

MBS MacOSXCG Plugin Documentation

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0.1 Introduction

This is the PDF version of the documentation for the Xojo (Real Studio) Plug-in from Monkeybread Software Germany. Plugin part: MBS MacOSXCG Plugin

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Chapter 3

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Chapter 4

CoreGraphics

4.1 Globals

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Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a PDF document.

Notes:

Title, Author, Creator, Subject and Keywords parameters can be empty.

If OwnerPassword and UserPassword are filled in the PDF is encrypted and AllowsPrinting/AllowsCopy define what the user can do after he entered his password.

The passwords must be a string which can be represented in ASCII encoding; only the first 32 bytes will be used for the password.

Requires Mac OS X to work.

See also:

- 4.1.2 CGNewPDFDocumentMBS(file as folderitem, MediaBox as CGRectMBS, title as string, author as string, creator as string, subject as string, keywords as string, OwnerPassword as string, UserPassword as string, AllowsPrinting as boolean, AllowsCopy as boolean, KeyLength as Integer) as CGPDFContextMBS 136

4.1.2 CGNewPDFDocumentMBS(file as folderitem, MediaBox as CGRectMBS, title as string, author as string, creator as string, subject as string, keywords as string, OwnerPassword as string, UserPassword as string, AllowsPrinting as boolean, AllowsCopy as boolean, KeyLength as Integer) as CGPDFContextMBS

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a PDF document.

Notes:

Title, Author, Creator, Subject and Keywords parameters can be empty.

If OwnerPassword and UserPassword are filled in the PDF is encrypted and AllowsPrinting/AllowsCopy define what the user can do after he entered his password. #

The passwords must be a string which can be represented in ASCII encoding; only the first 32 bytes will be used for the password.

Keylength must be a value between 48 bit and 128 bit in 8 bit steps. 0 uses default value.

Requires Mac OS X to work.

See also:

- 4.1.1 CGNewPDFDocumentMBS(file as folderitem, MediaBox as CGRectMBS, title as string, author as string, creator as string, subject as string, keywords as string, OwnerPassword as string, UserPassword as string, AllowsPrinting as boolean, AllowsCopy as boolean) as CGPDFContextMBS 135

4.1.3 GetCurrentCGContextMBS as CGContextMBS

Plugin Version: 9.8, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new CGContextMBS object for the current Cocoa graphics context.

Notes:

Requires Mac OS X to work.

Returns nil on any error.

4.1.4 CGBitmapContextCreateMBS(data as memoryblock, width as Integer, height as Integer, bitsPerComponent as Integer, bytesPerRow as Integer, colorspace as CGColorSpaceMBS, alphaInfo as Integer) as CGBitmapContextMBS

Plugin Version: 3.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Create a bitmap context.

Notes:

The context draws into a bitmap which is 'width' pixels wide and 'height' pixels high. The number of components for each pixel is specified by 'colorspace', which also may specify a destination color profile. The number of bits for each component of a pixel is specified by 'bitsPerComponent', which must be 1, 2, 4, or 8. Each row of the bitmap consists of 'bytesPerRow' bytes, which must be at least '(width * bitsPerComponent * number of components + 7)/8' bytes. 'data' points a block of memory at least 'bytesPerRow * height' bytes. 'alphaInfo' specifies whether the bitmap should contain an alpha channel, and how it's to be generated.

Fails if data=nil or colorspace=nil.

The memoryblock is not referenced and not stored, so keep it alive while using the BitmapContext object.

Returns nil on any error.

data

A pointer to the destination in memory where the drawing is to be rendered. The size of this memoryblock should be at least(bytesPerRow*height) bytes.

width

The width of the bitmap in pixels.

height

The height of the bitmap in pixels.

bitsPerComponent

The number of bits to use for each component of a pixel in memory. Allowable values are 4, 5, or 8. For example, for a 32-bit RGB(A) colorspace, you would specify a value of 8 bits per color component. In combination, the number of bits per component, the color space, and the alpha value determine which bitmap context formats Quartz supports.

bytesPerRow

The number of bytes of memory to use per row of the bitmap. This value must be at least the product of the width and bitsPerComponentparameters, times the number of components per pixel. The result should be divided by 8 and rounded up to the nearest whole number to obtain the number of bytes to use per row. That is, the value must be at least $\lceil ((\text{width}) * (\text{bits per component}) * (\text{number of components per pixel})) / 8 \rceil$ bytes. For a given row, Quartz stores bitmap data for the first width pixels and ignores any remaining bytes.

The colorspace value referenced by the colorspace parameter specifies the number of components for each pixel.

colorspace

The color space to use for the bitmap context.

alphaInfo

A `CGImageAlphaInfo` constant specifying whether the bitmap should contain an alpha channel and how it is to be generated. The alpha value determines the opacity of a pixel when it is drawn.

Supported pixel formats:

Pixel format	Color space	Bits per pixel	Bits per component	Alpha option
Gray_8	Grayscale	8	8	<code>kCGImageAlphaNone</code>
RGB555	RGB	16	5	<code>kCGImageAlphaNoneSkipFirst</code>
XRGB_32	RGB	32	8	<code>kCGImageAlphaNoneSkipFirst</code>
ARGB_32	RGB	32	8	<code>kCGImageAlphaPremultipliedFirst</code>
RGBX_32	RGB	32	8	<code>kCGImageAlphaNoneSkipLast</code>
RGBA_32	RGB	32	8	<code>kCGImageAlphaPremultipliedLast</code>

Quartz does not support the following formats in a bitmap context:

- 1-bit grayscale
- 24-bit RGB
- CMYK (any depth)

`CGImageAlphaInfo` constants:

<code>kCGImageAlphaNone</code>	0	
<code>kCGImageAlphaPremultipliedLast</code>	1	For example, premultiplied RGBA
<code>kCGImageAlphaPremultipliedFirst</code>	2	For example, premultiplied ARGB
<code>kCGImageAlphaLast</code>	3	For example, non-premultiplied RGBA
<code>kCGImageAlphaFirst</code>	4	For example, non-premultiplied ARGB
<code>kCGImageAlphaNoneSkipLast</code>	5	Equivalent to <code>kCGImageAlphaNone</code> .
<code>kCGImageAlphaNoneSkipFirst</code>	6	

4.1.5 `CGOpenPDFDocumentMBS(dataprovider as CGDataProviderMBS)` as `CGPDFDocumentMBS`

Plugin Version: 5.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Opens a CG PDF Document from a data stream.

Example:

```

Sub Paint(g As Graphics)
// window.paint event
dim f as FolderItem
dim b as BinaryStream
dim s as string
dim d as CGDataProviderMBS
dim p as CGPDFDocumentMBS

// get a folderitem to a pdf file.
f=SpecialFolder.Desktop.Child("notes.pdf")

// load the content in a string variable
b=f.OpenAsBinaryFile(false)
s=b.Read(b.Length)
b.Close

// now make a CGDataProvider based on a string.
d=CGDataProviderMBS.CreateWithData(s)

// Open the PDF from the Data Provider
p=CGOpenPDFDocumentMBS(d)

// And play with it
g.DrawCGPDFDocumentMBS p,p.MediaBox(1),1

Exception
// trouble goes here.
End Sub

```

Notes: Returns nil on any error.

4.1.6 CGShadingCreateAxialMBS(colorspace as CGColorSpaceMBS, startPoint as CGPointMBS, endPoint as CGPointMBS, func as CGFunctionMBS, extendStart as boolean, extendEnd as boolean) as CGShadingMBS

Plugin Version: 6.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a Quartz axial shading.

Notes:

Parameters:

colorspace: The color space in which color values are expressed. Quartz retains this object; upon return, you may safely release it.

startPoint: The starting point of the axis, in the shading's target coordinate space.

`endPoint`: The ending point of the axis, in the shading's target coordinate space.

`function`: A `CGFunction` object. This object refers to your function for creating an axial shading. Quartz retains this object; upon return, you may safely release it.

`extendStart`: A Boolean value that specifies whether to extend the shading beyond the starting point of the axis.

`extendEnd`: A Boolean value that specifies whether to extend the shading beyond the ending point of the axis.

Returns a new Quartz axial shading or nil on any error.

Discussion

An axial shading is a color blend that varies along a linear axis between two endpoints and extends indefinitely perpendicular to that axis. When you are ready to draw the shading, call the function `CGContextMBS.DrawShading`.

Available in Mac OS X version 10.2 and later.

4.1.7 `CGShadingCreateRadialMBS(colorspace as CGColorSpaceMBS, startPoint as CGPointMBS, startRadius as Double, endPoint as CGPointMBS, endRadius as Double, func as CGFunctionMBS, extendStart as boolean, extendEnd as boolean) as CGShadingMBS`

Plugin Version: 6.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a Quartz radial shading.

Notes:

Parameters

`colorspace`: The color space in which color values are expressed.

`startPoint`: The center of the starting circle, in the shading's target coordinate space.

`startRadius`: The radius of the starting circle, in the shading's target coordinate space.

`endPoint`: The center of the ending circle, in the shading's target coordinate space.

`endRadius`: The radius of the ending circle, in the shading's target coordinate space.

`function`: A `CGFunction` object. This object refers to your function for creating a radial shading.

`extendStart`: A Boolean value that specifies whether to extend the shading beyond the starting circle.

`extendEnd`: A Boolean value that specifies whether to extend the shading beyond the ending circle.

Returns a new Quartz radial shading or nil on any error.

A radial shading is a color blend that varies between two circles. To draw the shading, call the function `CGContextDrawShading`.

Available in Mac OS X version 10.2 and later.

4.1.8 CGCreateImageFromJPEGDataProviderMBS(dataprovider as Variant, decode as memoryblock, shouldInterpolate as boolean, intent as Integer) as CGImageMBS

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new CGImage with JPEG data.

Example:

```
// Shows moon.jpg from the desktop folder
// shows in the window title if i,p or u is nil.
```

```
Sub Mainwindow.Paint(g As Graphics)
dim f as FolderItem
dim p as CGDataProviderMBS
dim i as CGImageMBS

f=SpecialFolder.Desktop.Child("moon.jpg")
p=CGDataProviderMBS.CreateWithFile(f)
if p=nil then
Title="p=nil"
else
i=CGCreateImageFromJPEGDataProviderMBS(p,nil,true,0)

if i=nil then
Title="i=nil"
else
mainwindow1.CGContextMBS.DrawPicture i,CGMakeRectMBS(0,0,i.Width,i.Height)
end if
end if

End Sub
```

Notes:

Dataprovider must be a CGDataProviderMBS object.

Parameters:

dataprovider:

A reference to a data provider supplying JPEG-encoded data.

decode:

Pass the decode array for the image. In the decode array, for each color component in the source color space, you provide a pair of values denoting the upper and lower limits of a range. For example, the decode array for a source image in the RGB color space would contain six entries total, consisting of one pair each

for red, green, and blue. When the image is rendered, Quartz uses a linear transform to map the original component value into a relative number within your designated range that is appropriate for the destination color space. If you do not want to allow remapping of the image's color values, pass nil for the decode array. The memoryblock for the array needs to be filled with double values.

`shouldInterpolate:`

Pass true if interpolation should occur; otherwise, pass false . The interpolation setting specifies whether Quartz should apply a pixel-smoothing algorithm to the image. If you pass false , the image may appear jagged or pixelated when drawn on an output device with higher resolution than the image data.

`intent:`

Pass a `CGColorRenderingIntent` value specifying how Quartz should display colors in the image that are not located within the current color space of the graphics context. The rendering intent determines the exact method used to map colors from one color space to another.

4.1.9 `CGCreateImageFromPNGDataProviderMBS(dataprovider as Variant, decode as memoryblock, shouldInterpolate as boolean, intent as Integer) as CGImageMBS`

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new `CGImage` with PNG data.

Notes:

Dataprovider must be a `CGDataProviderMBS` object.

Parameters:

`dataprovider:`

A reference to a data provider supplying JPEG-encoded data.

`decode:`

Pass the decode array for the image. In the decode array, for each color component in the source color space, you provide a pair of values denoting the upper and lower limits of a range. For example, the decode array for a source image in the RGB color space would contain six entries total, consisting of one pair each for red, green, and blue. When the image is rendered, Quartz uses a linear transform to map the original component value into a relative number within your designated range that is appropriate for the destination color space. If you do not want to allow remapping of the image's color values, pass nil for the decode array. The memoryblock for the array needs to be filled with double values.

`shouldInterpolate:`

Pass true if interpolation should occur; otherwise, pass false . The interpolation setting specifies whether Quartz should apply a pixel-smoothing algorithm to the image. If you pass false , the image may appear

jagged or pixelated when drawn on an output device with higher resolution than the image data.

intent:

Pass a `CGColorRenderingIntent` value specifying how Quartz should display colors in the image that are not located within the current color space of the graphics context. The rendering intent determines the exact method used to map colors from one color space to another.

4.1.10 `CGCreateImageMBS(pic as picture) as CGImageMBS`

Plugin Version: 8.6, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new `CGImageMBS` from the given images.

Example:

```
dim c as CGImageMBS
dim pic, mask as Picture
// get picture and mask

c=CGCreateImageMBS(pic)
if c<>Nil then
// go on
end if
```

Notes: If the image has a mask, it is used.

See also:

- 4.1.11 `CGCreateImageMBS(pic as picture, mask as picture) as CGImageMBS`

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4.1.11 `CGCreateImageMBS(pic as picture, mask as picture) as CGImageMBS`

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new `CGImageMBS` from the given images.

Example:

```
dim c as CGImageMBS
dim pic, mask as Picture
// get picture and mask

c=CGCreateImageMBS(pic, mask)
if c<>Nil then
// go on
end if
```

Notes:

The mask is taken from the second image.

With 11.3 plugins we are deprecating to pass a mask. The plugin prefers to simply take the mask or alpha channel of the picture itself.

See also:

- 4.1.10 CGCreateImageMBS(pic as picture) as CGImageMBS 143

4.1.12 CGMakePointMBS(x as Double, y as Double) as CGPointMBS

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a new CGPointMBS object.

4.1.13 CGMakeRectMBS(left as Double, top as Double, width as Double, height as Double) as CGRectMBS

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a new CGRectMBS object with the given value.

4.1.14 CGMakeSizeMBS(width as Double, height as Double) as CGSizeMBS

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a new CGSizeMBS object.

4.1.15 CGNewPDFDocumentMBS(consumer as CGDataConsumerMBS, MediaBox as CGRectMBS, title as string, author as string, creator as string) as CGPDFContextMBS

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a PDF document.

Notes:

Title, author and creator are all optional.

Requires Mac OS X to work.

Keep yourself a reference to the consumer object so RB does not release it resulting in a crash.

4.1.16 CGNewPDFDocumentMBS(file as folderitem, MediaBox as CGRectMBS, title as string, author as string, creator as string) as CGPDFContextMBS

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a PDF document.

Notes:

Title, author and creator are all optional.
Requires Mac OS X to work.

4.1.17 CGOpenPDFDocumentMBS(file as folderitem) as CGPDFDocumentMBS

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Opens a PDF document.

Notes:

RB 4.5 should do this perfectly, but older RB versions may have problems with longer file names.
Requires Mac OS X to work.

4.2 class CGAffineTransformMBS**4.2.1 class CGAffineTransformMBS**

Plugin Version: 3.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for an affine transformation.

Example:

```
dim af as CGAffineTransformMBS = CGAffineTransformMBS.Identity
```

```
MsgBox str(af.A)+" "+str(af.b)+" "+str(af.c)+" "+str(af.d)+" "+str(af.tx)+" "+str(af.ty)
```

```
af = af.Scale( 1, -1 )
```

```
MsgBox str(af.A)+" "+str(af.b)+" "+str(af.c)+" "+str(af.d)+" "+str(af.tx)+" "+str(af.ty)
```

```
af = af.Translate( 0, 100 )
```

```
MsgBox str(af.A)+" "+str(af.b)+" "+str(af.c)+" "+str(af.d)+" "+str(af.tx)+" "+str(af.ty)
```

```
dim r1 as CGRectMBS
```

```
dim r2 as CGRectMBS
```

```
r1=CGMakeRectMBS(100,100,100,100)
```

```
r2=r1.ApplyAffineTransform(af)
```

```
MsgBox "("+str(r1.Left)+", "+str(r1.top)+", "+str(r1.width)+", "+str(r1.height)+") => "("+str(r2.Left)+", "+str(r2.top)+", "+str(r2.width)+", "+str(r2.height)+")"
```

4.2.2 Methods

4.2.3 Binary as MemoryBlock

Plugin Version: 3.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the binary data of the object for toolbox calls.

4.2.4 Concat(t as CGAffineTransformMBS) as CGAffineTransformMBS

Plugin Version: 3.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Concatenate 't2' to 't1' and returne the result: $t' = t1 * t2$

4.2.5 Constructor

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** This constructor creates the identity transform: $[1 \ 0 \ 0 \ 1 \ 0 \ 0]$.

See also:

- 4.2.6 Constructor(a as Double, b as Double, c as Double, d as Double, tx as Double, ty as Double) 146
- 4.2.7 Constructor(p as Ptr) 147

4.2.6 Constructor(a as Double, b as Double, c as Double, d as Double, tx as Double, ty as Double)

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates the transformation with the given values.

See also:

- 4.2.5 Constructor 146
- 4.2.7 Constructor(p as Ptr) 147

4.2.7 Constructor(p as Ptr)

Plugin Version: 17.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new instance using data at the pointer.

Notes: Make sure the pointer is valid and has the right data and size.

See also:

- 4.2.5 Constructor 146
- 4.2.6 Constructor(a as Double, b as Double, c as Double, d as Double, tx as Double, ty as Double) 146

4.2.8 EqualToTransform(t as CGAffineTransformMBS) as boolean

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Checks whether two affine transforms are equal.

Notes:

Returns true if t1 and t2 are equal, false otherwise.

Available in Mac OS X v10.4 and later.

4.2.9 Identity as CGAffineTransformMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The identity transform: $\begin{bmatrix} 1 & 0 & 0 & 1 & 0 & 0 \end{bmatrix}$.

4.2.10 Invert as CGAffineTransformMBS

Plugin Version: 3.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Invert 't' and return the result. If 't' has zero determinant, then 't' is returned unchanged.

4.2.11 IsIdentity as boolean

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Checks whether an affine transform is the identity transform.

Notes:

Returns true if t is the identity transform, false otherwise.

Available in Mac OS X v10.4 and later.

4.2.12 Make(a as Double, b as Double, c as Double, d as Double, tx as Double, ty as Double) as CGAffineTransformMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return the transform $[a \ b \ c \ d \ tx \ ty]$.

4.2.13 MakeRotation(angle as Double) as CGAffineTransformMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return a transform which rotates by 'angle' radians: $t' = [\cos(\text{angle}) \ \sin(\text{angle}) \ -\sin(\text{angle}) \ \cos(\text{angle}) \ 0 \ 0]$

4.2.14 MakeScale(sx as Double, sy as Double) as CGAffineTransformMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return a transform which scales by '(sx, sy)': $t' = [sx \ 0 \ 0 \ sy \ 0 \ 0]$

4.2.15 MakeTranslation(tx as Double, ty as Double) as CGAffineTransformMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return a transform which translates by '(tx, ty)': $t' = [1 \ 0 \ 0 \ 1 \ tx \ ty]$

4.2.16 Rotate(angle as Double) as CGAffineTransformMBS

Plugin Version: 3.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Rotate 't' by 'angle' radians and return the result: $t' = [\cos(\text{angle}) \ \sin(\text{angle}) \ -\sin(\text{angle}) \ \cos(\text{angle}) \ 0 \ 0] * t$

4.2.17 Scale(sx as Double, sy as Double) as CGAffineTransformMBS

Plugin Version: 3.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Scale 't' by '(sx, sy)' and return the result: $t' = [sx \ 0 \ 0 \ sy \ 0 \ 0] * t$

4.2.18 Translate(tx as Double, ty as Double) as CGAffineTransformMBS

Plugin Version: 3.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Translate 't' by '(tx, ty)' and return the result: $t' = [1 \ 0 \ 0 \ 1 \ tx \ ty] * t$

Example:

```
dim t as new CGAffineTransformMBS(1,0,0,1,1,1)
t=t.Translate(2,3)
```

```
MsgBox str(T.A)+" "+str(t.B)+" "+str(t.C)+" "+str(t.D)+" "+str(t.TX)+" "+str(t.TY)
```

```
// shows 1 0 0 1 3 4
```

4.2.19 Properties

4.2.20 A as Double

Plugin Version: 3.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The A value.
Notes: (Read and Write property)

4.2.21 B as Double

Plugin Version: 3.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The B value.
Notes: (Read and Write property)

4.2.22 C as Double

Plugin Version: 3.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The C value.
Notes: (Read and Write property)

4.2.23 D as Double

Plugin Version: 3.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The D value.
Notes: (Read and Write property)

4.2.24 TX as Double

Plugin Version: 3.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The TX value.
Notes: (Read and Write property)

4.2.25 TY as Double

Plugin Version: 3.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The TY value.
Notes: (Read and Write property)

4.3 class CGBitmapContextMBS

4.3.1 class CGBitmapContextMBS

Plugin Version: 3.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class to hold a CoreGraphics bitmap context.

Example:

```
Sub Paint(g As Graphics)
dim c as CGPictureContextMBS
dim w as CGContextMBS // of window
dim p,m as Picture

c=new CGPictureContextMBS(100,100)

c.ClearRect CGMakeRectMBS(0,0,100,100)
c.SetRGBFillColor 1,0,0,1
c.FillRect CGMakeRectMBS(0,0,50,50)

w=window1.CGContextMBS // we are inside paint event!
// Draw using CGImage
w.DrawPicture c.CGImage(false,0),CGMakeRectMBS(0,0,c.BitmapWidth,c.BitmapHeight)
w.Flush

// Draw using RB picture, so we can see whether it looks equal.
m=c.CopyPictureMask
p=NewPicture(m.Width,m.Height,32)
p.Graphics.DrawPicture c.CopyPicture,0,0
p.Mask.Graphics.DrawPicture m,0,0
g.DrawPicture p,0,0

End Sub
```

Notes:

If the RB graphics class is like a CGContext, the RB picture class (created using NewPicture) is something like a CGBitmapContext.

Not supported for 64 bit targets.

Subclass of the CGContextMBS class.

This is an abstract class. You can't create an instance, but you can get one from various plugin functions.

4.3.2 Methods

4.3.3 CGImage(shouldInterpolate as boolean = false, intent as Integer = 0) as CGImageMBS

Plugin Version: 4.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a CGImageMBS object referencing the CGContext object.

Example:

```
dim c as CGPictureContextMBS
dim w as CGContextMBS // of window

c=new CGPictureContextMBS(100,100)

c.SetRGBFillColor 1,0,0,1
c.FillRect CGMakeRectMBS(0,0,50,50)

w=window1.CGContextMBS // we are inside paint event!
w.DrawPicture c.CGImage(false,0),CGMakeRectMBS(0,0,c.BitmapWidth,c.BitmapHeight)
w.Flush
```

Notes:

You will crash your application if you use this Image after the CGContext object was destroyed. Changes made to the connected CGContext will be seen in the CGImage. Returns nil on low memory.

Constants for intent:

kCGRenderingIntentDefault	0
kCGRenderingIntentAbsoluteColorimetric	1
kCGRenderingIntentRelativeColorimetric	2
kCGRenderingIntentPerceptual	3
kCGRenderingIntentSaturation	4

Set shouldInterpolate to true if the image should use interpolation.

4.3.4 Constructor

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The private constructor.

4.3.5 Create(data as memoryblock, width as Integer, height as Integer, bitsPerComponent as Integer, bytesPerRow as Integer, colorspace as CGColorSpaceMBS, alphaInfo as Integer) as CGContextContextMBS

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Create a bitmap context.

Notes:

The context draws into a bitmap which is 'width' pixels wide and 'height' pixels high. The number of components for each pixel is specified by 'colorspace', which also may specify a destination color profile. The number of bits for each component of a pixel is specified by 'bitsPerComponent', which must be 1, 2, 4, or 8. Each row of the bitmap consists of 'bytesPerRow' bytes, which must be at least '(width * bitsPerComponent * number of components + 7)/8' bytes. 'data' points a block of memory at least 'bytesPerRow * height' bytes. 'alphaInfo' specifies whether the bitmap should contain an alpha channel, and how it's to be generated.

Fails if data=nil or colorspace=nil.

The memoryblock is not referenced and not stored, so keep it alive while using the BitmapContext object.

Returns nil on any error.

data

A pointer to the destination in memory where the drawing is to be rendered. The size of this memoryblock should be at least(bytesPerRow*height) bytes.

width

The width of the bitmap in pixels.

height

The height of the bitmap in pixels.

bitsPerComponent

The number of bits to use for each component of a pixel in memory. Allowable values are 4, 5, or 8. For example, for a 32-bit RGB(A) colorspace, you would specify a value of 8 bits per color component. In combination, the number of bits per component, the color space, and the alpha value determine which bitmap context formats Quartz supports.

bytesPerRow

The number of bytes of memory to use per row of the bitmap. This value must be at least the product of the width and bitsPerComponentparameters, times the number of components per pixel. The result should be divided by 8 and rounded up to the nearest whole number to obtain the number of bytes to use per row. That is, the value must be at least $((width) * (bits\ per\ component) * (number\ of\ components\ per\ pixel)) + 7 / 8$ bytes. For a given row, Quartz stores bitmap data for the first width pixels and ignores any remaining bytes. The colorspace value referenced by the colorspace parameter specifies the number of components for each pixel.

colorspace

The color space to use for the bitmap context.

alphaInfo

A `CGImageAlphaInfo` constant specifying whether the bitmap should contain an alpha channel and how it is to be generated. The alpha value determines the opacity of a pixel when it is drawn.

Supported pixel formats:

Pixel format	Color space	Bits per pixel	Bits per component	Alpha option
Gray_8	Grayscale	8	8	<code>kCGImageAlphaNone</code>
RGB555	RGB	16	5	<code>kCGImageAlphaNoneSkipFirst</code>
XRGB_32	RGB	32	8	<code>kCGImageAlphaNoneSkipFirst</code>
ARGB_32	RGB	32	8	<code>kCGImageAlphaPremultipliedFirst</code>
RGBX_32	RGB	32	8	<code>kCGImageAlphaNoneSkipLast</code>
RGBA_32	RGB	32	8	<code>kCGImageAlphaPremultipliedLast</code>

Quartz does not support the following formats in a bitmap context:

- 1-bit grayscale
- 24-bit RGB
- CMYK (any depth)

`CGImageAlphaInfo` constants:

<code>kCGImageAlphaNone</code>	0	
<code>kCGImageAlphaPremultipliedLast</code>	1	For example, premultiplied RGBA
<code>kCGImageAlphaPremultipliedFirst</code>	2	For example, premultiplied ARGB
<code>kCGImageAlphaLast</code>	3	For example, non-premultiplied RGBA
<code>kCGImageAlphaFirst</code>	4	For example, non-premultiplied ARGB
<code>kCGImageAlphaNoneSkipLast</code>	5	Equivalent to <code>kCGImageAlphaNone</code> .
<code>kCGImageAlphaNoneSkipFirst</code>	6	

See also:

- 4.3.6 `Create(Other as CGContextContextMBS, NewColorspace as CGColorSpaceMBS) as CGContextContextMBS`

4.3.6 Create(Other as CGBitmapContextMBS, NewColorspace as CGColorSpaceMBS) as CGBitmapContextMBS

Plugin Version: 14.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new bitmap object.

Example:

```
dim pic as new Picture(100,100) // some picture
dim ICCProfileData as memoryblock // get a IIC Profile somewhere

dim colorspace as CGColorSpaceMBS = CGColorSpaceMBS.CreateWithICCProfile(ICCProfileData)
dim bitmap as CGBitmapContextMBS = CGBitmapContextMBS.CreateWithPicture(pic)
dim zweiteBitmap as CGBitmapContextMBS = bitmap.Create(bitmap, colorspace)
```

Notes: The new bitmap object uses same data as existing object, just accesses the pixels using the new color space.

See also:

- 4.3.5 Create(data as memoryblock, width as Integer, height as Integer, bitsPerComponent as Integer, bytesPerRow as Integer, colorspace as CGColorSpaceMBS, alphaInfo as Integer) as CGBitmapContextMBS 153

4.3.7 CreateImage as CGImageMBS

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return an image containing a snapshot of the bitmap context.

Example:

```
// a new picture in RB
dim pic as new Picture(500, 500)

// and create CGBitmapContextMBS pointing to it
dim b as CGBitmapContextMBS = CGBitmapContextMBS.CreateWithPicture(pic)

// color set to full red
b.SetRGBFillColor 1.0, 0.0, 0.0, 1.0

// draw ellipse
dim r as CCGRectMBS = CCGRectMBS.Make(0, 0, 500, 500)
b.FillEllipseInRect r

// flush drawings
b.Flush

// now try CGImage creation
dim cgimage as CGImageMBS = b.CreateImage
```

```
// and display by converting to a new picture
Backdrop = cimage.Picture
```

Notes:

If context is not a bitmap context, or if the image cannot be created for any reason, this function returns NULL. This is a "copy" operation subsequent changes to context will not affect the contents of the returned image.

Note that in some cases the copy will actually follow "copy-on-write" semantics, so that the actual physical copy of the bits will only occur if the underlying data in the bitmap context is modified. As a consequence, you may wish to use the resulting image and release it before performing more drawing into the bitmap context; in this way, the actual physical copy of the data may be avoided.

4.3.8 CreateRGB(data as memoryblock, width as Integer, height as Integer, bytesPerRow as Integer, colorspace as CGColorSpaceMBS = nil) as CGBitmapContextMBS

Plugin Version: 15.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Convenience function to handle RGB data.

Notes:

Same as Create method, but for RGB data.

Converts data from 3 byte/pixel to 4 byte/pixel and then creates CGBitmapContextMBS.

Colorspace is optional and defaults to Generic RGB.

Returns nil on error, raises OutOfBounds exception for invalid parameters.

4.3.9 CreateWithPicture(Pic as Picture) as CGBitmapContextMBS

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a CGBitmapContext referencing the given picture.

Example:

```
// a new picture in RB
dim pic as new Picture(500, 500)
```

```
// and create CGBitmapContextMBS pointing to it
dim b as CGBitmapContextMBS = CGBitmapContextMBS.CreateWithPicture(pic)
```

```
// color set to full red
b.SetRGBFillColor 1.0, 0.0, 0.0, 1.0
```

```

// draw ellipse
dim r as CCGRectMBS = CCGRectMBS.Make(0, 0, 500, 500)
b.FillEllipseInRect r

// flush drawings
b.Flush

// and show
Backdrop = pic

```

Notes:

Only for Cocoa target.
The plugin will do a clear cache on the picture in the destructor.

4.3.10 Properties**4.3.11 BitmapAlphaInfo as Integer**

Plugin Version: 3.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the alpha info of the bitmap.

Example:

```

// a new picture in RB
dim pic as new Picture(500, 500)

// and create CGBitmapContextMBS pointing to it
dim b as CGBitmapContextMBS = CGBitmapContextMBS.CreateWithPicture(pic)

// shows 2 for kCGImageAlphaPremultipliedFirst
MsgBox str(b.BitmapAlphaInfo)

```

Notes:

Returns 0 on any error.

CGImageAlphaInfo constants:

(Read only property)

kCGImageAlphaNone	0	
kCGImageAlphaPremultipliedLast	1	For example, premultiplied RGBA
kCGImageAlphaPremultipliedFirst	2	For example, premultiplied ARGB
kCGImageAlphaLast	3	For example, non-premultiplied RGBA
kCGImageAlphaFirst	4	For example, non-premultiplied ARGB
kCGImageAlphaNoneSkipLast	5	Equivalent to kCGImageAlphaNone.
kCGImageAlphaNoneSkipFirst	6	

4.3.12 BitmapBitsPerComponent as Integer

Plugin Version: 3.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the bits per component of the bitmap.

Example:

```
// a new picture in RB
dim pic as new Picture(500, 500)

// and create CGContextMBS pointing to it
dim b as CGContextMBS = CGContextMBS.CreateWithPicture(pic)

// shows 8
MsgBox str(b.BitmapBitsPerComponent)
```

Notes:

Returns 0 on any error.
(Read only property)

4.3.13 BitmapBitsPerPixel as Integer

Plugin Version: 3.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the bits per pixel of the bitmap.

Example:

```
// a new picture in RB
dim pic as new Picture(500, 500)

// and create CGContextMBS pointing to it
dim b as CGContextMBS = CGContextMBS.CreateWithPicture(pic)

// shows 32
MsgBox str(b.BitmapBitsPerPixel)
```

Notes:

Returns 0 on any error.
(Read only property)

4.3.14 BitmapBytesPerRow as Integer

Plugin Version: 3.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the bytes per row of the bitmap.

Example:

```
// a new picture in RB
dim pic as new Picture(500, 500)

// and create CGBitmapContextMBS pointing to it
dim b as CGBitmapContextMBS = CGBitmapContextMBS.CreateWithPicture(pic)

// shows 2000
MsgBox str(b.BitmapBytesPerRow)
```

Notes:

Returns 0 on any error.
(Read only property)

4.3.15 BitmapColorSpace as CGColorSpaceMBS

Plugin Version: 3.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the colorspace used for this bitmap.

Notes:

Returns nil on any error.

This is not the same RB object used when you created the bitmap, but it will contain the same handle.
(Read only property)

4.3.16 BitmapData as MemoryBlock

Plugin Version: 3.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a memory-block for the data of the bitmap.

Notes:

Returns nil on any error.

This is not the same RB memoryblock object as you passed to the Create function, but it will point to the same bytes in memory.
(Read only property)

4.3.17 BitmapHeight as Integer

Plugin Version: 3.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the height of the bitmap.

Example:

```
// a new picture in RB
dim pic as new Picture(500, 500)

// and create CGContextMBS pointing to it
dim b as CGContextMBS = CGContextMBS.CreateWithPicture(pic)

// shows 500
MsgBox str(b.BitmapHeight)
```

Notes:

Returns 0 on any error.
(Read only property)

4.3.18 BitmapInfo as Integer

Plugin Version: 11.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Obtains the bitmap information associated with a bitmap graphics context.

Example:

```
// a new picture in RB
dim pic as new Picture(500, 500)

// and create CGContextMBS pointing to it
dim b as CGContextMBS = CGContextMBS.CreateWithPicture(pic)

// shows info: 2 for kCGImageAlphaPremultipliedFirst
MsgBox str(b.BitmapInfo)
```


Notes:

The bitmap info of the bitmap graphics context or 0 if c is not a bitmap graphics context. See *CGImage Reference* for a description of the Image Bitmap Information constants that can be returned.

The *CGBitmapInfo* data returned by the function specifies whether the bitmap contains an alpha channel and how the alpha channel is generated, along with whether the components are floating-point or integer. (Read only property)

4.3.19 *BitmapWidth* as Integer

Plugin Version: 3.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the width of the bitmap.

Example:

```
// a new picture in RB
dim pic as new Picture(500, 500)

// and create CGBitmapContextMBS pointing to it
dim b as CGBitmapContextMBS = CGBitmapContextMBS.CreateWithPicture(pic)

// show info: 500
MsgBox str(b.BitmapWidth)
```

Notes:

Returns 0 on any error.
(Read only property)

4.4 class CGColorMBS

4.4.1 class CGColorMBS

Plugin Version: 4.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a Core-Graphics color object.

4.4.2 Methods

4.4.3 Alpha as Double

Plugin Version: 4.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The alpha value of the color.

4.4.4 Black as CGColorMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The black color in the Generic gray color space.

4.4.5 Clear as CGColorMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The clear color in the Generic gray color space.

4.4.6 ColorSpace as CGColorSpaceMBS

Plugin Version: 4.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The colorspace of this color.

Notes: May be nil if unknown.

4.4.7 Components as memoryblock

Plugin Version: 4.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The components of the color as a memoryblock.

Notes:

The memoryblock contains double properties.
m.double(0), m.double(4), etc.

4.4.8 Copy as CGColorMBS

Plugin Version: 4.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a copy of the color.

Notes: Returns nil on any error.

4.4.9 CopyWithAlpha(alpha as Double) as CGColorMBS

Plugin Version: 4.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Makes a new copy of the color with a different alpha value.

Notes: Returns nil on any error.

4.4.10 Create(colorspace as CGColorSpaceMBS, components as memoryblock) as CGColorMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new color with the given components.

Example:

```
dim c as color = &cFF0000
```

```
Dim m As MemoryBlock
```

```
m=NewMemoryBlock(16)
m.SingleValue(0)=c.Red/256
m.SingleValue(4)=c.Green/256
m.SingleValue(8)=c.Blue/256
m.SingleValue(12)=1.0
```

```
dim colorspace as CGColorSpaceMBS
```

```
colorspace=CGColorSpaceMBS.CreateDeviceRGB
```

```
if colorspace=nil or colorspace.Handle=0 then
  MsgBox "Failed to get RGB color space!"
  Return
end if
```

```
Dim col As CGColorMBS
```

```
col=CGColorMBS.Create(colorspace, m)
```

```
if col=nil or col.Handle=0 then
  MsgBox "Failed to create color."
Return
end if
```

```
MsgBox str(Col.NumberOfComponents)
```

Notes: This method was called NewCGColorMBS in earlier MBS Plugins.
See also:

- 4.4.11 Create(colorspace as CGColorSpaceMBS, components() as Double) as CGColorMBS 164

4.4.11 Create(colorspace as CGColorSpaceMBS, components() as Double) as CGColorMBS

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new color with the given components.

Notes:

Supports up to 32 components.

Returns nil on any error.

See also:

- 4.4.10 Create(colorspace as CGColorSpaceMBS, components as memoryblock) as CGColorMBS 163

4.4.12 CreateDeviceCMYK(cyan as Double, magenta as Double, yellow as Double, black as Double, alpha as Double = 1.0) as CGColorMBS

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a color in the device CMYK color space.

Notes:

cyan: A cyan value (0.0 - 1.0).

magenta: A magenta value (0.0 - 1.0).

yellow: A yellow value (0.0 - 1.0).

black: A black value (0.0 - 1.0).

alpha: An alpha value (0.0 - 1.0).

Returns a color object.

4.4.13 CreateDeviceGray(gray as Double, alpha as Double = 1.0) as CGColorMBS

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a color in the device gray color space.

Notes:

gray: A grayscale value (0.0 - 1.0).

alpha: An alpha value (0.0 - 1.0).

Returns a color object.

4.4.14 CreateDeviceRGB(red as Double, green as Double, blue as Double, alpha as Double = 1.0) as CGColorMBS

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a color in the device RGB color space.

Notes:

red: A red component value (0.0 - 1.0).

green: A green component value (0.0 - 1.0).

blue: A blue component value (0.0 - 1.0).

alpha: An alpha value (0.0 - 1.0).

Returns a new color object.

4.4.15 CreateGenericCMYK(cyan as Double, magenta as Double, yellow as Double, black as Double, alpha as Double = 1.0) as CGColorMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a color in the Generic CMYK color space.

Notes:

cyan: A cyan value (0.0 - 1.0).

magenta: A magenta value (0.0 - 1.0).

yellow: A yellow value (0.0 - 1.0).

black: A black value (0.0 - 1.0).

alpha: An alpha value (0.0 - 1.0).

Returns a color object.

Available in Mac OS X v10.5 and later.

4.4.16 CreateGenericGray(gray as Double, alpha as Double = 1.0) as CGColorMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a color in the Generic gray color space.

Notes:

gray: A grayscale value (0.0 - 1.0).

alpha: An alpha value (0.0 - 1.0).

Returns a color object.

Available in Mac OS X v10.5 and later.

4.4.17 CreateGenericRGB(red as Double, green as Double, blue as Double, alpha as Double = 1.0) as CGColorMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a color in the Generic RGB color space.

Notes:

red: A red component value (0.0 - 1.0).

green: A green component value (0.0 - 1.0).

blue: A blue component value (0.0 - 1.0).

alpha: An alpha value (0.0 - 1.0).

Returns a new color object.

Available in Mac OS X v10.5 and later.

4.4.18 Equal(secondColor as CGColorMBS) as boolean

Plugin Version: 4.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** True if both colors have equal values.

Notes: False on any error.

4.4.19 NumberOfComponents as Integer

Plugin Version: 4.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The number of components.

Notes: Should be 3 for RGB and 4 for CMYK.

4.4.20 White as CGColorMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The white color in the Generic gray color space.

4.4.21 Properties

4.4.22 Handle as Integer

Plugin Version: 4.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The handle to the CGColorRef used internal.

Notes: (Read and Write property)

4.5 class CGColorSpaceMBS

4.5.1 class CGColorSpaceMBS

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a Core-Graphics color space.

4.5.2 Methods

4.5.3 CreateCalibratedGray(whitePoint() as Double, blackPoint() as Double, gamma as Double) as CGColorSpaceMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a calibrated gray colorspace.

Notes:

WhitePoint is an array of 3 numbers (type double) specifying the tristimulus value, in the CIE 1931 XYZ-space, of the diffuse white point.

BlackPoint is an array of 3 numbers (type double) specifying the tristimulus value, in CIE 1931 XYZ-space, of the diffuse black point.

Gamma defines the gamma for the gray component.

Returns nil on any error.

4.5.4 CreateCalibratedRGB(whitePoint() as Double, blackPoint() as Double, gamma() as Double, matrix() as Double) as CGColorSpaceMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a calibrated RGB colorspace.

Notes:

WhitePoint is an array of 3 numbers (type double) specifying the tristimulus value, in the CIE 1931 XYZ-space, of the diffuse white point.

BlackPoint is an array of 3 numbers (type double) specifying the tristimulus value, in CIE 1931 XYZ-space, of the diffuse black point.

Gamma is an array of 3 numbers (type double) specifying the gamma for the red, green, and blue components of the color space.

Matrix is an array of 9 numbers (type double) specifying the linear interpretation of the gamma-modified RGB values of the colorspace with respect to the final XYZ representation.

Returns nil on any error.

4.5.5 CreateDeviceCMYK as CGColorSpaceMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a DeviceCMYK colorspace.

Notes: Returns nil on any error.

4.5.6 CreateDeviceGray as CGColorSpaceMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a DeviceGray colorspace.

Notes: Returns nil on any error.

4.5.7 CreateDeviceRGB as CGColorSpaceMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a DeviceRGB colorspace.

Notes:

Returns nil on any error.

Old name: CGColorSpaceCreateDeviceRGBMBS

4.5.8 CreateLab(whitePoint() as Double, blackPoint() as Double, range() as Double) as CGColorSpaceMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates an L*a*b* colorspace.

Notes:

WhitePoint is an array of 3 numbers (type double) specifying the tristimulus value, in the CIE 1931 XYZ-space, of the diffuse white point.

BlackPoint is an array of 3 numbers (type double) specifying the tristimulus value, in CIE 1931 XYZ-space, of the diffuse black point.

Range is an array of four numbers (type double) specifying the range of valid values for the a* and b* components of the color space.

Returns nil on any error.

4.5.9 CreatePattern(baseSpace as CGColorSpaceMBS) as CGColorSpaceMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a pattern colorspace.

Notes:

BaseSpace is the underlying colorspace of the pattern colorspace. For colored patterns, baseSpace should be nil; for uncolored patterns, baseSpace specifies the colorspace of colors which will be painted through the pattern.

Returns nil on any error.

4.5.10 CreateWithHandle(Handle as Integer) as CGColorSpaceMBS

Plugin Version: 15.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a CGColorSpace for a handle.

Example:

```
dim n as NSColorSpaceMBS = NSColorSpaceMBS.genericCMYKColorSpace
dim c as CGColorSpaceMBS = CGColorSpaceMBS.CreateWithHandle(n.CGColorSpaceHandle)
MsgBox c.Name
```

Notes:

Sometimes you need to create CGColorSpaceMBS from NSColorSpaceMBS or some handle you got from an OS function and than you can use this function.

Returns nil on any error. Retains the handle.

4.5.11 CreateWithICCProfile(ICCProfileData as memoryblock) as CGColorSpaceMBS

Plugin Version: 13.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates an ICC-based color space using the ICC profile contained in the specified data.

Notes:

data: The data containing the ICC profile to set for the new color space.

Returns a new color space based on the specified profile.

See also:

- 4.5.12 CreateWithICCProfile(ICCProfileData as string) as CGColorSpaceMBS

4.5.12 CreateWithICCProfile(ICCProfileData as string) as CGColorSpaceMBS

Plugin Version: 13.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates an ICC-based color space using the ICC profile contained in the specified data.

Notes:

data: The data containing the ICC profile to set for the new color space.

Returns a new color space based on the specified profile.

See also:

- 4.5.11 CreateWithICCProfile(ICCProfileData as memoryblock) as CGColorSpaceMBS 170

4.5.13 CreateWithName(name as string) as CGColorSpaceMBS

Plugin Version: 11.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Create a color space using name as the identifier for the color space.

Notes: Pass one of the kCGColorSpace* string constants.

4.5.14 CreateWithPlatformColorSpace(Handle as Integer) as CGColorSpaceMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a CGColorSpace using a Colorsync Profile Handle.

Notes: Returns nil on any error.

4.5.15 ICCProfile as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a copy of the ICC profile of the provided color space.

Notes:

The ICC profile or "" if the color space does not have an ICC profile.

Available in Mac OS X v10.5 and later.

4.5.16 kCGColorSpaceACESCGLinear as string

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the names for color spaces.

Notes:

The name of the ACEScG color space. For more information, see ACEScG A Working Space for CGI Render and Compositing, Version 1.0.1, Academy of Motion Picture Arts and Sciences (<http://www.oscars.org/science-technology/sci-tech-projects/aces>).

Available in OS X v10.11 and later.

4.5.17 `kCGColorSpaceAdobeRGB1998` as string

Plugin Version: 11.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the names for color spaces.

Notes: The name of the Adobe RGB (1998) color space. For more information, see "Adobe RGB (1998) Color Image Encoding", Version 2005-05, Adobe Systems Inc. (<http://www.adobe.com>).

4.5.18 `kCGColorSpaceDCIP3` as string

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the names for color spaces.

Notes:

The name of the DCI P3 color space, created by Digital Cinema Initiatives, LLC. This color space is the digital cinema standard.

Available in OS X v10.11 and later.

4.5.19 `kCGColorSpaceDisplayP3` as string

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the names for color spaces.

Notes:

The name of the Display P3 color space, created by Apple Inc. This color space uses the DCI P3 primaries, a D65 white point, and the same gamma curve as the sRGB color space.

Available in OS X v10.10 and later.

4.5.20 `kCGColorSpaceGenericCMYK` as string

Plugin Version: 11.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the names for color spaces.

Notes: The name of the "Generic" CMYK color space.

4.5.21 kCGColorSpaceGenericGray as string

Plugin Version: 11.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the names for color spaces.

Notes: The name of the "Generic" gray color space.

4.5.22 kCGColorSpaceGenericGrayGamma2_2 as string

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the names for color spaces.

Notes:

The name of the generic gray color space with a gamma value of 2.2.

Available in OS X v10.6 and later.

4.5.23 kCGColorSpaceGenericRGB as string

Plugin Version: 11.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the names for color spaces.

Notes: The name of the "Generic" RGB color space.

4.5.24 kCGColorSpaceGenericRGBLinear as string

Plugin Version: 11.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the names for color spaces.

Notes: The name of the "Generic" linear RGB color space. This is the same as kCGColorSpaceGenericRGB but with a 1.0 gamma.

4.5.25 kCGColorSpaceGenericXYZ as string

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the names for color spaces.

Notes:

The name of the generic XYZ color space.

Available in OS X v10.11 and later.

4.5.26 `kCGColorSpaceITUR_2020` as string

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the names for color spaces.

Notes:

The name of the ITU-R Recommendation BT.2020 color space. For more information, see BT.2020 : Parameter values for ultra-high definition television systems for production and international programme exchange, Version 2014-06, International Telecommunication Union (<https://www.itu.int/rec/R-REC-BT.2020>).

Available in OS X v10.11 and later.

4.5.27 `kCGColorSpaceITUR_709` as string

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the names for color spaces.

Notes:

The name of the ITU-R Recommendation BT.2020 color space. For more information, see BT.2020 : Parameter values for ultra-high definition television systems for production and international programme exchange, Version 2014-06, International Telecommunication Union (<https://www.itu.int/rec/R-REC-BT.2020>).

Available in OS X v10.11 and later.

4.5.28 `kCGColorSpaceROMMRGB` as string

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the names for color spaces.

Notes:

The name of the ROMM RGB color space. For more information, see Reference Output Medium Metric RGB Color Space (ROMM RGB) White Paper, Version 2.1, Eastman Kodak Company (http://www.kodak.com/global/plugins/acrobat/en/professional/products/software/colorFlow/romm_rgb.pdf).

Available in OS X v10.11 and later.

4.5.29 kCGColorSpaceSRGB as string

Plugin Version: 11.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the names for color spaces.

Notes: The name of the sRGB color space. The capitalization in the name, while strictly inaccurate, avoids interpretational ambiguity. For more information, see IEC 61966-2-1 (1999-10): "Multimedia systems and equipment - Colour measurement and management - Part 2-1: Colour management - Default RGB colour space - sRGB".

4.5.30 Properties

4.5.31 BaseColorSpace as CGColorSpaceMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the base color space of a pattern or indexed color space.

Notes:

The base color space if the space parameter is a pattern or indexed color space; otherwise, nil.

Available in Mac OS X v10.5 and later.
(Read only property)

4.5.32 ColorTableCount as Integer

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the number of entries in the color table of an indexed color space.

Notes:

The number of entries in the color table of the space parameter if the color space is an indexed color space; otherwise, returns 0.

Available in Mac OS X v10.5 and later.
(Read only property)

4.5.33 Description as String

Plugin Version: 15.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The description text.

Example:

```
dim c as CGColorSpaceMBS = window1.CGColorSpaceMBS
MsgBox c.description
```

Notes: (Read only property)

4.5.34 Handle as Integer

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The handle to the color space.

Notes:

(a CGColorSpaceRef)
(Read and Write property)

4.5.35 Model as Integer

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the color space model of the provided color space.

Notes:

Available in Mac OS X v10.5 and later.

Use this constants:

```
CGColorSpaceMBS.kCGColorSpaceModelUnknown
CGColorSpaceMBS.kCGColorSpaceModelCMYK
CGColorSpaceMBS.kCGColorSpaceModelDeviceN
CGColorSpaceMBS.kCGColorSpaceModelIndexed
CGColorSpaceMBS.kCGColorSpaceModelLab
CGColorSpaceMBS.kCGColorSpaceModelMonochrome
CGColorSpaceMBS.kCGColorSpaceModelPattern
CGColorSpaceMBS.kCGColorSpaceModelRGB
```

(Read only property)

4.5.36 ModelText as String

Plugin Version: 15.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The model as text.

Notes:

For viewing in debugger.
(Read only property)

4.5.37 Name as String

Plugin Version: 13.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Queries the name of the colorspace.

Notes:

Not all CGColorspace objects have names. Some have only ICC Profile and you can get name via Name property in LCMS2ProfileMBS if you open the profile with LCMS.
(Read only property)

4.5.38 NumberOfComponents as Integer

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the number of components.

Notes:

typical 1 for grayscale, 3 for RGB and 4 for CMYK.
(Read only property)

4.5.39 Constants

4.5.40 kCGColorSpaceModelCMYK=2

Plugin Version: 9.5. **Function:** One of the colorspace model constants.

Notes:

A CMYK color space model.

Available in Mac OS X v10.5 and later.

4.5.41 kCGColorSpaceModelDeviceN=4

Plugin Version: 9.5. **Function:** One of the colorspace model constants.

Notes:

A DeviceN color space model.

Available in Mac OS X v10.5 and later.

4.5.42 `kCGColorSpaceModelIndexed=5`

Plugin Version: 9.5. **Function:** One of the colorspace model constants.

Notes:

An indexed color space model.

Available in Mac OS X v10.5 and later.

4.5.43 `kCGColorSpaceModelLab=3`

Plugin Version: 9.5. **Function:** One of the colorspace model constants.

Notes:

A Lab color space model.

Available in Mac OS X v10.5 and later.

4.5.44 `kCGColorSpaceModelMonochrome=0`

Plugin Version: 9.5. **Function:** One of the colorspace model constants.

Notes:

A monochrome color space model.

Available in Mac OS X v10.5 and later.

4.5.45 `kCGColorSpaceModelPattern=6`

Plugin Version: 9.5. **Function:** One of the colorspace model constants.

Notes:

A pattern color space model.

Available in Mac OS X v10.5 and later.

4.5.46 kCGColorSpaceModelRGB=1

Plugin Version: 9.5. **Function:** One of the colorspace model constants.

Notes:

An RGB color space model.

Available in Mac OS X v10.5 and later.

4.5.47 kCGColorSpaceModelUnknown=-1

Plugin Version: 9.5. **Function:** One of the colorspace model constants.

Notes:

An unknown color space model.

Available in Mac OS X v10.5 and later.

4.5.48 kCGRenderingIntentAbsoluteColorimetric=1

Plugin Version: 9.5. **Function:** One of the color rendering intents constants.

Notes: Map colors outside of the gamut of the output device to the closest possible match inside the gamut of the output device. This can produce a clipping effect, where two different color values in the gamut of the graphics context are mapped to the same color value in the output device's gamut. Unlike the relative colorimetric, absolute colorimetric does not modify colors inside the gamut of the output device.

4.5.49 kCGRenderingIntentDefault=0

Plugin Version: 9.5. **Function:** One of the color rendering intents constants.

Notes: The default rendering intent for the graphics context.

4.5.50 kCGRenderingIntentPerceptual=3

Plugin Version: 9.5. **Function:** One of the color rendering intents constants.

Notes: Preserve the visual relationship between colors by compressing the gamut of the graphics context to fit inside the gamut of the output device. Perceptual intent is good for photographs and other complex, detailed images.

4.5.51 `kCGRenderingIntentRelativeColorimetric=2`

Plugin Version: 9.5. **Function:** One of the color rendering intents constants.

Notes: Map colors outside of the gamut of the output device to the closest possible match inside the gamut of the output device. This can produce a clipping effect, where two different color values in the gamut of the graphics context are mapped to the same color value in the output device's gamut. The relative colorimetric shifts all colors (including those within the gamut) to account for the difference between the white point of the graphics context and the white point of the output device.

4.5.52 `kCGRenderingIntentSaturation=4`

Plugin Version: 9.5. **Function:** One of the color rendering intents constants.

Notes: Preserve the relative saturation value of the colors when converting into the gamut of the output device. The result is an image with bright, saturated colors. Saturation intent is good for reproducing images with low detail, such as presentation charts and graphs.

4.6 class CGContextMBS

4.6.1 class CGContextMBS

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a core graphics context.

Notes:

If the handle property has a non zero value, the destructor of this class will release the context reference.

If you create this in a method based on a window, please release it within that method. e.g. in a paint event, create it and let RB delete the last reference on the end of the method. Else you may see crashes as the context is still being around while the graphics port has been released.

4.6.2 Methods

4.6.3 AddArc(x as Double, y as Double, radius as Double, startangle as Double, endangle as Double, clockwise as boolean)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Add an arc to the current path.

Example:

```
const r=100.0
dim c as CGContextMBS
// draws a circle with radius r
c.BeginPath
c.SetLineWidth 5
c.SetGrayStrokeColor 0,1
c.AddArc 250,150,r,0,360,false
c.StrokePath
```

Notes: Add an arc of a circle to the context's path, possibly preceded by a straight line segment. '(x, y)' is the center of the arc; 'radius' is its radius; 'startAngle' is the angle to the first endpoint of the arc; 'endAngle' is the angle to the second endpoint of the arc; and 'clockwise' is true if the arc is to be drawn clockwise, false otherwise. 'startAngle' and 'endAngle' are measured in radians.

4.6.4 `addArcToPath(x as Double, y as Double, w as Double, h as Double, startAngle as Integer, arcAngle as Integer)`

Plugin Version: 8.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Adds an arc to the current path.

4.6.5 `AddArcToPoint(x1 as Double, y1 as Double, x2 as Double, y2 as Double, radius as Double)`

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Add an arc to the current path.

Notes: Add an arc of a circle to the context's path, possibly preceded by a straight line segment. 'radius' is the radius of the arc. The arc is tangent to the line from the current point to '(x1, y1)', and the line from '(x1, y1)' to '(x2, y2)'.

4.6.6 `AddCurveToPoint(cp1x as Double, cp1y as Double, cp2x as Double, cp2y as Double, x as Double, y as Double)`

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Append a cubic Bezier curve from the current point to (x,y), with control points (cp1x, cp1y) and (cp2x, cp2y)

4.6.7 `AddEllipseInRect(r as CGRectMBS)`

Plugin Version: 7.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Add an ellipse inside rect to the current path of context.

Notes:

See the function `CGPathMBS.AddEllipseInRect` for more information on how the path for the ellipse is constructed.

Requires Mac OS X 10.4.

4.6.8 `AddLines(p() as CGPointMBS)`

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Add a set of lines to the context's path.

Notes:

Currently this function is not available to RB versions before 3.5.

Note that the p parameter is an array of `CGPointMBS` and not just one.

4.6.9 AddLineToPoint(x as Double, y as Double)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Append a straight line segment from the current point to (x, y).

Example:

```
dim c as CGContextMBS
c=window1.CGContextMBS
c.SetRGBStrokeColor 1,0,0,1
c.BeginPath
c.MoveToPoint 0,0
c.AddLineToPoint 100,100
c.StrokePath
c.Flush
```

4.6.10 addOvalToPath(x as Double, y as Double, w as Double, h as Double)

Plugin Version: 8.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Adds an oval to the current path.

4.6.11 AddPath(path as CGPathMBS)

Plugin Version: 7.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Add path to the path of context.

Notes:

The points in path are transformed by the CTM of context before they are added.
Requires Mac OS X 10.2.

4.6.12 AddQuadCurveToPoint(cpx as Double, cpy as Double, x as Double, y as Double)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Append a quadratic curve from the current point to (x, y), with control point (cpx, cpy).

4.6.13 AddRect(r as CGRectMBS)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Add a double rect to the context's path.

4.6.14 AddRects(r() as CGRectMBS)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Add a set of rects to the context's path.

Notes:

Currently this function is not available to RB versions before 3.5.
Note that the r parameter is an array of CGRectMBS and not just one.

4.6.15 addRoundedRectToPath(x as Double, y as Double, w as Double, h as Double, arcWidth as Double, arcHeight as Double)

Plugin Version: 8.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Adds a round rectangle to the current path.

4.6.16 BeginPage(mediabox as CGRectMBS)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Begin a new page.

4.6.17 BeginPath

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Begin a new path. The old path is discarded.

Example:

```
dim c as CGContextMBS = CGContextMBS.contextWithCGContext(g.Handle(g.HandleTypeCGContextRef))
```

```
c.SetGrayStrokeColor(0,1)
c.SetGrayFillColor(0,1)
c.BeginPath
c.SetLineWidth 0.5
c.MoveToPoint 50, 550
c.AddLineToPoint 100, 600
c.StrokePath
```


c.Flush
 c = nil

Notes: Note that a context has a double path in use at any time: a path is not part of the graphics state.

4.6.18 BeginTransparencyLayer(auxiliaryInfo as Dictionary = nil)

Plugin Version: 12.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Begin a transparency layer in context.

Notes:

All subsequent drawing operations until a corresponding EndTransparencyLayer are composited into a fully transparent backdrop (which is treated as a separate destination buffer from the context). After the transparency layer is ended, the result is composited into the context using the global alpha and shadow state of the context. This operation respects the clipping region of the context. After a call to this function, all of the parameters in the graphics state remain unchanged with the exception of the following:

- The global alpha is set to 1.
- The shadow is turned off.
- The blend mode is set to 'kCGBlendModeNormal'.

Ending the transparency layer restores these parameters to the values they had before BeginTransparencyLayer was called. Transparency layers may be nested.

4.6.19 BeginTransparencyLayerWithRect(r as CGRectMBS, auxiliaryInfo as Dictionary = nil)

Plugin Version: 12.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Begin a transparency layer in context.

Notes: This function is identical to BeginTransparencyLayer except that the content of the transparency layer will be bounded by rect (specified in user space).

4.6.20 clearRect(rect as CGRectMBS)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Clears the background.

Notes: Remember that in CoreGraphics the position 0/0 is in the bottom left corner. In Realbasic 0/0 is in the top left corner.

4.6.21 clip

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Clips the current path.

Notes: Intersect the context's path with the current clip path and use the resulting path as the clip path for subsequent rendering operations. Use the winding-number fill rule for deciding what's inside the path.

4.6.22 ClipToMask(rect as CGRectMBS, mask as CGImageMBS)

Plugin Version: 11.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Maps a mask into the specified rectangle and intersects it with the current clipping area of the graphics context.

Notes:

rect: The rectangle to map the mask parameter to.

mask: An image or an image mask. If mask is an image, then it must be in the DeviceGray color space, may not have an alpha component, and may not be masked by an image mask or masking color.

If the mask parameter is an image mask, then Quartz clips in a manner identical to the behavior seen with the function DrawImage. The mask indicates an area to be left unchanged when drawing. The source samples of the image mask determine which points of the clipping area are changed, acting as an "inverse alpha" value. If the value of a source sample in the image mask is S , then the corresponding point in the current clipping area is multiplied by an alpha value of $(1-S)$. For example, if S is 1 then the point in the clipping area becomes transparent. If S is 0, the point in the clipping area is unchanged.

If the mask parameter is an image, then mask acts like an alpha mask and is blended with the current clipping area. The source samples of mask determine which points of the clipping area are changed. If the value of the source sample in mask is S , then the corresponding point in the current clipping area is multiplied by an alpha of S . For example, if S is 0, then the point in the clipping area becomes transparent. If S is 1, the point in the clipping area is unchanged.

Available in Mac OS X v10.4 and later.

4.6.23 clipToRect(rect as CGRectMBS)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Clips the current path.

Notes: Intersect the current clipping path with 'rect'. Note that this function resets the context's path to the empty path.

4.6.24 Close

Plugin Version: 15.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Closes the context.
Notes: Same as destructor later, but running now when you call method.

4.6.25 closePath

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Close the current subpath of the context's path.

4.6.26 ConcatCTM(transform as CGAffineTransformMBS)

Plugin Version: 4.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Concatenate the current graphics state's transformation matrix (the CTM) with the affine transform 'transform'.

4.6.27 Constructor(handle as Integer)

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new CGContextMBS object based on a CGContextRef.
Notes: The CGContext is retained.

4.6.28 contextWithCGContext(handle as Integer) as CGContextMBS

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new CGContextMBS object based on a CGContextRef.

Example:

```
// load a picture
dim f as FolderItem = SpecialFolder.Desktop.Child("ColorSpin.jpg")
dim pic as Picture = picture.Open(f)

// open printer
dim g as Graphics = OpenPrinterDialog
if g = nil then Return

// draw
g.DrawPicture pic, 0, 0

// now load again
dim ImageSource as new CGImageSourceMBS(f)
```

```

dim img as CGImageMBS = ImageSource.CreateImageAtIndex(0)
dim cs as CGColorSpaceMBS = CGColorSpaceMBS.CreateDeviceRGB

// copy with replacing colorspace
img = img.CopyWithColorSpace(cs)

// and draw
dim c as CGContextMBS = CGContextMBS.contextWithCGContext(g.Handle(g.HandleTypeCGContextRef))
dim r as CGRectMBS = CGMakeRectMBS(0, 0, img.Width, img.Height)

c.DrawPicture(img, r)
c.Flush

```

Notes:

The CGContext is retained.

Returns nil on any error.

4.6.29 contextWithCGraf(handle as Integer) as CGContextMBS

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new CGContextMBS object based on a QuickDraw CGraf.

Notes:

The CGraf must be kept alive as long as the CGContextMBS object exists. And please free the CGContextMBS by setting variable to nil before the CGraf is destroyed.

This function is not available on 64 bit targets.

Returns nil on any error.

Deprecated and only for QuickDraw stuff from a time long ago.

4.6.30 CopyPath as CGPathMBS

Plugin Version: 11.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a Quartz path object built from the current path information in a graphics context.

Notes: Available in Mac OS X v10.6 and later.

4.6.31 DrawCGPDFDocument(pdf as Variant, rect as CGRectMBS, page as Integer)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Draw 'page' in 'document' in the rectangular area specified by 'rect'.

Example:

```
'get a print session

// print this PDF
dim pathPrinted as FolderItem=GetFolderItem("test.pdf")

dim thePrintSession as CPMPrintSessionMBS = NewCPMPrintSessionMBS
if thePrintSession = nil then Return

'get default page format and print settings and attach it to the print settings
dim thePageFormat as CPMPageFormatMBS = NewCPMPageFormatMBS
dim thePrintSettings as CPMPrintSettingsMBS = NewCPMPrintSettingsMBS
thePrintSession.DefaultPageFormat thePageFormat
thePrintSession.DefaultPrintSettings thePrintSettings

'show the print dialog
if not thePrintSession.PrintDialog(thePrintSettings,thePageFormat) then return

'open the file which will be printed
dim thePdfDocument as CGPDFDocumentMBS = pathPrinted.OpenAsCGPDFDocumentMBS

' limit page counts to the one we have
dim LastPage as Integer = thePdfDocument.PageCount
if thePrintSettings.LastPage<lastpage then
lastpage=thePrintSettings.LastPage
end if

' you get better progress bar if you tell how many pages will come
thePrintSettings.LastPage=lastpage

'begin the printing
thePrintSession.BeginDocument(thePrintSettings, thePageFormat)

'loop over the number of copies
for currentCopy as Integer = 1 to thePrintSettings.Copies

'loop over the pages
for currentPage as Integer = thePrintSettings.FirstPage to LastPage

'prepage the page
dim PrintRect as CPMRectMBS =thePageFormat.AdjustedPageSize
dim CGRect as CGRectMBS =CGMakeRectMBS(PrintRect.left, PrintRect.top, PrintRect.Width, Print-
```

```

Rect.Height)
thePrintSession.BeginPage(thePageFormat, nil)
dim thePrintContext as CGContextMBS = thePrintSession.PageContext
if thePrintContext = Nil then return

'print the page
thePrintContext.DrawCGPDFDocument thePdfDocument, CGRect, currentPage

'end the page
thePrintContext = nil
thePrintSession.EndPage
next

next

'end the printing
thePrintSession.EndDocument

```

Notes:

Pass a CGContextMBS object for the pdf argument.
The media box of the page is scaled, if necessary, to fit into 'rect'.

4.6.32 DrawLayerAtPoint(Point as CGPointMBS, layer as CGLayerMBS)

Plugin Version: 12.2, Console & Web: Yes, Mac: No, Win: Yes, Linux: Yes. **Function:** Draws the contents of a CGLayer object at the specified point.

Notes:

context: The graphics context associated with the layer.
point: The location, in current user space coordinates, to use as the origin for the drawing.
layer: The layer whose contents you want to draw.

Calling the function DrawLayerAtPoint is equivalent to calling the function DrawLayerInRect with a rectangle that has its origin at point and its size equal to the size of the layer.

Available in Mac OS X version 10.4 and later.

4.6.33 DrawLayerInRect(rect as CGRectMBS, layer as CGLayerMBS)

Plugin Version: 12.2, Console & Web: Yes, Mac: No, Win: Yes, Linux: Yes. **Function:** Draws the contents of a CGLayer object into the specified rectangle.

Notes:

context: The graphics context associated with the layer.
 rect: The rectangle, in current user space coordinates, to draw to.
 layer: The layer whose contents you want to draw.

The contents are scaled, if necessary, to fit into the rectangle.
 Available in Mac OS X version 10.4 and later.

4.6.34 DrawLinearGradient(**gradient** as CGGradientMBS, **startPoint** as CGPointMBS, **endPoint** as CGPointMBS, **options** as Integer)

Plugin Version: 11.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Paints a gradient fill that varies along the line defined by the provided starting and ending points.

Notes:

gradient: A CGGradient object.
 startPoint: The coordinate that defines the starting point of the gradient.
 endPoint: The coordinate that defines the ending point of the gradient.
 options: Option flags (kCGGradientDrawsBeforeStartLocation or kCGGradientDrawsAfterEndLocation) that control whether the fill is extended beyond the starting or ending point.

The color at location 0 in the CGGradient object is mapped to the starting point. The color at location 1 in the CGGradient object is mapped to the ending point. Colors are linearly interpolated between these two points based on the location values of the gradient. The option flags control whether the gradient is drawn before the start point or after the end point.

Available in Mac OS X v10.5 and later.

4.6.35 DrawPath(**mode** as Integer)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Draw the context's path using drawing mode 'mode'.

4.6.36 DrawPicture(**pic** as CGImageMBS, **rect** as CGRectMBS)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Draws a CGImageMBS at the given position.

Example:

```

// put inside window paint event

dim c as CGContextMBS
if TargetCocoa then
c = GetCurrentCGContextMBS
else
c = window1.CGContextMBS
end if

dim logo as Picture = logoMBS(500)
dim image as CGImageMBS = CGCreateImageMBS(logo)

dim r as CGRectMBS = CGMakeRectMBS(0,0,g.Width,g.Height)

c.DrawPicture image, r

```

Notes: Remember that in CoreGraphics the position 0/0 is in the bottom left corner. In Realbasic 0/0 is in the top left corner.

4.6.37 DrawRadialGradient(**gradient** as CGGradientMBS, **startCenter** as CGPointMBS, **startRadius** as Double, **endCenter** as CGPointMBS, **endRadius** as Double, **options** as Integer)

Plugin Version: 11.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Paints a gradient fill that varies along the area defined by the provided starting and ending circles.

Notes:

gradient: A CGGradient object.

startCenter: The coordinate that defines the center of the starting circle.

startRadius: The radius of the starting circle.

endCenter: The coordinate that defines the center of the ending circle.

endRadius: The radius of the ending circle.

options: Option flags (kCGGradientDrawsBeforeStartLocation or kCGGradientDrawsAfterEndLocation) that control whether the gradient is drawn before the starting circle or after the ending circle.

The color at location 0 in the CGGradient object is mapped to the circle defined by startCenter and startRadius. The color at location 1 in the CGGradient object is mapped to the circle defined by endCenter and endRadius. Colors are linearly interpolated between the starting and ending circles based on the location values of the gradient. The option flags control whether the gradient is drawn before the start point or after the end point.

Available in Mac OS X v10.5 and later.

4.6.38 DrawShading(shading as CGShadingMBS)

Plugin Version: 6.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Fills the clipping path of a context with the specified shading.

Notes:

shading: A Quartz shading. Quartz retains this object; upon return, you may safely release it. Available in Mac OS X version 10.2 and later.

4.6.39 DrawTiledImage(pic as CGImageMBS, rect as CGRectMBS)

Plugin Version: 11.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Repeatedly draws an image, scaled to the provided rectangle, to fill the current clip region.

Example:

```
// put inside window paint event

dim c as CGContextMBS
if TargetCocoa then
c = GetCurrentCGContextMBS
else
c = window1.CGContextMBS
end if

dim logo as Picture = logoMBS(50)
dim image as CGImageMBS = CGCreateImageMBS(logo)

dim r as CGRectMBS = CGMakeRectMBS(0,0,50,50)

c.DrawTiledImage image, r
```

Notes:

rect: A rectangle that specifies the origin and size of the destination tile. Quartz scales the image disproportionately, if necessary to fit the bounds specified by the rect parameter.

image: The image to draw.

Quartz draws the scaled image starting at the origin of the rectangle in user space, then moves to a new point (horizontally by the width of the tile and/or vertically by the height of the tile), draws the scaled image, moves again, draws again, and so on, until the current clip region is tiled with copies of the image. Unlike patterns, the image is tiled in user space, so transformations applied to the CTM affect the final result.

Available in Mac OS X v10.5 and later.

4.6.40 EndPage

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** End the current page.

4.6.41 EndTransparencyLayer

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** End a transparency layer.

4.6.42 EOClip

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Clips the current path.

Notes: Intersect the context's path with the current clip path and use the resulting path as the clip path for subsequent rendering operations. Use the even-odd fill rule for deciding what's inside the path.

4.6.43 EOFillPath

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Fill the context's path using the even-odd fill rule. Any open subpath of the path is implicitly closed.

4.6.44 FillEllipseInRect(rect as CGRectMBS)

Plugin Version: 7.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Fill an ellipse (an oval) inside rect.

Example:

```
// a new picture in RB
dim pic as new Picture(500, 500)

// and create CGContextMBS pointing to it
dim b as CGContextMBS = CGContextMBS.CreateWithPicture(pic)

// color set to full red
b.SetRGBFillColor 1.0, 0.0, 0.0, 1.0
```

```
// draw ellipse
dim r as CGRectMBS = CGRectMBS.Make(0, 0, 500, 500)
b.FillEllipseInRect r

// flush drawings
b.Flush

// and show
Backdrop = pic
```

Notes: Requires Mac OS X 10.4.

4.6.45 FillPath

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Fill the context's path using the winding-number fill rule. Any open subpath of the path is implicitly closed.

4.6.46 FillRect(rect as CGRectMBS)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Fills the background with current fill color.

Example:

```
// put in window.paint event
dim c as CGContextMBS

c=window1.CGContextMBS

c.RotateCTM 0.1
c.SetRGBFillColor 0,0,1,0.5
c.FillRect CGMakeRectMBS(0,0,100,100)

c.Flush
```

Notes: Remember that in CoreGraphics the position 0/0 is in the bottom left corner. In Realbasic 0/0 is in the top left corner.

4.6.47 fillRoundedRect(x as Double, y as Double, w as Double, h as Double, arcWidth as Double, arcHeight as Double)

Plugin Version: 8.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Fills a round rectangle.

Example:

```
dim c as CGContextMBS

c=window1.CGContextMBS

// fill in red
c.SetRGBFillColor 1,0,0,1
c.fillRoundedRect 100,100,100,100,20,20

// draw in green
c.SetRGBStrokeColor 0,1,0,1
c.strokeRoundedRect 100,100,100,100,20,20
```

4.6.48 Flush

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Updates the screen to show the current content.

Notes: Like UpdateNow in the RB window class.

4.6.49 frameArc(x as Double, y as Double, w as Double, h as Double, startAngle as Integer, arcAngle as Integer)

Plugin Version: 8.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Draws an arc.

Example:

```
dim c as CGContextMBS

c=window1.CGContextMBS

// fill in red
c.SetRGBFillColor 1,0,0,1
c.paintArc 100,100,100,100,50,90

// draw in green
c.SetRGBStrokeColor 0,1,0,1
c.frameArc 100,100,100,100,50,90
```

Notes: angles are in degree.

4.6.50 frameOval(x as Double, y as Double, w as Double, h as Double)

Plugin Version: 8.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Draws an oval.

Example:

```
dim c as CGContextMBS

c=window1.CGContextMBS

// fill in red
c.SetRGBFillColor 1,0,0,1
c.paintOval 100,100,100,100

// draw in green
c.SetRGBStrokeColor 0,1,0,1
c.frameOval 100,100,100,100
```

4.6.51 frameRect(x as Double, y as Double, w as Double, h as Double)

Plugin Version: 8.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Draws the frame for the rectangle.

Example:

```
dim c as CGContextMBS

c=window1.CGContextMBS

// fill in red
c.SetRGBFillColor 1,0,0,1
c.paintRect 100,100,100,100

// draw in green
c.SetRGBStrokeColor 0,1,0,1
c.frameRect 100,100,100,100
```

4.6.52 GetClipBoundingBox as CGRectMBS

Plugin Version: 11.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the bounding box of a clipping path.

Notes:

Returns the bounding box of the clipping path, specified in user space.

The bounding box is the smallest rectangle completely enclosing all points in the clipping path, including control points for any Bezier curves in the path.

Available in Mac OS X v10.3 and later.

4.6.53 GetCTM as CGAffineTransformMBS

Plugin Version: 4.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return the current graphics state's transformation matrix.

Notes: Returns nil on any error.

4.6.54 GetPathBoundingBox as CGRectMBS

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return the bounding box of the context's path.

Notes: The bounding box is the smallest rectangle completely enclosing all points in the path, including control points for Bezier and quadratic curves.

4.6.55 GetPathCurrentPoint as CGPointMBS

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return the current point of the current subpath of the context's path.

4.6.56 GetTextPosition as CGPointMBS

Plugin Version: 4.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return the current user-space point at which text will be drawn to (x,y).

Notes: Returns nil on any problem.

4.6.57 IsPathEmpty as boolean

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns true if the context's path contains no elements.

4.6.58 MoveToPoint(x as Double, y as Double)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Append a straight line segment from the current point to (x, y).

4.6.59 paintArc(x as Double, y as Double, w as Double, h as Double, startAngle as Integer, arcAngle as Integer)

Plugin Version: 8.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Fills an arc.

Example:

```
dim c as CGContextMBS

c=window1.CGContextMBS

// fill in red
c.SetRGBFillColor 1,0,0,1
c.paintArc 100,100,100,100,50,90

// draw in green
c.SetRGBStrokeColor 0,1,0,1
c.frameArc 100,100,100,100,50,90
```

Notes: angles are in degree.

4.6.60 paintOval(x as Double, y as Double, w as Double, h as Double)

Plugin Version: 8.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Fills an oval.

Example:

```
dim c as CGContextMBS

c=window1.CGContextMBS

// fill in red
c.SetRGBFillColor 1,0,0,1
```

```
c.paintOval 100,100,100,100
```

```
// draw in green  
c.SetRGBStrokeColor 0,1,0,1  
c.frameOval 100,100,100,100
```

4.6.61 `paintRect(x as Double, y as Double, w as Double, h as Double)`

Plugin Version: 8.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Fills the rectangle.

Example:

```
dim c as CGContextMBS  
  
c=window1.CGContextMBS  
  
// fill in red  
c.SetRGBFillColor 1,0,0,1  
c.paintRect 100,100,100,100  
  
// draw in green  
c.SetRGBStrokeColor 0,1,0,1  
c.frameRect 100,100,100,100
```

4.6.62 `PathContainsPoint(point as CGPointMBS, mode as Integer) as boolean`

Plugin Version: 7.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return true if point is contained in the current path of context.

Notes:

A point is contained within a contexts path if it is inside the painted region when the path is stroked or filled with opaque colors using the path drawing mode mode. point is specified is user space.

Requires Mac OS X 10.4.

4.6.63 `ReplacePathWithStrokedPath`

Plugin Version: 7.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Replace the path in context with the stroked version of the path, using the parameters of context to calculate the stroked path.

Notes:

The resulting path is created such that filling it with the appropriate color will produce the same results as stroking the original path. You can use this path in the same way you can use the path of any context; for example, you can clip to the stroked version of a path by calling this function followed by a call to "ClipPath".

Requires Mac OS X 10.4.

4.6.64 RestoreGState

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Restores the last saved graphics state.

4.6.65 RotateCTM(angle as Double)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Rotate the current graphics state's transformation matrix (the CTM) by 'angle' radians.

Example:

// Rotate a picture not on the edge of the context:

```
dim c as CGImageMBS
dim f as FolderItem
dim d as CGDataProviderMBS
dim cg as CGContextMBS
dim r as CGRectMBS

f=SpecialFolder.Desktop.Child("IMAG0001.JPG")

d=CGDataProviderMBS.CreateWithFile(f)
c=CGCreateImageFromJPEGDataProviderMBS(d,nil,true,0)

cg=window1.CGContextMBS

r=CGMakeRectMBS(-c.Width/2,-c.Height/2,c.Width,c.Height)
cg.TranslateCTM Width/2,Height/2
cg.RotateCTM Slider1.Value/180.0*3.14
cg.DrawPicture c,r

cg.Flush
```

4.6.66 SaveGState

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Saves the current graphics state.

4.6.67 ScaleCTM(sx as Double, sy as Double)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Scale the current graphics state's transformation matrix (the CTM) by (sx, sy).

4.6.68 SelectFont(name as string, size as Double, fontencoding as Integer)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Attempts to find the font named 'name'. If successful, scales it to 'size' units in user space.

Notes:

Name: string that contains the PostScript name of the font to set.

'textEncoding' specifies how to translate from bytes to glyphs.

```
kCGEncodingFontSpecific  0
kCGEncodingMacRoman     1
```

As "Comic Sans MS" works, but not ""Comic Sans ms" this functions seems to be case sensitive.

Matthias Buercher notes that sometimes a font is not selected if the RGBFillColor was not set before.

You may need to reset the textmatrix with some code like `c.TextMatrix = CGAffineTransformMBS.Identity`. If the text matrix is different, your text may be rotated, skewed or resized.

4.6.69 SetAllowsAntialiasing(allowsAntialiasing as boolean)

Plugin Version: 7.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Whether to allow antialiasing.

Notes:

Allow antialiasing in context if `allowsAntialiasing` is true; don't allow it otherwise. This parameter is not part of the graphics state. A context will perform antialiasing if both `allowsAntialiasing` and the graphics state parameter `shouldAntialias` are true.

Requires Mac OS X 10.4 to work.

4.6.70 SetAlpha(alpha as Double)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Set the alpha value in the current graphics state to alpha.

4.6.71 SetBlendMode(BlendMode as Integer)

Plugin Version: 7.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Set the blend mode of context to mode.

Notes: Requires Mac OS X 10.4.

4.6.72 SetCharacterSpacing(spacing as Double)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Set the current character spacing to 'spacing'.

Notes: The character spacing is added to the displacement between the origin of one character and the origin of the next.

4.6.73 SetCMYKFillColor(cyan as Double, magenta as Double, yellow as Double, black as Double, alpha as Double = 1.0)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Sets the fill color to a CMYK color.

Notes: colors are from 0 to 1 and alpha is from 0 (transparent) to 1 (solid).

4.6.74 SetCMYKStrokeColor(cyan as Double, magenta as Double, yellow as Double, black as Double, alpha as Double = 1.0)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Sets the stroke color to a CMYK color.

Notes: colors are from 0 to 1 and alpha is from 0 (transparent) to 1 (solid).

4.6.75 SetFillColor(color as CGColorMBS)

Plugin Version: 17.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Sets the given color as fill color.

4.6.76 SetFillColorSpace(colorspace as CGColorSpaceMBS)

Plugin Version: 4.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Sets the colorspace used for the fill color of the graphics context.

4.6.77 SetFlatness(flatness as Double)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Set the path flatness parameter in the current graphics state to flatness.

4.6.78 SetFont(font as CGFontMBS)

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Sets the current font.

4.6.79 SetFontSize(size as Double)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Set the current font size to 'size'.

4.6.80 SetGrayFillColor(gray as Double, alpha as Double = 1.0)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Sets the fill color to a gray color.

Notes: gray is from 0 to 1 and alpha is from 0 (transparent) to 1 (solid).

4.6.81 SetGrayStrokeColor(gray as Double, alpha as Double = 1.0)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Sets the stroke color to a gray color.

Notes: gray is from 0 to 1 and alpha is from 0 (transparent) to 1 (solid).

4.6.82 SetLineCap(cap as Integer)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Set the line cap in the current graphics state to cap.

4.6.83 SetLineDash(phase as Double, lengths as memoryblock, count as Integer)

Plugin Version: 7.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Sets the pattern for dashed lines in a graphics context.

Notes:

phase:

A value that specifies how far into the dash pattern the line starts, in units of the user space. For example, passing a value of 3 means the line is drawn with the dash pattern starting at three units from its beginning. Passing a value of 0 draws a line starting with the beginning of a dash pattern.

lengths:

A memoryblock of float values that specify the lengths of the painted segments and unpainted segments, respectively, of the dash pattern or nil for no dash pattern.

For example, passing a memoryblock with the values [2,3] sets a dash pattern that alternates between a 2-user-space-unit-long painted segment and a 3-user-space-unit-long unpainted segment. Passing the values [1,3,4,2] sets the pattern to a 1-unit painted segment, a 3-unit unpainted segment, a 4-unit painted segment, and a 2-unit unpainted segment.

count

If the lengths parameter specifies a memoryblock, pass the number of elements in the memoryblock. Otherwise, pass 0.

4.6.84 SetLineJoin(join as Integer)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Set the line join in the current graphics state to join.

4.6.85 SetLineWidth(width as Double)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Set the line width in the current graphics state to width.

Example:

```
dim c as CGContextMBS = CGContextMBS.contextWithCGContext(g.Handle(g.HandleTypeCGContextRef))
```

```
c.SetGrayStrokeColor(0,1)
c.SetGrayFillColor(0,1)
c.BeginPath
c.SetLineWidth 0.5
c.MoveToPoint 50, 550
c.AddLineToPoint 100, 600
c.StrokePath
c.Flush
c = nil
```

4.6.86 SetMiterLimit(limit as Double)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Set the miter limit in the current graphics state to limit.

4.6.87 SetRenderingIntent(intent as Integer)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Set the rendering intent in the graphics state to 'intent'.

Notes:

Possible values for intent:

kCGRenderingIntentDefault	0
kCGRenderingIntentAbsoluteColorimetric	1
kCGRenderingIntentRelativeColorimetric	2
kCGRenderingIntentPerceptual	3
kCGRenderingIntentSaturation	4

4.6.88 SetRGBFillColor(red as Double, green as Double, blue as Double, alpha as Double = 1.0)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Sets the fill color to a RGB color.

Notes: colors are from 0 to 1 and alpha is from 0 (transparent) to 1 (solid).

4.6.89 SetRGBStrokeColor(red as Double, green as Double, blue as Double, alpha as Double = 1.0)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Sets the stroke color to a RGB color.

Notes: colors are from 0 to 1 and alpha is from 0 (transparent) to 1 (solid).

4.6.90 SetShadow(x as Double, y as Double, blur as Double)

Plugin Version: 8.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Enables shadowing in a graphics context.

Example:

```
Sub Paint(g As Graphics)
```

```
dim c as CGContextMBS
```

```
c=window1.CGContextMBS
```

```
c.SetShadow 5,5,0.5
```

```
c.SetRGBFillColor 1,0,0,1
```

```
c.FillRect CGMakeRectMBS(100,100,100,100)
```

```
c.Flush
```

```
End Sub
```

Notes:

x/y: Specifies a translation of the context's coordinate system, to establish an offset for the shadow ({ 0,0 } specifies a light source immediately above the screen).

blur: A non-negative number specifying the amount of blur.

Shadow parameters are part of the graphics state in a context. After shadowing is set, all objects drawn are shadowed using a black color with 1/3 alpha (i.e., RGBA = { 0, 0, 0, 1.0/3.0 }) in the DeviceRGB color space.

To turn off shadowing:

- Use the standard save/restore mechanism for the graphics state.
- Use CGContextSetShadowWithColor to set the shadow color to a fully transparent color (or pass nil as the color).

4.6.91 **SetShadowWithColor(x as Double, y as Double, blur as Double, color-value as CGColorMBS)**

Plugin Version: 8.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Enables shadowing with color a graphics context.

Notes:

x/y: Specifies a translation in base-space.

blur: A non-negative number specifying the amount of blur.

colorvalue: Specifies the color of the shadow, which may contain a non-opaque alpha value. If nil, then shadowing is disabled.

See also SetShadow.

4.6.92 **SetShouldAntialias(shouldAntialias as boolean)**

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Turn off antialiasing if 'shouldAntialias' is zero; turn it on otherwise.

Notes: This parameter is part of the graphics state.

4.6.93 **SetShouldSmoothFonts(shouldSmoothFonts as boolean)**

Plugin Version: 7.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Whether font smoothing is enabled.

Notes:

Turn on font smoothing if shouldSmoothFonts is true; turn it off otherwise. This parameter is part of the graphics state. Note that this doesn't guarantee that font smoothing will occur: not all destination contexts support font smoothing.

Requires Mac OS X 10.2.

4.6.94 **SetStrokeColor(color as CGColorMBS)**

Plugin Version: 17.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Sets the given color as stroke color.

4.6.95 **SetStrokeColorSpace(colorspace as CGColorSpaceMBS)**

Plugin Version: 4.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Sets the colorspace used for the stroke color of the graphics context.

4.6.96 SetTextDrawingMode(mode as Integer)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Set the text drawing mode to 'mode'.

Notes:

Possible values:

kCGTextFill	0
kCGTextStroke	1
kCGTextFillStroke	2
kCGTextInvisible	3
kCGTextFillClip	4
kCGTextStrokeClip	5
kCGTextFillStrokeClip	6
kCGTextClip	7

4.6.97 ShowText(text as string)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Draw 'string' at the point specified by the current text matrix.

Notes:

Each byte of the string is mapped through the encoding vector of the current font to obtain the glyph to display.

This function is more for quick and dirty text output, but not for serious drawing as it does not do most unicode strings correctly. Use ATS for better drawing.

Some RB 5.x versions show a bug that the text is not displayed on a CGContext in while running the application in debug mode.

4.6.98 ShowTextAtPoint(text as string, x as Double, y as Double)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Draw 'string' at the point '(x, y)', specified in user space.

Notes:

Each byte of the string is mapped through the encoding vector of the current font to obtain the glyph to display.

This function is more for quick and dirty text output, but not for serious drawing as it does not do most

unicode strings correctly. Use ATS for better drawing.

Some RB 5.x versions show a bug that the text is not displayed on a CGContext in while running the application in debug mode.

4.6.99 StrokeEllipseInRect(rect as CGRectMBS)

Plugin Version: 7.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Stroke an ellipse (an oval) inside rect.

Notes: Requires Mac OS X 10.4.

4.6.100 StrokePath

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Stroke the context's path.

Example:

```
dim c as CGContextMBS
```

```
c=window1.CGContextMBS
```

```
c.SetRGBStrokeColor 1,0,0,1
```

```
c.BeginPath
```

```
c.MoveToPoint 0,0
```

```
c.AddLineToPoint 100,100
```

```
c.StrokePath
```

```
c.Flush
```

4.6.101 StrokeRect(rect as CGRectMBS)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Stroke 'rect' with the current stroke color and the current linewidth.

4.6.102 StrokeRectWithWidth(rect as CGRectMBS, width as Double)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Stroke 'rect' with the current stroke color, using 'width' as the the line width.

4.6.103 strokeRoundedRect(x as Double, y as Double, w as Double, h as Double, arcWidth as Double, arcHeight as Double)

Plugin Version: 8.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Draws the frame for the round rectangle.

Example:

```
dim c as CGContextMBS

c=window1.CGContextMBS

// fill in red
c.SetRGBFillColor 1,0,0,1
c.fillRoundedRect 100,100,100,100,20,20

// draw in green
c.SetRGBStrokeColor 0,1,0,1
c.strokeRoundedRect 100,100,100,100,20,20
```

4.6.104 Synchronize

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Synchronizes the context with the device.

4.6.105 TranslateCTM(tx as Double, ty as Double)

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Translate the current graphics state's transformation matrix (the CTM) by (tx,ty).

Example:

```
// Rotate a PDF page

// our files
dim sourcefile as FolderItem = SpecialFolder.Desktop.Child("test.pdf")
dim destfile as FolderItem = SpecialFolder.Desktop.Child("rotated.pdf")

// open PDF
dim pdf as CGPDFDocumentMBS = sourcefile.OpenAsCGPDFDocumentMBS

// query media size of first page
dim r as CGRectMBS = pdf.MediaBox(1)
```

```
// create new PDF
dim c as CGContextMBS = destfile.NewCGPDFDocumentMBS(r,"title","Author","Creator")

// create rotated rectangle
dim nr as new CGRectMBS(0,0,r.Height,r.Width)

// create new page
c.BeginPage nr
c.SaveGState

const pi = 3.14159265

// rotate by 90
c.RotateCTM pi*1.5

// fix origin
c.TranslateCTM -r.width,0

// draw PDF
c.DrawCGPDFDocument pdf,r,1

// cleanup
c.RestoreGState
c.EndPage

c = nil

// show in PDF viewer
destfile.Launch
```

4.6.106 Properties

4.6.107 handle as Integer

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The handle for this context.

Notes:

Handle is a CGContextRef.
(Read and Write property)

4.6.108 InterpolationQuality as Integer

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The interpolation quality for image rendering of this context.

Notes:

The interpolation quality is a gstate-parameter which controls the level of interpolation performed when an image is interpolated (for example, when scaling the image). Note that it is merely a hint to the context: not all contexts support all interpolation quality levels.

Possible values:

kCGInterpolationDefault	0	Let the context decide.
kCGInterpolationNone	1	Never interpolate.
kCGInterpolationLow	2	Fast, low quality.
kCGInterpolationHigh	3	Slow, high quality.

(Read and Write property)

4.6.109 RetainCount as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the reference counter of the object.

Notes:

If the retain count falls below 1, the object is destroyed.

(Read only property)

4.6.110 TextMatrix as CGAffineTransformMBS

Plugin Version: 4.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return the text matrix.

Notes:

Returns nil on any error.

(Read and Write computed property)

4.6.111 TextPosition as CGPointMBS

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** User-space point at which text will be drawn to (x,y).

Notes: (Read and Write computed property)

4.6.112 Constants

4.6.113 kCGBlendModeClear=16

Plugin Version: 11.2. **Function:** A constant for the Blend modes.

Notes:

$R = 0$

Available in Mac OS X v10.5 and later.

4.6.114 kCGBlendModeColor=14

Plugin Version: 7.6. **Function:** A constant for the Blend modes.

4.6.115 kCGBlendModeColorBurn=7

Plugin Version: 7.6. **Function:** A constant for the Blend modes.

4.6.116 kCGBlendModeColorDodge=6

Plugin Version: 7.6. **Function:** A constant for the Blend modes.

4.6.117 kCGBlendModeCopy=17

Plugin Version: 11.2. **Function:** A constant for the Blend modes.

Notes:

$R = S$

Available in Mac OS X v10.5 and later.

4.6.118 kCGBlendModeDarken=4

Plugin Version: 7.6. **Function:** A constant for the Blend modes.

4.6.119 kCGBlendModeDestinationAtop=24

Plugin Version: 11.2. **Function:** A constant for the Blend modes.

Notes:

$$R = S*(1 - Da) + D*Sa$$

Available in Mac OS X v10.5 and later.

4.6.120 kCGBlendModeDestinationIn=22

Plugin Version: 11.2. **Function:** A constant for the Blend modes.

Notes:

$$R = D*Sa$$

Available in Mac OS X v10.5 and later.

4.6.121 kCGBlendModeDestinationOut=23

Plugin Version: 11.2. **Function:** A constant for the Blend modes.

Notes:

$$R = D*(1 - Sa)$$

Available in Mac OS X v10.5 and later.

4.6.122 kCGBlendModeDestinationOver=21

Plugin Version: 11.2. **Function:** A constant for the Blend modes.

Notes:

$$R = S*(1 - Da) + D$$

Available in Mac OS X v10.5 and later.

4.6.123 kCGBlendModeDifference=10

Plugin Version: 7.6. **Function:** A constant for the Blend modes.

4.6.124 kCGBlendModeExclusion=11

Plugin Version: 7.6. **Function:** A constant for the Blend modes.

4.6.125 kCGBlendModeHardLight=9

Plugin Version: 7.6. **Function:** A constant for the Blend modes.

4.6.126 kCGBlendModeHue=12

Plugin Version: 7.6. **Function:** A constant for the Blend modes.

4.6.127 kCGBlendModeLighten=5

Plugin Version: 7.6. **Function:** A constant for the Blend modes.

4.6.128 kCGBlendModeLuminosity=15

Plugin Version: 7.6. **Function:** A constant for the Blend modes.

4.6.129 kCGBlendModeMultiply=1

Plugin Version: 7.6. **Function:** A constant for the Blend modes.

4.6.130 kCGBlendModeNormal=0

Plugin Version: 7.6. **Function:** A constant for the Blend modes.

4.6.131 kCGBlendModeOverlay=3

Plugin Version: 7.6. **Function:** A constant for the Blend modes.

4.6.132 kCGBlendModePlusDarker=26

Plugin Version: 11.2. **Function:** A constant for the Blend modes.

Notes:

$$R = \text{MAX}(0, (1 - D) + (1 - S))$$

Available in Mac OS X v10.5 and later.

4.6.133 kCGBlendModePlusLighter=27

Plugin Version: 11.2. **Function:** A constant for the Blend modes.

Notes:

$$R = \text{MIN}(1, S + D)$$

Available in Mac OS X v10.5 and later.

4.6.134 kCGBlendModeSaturation=13

Plugin Version: 7.6. **Function:** A constant for the Blend modes.

4.6.135 kCGBlendModeScreen=2

Plugin Version: 7.6. **Function:** A constant for the Blend modes.

4.6.136 kCGBlendModeSoftLight=8

Plugin Version: 7.6. **Function:** A constant for the Blend modes.

4.6.137 kCGBlendModeSourceAtop=20

Plugin Version: 11.2. **Function:** A constant for the Blend modes.

Notes:

$$R = S * D_a + D * (1 - S_a)$$

Available in Mac OS X v10.5 and later.

4.6.138 kCGBlendModeSourceIn=18

Plugin Version: 11.2. **Function:** A constant for the Blend modes.

Notes:

$$R = S * D_a$$

Available in Mac OS X v10.5 and later.

4.6.139 kCGBlendModeSourceOut=19

Plugin Version: 11.2. **Function:** A constant for the Blend modes.

Notes:

$$R = S * (1 - D_a)$$

Available in Mac OS X v10.5 and later.

4.6.140 kCGBlendModeXOR=25

Plugin Version: 11.2. **Function:** A constant for the Blend modes.

Notes:

$R = S * (1 - D_a) + D * (1 - S_a)$. This XOR mode is only nominally related to the classical bitmap XOR operation, which is not supported by Quartz 2D.

Available in Mac OS X v10.5 and later.

4.6.141 kCGEncodingFontSpecific=0

Plugin Version: 7.6. **Function:** A constant for the Text encodings.

4.6.142 kCGEncodingMacRoman=1

Plugin Version: 7.6. **Function:** A constant for the Text encodings.

4.6.143 kCGInterpolationDefault=0

Plugin Version: 7.6. **Function:** A constant for the Interpolation quality.

Notes: Let the context decide.

4.6.144 kCGInterpolationHigh=3

Plugin Version: 7.6. **Function:** A constant for the Interpolation quality.

Notes: Slower, higher quality.

4.6.145 kCGInterpolationLow=2

Plugin Version: 7.6. **Function:** A constant for the Interpolation quality.

Notes: Faster, lower quality.

4.6.146 kCGInterpolationMedium=4

Plugin Version: 11.2. **Function:** A constant for the Interpolation quality.

Notes:

A medium level of interpolation quality. This setting is slower than the low setting but faster than the high setting.

Available in Mac OS X v10.6 and later.

4.6.147 kCGInterpolationNone=1

Plugin Version: 7.6. **Function:** A constant for the Interpolation quality.

Notes: Never interpolate.

4.6.148 kCGLineCapButt=0

Plugin Version: 7.6. **Function:** A constant for the Line cap styles.

4.6.149 kCGLineCapRound=1

Plugin Version: 7.6. **Function:** A constant for the Line cap styles.

4.6.150 kCGLineCapSquare=2

Plugin Version: 7.6. **Function:** A constant for the Line cap styles.

4.6.151 kCGLineJoinBevel=2

Plugin Version: 7.6. **Function:** A constant for the Line join styles.

4.6.152 kCGLineJoinMiter=0

Plugin Version: 7.6. **Function:** A constant for the Line join styles.

4.6.153 kCGLineJoinRound=1

Plugin Version: 7.6. **Function:** A constant for the Line join styles.

4.6.154 kCGPathEOFill=1

Plugin Version: 7.6. **Function:** A constant for the Drawing modes for paths.

4.6.155 kCGPathEOFillStroke=4

Plugin Version: 7.6. **Function:** A constant for the Drawing modes for paths.

4.6.156 kCGPathFill=0

Plugin Version: 7.6. **Function:** A constant for the Drawing modes for paths.

4.6.157 kCGPathFillStroke=3

Plugin Version: 7.6. **Function:** A constant for the Drawing modes for paths.

4.6.158 kCGPathStroke=2

Plugin Version: 7.6. **Function:** A constant for the Drawing modes for paths.

4.6.159 kCGTextClip=7

Plugin Version: 7.6. **Function:** A constant for the Drawing modes for text.

4.6.160 kCGTextFill=0

Plugin Version: 7.6. **Function:** A constant for the Drawing modes for text.

4.6.161 kCGTextFillClip=4

Plugin Version: 7.6. **Function:** A constant for the Drawing modes for text.

4.6.162 kCGTextFillStroke=2

Plugin Version: 7.6. **Function:** A constant for the Drawing modes for text.

4.6.163 kCGTextFillStrokeClip=6

Plugin Version: 7.6. **Function:** A constant for the Drawing modes for text.

4.6.164 kCGTextInvisible=3

Plugin Version: 7.6. **Function:** A constant for the Drawing modes for text.

4.6.165 kCGTextStroke=1

Plugin Version: 7.6. **Function:** A constant for the Drawing modes for text.

4.6.166 kCGTextStrokeClip=5

Plugin Version: 7.6. **Function:** A constant for the Drawing modes for text.

4.7 class CGDataConsumerMBS

4.7.1 class CGDataConsumerMBS

Plugin Version: 4.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for CoreGraphics to write data.

4.7.2 Methods

4.7.3 Constructor

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new event based data consumer.

Notes: On failure the handle property is zero.

See also:

- 4.7.4 Constructor(file as folderitem) 222
- 4.7.5 Constructor(url as string) 222

4.7.4 Constructor(file as folderitem)

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new CGDataConsumer to write data to the given file.

Notes: On failure the handle property is zero.

See also:

- 4.7.3 Constructor 222
- 4.7.5 Constructor(url as string) 222

4.7.5 Constructor(url as string)

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new CGDataConsumer to write data to the given url.

Notes: On failure the handle property is zero.

See also:

- 4.7.3 Constructor 222
- 4.7.4 Constructor(file as folderitem) 222

4.7.6 CreateWithFile(file as folderitem) as CGDataConsumerMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new CGDataConsumer to write data to the given file.

Notes: Returns nil on any error.

4.7.7 CreateWithURL(url as string) as CGDataConsumerMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new CGDataConsumer to write data to the given url.

Notes: Returns nil on any error.

4.7.8 Properties

4.7.9 Handle as Integer

Plugin Version: 4.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The handle to the CGDataConsumer object.

Notes:

Data is a CGDataConsumerRef.
(Read and Write property)

4.7.10 Events

4.7.11 CloseConsumer

Plugin Version: 4.3, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Event called when the consumer is no longer needed.

4.7.12 Put(data as string) as Integer

Plugin Version: 4.3, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Some data needs to be stored.

Notes: Write the given data string into your backbuffer or file and return the number of bytes written. Return 0 if you can't accept new input.

4.8 class CGDataProviderMBS

4.8.1 class CGDataProviderMBS

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a Coregraphics data provider.

Notes: Something like a textinputstream in RB, but for Coregraphics this stream provides binary data.

4.8.2 Methods

4.8.3 Constructor(data as string)

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new data provider reading data from the given string.

Notes:

On failure the handle property is zero.

Available in Mac OS X v10.4 and later.

See also:

- 4.8.4 Constructor(file as folderitem) 224

4.8.4 Constructor(file as folderitem)

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a data provider using a CFUrl.

Notes: On failure the handle property is zero.

See also:

- 4.8.3 Constructor(data as string) 224

4.8.5 CreateWithData(data as string) as CGDataProviderMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new data provider reading data from the given string.

Notes:

On failure the handle property is zero.

Available in Mac OS X v10.4 and later.

4.8.6 CreateWithFile(file as folderitem) as CGDataProviderMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a data provider using a file.

Notes: Returns nil on any error.

4.8.7 CreateWithURL(url as string) as CGDataProviderMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a data provider using an URL.

Notes: Returns nil on any error.

4.8.8 Data as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a copy of the provider's data.

Notes: Available in Mac OS X v10.5 and later.

4.8.9 Properties

4.8.10 Handle as Integer

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The handle to CGDataProvider object.

Notes:

(a CGDataProviderRef)

(Read and Write property)

4.9 class CGDisplayConfigMBS

4.9.1 class CGDisplayConfigMBS

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The class for a display configuration.

Notes:

The display reconfiguration process:

- Make all desired changes for all displays.
- Commit the changes using Complete(), or cancel with Cancel().

The resulting layout will be adjusted to remove gaps or overlaps from the requested layout, if needed. */

4.9.2 Methods

4.9.3 Cancel

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Cancel a set of display configuration changes.

Notes: On return, the configuration is cancelled and is no longer valid.

4.9.4 Complete(options as Integer)

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Complete a set of display configuration changes.

Notes:

On return, the configuration is no longer valid.

A configuration change can apply for the life of an application, the life of a login session, or permanently. If a request is made to make a change permanent, and the change cannot be supported by Mac OS X user interface, then the configuration change lasts only for the current login session.

A permanent configuration change also becomes the current session's configuration.

When the system reverts configurations at app termination, the configuration reverts to the session or permanent configuration setting.

When the system reverts configurations at session termination, the configuration reverts to the permanent configuration setting.

This operation may fail if an unsupported display mode is requested, or if another app is running in full-screen mode.

4.9.5 DisplayMode(display as CGDisplayMBS, mode as CGDisplayModeMBS)

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Configure the display mode of a display.

Notes:

A display mode is a set of properties such as width, height, pixel depth, and refresh rate, and options such as stretched LCD panel filling.

If you use this function to change the mode of a display in a mirroring set, Quartz may adjust the bounds, resolutions, and depth of the other displays in the set to a safe mode, with matching depth and the smallest enclosing size.

4.9.6 MirrorOfDisplay(display as CGDisplayMBS, master as CGDisplayMBS)

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Make a display a mirror of a master display.

Notes:

Pass nil for the master display to disable mirroring.

Pass MainDisplay for the master display to mirror the main display.

Display mirroring and display matte generation are implemented either in hardware (preferred) or software, at the discretion of the device driver.

- Hardware mirroring

With hardware mirroring enabled, all drawing is directed to the primary display — see PrimaryDisplay.

If the device driver selects hardware matte generation, the display bounds and rowbytes values are adjusted to reflect the active drawable area.

- Software mirroring

In this form of mirroring, identical content is drawn into each display in the mirroring set. Applications that use the window system need not be concerned about mirroring, as the window system takes care of all

flushing of window content to the appropriate displays.

Applications that draw directly to the display, as with display capture, must make sure to draw the same content to all mirrored displays in a software mirror set. When drawing to software mirrored displays using a full screen OpenGL context (not drawing through a window), you should create shared OpenGL contexts for each display and re-render for each display.

You can use the function `GetActiveDisplayList` to determine which displays are active, or drawable. This automatically gives your application the correct view of the current displays.

4.9.7 `Mode(display as CGDisplayMBS, mode as Dictionary)`

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Sets the mode given the values in the dictionary.

Notes: Deprecated with Mac OS X 10.6.

4.9.8 `Origin(display as CGDisplayMBS, x as Integer, y as Integer)`

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Configure the origin of a display in global display coordinates.

Notes:

The new origin of the display is placed as close as possible to the requested location, without overlapping or leaving a gap between displays.

Any display whose origin is not explicitly set in a reconfiguration will be repositioned to a location as close as possible to its current location without overlapping or leaving a gap between displays.

Note that setting the origin of a display which is mirroring another display will remove that display from any mirroring set.

4.9.9 `RestorePermanentDisplayConfiguration`

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Restore the permanent display configuration settings for the current user.

4.9.10 StereoOperation(display as CGDisplayMBS, stereo as Boolean, forceBlueLine as Boolean)

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Enable or disable stereo operation for a display.

Notes:

Note that the system normally detects the presence of a stereo window, and will automatically switch a display containing a stereo window to stereo operation. This function provides a mechanism to force a display to stereo operation, and to set options (such as blue line sync signal) when in stereo operation.

When in stereo operation, a display may need to generate a special stereo sync signal as part of the video output. The sync signal consists of a blue line which occupies the first 25% of the last scanline for the left eye view, and the first 75% of the last scanline for the right eye view. The remainder of the scanline is black. To force the display to generate this sync signal, pass true for forceBlueLine; otherwise, pass false.

Returns kCGErrorSuccess on success, or kCGErrorRangeCheck if the display does not support the stereo operation settings requested.

On success, the display resolution, mirroring mode, and available display modes may change due to hardware-specific capabilities and limitations. You should check these settings to verify that they are appropriate for your application.

4.9.11 Properties

4.9.12 Handle as Integer

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The internal object reference.

Notes: (Read only property)

4.9.13 Lasterror as Integer

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The last error value.

Notes: (Read only property)

4.9.14 Constants

4.9.15 `kCGConfigureForAppOnly = 0`

Plugin Version: 11.1. **Function:** One of the option constants for Complete method.

Notes: For application only.

4.9.16 `kCGConfigureForSession = 1`

Plugin Version: 11.1. **Function:** One of the option constants for Complete method.

Notes: For session only.

4.9.17 `kCGConfigurePermanently = 2`

Plugin Version: 11.1. **Function:** One of the option constants for Complete method.

Notes: Permanently.

4.10 class CGDisplayMBS

4.10.1 class CGDisplayMBS

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a CoreGraphics Display object.

Example:

```
dim c as new CGDisplayMBS
dim lines(-1) as string

dim DPIWidth as Double = c.PixelsWide/(c.ScreenSizeWidth/10.0/2.54)
dim DPIHeight as Double = c.PixelsHigh/(c.ScreenSizeHeight/10.0/2.54)

lines.append str(c.ScreenSizeWidth)+" x "+str(c.ScreenSizeHeight)+" Millimeter with"
lines.append str(c.PixelsWide)+" x "+str(c.PixelsHigh)+" Pixel is"
lines.append str(DPIWidth)+" x "+str(DPIHeight)+" DPI"

MsgBox Join(lines,EndOfLine)
```

4.10.2 Methods

4.10.3 AllDisplayModes as CGDisplayModeMBS()

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return an array of all modes for the specified display.

Example:

```
dim d as CGDisplayMBS = CGDisplayMBS.MainDisplay
dim modes(-1) as string
for each mode as CGDisplayModeMBS in d.AllDisplayModes
modes.append str(mode.Width)+" x "+str(mode.Height)
next
MsgBox Join(modes,EndOfLine)
```

Notes:

Returns an empty array on any error.
Requires Mac OS X 10.6

4.10.4 AvailableModes as Dictionary()

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array filled with dictionaries (one for each mode).

Example:

```
// Display all available graphic modes:

Listbox1.DeleteAllRows
Listbox1.ColumnCount = 4

dim d as CGDisplayMBS = CGDisplayMBS.MainDisplay

dim a(-1) as Dictionary = d.AvailableModes

for each di as Dictionary in a

Listbox1.AddRow di.Value(d.kCGDisplayMode).stringValue
Listbox1.cell(Listbox1.LastIndex,1) = di.Value(d.kCGDisplayWidth)+" x "+di.Value(d.kCGDisplayHeight)
Listbox1.cell(Listbox1.LastIndex,2) = di.Value(d.kCGDisplayRefreshRate)
Listbox1.cell(Listbox1.LastIndex,3) = di.Value(d.kCGDisplayBitsPerPixel)

next
```

Notes: Returns empty error on any error.

4.10.5 BestModeForParameters(BitsPerPixel as Integer, Width as Integer, Height as Integer, byref ExactMatch as boolean) as Dictionary

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a Dictionary with the best mode found for the given parameters.

Notes:

Returns nil on any error.

Try to find a display mode of specified depth with dimensions equal or greater than specified. If no depth match is found, try for the next larger depth with dimensions equal or greater than specified. If no luck, then just return the current mode.

exactmatch is set to 'true' if an exact match in width, height, and depth is found, and 'false' otherwise. Returns nil if display is invalid.

4.10.6 **BestModeForParametersAndRefreshRate(BitsPerPixel as Integer, Width as Integer, Height as Integer, RefreshRate as Integer, byref ExactMatch as boolean) as Dictionary**

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a Dictionary with the best mode found for the given parameters.

Notes:

Returns nil on any error.

Try to find a display mode of specified depth with dimensions equal or greater than specified. If no depth match is found, try for the next larger depth with dimensions equal or greater than specified. If no luck, then just return the current mode.

exactmatch is set to 'true' if an exact match in width, height, and depth is found, and 'false' otherwise. Returns nil if display is invalid.

4.10.7 **BestModeForParametersAndRefreshRateWithProperty(BitsPerPixel as Integer, Width as Integer, Height as Integer, RefreshRate as Integer, propertyName as string, byref ExactMatch as boolean) as Dictionary**

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a Dictionary with the best mode found for the given parameters.

Notes:

Returns nil on any error.

Try to find a display mode of specified depth with dimensions equal or greater than specified. If no depth match is found, try for the next larger depth with dimensions equal or greater than specified. If no luck, then just return the current mode.

exactmatch is set to 'true' if an exact match in width, height, and depth is found, and 'false' otherwise. Returns nil if display is invalid.

4.10.8 **Capture as Integer**

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Captures this display for your use.

Example:

```
dim d as CGDisplayMBS = CGDisplayMBS.MainDisplay
```

```

if d.Capture = 0 then

dim c as CGContextMBS = d.DrawingContext

// watch it drawing red
c.SetRGBFillColor 1.0, 0.0, 0.0, 1.0
c.FillRect CGMakeRectMBS(0,0,d.PixelsWide,d.PixelsHigh)

DelayMBS 3.0

call d.Release
else
MsgBox "Failed to capture displays."
end if

```

Notes:

Don't forget to Release the display later.
Returns an error code.

4.10.9 CaptureAllDisplays as Integer

Plugin Version: 3.3, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Capture all displays.

Example:

```

dim d as CGDisplayMBS = CGDisplayMBS.MainDisplay

if d.CaptureAllDisplays = 0 then

dim c as CGContextMBS = d.DrawingContext

// watch it drawing red
c.SetRGBFillColor 1.0, 0.0, 0.0, 1.0
c.FillRect CGMakeRectMBS(0,0,d.PixelsWide,d.PixelsHigh)

DelayMBS 3.0

call d.ReleaseAllDisplays
else
MsgBox "Failed to capture displays."
end if

```

Notes:

This has the nice effect of providing an immersive environment, and preventing other apps from trying to adjust themselves to display changes only needed by your app.

Returns an error code.

4.10.10 CaptureAllDisplaysWithOptions(options as Integer) as Integer

Plugin Version: 11.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Capture all displays.

Example:

```
dim d as CGDisplayMBS = CGDisplayMBS.MainDisplay

if d.CaptureAllDisplaysWithOptions(d.kCGCaptureNoOptions) = 0 then

dim c as CGContextMBS = d.DrawingContext

// watch it drawing red
c.SetRGBFillColor 1.0, 0.0, 0.0, 1.0
c.FillRect CGMakeRectMBS(0,0,d.PixelsWide,d.PixelsHigh)

DelayMBS 3.0

call d.ReleaseAllDisplays
else
MsgBox "Failed to capture displays."
end if
```

Notes:

This has the nice effect of providing an immersive environment, and preventing other apps from trying to adjust themselves to display changes only needed by your app.

Use kCGCaptureNoOptions and kCGCaptureNoFill for options parameter.

Returns an error code.

4.10.11 CaptureWithOptions(options as Integer) as Integer

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Captures this display for your use.

Example:

```

dim d as CGDisplayMBS = CGDisplayMBS.MainDisplay

if d.CaptureWithOptions(d.kCGCaptureNoOptions) = 0 then

dim c as CGContextMBS = d.DrawingContext

// watch it drawing red
c.SetRGBFillColor 1.0, 0.0, 0.0, 1.0
c.FillRect CGMakeRectMBS(0,0,d.PixelsWide,d.PixelsHigh)

DelayMBS 3.0

call d.Release
else
MsgBox "Failed to capture displays."
end if

```

Notes:

Don't forget to Release the display later.

Returns an error code.

Use kCGCaptureNoOptions and kCGCaptureNoFill for options parameter.

4.10.12 CreateImage as CGImageMBS

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return an image containing the contents of the display.

Example:

```

dim d as CGDisplayMBS = CGDisplayMBS.MainDisplay
dim img as CGImageMBS = d.CreateImage

```

```

Backdrop = img.Picture

```

Notes: Requires Mac OS X 10.6.

4.10.13 CreateImageAsync(receiverDelegate as CreateImageAsyncDelegateMBS, jpegQuality as Double = 0.9, tag as Variant = nil)

Plugin Version: 15.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Asynchronously creates an image with screenshot.

Notes:

If jpeg is ≥ 0 , we use it as quality for the jpeg compression and provide the JPEG data as memoryblock in the delegate.

Tag is passed through as is.

Delegate declaration:

```
CreateImageAsyncDelegateMBS(img as CGImageMBS, JPEGData as MemoryBlock, Tag as Variant)
```

4.10.14 CreateImageForRect(rect as CCGRectMBS) as CGImageMBS

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return an image containing the contents of the rectangle rect, specified in display space, of the display identified by self.

Example:

```
dim r as CCGRectMBS = CGMakeRectMBS(100,100,500,500)
dim d as CGDisplayMBS = CGDisplayMBS.MainDisplay
dim img as CGImageMBS = d.CreateImageForRect(r)
```

```
Backdrop = img.Picture
```

Notes:

The actual rectangle used is the rectangle returned from CCGRectIntegral(rect).
Requires Mac OS X 10.6.

4.10.15 DrawingContext as CGContextMBS

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return a CGContext suitable for drawing to the captured display, or nil if display has not been captured.

Example:

```
dim d as CGDisplayMBS = CGDisplayMBS.MainDisplay

if d.Capture = 0 then

dim c as CGContextMBS = d.DrawingContext

// watch it drawing red
c.SetRGBFillColor 1.0, 0.0, 0.0, 1.0
c.FillRect CGMakeRectMBS(0,0,d.PixelsWide,d.PixelsHigh)

DelayMBS 3.0
```

```

call d.Release
else
MsgBox "Failed to capture displays."
end if

```

Notes:

The context is owned by the device and should not be released by the caller.

The context remains valid while the display is captured and while the display configuration is unchanged. Releasing the captured display or reconfiguring the display invalidates the drawing context.

To determine when the display configuration is changing, use CGDisplayReconfigurationEventMBS class.

4.10.16 GetActiveDisplayList as CGDisplayMBS()

Plugin Version: 11.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array with the active displays.

Example:

```
// List all displays in a 2 column listbox:
```

```
Listbox1.DeleteAllRows
```

```
for each d as CGDisplayMBS in CGDisplayMBS.GetActiveDisplayList
```

```
Listbox1.AddRow hex(d.Handle)
```

```
Listbox1.cell(Listbox1.LastIndex,1)=str(d.PixelsWide)+" x "+str(d.PixelsHigh)
```

```
next
```

Notes:

Returns an empty array on any error.

The first display returned in the list is the main display, the one with the menu bar.

When mirroring, this will be the largest display, or if all are the same size, the one with the deepest pixel depth.

This function was named CGGetActiveDisplayListMBS in older plugin versions.

4.10.17 GetDisplaysWithOpenGLDisplayMask(mask as Integer) as CGDisplayMBS()

Plugin Version: 11.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Find all displays for the given OpenGL mask.

Notes: Returns an empty array on any error.

4.10.18 GetDisplaysWithPoint(cgpoint as CGPointMBS) as CGDisplayMBS()

Plugin Version: 11.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array of CGDisplayMBS objects who are visible at the point on the virtual screen.

Example:

// List all displays in a 2 column listbox which match the point:

```
Listbox1.DeleteAllRows
```

```
dim p as CGPointMBS = CGMakePointMBS(100,100)
for each d as CGDisplayMBS in CGDisplayMBS.GetDisplaysWithPoint(p)
```

```
Listbox1.AddRow hex(d.Handle)
Listbox1.cell(Listbox1.LastIndex,1)=str(d.PixelsWide)+" x "+str(d.PixelsHigh)
```

```
next
```

Notes:

Returns an empty array on any error.

This function was called CGGetDisplaysWithPointMBS in older plugin versions.

See also:

- 4.10.19 GetDisplaysWithPoint(x as Double, y as Double) as CGDisplayMBS()

4.10.19 GetDisplaysWithPoint(x as Double, y as Double) as CGDisplayMBS()

Plugin Version: 11.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array of CGDisplayMBS objects who are visible at the point on the virtual screen.

Example:

```
// List all displays in a 2 column listbox which match the point:

Listbox1.DeleteAllRows

for each d as CGDisplayMBS in CGDisplayMBS.GetDisplaysWithPoint(100,100)

Listbox1.AddRow hex(d.Handle)
Listbox1.cell(Listbox1.LastIndex,1)=str(d.PixelsWide)+" x "+str(d.PixelsHigh)

next
```

Notes:

Returns an empty array on any error.

This function was called CGGetDisplaysWithPointMBS in older plugin versions.
See also:

- 4.10.18 GetDisplaysWithPoint(cgpoint as CGPointMBS) as CGDisplayMBS()

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4.10.20 GetDisplaysWithRect(cgrect as CGRectMBS) as CGDisplayMBS()

Plugin Version: 11.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array of CGDisplayMBS objects who are visible within the rectangle on the virtual screen.

Example:

```
// List all displays in a 2 column listbox which match the rectangle:

Listbox1.DeleteAllRows

dim p as CGRectMBS = CGMakeRectMBS(100,100,100,100)
for each d as CGDisplayMBS in CGDisplayMBS.GetDisplaysWithRect(p)

Listbox1.AddRow hex(d.Handle)
Listbox1.cell(Listbox1.LastIndex,1)=str(d.PixelsWide)+" x "+str(d.PixelsHigh)

next
```

Notes:

Returns an empty array on any error.

This function was called CGGetDisplaysWithRectMBS in older plugin versions.
See also:

- 4.10.21 GetDisplaysWithRect(x as Double, y as Double, w as Double, h as Double) as CGDisplayMBS()
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4.10.21 GetDisplaysWithRect(x as Double, y as Double, w as Double, h as Double) as CGDisplayMBS()

Plugin Version: 11.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array of CGDisplayMBS objects who are visible within the rectangle on the virtual screen.

Example:

// List all displays in a 2 column listbox which match the rectangle:

```
Listbox1.DeleteAllRows
```

```
for each d as CGDisplayMBS in CGDisplayMBS.GetDisplaysWithRect(100,100,100,100)
```

```
Listbox1.AddRow hex(d.Handle)
```

```
Listbox1.cell(Listbox1.LastIndex,1)=str(d.PixelsWide)+" x "+str(d.PixelsHigh)
```

```
next
```

Notes:

Returns an empty array on any error.

This function was called CGGetDisplaysWithRectMBS in older plugin versions.

See also:

- 4.10.20 GetDisplaysWithRect(cgrect as CRectMBS) as CGDisplayMBS() 240

4.10.22 GetDisplayTransferByTable(capacity as Integer, red as memoryblock, green as memoryblock, blue as memoryblock, byref samplecount as Integer) as Integer

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Get transfer tables.

Notes:

Capacity should contain the number of samples each array can hold, and sampleCount is filled in with the number of samples actually copied in.

You must pass in Memoryblocks with the given size (capacity*4 Bytes).

Returns an error code.

4.10.23 GetDisplayTransferFormula(byref formula as CGDisplayTransferFormulaMBS) as Integer

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Queries the display for the current gamma formula.

Notes: Returns an error code.

4.10.24 GetLastMouseDelta(byref deltax as Integer, byref deltay as Integer)

Plugin Version: 3.3, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Report the mouse position change associated with the last mouse move event recieved by this application.

4.10.25 GetOnlineDisplayList as CGDisplayMBS()

Plugin Version: 11.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array with the online displays.

Example:

// List all online displays in a 2 column listbox:

```
Listbox1.DeleteAllRows
```

```
for each d as CGDisplayMBS in CGDisplayMBS.GetOnlineDisplayList
```

```
Listbox1.AddRow hex(d.Handle)
```

```
Listbox1.cell(Listbox1.LastIndex,1)=str(d.PixelsWide)+" x "+str(d.PixelsHigh)
```

```
next
```

Notes:

Returns an empty array on any error.

The first display returned in the list is the main display, the one with the menu bar.

When mirroring, this will be the largest display, or if all are the same size, the one with the deepest pixel depth.

With hardware mirroring, a display may be on-line, but not necessarily active, or drawable. Programs which manipulate display settings such as the palette or gamma tables need access to all displays in use, including hardware mirrors which are not drawable.

This function was named CGGetOnlineDisplayListMBS in older plugin versions.

4.10.26 HideCursor as Integer

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Hides the mouse cursor.

Notes:

Returns an error code.

Decrements hide cursor count.

4.10.27 Info as Dictionary

Plugin Version: 8.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the information CFDictionary about the display.

Example:

```
dim c as CGDisplayMBS = CGDisplayMBS.MainDisplay
dim d as Dictionary = c.Info
```

```
MsgBox d.Value("DisplaySerialNumber")
```

Notes:

On any error the return value is nil.

This function leaks around 4 to 16 KB of memory on Mac OS X 10.4. Not in the versions 10.3 or 10.5.

4.10.28 InfoAsCFDictionary as Variant

Plugin Version: 14.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the information CFDictionary about the display.

Notes:

On any error the return value is nil.

Returns a CFDictionaryMBS object. Returned as Variant to reduce plugin dependencies.

4.10.29 IsCaptured as boolean

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns true if you captured this display.

Example:

```
dim d as new CGDisplayMBS // pick main display

MsgBox str(d.IsCaptured)
```

4.10.30 MainDisplay as CGDisplayMBS

Plugin Version: 11.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Return the display object of the current main display.

Example:

```
dim c as CGDisplayMBS = CGDisplayMBS.MainDisplay

MsgBox str(c.PixelsWide)+" x "+str(c.PixelsHigh)
```

4.10.31 MoveCursorToPoint(x as Double, y as Double) as Integer

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Move the cursor to the specified point relative to the display origin (the upper left corner of the display).

Example:

```
Function KeyDown(Key As String) As Boolean
// in a window keydown event:

if asc(key)=32 then
dim c as new CGDisplayMBS
dim error as Integer = c.MoveCursorToPoint(200,200)

Title=str(error) // zero on success

end if

End Function
```

Notes:

Returns CGDisplayNoErr (0) on success.
 No events are generated as a result of this move.
 Points that would lie outside the desktop are clipped to the desktop.

4.10.32 OpenGLDisplayMask as Integer

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return the OpenGL display mask for display, or 0 is display is an invalid display.

4.10.33 Release as Integer

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Releases the display.

Example:

```
dim d as CGDisplayMBS = CGDisplayMBS.MainDisplay

if d.Capture = 0 then

dim c as CGContextMBS = d.DrawingContext

// watch it drawing red
c.SetRGBFillColor 1.0, 0.0, 0.0, 1.0
c.FillRect CGMakeRectMBS(0,0,d.PixelsWide,d.PixelsHigh)

DelayMBS 3.0

call d.Release
else
MsgBox "Failed to capture displays."
end if
```

Notes: Returns an error code.

4.10.34 ReleaseAllDisplays as Integer

Plugin Version: 3.3, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Release all captured displays.

Example:

```
dim d as CGDisplayMBS = CGDisplayMBS.MainDisplay

if d.CaptureAllDisplays = 0 then

dim c as CGContextMBS = d.DrawingContext

// watch it drawing red
c.SetRGBFillColor 1.0, 0.0, 0.0, 1.0
```

```
c.FillRect CGMakeRectMBS(0,0,d.PixelsWide,d.PixelsHigh)
```

```
DelayMBS 3.0
```

```
call d.ReleaseAllDisplays
```

```
else
```

```
MsgBox "Failed to capture displays."
```

```
end if
```

Notes: Release all captured displays, and restore the display modes to the user's preferences. May be used in conjunction with Capture or CaptureAllDisplays.

4.10.35 RestoreColorSyncSettings

Plugin Version: 3.3, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Restore gamma tables of system displays to the user's ColorSync specified values.

4.10.36 SetDisplayMode(mode as CGDisplayModeMBS) as Integer

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Switch the display mode to mode.

Notes:

The selected display mode persists for the life of the program, and automatically reverts to the permanent setting when the program terminates.

When changing display modes of displays in a mirroring set, other displays in the mirroring set will be set to a display mode capable of mirroring the bounds of the largest display being explicitly set.

Note that after switching, display parameters and addresses may change.

4.10.37 SetDisplayTransferByByteTable(count as Integer, red as memoryblock, green as memoryblock, blue as memoryblock) as Integer

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Set a display gamma/transfer function using tables of data for each channel.

Notes:

As a convenience, allow setting of the gamma table by byte values.

Returns an error code.

4.10.38 SetDisplayTransferByTable(count as Integer, red as memoryblock, green as memoryblock, blue as memoryblock) as Integer

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Set a display gamma/transfer function.

Notes:

Set a display gamma/transfer function using tables of data for each channel.

Values within each table should have values in the range of 0.0 through 1.0.

The same table may be passed in for red, green, and blue channels. 'count' indicates the number of entries in each table.

The tables are interpolated as needed to generate the number of samples needed by hardware.

Returns an error code.

4.10.39 SetDisplayTransferFormula(formula as CGDisplayTransferFormulaMBS) as Integer

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Set a display gamma/transfer function.

Notes:

Set a display gamma/transfer function from a formula specifying min and max values and a gamma for each channel.

Gamma values must be greater than 0.0.

To get an antigamma of 1.6, one would specify a value of (1.0 / 1.6)

Min values must be greater than or equal to 0.0 and less than 1.0.

Max values must be greater than 0.0 and less than or equal to 1.0.

Out of range values, or Max greater than or equal to Min result in a kCGSRangeCheck error.

Values are computed by sampling a function for a range of indices from 0 through 1: $value = Min + ((Max - Min) * pow(index, Gamma))$

The resulting values are converted to a machine specific format and loaded into hardware.

Returns an error code.

4.10.40 SetRotation(angle as Integer) as Integer

Plugin Version: 13.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Rescans the bus of displays and changes the rotation of the display.

Example:

```
dim d as CGDisplayMBS = CGDisplayMBS.MainDisplay
dim e as Integer = d.SetRotation(90)

if e<>0 then
MsgBox "Error: "+str(e)
end if
```

Notes:

Returns IOKit error code. Zero means success.

Lasterror is set.

4.10.41 SetStereoOperation(stereo as boolean, forceBlueLine as boolean, option as Integer) as Integer

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Immediately enable or disable stereo operation for a display.

Notes:

Note that the system normally detects the presence of a stereo window, and will automatically switch a display containing a stereo window to stereo operation. This function provides a mechanism to force a display to stereo operation, and to set options (such as blue line sync signal) when in stereo operation.

When in stereo operation, a display may need to generate a special stereo sync signal as part of the video output. The sync signal consists of a blue line which occupies the first 25% of the last scanline for the left eye view, and the first 75% of the last scanline for the right eye view. The remainder of the scanline is black. To force the display to generate this sync signal, pass true for forceBlueLine; otherwise, pass false.

Lasterror is set to kCGErrorSuccess on success, or kCGErrorRangeCheck if the display does not support the stereo operation settings requested.

On success, the display resolution, mirroring mode, and available display modes may change due to hardware-specific capabilities and limitations. You should check these settings to verify that they are appropriate for your application.

Lasterror is set.

4.10.42 ShieldingWindowID as UInt32

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns window ID of the shield window for the captured display, or 0 if the display is not not shielded.

4.10.43 ShieldingWindowLevel as Int32

Plugin Version: 11.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Returns the window level of the shield window for the captured display.

4.10.44 ShowCursor as Integer

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Shows the mouse cursor.

Notes:

Returns an error code.

Increments hide cursor count.

4.10.45 SwitchToMode(Mode as Dictionary) as Integer

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Switch display mode.

Notes:

Note that after switching, display parameters and addresses may change.

The selected display mode persists for the life of the program, and automatically reverts to the permanent setting made by Preferences when the program terminates.

The mode dictionary passed in must be a dictionary vended by other CGDirectDisplay APIs such as BestModeForParameters() and AvailableModes().

Returns an error code.

4.10.46 WaitForBeamPositionOutsideLines(upperScanLine as UInt32, lowerScanLine as UInt32) as Integer

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Wait until the beam position is outside the range specified.

Notes:

Wait until the beam position is outside the range specified by `upperScanLine` and `lowerScanLine`. Note that if `upperScanLine` and `lowerScanLine` encompass the entire display height, the function returns an error. `lowerScanLine` must be greater than or equal to `upperScanLine`.

Some display systems may not conventional video vertical and horizontal sweep in painting. These displays report a `kCGDisplayRefreshRate` of 0 in the `CFDictionaryRef` returned by `CurrentMode()`. On such displays, this function returns at once.

Some drivers may not implement support for this mechanism. On such displays, this function returns at once.

Returns `CGDisplayNoErr` on success, and an error if `display` or `upperScanLine` and `lowerScanLine` are invalid.

The app should set the values of `upperScanLine` and `lowerScanLine` to allow enough lead time for the drawing operation to complete. A common strategy is to wait for the beam to pass the bottom of the drawing area, allowing almost a full vertical sweep period to perform drawing.

To do this, set `upperScanLine` to 0, and set `lowerScanLine` to the bottom of the bounding box:
`lowerScanLine = (CGBeamPosition)(cgrect.origin.y + cgrect.size.height);`

IOKit may implement this as a spin-loop on the beam position call used for `BeamPosition()`. On such system the function is CPU bound, and subject to all the usual scheduling pre-emption. In particular, attempting to wait for the beam to hit a specific scanline may be an exercise in frustration.

These functions are advisory in nature, and depend on IOKit and hardware specific drivers to implement support. If you need extremely precise timing, or access to vertical blanking interrupts, you should consider writing a device driver to tie into hardware-specific capabilities.

Returns an error code.

4.10.47 Properties**4.10.48 BeamPosition as UInt32**

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the current beam position on the display.

Example:

```
dim d as new CGDisplayMBS // pick main display
```

```
MsgBox str(d.BeamPosition)
```

Notes:

If display is invalid, or the display does not implement conventional video vertical and horizontal sweep in painting, or the driver does not implement this functionality, 0 is returned.
(Read only property)

4.10.49 Bounds as CGRectMBS

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return screen size and origin in global coords.

Notes:

Empty rect or nil if display is invalid.
(Read only property)

4.10.50 Brightness as Double

Plugin Version: 15.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Get/Set brightness of display.

Notes:

Returns -1 if not supported.
LastError is set.
(Read and Write property)

4.10.51 CanSetPalette as boolean

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns true if the current display mode supports palettes.

Example:

```
dim d as new CGDisplayMBS // pick main display
```

```
MsgBox str(d.CanSetPalette)
```

Notes: (Read only property)

4.10.52 ColorSpace as CGColorSpaceMBS

Plugin Version: 8.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the color space for a display.

Example:

```
dim d as new CGDisplayMBS // pick main display
```

```
MsgBox str(d.ColorSpace.Model) // typical 1 = CGColorSpaceMBS.kCGColorSpaceModelRGB
```

Notes:

This function returns a display-dependent ICC-based color space. You can use this function when rendering content for a specific display in order to produce color-matched output for that display.

Available in Mac OS X v10.5 and later.
(Read only property)

4.10.53 CurrentMode as Dictionary

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return a Dictionary describing the current display mode.

Example:

```
dim d as CGDisplayMBS = CGDisplayMBS.MainDisplay
```

```
dim dic as Dictionary = d.CurrentMode
```

```
MsgBox dic.Value(d.kCGDisplayWidth)+" x "+dic.Value(d.kCGDisplayHeight)
```

Notes:

Returns nil on any error.
(Read only property)

4.10.54 DisplayMode as CGDisplayModeMBS

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return the current mode of the specified display.

Example:

```
dim d as CGDisplayMBS = CGDisplayMBS.MainDisplay
MsgBox str(d.DisplayMode.Width)+" x "+str(d.DisplayMode.Height)
```

Notes:

Returns nil on any error.
 Requires Mac OS X 10.6
 (Read only property)

4.10.55 DisplayProductNames as Dictionary

Plugin Version: 14.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Queries product names for display in all available languages.

Example:

```
dim display as CGDisplayMBS = CGDisplayMBS.MainDisplay
dim names as Dictionary = display.DisplayProductNames
```

```
MsgBox names.Lookup("en_US", "?")
```

Notes: (Read only property)

4.10.56 Handle as Integer

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The handle to the current display.

Notes:

Internally: The DisplayID.
 0 is the main display (to keep it easier).
 (Read only property)

4.10.57 IOServicePort as Integer

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return the IOKit service port of a display.

Notes: (Read only property)

4.10.58 IsActive as boolean

Plugin Version: 8.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a Boolean value indicating whether a display is active.

Example:

```
dim d as new CGDisplayMBS // pick main display
```

```
MsgBox str(d.IsActive)
```

Notes:

If true, the specified display is active; otherwise, false.

An active display is connected, awake, and available for drawing. In a hardware mirroring set, only the primary display is active.

(Read only property)

4.10.59 IsAlwaysInMirrorSet as boolean

Plugin Version: 8.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a Boolean value indicating whether a display is always in a mirroring set.

Example:

```
dim d as new CGDisplayMBS // pick main display
```

```
MsgBox str(d.IsAlwaysInMirrorSet)
```

Notes:

If true, the specified display is in a mirroring set and cannot be removed from this set.

Some hardware configurations support the connection of auxiliary displays that always mirror the main display, and therefore cannot be removed from the mirroring set to which they belong.

(Read only property)

4.10.60 IsAsleep as boolean

Plugin Version: 8.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a Boolean value indicating whether a display is sleeping (and is therefore not drawable.)

Example:

```
dim d as new CGDisplayMBS // pick main display
```

```
MsgBox str(d.IsAsleep)
```

Notes:

If true, the specified display is in sleep mode; otherwise, false.

A display is sleeping when its frame buffer and the attached monitor are in reduced power mode. A sleeping display is still considered to be a part of global display (desktop) space, but it is not drawable.

(Read only property)

4.10.61 IsBuiltin as boolean

Plugin Version: 8.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a Boolean value indicating whether a display is built-in, such as the internal display in portable systems.

Example:

```
dim d as new CGDisplayMBS // pick main display
```

```
MsgBox str(d.IsBuiltin)
```

Notes:

If true, the specified display is considered to be a built-in display; otherwise, false.

Portable systems typically identify the internal LCD panel as a built-in display.

Note that it is possible and reasonable for a system to have no displays marked as built-in. For example, a portable system running with the lid closed may report no built-in displays.

(Read only property)

4.10.62 IsInHWMirrorSet as boolean

Plugin Version: 8.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a Boolean value indicating whether a display is in a hardware mirroring set.

Example:

```
dim d as new CGDisplayMBS // pick main display
```

```
MsgBox str(d.IsInHWMirrorSet)
```

Notes:

If true, the specified display is a member of a hardware mirroring set; otherwise, false.

When hardware mirroring is enabled, the contents of a double frame buffer are rendered in all displays in the hardware mirroring set.

(Read only property)

4.10.63 IsInMirrorSet as boolean

Plugin Version: 8.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a Boolean value indicating whether a display is in a mirroring set.

Example:

```
dim d as new CGDisplayMBS // pick main display
```

```
MsgBox str(d.IsInMirrorSet)
```

Notes: (Read only property)

4.10.64 IsMain as boolean

Plugin Version: 8.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a Boolean value indicating whether a display is the main display.

Example:

```
dim d as new CGDisplayMBS // pick main display
```

```
MsgBox str(d.IsMain)
```

Notes:

If true, the specified display is currently the main display; otherwise, false.

(Read only property)

4.10.65 IsOnline as boolean

Plugin Version: 8.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a Boolean value indicating whether a display is connected or online.

Example:

```
dim d as new CGDisplayMBS // pick main display
```

```
MsgBox str(d.IsOnline)
```

Notes:

Returns true if the specified display is connected; otherwise, false.

A display is considered connected or online when the frame buffer hardware is connected to a monitor.

You can use this function to determine if someone has hot-plugged a display to the system. Note that hot-plugging is a hardware feature that may not be present on all displays.

(Read only property)

4.10.66 IsStereo as boolean

Plugin Version: 8.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a Boolean value indicating whether a display is running in a stereo graphics mode.

Example:

```
dim d as new CGDisplayMBS // pick main display
```

```
MsgBox str(d.IsStereo)
```

Notes:

If true, the specified display is running in a stereo graphics mode; otherwise, false.

Available in Mac OS X v10.4 and later.

(Read only property)

4.10.67 LastError as Integer

Plugin Version: 15.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The last error code.
Notes:

Only set for a few properties like brightness where we do have an error code.
 (Read only property)

4.10.68 MirrorsDisplay as CGDisplayMBS

Plugin Version: 8.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** For a secondary display in a mirroring set, returns the primary display.

Notes:

Returns the primary display in the mirroring set. Returns kCGNullDirectDisplay if the specified display is actually the primary display or is not in a mirroring set.
 (Read only property)

4.10.69 ModelNumber as Integer

Plugin Version: 8.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the model number of a display monitor.

Example:

```
dim d as new CGDisplayMBS // pick main display
```

```
MsgBox str(d.ModelNumber)
```

Notes:

A model number for the monitor associated with the specified display, or a constant to indicate an exceptionsee the discussion below.

This function uses I/O Kit to identify the monitor associated with the specified display. The return value depends on the following:

If I/O Kit can identify the monitor, the product ID code for the monitor is returned.

If I/O Kit can't identify the monitor, kDisplayProductIDGeneric is returned.

If no monitor is connected, a value of 0xFFFFFFFF is returned.

(Read only property)

4.10.70 PixelsHigh as Integer

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Height of the display in pixels.

Notes:

```
dim d as new CGDisplayMBS // pick main display
```

```
MsgBox str(D.PixelsHigh)
(Read only property)
```

4.10.71 PixelsWide as Integer

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Width of the display in pixels.

Example:

```
dim d as new CGDisplayMBS // pick main display
```

```
MsgBox str(D.PixelsWide)
```

Notes: (Read only property)

4.10.72 PrimaryDisplay as CGDisplayMBS

Plugin Version: 8.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the primary display in a hardware mirroring set.

Notes:

The primary display in the mirror set. If display is not hardware-mirrored, this function simply returns display.

In hardware mirroring, the contents of a double frame buffer are rendered in two or more displays simultaneously. The mirrored displays are said to be in a hardware mirroring set.

At the discretion of the device driver, one of the displays in a hardware mirroring set is designated as the primary display. The device driver binds the drawing engine, hardware accelerator, and 3D engine to the primary display, and directs all drawing operations to this display.

(Read only property)

4.10.73 RefreshRate as Integer

Plugin Version: 15.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** Queries refresh rate in Hz for this display.

Example:

```
dim m as CGDisplayMBS = CGDisplayMBS.MainDisplay
MsgBox str(m.RefreshRate)+" Hz"
```

Notes:

Returns 60 for LCD displays.
(Read only property)

4.10.74 Rotation as Double

Plugin Version: 8.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the rotation angle of a display in degrees.

Example:

```
dim d as new CGDisplayMBS // pick main display
MsgBox str(d.Rotation)
```

Notes:

The rotation angle of the display in degrees, or 0 if the display is not valid.

This function returns the rotation angle of a display in a clockwise direction. For example, if the specified display is rotated clockwise 90 degrees then this function returns 90.0. After a 90 degree clockwise rotation, the physical bottom of the display is on the left side and the physical top is on the right side.

Available in Mac OS X v10.5 and later.
(Read only property)

4.10.75 ScreenSizeHeight as Double

Plugin Version: 8.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the height of a display in millimeters.

Example:

```

dim c as new CGDisplayMBS
dim lines(-1) as string

dim DPIWidth as Double = c.PixelsWide/(c.ScreenSizeWidth/10.0/2.54)
dim DPIHeight as Double = c.PixelsHigh/(c.ScreenSizeHeight/10.0/2.54)

lines.append str(c.ScreenSizeWidth)+" x "+str(c.ScreenSizeHeight)+" Millimeter with"
lines.Append str(c.PixelsWide)+" x "+str(c.PixelsHigh)+" Pixel is"
lines.Append str(DPIWidth)+" x "+str(DPIHeight)+" DPI"

MsgBox Join(lines,EndOfLine)

```

Notes:

If Extended Display Identification Data (EDID) for the display device is not available, the size is estimated based on the device width and height in pixels from CGDisplayBounds, with an assumed resolution of 2.835 pixels/mm or 72 DPI, a reasonable guess for displays predating EDID support.
(Read only property)

4.10.76 ScreenSizeWidth as Double

Plugin Version: 8.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the width of a display in millimeters.

Example:

```

dim d as new CGDisplayMBS // pick main display

MsgBox str(d.ScreenSizeHeight) // for example 400 on a 30" Apple Display
MsgBox str(d.ScreenSizeWidth) // for example 640 on a 30" Apple Display

```

Notes:

If Extended Display Identification Data (EDID) for the display device is not available, the size is estimated based on the device width and height in pixels from CGDisplayBounds, with an assumed resolution of 2.835 pixels/mm or 72 DPI, a reasonable guess for displays predating EDID support.
(Read only property)

4.10.77 SerialNumber as Integer

Plugin Version: 8.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the serial number of a display monitor.

Example:

```
dim d as new CGDisplayMBS // pick main display
```

```
MsgBox str(D.SerialNumber)
```

Notes:

Returns the serial number for the monitor associated with the specified display, or a constant to indicate an exceptionsee the discussion below.

This function uses I/O Kit to identify the monitor associated with the specified display.

If I/O Kit can identify the monitor:

If the manufacturer has encoded a serial number for the monitor, the number is returned.
If there is no encoded serial number, 0x00000000 is returned.

If I/O Kit cannot identify the monitor:

If a monitor is connected to the display, 0x00000000 is returned.
If no monitor is connected to the display hardware, a value of 0xFFFFFFFF is returned.

Note that a serial number is meaningful only in conjunction with a specific vendor and product or model.
(Read only property)

4.10.78 UnitNumber as Integer

Plugin Version: 8.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the logical unit number of a display.

Example:

```
dim d as new CGDisplayMBS // pick main display
```

```
MsgBox str(D.UnitNumber)
```

Notes:

A logical unit number for the specified display.

The logical unit number represents a particular node in the I/O Kit device tree associated with the display's frame buffer. For a particular hardware configuration, this value will not change when the attached monitor

is changed.

The unit number will change if the I/O Kit device tree changes, as when hardware is reconfigured, drivers are replaced, or significant changes occur to I/O Kit, so it should not be assumed to be invariant across login sessions.

For more information about I/O Kit, see the Apple publication "I/O Kit Fundamentals".
(Read only property)

4.10.79 UsesOpenGLAcceleration as boolean

Plugin Version: 8.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a Boolean value indicating whether Quartz is using OpenGL-based window acceleration (Quartz Extreme) to render in a display.

Example:

```
dim d as new CGDisplayMBS // pick main display
```

```
MsgBox str(D.UsesOpenGLAcceleration)
```

Notes:

Return value: If true, Quartz Extreme is used to render in the specified display; otherwise, false.

Quartz Extreme is an OpenGL-based, hardware-accelerated window compositor available in Mac OS X version 10.2 and later. Quartz Extreme requires a minimum hardware configuration to operate.

The information this function provides is typically used to adjust the demands of drawing operations to the capabilities of the display hardware. For example, an application running on an unaccelerated system could disable live window-resizing.

(Read only property)

4.10.80 VendorNumber as Integer

Plugin Version: 8.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the vendor number of the specified display's monitor.

Example:

```
dim d as new CGDisplayMBS // pick main display
```

```
MsgBox str(D.VendorNumber)
```

```
// 1552 seems to be Apple
```

Notes:

A vendor number for the monitor associated with the specified display, or a constant to indicate an exception see the discussion below.

This function uses I/O Kit to identify the monitor associated with the specified display.

There are three cases:

If I/O Kit can identify the monitor, the vendor ID is returned.

If I/O Kit cannot identify the monitor, `kDisplayVendorIDUnknown` is returned.

If there is no monitor associated with the display, `0xFFFFFFFF` is returned.

(Read only property)

4.10.81 Constants

4.10.82 `kCGCaptureNoFill = 1`

Plugin Version: 11.1. **Function:** One of the capture option flags.

Notes: Disables fill with black on capture.

4.10.83 `kCGCaptureNoOptions = 0`

Plugin Version: 11.1. **Function:** One of the capture option flags.

Notes: Default behavior.

4.10.84 `kCGDisplayBitsPerPixel = "BitsPerPixel"`

Plugin Version: 11.1. **Function:** One of the keys for mode dictionary

Notes:

The number of bits per pixel.

The value for this key is a number inside the dictionary.

4.10.85 kCGDisplayBitsPerSample = "BitsPerSample"

Plugin Version: 11.1. **Function:** One of the keys for mode dictionary

Notes:

The number of bits per sample.

The value for this key is a number inside the dictionary.

4.10.86 kCGDisplayBytesPerRow = "kCGDisplayBytesPerRow"

Plugin Version: 11.1. **Function:** One of the keys for mode dictionary

4.10.87 kCGDisplayHeight = "Height"

Plugin Version: 11.1. **Function:** One of the keys for mode dictionary

Notes:

The display height.

The value for this key is a number inside the dictionary.

4.10.88 kCGDisplayIOFlags = "IOFlags"

Plugin Version: 11.1. **Function:** One of the keys for mode dictionary

Notes: The value for this key is a number inside the dictionary.

4.10.89 kCGDisplayMode = "Mode"

Plugin Version: 11.1. **Function:** One of the keys for mode dictionary

Notes: The value for this key is a number inside the dictionary.

4.10.90 kCGDisplayModeIsInterlaced = "kCGDisplayModeIsInterlaced"

Plugin Version: 11.1. **Function:** One of the keys for mode dictionary

Notes: This key reflects interesting bits of the IOKit display mode flags.

4.10.91 `kCGDisplayModeIsSafeForHardware = "kCGDisplayModeIsSafeForHardware"`

Plugin Version: 11.1. **Function:** One of the keys for mode dictionary

Notes: Set if display mode doesn't need a confirmation dialog to be set.

4.10.92 `kCGDisplayModeIsStretched = "kCGDisplayModeIsStretched"`

Plugin Version: 11.1. **Function:** One of the keys for mode dictionary

Notes: This key reflects interesting bits of the IOKit display mode flags.

4.10.93 `kCGDisplayModeIsTelevisionOutput = "kCGDisplayModeIsTelevisionOutput"`

Plugin Version: 11.1. **Function:** One of the keys for mode dictionary

Notes: This key reflects interesting bits of the IOKit display mode flags.

4.10.94 `kCGDisplayModeUsableForDesktopGUI = "UsableForDesktopGUI"`

Plugin Version: 11.1. **Function:** One of the keys for mode dictionary

Notes:

Whether this display can be used for desktop GUI.

The value for this key is a boolean inside the dictionary.

4.10.95 `kCGDisplayRefreshRate = "RefreshRate"`

Plugin Version: 11.1. **Function:** One of the keys for mode dictionary

Notes:

The refresh rate.

The value for this key is a number inside the dictionary.

4.10.96 `kCGDisplaySamplesPerPixel = "SamplesPerPixel"`

Plugin Version: 11.1. **Function:** One of the keys for mode dictionary

Notes:

The number of samples per pixel.

The value for this key is a number inside the dictionary.

4.10.97 kCGDisplayWidth = "Width"

Plugin Version: 11.1. **Function:** One of the keys for mode dictionary

Notes:

The width of the display.

The value for this key is a number inside the dictionary.

4.10.98 kCGIODisplayModeID = "IODisplayModeID"

Plugin Version: 11.1. **Function:** One of the keys for mode dictionary

4.11 class CGDisplayModeMBS

4.11.1 class CGDisplayModeMBS

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The class for a display mode.

Notes:

Requires Mac OS X 10.6

This is an abstract class. You can't create an instance, but you can get one from various plugin functions.

4.11.2 Methods

4.11.3 Constructor

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The private constructor.

4.11.4 Properties

4.11.5 Handle as Integer

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The internal object reference.

Notes: (Read only property)

4.11.6 Height as Integer

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return the height in pixels of the specified display mode.

Example:

```
dim display as CGDisplayMBS = CGDisplayMBS.MainDisplay
```

```
dim mode as CGDisplayModeMBS = Display.DisplayMode
```

```
MsgBox str(mode.Height)+" Pixel"
```

Notes: (Read only property)

4.11.7 IODisplayModeID as Int32

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return the IOKit display mode ID of the specified display mode.

Notes: (Read only property)

4.11.8 IOFlags as UInt32

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return the IOKit flags of the specified display mode.

Example:

```
dim display as CGDisplayMBS = CGDisplayMBS.MainDisplay
dim mode as CGDisplayModeMBS = Display.DisplayMode
```

```
MsgBox str(mode.IOFlags)
```

Notes: (Read only property)

4.11.9 IsUsableForDesktopGUI as boolean

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return true if the specified mode is usable for displaying the desktop GUI; false otherwise.

Notes:

Requires Mac OS X 10.6 or newer.

(Read only property)

4.11.10 PixelEncoding as string

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return a string representing the pixel encoding of the specified display mode, expressed as a CFString containing an IOKit graphics mode.

Example:

```
dim display as CGDisplayMBS = CGDisplayMBS.MainDisplay
dim mode as CGDisplayModeMBS = Display.DisplayMode
```

```
MsgBox mode.PixelEncoding // shows e.g. —RRRRRRRRGGGGGGGGBBBBBBBB
```

Notes: (Read only property)

4.11.11 PixelHeight as Integer

Plugin Version: 12.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return the height in pixels of the specified display mode.

Notes:

On older Mac OS X versions without retina display support returns width in points.
(Read only property)

4.11.12 PixelWidth as Integer

Plugin Version: 12.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return the width in pixels of the specified display mode.

Notes:

On older Mac OS X versions without retina display support returns height in points.
(Read only property)

4.11.13 RefreshRate as Double

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return the refresh rate of the specified display mode.

Example:

```
dim display as CGDisplayMBS = CGDisplayMBS.MainDisplay
dim mode as CGDisplayModeMBS = Display.DisplayMode
```

```
MsgBox str(mode.RefreshRate)
```

Notes: (Read only property)

4.11.14 Width as Integer

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return the width in pixels of the specified display mode.

Example:

4.11. CLASS CGDISPLAYMODEMBS

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```
dim display as CGDisplayMBS = CGDisplayMBS.MainDisplay  
dim mode as CGDisplayModeMBS = Display.DisplayMode
```

```
MsgBox str(mode.Width)+" Pixel"
```

Notes: (Read only property)

4.12 class CGDisplayReconfigurationEventMBS

4.12.1 class CGDisplayReconfigurationEventMBS

Plugin Version: 11.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The class to listen for display configuration changes.

Notes:

In constructor the plugin registers for the event and in destructor unregisters. So keep the object reference alive to receive events.

events are invoked when the app is listening for events, on the event processing thread, or from within the display reconfiguration function when in the program that is driving the reconfiguration.

events should avoid changing display configurations, and should not raise exceptions or perform a non-local return such as calling longjmp.

Before display reconfiguration, a event fires to inform applications of a configuration change. The event runs once for each on-line display. The flag is set to kCGDisplayBeginConfigurationFlag. This event does not carry other per-display information, as details of how a reconfiguration affects a particular device rely on device-specific behaviors which may not be exposed by a device driver.

After display reconfiguration, at the time the event function is invoked, all display state reported by CoreGraphics, QuickDraw, and the Carbon Display Manager API will be up to date. This event runs after the Carbon Display Manager notification events. The event runs once for each added, removed, and currently on-line display. Note that in the case of removed displays, calls into the CoreGraphics API with the removed display ID will fail.

4.12.2 Events

4.12.3 DisplayReconfiguration(DisplayID as Integer, flags as Integer)

Plugin Version: 11.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** This event is invoked whenever the configuration of a local display is changed.

4.12.4 Constants

4.12.5 kCGDisplayAddFlag = 16

Plugin Version: 11.1. **Function:** One of the possible flag values.

Notes: Display Added

4.12.6 kCGDisplayBeginConfigurationFlag = 1

Plugin Version: 11.1. **Function:** One of the possible flag values.

Notes: Begin Configuration for display.

4.12.7 kCGDisplayDesktopShapeChangedFlag = 4096

Plugin Version: 11.1. **Function:** One of the possible flag values.

Notes: Desktop Shape Changed.

4.12.8 kCGDisplayDisabledFlag = 512

Plugin Version: 11.1. **Function:** One of the possible flag values.

Notes: Display disabled.

4.12.9 kCGDisplayEnabledFlag = 256

Plugin Version: 11.1. **Function:** One of the possible flag values.

Notes: Display enabled.

4.12.10 kCGDisplayMirrorFlag = 1024

Plugin Version: 11.1. **Function:** One of the possible flag values.

Notes: Mirror enabled

4.12.11 kCGDisplayMovedFlag = 2

Plugin Version: 11.1. **Function:** One of the possible flag values.

Notes: Display Moved

4.12.12 kCGDisplayRemoveFlag = 32

Plugin Version: 11.1. **Function:** One of the possible flag values.

Notes: Display Removed

4.12.13 kCGDisplaySetMainFlag = 4

Plugin Version: 11.1. **Function:** One of the possible flag values.

Notes: Set Main

4.12.14 kCGDisplaySetModeFlag = 8

Plugin Version: 11.1. **Function:** One of the possible flag values.

Notes: Set Mode

4.12.15 kCGDisplayUnMirrorFlag = 2048

Plugin Version: 11.1. **Function:** One of the possible flag values.

Notes: Mirror disabled

4.13 class CGDisplayStreamEventMBS

4.13.1 class CGDisplayStreamEventMBS

Plugin Version: 16.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** CGDisplayStreamEventMBS provides a streaming API for capturing display updates in a realtime manner.

Notes:

It can also provide scaling and color space conversion services, as well as allow capturing sub regions of the display.

Requires OS X 10.8.

4.13.2 Methods

4.13.3 Constructor(DisplayHandle as Integer, outputWidth as Integer, outputHeight as Integer, pixelFormat as Integer = 0, properties as dictionary = nil)

Plugin Version: 16.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new CGDisplayStream.

Notes:

This function creates a new CGDisplayStream that is to be used to get a stream of frame updates from a particular display.

DisplayHandle: The CGDirectDisplayID to use as the source for generated frames. (Handle from CGDisplayMBS class)

outputWidth: The output width (in pixels, not points) of the frames to be generated. Must not be zero.

outputHeight: The output height (in pixels, not points) of the frames to be generated. Must not be zero.

pixelFormat: The desired CoreVideo/CoreMedia-style pixel format of the output IOSurfaces. If 0 the plugin will use RGBA.

properties: Any optional properties of the CGDisplayStream.

4.13.4 kCGDisplayStreamColorSpace as String

Plugin Version: 16.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes:

Set the desired CGColorSpace of the output frames.

By default the color space will be that of the display.

4.13.5 kCGDisplayStreamDestinationRect as String

Plugin Version: 16.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes:

This may be used to request where within the destination buffer the display updates should be placed. Use `CGRectCreateDictionaryRepresentation` to convert from a `CGRect` to the value used here.

Note: The coordinate system for the destination rectangle is always specified in output pixels to match the fact that the output buffer size is also specified in terms of pixels.

Defaults to entire buffer

4.13.6 kCGDisplayStreamMinimumFrameTime as String

Plugin Version: 16.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes:

Request that the delta between frame updates be at least as much specified by this value.

Number in seconds, defaults to zero.

4.13.7 kCGDisplayStreamPreserveAspectRatio as String

Plugin Version: 16.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes:

Enable/disable the work the Window Server will do to preserve the display aspect ratio. By default the Window Server will assume that it should preserve the original aspect ratio of the source display rect. If the aspect ratio of the source display and the display stream destination rect are not the same, black borders will be inserted at the top/bottom or right/left sides of the destination in order to preserve the source aspect ratio.

Boolean - defaults to true

4.13.8 kCGDisplayStreamQueueDepth as String

Plugin Version: 16.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes:

Controls how many frames deep the frame queue will be.

Defaults to 3.

4.13.9 kCGDisplayStreamShowCursor as String

Plugin Version: 16.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Controls whether the cursor is embedded within the provided buffers or not.

4.13.10 kCGDisplayStreamSourceRect as String

Plugin Version: 16.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes:

This may be used to request a subregion of the display to be provided as the source of the display stream. Use `CGRectCreateDictionaryRepresentation` to convert from a `CGRect` to the value used here. N

Note: The coordinate system for the source rectangle is specified in display logical coordinates and not in pixels, in order to match the normal convention on HiDPI displays.

Defaults to entire display.

4.13.11 kCGDisplayStreamYCbCrMatrix as String

Plugin Version: 16.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes:

When outputting frames in 420v or 420f format, this key may be used to control which YCbCr matrix is used

The value should be one of the three `kCGDisplayStreamYCbCrMatrix` values specified below:

`kCGDisplayStreamYCbCrMatrix_SMPTE_240M_1995`

`kCGDisplayStreamYCbCrMatrix_ITU_R_709_2`

`kCGDisplayStreamYCbCrMatrix_ITU_R_601_4`

4.13.12 kCGDisplayStreamYCbCrMatrix_ITU_R_601_4 as String

Plugin Version: 16.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A possible value for `kCGDisplayStreamYCbCrMatrix` key.

4.13.13 kCGDisplayStreamYCbCrMatrix_ITU_R_709_2 as String

Plugin Version: 16.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A possible value for `kCGDisplayStreamYCbCrMatrix` key.

4.13.14 `kCGDisplayStreamYCbCrMatrix_SMPTE_240M_1995` as `String`

Plugin Version: 16.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A possible value for `kCGDisplayStreamYCbCrMatrix` key.

4.13.15 `Start`

Plugin Version: 16.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Begin delivering frame updates to the event.

4.13.16 `Stop`

Plugin Version: 16.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** End delivery of frame updates.

Notes:

After this call returns, the `CGDisplayStream` callback function will eventually be called with a status of `StatusStopped`. After that point it is safe to release the object.

It is safe to call this function from within the event, but the previous caveat still applies.

4.13.17 `Properties`

4.13.18 `Handle as Integer`

Plugin Version: 16.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The internal object reference.

Notes: (Read only property)

4.13.19 `Lasterror as Integer`

Plugin Version: 16.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The `lasterror` code.

Notes: (Read only property)

4.13.20 Events

4.13.21 FrameAvailable(Status as Integer, displayTime as UInt64, frameSurfaceHandle as Integer, Update as CGDisplayStreamUpdateMBS)

Plugin Version: 16.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** A new frame is available.

Notes:

The event used for new frame delivery by CGDisplayStream objects

For each frame that is generated by the WindowServer for a particular display, the user provided event is invoked and provides the user with an IOSurface handle (inside update object), that contains the pixel data for the new frame, as well as a CGDisplayStreamUpdateMBS that contains all of the metadata associated with that IOSurface.

frameSurfaceHandle: The IOSurfaceRef for the current frame. May be zero/nil in some cases. The plugin retains it as part of Update object to keeps it alive.

displayTime: The mach absolute time of when the corresponding frame was to be displayed by the WindowServer

Update: The CGDisplayStreamUpdateMBS for the current frame. will be nil in cases when status is not kCGDisplayStreamFrameStatusFrameComplete.

4.13.22 Constants

4.13.23 StatusFrameBlank = 2

Plugin Version: 16.1. **Function:** One of the frame status constants.

Notes: As of displayTime, the display is has gone blank

4.13.24 StatusFrameComplete = 0

Plugin Version: 16.1. **Function:** One of the frame status constants.

Notes: A new frame has been generated by the Window Server for a particular display at time displayTime.

4.13.25 StatusFrameIdle = 1

Plugin Version: 16.1. **Function:** One of the frame status constants.

Notes: The Window Server did not generate a new frame for displayTime

4.13.26 StatusStopped = 3

Plugin Version: 16.1. **Function:** One of the frame status constants.

Notes: The display stream has stopped and no more calls will be made to the handler until the stream is started.

4.14 class CGDisplayStreamUpdateMBS

4.14.1 class CGDisplayStreamUpdateMBS

Plugin Version: 16.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A single frame's extra metadata that describes useful frame delta information.

Notes: A CGDisplayStreamUpdate encapsulates information about what portions of a frame have changed relative to a previously delivered frame. This includes regions that were changed in any way, which ones were actually redrawn, and which regions were merely copied from one place to another.

4.14.2 Methods

4.14.3 getRects(type as Integer) as CGRectMBS()

Plugin Version: 16.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array of CGRectMBS that describe what parts of the frame have changed relative to the previously delivered frame.

Notes: This rectangle list encapsulates both the update rectangles and movement rectangles.

4.14.4 Properties

4.14.5 CIImage as Variant

Plugin Version: 16.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Queries the IOSurface with frame as CIImageMBS.

Notes:

Returns CIImageMBS.

(Read only property)

4.14.6 DeltaX as Double

Plugin Version: 16.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The x component of the movement delta.

Notes: (Read only property)

4.14.7 DeltaY as Double

Plugin Version: 16.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The y component of the movement delta.

Notes: (Read only property)

4.14.8 DropCount as Integer

Plugin Version: 16.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return how many frames (if any) have been dropped since the last call to the event.

Notes:

This call is primarily useful for performance measurement to determine if the client is keeping up with all WindowServer updates.

(Read only property)

4.14.9 Handle as Integer

Plugin Version: 16.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The internal object reference.

Notes: (Read only property)

4.14.10 IOSurfaceHandle as Integer

Plugin Version: 16.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The internal object reference for the IOSurface.

Notes: (Read only property)

4.14.11 Constants

4.14.12 UpdateDirtyRects = 2

Plugin Version: 16.1. **Function:** One of the rectangle selector values for getRects function.

Notes: The union of both refreshed and moved rects.

4.14.13 UpdateMovedRects = 1

Plugin Version: 16.1. **Function:** One of the rectangle selector values for getRects function.

Notes: The rectangles that were simply moved from one part of the display to another

4.14.14 UpdateReducedDirtyRects = 3

Plugin Version: 16.1. **Function:** One of the rectangle selector values for getRects function.

Notes: A possibly simplified (but overstated) array of dirty rectangles.

4.14.15 UpdateRefreshedRects = 0

Plugin Version: 16.1. **Function:** One of the rectangle selector values for getRects function.

Notes: The rectangles that were refreshed on the display, not counting moved rectangles

4.15 class CGDisplayTransferFormulaMBS

4.15.1 class CGDisplayTransferFormulaMBS

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a transfer formula.

4.15.2 Properties

4.15.3 BlueGamma as Double

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The blue gamma value.

Notes: (Read and Write property)

4.15.4 BlueMax as Double

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The maximum blue value.

Notes: (Read and Write property)

4.15.5 BlueMin as Double

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The minimum blue value.

Notes: (Read and Write property)

4.15.6 GreenGamma as Double

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The green gamma value.

Notes: (Read and Write property)

4.15.7 GreenMax as Double

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The maximum green value.

Notes: (Read and Write property)

4.15.8 GreenMin as Double

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The minimum green value.

Notes: (Read and Write property)

4.15.9 RedGamma as Double

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The red gamma value.

Notes: (Read and Write property)

4.15.10 RedMax as Double

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The maximum red value.

Notes: (Read and Write property)

4.15.11 RedMin as Double

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The minimum red value.

Notes: (Read and Write property)

4.16 class CGFontMBS

4.16.1 class CGFontMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The CoreGraphics class for a font.

Notes:

The CGFontRef opaque type encapsulates font information. A font is a set of shapes or glyphs associated with a character set. A glyph can represent a single character (such as b), more than one character (such as the ”” ligature), or a special character such as a space. Quartz retrieves the glyphs for the font from ATS (Apple Type Services) and paints the glyphs based on the relevant parameters of the current graphics state.

Quartz provides a limited, low-level interface for drawing text. For information on text-drawing functions, see CGContext Reference. For full Unicode and text-layout support, use the services provided by Core Text or ATSUI).

4.16.2 Methods

4.16.3 CreateWithDataProvider(CGDataProvider as Variant) as CGFontMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a font object from data supplied from a data provider.

Notes:

Dataprovider must be a CGDataProviderMBS object.

Returns the font object or nil if the font can't be created.

Before drawing text in a Quartz context, you must set the font in the current graphics state by calling the function CGContextMBS.SetFontSize.

4.16.4 CreateWithFontName(name as string) as CGFontMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a font object corresponding to the font specified by a PostScript or full name.

Example:

```
dim c as CGFontMBS = CGFontMBS.CreateWithFontName("Courier")
MsgBox c.FullName
```

Notes:

Returns the font object or nil if the font can't be created.

Before drawing text in a Quartz context, you must set the font in the current graphics state by calling the function `CGContextMBS.SetFont`.

4.16.5 `CreateWithPlatformFont(ATSTFontHandle as Integer)` as `CGFontMBS`

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new font reference from an `ATSTFontRef`.

Notes:

Create a `CGFont` using `platformFontReference`, a handle to a platform-specific font reference. For MacOS X, `platformFontReference` should be a handle to an `ATSTFontRef`.

4.16.6 Properties

4.16.7 `Ascent` as `Integer`

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the ascent of a font.

Example:

```
dim c as CGFontMBS = CGFontMBS.CreateWithFontName("Times")
MsgBox str(c.Ascent)
```

Notes:

The ascent is the maximum distance above the baseline of glyphs in a font. The value is specified in glyph space units.

(Read only property)

4.16.8 `CapHeight` as `Integer`

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the cap height of a font.

Example:

```
dim c as CGFontMBS = CGFontMBS.CreateWithFontName("Times")
MsgBox str(c.CapHeight)
```

Notes:

The cap height is the distance above the baseline of the top of flat capital letters of glyphs in a font. The value is specified in glyph space units.

(Read only property)

4.16.9 Descent as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the descent of a font.

Example:

```
dim c as CGFontMBS = CGFontMBS.CreateWithFontName("Times")
MsgBox str(c.Descent)
```

Notes:

The descent is the maximum distance below the baseline of glyphs in a font. The value is specified in glyph space units.

(Read only property)

4.16.10 FontBBox as CRectMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the bounding box of a font.

Example:

```
dim c as CGFontMBS = CGFontMBS.CreateWithFontName("Times")
dim r as CRectMBS = c.FontBBox
MsgBox str(r.Width)+" "+str(r.Height)
```

Notes:

The font bounding box is the union of all of the bounding boxes for all the glyphs in a font. The value is specified in glyph space units.

(Read only property)

4.16.11 FullName as String

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the full name associated with a font object.

Example:


```
dim c as CGFontMBS = CGFontMBS.CreateWithFontName("Courier")
MsgBox c.FullName
```

Notes: (Read only property)

4.16.12 Handle as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The internal object reference.

Notes: (Read and Write property)

4.16.13 ItalicAngle as Double

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the italic angle of a font.

Example:

```
dim c as CGFontMBS = CGFontMBS.CreateWithFontName("Times")
MsgBox str(c.ItalicAngle)
```

Notes:

The italic angle of the font, measured in degrees counter-clockwise from the vertical.
(Read only property)

4.16.14 Leading as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the leading of a font.

Example:

```
dim c as CGFontMBS = CGFontMBS.CreateWithFontName("Times")
MsgBox str(c.Leading)
```

Notes:

The leading is the spacing between consecutive lines of text in a font. The value is specified in glyph space units.

(Read only property)

4.16.15 NumberOfGlyphs as UInt64

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the number of glyphs in a font.

Example:

```
dim c as CGFontMBS = CGFontMBS.CreateWithFontName("Times")
MsgBox str(c.NumberOfGlyphs)
```

Notes: (Read only property)

4.16.16 PostScriptName as String

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Obtains the PostScript name of a font.

Example:

```
dim c as CGFontMBS = CGFontMBS.CreateWithFontName("Courier")
MsgBox c.PostScriptName
```

Notes: (Read only property)

4.16.17 StemV as Double

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the thickness of the dominant vertical stems of glyphs in a font.

Example:

```
dim c as CGFontMBS = CGFontMBS.CreateWithFontName("Times")
MsgBox str(c.StemV)
```

Notes:

The thickness of the dominant vertical stems of glyphs in a font.
(Read only property)

4.16.18 UnitsPerEm as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the number of glyph space units per em for the provided font.

Example:

```
dim c as CGFontMBS = CGFontMBS.CreateWithFontName("Times")
MsgBox str(c.UnitsPerEm)
```

Notes:

The number of glyph space units per em for the provided font.
(Read only property)

4.16.19 XHeight as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the x-height of a font.

Example:

```
dim c as CGFontMBS = CGFontMBS.CreateWithFontName("Times")
MsgBox str(c.XHeight)
```

Notes:

The x-height is the distance above the baseline of the top of flat, non-ascending lowercase letters (such as x) of glyphs in a font. The value is specified in glyph space units.
(Read only property)

4.16.20 Constants

4.16.21 kCGFontIndexInvalid = 65535

Plugin Version: 14.2. **Function:** An invalid font index (a value which never represents a valid glyph).

4.16.22 kCGFontIndexMax = 65534

Plugin Version: 14.2. **Function:** The maximum allowed value for font index.

4.16.23 `kCGFontPostScriptFormatType1 = 1`

Plugin Version: 14.2. **Function:** One of the PostScript font subset formats.

Notes: This is documented in Adobe Type 1 Font Format, which is available from <http://partners.adobe.com/>.

4.16.24 `kCGFontPostScriptFormatType3 = 3`

Plugin Version: 14.2. **Function:** One of the PostScript font subset formats.

Notes: This is documented in PostScript Language Reference, 3rd edition, which is available from <http://partners.adobe.com/>.

4.16.25 `kCGFontPostScriptFormatType42 = 42`

Plugin Version: 14.2. **Function:** One of the PostScript font subset formats.

Notes: This is documented in Adobe Technical Note 5012, The Type 42 Font Format Specification, which is available from <http://partners.adobe.com/>.

4.16.26 `kCGGlyphMax = 65534`

Plugin Version: 14.2. **Function:** The maximum value for a glyph.

4.17 class CGFunctionMBS

4.17.1 class CGFunctionMBS

Plugin Version: 6.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** CGFunction provides a general facility for defining and using callback functions that take an arbitrary number of floating-point input values, and pass back an arbitrary number of floating-point output values.

4.17.2 Methods

4.17.3 Create(domainDimension as Integer, domain as memoryblock, rangeDimension as Integer, range as memoryblock)

Plugin Version: 6.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a Quartz function.

Notes:

Parameters

domainDimension: The number of inputs.

domain: An array of (2*domainDimension) floats used to specify the valid intervals of input values. For each k from 0 to (domainDimension - 1), domain [2*k] must be less than or equal to domain [2*k+1] , and the kth input value will be clipped to lie in the interval domain [2*k] input [k] domain [2*k+1] . If this parameter is nil, then the input values are not clipped.

rangeDimension: The number of outputs.

range: An array of (2*rangeDimension) floats that specifies the valid intervals of output values. For each k from 0 to (rangeDimension - 1), range [2*k] must be less than or equal to range [2*k+1] , and the kth output value will be clipped to lie in the interval range [2*k] output [k] range [2*k+1] . If this parameter is nil, then the output values are not clipped.

Returns the new Quartz function or nil on any error.

Available in Mac OS X version 10.2 and later.

4.17.4 Properties

4.17.5 Handle as Integer

Plugin Version: 6.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Handle to the CGFunctionRef.

Notes: (Read and Write property)

4.17.6 Events

4.17.7 Evaluate(Input as memoryblock, Output as memoryblock)

Plugin Version: 6.2, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Asks the CGFunction to calculate the values.

Notes: memoryblocks must be big enough.

4.18 class CGGradientMBS

4.18.1 class CGGradientMBS

Plugin Version: 11.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A gradient defines a smooth transition between colors across an area.

Notes:

The CGGradientMBS class, and the functions that operate on it, make creating and using radial and axial gradient fills an easy task. A CGGradient object has a color space, two or more colors, and a location for each color. The color space cannot be a pattern or indexed color space, otherwise it can be any Quartz color space (CGColorSpaceMBS).

Colors can be provided as component values (such as red, green, blue) or as Quartz color objects (CGColorMBS). In Quartz, component can vary from 0.0 to 1.0, designating the proportion of the component present in the color.

A location is a normalized value. When it comes time to paint the gradient, Quartz maps the normalized location values to the points in coordinate space that you provide.

If you want more precise control over gradients, or if your application runs in versions of Mac OS X that are earlier than v10.5, see CGShadingMBS.

Requires Mac OS X 10.5.

4.18.2 Methods

4.18.3 CreateWithColorComponents(colorSpace as CGColorSpaceMBS, components() as Double) as CGGradientMBS

Plugin Version: 11.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a CGGradient object from a color space and the provided color components and locations.

Notes:

space: The color space to use for the gradient. You cannot use a pattern or indexed color space.

components: The color components for each color that defines the gradient. The components should be in the color space specified by space. If you are unsure of the number of components, you can call the function CGColorSpaceMBS.NumberOfComponents.

The number of items in this array should be the product of count and the number of components in the color space. For example, if the color space is an RGBA color space and you want to use two colors in the gradient (one for a starting location and another for an ending location), then you need to provide 8 values

in componentsred, green, blue, and alpha values for the first color, followed by red, green, blue, and alpha values for the second color.

locations: Optional, The location for each color provided in components. Each location must be a CGFloat value in the range of 0 to 1, inclusive. If 0 and 1 are not in the locations array, Quartz uses the colors provided that are closest to 0 and 1 for those locations.

If locations is not passed, the first color in colors is assigned to location 0, the last color in colors is assigned to location 1, and intervening colors are assigned locations that are at equal intervals in between.

Available in Mac OS X v10.5 and later.

See also:

- 4.18.4 CreateWithColorComponents(colorSpace as CGColorSpaceMBS, components() as Double, locations() as Double) as CGGradientMBS 296

4.18.4 CreateWithColorComponents(colorSpace as CGColorSpaceMBS, components() as Double, locations() as Double) as CGGradientMBS

Plugin Version: 11.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a CGGradient object from a color space and the provided color components and locations.

Example:

```
// put into paint event of window
dim c as CGContextMBS
if TargetCocoa then
c = GetCurrentCGContextMBS
else
c = window1.CGContextMBS
end if

dim locations() as Double = array(0.0, 0.6, 1.0)
dim components() as Double = array(1.0, 0.0, 0.0, 0.35, 0.0, 1.0, 0.0, 0.2, 0.0, 0.0, 1.0, 0.06) // Start color
and End color

dim rgbColorspace as CGColorSpaceMBS = CGColorSpaceMBS.CreateDeviceRGB
dim glossGradient as CGGradientMBS = CGGradientMBS.CreateWithColorComponents(rgbColorspace,
components, locations)
'dim glossGradient as CGGradientMBS = CGGradientMBS.CreateWithColorComponents(rgbColorspace,
components)

dim currentBounds as CGRectMBS = CGMakeRectMBS(0,0,g.Width,g.Height)

dim topCenter as CGPointMBS = CGMakePointMBS(g.width/2, 0.0)
dim midCenter as CGPointMBS = CGMakePointMBS(g.width/2, g.height)
```



```

c.SaveGState

// fill white
c.SetRGBFillColor 1.0, 1.0, 1.0, 1.0
c.FillRect currentBounds

// draw gradient
c.AddRect(currentBounds)
c.Clip
c.DrawLinearGradient(glossGradient, topCenter, midCenter, 0)
c.RestoreGState
c.Flush

```

Notes:

space: The color space to use for the gradient. You cannot use a pattern or indexed color space.

components: The color components for each color that defines the gradient. The components should be in the color space specified by space. If you are unsure of the number of components, you can call the function `CGColorSpaceMBS.NumberOfComponents`.

The number of items in this array should be the product of count and the number of components in the color space. For example, if the color space is an RGBA color space and you want to use two colors in the gradient (one for a starting location and another for an ending location), then you need to provide 8 values in components: red, green, blue, and alpha values for the first color, followed by red, green, blue, and alpha values for the second color.

locations: Optional, The location for each color provided in components. Each location must be a `CGFloat` value in the range of 0 to 1, inclusive. If 0 and 1 are not in the locations array, Quartz uses the colors provided that are closest to 0 and 1 for those locations.

If locations is not passed, the first color in colors is assigned to location 0, the last color in colors is assigned to location 1, and intervening colors are assigned locations that are at equal intervals in between.

Available in Mac OS X v10.5 and later.

See also:

- 4.18.3 `CreateWithColorComponents(colorSpace as CGColorSpaceMBS, components() as Double) as CGGradientMBS` 295

4.18.5 CreateWithColors(colorSpace as CGColorSpaceMBS, colors() as CGColorMBS) as CGGradientMBS

Plugin Version: 11.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a CGGradient object from a color space and the provided color objects and locations.

Example:

```
// put into window paint event
dim c as CGContextMBS
if TargetCocoa then
c = GetCurrentCGContextMBS
else
c = window1.CGContextMBS
end if

dim colors(-1) as CGColorMBS

colors.Append CGColorMBS.CreateGenericRGB(1.0, 0.0, 0.0, 0.35)
colors.Append CGColorMBS.CreateGenericRGB(0.0, 1.0, 0.0, 0.2)
colors.Append CGColorMBS.CreateGenericRGB(0.0, 0.0, 1.0, 0.06)

dim glossGradient as CGGradientMBS = CGGradientMBS.CreateWithColors(nil, colors)

dim topCenter as CGPointMBS = CGMakePointMBS(g.width/2, 0.0)
dim midCenter as CGPointMBS = CGMakePointMBS(g.width/2, g.height)

// fill white
c.SetRGBFillColor 1.0, 1.0, 1.0, 1.0
c.FillRect CGMakeRectMBS(0,0,g.Width,g.Height)

// gradient
dim currentBounds as CGRectMBS = CGMakeRectMBS(0,0,g.Width,g.Height)
c.SaveGState
c.AddRect(currentBounds)
c.Clip
c.DrawLineGradient(glossGradient, topCenter, midCenter, 0)
c.RestoreGState

c.Flush
```

Notes:

space: The color space to use for the gradient. You cannot use a pattern or indexed color space. Can be nil.
 colors: A non-empty array of CGColorMBS objects that should be in the color space specified by space. If space is not nil, each color will be converted (if necessary) to that color space and the gradient will drawn in that color space. Otherwise, each color will be converted to and drawn in the GenericRGB color space.
 locations: Optional. The location for each color provided in colors; each location must be a CGFloat value

in the range of 0 to 1, inclusive. If 0 and 1 are not in the locations array, Quartz uses the colors provided that are closest to 0 and 1 for those locations.

If locations is missing, the first color in colors is assigned to location 0, the last color in colors is assigned to location 1, and intervening colors are assigned locations that are at equal intervals in between. The locations array should contain the same number of items as the colors array.

Available in Mac OS X v10.5 and later.

See also:

- 4.18.6 CreateWithColors(colorSpace as CGColorSpaceMBS, colors() as CGColorMBS, locations() as Double) as CGGradientMBS 299

4.18.6 CreateWithColors(colorSpace as CGColorSpaceMBS, colors() as CGColorMBS, locations() as Double) as CGGradientMBS

Plugin Version: 11.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a CGGradient object from a color space and the provided color objects and locations.

Example:

```
// put into window paint event
dim c as CGContextMBS
if TargetCocoa then
c = GetCurrentCGContextMBS
else
c = window1.CGContextMBS
end if

dim locations() as Double = array(0.0, 0.8, 1.0)

dim colors(-1) as CGColorMBS

colors.Append CGColorMBS.CreateGenericRGB(1.0, 0.0, 0.0, 0.35)
colors.Append CGColorMBS.CreateGenericRGB(0.0, 1.0, 0.0, 0.2)
colors.Append CGColorMBS.CreateGenericRGB(0.0, 0.0, 1.0, 0.06)

dim glossGradient as CGGradientMBS = CGGradientMBS.CreateWithColors(nil, colors, locations)

dim topCenter as CGPointMBS = CGMakePointMBS(g.width/2, 0.0)
dim midCenter as CGPointMBS = CGMakePointMBS(g.width/2, g.height)

// fill white
c.SetRGBFillColor 1.0, 1.0, 1.0, 1.0
c.FillRect CGMakeRectMBS(0,0,g.Width,g.Height)

// gradient
```

```

dim currentBounds as CGRectMBS = CGMakeRectMBS(0,0,g.Width,g.Height)
c.SaveGState
c.AddRect(currentBounds)
c.Clip
c.DrawLineGradient(glossGradient, topCenter, midCenter, 0)
c.RestoreGState

c.Flush

```

Notes:

space: The color space to use for the gradient. You cannot use a pattern or indexed color space. Can be nil.

colors: A non-empty array of CGColorMBS objects that should be in the color space specified by space. If space is not nil, each color will be converted (if necessary) to that color space and the gradient will be drawn in that color space. Otherwise, each color will be converted to and drawn in the GenericRGB color space.

locations: Optional. The location for each color provided in colors; each location must be a CGFloat value in the range of 0 to 1, inclusive. If 0 and 1 are not in the locations array, Quartz uses the colors provided that are closest to 0 and 1 for those locations.

If locations is missing, the first color in colors is assigned to location 0, the last color in colors is assigned to location 1, and intervening colors are assigned locations that are at equal intervals in between. The locations array should contain the same number of items as the colors array.

Available in Mac OS X v10.5 and later.

See also:

- 4.18.5 CreateWithColors(colorSpace as CGColorSpaceMBS, colors() as CGColorMBS) as CGGradientMBS 298

4.18.7 Properties**4.18.8 Handle as Integer**

Plugin Version: 11.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Handle to the CGGradientRef.

Notes: (Read and Write property)

4.18.9 Constants

4.18.10 kCGGradientDrawsAfterEndLocation = 2

Plugin Version: 11.2. **Function:** One of the Gradient Drawing Options constants.

Notes:

The fill should extend beyond the ending location. The color that extends beyond the ending point is the solid color defined by the CGGradient object to be at location 1.

Available in Mac OS X v10.5 and later.

4.18.11 kCGGradientDrawsBeforeStartLocation = 1

Plugin Version: 11.2. **Function:** One of the Gradient Drawing Options constants.

Notes:

The fill should extend beyond the starting location. The color that extends beyond the starting point is the solid color defined by the CGGradient object to be at location 0.

Available in Mac OS X v10.5 and later.

4.19 class CGImageDestinationMBS

4.19.1 class CGImageDestinationMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class to write CGImages.

Example:

```
dim logo as Picture = LogoMBS(500)
dim image as CGImageMBS = CGCreateImageMBS(logo)

dim dic as new Dictionary

// 10%
'dic.Value(CGImageDestinationMBS.kCGImageDestinationLossyCompressionQuality)=0.1

// 100%
dic.Value(CGImageDestinationMBS.kCGImageDestinationLossyCompressionQuality)=1.0

dim file as FolderItem = SpecialFolder.Desktop.Child("logo.jpg")
dim d as new CGImageDestinationMBS(file, "public.jpeg", 1)

d.AddImage(image, dic)

if d.Finalize then
MsgBox "Saved"
else
MsgBox "Failed to save."
end if
```

Notes:

CGImageDestination objects, available in Mac OS X v10.4 or later, abstract the data-writing task. An image destination can represent a single image or multiple images. It can contain thumbnail images as well as properties for each image.

The functions described in this reference can write data to three kinds of destinations: a file, an URL and a string. After creating a CGImageDestination object for the appropriate destination, you can add image data and set image properties. When you are finished adding data, call the function Finalize to write the image data and properties.

4.19.2 Methods

4.19.3 AddImage(image as CGImageMBS, properties as dictionary=nil)

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Adds an image to an image destination.

Example:

```
dim inputfile as FolderItem = SpecialFolder.Desktop.Child("test.jpg")

// reading the picture
dim c as new CGImageSourceMBS(inputfile)
dim img as CGImageMBS = c.CreateImageAtIndex(0)
dim propertiesGlobal as Dictionary = c.Properties
dim propertiesImage as Dictionary = c.PropertiesAtIndex(0)

dim outputFile as FolderItem = SpecialFolder.Desktop.Child("output.jpg")
dim d as new CGImageDestinationMBS(outputFile, "public.jpeg", 1)

// writing the picture and include metadata
d.SetProperties(propertiesGlobal)
d.AddImage(img, propertiesImage)
if d.FinalizeMT then
outputFile.Launch
else
MsgBox "Failed to write jpeg."
end if
```

Notes:

image: The image to add.

properties: An optional dictionary that specifies the properties of the added image.

For properties you can use those in the CGImageSourceMBS class, kCGImageDestinationLossyCompressionQuality and kCGImageDestinationBackgroundColor.

The function logs an error if you add more images than what you specified when you created the image destination.

Available in Mac OS X version 10.4 and later.

4.19.4 AddImageCF(image as CGImageMBS, properties as Variant = nil)

Plugin Version: 13.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Adds an image to an image destination.

Notes:

image: The image to add.

properties: An optional dictionary or CFDictionaryMBS that specifies the properties of the added image.

For properties you can use those in the CGImageSourceMBS class, kCGImageDestinationLossyCompressionQuality and kCGImageDestinationBackgroundColor.

The function logs an error if you add more images than what you specified when you created the image destination.

Available in Mac OS X version 10.4 and later.

4.19.5 AddImageFromSource(source as CGImageSourceMBS, index as Integer, options as dictionary = nil)

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Adds an image from an image source to an image destination.

Notes:

source: An image source.

index: An index that specifies the location of the image in the image source. The index is zero-based.

properties: A dictionary that specifies properties to overwrite or add to the source image properties.

Available in Mac OS X version 10.4 and later.

4.19.6 AddImageFromSourceCF(source as CGImageSourceMBS, index as Integer, options as Variant = nil)

Plugin Version: 13.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Adds an image from an image source to an image destination.

Notes:

source: An image source.

index: An index that specifies the location of the image in the image source. The index is zero-based.

properties: A dictionary or CFDictionaryMBS that specifies properties to overwrite or add to the source image properties.

Available in Mac OS X version 10.4 and later.

4.19.7 Constructor(file as folderitem, type as string, count as Integer = 1)

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates an image destination that writes to a location specified by a folderitem.

Notes:

file: The file to write to. If the file already exists, the data at this location is overwritten.

type: The UTI (uniform type identifier) of the resulting image file. See Uniform Type Identifiers Overview for a list of system-declared and third-party UTIs.

count: The number of images (not including thumbnail images) that the image file will contain.

On success the handle value is not zero.

Available in Mac OS X version 10.4 and later.

See also:

- 4.19.8 Constructor(type as string, count as Integer = 1) 305
- 4.19.9 Constructor(url as string, type as string, count as Integer = 1) 306

4.19.8 Constructor(type as string, count as Integer = 1)

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates an image destination that writes to a string.

Notes:

type: The uniform type identifier (UTI) of the resulting image file. See Uniform Type Identifiers Overview for a list of system-declared and third-party UTIs.

count: The number of images (not including thumbnail images) that the image file will contain.

On success the handle is not zero.

Available in Mac OS X version 10.4 and later.

See also:

- 4.19.7 Constructor(file as folderitem, type as string, count as Integer = 1) 305
- 4.19.9 Constructor(url as string, type as string, count as Integer = 1) 306

4.19.9 Constructor(url as string, type as string, count as Integer = 1)

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates an image destination that writes to a location specified by a URL.

Notes:

url: The URL to write to. If the URL already exists, the data at this location is overwritten.

type: The UTI (uniform type identifier) of the resulting image file. See Uniform Type Identifiers Overview for a list of system-declared and third-party UTIs.

count: The number of images (not including thumbnail images) that the image file will contain.

On success the handle value is not zero.

Available in Mac OS X version 10.4 and later.

See also:

- 4.19.7 Constructor(file as folderitem, type as string, count as Integer = 1) 305
- 4.19.8 Constructor(type as string, count as Integer = 1) 305

4.19.10 CreateWithData(type as string, count as Integer = 1) as CGImageDestinationMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates an image destination that writes to a string.

Notes:

type: The uniform type identifier (UTI) of the resulting image file. See Uniform Type Identifiers Overview for a list of system-declared and third-party UTIs.

count: The number of images (not including thumbnail images) that the image file will contain.

On error the function returns nil.

Available in Mac OS X version 10.4 and later.

4.19.11 CreateWithFile(file as folderitem, type as string, count as Integer = 1) as CGImageDestinationMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates an image destination that writes to a location specified by a folderitem.

Notes:

file: The file to write to. If the file already exists, the data at this location is overwritten.

type: The UTI (uniform type identifier) of the resulting image file. See Uniform Type Identifiers Overview for a list of system-declared and third-party UTIs.

count: The number of images (not including thumbnail images) that the image file will contain.

On failure the function returns nil.

Available in Mac OS X version 10.4 and later.

4.19.12 CreateWithURL(url as string, type as string, count as Integer = 1) as CGImageDestinationMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates an image destination that writes to a location specified by a URL.

Notes:

url: The URL to write to. If the URL already exists, the data at this location is overwritten.

type: The UTI (uniform type identifier) of the resulting image file. See Uniform Type Identifiers Overview for a list of system-declared and third-party UTIs.

count: The number of images (not including thumbnail images) that the image file will contain.

On error nil is returned.

Available in Mac OS X version 10.4 and later.

4.19.13 Data as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Makes a copy of the data.

Notes: The data is collected and after you called Finalize you can pick the data here.

4.19.14 Finalize as boolean

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Writes image data and properties to the data or URL associated with the image destination.

Example:

```
dim logo as Picture = LogoMBS(500)
dim image as CGImageMBS = CGCreateImageMBS(logo)

dim file as FolderItem = SpecialFolder.Desktop.Child("logo.png")
dim d as new CGImageDestinationMBS(file, "public.png", 1)

d.AddImage(image, nil)

if d.Finalize then
  MsgBox "Saved"
else
  MsgBox "Failed to save."
end if
```

Notes:

Returns true if the image is successfully written; false otherwise.

You must call this function or the output of the image destination will not be valid. After calling this function, no additional data can be added to the image destination.

Available in Mac OS X version 10.4 and later.

4.19.15 FinalizeMT as boolean

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Writes image data and properties to the data or URL associated with the image destination.

Notes:

Returns true if the image is successfully written; false otherwise.

You must call this function or the output of the image destination will not be valid. After calling this function, no additional data can be added to the image destination.

Available in Mac OS X version 10.4 and later.

Must be called inside a Xojo (Real Studio) thread so time yields to main thread and you can keep the GUI running.

4.19.16 kCGImageDestinationBackgroundColor as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the constant for the image destination properties.

Notes:

The desired background color to composite against when writing an image that has an alpha component to a destination format that does not support alpha. If present, the value associated with this key must be a CGColorRef data type without an alpha component of its own. If not present, and if a background color is needed, a white color is used.

Available in Mac OS X v10.4 and later.

4.19.17 kCGImageDestinationDateTime as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the constant for the image destination properties.

Notes: Updates the DateTime parameters of the image metadata. Only values present in the original image will updated. If present, the value should be a String or a Date. If String, the value must be in Exif DateTime or ISO 8601 DateTime format. This option is mutually exclusive with kCGImageDestinationMetadata.

4.19.18 kCGImageDestinationLossyCompressionQuality as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the constant for the image destination properties.

Notes:

The desired compression quality to use when writing to an image destination. If present, the value associated with this key must be a double in the range 0.0 to 1.0. A value of 1.0 specifies to use lossless compression if destination format supports it. A value of 0.0 implies to use maximum compression.

Available in Mac OS X v10.4 and later.

4.19.19 kCGImageDestinationMergeMetadata as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the constant for the image destination properties.

Example:

```
// Change rotation in an image file

// files
dim dpath as folderitem = SpecialFolder.Desktop.Child("test.jpg")
dim opath as folderitem = dpath.parent.Child("output.jpg")

// open source
dim imageSource as new cgimagesourcembs(dpath)

// read image
dim img as cgimagembs = imageSource.createimageatindex(0)

// global properties
dim globalprop as dictionary = imageSource.properties
// per image properties
dim p as Dictionary = imageSource.PropertiesAtIndex(0)

dim imageDest as new CGImageDestinationMBS(opath,"public.jpeg",1)

'const orientation = 1 // top left
const orientation = 3 // bottom right

// set globals
imageDest.SetProperties(globalprop)

// now set new orientation
p.value(imageDest.kCGImageDestinationOrientation) = orientation
p.value(imageDest.kCGImageDestinationMergeMetadata) = true

// change tiff dictionary, if present
dim dTIFF as Dictionary = p.lookup(imageSource.kCGImagePropertyTIFFDictionary, nil)
if dTIFF <> nil then
dTIFF.value(imageSource.kCGImagePropertyTIFFOrientation) = orientation
end if

// change iptc dictionary, if present
dim dIPTC as Dictionary = p.lookup(imageSource.kCGImagePropertyIPTCDictionary, nil)
if dIPTC <> nil then
dIPTC.value(imageSource.kCGImagePropertyIPTCImageOrientation) = orientation
```

end if

```
// write out image
imageDest.AddImage(img,p)
call imageDest.Finalize
```

Notes: If true, The metadata will be copied from the source and merged with the tags specified in kCGImageDestinationMetadata. If a tag does not exist in the source, it will be added. If the tag exists in the source, it will be updated. A metadata tag can be removed by setting the tag's value to nil. If present, the value of this key is a Boolean. The default is False.

4.19.20 kCGImageDestinationMetadata as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the constant for the image destination properties.

Notes: Set the metadata tags for the image destination. If present, the value of this key is a CGImageMetadata. By default, all EXIF, IPTC, and XMP tags will be replaced. Use kCGImageDestinationMergeMetadata to merge the tags with the existing tags in the image source.

4.19.21 kCGImageDestinationOrientation as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the constant for the image destination properties.

Example:

```
// Change rotation in an image file

// files
dim dpath as folderitem = SpecialFolder.Desktop.Child("test.jpg")
dim opath as folderitem = dpath.parent.Child("output.jpg")

// open source
dim imageSource as new cgimagesourcembs(dpath)

// read image
dim img as cgimage = imageSource.createimageatindex(0)

// global properties
dim globalprop as dictionary = imageSource.properties
// per image properties
dim p as Dictionary = imageSource.PropertiesAtIndex(0)

dim imageDest as new CGImageDestinationMBS(opath,"public.jpeg",1)
```

```

'const orientation = 1 // top left
const orientation = 3 // bottom right

// set globals
imageDest.SetProperties(globalprop)

// now set new orientation
p.value(imageDest.kCGImageDestinationOrientation) = orientation
p.value(imageDest.kCGImageDestinationMergeMetadata) = true

// change tiff dictionary, if present
dim dTIFF as Dictionary = p.lookup(imageSource.kCGImagePropertyTIFFDictionary, nil)
if dTIFF <> nil then
dTIFF.value(imageSource.kCGImagePropertyTIFFOrientation) = orientation
end if

// change iptc dictionary, if present
dim dIPTC as Dictionary = p.lookup(imageSource.kCGImagePropertyIPTCDictionary, nil)
if dIPTC <> nil then
dIPTC.value(imageSource.kCGImagePropertyIPTCImageOrientation) = orientation
end if

// write out image
imageDest.AddImage(img,p)
call imageDest.Finalize

```

Notes: Updates the orientation in the image metadata. The image data itself will not be rotated. If present, the value should be a Integer from 1 to 8. This option is mutually exclusive with `kCGImageDestination-Metadata`.

4.19.22 `kCGImageMetadataShouldExcludeXMP` as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the constant for the image destination properties.

Notes: XMP data will not be written to the destination. If used in conjunction with `kCGImageDestination-Metadata`, EXIF and/or IPTC tags will be preserved, but an XMP packet will not be written to the file. If present, the value for this key is a Boolean. The default is False.

4.19.23 SetPropertyes(options as dictionary = nil)

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Applies one or more properties to all images in an image destination.

Example:

```
dim inputfile as FolderItem = SpecialFolder.Desktop.Child("test.jpg")

// reading the picture
dim c as new CGImageSourceMBS(inputfile)
dim img as CGImageMBS = c.CreateImageAtIndex(0)
dim propertiesGlobal as Dictionary = c.Properties
dim propertiesImage as Dictionary = c.PropertiesAtIndex(0)

dim outputFile as FolderItem = SpecialFolder.Desktop.Child("output.jpg")
dim d as new CGImageDestinationMBS(outputFile, "public.jpeg", 1)

// writing the picture and include metadata
d.SetProperties(propertiesGlobal)
d.AddImage(img, propertiesImage)
if d.FinalizeMT then
outputFile.Launch
else
MsgBox "Failed to write jpeg."
end if
```

Notes: Available in Mac OS X version 10.4 and later.

4.19.24 SetPropertyesCF(options as Variant)

Plugin Version: 13.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Applies one or more properties to all images in an image destination.

Notes:

Available in Mac OS X version 10.4 and later.
Options can be a Dictionary or CFDictionaryMBS.

4.19.25 TypeIdentifiers as string()

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array of the uniform type identifiers (UTIs) that are supported for image destinations.

Example:

```
dim s(-1) as string = CGImageDestinationMBS.TypeIdentifiers
```

```
MsgBox Join(s,EndOfLine)
```

```
// shows on Mac OS X 10.5:  
//  
// public.png  
// public.jpeg  
// com.compuserve.gif  
// public.jpeg-2000  
// public.tiff  
// com.adobe.photoshop-image  
// com.adobe.pdf  
// com.microsoft.bmp  
// com.apple.pict  
// com.truevision.tga-image  
// com.sgi.sgi-image  
// com.ilm.openexr-image
```

Notes:

Returns an array of the UTIs that are supported for image destinations. See Uniform Type Identifiers Overview for a list of system-declared and third-party UTIs that can be returned.

Available in Mac OS X version 10.4 and later.

4.19.26 Properties

4.19.27 Handle as Integer

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The internal reference.

Notes: (Read and Write property)

4.20 class CGImageMBS

4.20.1 class CGImageMBS

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a core graphics image.

Notes:

If the release property is true, the destructor of this class will release the image reference. This is an abstract class. You can't create an instance, but you can get one from various plugin functions.

4.20.2 Methods

4.20.3 Constructor

Plugin Version: 13.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The private constructor.

4.20.4 Copy as CGImageMBS

Plugin Version: 8.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a copy of a bitmap image.

See also:

- 4.20.5 Copy(r as CCGRectMBS) as CGImageMBS 315

4.20.5 Copy(r as CCGRectMBS) as CGImageMBS

Plugin Version: 8.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a copy of a bitmap image.

See also:

- 4.20.4 Copy as CGImageMBS 315

4.20.6 CopyWithColorSpace(profile as CGColorSpaceMBS) as CGImageMBS

Plugin Version: 3.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a copy of the image with the new Colorspace included.

Example:

```
// load a picture
dim f as FolderItem = SpecialFolder.Desktop.Child("ColorSpin.jpg")
```

```

dim pic as Picture = picture.Open(f)

// open printer
dim g as Graphics = OpenPrinterDialog
if g = nil then Return

// draw
g.DrawPicture pic, 0, 0

// now load again
dim ImageSource as new CGImageSourceMBS(f)
dim img as CGImageMBS = ImageSource.CreateImageAtIndex(0)
dim cs as CGColorSpaceMBS = CGColorSpaceMBS.CreateDeviceRGB

// copy with replacing colorspace
img = img.CopyWithColorSpace(cs)

// and draw
dim c as CGContextMBS = CGContextMBS.contextWithCGContext(g.Handle(g.HandleTypeCGContextRef))
dim r as CGRectMBS = CGMakeRectMBS(0, 0, img.Width, img.Height)

c.DrawPicture(img, r)
c.Flush

```

Notes:

profile must be a CGColorSpaceMBS.
Requires Mac OS X 10.3.

4.20.7 CopyWithMask(mask as CGImageMBS) as CGImageMBS

Plugin Version: 8.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** reates a bitmap image from an existing image and an image mask.

Notes:

Parameters:

self: The image to apply the mask parameter to. This image must not be an image mask and may not have an image mask or masking color associated with it.

mask: A mask. If the mask is an image, it must be in the DeviceGray color space, must not have an alpha component, and may not itself be masked by an image mask or a masking color. If the mask is not the same size as the image specified by the image parameter, then Quartz scales the mask to fit the image.

Return Value: An image created by masking image with mask. You are responsible for releasing this object by calling `CGImageRelease`.

The resulting image depends on whether the mask parameter is an image mask or an image. If the mask parameter is an image mask, then the source samples of the image mask act as an inverse alpha value. That is, if the value of a source sample in the image mask is S , then the corresponding region in image is blended with the destination using an alpha value of $(1-S)$. For example, if S is 1, then the region is not painted, while if S is 0, the region is fully painted.

If the mask parameter is an image, then it serves as an alpha mask for blending the image onto the destination. The source samples of mask' act as an alpha value. If the value of the source sample in mask is S , then the corresponding region in image is blended with the destination with an alpha of S . For example, if S is 0, then the region is not painted, while if S is 1, the region is fully painted.

4.20.8 CreateImage(pic as picture) as CGImageMBS

Plugin Version: 13.5, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new `CGImageMBS` from the given images.

Example:

```
dim c as CGImageMBS
dim pic, mask as Picture
// get picture and mask

c = CGImageMBS.CreateImage(pic)
if c<>Nil then
// go on
end if
```

Notes: If the image has a mask, it is used.
See also:

- 4.20.9 CreateImage(pic as picture, mask as picture) as CGImageMBS

4.20.9 CreateImage(pic as picture, mask as picture) as CGImageMBS

Plugin Version: 13.5, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new `CGImageMBS` from the given images.

Example:

```

dim c as CGImageMBS
dim pic, mask as Picture
// get picture and mask

c = CGImageMBS.CreateImage(pic, mask)
if c<>Nil then
// go on
end if

```

Notes:

The mask is taken from the second image.

With 11.3 plugins we are deprecating to pass a mask. The plugin prefers to simply take the mask or alpha channel of the picture itself.

See also:

- 4.20.8 CreateImage(pic as picture) as CGImageMBS

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4.20.10 CreateImageFromJPEGDataProvider(dataprovider as Variant, decode as memoryblock, shouldInterpolate as boolean, intent as Integer) as CGImageMBS

Plugin Version: 13.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new CGImage with JPEG data.

Example:

```

// Shows moon.jpg from the desktop folder
// shows in the window title if i,p or u is nil.

```

```

Sub Mainwindow.Paint(g As Graphics)
dim f as FolderItem
dim p as CGDataProviderMBS
dim i as CGImageMBS

f=SpecialFolder.Desktop.Child("moon.jpg")
p=CGDataProviderMBS.CreateWithFile(f)
if p=nil then
Title="p=nil"
else
i = CGImageMBS.CreateImageFromJPEGDataProvider(p,nil,true,0)

if i=nil then
Title="i=nil"
else
mainwindow1.CGContextMBS.DrawPicture i,CGMakeRectMBS(0,0,i.Width,i.Height)
end if

```

end if

End Sub

Notes:

Parameters:

dataproducer:

A reference to a data provider supplying JPEG-encoded data.

decode:

Pass the decode array for the image. In the decode array, for each color component in the source color space, you provide a pair of values denoting the upper and lower limits of a range. For example, the decode array for a source image in the RGB color space would contain six entries total, consisting of one pair each for red, green, and blue. When the image is rendered, Quartz uses a linear transform to map the original component value into a relative number within your designated range that is appropriate for the destination color space. If you do not want to allow remapping of the image's color values, pass nil for the decode array. The memoryblock for the array needs to be filled with double values.

shouldInterpolate:

Pass true if interpolation should occur; otherwise, pass false . The interpolation setting specifies whether Quartz should apply a pixel-smoothing algorithm to the image. If you pass false , the image may appear jagged or pixelated when drawn on an output device with higher resolution than the image data.

intent:

Pass a CGColorRenderingIntent value specifying how Quartz should display colors in the image that are not located within the current color space of the graphics context. The rendering intent determines the exact method used to map colors from one color space to another.

4.20.11 CreateImageFromPNGDataProvider(dataprovider as Variant, decode as memoryblock, shouldInterpolate as boolean, intent as Integer) as CGImageMBS

Plugin Version: 13.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new CGImage with PNG data.

Notes:

Parameters:

dataproducer:

A reference to a data provider supplying JPEG-encoded data.

decode:

Pass the decode array for the image. In the decode array, for each color component in the source color space, you provide a pair of values denoting the upper and lower limits of a range. For example, the decode array for a source image in the RGB color space would contain six entries total, consisting of one pair each for red, green, and blue. When the image is rendered, Quartz uses a linear transform to map the original component value into a relative number within your designated range that is appropriate for the destination color space. If you do not want to allow remapping of the image's color values, pass nil for the decode array. The memoryblock for the array needs to be filled with double values.

shouldInterpolate:

Pass true if interpolation should occur; otherwise, pass false . The interpolation setting specifies whether Quartz should apply a pixel-smoothing algorithm to the image. If you pass false , the image may appear jagged or pixelated when drawn on an output device with higher resolution than the image data.

intent:

Pass a CGColorRenderingIntent value specifying how Quartz should display colors in the image that are not located within the current color space of the graphics context. The rendering intent determines the exact method used to map colors from one color space to another.

4.20.12 CreateImageWithFile(file as folderitem) as CGImageMBS

Plugin Version: 15.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Opens a file as CGImage object.

Notes: Returns nil on any error.

4.20.13 CreateImageWithHandle(handle as Integer) as CGImageMBS

Plugin Version: 13.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates image from a CGImageRef handle value.

Notes: Internally the CGImageMBS retains this reference and releases it in destructor.

4.20.14 DataProvider as Variant

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The data provider used for the image.

Notes:

Value is a CGDataProviderMBS object.

Returns nil on any error.

4.20.15 DecodeArray as memoryblock

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The decode array used for the image.

Notes:

A memoryblock with an array of double variables.
Returns nil on any error.

4.20.16 JPEGData(Compression as Integer = 90) as MemoryBlock

Plugin Version: 14.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns image compressed as JPEG file.

Notes:

Compression defines the compression level from 0 to 100.
Returns nil on any error.

4.20.17 Picture(ColorSpace as CGColorSpaceMBS = nil) as Picture

Plugin Version: 11.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a copy of the CGImage as a picture.

Example:

```
// get CGImage
dim f as FolderItem = SpecialFolder.Desktop.Child("bild.jpg")
dim c as CGImageMBS = CGImageMBS.CreateImageWithFile(f)
// get picture
dim p as Picture = c.Picture
// save as jpeg
dim d as FolderItem = SpecialFolder.Desktop.Child("output.jpg")
p.Save(d, p.SaveAsJPEG, 80)
```

Notes:

Colorspace: the optional CoreGraphics Colorspace to use for the bitmap conversion (CGColorSpaceMBS class).
Returns nil on any error.

4.20.18 `PictureScaled(OutputWidth as Integer, OutputHeight as Integer, ColorSpace as CGColorSpaceMBS = nil) as Picture`

Plugin Version: 17.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a copy of the `CGImage` as a picture scaled.

Example:

```
// get CGImage
dim f as FolderItem = SpecialFolder.Desktop.Child("bild.jpg")
dim c as CGImageMBS = CGImageMBS.CreateImageWithFile(f)
// get picture
dim p as Picture = c.PictureScaled(640,480)
// save as jpeg
dim d as FolderItem = SpecialFolder.Desktop.Child("output.jpg")
p.Save(d, p.SaveAsJPEG, 80)
```

Notes:

Colorspace: the optional CoreGraphics Colorspace to use for the bitmap conversion (`CGColorSpaceMBS` class).

Returns nil on any error.

If output width and height are zero, we use the image sizes.

4.20.19 `PNGData as MemoryBlock`

Plugin Version: 14.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns image compressed as PNG file.

Notes: Returns nil on any error.

4.20.20 `ReleaseHandle`

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Decrements the retain count of a `CGImageRef`.

Notes:

Each retain must have a release. Too many releases and your app will crash, too many retains and it will leak memory.

Use only if you really know what you are doing.

4.20.21 RetainHandle

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Increments the retain count of a CGImageRef.

Notes:

Each retain must have a release. Too many releases and your app will crash, too many retains and it will leak memory.

Use only if you really know what you are doing.

4.20.22 Properties

4.20.23 AlphaInfo as Integer

Plugin Version: 15.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the alpha channel information for a bitmap image.

Notes:

A CGImageAlphaInfo constant that specifies (1) whether the bitmap contains an alpha channel, (2) where the alpha bits are located in the image data, and (3) whether the alpha value is premultiplied. For possible values, see Constants. The function returns kCGImageAlphaNone if the image parameter refers to an image mask.

(Read only property)

4.20.24 BitmapInfo as Integer

Plugin Version: 15.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the bitmap information for a bitmap image.

Notes:

This function returns a constant that specifies:

The type of bitmap data floating point or integer. You use the constant kCGBitmapFloatComponents to extract this information.

Whether an alpha channel is in the data, and if so, how the alpha data is stored. You use the constant kCGBitmapAlphaInfoMask to extract the alpha information. Alpha information is specified as one of the constants listed in Alpha Information for Images.

(Read only property)

4.20.25 BitsPerComponent as Integer

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the number of bits/component of the image.

Notes: (Read only property)

4.20.26 BitsPerPixel as Integer

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the number of bits/pixel of image.

Notes: (Read only property)

4.20.27 BytesPerRow as Integer

Plugin Version: 8.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the number of bytes allocated for a double row of a bitmap image.

Notes: (Read only property)

4.20.28 ColorSpace as CGColorSpaceMBS

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The color space used for the image.

Example:

```
// get a picture file
dim file as FolderItem = SpecialFolder.Desktop.Child("sylvia.jpg")
// get image source
dim source as new CGImageSourceMBS(file)
// read image
dim image as CGImageMBS = source.CreateImageAtIndex(0)
// get Color space from image
dim profile as CGColorSpaceMBS = image.ColorSpace
// get ICC profile data
dim ICCProfile as string = profile.ICCProfile
// and parse it with LCMS and show name
dim LCMSProfile as LCMS2ProfileMBS = LCMS2ProfileMBS.OpenProfileFromString(ICCProfile)
MsgBox LCMSProfile.Name
```

Notes:

Value is a CGColorSpaceMBS.

Returns nil on any error.
(Read only property)

4.20.29 handle as Integer

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The handle for this image.

Notes:

Handle is a CGImageRef.
(Read and Write property)

4.20.30 height as Integer

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the image's height.

Notes:

Returns 0 on error.
(Read only property)

4.20.31 ImageIsMask as boolean

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns true if the image is an image mask, false otherwise.

Notes: (Read only property)

4.20.32 RenderingIntent as Integer

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the rendering intent of the image.

Notes:

Constants:

kCGRenderingIntentDefault	0
kCGRenderingIntentAbsoluteColorimetric	1
kCGRenderingIntentRelativeColorimetric	2
kCGRenderingIntentPerceptual	3
kCGRenderingIntentSaturation	4

(Read only property)

4.20.33 RetainCount as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the retain count of the CGImageRef.

Notes:

This is useful for debugging.

The retain count is for the CGImageRef, not the CGImageMBS object.

(Read only property)

4.20.34 ShouldInterpolate as boolean

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the interpolation parameter of image.

Notes:

True if the image should use interpolation.

(Read only property)

4.20.35 width as Integer

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the image's width.

Notes:

Returns 0 on error.

(Read only property)

4.20.36 Constants

4.20.37 kCGBitmapAlphaInfoMask = & h1F

Plugin Version: 15.3. **Function:** One of the bitmap info values.

Notes: The alpha information mask. Use this to extract alpha information that specifies whether a bitmap contains an alpha channel and how the alpha channel is generated.

4.20.38 kCGBitmapByteOrder16Big = 12288

Plugin Version: 15.3. **Function:** One of the bitmap info values.
Notes: 16-bit, big endian format.

4.20.39 kCGBitmapByteOrder16Little = 4096

Plugin Version: 15.3. **Function:** One of the bitmap info values.
Notes: 16-bit, little endian format.

4.20.40 kCGBitmapByteOrder32Big = 16384

Plugin Version: 15.3. **Function:** One of the bitmap info values.
Notes: 32-bit, big endian format.

4.20.41 kCGBitmapByteOrder32Little = 8192

Plugin Version: 15.3. **Function:** One of the bitmap info values.
Notes: 32-bit, little endian format.

4.20.42 kCGBitmapByteOrderDefault = 0

Plugin Version: 15.3. **Function:** One of the bitmap info values.
Notes: The default byte order.

4.20.43 kCGBitmapByteOrderMask = & h7000

Plugin Version: 15.3. **Function:** One of the bitmap info values.
Notes: The byte ordering of pixel formats.

4.20.44 kCGBitmapFloatComponents = 256

Plugin Version: 15.3. **Function:** One of the bitmap info values.
Notes: The components of a bitmap are floating-point values.

4.20.45 `kCGImageAlphaFirst = 4`

Plugin Version: 15.3. **Function:** One of the alpha info values.

Notes: The alpha component is stored in the most significant bits of each pixel. For example, non-premultiplied ARGB.

4.20.46 `kCGImageAlphaLast = 3`

Plugin Version: 15.3. **Function:** One of the alpha info values.

Notes: The alpha component is stored in the least significant bits of each pixel. For example, non-premultiplied RGBA.

4.20.47 `kCGImageAlphaNone = 0`

Plugin Version: 15.3. **Function:** One of the alpha info values.

Notes: There is no alpha channel. If the total size of the pixel is greater than the space required for the number of color components in the color space, the least significant bits are ignored. This value is equivalent to `kCGImageAlphaNoneSkipLast`.

4.20.48 `kCGImageAlphaNoneSkipFirst = 6`

Plugin Version: 15.3. **Function:** One of the alpha info values.

Notes: There is no alpha channel. If the total size of the pixel is greater than the space required for the number of color components in the color space, the most significant bits are ignored.

4.20.49 `kCGImageAlphaNoneSkipLast = 5`

Plugin Version: 15.3. **Function:** One of the alpha info values.

Notes: There is no alpha channel. If the total size of the pixel is greater than the space required for the number of color components in the color space, the least significant bits are ignored. This value is equivalent to `kCGImageAlphaNone`.

4.20.50 `kCGImageAlphaOnly = 7`

Plugin Version: 15.3. **Function:** One of the alpha info values.

Notes: There is no color data, only an alpha channel.

4.20.51 kCGImageAlphaPremultipliedFirst = 2

Plugin Version: 15.3. **Function:** One of the alpha info values.

Notes: The alpha component is stored in the most significant bits of each pixel and the color components have already been multiplied by this alpha value. For example, premultiplied ARGB.

4.20.52 kCGImageAlphaPremultipliedLast = 1

Plugin Version: 15.3. **Function:** One of the alpha info values.

Notes: The alpha component is stored in the least significant bits of each pixel and the color components have already been multiplied by this alpha value. For example, premultiplied RGBA.

4.21 class CGImageSourceMBS

4.21.1 class CGImageSourceMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The CoreGraphics class for image loading.

Example:

```
dim file as FolderItem = SpecialFolder.Desktop.Child("test.jpg")
dim c as new CGImageSourceMBS(file)
dim img as CGImageMBS = c.CreateImageAtIndex(0)
```

```
Backdrop=img.Picture
```

Notes:

CGImageSource objects, available in Mac OS X v10.4 or later, abstract the data-reading task. An image source can read image data from a URL, a file or a string.

After creating a CGImageSource object for the appropriate source, you can obtain images, thumbnails, image properties, and other image information using CGImageSource functions.

4.21.2 Methods

4.21.3 Constructor(data as string, options as dictionary = nil)

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates an image source that reads from a string.

Notes:

data: The data string to read from.

options: A dictionary that specifies additional creation options. For example kCGImageSourceTypeIdentifierHint.

On success the handle value is not zero.

Available in Mac OS X version 10.4 and later.

See also:

- 4.21.4 Constructor(file as folderitem, options as dictionary = nil) 331
- 4.21.5 Constructor(options as dictionary = nil) 331

4.21.4 Constructor(file as folderitem, options as dictionary = nil)

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates an image source that reads from a location specified by a file.

Notes:

url: The URL to read from.

options: A dictionary that specifies additional creation options. For example kCGImageSourceTypeIdentifierHint.

On success the handle value is not zero.

Available in Mac OS X version 10.4 and later.

See also:

- 4.21.3 Constructor(data as string, options as dictionary = nil) 330
- 4.21.5 Constructor(options as dictionary = nil) 331

4.21.5 Constructor(options as dictionary = nil)

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Create an incremental image source.

Notes:

options: A dictionary that specifies additional creation options. For example kCGImageSourceTypeIdentifierHint.

Returns an image source object.

The constructor creates an empty image source container to which you can add data later by calling the function UpdateData. You don't provide data when you call this function.

An incremental image is an image that is created in chunks, similar to the way large images viewed over the web are loaded piece by piece.

Available in Mac OS X version 10.4 and later.

See also:

- 4.21.3 Constructor(data as string, options as dictionary = nil) 330
- 4.21.4 Constructor(file as folderitem, options as dictionary = nil) 331

4.21.6 CreateImageAtIndex(index as Integer, options as dictionary = nil) as CGImageMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a CGImage object for the image data associated with the specified index in an image source.

Example:

```
dim file as FolderItem = SpecialFolder.Desktop.Child("test.jpg")
dim c as new CGImageSourceMBS(file)
dim img as CGImageMBS = c.CreateImageAtIndex(0)
```

```
Backdrop=img.Picture
```

Notes:

index: The index that specifies the location of the image. The index is zero-based.

options: A dictionary that specifies additional creation options.

Returns a CGImage object.

Available in Mac OS X version 10.4 and later.

4.21.7 CreateIncremental(options as dictionary=nil) as CGImageSourceMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Create an incremental image source.

Notes:

options: A dictionary that specifies additional creation options. For example kCGImageSourceTypeIdentifierHint.

The function CreateIncremental creates an empty image source container to which you can add data later by calling the function UpdateData. You don't provide data when you call this function.

An incremental image is an image that is created in chunks, similar to the way large images viewed over the web are loaded piece by piece.

Available in Mac OS X version 10.4 and later.

4.21.8 CreateThumbnailAtIndex(index as Integer, options as dictionary = nil) as CGImageMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a thumbnail image of the image located at a specified location in an image source.

Example:

```
dim file as FolderItem = SpecialFolder.Desktop.Child("test.jpg")
dim c as new CGImageSourceMBS(file)

dim d as new Dictionary
d.Value(c.kCGImageSourceThumbnailMaxPixelSize)=200
d.Value(c.kCGImageSourceCreateThumbnailFromImageIfAbsent)=true

dim img as CGImageMBS = c.CreateThumbnailAtIndex(0,d)

Backdrop=img.Picture
```

Notes:

index: The index that specifies the location of the image. The index is zero-based.

options: A dictionary that specifies additional creation options.

Returns a CGImageMBS.

If the image source is a PDF, this function creates a 72 dpi image of the PDF page specified by the index that you pass. You must, however, pass an options dictionary that contains either the `kCGImageSourceCreateThumbnailFromImageIfAbsent` or `kCGImageSourceCreateThumbnailFromImageAlways` keys, with the value of the key set to `TRUE`.

Available in Mac OS X version 10.4 and later.

4.21.9 CreateWithData(data as string, options as dictionary=nil) as CGImageSourceMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates an image source that reads from a string.

Notes:

data: The data string to read from.

options: A dictionary that specifies additional creation options. For example `kCGImageSourceTypeIdentifierHint`.

Returns an image source.

Available in Mac OS X version 10.4 and later.

4.21.10 CreateWithFile(file as folderitem, options as dictionary=nil) as CGImageSourceMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates an image source that reads from a location specified by a file.

Example:

```
// get a picture file
dim file as FolderItem = SpecialFolder.Desktop.Child("sylwia.jpg")
// get image source
dim source as new CGImageSourceMBS(file)
// read image
dim image as CGImageMBS = source.CreateImageAtIndex(0)
// get Color space from image
dim profile as CGColorSpaceMBS = image.ColorSpace
// get ICC profile data
dim ICCProfile as string = profile.ICCProfile
// and parse it with LCMS and show name
dim LCMSProfile as LCMS2ProfileMBS = LCMS2ProfileMBS.OpenProfileFromString(ICCProfile)
MsgBox LCMSProfile.Name
```

Notes:

url: The URL to read from.

options: A dictionary that specifies additional creation options. For example kCGImageSourceTypeIdentifierHint.

Returns an image source.

Available in Mac OS X version 10.4 and later.

4.21.11 CreateWithURL(url as string, options as dictionary=nil) as CGImageSourceMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates an image source that reads from a location specified by a URL.

Notes:

url: The URL to read from.

options: A dictionary that specifies additional creation options. For example kCGImageSourceTypeIdentifierHint.

On success the handle value is not zero.

Available in Mac OS X version 10.4 and later.

4.21.12 kCGImageProperty8BIMDictionary as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes: A dictionary of key-value pairs for an Adobe Photoshop image.

4.21.13 kCGImageProperty8BIMLayerNames as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes: The layer names for an Adobe Photoshop file.

4.21.14 kCGImagePropertyCIFFCameraSerialNumber as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Camera Image File Format (CIFF).

Notes: The camera serial number.

4.21.15 kCGImagePropertyCIFFContinuousDrive as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Camera Image File Format (CIFF).

Notes: The continuous drive mode.

4.21.16 `kCGImagePropertyCIFFDescription` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Camera Image File Format (CIFF).

Notes: The camera description..

4.21.17 `kCGImagePropertyCIFFDictionary` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes:

A dictionary of key-value pairs for an image that uses Camera Image File Format (CIFF).

Available in Mac OS X v10.5 and later.

4.21.18 `kCGImagePropertyCIFFFirmware` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Camera Image File Format (CIFF).

Notes: The firmware version.

4.21.19 `kCGImagePropertyCIFFFFlashExposureComp` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Camera Image File Format (CIFF).

Notes: The flash exposure compensation.

4.21.20 `kCGImagePropertyCIFFFFocusMode` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Camera Image File Format (CIFF).

Notes: The focus mode.

4.21.21 kCGImagePropertyCIFFImageFileName as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Camera Image File Format (CIFF).

Notes: The image file name.

4.21.22 kCGImagePropertyCIFFImageName as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Camera Image File Format (CIFF).

Notes: The image name.

4.21.23 kCGImagePropertyCIFFImageSerialNumber as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Camera Image File Format (CIFF).

Notes: The image serial number.

4.21.24 kCGImagePropertyCIFFLensMaxMM as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Camera Image File Format (CIFF).

Notes: The maximum lens length.

4.21.25 kCGImagePropertyCIFFLensMinMM as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Camera Image File Format (CIFF).

Notes: The minimum lens length.

4.21.26 kCGImagePropertyCIFFLensModel as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Camera Image File Format (CIFF).

Notes: The lens model.

4.21.27 `kCGImagePropertyCIFFMeasuredEV` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Camera Image File Format (CIFF).

Notes: The measured EV.

4.21.28 `kCGImagePropertyCIFFMeteringMode` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Camera Image File Format (CIFF).

Notes: The metering mode.

4.21.29 `kCGImagePropertyCIFFOwnerName` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Camera Image File Format (CIFF).

Notes: The owner name.

4.21.30 `kCGImagePropertyCIFFRecordID` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Camera Image File Format (CIFF).

Notes: The record ID

4.21.31 `kCGImagePropertyCIFFReleaseMethod` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Camera Image File Format (CIFF).

Notes: The release method.

4.21.32 `kCGImagePropertyCIFFReleaseTiming` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Camera Image File Format (CIFF).

Notes: The release timing.

4.21.33 kCGImagePropertyCIFFSelfTimingTime as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Camera Image File Format (CIFF).

Notes: The self timing time.

4.21.34 kCGImagePropertyCIFFShootingMode as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Camera Image File Format (CIFF).

Notes: The shooting mode.

4.21.35 kCGImagePropertyCIFFWhiteBalanceIndex as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Camera Image File Format (CIFF).

Notes: The white balance index.

4.21.36 kCGImagePropertyColorModel as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes:

The color model of the image such as, "RGB", "CMYK", "Gray", or "Lab". The value of this key is CF-StringRef.

A color model describes how color values are represented mathematically. A color space is a color model combined with a definition of how to interpret values within the model.

4.21.37 kCGImagePropertyColorModelCMYK as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Values for the color model property.

Notes: A CMYK color model.

4.21.38 `kCGImagePropertyColorModelGray` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Values for the color model property.

Notes: A Gray color model.

4.21.39 `kCGImagePropertyColorModelLab` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Values for the color model property.

Notes: A Lab color model.

4.21.40 `kCGImagePropertyColorModelRGB` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Values for the color model property.

Notes: An RGB color model.

4.21.41 `kCGImagePropertyDepth` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes: The number of bits in each color sample of each pixel. If present, this key is a CFNumber value.

4.21.42 `kCGImagePropertyDNGBackwardVersion` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses the Digital Negative (DNG) archival format.

Notes: The oldest version for which a file is compatible.

4.21.43 `kCGImagePropertyDNGCameraSerialNumber` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses the Digital Negative (DNG) archival format.

Notes: The camera serial number.

4.21.44 kCGImagePropertyDNGLensInfo as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes: A dictionary of key-value pairs for an image that uses the Digital Negative (DNG) archival format.

4.21.45 kCGImagePropertyDNGLocalizedCameraModel as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses the Digital Negative (DNG) archival format.

Notes: Information about the lens used for the image.

4.21.46 kCGImagePropertyDNGLocalizedCameraModel as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses the Digital Negative (DNG) archival format.

Notes: The localized camera model name.

4.21.47 kCGImagePropertyDNGUniqueCameraModel as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses the Digital Negative (DNG) archival format.

Notes: A unique, nonlocalized name for the camera mode.

4.21.48 kCGImagePropertyDNGVersion as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses the Digital Negative (DNG) archival format.

Notes: An encoding of the four-tier version number.

4.21.49 kCGImagePropertyDPIHeight as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes: The resolution, in dots per inch, in the x dimension. If present, this key is a CFNumber value.

4.21.50 kCGImagePropertyDPIWidth as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes: The resolution, in dots per inch, in the y dimension. If present, this key is a CFNumber value.

4.21.51 kCGImagePropertyExifApertureValue as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The aperture value.

4.21.52 kCGImagePropertyExifAuxDictionary as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes: An auxiliary dictionary of key-value pairs for an image that uses Exchangeable Image File Format (EXIF).

4.21.53 kCGImagePropertyExifAuxFirmware as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the Exif Auxiliary dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: Firmware information.

4.21.54 kCGImagePropertyExifAuxFlashCompensation as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the Exif Auxiliary dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: Flash compensation.

4.21.55 kCGImagePropertyExifAuxImageNumber as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the Exif Auxiliary dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The image number.

4.21.56 kCGImagePropertyExifAuxLensID as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the Exif Auxiliary dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The lens ID.

4.21.57 kCGImagePropertyExifAuxLensInfo as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the Exif Auxiliary dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: Lens information.

4.21.58 kCGImagePropertyExifAuxLensModel as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the Exif Auxiliary dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The lens model.

4.21.59 kCGImagePropertyExifAuxLensSerialNumber as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the Exif Auxiliary dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The lens serial number.

4.21.60 kCGImagePropertyExifAuxOwnerName as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the Exif Auxiliary dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The owner name.

4.21.61 kCGImagePropertyExifAuxSerialNumber as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the Exif Auxiliary dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The serial number.

4.21.62 `kCGImagePropertyExifBrightnessValue` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The brightness value.

4.21.63 `kCGImagePropertyExifCFAPattern` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The color filter array (CFA) pattern, which is the geometric patter of the image sensor for a 1-chip color sensor area.

4.21.64 `kCGImagePropertyExifColorSpace` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The color space.

4.21.65 `kCGImagePropertyExifComponentsConfiguration` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The components configuration. For compressed data, specifies that the channels of each component are arranged in increasing numeric order (from first component to the fourth).

4.21.66 `kCGImagePropertyExifCompressedBitsPerPixel` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The compressed bits per pixel.

4.21.67 `kCGImagePropertyExifContrast` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The contrast applied to the image.

4.21.68 kCGImagePropertyExifCustomRendered as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: Special rendering performed on the image data.

4.21.69 kCGImagePropertyExifDateTimeDigitized as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The digitized date and time.

4.21.70 kCGImagePropertyExifDateTimeOriginal as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The original date and time.

4.21.71 kCGImagePropertyExifDeviceSettingDescription as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: For a particular camera mode, indicates the conditions for taking the picture.

4.21.72 kCGImagePropertyExifDictionary as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes: A dictionary of key-value pairs for an image that uses Exchangeable Image File Format (EXIF).

4.21.73 kCGImagePropertyExifDigitalZoomRatio as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The digital zoom ratio.

4.21.74 `kCGImagePropertyExifExposureBiasValue` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The exposure bias value.

4.21.75 `kCGImagePropertyExifExposureIndex` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The selected exposure index.

4.21.76 `kCGImagePropertyExifExposureMode` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The exposure mode setting.

4.21.77 `kCGImagePropertyExifExposureProgram` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The exposure program.

4.21.78 `kCGImagePropertyExifExposureTime` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The exposure time.

4.21.79 `kCGImagePropertyExifFileSource` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The image source.

4.21.80 kCGImagePropertyExifFlash as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The flash status when the image was shot.

4.21.81 kCGImagePropertyExifFlashEnergy as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The strobe energy when the image was captures, in beam candle power seconds.

4.21.82 kCGImagePropertyExifFlashPixVersion as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The FlashPix version supported by an FPXR file. FlashPix is a format for multi-resolution, tiled images, that facilitates fast onscreen viewing.

4.21.83 kCGImagePropertyExifFNumber as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The F number.

4.21.84 kCGImagePropertyExifFocalLength as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The focal length.

4.21.85 kCGImagePropertyExifFocalLenIn35mmFilm as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The equivalent focal length in 35 mm film.

4.21.86 `kCGImagePropertyExifFocalPlaneResolutionUnit` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The unit of measurement for the focal plane x and y tags.

4.21.87 `kCGImagePropertyExifFocalPlaneXResolution` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The number of image-width pixels (x) per focal plane resolution unit.

4.21.88 `kCGImagePropertyExifFocalPlaneYResolution` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The number of image-height pixels (y) per focal plane resolution unit.

4.21.89 `kCGImagePropertyExifGainControl` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The gain adjustment applied to the image.

4.21.90 `kCGImagePropertyExifGamma` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The gamma setting.

4.21.91 `kCGImagePropertyExifImageUniqueID` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The unique ID of the image.

4.21.92 kCGImagePropertyExifISOSpeedRatings as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: ISO speed ratings.

4.21.93 kCGImagePropertyExifLightSource as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The light source.

4.21.94 kCGImagePropertyExifMakerNote as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: A maker note.

4.21.95 kCGImagePropertyExifMaxApertureValue as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The maximum aperture value.

4.21.96 kCGImagePropertyExifMeteringMode as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The metering mode.

4.21.97 kCGImagePropertyExifOECF as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The opto-electrical conversion function (OECF), which defines the relationship between the optical input of the camera and the image values.

4.21.98 `kCGImagePropertyExifPixelXDimension` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The pixel x dimension.

4.21.99 `kCGImagePropertyExifPixelYDimension` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The pixel y dimension.

4.21.100 `kCGImagePropertyExifRelatedSoundFile` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: A related sound file.

4.21.101 `kCGImagePropertyExifSaturation` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The saturation applied to the image.

4.21.102 `kCGImagePropertyExifSceneCaptureType` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The scene capture type (standard, landscape, portrait, night).

4.21.103 kCGImagePropertyExifSceneType as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The scene type.

4.21.104 kCGImagePropertyExifSensingMethod as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The sensor type of the camera or input device.

4.21.105 kCGImagePropertyExifSharpness as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The sharpness applied to the image.

4.21.106 kCGImagePropertyExifShutterSpeedValue as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The shutter speed value.

4.21.107 kCGImagePropertyExifSpatialFrequencyResponse as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The spatial frequency table and spatial frequency response values in the direction of image width, image height, and diagonal directions. See ISO 12233..

4.21.108 kCGImagePropertyExifSpectralSensitivity as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The spectral sensitivity of each channel.

4.21.109 `kCGImagePropertyExifSubjectArea` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The subject area.

4.21.110 `kCGImagePropertyExifSubjectDistance` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The distance to the subject, in meters.

4.21.111 `kCGImagePropertyExifSubjectDistRange` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The subject distance range.

4.21.112 `kCGImagePropertyExifSubjectLocation` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The location of the scene's primary subject.

4.21.113 `kCGImagePropertyExifSubsecTime` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The fraction of seconds for the date and time tag.

4.21.114 `kCGImagePropertyExifSubsecTimeDigitized` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The fraction of seconds for the digitized time tag.

4.21.115 kCGImagePropertyExifSubsecTimeOriginal as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The fraction of seconds for the original date and time tag.

4.21.116 kCGImagePropertyExifUserComment as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: A user comment.

4.21.117 kCGImagePropertyExifVersion as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The version.

4.21.118 kCGImagePropertyExifWhiteBalance as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for the (EXIF) dictionary for an image that uses Exchangeable Image File Format (EXIF).

Notes: The white balance mode.

4.21.119 kCGImagePropertyFileSize as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes:

The size of the image file in bytes, if known. If present, this key is a CFNumber value. Available in Mac OS X v10.4 and later.

This key is used in the image source properties.

4.21.120 `kCGImagePropertyGIFDelayTime` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Graphics Interchange Format (GIF).

Notes: The delay time.

4.21.121 `kCGImagePropertyGIFDictionary` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes: A dictionary of key-value pairs for an image that uses Graphics Interchange Format (GIF).

4.21.122 `kCGImagePropertyGIFHasGlobalColorMap` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Graphics Interchange Format (GIF).

Notes: Whether or not the GIF has a global color map.

4.21.123 `kCGImagePropertyGIFImageColorMap` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Graphics Interchange Format (GIF).

Notes: The image color map.

4.21.124 `kCGImagePropertyGIFLoopCount` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Graphics Interchange Format (GIF).

Notes: The loop count.

4.21.125 `kCGImagePropertyGIFUnclampedDelayTime` as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the key names for the properties.

Notes:

The unclamped delay time.

Available in OS X v10.7 and later.

4.21.126 kCGImagePropertyGPSAltitude as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that has Global Positioning System (GPS) information.

Notes: The altitude.

4.21.127 kCGImagePropertyGPSAltitudeRef as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that has Global Positioning System (GPS) information.

Notes: The reference altitude.

4.21.128 kCGImagePropertyGPSAreaInformation as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that has Global Positioning System (GPS) information.

Notes: The name of the GPS area.

4.21.129 kCGImagePropertyGPSDateStamp as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that has Global Positioning System (GPS) information.

Notes: The data and time information relative to Coordinated Universal Time (UTC).

4.21.130 kCGImagePropertyGPSDestBearing as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that has Global Positioning System (GPS) information.

Notes: The bearing to the destination point.

4.21.131 kCGImagePropertyGPSDestBearingRef as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that has Global Positioning System (GPS) information.

Notes: The reference for giving the bearing to the destination point.

4.21.132 `kCGImagePropertyGPSDestDistance` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that has Global Positioning System (GPS) information.

Notes: The distance to the destination point.

4.21.133 `kCGImagePropertyGPSDestDistanceRef` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that has Global Positioning System (GPS) information.

Notes: The units for expressing the distance to the destination point.

4.21.134 `kCGImagePropertyGPSDestLatitude` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that has Global Positioning System (GPS) information.

Notes: The latitude of the destination point.

4.21.135 `kCGImagePropertyGPSDestLatitudeRef` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that has Global Positioning System (GPS) information.

Notes: Whether the latitude of the destination point is northern or southern.

4.21.136 `kCGImagePropertyGPSDestLongitude` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that has Global Positioning System (GPS) information.

Notes: The longitude of the destination point.

4.21.137 `kCGImagePropertyGPSDestLongitudeRef` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that has Global Positioning System (GPS) information.

Notes: Whether the longitude of the destination point is east or west.

4.21.138 kCGImagePropertyGPSDictionary as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes: A dictionary of key-value pairs for an image that has Global Positioning System (GPS) information.

4.21.139 kCGImagePropertyGPSDifferential as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that has Global Positioning System (GPS) information.

Notes: Whether differential correction is applied to the GPS receiver.

4.21.140 kCGImagePropertyGPSDOP as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that has Global Positioning System (GPS) information.

Notes: The data degree of precision (DOP).

4.21.141 kCGImagePropertyGPSImgDirection as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that has Global Positioning System (GPS) information.

Notes: The direction of the image.

4.21.142 kCGImagePropertyGPSImgDirectionRef as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that has Global Positioning System (GPS) information.

Notes: The reference for the direction of the image.

4.21.143 kCGImagePropertyGPSLatitude as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that has Global Positioning System (GPS) information.

Notes: The latitude.

4.21.144 `kCGImagePropertyGPSLatitudeRef` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that has Global Positioning System (GPS) information.

Notes: Whether the latitude is northern or southern.

4.21.145 `kCGImagePropertyGPSLongitude` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that has Global Positioning System (GPS) information.

Notes: The longitude.

4.21.146 `kCGImagePropertyGPSLongitudeRef` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that has Global Positioning System (GPS) information.

Notes: Whether the longitude is east or west.

4.21.147 `kCGImagePropertyGPSMapDatum` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that has Global Positioning System (GPS) information.

Notes: The geodetic survey data used by the GPS receiver.

4.21.148 `kCGImagePropertyGPSMeasureMode` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that has Global Positioning System (GPS) information.

Notes: The measurement mode.

4.21.149 `kCGImagePropertyGPSProcessingMethod` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that has Global Positioning System (GPS) information.

Notes: The name of the method used for finding a location.

4.21.150 kCGImagePropertyGPSSatellites as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that has Global Positioning System (GPS) information.

Notes: The satellites used for GPS measurements.

4.21.151 kCGImagePropertyGPSSpeed as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that has Global Positioning System (GPS) information.

Notes: The GPS receiver speed of movement.

4.21.152 kCGImagePropertyGPSSpeedRef as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that has Global Positioning System (GPS) information.

Notes: The unit for expressing the GPS receiver speed of movement.

4.21.153 kCGImagePropertyGPSStatus as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that has Global Positioning System (GPS) information.

Notes: The status of the GPS receiver.

4.21.154 kCGImagePropertyGPSTimeStamp as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that has Global Positioning System (GPS) information.

Notes: The time as UTC (Coordinated Universal Time).

4.21.155 kCGImagePropertyGPSTrack as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that has Global Positioning System (GPS) information.

Notes: The direction of GPS receiver movement.

4.21.156 `kCGImagePropertyGPSTrackRef` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that has Global Positioning System (GPS) information.

Notes: The reference for the direction of GPS receiver movement.

4.21.157 `kCGImagePropertyGPSVersion` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that has Global Positioning System (GPS) information.

Notes: The version.

4.21.158 `kCGImagePropertyHasAlpha` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes: Whether or not the image has an alpha channel. The value of this key is `kCFBooleanTrue` if the image contains an alpha channel.

4.21.159 `kCGImagePropertyIPTCActionAdvised` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The advised action.

4.21.160 `kCGImagePropertyIPTCByline` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The byline.

4.21.161 kCGImagePropertyIPTCBylineTitle as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The byline title.

4.21.162 kCGImagePropertyIPTCCaptionAbstract as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The caption abstract.

4.21.163 kCGImagePropertyIPTCCategory as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The category.

4.21.164 kCGImagePropertyIPTCCity as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The city.

4.21.165 kCGImagePropertyIPTCContact as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: Contact information.

4.21.166 kCGImagePropertyIPTCContactInfoAddress as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the key names for the properties.

Notes:

The address portion of the contact information.
Available in OS X v10.6 and later.

4.21.167 `kCGImagePropertyIPTCContactInfoCity` as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the key names for the properties.

Notes:

The city portion of the contact information.
Available in OS X v10.6 and later.

4.21.168 `kCGImagePropertyIPTCContactInfoCountry` as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the key names for the properties.

Notes:

The country portion of the contact information.
Available in OS X v10.6 and later.

4.21.169 `kCGImagePropertyIPTCContactInfoEmails` as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the key names for the properties.

Notes:

Email addresses for the contact.
Available in OS X v10.6 and later.

4.21.170 `kCGImagePropertyIPTCContactInfoPhones` as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the key names for the properties.

Notes:

Phone numbers for the contact.
Available in OS X v10.6 and later.

4.21.171 kCGImagePropertyIPTCContactInfoPostalCode as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the key names for the properties.

Notes:

The postal code portion of the contact information.
Available in OS X v10.6 and later.

4.21.172 kCGImagePropertyIPTCContactInfoStateProvince as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the key names for the properties.

Notes:

The state or province for the contact.
Available in OS X v10.6 and later.

4.21.173 kCGImagePropertyIPTCContactInfoWebURLs as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the key names for the properties.

Notes:

Web addresses for the contact.
Available in OS X v10.6 and later.

4.21.174 kCGImagePropertyIPTCContentLocationCode as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The content location code.

4.21.175 kCGImagePropertyIPTCContentLocationName as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The content location name.

4.21.176 kCGImagePropertyIPTCCopyrightNotice as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The copyright notice.

4.21.177 kCGImagePropertyIPTCCountryPrimaryLocationCode as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The country primary location code.

4.21.178 kCGImagePropertyIPTCCountryPrimaryLocationName as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The country primary location name.

4.21.179 kCGImagePropertyIPTCCreatorContactInfo as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the key names for the properties.

Notes:

The creator's contact info. See "IPTC Creator Contact Info Dictionary Keys."
Available in OS X v10.6 and later.

4.21.180 kCGImagePropertyIPTCCredit as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: Credit information.

4.21.181 kCGImagePropertyIPTCDateCreated as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The date created.

4.21.182 kCGImagePropertyIPTCDictionary as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Example:

```
// Change rotation in an image file

// files
dim dpath as folderitem = SpecialFolder.Desktop.Child("test.jpg")
dim opath as folderitem = dpath.parent.Child("output.jpg")

// open source
dim imageSource as new cgimagesourcembs(dpath)

// read image
dim img as cgimage = imageSource.createimageatindex(0)

// global properties
dim globalprop as dictionary = imageSource.properties
// per image properties
dim p as Dictionary = imageSource.PropertiesAtIndex(0)

dim imageDest as new CGImageDestinationMBS(opath,"public.jpeg",1)

'const orientation = 1 // top left
const orientation = 3 // bottom right

// set globals
imageDest.SetProperties(globalprop)

// now set new orientation
p.value(imageDest.kCGImageDestinationOrientation) = orientation
p.value(imageDest.kCGImageDestinationMergeMetadata) = true

// change tiff dictionary, if present
dim dTIFF as Dictionary = p.lookup(imageSource.kCGImagePropertyTIFFDictionary, nil)
if dTIFF <> nil then
dTIFF.value(imageSource.kCGImagePropertyTIFFOrientation) = orientation
end if

// change iptc dictionary, if present
dim dIPTC as Dictionary = p.lookup(imageSource.kCGImagePropertyIPTCDictionary, nil)
if dIPTC <> nil then
```

```
dIPTC.value(imageSource.kCGImagePropertyIPTCImageOrientation) = orientation  
end if
```

```
// write out image  
imageDest.AddImage(img,p)  
call imageDest.Finalize
```

Notes:

A dictionary of key-value pairs for an image that uses International Press Telecommunications Council (IPTC) metadata.

IPTC constants are metadata elements of the Information Interchange Model (IIM) used to provide information about images. The IIM was developed by the Newspaper Association of America (NAA) and the International Press Telecommunications Council (IPTC).

4.21.183 kCGImagePropertyIPTCDigitalCreationDate as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The digital creation date.

4.21.184 kCGImagePropertyIPTCDigitalCreationTime as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The digital creation time.

4.21.185 kCGImagePropertyIPTCEditorialUpdate as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: An editorial update.

4.21.186 kCGImagePropertyIPTCEditStatus as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The edit status.

4.21.187 kCGImagePropertyIPTCExpirationDate as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The expiration date.

4.21.188 kCGImagePropertyIPTCExpirationTime as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The expiration time.

4.21.189 kCGImagePropertyIPTCFixtureIdentifier as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: A fixture identifier.

4.21.190 kCGImagePropertyIPTCHeadline as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The headline.

4.21.191 kCGImagePropertyIPTCImageOrientation as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The image orientation.

4.21.192 kCGImagePropertyIPTCImageType as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The image type.

4.21.193 `kCGImagePropertyIPTCKeywords` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: Keywords

4.21.194 `kCGImagePropertyIPTCLanguageIdentifier` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The language identifier.

4.21.195 `kCGImagePropertyIPTCObjectAttributeReference` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The object attribute.

4.21.196 `kCGImagePropertyIPTCObjectCycle` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The object cycle.

4.21.197 `kCGImagePropertyIPTCObjectName` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The object name.

4.21.198 `kCGImagePropertyIPTCObjectTypeReference` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The object type.

4.21.199 kCGImagePropertyIPTCOriginalTransmissionReference as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The original transmission reference.

4.21.200 kCGImagePropertyIPTCOriginatingProgram as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The originating program.

4.21.201 kCGImagePropertyIPTCProgramVersion as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The program version.

4.21.202 kCGImagePropertyIPTCProvinceState as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The province or state.

4.21.203 kCGImagePropertyIPTCReferenceDate as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The reference date.

4.21.204 kCGImagePropertyIPTCReferenceNumber as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The reference number.

4.21.205 `kCGImagePropertyIPTCReferenceService` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The reference service.

4.21.206 `kCGImagePropertyIPTCReleaseDate` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The release date.

4.21.207 `kCGImagePropertyIPTCReleaseTime` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The release time.

4.21.208 `kCGImagePropertyIPTCRightsUsageTerms` as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the key names for the properties.

Notes:

The usage rights for the image.
Available in OS X v10.6 and later.

4.21.209 `kCGImagePropertyIPTCScene` as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the key names for the properties.

Notes:

The scene codes for the image; a scene code is a six-digit string.
Available in OS X v10.6 and later.

4.21.210 kCGImagePropertyIPTCSource as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The source.

4.21.211 kCGImagePropertyIPTCSpecialInstructions as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: Special instructions.

4.21.212 kCGImagePropertyIPTCStarRating as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The star rating.

4.21.213 kCGImagePropertyIPTCSubjectReference as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The subject.

4.21.214 kCGImagePropertyIPTCSubLocation as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The sublocation.

4.21.215 kCGImagePropertyIPTCSupplementalCategory as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: A supplemental category.

4.21.216 `kCGImagePropertyIPTCTimeCreated` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The time created.

4.21.217 `kCGImagePropertyIPTCUrgency` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The urgency level.

4.21.218 `kCGImagePropertyIPTCWriterEditor` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses International Press Telecommunications Council (IPTC) metadata.

Notes: The writer or editor.

4.21.219 `kCGImagePropertyIsFloat` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes: Whether or not the image contains floating-point pixel samples. The value of this key is `kCFBooleanTrue` if the image contains them.

4.21.220 `kCGImagePropertyIsIndexed` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes: Whether or not the image contains indexed pixel samples (sometimes called paletted samples). The value of this key is `kCFBooleanTrue` if the image contains them.

4.21.221 `kCGImagePropertyJFIFDensityUnit` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses JPEG File Interchange Format (JFIF).

Notes: The density unit.

4.21.222 kCGImagePropertyJFIFDictionary as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes: A dictionary of key-value pairs for an image that uses JPEG File Interchange Format (JFIF).

4.21.223 kCGImagePropertyJFIFIsProgressive as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses JPEG File Interchange Format (JFIF).

Notes: Whether or not the image is progressive.

4.21.224 kCGImagePropertyJFIFVersion as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses JPEG File Interchange Format (JFIF).

Notes: The version.

4.21.225 kCGImagePropertyJFIFXDensity as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses JPEG File Interchange Format (JFIF).

Notes: The x density.

4.21.226 kCGImagePropertyJFIFYDensity as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses JPEG File Interchange Format (JFIF).

Notes: The y density.

4.21.227 kCGImagePropertyMakerCanonAspectRatioInfo as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes: The image aspect ratio.

4.21.228 kCGImagePropertyMakerCanonCameraSerialNumber as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes: The camera serial number.

4.21.229 kCGImagePropertyMakerCanonContinuousDrive as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes: The presence of a continuous drive.

4.21.230 kCGImagePropertyMakerCanonDictionary as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes:

A dictionary of key-value pairs for an image from a Canon camera.
Available in Mac OS X v10.5 and later.

4.21.231 kCGImagePropertyMakerCanonFirmware as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes: The firmware version.

4.21.232 kCGImagePropertyMakerCanonFlashExposureComp as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes: The flash exposure compensation.

4.21.233 kCGImagePropertyMakerCanonImageSerialNumber as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes: The image serial number.

4.21.234 kCGImagePropertyMakerCanonLensModel as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes: The lens model.

4.21.235 kCGImagePropertyMakerCanonOwnerName as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes: The owner name.

4.21.236 kCGImagePropertyMakerFujiDictionary as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes:

A dictionary of key-value pairs for an image from a Fuji camera.
Available in Mac OS X v10.5 and later.

4.21.237 kCGImagePropertyMakerMinoltaDictionary as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes:

A dictionary of key-value pairs for an image from a Minolta camera.
Available in Mac OS X v10.5 and later.

4.21.238 kCGImagePropertyMakerNikonCameraSerialNumber as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image from a Nikon camera.

Notes: The camera serial number.

4.21.239 `kCGImagePropertyMakerNikonColorMode` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image from a Nikon camera.

Notes: The color mode.

4.21.240 `kCGImagePropertyMakerNikonDictionary` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes:

A dictionary of key-value pairs for an image from a Nikon camera.
Available in Mac OS X v10.5 and later.

4.21.241 `kCGImagePropertyMakerNikonDigitalZoom` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image from a Nikon camera.

Notes: The digital zoom setting.

4.21.242 `kCGImagePropertyMakerNikonFlashExposureComp` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image from a Nikon camera.

Notes: The flash exposure compensation.

4.21.243 `kCGImagePropertyMakerNikonFlashSetting` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image from a Nikon camera.

Notes: The flash setting.

4.21.244 `kCGImagePropertyMakerNikonFocusDistance` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image from a Nikon camera.

Notes: The focus distance.

4.21.245 kCGImagePropertyMakerNikonFocusMode as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image from a Nikon camera.

Notes: The focus mode.

4.21.246 kCGImagePropertyMakerNikonImageAdjustment as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image from a Nikon camera.

Notes: Image adjustment setting.

4.21.247 kCGImagePropertyMakerNikonISOSelection as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image from a Nikon camera.

Notes: The ISO selection.

4.21.248 kCGImagePropertyMakerNikonISOSetting as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image from a Nikon camera.

Notes: The ISO setting.

4.21.249 kCGImagePropertyMakerNikonLensAdapter as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image from a Nikon camera.

Notes: The lens adapter.

4.21.250 kCGImagePropertyMakerNikonLensInfo as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image from a Nikon camera.

Notes: Lens information.

4.21.251 `kCGImagePropertyMakerNikonLensType` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image from a Nikon camera.

Notes: The lens type.

4.21.252 `kCGImagePropertyMakerNikonQuality` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image from a Nikon camera.

Notes: The quality setting.

4.21.253 `kCGImagePropertyMakerNikonSharpenMode` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image from a Nikon camera.

Notes: The sharpening mode.

4.21.254 `kCGImagePropertyMakerNikonShootingMode` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image from a Nikon camera.

Notes: The shooting mode.

4.21.255 `kCGImagePropertyMakerNikonShutterCount` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image from a Nikon camera.

Notes: The shutter count.

4.21.256 `kCGImagePropertyMakerNikonWhiteBalanceMode` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image from a Nikon camera.

Notes: The white balance mode.

4.21.257 kCGImagePropertyMakerOlympusDictionary as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes:

A dictionary of key-value pairs for an image from a Olympus camera.
Available in Mac OS X v10.5 and later.

4.21.258 kCGImagePropertyMakerPentaxDictionary as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes:

A dictionary of key-value pairs for an image from a Pentax camera.
Available in Mac OS X v10.5 and later.

4.21.259 kCGImagePropertyOrientation as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes:

The intended display orientation of the image. If present, this key is a CFNumber value with the same value as defined by the TIFF and EXIF specifications. The value specifies where the origin (0,0) of the image is located, as shown in Table 1. If not present, a value of 1 is assumed.

Value	Location of the origin of the image
1	Top, left
2	Top, right
3	Bottom, right
4	Bottom, left
5	Left, top
6	Right, top
7	Right, bottom
8	Left, bottom

4.21.260 kCGImagePropertyPixelHeight as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Example:

```
// open an image file
dim path as string = "/Library/Desktop Pictures/Galaxy.jpg"
dim f as FolderItem = GetFolderItem(path, FolderItem.PathTypeNative)
Dim c As New CGImageSourceMBS(f)

// properties for first image
dim p as Dictionary = c.PropertiesAtIndex(0)
dim w as Integer = p.Value(c.kCGImagePropertyPixelWidth)
dim h as Integer = p.Value(c.kCGImagePropertyPixelHeight)

// show size
MsgBox str(w)+" x "+str(h)
```

Notes: The number of pixels in the y dimension. If present, this key is a CFNumber value.

4.21.261 kCGImagePropertyPixelWidth as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Example:

```
// open an image file
dim path as string = "/Library/Desktop Pictures/Galaxy.jpg"
dim f as FolderItem = GetFolderItem(path, FolderItem.PathTypeNative)
Dim c As New CGImageSourceMBS(f)

// properties for first image
dim p as Dictionary = c.PropertiesAtIndex(0)
dim w as Integer = p.Value(c.kCGImagePropertyPixelWidth)
dim h as Integer = p.Value(c.kCGImagePropertyPixelHeight)

// show size
MsgBox str(w)+" x "+str(h)
```

Notes: The number of pixels in the x dimension. If present, this key is a CFNumber value.

4.21.262 kCGImagePropertyPNGAuthor as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the key names for the properties.

Notes:

The content is a string that identifies the author of the image.
Available in OS X v10.7 and later.

4.21.263 kCGImagePropertyPNGChromaticities as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Portable Network Graphics (PNG) format.

Notes: The chromaticities.

4.21.264 kCGImagePropertyPNGCopyright as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the key names for the properties.

Notes:

The content is a string that identifies the copyright of the image.
Available in OS X v10.7 and later.

4.21.265 kCGImagePropertyPNGCreationTime as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the key names for the properties.

Notes:

The content is a string that identifies the date and time the image was created.
Available in OS X v10.7 and later.

4.21.266 kCGImagePropertyPNGDescription as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the key names for the properties.

Notes:

The content is a string that describes the image.
Available in OS X v10.7 and later.

4.21.267 kCGImagePropertyPNGDictionary as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes: A dictionary of key-value pairs for an image that uses Portable Network Graphics (PNG) format.

4.21.268 kCGImagePropertyPNGGamma as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Portable Network Graphics (PNG) format.

Notes: The gamma value.

4.21.269 kCGImagePropertyPNGInterlaceType as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Portable Network Graphics (PNG) format.

Notes: The interlace type.

4.21.270 kCGImagePropertyPNGModificationTime as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the key names for the properties.

Notes:

The content is a string that identifies the last date and time the image was modified.
Available in OS X v10.7 and later.

4.21.271 kCGImagePropertyPNGSoftware as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the key names for the properties.

Notes:

The content is a string that identifies the software used to create the image.
Available in OS X v10.7 and later.

4.21.272 kCGImagePropertyPNGsRGBIntent as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Portable Network Graphics (PNG) format.

Notes: The sRGB intent.

4.21.273 kCGImagePropertyPNGTitle as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the key names for the properties.

Notes:

The content is a string that holds the image's title.

Available in OS X v10.7 and later.

4.21.274 kCGImagePropertyPNGXPixelsPerMeter as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Portable Network Graphics (PNG) format.

Notes: The number of x pixels per meter.

4.21.275 kCGImagePropertyPNGYPixelsPerMeter as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Portable Network Graphics (PNG) format.

Notes: The number of y pixels per meter.

4.21.276 kCGImagePropertyProfileName as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes: The name of the optional ICC profile embedded in the image, if known. If present, the value of this key is a CFStringRef.

4.21.277 kCGImagePropertyRawDictionary as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Notes: A dictionary of key-value pairs for an image that contains minimally processed, or raw, data.

4.21.278 `kCGImagePropertyTIFFArtist` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Tagged Image File Format (TIFF).

Notes: The artist.

4.21.279 `kCGImagePropertyTIFFCompression` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Tagged Image File Format (TIFF).

Notes: The compression scheme used on the image data.

4.21.280 `kCGImagePropertyTIFFCopyright` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Tagged Image File Format (TIFF).

Notes: Copyright information.

4.21.281 `kCGImagePropertyTIFFDateTime` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Tagged Image File Format (TIFF).

Notes: The date and time.

4.21.282 `kCGImagePropertyTIFFDictionary` as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the properties dictionary.

Example:

```
// Change rotation in an image file

// files
dim dpath as folderitem = SpecialFolder.Desktop.Child("test.jpg")
dim opath as folderitem = dpath.parent.Child("output.jpg")
```



```

// open source
dim imageSource as new cgimagesourcembs(dpath)

// read image
dim img as cgimagembs = imageSource.createimageatindex(0)

// global properties
dim globalprop as dictionary = imageSource.properties
// per image properties
dim p as Dictionary = imageSource.PropertiesAtIndex(0)

dim imageDest as new CGImageDestinationMBS(opath,"public.jpeg",1)

'const orientation = 1 // top left
const orientation = 3 // bottom right

// set globals
imageDest.SetProperties(globalprop)

// now set new orientation
p.value(imageDest.kCGImageDestinationOrientation) = orientation
p.value(imageDest.kCGImageDestinationMergeMetadata) = true

// change tiff dictionary, if present
dim dTIFF as Dictionary = p.lookup(imageSource.kCGImagePropertyTIFFDictionary, nil)
if dTIFF <>nil then
dTIFF.value(imageSource.kCGImagePropertyTIFFOrientation) = orientation
end if

// change iptc dictionary, if present
dim dIPTC as Dictionary = p.lookup(imageSource.kCGImagePropertyIPTCDictionary, nil)
if dIPTC <>nil then
dIPTC.value(imageSource.kCGImagePropertyIPTCImageOrientation) = orientation
end if

// write out image
imageDest.AddImage(img,p)
call imageDest.Finalize

```

Notes: A dictionary of key-value pairs for an image that uses Tagged Image File Format (TIFF).

4.21.283 kCGImagePropertyTIFFDocumentName as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Tagged Image File Format (TIFF).

Notes: The document name.

4.21.284 kCGImagePropertyTIFFHostComputer as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Tagged Image File Format (TIFF).

Notes: The computer or operation system used when the image was created.

4.21.285 kCGImagePropertyTIFFImageDescription as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Tagged Image File Format (TIFF).

Notes: The image description.

4.21.286 kCGImagePropertyTIFFMake as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Tagged Image File Format (TIFF).

Notes: The camera or input device make.

4.21.287 kCGImagePropertyTIFFModel as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Tagged Image File Format (TIFF).

Notes: A camera or input device model.

4.21.288 kCGImagePropertyTIFFOrientation as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Tagged Image File Format (TIFF).

Example:

```
// Change rotation in an image file
```

```

// files
dim dpath as folderitem = SpecialFolder.Desktop.Child("test.jpg")
dim opath as folderitem = dpath.parent.Child("output.jpg")

// open source
dim imageSource as new cgimagesourcembs(dpath)

// read image
dim img as cgimagembs = imageSource.createimageatindex(0)

// global properties
dim globalprop as dictionary = imageSource.properties
// per image properties
dim p as Dictionary = imageSource.PropertiesAtIndex(0)

dim imageDest as new CGImageDestinationMBS(opath,"public.jpeg",1)

'const orientation = 1 // top left
const orientation = 3 // bottom right

// set globals
imageDest.SetProperties(globalprop)

// now set new orientation
p.value(imageDest.kCGImageDestinationOrientation) = orientation
p.value(imageDest.kCGImageDestinationMergeMetadata) = true

// change tiff dictionary, if present
dim dTIFF as Dictionary = p.lookup(imageSource.kCGImagePropertyTIFFDictionary, nil)
if dTIFF <> nil then
dTIFF.value(imageSource.kCGImagePropertyTIFFOrientation) = orientation
end if

// change iptc dictionary, if present
dim dIPTC as Dictionary = p.lookup(imageSource.kCGImagePropertyIPTCDictionary, nil)
if dIPTC <> nil then
dIPTC.value(imageSource.kCGImagePropertyIPTCImageOrientation) = orientation
end if

// write out image
imageDest.AddImage(img,p)
call imageDest.Finalize

```

Notes: The image orientation.

4.21.289 kCGImagePropertyTIFFPhotometricInterpretation as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Tagged Image File Format (TIFF).

Notes: The color space of the image data.

4.21.290 kCGImagePropertyTIFFPrimaryChromaticities as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Tagged Image File Format (TIFF).

Notes: The chromaticities of the primaries of the image.

4.21.291 kCGImagePropertyTIFFResolutionUnit as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Tagged Image File Format (TIFF).

Notes: The units of resolution.

4.21.292 kCGImagePropertyTIFFSoftware as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Tagged Image File Format (TIFF).

Notes: The name and version of the software used for image creation.

4.21.293 kCGImagePropertyTIFFTransferFunction as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Tagged Image File Format (TIFF).

Notes: The transfer function, in tabular format, used to map pixel components from a nonlinear form into a linear form.

4.21.294 kCGImagePropertyTIFFWhitePoint as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Tagged Image File Format (TIFF).

Notes: The white point.

4.21.295 kCGImagePropertyTIFFXResolution as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Tagged Image File Format (TIFF).

Notes: The number of pixels per resolution unit in the image width direction.

4.21.296 kCGImagePropertyTIFFYResolution as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Keys for an image that uses Tagged Image File Format (TIFF).

Notes: The number of pixels per resolution unit in the image height direction.

4.21.297 kCGImageSourceCreateThumbnailFromImageAlways as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the key names for the properties.

Notes: Specifies whether a thumbnail should be created from the full image even if a thumbnail is present in the image source file. The thumbnail will be created from the full image, subject to the limit specified by `kCGImageSourceThumbnailMaxPixelSize`—if a maximum pixel size isn't specified, then the thumbnail will be the size of the full image, which probably isn't what you want. The value of this key must be a Boolean; the default value of this key is `False`.

4.21.298 kCGImageSourceCreateThumbnailFromImageIfAbsent as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the key names for the properties.

Notes: Specifies whether a thumbnail should be automatically created for an image if a thumbnail isn't present in the image source file. The thumbnail will be created from the full image, subject to the limit specified by `kCGImageSourceThumbnailMaxPixelSize`—if a maximum pixel size isn't specified, then the thumbnail will be the size of the full image, which probably isn't what you want. The value of this key must be a Boolean; the default value of this key is `False`.

4.21.299 kCGImageSourceCreateThumbnailWithTransform as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the key names for the properties.

Notes: Specifies whether the thumbnail should be rotated and scaled according to the orientation and pixel aspect ratio of the full image. The value of this key must be a Boolean; the default value of this key is `False`.

4.21.300 `kCGImageSourceShouldAllowFloat` as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the key names for the properties.

Notes: Specifies whether the image should be returned as a floating point CGImage if supported by the file format. Extended range floating point CGImage may require additional processing to render pleasingly. The value of this key must be a Boolean; the default value is False.

4.21.301 `kCGImageSourceShouldCache` as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the key names for the properties.

Notes: Specifies whether the image should be cached in a decoded form. The value of this key must be a Boolean; the default value is False.

4.21.302 `kCGImageSourceShouldCacheImmediately` as string

Plugin Version: 17.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for the options dictionary.

Notes:

Specifies whether image decoding and caching should happen at image creation time.

The value of this key must be a boolean. The default value is `kCFBooleanFalse` (image decoding will happen at rendering time).

4.21.303 `kCGImageSourceThumbnailMaxPixelSize` as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the key names for the properties.

Notes: Specifies the maximum width and height in pixels of a thumbnail. If this key is not specified, the width and height of a thumbnail is not limited and thumbnails may be as big as the image itself. If present, this value of this key must be an Integer.

4.21.304 `kCGImageSourceTypeIdentifierHint` as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of the key names for the properties.

Notes: Specifies the "best guess" of the type identifier for the format of the image source file. If specified, the value of this key must be a String. For more information about type identifiers, see "UTType.h" in the

Application Services framework.

4.21.305 Properties(options as dictionary = nil) as dictionary

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the properties of the image source.

Example:

```
dim inputfile as FolderItem = SpecialFolder.Desktop.Child("test.jpg")

// reading the picture
dim c as new CGImageSourceMBS(inputfile)
dim img as CGImageMBS = c.CreateImageAtIndex(0)
dim propertiesGlobal as Dictionary = c.Properties
dim propertiesImage as Dictionary = c.PropertiesAtIndex(0)

dim outputFile as FolderItem = SpecialFolder.Desktop.Child("output.jpg")
dim d as new CGImageDestinationMBS(outputFile, "public.jpeg", 1)

// writing the picture and include metadata
d.SetProperties(propertiesGlobal)
d.AddImage(img, propertiesImage)
if d.FinalizeMT then
outputFile.Launch
else
MsgBox "Failed to write jpeg."
end if
```

Notes:

options: A dictionary you can use to request additional options.

Returns a dictionary that contains the properties associated with the image source container.

These properties apply to the container in general but not necessarily to any individual image contained in the image source.

Available in Mac OS X version 10.4 and later.

4.21.306 PropertiesAtIndex(index as Integer, options as dictionary = nil) as dictionary

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the properties of the image at a specified location in an image source.

Example:

```

dim file as FolderItem = SpecialFolder.Desktop.Child("test.jpg")
dim c as new CGImageSourceMBS(file)

dim d as Dictionary = c.PropertiesAtIndex(0)

dim e as Dictionary
e=d.Value(c.kCGImagePropertyExifDictionary)

if e<>Nil then
dim keys(-1) as Variant = e.Keys
dim lines(-1) as string

for each key as string in keys
lines.Append key+": "+e.Value(key)
next

MsgBox "Exif: "+EndOfLine+EndOfLine+Join(lines,EndOfLine)
end if

e=d.Value(c.kCGImagePropertyGPSDictionary)

if e<>Nil then
dim keys(-1) as Variant = e.Keys
dim lines(-1) as string

for each key as string in keys
lines.Append key+": "+e.Value(key)
next

MsgBox "GPS: "+EndOfLine+EndOfLine+Join(lines,EndOfLine)
end if

```

Notes:

index: The index of the image whose properties you want to obtain. The index is zero-based.

options: A dictionary you can use to request additional options.

Returns a dictionary that contains the properties associated with the image.

Available in Mac OS X version 10.4 and later.

4.21.307 PropertiesAtIndexCF(index as Integer, options as Variant = nil) as Variant

Plugin Version: 13.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the properties of the image at a specified location in an image source.

Notes:

index: The index of the image whose properties you want to obtain. The index is zero-based.
options: A dictionary or CFDictionaryMBS you can use to request additional options.
Returns a CFDictionaryMBS that contains the properties associated with the image.
Available in Mac OS X version 10.4 and later.

4.21.308 PropertiesCF(options as Variant = nil) as Variant

Plugin Version: 13.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the properties of the image source.

Notes:

options: A dictionary or CFDictionaryMBS you can use to request additional options.
Returns a CFDictionaryMBS that contains the properties associated with the image source container.
These properties apply to the container in general but not necessarily to any individual image contained in the image source.
Available in Mac OS X version 10.4 and later.

4.21.309 StatusAtIndex(index as Integer) as Integer

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the current status of an image that is at a specified location in an image source.

Notes:

index: The index of the image whose status you want to obtain. The index is zero-based.

Returns the current status of the image.

The status is particularly informative for incremental image sources, but may also be used by clients that provide non-incremental data.

Available in Mac OS X version 10.4 and later.

4.21.310 TypeIdentifiers as string()

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array of uniform type identifiers (UTIs) that are supported for image sources.

Example:

```
dim s(-1) as string = CGImageSourceMBS.TypeIdentifiers
```

MsgBox Join(s,EndOfLine)

```
// shows:
//
// public.png
// public.jpeg
// com.compuserve.gif
// public.jpeg-2000
// com.adobe.raw-image
// com.leafamerica.raw-image
// com.hasselblad.fff-raw-image
// com.hasselblad.3fr-raw-image
// com.nikon.raw-image
// com.nikon.nrw-raw-image
// com.pentax.raw-image
// com.sony.sr2-raw-image
// com.sony.arw-raw-image
// com.epson.raw-image
// com.kodak.raw-image
// public.tiff
// com.apple.icns
// com.canon.tif-raw-image
// com.canon.cr2-raw-image
// com.canon.crw-raw-image
// com.fuji.raw-image
// com.panasonic.raw-image
// com.panasonic.rw2-raw-image
// com.panasonic.rwl-raw-image
// com.leica.pwl-raw-image
// com.konicaminolta.raw-image
// com.olympus.raw-image
// com.olympus.raw-image
// com.sony.raw-image
// com.adobe.photoshop-image
// com.adobe.pdf
// com.adobe.illustrator.ai-image
// com.microsoft.ico
// com.microsoft.bmp
// public.xbitmap-image
// com.microsoft.cur
// com.apple.pict
// com.truevision.tga-image
// com.sgi.sgi-image
// com.apple.quicktime-image
// com.kodak.flashpix-image
// com.apple.macpaint-image
// com.ilm.openexr-image
// public.radiance
```

Notes:

Returns an array of the UTIs that are supported for image sources.

See Uniform Type Identifiers Overview for a list of system-declared and third-party UTIs.

Available in Mac OS X version 10.4 and later.

4.21.311 UpdateData(data as string, final as boolean)

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Updates an incremental image source with new data.

Notes:

data: The data to add to the image source. Each time you call the function UpdateData, the data parameter must contain all of the image file data accumulated so far.

final: A value that specifies whether the data is the final set. Pass true if it is, false otherwise.

Available in Mac OS X version 10.4 and later.

4.21.312 Properties**4.21.313 Count as Integer**

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the number of images (not including thumbnails) in the image source.

Example:

```
dim file as FolderItem = SpecialFolder.Desktop.Child("test.jpg")
dim c as new CGImageSourceMBS(file)
```

```
MsgBox str(c.Count)+" images in this file."
```

Notes:

The number of images. If the image source is a multilayered PSD file, the function returns 1.

This function does not extract the layers of a PSD file.

Available in Mac OS X version 10.4 and later.
(Read only property)

4.21.314 Handle as Integer

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The internal reference.

Notes: (Read and Write property)

4.21.315 Status as Integer

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return the status of an image source.

Notes:

Returns the current status of the image source.

The status is particularly informative for incremental image sources, but may also be used by clients that provide non-incremental data.

Available in Mac OS X version 10.4 and later.
(Read only property)

4.21.316 Type as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the uniform type identifier of the source container.

Notes:

The uniform type identifier of the image.

The uniform type identifier (UTI) of the source container can be different from the type of the images in the container. For example, the .icns format supports embedded JPEG2000. The type of the source container is "com.apple.icns" but type of the images is JPEG2000.

Available in Mac OS X version 10.4 and later.
(Read only property)

4.21.317 Constants

4.21.318 kCGImageStatusComplete = 0

Plugin Version: 9.5. **Function:** One of the status constants.

Notes: The operation is complete.

4.21.319 kCGImageStatusIncomplete = -1

Plugin Version: 9.5. **Function:** One of the status constants.

Notes: The operation is not complete.

4.21.320 kCGImageStatusInvalidData = -4

Plugin Version: 9.5. **Function:** One of the status constants.

Notes: The data is not valid.

4.21.321 kCGImageStatusReadingHeader = -2

Plugin Version: 9.5. **Function:** One of the status constants.

Notes: In the process of reading the header.

4.21.322 kCGImageStatusUnexpectedEOF = -5

Plugin Version: 9.5. **Function:** One of the status constants.

Notes: The end of the file was encountered unexpectedly.

4.21.323 kCGImageStatusUnknownType = -3

Plugin Version: 9.5. **Function:** One of the status constants.

Notes: The image is an unknown type.

4.22 class CGLayerMBS

4.22.1 class CGLayerMBS

Plugin Version: 12.2, Console & Web: Yes, Mac: No, Win: Yes, Linux: Yes. **Function:** The CoreGraphics layer class, similar to a template.

Notes:

CGLayer objects are useful for offscreen drawing and can be used in much the same way that a bitmap context can be used. In fact, a CGLayer object is a much better representation than a bitmap context.

Using CGLayer objects can improve performance, particularly when you need to capture a piece of drawing that you stamp repeatedly (using the same scale factor and orientation). Quartz can cache CGLayer objects to the video card, making drawing a CGLayer to a destination much faster than rendering the equivalent image constructed from a bitmap context.

A CGLayer object is created relative to a graphics context. Although layer uses this graphics context as a reference for initialization, you are not restricted to drawing the layer to this graphics context. You can draw the layer to other graphics contexts, although any limitations of the original context are imposed. For example, if you create a CGLayer object using a bitmap context, the layer is rendered as a bitmap when drawn to any other graphics context.

You can use a CGLayer when you want to apply a shadow to a group of objects (such as a group of circles) rather than to individual objects.

Use these layers in your code whenever you can, especially when:

- You need to reuse a filled or stroked shape.
- You are building a scene and at least some of it can be reused. Put the reusable drawing in its own CGLayer.

Any CG object that you draw repeatedly including CGPath, CGShading, and CGPDFPage benefit from improved performance if you draw it to a CGLayer object.

see also

https://developer.apple.com/library/mac/#documentation/graphicsimaging/conceptual/drawingwithquartz2d/dq_layers/d

4.22.2 Methods

4.22.3 Constructor(context as CGContextMBS, size as CGSizeMBS, auxiliary-Info as dictionary = nil)

Plugin Version: 12.2, Console & Web: Yes, Mac: No, Win: Yes, Linux: Yes. **Function:** Creates a CGLayer object that is associated with a graphics context.

Notes:

context: The graphics context you want to create the layer relative to. The layer uses this graphics context as a reference for initialization.

size: The size, in default user space units, of the layer relative to the graphics context.

auxiliaryInfo: Reserved for future use. Pass nil.

On Success the handle property is not nil.

After you create a CGLayer object, you should reuse it whenever you can to facilitate the Quartz caching strategy. Quartz caches any objects that are reused, including CGLayer objects. Objects that are reused frequently remain in the cache. In contrast, objects that are used once in a while may be moved in and out of the cache according to their frequency of use. If you don't reuse CGLayer objects, Quartz won't cache them. This means that you lose an opportunity to improve the performance of your application.

Available in Mac OS X version 10.4 and later.

See also:

- 4.22.4 Constructor(context as CGContextMBS, width as Double, height as Double, auxiliaryInfo as dictionary = nil) 399

4.22.4 Constructor(context as CGContextMBS, width as Double, height as Double, auxiliaryInfo as dictionary = nil)

Plugin Version: 12.2, Console & Web: Yes, Mac: No, Win: Yes, Linux: Yes. **Function:** Creates a CGLayer object that is associated with a graphics context.

Notes:

context: The graphics context you want to create the layer relative to. The layer uses this graphics context as a reference for initialization.

width/height: The size, in default user space units, of the layer relative to the graphics context.

auxiliaryInfo: Reserved for future use. Pass nil.

On Success the handle property is not nil.

After you create a CGLayer object, you should reuse it whenever you can to facilitate the Quartz caching strategy. Quartz caches any objects that are reused, including CGLayer objects. Objects that are reused

frequently remain in the cache. In contrast, objects that are used once in a while may be moved in and out of the cache according to their frequency of use. If you don't reuse `CGLayer` objects, Quartz won't cache them. This means that you lose an opportunity to improve the performance of your application.

Available in Mac OS X version 10.4 and later.

See also:

- 4.22.3 `Constructor(context as CGContextMBS, size as CGSizeMBS, auxiliaryInfo as dictionary = nil)`
399

4.22.5 Context as `CGContextMBS`

Plugin Version: 12.2, Console & Web: Yes, Mac: No, Win: Yes, Linux: Yes. **Function:** Returns the graphics context associated with a `CGLayer` object.

Notes: The context that's returned is the context for the layer itself, not the context that you specified when you created the layer.

4.22.6 Size as `CGSizeMBS`

Plugin Version: 12.2, Console & Web: Yes, Mac: No, Win: Yes, Linux: Yes. **Function:** Returns the width and height of a `CGLayer` object.

4.22.7 Properties

4.22.8 Handle as Integer

Plugin Version: 12.2, Console & Web: Yes, Mac: No, Win: Yes, Linux: Yes. **Function:** Internal object reference.

Notes: (Read and Write property)

4.23 class CGMutablePathMBS

4.23.1 class CGMutablePathMBS

Plugin Version: 7.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a Core-Graphics mutable path.

Notes: Subclass of the CGPathMBS class.

4.23.2 Methods

4.23.3 AddArc(transform as CGAffineTransformMBS, x as Double, y as Double, radius as Double, startAngle as Double, endAngle as Double, clockwise as boolean)

Plugin Version: 7.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Add an arc of a circle to path, possibly preceded by a straight line segment.

Notes: The arc is approximated by a sequence of cubic Bezier curves. (x, y) is the center of the arc; radius is its radius; startAngle is the angle to the first endpoint of the arc; endAngle is the angle to the second endpoint of the arc; and clockwise is true if the arc is to be drawn clockwise, false otherwise. startAngle and endAngle are measured in radians. If m is not nil, then the constructed Bezier curves representing the arc will be transformed by the matrix before they are added to path.

4.23.4 AddArcToPoint(transform as CGAffineTransformMBS, x as Double, y as Double, x2 as Double, y2 as Double, radius as Double)

Plugin Version: 7.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Add an arc of a circle to path, possibly preceded by a straight line segment.

Notes: The arc is approximated by a sequence of cubic Bezier curves. (x, y) is the center of the arc; radius is its radius; startAngle is the angle to the first endpoint of the arc; endAngle is the angle to the second endpoint of the arc; and clockwise is true if the arc is to be drawn clockwise, false otherwise. startAngle and endAngle are measured in radians. If m is not nil, then the constructed Bezier curves representing the arc will be transformed by the matrix before they are added to path.

4.23.5 AddCurveToPoint(transform as CGAffineTransformMBS, cp1x as Double, cp1y as Double, cp2x as Double, cp2y as Double, x as Double, y as Double)

Plugin Version: 7.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Append a cubic Bezier curve from the current point to (x,y) with control points (cp1x, cp1y) and (cp2x, cp2y) in path and move the current point to (x, y).

Notes: If transform is not nil, then transform all points by the matrix first.

4.23.6 AddEllipseInRect(transform as CGAffineTransformMBS, r as CRectMBS)

Plugin Version: 7.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Add an ellipse (an oval) inside rect to path.

Notes: The ellipse is approximated by a sequence of Bezier curves. The center of the ellipse is the midpoint of rect. If rect is square, then the ellipse will be circular with radius equal to one-half the width (equivalently, one-half the height) of rect. If rect is rectangular, then the major- and minor-axes will be the width and height of rect. The ellipse forms a complete subpath of path — that is, it begins with a "move to" and ends with a "close subpath" — oriented in the clockwise direction. If transform is not nil, then the constructed Bezier curves representing the ellipse will be transformed by m before they are added to path.

4.23.7 AddLineToPoint(transform as CGAffineTransformMBS, x as Double, y as Double)

Plugin Version: 7.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Append a straight line segment from the current point to (x, y) in the path and move the current point to (x, y).

Notes: If transform is not nil, then transform (x, y) by the matrix first.

4.23.8 AddPath(transform as CGAffineTransformMBS, path as CGPathMBS)

Plugin Version: 7.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Add a path to the path.

Notes: If m is not nil, then the points in the new path will be transformed by the matrix before they are added to path1.

4.23.9 AddQuadCurveToPoint(transform as CGAffineTransformMBS, cpx as Double, cpy as Double, x as Double, y as Double)

Plugin Version: 7.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Append a quadratic curve from the current point to (x, y) with control point (cpx, cpy) in path and move the current point to (x, y).

Notes: If transform is not nil, then transform all points by the matrix first.

4.23.10 AddRect(transform as CGAffineTransformMBS, r as CGRectMBS)

Plugin Version: 7.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Add rect to path.
Notes: If transform is not nil, then transform the rectangle by the matrix first.

4.23.11 CloseSubpath

Plugin Version: 7.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Append a line from the current point to the starting point of the current subpath of path and end the subpath.

4.23.12 Constructor

Plugin Version: 7.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Create a mutable path.

4.23.13 ContainsPoint(transform as CGAffineTransformMBS, point as CGPointMBS, eoFill as boolean) as boolean

Plugin Version: 7.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return true if point is contained in path; false otherwise.

Notes: A point is contained in a path if it is inside the painted region when the path is filled; if eoFill is true, then the even-odd fill rule is used to evaluate the painted region of the path, otherwise, the winding-number fill rule is used. If m is not nil, then the point is transformed by m before determining whether the path contains it.

4.23.14 MoveToPoint(transform as CGAffineTransformMBS, x as Double, y as Double)

Plugin Version: 7.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Move the current point to (x, y) in path and begin a new subpath.

Notes: If transform is not nil, then transform (x, y) by the matrix first.

4.24 class CGPathElementMBS

4.24.1 class CGPathElementMBS

Plugin Version: 15.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The class for CGPath elements.

Example:

```
dim m as new CGMutablePathMBS
```

```
m.MoveToPoint nil, 10, 10
```

```
m.AddLineToPoint nil, 20, 30
```

```
dim e() as CGPathElementMBS = m.Elements
```

```
Break // see in debugger
```

4.24.2 Methods

4.24.3 Point(Index as Integer) as CGPointMBS

Plugin Version: 15.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns point with given index.

4.24.4 PointX(Index as Integer) as Double

Plugin Version: 15.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns point x with given index.

4.24.5 PointY(Index as Integer) as Double

Plugin Version: 15.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns point y with given index.

4.24.6 Properties

4.24.7 PointCount as Integer

Plugin Version: 15.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns number of points in this element.

Notes: (Read and Write property)

4.24.8 Type as Integer

Plugin Version: 15.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The type of this element.

Notes: (Read and Write property)

4.24.9 Constants

4.24.10 kTypeAddCurveToPoint = 3

Plugin Version: 15.1. **Function:** One of the type constants.

Notes: The path element that adds a cubic curve from the current point to the specified point. The element holds two control points and a destination point.

4.24.11 kTypeAddLineToPoint = 1

Plugin Version: 15.1. **Function:** One of the type constants.

Notes: The path element that adds a line from the current point to a new point. The element holds a single point for the destination.

4.24.12 kTypeAddQuadCurveToPoint = 2

Plugin Version: 15.1. **Function:** One of the type constants.

Notes: The path element that adds a quadratic curve from the current point to the specified point. The element holds a control point and a destination point.

4.24.13 kTypeCloseSubpath = 4

Plugin Version: 15.1. **Function:** One of the type constants.

Notes: The path element that closes and completes a subpath. The element does not contain any points.

4.24.14 kTypeMoveToPoint = 0

Plugin Version: 15.1. **Function:** One of the type constants.

Notes: The path element that starts a new subpath. The element holds a single point for the destination.

4.25 class CGPathMBS

4.25.1 class CGPathMBS

Plugin Version: 7.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a Core-Graphics path.

4.25.2 Methods

4.25.3 BoundingBox as CGRectMBS

Plugin Version: 7.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return the bounding box of path.

Notes: The bounding box is the smallest rectangle completely enclosing all points in the path, including control points for Bezier and quadratic curves. If the path is empty, then return (0,0,0).

4.25.4 Copy as CGPathMBS

Plugin Version: 7.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a copy of the path.

Notes: Returns nil on any error.

4.25.5 CurrentPoint as CGPointMBS

Plugin Version: 7.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return the current point of the current subpath of path.

Notes: If there is no current point, then return (0,0).

4.25.6 Elements as CGPathElementMBS()

Plugin Version: 15.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Queries all the elements in a CGPath.

Example:

```
dim m as new CGMutablePathMBS
```

```
m.MoveToPoint nil, 10, 10
```

```
m.AddLineToPoint nil, 20, 30
```

```
dim e() as CGPathElementMBS = m.Elements  
Break // see in debugger
```

4.25.7 EqualToPath(path as CGPathMBS) as boolean

Plugin Version: 7.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return true if the path self is equal to path; false otherwise.

Notes: Returns false if the path is nil.

4.25.8 IsEmpty as boolean

Plugin Version: 7.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return true if path contains no elements, false otherwise.

4.25.9 IsRect(byref rect as CCGRectMBS) as boolean

Plugin Version: 7.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return true if path represents a rectangle, false otherwise.

4.25.10 MutableCopy as CGMutablePathMBS

Plugin Version: 7.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Create a mutable copy of path.

Notes: Returns nil on any error.

4.25.11 Properties

4.25.12 Handle as Integer

Plugin Version: 7.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The handle to the internal used object.

Notes: (Read and Write property)

4.26 class CGPDFArrayMBS

4.26.1 class CGPDFArrayMBS

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a pdf array.

4.26.2 Methods

4.26.3 ArrayValue(index as Integer, byref value as CGPDFArrayMBS) as boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** If the object with the given index is a pdf array, this function will return it.

Notes: Returns true on success and false on failure.

4.26.4 BooleanValue(index as Integer, byref value as boolean) as boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** If the object with the given index is a boolean value, this function will return it.

Notes: Returns true on success and false on failure.

4.26.5 Count as Integer

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the count of items in this array.

4.26.6 DictionaryValue(index as Integer, byref value as CGPDFDictionaryMBS) as boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** If the object with the given index is a pdf dictionary, this function will return it.

Notes: Returns true on success and false on failure.

4.26.7 IntegerValue(index as Integer, byref value as Integer) as boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** If the object with the given index is an integer value, this function will return it.

Notes:

Returns true on success and false on failure.

Is function will return double and integer values. Conversion is done automatically.

4.26.8 NameValue(index as Integer, byref value as string) as boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** If the object with the given index is a name string, this function will return it.

Notes: Returns true on success and false on failure.

4.26.9 NullValue(index as Integer) as boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** If the object with the given index is a nil value, this function will return it.

Notes: Returns true on success and false on failure.

4.26.10 ObjectValue(index as Integer, byref value as CGPDFObjectMBS) as boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** If the object with the given index is a pdf object, this function will return it.

Notes: Returns true on success and false on failure.

4.26.11 SingleValue(index as Integer, byref value as Double) as boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** If the object with the given index is a floating point value, this function will return it.

Notes:

Returns true on success and false on failure.

Is function will return double and integer values. Conversion is done automatically.

4.26.12 StreamValue(index as Integer, byref value as CGPDFStreamMBS) as boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** If the object with the given index is a pdf stream, this function will return it.

Notes: Returns true on success and false on failure.

4.26.13 StringValue(index as Integer, byref value as CGPDFStringMBS) as boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** If the object with the given index is a pdf string, this function will return it.

Notes: Returns true on success and false on failure.

4.26.14 Properties

4.26.15 Document as CGPDFDocumentMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The document this PDF Array belongs to.

Notes: (Read only property)

4.26.16 Handle as Integer

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The handle of the pdf array.

Notes: (Read and Write property)

4.27 class CGPDFContextMBS

4.27.1 class CGPDFContextMBS

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A CoreGraphics context for PDF specific functions.

Example:

```
// create pdf
dim file as FolderItem = SpecialFolder.Desktop.Child("test.pdf")
dim r as new CGRectMBS(0,0,500,500)
dim c as CGContextMBS = file.NewCGPDFDocumentMBS(r, "My Title", "My Author", "My Creator")

if c<>Nil then

// create page
c.BeginPage r

// draw something
c.SetRGBFillColor(1.0, 0.0, 0.0, 1.0)
c.FillRect CGMakeRectMBS(100,100,100,100)

// close page
c.EndPage

// flush and show in PDF viewer
c = nil
file.Launch
end if
```

Notes:

This class defines functions to create and get information about a Quartz PDF context. A CGPDFContext object is a type of CGContext that is used for drawing PDF content. The functions in this reference operate only on Quartz PDF graphics contexts created using the functions CGPDFContextCreate or CGPDFContextCreateWithURL.

When you draw to the PDF context using CGContext functions the drawing operations are recorded in PDF format. The PDF commands that represent the drawing are written to the destination specified when you create the PDF graphics context.

Subclass of the CGContextMBS class.

4.27.2 Methods

4.27.3 AddDestinationAtPoint(name as string, x as Double, y as Double)

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Sets a destination to jump to when a point in the current page of a PDF graphics context is clicked.

Notes:

name: A destination name.

x/y: A location in the current page of the PDF graphics context.

Available in Mac OS X v10.4 and later.

4.27.4 BeginPage(pageInfo as dictionary)

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Begins a new page in a PDF graphics context.

Notes:

pageInfo: A dictionary that contains key-value pairs that define the page properties.

You must call the function EndPage to signal the end of the page.

Available in Mac OS X v10.4 and later.

4.27.5 Close

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Closes a PDF document.

Notes: After closing the context, all pending data is written to the context destination, and the PDF file is completed. No additional data can be written to the destination context after the PDF document is closed.

4.27.6 EndPage

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Ends the current page in the PDF graphics context.

Notes: You can call EndPage only after you call the function BeginPage.

4.27.7 kCGPDFContextAllowsCopying as string

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the Keys that used to set up a PDF context.

Notes:

Whether the document allows copying when unlocked with the user password. The value of this key must be a Boolean object. The default value of this key is true.
Available in Mac OS X v10.4 and later.

4.27.8 kCGPDFContextAllowsPrinting as string

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the Keys that used to set up a PDF context.

Notes:

Whether the document allows printing when unlocked with the user password. The value of this key must be a boolean value. The default value of this key is true.
Available in Mac OS X v10.4 and later.

4.27.9 kCGPDFContextArtBox as string

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the Keys that specify various PDF boxes.

Notes:

The art box for the document or for a given page. This key is optional. If present, the value of this key must be a CGRectMBS.
Available in Mac OS X v10.4 and later.

4.27.10 kCGPDFContextAuthor as string

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the Keys that used to set up a PDF context.

Notes:

The corresponding value is a string that represents the name of the person who created the document. This key is optional.
Available in Mac OS X v10.4 and later.

4.27.11 kCGPDFContextBleedBox as string

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the Keys that specify various PDF boxes.

Notes:

The bleed box for the document or for a given page. This key is optional. If present, the value of this key must be a CGRectMBS object.

Available in Mac OS X v10.4 and later.

4.27.12 kCGPDFContextCreator as string

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the Keys that used to set up a PDF context.

Notes:

The corresponding value is a string that represents the name of the application used to produce the document. This key is optional.

Available in Mac OS X v10.4 and later.

4.27.13 kCGPDFContextCropBox as string

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the Keys that specify various PDF boxes.

Notes:

The crop box for the document or for a given page. This key is optional. If present, the value of this key must be a CGRect object.

Available in Mac OS X v10.4 and later.

4.27.14 kCGPDFContextEncryptionKeyLength as string

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the Keys that used to set up a PDF context.

Notes:

The encryption key length in bits; see Table 3.18 "Entries common to all encryption dictionaries", PDF Reference: Adobe PDF version 1.5 (4th ed.) for more information. Optional; if present, the value of this key must be a number with value which is a multiple of 8 between 40 and 128, inclusive. If this key is absent or invalid, the encryption key length defaults to 40 bits.

Available in Mac OS X v10.5 and later.

4.27.15 kCGPDFContextKeywords as string

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the Keys that used to set up a PDF context.

Notes:

The keywords for this document. This key is optional. If the value of this key is a string, the `/Keywords` entry will be the specified string. If the value of this key is an array, then it must be an array of variants with strings. The `/Keywords` entry will, in this case, be the concatenation of the specified strings separated by commas (","). In addition, an entry with the key `"/AAPL:Keywords"` is stored in the document information dictionary; its value is an array consisting of each of the specified strings. The value of this key must be in one of the above forms; otherwise, this key is ignored.

Available in Mac OS X v10.5 and later.

4.27.16 `kCGPDFContextMediaBox` as string

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the Keys that specify various PDF boxes.

Notes:

The media box for the document or for a given page. This key is optional. If present, the value of this key must be a `CGRectMBS` object.

Available in Mac OS X v10.4 and later.

4.27.17 `kCGPDFContextOutputIntent` as string

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the Keys that used to set up a PDF context.

Notes:

The output intent PDF/X. This key is optional. If present, the value of this key must be a dictionary. The dictionary is added to the `/OutputIntents` entry in the PDF file document catalog. The keys and values contained in the dictionary must match those specified in section 9.10.4 of the PDF 1.4 specification, ISO/DIS 15930-3 document published by ISO/TC 130, and Adobe Technical Note # 5413.

Available in Mac OS X v10.4 and later.

4.27.18 `kCGPDFContextOutputIntents` as string

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the Keys that used to set up a PDF context.

Notes:

Output intent dictionaries. This key is optional. If present, the value must be an array of one or more `kCGPDFContextOutputIntent` dictionaries. The array is added to the PDF document in the `/OutputIntents` entry in the PDF file's document catalog. Each dictionary in the array must be of form specified for the `kCGPDFContextOutputIntent` key, except that only the first dictionary in the array is required to contain the "S" key with a value of `GTS_PDFX`. If both the `kCGPDFContextOutputIntent` and `kCGPDFContextOutputIntents` keys are specified, the former is ignored.

Available in Mac OS X v10.4 and later.

4.27.19 kCGPDFContextOwnerPassword as string

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the Keys that used to set up a PDF context.

Notes:

The owner password of the PDF document. If this key is specified, the document is encrypted using the value as the owner password; otherwise, the document will not be encrypted. The value of this key must be a string that can be represented in ASCII encoding. Only the first 32 bytes are used for the password. There is no default value for this key. If the value of this key cannot be represented in ASCII, the document is not created and the creation function returns nil.

Available in Mac OS X v10.4 and later.

4.27.20 kCGPDFContextSubject as string

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the Keys that used to set up a PDF context.

Notes:

The subject of a document. Optional; if present, the value of this key must be a string.

Available in Mac OS X v10.5 and later.

4.27.21 kCGPDFContextTitle as string

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the Keys that used to set up a PDF context.

Notes:

The corresponding value is a string that represents the title of the document. This key is optional.

Available in Mac OS X v10.4 and later.

4.27.22 kCGPDFContextTrimBox as string

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the Keys that specify various PDF boxes.

Notes:

The trim box for the document or for a given page. This key is optional. If present, the value of this key must be a memoryblock that contains a CGRect (stored by value, not by reference).

Available in Mac OS X v10.4 and later.

4.27.23 `kCGPDFContextUserPassword` as string

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the Keys that used to set up a PDF context.

Notes:

The user password of the PDF document. If the document is encrypted, then the value of this key will be the user password for the document. If not specified, the user password is the empty string. The value of this key must be a string that can be represented in ASCII encoding; only the first 32 bytes will be used for the password. If the value of this key cannot be represented in ASCII, the document is not created and the creation function returns nil.

Available in Mac OS X v10.4 and later.

4.27.24 `kCGPDFXDestinationOutputProfile` as string

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the Output Intent Dictionary Keys.

Notes:

An ICC profile stream defining the transformation from the PDF document's source colors to output device colorants. This key is required if the value of `kCGPDFXOutputConditionIdentifier` does not specify a standard production condition. It is optional otherwise. If present, the value of this key must be an ICC-based color space specified as a `CGColorSpaceMBS` object.

Available in Mac OS X v10.4 and later.

4.27.25 `kCGPDFXInfo` as string

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the Output Intent Dictionary Keys.

Notes:

A human-readable text string containing additional information or comments about the intended target device or production condition. This key is required if the value of `kCGPDFXOutputConditionIdentifier` does not specify a standard production condition. It is optional otherwise. If present, the value of this key must be a string.

Available in Mac OS X v10.4 and later.

4.27.26 kCGPDFXOutputCondition as string

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the Output Intent Dictionary Keys.

Notes:

A text string identifying the intended output device or production condition in a human- readable form. This key is optional. If present, the value of this key must be a string. Available in Mac OS X v10.4 and later.

4.27.27 kCGPDFXOutputConditionIdentifier as string

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the Output Intent Dictionary Keys.

Notes:

A string identifying the intended output device or production condition in a human- or machine-readable form. This key is required. The value of this key must be a string. For best results, the string should be restricted to characters in the ASCII character set. Available in Mac OS X v10.4 and later.

4.27.28 kCGPDFXOutputIntentSubtype as string

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the Output Intent Dictionary Keys.

4.27.29 kCGPDFXRegistryName as string

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the Output Intent Dictionary Keys.

Notes:

The output intent subtype. This key is required. The value of this key must be a String object equal to "GTS_PDFX"; otherwise, the dictionary is ignored. Available in Mac OS X v10.4 and later.

4.27.30 SetDestinationForRect(name as string, x as Double, y as Double, w as Double, h as Double)

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Sets a destination to jump to when a rectangle in the current PDF page is clicked.

Notes:

name: A destination name.

x,y,w,h: A rectangle that specifies an area of the current page of a PDF graphics context. The rectangle is specified in default user space (not device space).

Available in Mac OS X v10.4 and later.

4.27.31 SetURLForRect(url as string, x as Double, y as Double, w as Double, h as Double)

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Sets the URL associated with a rectangle in a PDF graphics context.

Example:

```
dim c as CGPDFContextMBS // your pdf context
c.SetURLForRect("http://www.apple.com/", 100, 100, 100, 100)
```

Notes:

url: A string that specifies the destination of the contents associated with the rectangle.

rect: A rectangle specified in default user space (not device space).

Available in Mac OS X v10.4 and later.

4.28 class CGPDFDictionaryListMBS

4.28.1 class CGPDFDictionaryListMBS

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a pdf dictionary list.

4.28.2 Methods

4.28.3 Close

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The destructor.
Notes:

There is no need to call this method except you want to free all resources of this object now without waiting for Realbasic to do it for you.

(e.g. some Realbasic versions crash on Windows if there are plugin objects not closed.)

4.28.4 Key(index as Integer) as string

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the key with the give index.

Notes: Returns "" on any error.

4.28.5 Value(index as Integer) as CGPDFObjectMBS

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The value with the given index.

Notes: Returns nil on any error.

4.28.6 Properties

4.28.7 Count as Integer

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the number of key& value pairs.

Notes:

Returns 0 on any error.
(Read only property)

4.28.8 Document as CGPDFDocumentMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The document this PDF Dictionary belongs to.

Notes: (Read only property)

4.29 class CGPDFDictionaryMBS

4.29.1 class CGPDFDictionaryMBS

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a pdf dictionary.

4.29.2 Methods

4.29.3 ArrayValue(key as string, byref value as CGPDFArrayMBS) as boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** If the object with the given key is a pdf array, this function will return it.

Notes: Returns true on success and false on failure.

4.29.4 BooleanValue(key as string, byref value as boolean) as boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** If the object with the given key is a boolean value, this function will return it.

Notes: Returns true on success and false on failure.

4.29.5 Count as Integer

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The number of keys in this dictionary.

4.29.6 DictionaryValue(key as string, byref value as CGPDFDictionaryMBS) as boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** If the object with the given key is a pdf dictionary, this function will return it.

Notes: Returns true on success and false on failure.

4.29.7 IntegerValue(key as string, byref value as Integer) as boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** If the object with the given key is an integer value, this function will return it.

Notes:

Returns true on success and false on failure.

Is function will return double and integer values. Conversion is done automatically.

4.29.8 List as CGPDFDictionaryListMBS

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a list of all key& value pairs in the dictionary.

Notes: Returns nil on any error.

4.29.9 NameValue(key as string, byref value as string) as boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** If the object with the given key is a name string, this function will return it.

Notes: Returns true on success and false on failure.

4.29.10 ObjectValue(key as string, byref value as CGPDFObjectMBS) as boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** If the object with the given key is a pdf object, this function will return it.

Notes: Returns true on success and false on failure.

4.29.11 SingleValue(key as string, byref value as Double) as boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** If the object with the given key is a floating point value, this function will return it.

Notes:

Returns true on success and false on failure.

Is function will return double and integer values. Conversion is done automatically.

4.29.12 StreamValue(key as string, byref value as CGPDFStreamMBS) as boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** If the object with the given key is a pdf stream, this function will return it.

Notes: Returns true on success and false on failure.

4.29.13 StringValue(key as string, byref value as CGPDFStringMBS) as boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** If the object with the given key is a pdf string, this function will return it.

Notes: Returns true on success and false on failure.

4.29.14 Properties

4.29.15 Document as CGPDFDocumentMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The document this PDF Dictionary belongs to.

Notes: (Read only property)

4.29.16 Handle as Integer

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The handle of the pdf dictionary.

Notes: (Read and Write property)

4.30 class CGPDFDocumentMBS

4.30.1 class CGPDFDocumentMBS

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a core graphics pdf document.

Example:

```

dim f as FolderItem
dim input as CGPDFDocumentMBS
dim output as CGContextMBS
dim r,c as CGRectMBS

f=SpecialFolder.Desktop.Child("test.pdf")
input=f.OpenAsCGPDFDocumentMBS

r=CGMakeRectMBS(0,0,200,200) // 200 by 200 Pixel page

f=SpecialFolder.Desktop.Child("output.pdf")
output=f.NewCGPDFDocumentMBS(r,"SomeTitle","SomeAuthor","SomeCreator")

// Create a new page
output.BeginPage r

// get size of input page one
c=input.CropBox(1)

// clip to a part of the new page leaving a border
r=CGMakeRectMBS(20,20,160,160)
output.ClipToRect r

// draw old pdf on a different position
c.top=-100
c.left=-100

// do the drawing of page one of input at new new output
output.DrawCGPDFDocument(input,c,1)

// cleanup
output.EndPage
output.Flush

```

Notes: If the release property is true, the destructor of this class will release the pdfdocument reference.

4.30.2 Methods

4.30.3 ArtBox(page as Integer) as CGRectMBS

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the ArtBox of this page.

Notes:

Returns nil on any error.

This function is deprecated by Apple in favor of using the CGPDFPageMBS class.

4.30.4 BleedBox(page as Integer) as CGRectMBS

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the BleedBox of this page.

Notes:

Returns nil on any error.

This function is deprecated by Apple in favor of using the CGPDFPageMBS class.

4.30.5 Catalog as CGPDFDictionaryMBS

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return the document catalog of 'document'.

4.30.6 Constructor(dataProvider as CGDataProviderMBS)

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a Quartz PDF document using a data provider.

Notes: Distributing individual pages of a PDF document to separate threads is not supported. If you want to use threads, consider creating a separate document for each thread and operating on a block of pages per thread.

See also:

- 4.30.7 Constructor(file as folderitem) 428
- 4.30.8 Constructor(Handle as Integer) 428
- 4.30.9 Constructor(url as string) 428

4.30.7 Constructor(file as folderitem)

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a Quartz PDF document using data specified by a file.

Notes: Distributing individual pages of a PDF document to separate threads is not supported. If you want to use threads, consider creating a separate document for each thread and operating on a block of pages per thread.

See also:

- 4.30.6 Constructor(dataProvider as CGDataProviderMBS) 427
- 4.30.8 Constructor(Handle as Integer) 428
- 4.30.9 Constructor(url as string) 428

4.30.8 Constructor(Handle as Integer)

Plugin Version: 11.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a Quartz PDF document object based on the given handle value.

Notes: Handle must not be zero and should be a valid CGPDFDocumentRef casted to integer.

See also:

- 4.30.6 Constructor(dataProvider as CGDataProviderMBS) 427
- 4.30.7 Constructor(file as folderitem) 428
- 4.30.9 Constructor(url as string) 428

4.30.9 Constructor(url as string)

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a Quartz PDF document using data specified by a URL.

Notes: Distributing individual pages of a PDF document to separate threads is not supported. If you want to use threads, consider creating a separate document for each thread and operating on a block of pages per thread.

See also:

- 4.30.6 Constructor(dataProvider as CGDataProviderMBS) 427
- 4.30.7 Constructor(file as folderitem) 428
- 4.30.8 Constructor(Handle as Integer) 428

4.30.10 CreateWithData(data as Memoryblock) as CGPDFDocumentMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a Quartz PDF document using a data.

Notes: Distributing individual pages of a PDF document to separate threads is not supported. If you want to use threads, consider creating a separate document for each thread and operating on a block of pages per thread.

See also:

- 4.30.11 CreateWithData(data as string) as CGPDFDocumentMBS 429

4.30.11 CreateWithData(data as string) as CGPDFDocumentMBS

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a Quartz PDF document using a data.

Notes: Distributing individual pages of a PDF document to separate threads is not supported. If you want to use threads, consider creating a separate document for each thread and operating on a block of pages per thread.

See also:

- 4.30.10 CreateWithData(data as Memoryblock) as CGPDFDocumentMBS 428

4.30.12 CreateWithFile(file as folderitem) as CGPDFDocumentMBS

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a Quartz PDF document using data specified by a file.

Notes: Distributing individual pages of a PDF document to separate threads is not supported. If you want to use threads, consider creating a separate document for each thread and operating on a block of pages per thread.

4.30.13 CreateWithProvider(dataProvider as CGDataProviderMBS) as CGPDFDocumentMBS

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a Quartz PDF document using a data provider.

Notes: Distributing individual pages of a PDF document to separate threads is not supported. If you want to use threads, consider creating a separate document for each thread and operating on a block of pages per thread.

4.30.14 CreateWithURL(url as string) as CGPDFDocumentMBS

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a Quartz PDF document using data specified by a URL.

Notes: Distributing individual pages of a PDF document to separate threads is not supported. If you want to use threads, consider creating a separate document for each thread and operating on a block of pages per

thread.

4.30.15 CropBox(page as Integer) as CGRectMBS

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the CropBox of this page.

Notes:

Returns nil on any error.

This function is deprecated by Apple in favor of using the CGPDFPageMBS class.

4.30.16 GetID as CGPDFArrayMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Gets the file identifier for a PDF document.

Notes:

A PDF file identifier is defined in the PDF specification as an array of two strings, the first of which is a permanent identifier that doesn't change even when the file is updated. The second string changes each time the file is updated. For more information, see PDF Reference: Version 1.3 (Second Edition), Adobe Systems Incorporated.

Available in Mac OS X v10.4 and later.

4.30.17 GetInfo as CGPDFDictionaryMBS

Plugin Version: 8.6, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Queries the PDF info dictionary.

Example:

```
dim f as FolderItem = SpecialFolder.Desktop.Child("test.pdf")
dim p as cgpdfdocumentMBS=f.OpenAsCGPDFDocumentMBS
```

```
dim Co as CGPDFStringMBS
dim info as CGPDFDictionaryMBS = p.GetInfo
if info.StringValue("Subject",co) then
MsgBox co.Text // shows subject
end if
```

Notes: Returns nil on any error.

4.30.18 MediaBox(page as Integer) as CGRectMBS

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the MediaBox of this page.

Notes:

Returns nil on any error.

This function is deprecated by Apple in favor of using the CGPDFPageMBS class.

4.30.19 Page(index as Integer) as CGPDFPageMBS

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a page of the document.

4.30.20 RotationAngle(page as Integer) as Integer

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the rotation of a page in degrees.

Notes: Returns 0 on any error.

4.30.21 TrimBox(page as Integer) as CGRectMBS

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the TrimBox of this page.

Notes:

Returns nil on any error.

This function is deprecated by Apple in favor of using the CGPDFPageMBS class.

4.30.22 UnlockWithPassword(name as string) as boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return true if 'document' is unlocked; false otherwise.

Notes: A document is unlocked if it isn't encrypted, or if it is encrypted and a valid password was previously specified with CGPDFDocumentUnlockWithPassword.

4.30.23 Properties

4.30.24 AllowsCopying as Boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return true if 'document' allows copying; false otherwise.

Notes:

Typically, this function returns false only if the document is encrypted and the document's current password doesn't grant permission to perform copying.

(Read only property)

4.30.25 AllowsPrinting as Boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return true if 'document' allows printing; false otherwise.

Notes:

Typically, this function returns false only if the document is encrypted and the document's current password doesn't grant permission to perform printing.

(Read only property)

4.30.26 handle as Integer

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The handle for this pdfdocument.

Notes:

Handle is a CGPDFDocumentRef.

(Read and Write property)

4.30.27 IsEncrypted as Boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return true if the PDF file associated with 'document' is encrypted; false otherwise.

Notes:

If the PDF file is encrypted, then a password must be supplied before certain operations are enabled; different passwords may enable different operations.

(Read only property)

4.30.28 IsUnlocked as Boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return true if 'document' is unlocked; false otherwise.

Notes:

A document is unlocked if it isn't encrypted, or if it is encrypted and a valid password was previously specified with CGPDFDocumentUnlockWithPassword.

(Read only property)

4.30.29 MajorVersion as Integer

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the major version of the pdf document.

Notes: (Read only property)

4.30.30 MinorVersion as Integer

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the minor version of the pdf document.

Notes: (Read only property)

4.30.31 PageCount as Integer

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Counts the pages inside the PDF document.

Example:

```
dim f as FolderItem
dim d as CGPDFDocumentMBS

f=SpecialFolder.Desktop.Child("test.pdf")
d=f.OpenAsCGPDFDocumentMBS

MsgBox str(d.PageCount)
```

Notes:

Returns 0 on any error.

(Read only property)

4.31 class CGPDFObjectMBS

4.31.1 class CGPDFObjectMBS

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a pdf object.

4.31.2 Methods

4.31.3 ArrayValue(byref value as CGPDFArrayMBS) as boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** If the object contains a pdf array, this function will return it.

Notes: Returns true on success and false on failure.

4.31.4 BooleanValue(byref value as boolean) as boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** If the object contains a boolean, this function will return it.

Notes: Returns true on success and false on failure.

4.31.5 DictionaryValue(byref value as CGPDFDictionaryMBS) as boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** If the object contains a pdf dictionary, this function will return it.

Notes: Returns true on success and false on failure.

4.31.6 IntegerValue(byref value as Integer) as boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** If the object contains an integer, this function will return it.

Notes:

Returns true on success and false on failure.

Is function will return double and integer values. Conversion is done automatically.

4.31.7 NameValue(byref value as string) as boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** If the object contains a name string, this function will return it.

Notes: Returns true on success and false on failure.

4.31.8 SingleValue(byref value as Double) as boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** If the object contains a floating point number, this function will return it.

Notes:

Returns true on success and false on failure.

Is function will return double and integer values. Conversion is done automatically.

4.31.9 StreamValue(byref value as CGPDFStreamMBS) as boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** If the object contains a pdf stream, this function will return it.

Notes: Returns true on success and false on failure.

4.31.10 StringValue(byref value as CGPDFStringMBS) as boolean

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** If the object contains a pdfstring, this function will return it.

Notes: Returns true on success and false on failure.

4.31.11 Type as Integer

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the type of the object content.

Notes:

Some useful constants:

```
kCGPDFObjectTypeNull = 1
kCGPDFObjectTypeBoolean = 2
kCGPDFObjectTypeInteger = 3
kCGPDFObjectTypeReal = 4
kCGPDFObjectTypeName = 5
```

kCGPDFObjectTypeString = 6
kCGPDFObjectTypeArray = 7
kCGPDFObjectTypeDictionary = 8
kCGPDFObjectTypeStream = 9

4.31.12 Properties

4.31.13 Document as CGPDFDocumentMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The document this PDF Object belongs to.

Notes: (Read only property)

4.31.14 Handle as Integer

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The handle of the pdf object.

Notes: (Read and Write property)

4.31.15 Constants

4.31.16 kCGPDFObjectTypeArray = 7

Plugin Version: 9.5. **Function:** One of the type constants for a PDF object type.

Notes: Type for a PDF array.

4.31.17 kCGPDFObjectTypeBoolean = 2

Plugin Version: 9.5. **Function:** One of the type constants for a PDF object type.

Notes: The type for a PDF Boolean.

4.31.18 kCGPDFObjectTypeDictionary = 8

Plugin Version: 9.5. **Function:** One of the type constants for a PDF object type.

Notes: The type for a PDF dictionary.

4.31.19 kCGPDFObjectTypeInteger = 3

Plugin Version: 9.5. **Function:** One of the type constants for a PDF object type.
Notes: The type for a PDF integer.

4.31.20 kCGPDFObjectTypeName = 5

Plugin Version: 9.5. **Function:** One of the type constants for a PDF object type.
Notes: Type for a PDF name.

4.31.21 kCGPDFObjectTypeNull = 1

Plugin Version: 9.5. **Function:** One of the type constants for a PDF object type.
Notes: The type for a PDF null.

4.31.22 kCGPDFObjectTypeReal = 4

Plugin Version: 9.5. **Function:** One of the type constants for a PDF object type.
Notes: The type for a PDF real.

4.31.23 kCGPDFObjectTypeStream = 9

Plugin Version: 9.5. **Function:** One of the type constants for a PDF object type.
Notes: The type for a PDF stream.

4.31.24 kCGPDFObjectTypeString = 6

Plugin Version: 9.5. **Function:** One of the type constants for a PDF object type.
Notes: The type for a PDF string.

4.32 class CGPDFPageMBS

4.32.1 class CGPDFPageMBS

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a pdf page.

4.32.2 Methods

4.32.3 ArtBox as CCGRectMBS

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the ArtBox of this page.

Notes:

Returns nil on any error.

This is the value of the corresponding entry in the page's dictionary.

4.32.4 BleedBox as CCGRectMBS

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the BleedBox of this page.

Notes:

Returns nil on any error.

This is the value of the corresponding entry in the page's dictionary.

4.32.5 CropBox as CCGRectMBS

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the BleedBox of this page.

Notes:

Returns nil on any error.

This is the value of the corresponding entry in the page's dictionary.

4.32.6 Dictionary as CGPDFDictionaryMBS

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The information dictionary of this page.

Notes: Returns nil on any error.

4.32.7 MediaBox as CRectMBS

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the MediaBox of this page.

Notes:

Returns nil on any error.

This is the value of the corresponding entry in the page's dictionary.

4.32.8 PageNumber as Integer

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The page number of this page.

4.32.9 RotationAngle as Integer

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the rotation of a page in degrees.

Notes: This is the value of the /Rotate entry in the page's dictionary.

4.32.10 TrimBox as CRectMBS

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the TrimBox of this page.

Notes:

Returns nil on any error.

This is the value of the corresponding entry in the page's dictionary.

4.32.11 Properties

4.32.12 Document as CGPDFDocumentMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The document this PDF Page belongs to.

Notes: (Read only property)

4.32.13 Handle as Integer

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The handle of the pdf page.

Notes: (Read and Write property)

4.32.14 Constants

4.32.15 kCGPDFArtBox=4

Plugin Version: 9.5. **Function:** One of the box types for a PDF page.

Notes:

The page art boxa rectangle, expressed in default user space units, defining the extent of the page's meaningful content (including potential white space) as intended by the page's creator.

Available in Mac OS X v10.3 and later.

4.32.16 kCGPDFBleedBox=2

Plugin Version: 9.5. **Function:** One of the box types for a PDF page.

Notes:

The page bleed boxa rectangle, expressed in default user space units, that defines the region to which the contents of the page should be clipped when output in a production environment

Available in Mac OS X v10.3 and later.

4.32.17 kCGPDFCropBox=1

Plugin Version: 9.5. **Function:** One of the box types for a PDF page.

Notes:

The page crop boxa rectangle, expressed in default user space units, that defines the visible region of default user space. When the page is displayed or printed, its contents are to be clipped to this rectangle.

Available in Mac OS X v10.3 and later.

4.32.18 kCGPDFMediaBox=0

Plugin Version: 9.5. **Function:** One of the box types for a PDF page.

Notes:

The page media boxa rectangle, expressed in default user space units, that defines the boundaries of the physical medium on which the page is intended to be displayed or printed

Available in Mac OS X v10.3 and later.

4.32.19 kCGPDFTrimBox=3

Plugin Version: 9.5. **Function:** One of the box types for a PDF page.

Notes:

The page trim boxa rectangle, expressed in default user space units, that defines the intended dimensions of the finished page after trimming.

Available in Mac OS X v10.3 and later.

4.33 class CGPDFStreamMBS

4.33.1 class CGPDFStreamMBS

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a pdf stream.

4.33.2 Methods

4.33.3 Data(byref format as Integer) as string

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The data of this pdf stream.

Notes:

Format is set to one of the following constants:

CGPDFDataFormatRaw	0
CGPDFDataFormatJPEGEncoded	1
CGPDFDataFormatJPEG2000	2

Returns nil on any error.

4.33.4 Dictionary as CGPDFDictionaryMBS

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The information dictionary for this stream.

Notes: Returns nil on any error.

4.33.5 Properties

4.33.6 Document as CGPDFDocumentMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The document this PDF Stream belongs to.

Notes: (Read only property)

4.33.7 Handle as Integer

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The handle of the pdf stream.

Notes: (Read and Write property)

4.33.8 Constants

4.33.9 CGPDFDataFormatJPEG2000=2

Plugin Version: 9.5. **Function:** One of the data format constants.

4.33.10 CGPDFDataFormatJPEGEncoded=1

Plugin Version: 9.5. **Function:** One of the data format constants.

4.33.11 CGPDFDataFormatRaw=0

Plugin Version: 9.5. **Function:** One of the data format constants.

4.34 class CGPDFStringMBS

4.34.1 class CGPDFStringMBS

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a pdf string.

4.34.2 Methods

4.34.3 Bytes as MemoryBlock

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The bytes of this pdf string.

Notes:

Returns nil on any error.

This memoryblock is not encoding safe!

4.34.4 Length as Integer

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The length of the text.

4.34.5 Text as string

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The text of the pdf string as a string.

Notes:

In contrast to the bytes in the memoryblock, this String is encoding save.

Returns nil on any error.

4.34.6 Properties

4.34.7 Document as CGPDFDocumentMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The document this PDF String belongs to.

Notes: (Read only property)

4.34.8 Handle as Integer

Plugin Version: 4.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The handle of the pdf string.

Notes: (Read and Write property)

4.35 class CGPictureContextMBS

4.35.1 class CGPictureContextMBS

Plugin Version: 4.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A subclass of the CGBitmapContextMBS class to draw into a picture.

Notes:

This class creates a picture bitmap which can be copied into a RB picture. Only for Carbon!

You need to call CGPictureContextMBS or fill background with some color as there may be random bytes in the picture memory.

The image is not cleared in the constructor for you (to increase performance where it's not needed). You may need to call ClearRect.

Subclass of the CGBitmapContextMBS class.

4.35.2 Methods

4.35.3 Constructor(width as Integer, height as Integer)

Plugin Version: 12.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor: Creates a new picture.

Notes:

On success the handle property is not 0.

You need to call CGPictureContextMBS or fill background with some color as there may be random bytes in the picture memory.

For Cocoa apps, the picture will have a normal Xojo picture to draw inside and you get that picture back with CopyPicture. For 32-bit Carbon we use a GWorld which has Mask and picture part.

See also:

- 4.35.4 Constructor(width as Integer, height as Integer, ColorSpace as CGColorSpaceMBS) 446

4.35.4 Constructor(width as Integer, height as Integer, ColorSpace as CGColorSpaceMBS)

Plugin Version: 12.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor: Creates a new picture.

Notes:

On success the handle property is not 0.

You need to call CGPictureContextMBS or fill background with some color as there may be random bytes in the picture memory.

For 64-bit Cocoa apps, the picture will have a normal Xojo picture to draw inside and you get that picture back with CopyPicture. For 32-bit we use a GWorld which has Mask and picture part.

See also:

- 4.35.3 Constructor(width as Integer, height as Integer)

4.35.5 CopyPicture as picture

Plugin Version: 4.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Returns a copy of the picture as a Realbasic picture object.

Example:

```
dim c as CGPictureContextMBS
```

```
c=new CGPictureContextMBS(100,100)
```

```
c.SetRGBFillColor 1,0,0,1
```

```
c.FillRect CGMakeRectMBS(0,0,50,50)
```

```
Backdrop=c.CopyPicture
```

Notes: Returns nil on any error.

4.35.6 CopyPictureMask as picture

Plugin Version: 4.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Returns a copy of the picture's mask as a Realbasic picture object.

Example:

```
dim c as CGPictureContextMBS
```

```
c=new CGPictureContextMBS(100,100)
```

```
c.SetRGBFillColor 1,0,0,0.5
```

```
c.FillRect CGMakeRectMBS(0,0,50,50)
```

```
Backdrop=c.CopyPictureMask
```

Notes: Returns nil on any error.

4.35.7 CopyPictureWithMask as picture

Plugin Version: 13.2, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Returns copy of the current context content as a picture with mask.

Example:

Function GetIcon(f as folderitem, w as Integer, h as Integer, WantAlphaPicture as Boolean = false) As picture

```

const DrawNormal=0
const DrawNoImage=2
const DrawNoMask=4
const DrawSelected=& h8000

// get icon
dim i as new iconmbs(f)

if i.Valid then

if TargetCocoa and WantAlphaPicture then
// Cocoa only: Make Picture with alpha channel
dim p as new Picture(w, h)
dim c as CGContextMBS = CGContextMBS.CreateWithPicture(p)

c.ClearRect CGMakeRectMBS(0,0,w,h)

// draw icon
i.DrawIconCGContext(c.Handle, 0,0,w,h,0,0,DrawNormal,& c000000)

c.Flush

Return p
end if

// Cocoa or Carbon: Make Picture with mask

// make bitmap context
dim c as new CGContextMBS(w,h)

c.ClearRect CGMakeRectMBS(0,0,w,h)

// draw icon
i.DrawIconCGContext(c.Handle, 0,0,w,h,0,0,DrawNormal,& c000000)

c.Flush

// and copy to picture
Return c.CopyPictureWithMask
end if

```


[End Function](#)

Notes: Returns nil on out of memory.

4.35.8 SetMask(mask as picture) as boolean

Plugin Version: 4.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Draws the given picture in the mask of the CGPicture.

Notes:

The alpha value is taken from one of the color channels.
Use a greyscale image inside a 32bit bitmap picture for this.
Size of the mask picture and the CGPictureContext need not fit.
Returns true on success.

4.35.9 Properties

4.35.10 GWorldHandle as Integer

Plugin Version: 4.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The handle of the used GWorld.

Notes:

Only useful for Toolbox calls.
(Read and Write property)

4.36 class CGPointMBS

4.36.1 class CGPointMBS

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a core graphics point.

4.36.2 Methods

4.36.3 ApplyAffineTransform(p as CGAffineTransformMBS) as CGPointMBS

Plugin Version: 3.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Transform 'point' by 't' and return the result: $p' = p * t$ where $p = [x \ y \ 1]$.

4.36.4 Binary as MemoryBlock

Plugin Version: 3.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the internal data of the object as a CGPoint for use on Toolbox calls.

Example:

```
dim c as CGPointMBS
dim m as MemoryBlock

c=CGMakePointMBS(10,20)

m=c.Binary

MsgBox str(m.Size) // 8
MsgBox str(m.doubleValue( 0)) // 10
MsgBox str(m.doubleValue( 4)) // 20
```

4.36.5 Constructor

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new point object with the given values.

See also:

- 4.36.6 Constructor(p as Ptr) 451
- 4.36.7 Constructor(source as CGPointMBS) 451

4.36. CLASS CGPOINTMBS	451
• 4.36.8 Constructor(x as Double, y as Double)	451

4.36.6 Constructor(p as Ptr)

Plugin Version: 17.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new instance using data at the pointer.

Notes: Make sure the pointer is valid and has the right data and size.

See also:

• 4.36.5 Constructor	450
• 4.36.7 Constructor(source as CGPointMBS)	451
• 4.36.8 Constructor(x as Double, y as Double)	451

4.36.7 Constructor(source as CGPointMBS)

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new point object with the given values.

See also:

• 4.36.5 Constructor	450
• 4.36.6 Constructor(p as Ptr)	451
• 4.36.8 Constructor(x as Double, y as Double)	451

4.36.8 Constructor(x as Double, y as Double)

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new point object with the given values.

See also:

• 4.36.5 Constructor	450
• 4.36.6 Constructor(p as Ptr)	451
• 4.36.7 Constructor(source as CGPointMBS)	451

4.36.9 Equal(p as CGPointMBS) as boolean

Plugin Version: 3.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns true if both points are equal.

4.36.10 Make(x as Double, y as Double) as CGPointMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a new CGPointMBS object.

4.36.11 Zero as CGPointMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the zero point.

Notes: The "zero" point – equivalent to CGMakePointMBS(0, 0).

4.36.12 Properties

4.36.13 x as Double

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The X property of the point.

Notes: (Read and Write property)

4.36.14 y as Double

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Y property of the point.

Notes: (Read and Write property)

4.37 class CGPSConverterMBS

4.37.1 class CGPSConverterMBS

Plugin Version: 4.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The class in Core-Graphics to convert Postscript code to PDF data.

Notes: Requires Mac OS X 10.3.

4.37.2 Methods

4.37.3 Abort as boolean

Plugin Version: 4.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Tell the converter to abort conversion at the next possible opportunity.

Notes: Returns false on any error and true on success.

4.37.4 Constructor(options as Dictionary = nil)

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Create a CGPSConverter.

Notes:

Currently you should pass nil for options. (Mac OS X 10.3)

On failure the handle property is zero.

4.37.5 Convert(provider as CGDataProviderMBS, consumer as CGDataConsumerMBS, options as Dictionary = nil) as boolean

Plugin Version: 4.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Converts PostScript data to PDF data.

Notes:

The PostScript data is supplied by provider; the resulting PDF is written to consumer. Returns true if the conversion succeeded; false otherwise.

4.37.6 IsConverting as boolean

Plugin Version: 4.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns true if the converter is currently converting data.

Notes: False on any error.

4.37.7 Properties

4.37.8 Handle as Integer

Plugin Version: 4.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The handle to the CGPSConverter object.

Notes:

Datatype is CGPSConverterRef.
(Read and Write property)

4.37.9 Events

4.37.10 BeginDocument

Plugin Version: 4.3, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Is called at the beginning of the conversion of the PostScript document.

4.37.11 BeginPage(PageNumber as Integer, PageInfo as Dictionary)

Plugin Version: 4.3, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Called at the start of the conversion of each page in the PostScript document.

4.37.12 EndDocument(success as boolean)

Plugin Version: 4.3, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Called at the end of conversion of the PostScript document.

4.37.13 EndPage(PageNumber as Integer, PageInfo as Dictionary)

Plugin Version: 4.3, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Called at the end of the conversion of each page in the PostScript document.

4.37.14 Finished

Plugin Version: 4.3, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Called when the converter is no longer needed.

4.37.15 Message(message as string)

Plugin Version: 9.5, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Called to pass any messages that might result during the conversion.

4.37.16 Progress

Plugin Version: 4.3, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Called periodically during the conversion to indicate that conversion is proceeding.

4.38 class CGRectMBS

4.38.1 class CGRectMBS

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a core graphics rectangle.

4.38.2 Methods

4.38.3 ApplyAffineTransform(a as CGAffineTransformMBS) as CGRectMBS

Plugin Version: 9.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Applies an affine transform to the rectangle and returns the result.

Example:

```
dim af as CGAffineTransformMBS = CGAffineTransformMBS.Identity
```

```
MsgBox str(af.A)+" "+str(af.b)+" "+str(af.c)+" "+str(af.d)+" "+str(af.tx)+" "+str(af.ty)
```

```
af = af.Scale( 1, -1 )
```

```
MsgBox str(af.A)+" "+str(af.b)+" "+str(af.c)+" "+str(af.d)+" "+str(af.tx)+" "+str(af.ty)
```

```
af = af.Translate( 0, 100 )
```

```
MsgBox str(af.A)+" "+str(af.b)+" "+str(af.c)+" "+str(af.d)+" "+str(af.tx)+" "+str(af.ty)
```

```
dim r1 as CGRectMBS
```

```
dim r2 as CGRectMBS
```

```
r1=CGMakeRectMBS(100,100,100,100)
```

```
r2=r1.ApplyAffineTransform(af)
```

```
MsgBox "("+str(r1.Left)+", "+str(r1.top)+", "+str(r1.width)+", "+str(r1.height)+") => ("+str(r2.Left)+", "+str(r2.top)+", "+str(r2.width)+", "+str(r2.height)+")"
```

Notes: Returns nil on any error.

4.38.4 Binary as MemoryBlock

Plugin Version: 3.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the internal data of the object as a CGRect for use on Toolbox calls.

Example:

```
dim c as CGRectMBS
dim m as MemoryBlock

c=CGMakeRectMBS(10,20,30,40)

m=c.Binary

MsgBox str(m.Size) // 16
MsgBox str(m.doubleValue( 0)) // 10
MsgBox str(m.doubleValue( 4)) // 20
MsgBox str(m.doubleValue( 8)) // 30
MsgBox str(m.doubleValue(12)) // 40
```

4.38.5 Constructor

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor to create a zero rectangle.

See also:

- 4.38.6 Constructor(p as Ptr) 457
- 4.38.7 Constructor(source as CGRectMBS) 458
- 4.38.8 Constructor(x as Double, y as Double, width as Double, height as Double) 458

4.38.6 Constructor(p as Ptr)

Plugin Version: 17.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new instance using data at the pointer.

Notes: Make sure the pointer is valid and has the right data and size.

See also:

- 4.38.5 Constructor 457
- 4.38.7 Constructor(source as CGRectMBS) 458
- 4.38.8 Constructor(x as Double, y as Double, width as Double, height as Double) 458

4.38.7 Constructor(source as CGRectMBS)

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new CGRectMBS object by copying the values.

See also:

- 4.38.5 Constructor 457
- 4.38.6 Constructor(p as Ptr) 457
- 4.38.8 Constructor(x as Double, y as Double, width as Double, height as Double) 458

4.38.8 Constructor(x as Double, y as Double, width as Double, height as Double)

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new CGRectMBS object with the given values.

See also:

- 4.38.5 Constructor 457
- 4.38.6 Constructor(p as Ptr) 457
- 4.38.7 Constructor(source as CGRectMBS) 458

4.38.9 ContainsPoint(r as CGPointMBS) as boolean

Plugin Version: 3.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return true if 'point' is contained in the rect, false otherwise.

4.38.10 ContainsRect(r as CGRectMBS) as boolean

Plugin Version: 3.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return true if 'rect2' is contained in 'rect1', false otherwise.

Notes:

'rect2' is contained in 'rect1' if the union of 'rect1' and 'rect2' is equal to 'rect1'.
(rect1 is the current rect and rect2 the rect you pass to this function)

4.38.11 Divide(byref slice as CGRectMBS, byref remainder as CGRectMBS, amount as Double, edge as Integer)

Plugin Version: 3.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Divides the rectangle. **Notes:** Make two new rectangles, 'slice' and 'remainder', by dividing the rect with a line that's parallel to

one of its sides, specified by 'edge' – either 'CGRectMinXEdge', 'CGRectMinYEdge', 'CGRectMaxXEdge', or 'CGRectMaxYEdge'. The size of 'slice' is determined by 'amount', which measures the distance from the specified edge.

4.38.12 Equal(r as CGRectMBS) as boolean

Plugin Version: 3.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns true if both rectangles are equal.

4.38.13 Infinite as CGRectMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A rectangle that has infinite extent.

Example:

```
dim r as CGRectMBS = CGRectMBS.Infinite
MsgBox str(r.Left)+" "+str(R.Top)+" "+str(R.Width)+" "+str(r.Height)
```

Notes: Available in Mac OS X v10.4 and later.

4.38.14 Inset(dx as Double, dy as Double) as CGRectMBS

Plugin Version: 3.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Inset the rect by '(dx, dy)' – i.e., offset its origin by '(dx, dy)', and decrease its size by '(2*dx, 2*dy)'

4.38.15 Integral as CGRectMBS

Plugin Version: 3.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Expand the rect to the smallest rect containing it with integral origin and size.

4.38.16 Intersection(r as CGRectMBS) as CGRectMBS

Plugin Version: 3.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return the intersection of both rectangles.

Notes: This may return a null rect.

4.38.17 IntersectsRect(r as CGRectMBS) as boolean

Plugin Version: 3.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return true if 'rect1' intersects 'rect2', false otherwise.

Notes: 'rect1' intersect 'rect2' if the intersection of 'rect1' and 'rect2' is not the null rect.

4.38.18 IsEmpty as boolean

Plugin Version: 3.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return true if the rect is empty – i.e., if it has zero width or height.

Notes: A null rect is defined to be empty.

4.38.19 IsInfinite as boolean

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns whether a rectangle is infinite.

Notes:

Returns true if the specified rectangle is infinite, false otherwise.

An infinite rectangle is one that has no defined bounds. Infinite rectangles can be created as output from a tiling filter. For example, the Core Image framework perspective tile filter creates an image whose extent is described by an infinite rectangle.

4.38.20 IsNull as boolean

Plugin Version: 3.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return true if the rect is null – e.g., the result of intersecting two disjoint rectangles is a null rect.

4.38.21 Make(x as Double, y as Double, width as Double, height as Double) as CGRectMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a new CGRectMBS object with the given values.

Example:

```
dim r as CGRectMBS = CGRectMBS.Make(1,2,3,4)
MsgBox str(r.Left)+" "+str(R.Top)+" "+str(R.Width)+" "+str(r.Height)
```

4.38.22 MaxX as Double

Plugin Version: 3.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return the rightmost x-value of the rect.

Example:

```
dim r as CGRectMBS = CGMakeRectMBS(10, 20, 30, 40)
MsgBox str(r.MaxX) // 40
```

4.38.23 MaxY as Double

Plugin Version: 3.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return the topmost y-value of the rect.

Example:

```
dim r as CGRectMBS = CGMakeRectMBS(10, 20, 30, 40)
MsgBox str(r.MaxY) // 60
```

4.38.24 MidX as Double

Plugin Version: 3.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return the midpoint x-value of the rect.

Example:

```
dim r as CGRectMBS = CGMakeRectMBS(10, 20, 30, 40)
MsgBox str(r.MidX) // 25
```

4.38.25 MidY as Double

Plugin Version: 3.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return the midpoint y-value of the rect.

Example:

```
dim r as CGRectMBS = CGMakeRectMBS(10, 20, 30, 40)
MsgBox str(r.MidY) // 40
```

4.38.26 MinX as Double

Plugin Version: 3.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return the leftmost x-value of the rect.

Example:

```
dim r as CRectMBS = CGMakeRectMBS(10, 20, 30, 40)
MsgBox str(r.MinX) // 10
```

4.38.27 MinY as Double

Plugin Version: 3.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return the bottom-most y-value of the rect.

Example:

```
dim r as CRectMBS = CGMakeRectMBS(10, 20, 30, 40)
MsgBox str(r.MinY) // 20
```

4.38.28 Null as CRectMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the null rect.

Example:

```
dim r as CRectMBS = CRectMBS.Null
MsgBox str(r.Left)+" "+str(R.Top)+" "+str(R.Width)+" "+str(r.Height)
```

Notes:

The "empty" rect. This is the rectangle returned when, for example, we intersect two disjoint rectangles. Note that the null rect is not the same as the zero rect.

4.38.29 Offset(dx as Double, dy as Double) as CRectMBS

Plugin Version: 3.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Offset the rect by '(dx, dy)'.

4.38.30 Standardize as CRectMBS

Plugin Version: 3.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Standardize the rect – i.e., convert it to an equivalent rect which has positive width and height.

Example:

```
dim r as CRectMBS = CRectMBS.Make(5, 6, -3, -2)
MsgBox str(r.Left)+" "+str(R.Top)+" "+str(R.Width)+" "+str(r.Height)
r = r.Standardize
MsgBox str(r.Left)+" "+str(R.Top)+" "+str(R.Width)+" "+str(r.Height)
```

4.38.31 Union(r as CRectMBS) as CRectMBS

Plugin Version: 3.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return the union of both rectangles.

Example:

```
dim r as CRectMBS = CRectMBS.Infinite
MsgBox str(r.Left)+" "+str(R.Top)+" "+str(R.Width)+" "+str(r.Height)
```

4.38.32 Zero as CRectMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A rectangle constant with location (0,0), and width and height of 0.

Example:

```
dim r as CRectMBS = CRectMBS.Zero
MsgBox str(r.Left)+" "+str(R.Top)+" "+str(R.Width)+" "+str(r.Height)
```

Notes: The zero rectangle is equivalent to CRectMBS.Make(0,0,0,0).

4.38.33 Properties**4.38.34 height as Double**

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The height property of the rectangle.

Example:

```
dim r as CCGRectMBS = CGMakeRectMBS(10, 20, 30, 40)
MsgBox str(r.Left)+" "+str(R.Top)+" "+str(R.Width)+" "+str(r.Height)
```

Notes: (Read and Write property)

4.38.35 left as Double

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The left property of the rectangle.

Notes: (Read and Write property)

4.38.36 Origin as CGPointMBS

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The origin of the rectangle.

Example:

```
dim r as CCGRectMBS = CCGRectMBS.Make(5, 6, 3, 2)
dim s as CGPointMBS = r.Origin
MsgBox str(s.x)+" x "+str(s.y)
```

Notes: (Read and Write property)

4.38.37 Size as CGSizeMBS

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The size of the rectangle.

Example:

```
dim r as CCGRectMBS = CCGRectMBS.Make(5, 6, 3, 2)
dim s as CGSizeMBS = r.Size
MsgBox str(s.Width)+" x "+str(s.Height)
```

Notes: (Read and Write property)

4.38.38 top as Double

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The top property of the rectangle.

Example:

```
dim r as CGRectMBS = CGMakeRectMBS(10, 20, 30, 40)
MsgBox str(r.Left)+" "+str(R.Top)+" "+str(R.Width)+" "+str(r.Height)
```

Notes: (Read and Write property)

4.38.39 width as Double

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The width property of the rectangle.

Example:

```
dim r as CGRectMBS = CGMakeRectMBS(10, 20, 30, 40)
MsgBox str(r.Left)+" "+str(R.Top)+" "+str(R.Width)+" "+str(r.Height)
```

Notes: (Read and Write property)

4.39 class CGSConnectionMBS

4.39.1 class CGSConnectionMBS

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a connection to the CoreGraphics System.

Example:

```
dim c as new CGSConnectionMBS
dim list as CGSWindowListMBS = c.GetWindowList
```

```
dim names() as string
dim u as Integer = List.Count-1
for i as Integer = 0 to u
dim w as CGSWindowMBS = List.Item(i)
names.append w.Title
next
```

```
MsgBox str(List.Count)+" windows: "+Join(names, ", ")
```

Notes:

Requires Mac OS X 10.4.

All functions used by the CGS classes are private APIs, so Apple does not guarantee that they work in future Mac OS X versions.

4.39.2 Methods

4.39.3 CGSWindow(w as window) as CGSWindowMBS

Plugin Version: 7.4, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Returns a CGSWindow reference to a normal RB window.

Notes: Can be used for the CGSTransitionRequestMBS.Win property.

4.39.4 CGSWindowbyHandle(windowhandle as Integer) as CGSWindowMBS

Plugin Version: 8.4, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Returns a CGSWindow reference to any window where you can have a handle.

Notes:

WindowHandle must be of C type WindowRef. Not a CGS Window Handle.
Can be used for the handle from an OverlayWindowMBS.

4.39.5 FlushAllWindows

Plugin Version: 8.0, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Flushes all windows.
Notes:

Walks over the window list (of the current process) and does a flush on each window.
Lasterror is set.

4.39.6 FlushAllWindowsForAllOtherProcesses

Plugin Version: 8.0, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Flushes all windows.
Notes:

Walks over the list of processes asking each for its window list and doing a flush on each window. The own process is ignored.
Lasterror is set.

4.39.7 FlushAllWindowsForAllProcesses

Plugin Version: 8.0, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Flushes all windows.
Notes:

Walks over the list of processes asking each for its window list and doing a flush on each window.
Lasterror is set.

4.39.8 GetOnScreenWindowList as CGSWindowListMBS

Plugin Version: 8.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Returns the list of windows on screen for the current process.

Notes: Returns nil on any error.

4.39.9 GetOnScreenWindowListForProcess(PID as Integer) as CGSWindowListMBS

Plugin Version: 8.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Returns the list of windows on screen for the process with the given Process ID.

Notes: Returns nil on any error.

4.39.10 GetWindowList as CGSWindowListMBS

Plugin Version: 8.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Returns the list of windows for the current process.

Notes: Returns nil on any error.

4.39.11 GetWindowListForProcess(PID as Integer) as CGSWindowListMBS

Plugin Version: 8.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Returns the list of windows for the process with the given Process ID.

Notes: Returns nil on any error.

4.39.12 NewTransition(request as CGSTransitionRequestMBS) as CGSTransitionMBS

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new transition.

Notes:

Lasterror is set.

Request must be a valid object reference.

Transitions seem not to work in Carbon PEF builds. MachO works.

4.39.13 RunTransition(request as CGSTransitionRequestMBS, duration as single)

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A method to run a transition for the given request and given time.

Example:

```
dim r as CGSTransitionRequestMBS
dim co as CGSConnectionMBS // global property
dim cw as CGSWindowMBS
```

```
co=new CGSConnectionMBS
```

```
cw=co.CGSWindow(window1)
```

```
r=new CGSTransitionRequestMBS
r.TransitionType=r.CGSFlip
r.TransitionOption=r.CGSLeft
r.HasBackGround=false
```

```
r.HasBackColor=false
r.Win=cw
co.RunTransition(r,2)
```

Notes:

Lasterror is set.

Transitions seem not to work in Carbon PEF builds. MachO works.

4.39.14 SetWorkspaceWithTransition(workspace as CGSWorkspaceMBS, transition as Integer, type as Integer, time as single)

Plugin Version: 8.2, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Performs a transition with a workspace specified by the workspace object.

Notes:

The values for the parameters are not documented on the web except that the transition and type property may use the same transition constants as for the other transitions.

Lasterror is set.

See also:

- 4.39.15 SetWorkspaceWithTransition(workspace as Integer, transition as Integer, type as Integer, time as single) 469

4.39.15 SetWorkspaceWithTransition(workspace as Integer, transition as Integer, type as Integer, time as single)

Plugin Version: 8.2, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Performs a transition with a workspace specified by the workspace number.

Example:

```
dim c as new CGSConnectionMBS
dim t as new CGSTransitionRequestMBS

// from space 1 to 2
c.SetWorkspaceWithTransition(2,t.CGSFade, t.CGSInOut, 5)

// but transition and time are ignored on testing Mac.

MsgBox str(c.Lasterror)
```

Notes:

The values for the parameters are not documented on the web except that the transition and type property may use the same transition constants as for the other transitions.

Lasterror is set.

See also:

- 4.39.14 SetWorkspaceWithTransition(workspace as CGSWorkspaceMBS, transition as Integer, type as Integer, time as single) 469

4.39.16 Properties

4.39.17 Handle as Integer

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The internal handle for this connection.

Notes: (Read and Write property)

4.39.18 Lasterror as Integer

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Last error code reported.

Notes:

The list of CoreGraphics error (from Mac OS X 10.4)

(Read and Write property)

4.39.19 Workspace as CGSWorkspaceMBS

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The workspace this connection is pointing to.

Notes: (Read and Write computed property)

kCGErrorSuccess	= 0	Success
kCGErrorFailure	= 1000	Failure
kCGErrorIllegalArgument	= 1001	Illegal Argument
kCGErrorInvalidConnection	= 1002	Invalid Connection
kCGErrorInvalidContext	= 1003	Invalid Context
kCGErrorCannotComplete	= 1004	Cannot complete
kCGErrorNameTooLong	= 1005	Name is too long
kCGErrorNotImplemented	= 1006	Not implemented
kCGErrorRangeCheck	= 1007	Out of bounds
kCGErrorTypeCheck	= 1008	Type error
kCGErrorNoCurrentPoint	= 1009	No current point
kCGErrorInvalidOperation	= 1010	Invalid Operation
kCGErrorNoneAvailable	= 1011	internal errors have taken 1012 1013 and 1014
kCGErrorApplicationRequiresNewerSystem	= 1015	the application being launched says in it's bundle info that it requires a newer version of the system than is currently running.
kCGErrorApplicationNotPermittedToExecute	= 1016	Macintosh Manager is active and this application is not permitted to run
kCGErrorApplicationIncorrectExecutableFormatFound	= 1023	the application being launched does not have any executable code for the current system.
kCGErrorApplicationIsLaunching	= 1024	The application is in the process of launching but hasn't checked in yet. Any launch data provided will be given to the application when it does check in.
kCGErrorApplicationAlreadyRunning	= 1025	The application being launched was already running (and had already checked in) and so any launch data provided can not be delivered to in by CPS
kCGErrorApplicationCanOnlyBeRunInOneSessionAtATime	= 1026	The application being launched is incompatible with multiple user sessions and is already running in another session by another user.
kCGErrorClassicApplicationsMustBeLaunchedByClassic	= 1027	To avoid deadlock Classic can't launch another Classic application by going thru CPS. This error gets returned in that case and it signals TruBlueEnvironment that it must handle this launch on its own.
kCGErrorForkFailed	= 1028	CPS was unable to fork a new process in order to launch an application.

4.40 class CGScreenRefreshEventMBS

4.40.1 class CGScreenRefreshEventMBS

Plugin Version: 16.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The class to receive events for screen updates.

4.40.2 Properties

4.40.3 Initialized as Boolean

Plugin Version: 16.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Whether object is initialized correctly.

Notes:

Should be true on OS X if initializing was done.
(Read only property)

4.40.4 Events

4.40.5 ScreenRefresh(rectCount as Integer, rects() as CGRectMBS)

Plugin Version: 16.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The event to inform you about a screen refresh.

Notes:

When an area of the display is modified or refreshed, this event function will be invoked with a count of the number of rectangles in the refreshed areas, and a list of the refreshed rectangles. The rectangles are in global coordinates.

Quartz invokes this event when operations such as drawing, window movement, scrolling, or display reconfiguration occur on local displays.

Note that a single rectangle may occupy multiple displays, either by overlapping the displays or by residing on coincident displays when mirroring is active. You can use the function `CGDisplayMBS.GetDisplaysWithRect` to determine the displays a rectangle occupies.

4.41 class CGScreenUpdateMoveEventMBS

4.41.1 class CGScreenUpdateMoveEventMBS

Plugin Version: 16.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The class to get event when something on screen changes.

4.41.2 Properties

4.41.3 Initialized as Boolean

Plugin Version: 16.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Whether object is initialized correctly.

Notes:

This should be true on Mac after calling constructor.
(Read only property)

4.41.4 Events

4.41.5 ScreenMove(deltaX as Integer, deltaY as Integer, rectCount as Integer, rects() as CGRectMBS)

Plugin Version: 16.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The event invoked when an area of the display is moved.

Notes:

When an area of the display is moved, your callback function will be invoked with a count of the number of rectangles in the moved area, and a list of the moved rectangles. The rectangles are in global coordinates, and describe the area prior to the move operation.

A single rectangle may occupy multiple displays, either by overlapping the displays or by residing on coincident displays when mirroring is active. Use `CGDisplayMBS.GetDisplaysWithRect` to determine the displays a rectangle occupies.

DeltaX/DeltaY: The distance a region on the screen moves in pixel units.

The fields `deltaX` and `deltaY` describe the direction of movement. Positive values of `deltaX` indicate movement to the right; negative values indicate movement to the left. Positive values of `deltaY` indicate movement downward; negative values indicate movement upward.

4.42 class CGShadingMBS

4.42.1 class CGShadingMBS

Plugin Version: 6.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** To shade means to fill using a smooth transition between colors across an area. Quartz shadings simplify several common shading operations. Quartz shadings currently support radial and axial gradient fills.

Notes: To paint with a Quartz shading, you call `CGContextMBS.DrawShading`. This function fills the current clipping path using the specified color gradient, calling your parametric function repeatedly as it draws.

4.42.2 Properties

4.42.3 Handle as Integer

Plugin Version: 6.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Handle to the `CGShadingRef`.

Notes: (Read and Write property)

4.43 class CGSizeMBS

4.43.1 class CGSizeMBS

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a core graphics size.

4.43.2 Methods

4.43.3 ApplyAffineTransform(p as CGAffineTransformMBS) as CGSizeMBS

Plugin Version: 3.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Transform 'size' by 't' and return the result: $s' = s * t$ where $s = [\text{width height } 0]$.

4.43.4 Binary as MemoryBlock

Plugin Version: 3.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the internal data of the object as a CGSize for use on Toolbox calls.

Example:

```
dim c as CGSizeMBS
```

```
dim m as MemoryBlock
```

```
c=CGMakeSizeMBS(10,20)
```

```
m=c.Binary
```

```
MsgBox str(m.Size) // 8
```

```
MsgBox str(m.doubleValue( 0)) // 10
```

```
MsgBox str(m.doubleValue( 4)) // 20
```

4.43.5 Constructor

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates an zero size object.

See also:

- 4.43.6 Constructor(p as Ptr) 476
- 4.43.7 Constructor(source as CGSizeMBS) 476

- 4.43.8 Constructor(width as Double, height as Double) 476

4.43.6 Constructor(p as Ptr)

Plugin Version: 17.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new instance using data at the pointer.

Notes: Make sure the pointer is valid and has the right data and size.

See also:

- 4.43.5 Constructor 475
- 4.43.7 Constructor(source as CGSizeMBS) 476
- 4.43.8 Constructor(width as Double, height as Double) 476

4.43.7 Constructor(source as CGSizeMBS)

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor which copies the values from the other size object.

See also:

- 4.43.5 Constructor 475
- 4.43.6 Constructor(p as Ptr) 476
- 4.43.8 Constructor(width as Double, height as Double) 476

4.43.8 Constructor(width as Double, height as Double)

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a size object with the given values.

See also:

- 4.43.5 Constructor 475
- 4.43.6 Constructor(p as Ptr) 476
- 4.43.7 Constructor(source as CGSizeMBS) 476

4.43.9 Equal(p as CGSizeMBS) as boolean

Plugin Version: 3.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns true if two CGSize objects are equal.

4.43.10 Make(width as Double, height as Double) as CGSizeMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a new CGSizeMBS object with the given values.

4.43.11 Zero as CGSizeMBS

Plugin Version: 9.5, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the zero size.

Notes: The "zero" size – equivalent to CGSizeMBS.Make(0, 0).

4.43.12 Properties

4.43.13 height as Double

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The height property of the point.

Notes: (Read and Write property)

4.43.14 width as Double

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The width property of the point.

Notes: (Read and Write property)

4.44 class CGSTransitionMBS

4.44.1 class CGSTransitionMBS

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a transition to the CoreGraphics System.

Notes:

Requires Mac OS X 10.4.

All functions used by the CGS classes are private APIs, so Apple does not guarantee that they work in future Mac OS X versions.

4.44.2 Methods

4.44.3 Invoke(duration as single)

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Performs the transition.

Example:

```
// cube transition for the whole screen
dim r as CGSTransitionRequestMBS
dim co as CGSConnectionMBS // global property
dim ct as CGSTransitionMBS // global property

co=new CGSConnectionMBS

r=new CGSTransitionRequestMBS
r.TransitionType=r.CGSCube
r.TransitionOption=r.CGSLeft
r.HasBackGround=true
r.HasBackColor=false

ct=co.NewTransition(r)
if ct<>Nil then
window1.refresh // draw new screen
ct.invoke 5
ct.wait 5
ct.release
else
MsgBox "Error creating the transition."
end if
```

Notes:

duration is the time in seconds the duration will need to complete.
Lasterror is set.

4.44.4 Release

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Releases the transaction.

Example:

```
dim r as CGSTransitionRequestMBS
dim co as CGSConnectionMBS // global property
dim ct as CGSTransitionMBS // global property
dim cw as CGSWindowMBS
```

```
co=new CGSConnectionMBS
```

```
cw=co.CGSWindow(window1)
```

```
r=new CGSTransitionRequestMBS
r.TransitionType=r.CGSCube
r.TransitionOption=r.CGSLeft
r.HasBackGround=false
r.HasBackColor=false
r.Win=cw
```

```
ct=co.NewTransition(r)
if ct<>Nil then
  window1.refresh // draw new screen
  ct.invoke 5
  ct.wait 5
  ct.release
else
  MsgBox "Error creating the transition."
end if
```

Notes:

Lasterror is set.
Must be called after performing a transition, but not before the transition is finished.

4.44.5 Run(duration as single)

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Runs a transition effect for the given duration.

Example:

```
dim r as CGSTransitionRequestMBS
dim co as CGSConnectionMBS // global property
dim ct as CGSTransitionMBS // global property
dim cw as CGSWindowMBS

co=new CGSConnectionMBS

cw=co.CGSWindow(window1)

r=new CGSTransitionRequestMBS
r.TransitionType=r.CGSCube
r.TransitionOption=r.CGSLeft
r.HasBackGround=false
r.HasBackColor=false
r.Win=cw

ct=co.NewTransition(r)
if ct<>Nil then
window1.Refresh // draw new window

ct.run(2)
else
MsgBox "Error creating the transition."
end if
```

Notes: Same as calling Invoke, Wait and Release.

4.44.6 Wait(duration as single)

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Waits the given time in second.

Example:

// instead of wait(5) you can do this to give time to other threads and timers of your application:

```
dim ct as CGSTransitionMBS
dim t as Integer

t=ticks+300 // 60th of a second * 300 = 5 seconds
```



```
while ticks<t  
ct.wait(0.1)  
app.YieldToNextThread  
wend
```

Notes: All the CPU time is given away to other applications to give maximum performance to the transition.

4.44.7 Properties

4.44.8 Connection as CGSConnectionMBS

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The reference to the connection used.

Notes:

Every CGS class has a reference to the connection so the connection object stays in memory as long as one of the depending objects is being used.

(Read only property)

4.44.9 ConnectionHandle as Integer

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The handle to the CGS connection being used.

Notes:

Most of the functions need this value and it needs to be not zero.

(Read and Write property)

4.44.10 Handle as Integer

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The internal handle for this transition.

Notes: (Read and Write property)

4.45 class CGSTransitionRequestMBS

4.45.1 class CGSTransitionRequestMBS

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a transition request to the CoreGraphics System.

Notes:

Requires Mac OS X 10.4.

All functions used by the CGS classes are private APIs, so Apple does not guarantee that they work in future Mac OS X versions.

4.45.2 Methods

4.45.3 Run(duration as single) as boolean

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Runs a transition.

Example:

```
dim r as CGSTransitionRequestMBS
dim co as CGSConnectionMBS // global property
dim cw as CGSWindowMBS // global property

co=new CGSConnectionMBS

cw=co.CGSWindow(window1)

r=new CGSTransitionRequestMBS
r.TransitionType=r.CGSCube
r.TransitionOption=r.CGSLeft
r.HasBackGround=false
r.HasBackColor=false
r.Win=cw
call r.run(5)
```

Notes:

Lasterror is set.

Transitions seem not to work in Carbon PEF builds. MachO works.

4.45.4 Properties

4.45.5 Blue as Single

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Blue part of the backcolor.

Notes:

Range is from 0.0 (no color) to 1.0 (full color).
(Read and Write property)

4.45.6 Green as Single

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Green part of the backcolor.

Notes:

Range is from 0.0 (no color) to 1.0 (full color).
(Read and Write property)

4.45.7 HasBackColor as Boolean

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Whether the background on the transition has a color.

Example:

```
dim r as CGSTransitionRequestMBS
dim co as CGSConnectionMBS // global property
dim ct as CGSTransitionMBS // global property

r=new CGSTransitionRequestMBS
r.TransitionType=r.CGSWarpSwitch
r.TransitionOption=r.CGSLeft
r.HasBackGround=true
r.HasBackColor=true
r.red=0 // all zero is black, all one is white
r.Blue=0
r.Green=0

ct=co.NewTransition(r)
if ct<>Nil then
window1.Refresh
ct.Invoke(2)
ct.Wait(2)
ct.Release
```

```
else  
MsgBox "Error creating the transition."  
end if
```

Notes: (Read and Write property)

4.45.8 HasBackGround as Boolean

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Whether you want to use the background or not.

Example:

```
dim r as new CGSTransitionRequestMBS  
r.HasBackGround=false // best for a window in place transition
```

Notes:

If HasBackGround is true, a background is drawn behind the transition which may have a background color. (Read and Write property)

4.45.9 Red as Single

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Red part of the backcolor.

Notes:

Range is from 0.0 (no color) to 1.0 (full color). (Read and Write property)

4.45.10 TransitionOption as Integer

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The transition options to use.

Example:

```
dim r as CGSTransitionRequestMBS  
r.TransitionOption=r.CGSLeft
```

Notes:

One of the constants:

CGSDown	= 0	Old desktop moves down.
CGSLeft	= 1	Old desktop moves left.
CGSRight	= 2	Old desktop moves right.
CGSInRight	= 3	CGSSwap: Old desktop moves into screen, new comes from right.
CGSBottomLeft	= 5	CGSSwap: Old desktop moves to bottom left, new comes from top right.
CGSBottomRight	= 6	Old desktop to bottom right, New from top left.
CGSDownTopRight	= 7	CGSSwap: Old desktop moves down, new from top right.
CGSup	= 8	Old desktop moves up.
CGSTopLeft	= 9	Old desktop moves top left.
CGSTopRight	= 10	CGSSwap: old to top right. new from bottom left.
CGSupBottomRight	= 11	CGSSwap: old desktop up, new from bottom right.
CGSInBottom	= 12	CGSSwap: old in, new from bottom.
CGSLeftBottomRight	= 13	CGSSwap: old one moves left, new from bottom right.
CGSRightBottomLeft	= 14	CGSSwap: old one moves right, new from bottom left.
CGSInBottomRight	= 15	CGSSwap: onl one in, new from bottom right.
CGSInOut	= 16	CGSSwap: old in, new out.

(Read and Write property)

4.45.11 TransitionType as Integer

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The transition to use.

Notes:

One of the constants:

CGSNone	= 0	No transition effect.
CGSFade	= 1	Cross-fade.
CGSZoom	= 2	Zoom/fade towards us.
CGSReveal	= 3	Reveal new desktop under old.
CGSSlide	= 4	Slide old out and new in.
CGSWarpFade	= 5	Warp old and fade out revealing new.
CGSSwap	= 6	Swap desktops over graphically.
CGSCube	= 7	The well-known cube effect.
CGSWarpSwitch	= 8	Warp old, switch and un-warp.
CGSFlip	= 9	The flip effect known from Dashboard

(Read and Write property)

4.45.12 Win as CGSWindowMBS

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The window to use for the transition.

Notes:

Set to nil to do a full screen transition.
(Read and Write property)

4.45.13 Constants

4.45.14 CGSBottomLeft = 5

Plugin Version: 7.4. **Function:** CGSSwap: Old desktop moves to bottom left, new comes from top right.

4.45.15 CGSBottomRight = 6

Plugin Version: 7.4. **Function:** Old desktop to bottom right, New from top left.

4.45.16 CGSCube = 7

Plugin Version: 7.4. **Function:** The well-known cube effect.

4.45.17 CGSDown = 0

Plugin Version: 7.4. **Function:** Old desktop moves down.

4.45.18 CGSDownTopRight = 7

Plugin Version: 7.4. **Function:** CGSSwap: Old desktop moves down, new from top right.

4.45.19 CGSFade = 1

Plugin Version: 7.4. **Function:** Cross-fade effect.

4.45.20 CGSFlip = 9

Plugin Version: 7.4. **Function:** The flip transition effect. (like Dashboard)

Example:

```
dim r as CGSTransitionRequestMBS
dim co as CGSConnectionMBS // global property
dim ct as CGSTransitionMBS // global property
dim cw as CGSWindowMBS
```

```
co=new CGSConnectionMBS
```

```
cw=co.CGSWindow(window1)
```

```
r=new CGSTransitionRequestMBS
r.TransitionType=r.CGSFlip
r.TransitionOption=r.CGSLeft
r.HasBackGround=false
r.HasBackColor=false
r.Win=cw
```

```
ct=co.NewTransition(r)
if ct<>Nil then
window1.Refresh
ct.Invoke(1)
ct.Wait(1)
ct.Release
else
MsgBox "Error creating the transition."
end if
```

4.45.21 CGSInBottom = 12

Plugin Version: 7.4. **Function:** CGSSwap: old in, new from bottom.

4.45.22 CGSInBottomRight = 15

Plugin Version: 7.4. **Function:** CGSSwap: onl one in, new from bottom right.

4.45.23 CGSInOut = 16

Plugin Version: 7.4. **Function:** CGSSwap: old in, new out.

4.45.24 CGSInRight = 3

Plugin Version: 7.4. **Function:** CGSSwap: Old desktop moves into screen, new comes from right.

4.45.25 CGSLeft = 1

Plugin Version: 7.4. **Function:** Old desktop moves left.

4.45.26 CGSLeftBottomRight = 13

Plugin Version: 7.4. **Function:** CGSSwap: old one moves left, new from bottom right.

4.45.27 CGSNone = 0

Plugin Version: 7.4. **Function:** No transition effect.

4.45.28 CGSReveal = 3

Plugin Version: 7.4. **Function:** Reveal new desktop under old.

4.45.29 CGSRight = 2

Plugin Version: 7.4. **Function:** Old desktop moves right.

Example:

```
// flip transition for the window
dim r as CGSTransitionRequestMBS
dim co as new CGSConnectionMBS
dim w as CGSWindowMBS = co.CGSWindow(window1)
```

```
r=new CGSTransitionRequestMBS
r.TransitionType=r.CGSFlip
```



```

r.TransitionOption=r.CGSRight
r.HasBackGround=false
r.HasBackColor=false
r.Win=w

dim ct as CGSTransitionMBS = co.NewTransition(r)
if ct<>Nil then
PagePanel1.Value = 0
Refresh

ct.invoke 0.5
ct.wait 0.5
ct.release
end if

```

4.45.30 CGSRightBottomLeft = 14

Plugin Version: 7.4. **Function:** CGSSwap: old one moves right, new from bottom left.

4.45.31 CGSSlide = 4

Plugin Version: 7.4. **Function:** Slide old out and new in.

Example:

```

dim r as CGSTransitionRequestMBS
dim co as CGSConnectionMBS // global property
dim ct as CGSTransitionMBS // global property
dim cw as CGSWindowMBS

co=new CGSConnectionMBS

cw=co.CGSWindow(window1)

r=new CGSTransitionRequestMBS
r.TransitionType=r.CGSSlide
r.TransitionOption=r.CGSLeft
r.win=cw

ct=co.NewTransition(r)
if ct<>Nil then
window1.Refresh
ct.Run(2)
else

```

```
MsgBox "Error creating the transition."  
end if
```

4.45.32 CGSSwap = 6

Plugin Version: 7.4. **Function:** Swap desktops over graphically.

4.45.33 CGSTopLeft = 9

Plugin Version: 7.4. **Function:** Old desktop moves top left.

4.45.34 CGSTopRight = 10

Plugin Version: 7.4. **Function:** CGSSwap: old to top right. new from bottom left.

4.45.35 CGSUp = 8

Plugin Version: 7.4. **Function:** Old desktop moves up.

4.45.36 CGSUpBottomRight = 11

Plugin Version: 7.4. **Function:** CGSSwap: old desktop up, new from bottom right.

4.45.37 CGSWarpFade = 5

Plugin Version: 7.4. **Function:** Warp old and fade out revealing new.

Example:

```
dim r as CGSTransitionRequestMBS  
dim co as CGSConnectionMBS // global property  
dim ct as CGSTransitionMBS // global property  
dim cw as CGSWindowMBS
```

```
co=new CGSConnectionMBS
```

```

cw=co.CGSWindow(window1)

r=new CGSTransitionRequestMBS
r.TransitionType=r.CGSWarpFade
r.TransitionOption=r.CGSLeft
r.win=cw

ct=co.NewTransition(r)
if ct<>Nil then
window1.Refresh
ct.Run(2)
else
MsgBox "Error creating the transition."
end if

```

4.45.38 CGSWarpSwitch = 8

Plugin Version: 7.4. **Function:** Warp old, switch and un-warp.

Example:

```

dim r as CGSTransitionRequestMBS
dim co as CGSConnectionMBS // global property
dim ct as CGSTransitionMBS // global property
dim cw as CGSWindowMBS

co=new CGSConnectionMBS

cw=co.CGSWindow(window1)

r=new CGSTransitionRequestMBS
r.TransitionType=r.CGSWarpSwitch
r.TransitionOption=r.CGSLeft
r.HasBackGround=false
r.HasBackColor=false
r.Win=cw

ct=co.NewTransition(r)
if ct<>Nil then
window1.Refresh
ct.Invoke(5)
ct.Wait(5)
ct.Release
else
MsgBox "Error creating the transition."
end if

```

4.45.39 CGSZoom = 2

Plugin Version: 7.4. **Function:** Zoom/fade towards us.

4.46 class CGSValueMBS

4.46.1 class CGSValueMBS

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a value to the CoreGraphics System.

Notes:

Requires Mac OS X 10.4.

All functions used by the CGS classes are private APIs, so Apple does not guarantee that they work in future Mac OS X versions.

4.46.2 Methods

4.46.3 IntegerValue as Integer

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The integer value of this object.

4.46.4 StringValue as string

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The string value of this object.

4.46.5 Properties

4.46.6 Connection as CGSConnectionMBS

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The reference to the connection used.

Notes:

Every CGS class has a reference to the connection so the connection object stays in memory as long as one of the depending objects is being used.

(Read only property)

4.46.7 ConnectionHandle as Integer

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The handle to the CGS connection being used.

Notes:

Most of the functions need this value and it needs to be not zero.
(Read and Write property)

4.46.8 Handle as Integer

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The internal used handle.

Notes: (Read and Write property)

4.47 class CGSWindowListMBS

4.47.1 class CGSWindowListMBS

Plugin Version: 8.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** An array of CGSWindowMBS objects.

Example:

```
dim c as new CGSConnectionMBS
dim list as CGSWindowListMBS = c.GetWindowList
```

```
dim names() as string
dim u as Integer = List.Count-1
for i as Integer = 0 to u
dim w as CGSWindowMBS = List.Item(i)
names.append w.Title
next
```

```
MsgBox str(List.Count)+" windows: "+Join(names, ", ")
```

4.47.2 Methods

4.47.3 Item(index as Integer) as CGSWindowMBS

Plugin Version: 8.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the window with the given index.

Notes: Index is from 0 to count-1.

4.47.4 Properties

4.47.5 Connection as CGSConnectionMBS

Plugin Version: 8.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The reference to the connection used.

Notes:

Every CGS class has a reference to the connection so the connection object stays in memory as long as one of the depending objects is being used.

(Read only property)

4.47.6 ConnectionHandle as Integer

Plugin Version: 8.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The handle to the CGS connection being used.

Notes:

Most of the functions need this value and it needs to be not zero.
(Read and Write property)

4.47.7 Count as Integer

Plugin Version: 8.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The number of CGSWindow objects in that array.

Notes: (Read and Write property)

4.47.8 Handle as Integer

Plugin Version: 8.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The handle to the window list.

Notes: (Read and Write property)

4.48 class CGSWindowMBS

4.48.1 class CGSWindowMBS

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a window in the CoreGraphics System.

Notes:

Requires Mac OS X 10.4.

All functions used by the CGS classes are private APIs, so Apple does not guarantee that they work in future Mac OS X versions.

To find all processes on Mac, use the ProcessMBS class.

To find all windows on Windows, use the WindowsListMBS class.

Not official supported by Apple and some effects don't work well on latest OS X versions!

4.48.2 Methods

4.48.3 Flush

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Flushes this window.

Example:

```
dim co as CGSConnectionMBS
dim cw as CGSWindowMBS
```

```
co=new CGSConnectionMBS
cw=co.CGSWindow(window1)
```

```
cw.Flush
```

Notes: Lasterror is set.

4.48.4 Height as Double

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The height of this window.

Example:

```
dim co as CGSConnectionMBS
dim cw as CGSWindowMBS
```

```
co=new CGSConnectionMBS
cw=co.CGSWindow(window1)
```

```
MsgBox str(cw.height)
```

4.48.5 Left as Double

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The left position of this window.

Example:

```
dim co as CGSConnectionMBS
dim cw as CGSWindowMBS
```

```
co=new CGSConnectionMBS
cw=co.CGSWindow(window1)
```

```
MsgBox str(cw.left)
```

4.48.6 Level as Integer

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The window level of this window.

Notes: See WindowGroupMBS.level or OverlayWindow.Level for details.

4.48.7 Move(byref x as single, byref y as single)

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Moves the window.

4.48.8 Order(mode as Integer, relativeToWindow as CGSWindowMBS=nil)

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Reorders the window.
Notes:

Lasterror is set.

Mode must be kCGSOrderAbove, kCGSOrderBelow or kCGSOrderOut.

4.48.9 Title as string

Plugin Version: 8.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The window title.

4.48.10 Top as Double

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The top position of this window.

Example:

```
dim co as CGSConnectionMBS
dim cw as CGSWindowMBS
```

```
co=new CGSConnectionMBS
cw=co.CGSWindow(window1)
```

```
MsgBox str(cw.top)
```

Notes: In Pixel from the top of the screen.

4.48.11 Uncover

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Uncovers the window.

Notes: Lasterror is set.

4.48.12 Warp(w as Integer, h as Integer, value as memoryblock)

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Sets the wrap of a window.

Example:

```
dim w,h as Integer
dim m as memoryblock
dim localx,localy, gobalx,gobaly as Integer
dim offset as Integer
```

```
m=newmemoryblock(w*h*16)
```

```

// for each row
// for each point in row
m.SingleValue(offset)=localx
offset=offset+4
m.SingleValue(offset)=localy
offset=offset+4
m.SingleValue(offset)=gobalx
offset=offset+4
m.SingleValue(offset)=gobaly
offset=offset+4

```

Notes:

the memoryblock must be of size $w*h*sizeof(single)*4$.
 a single is 4 bytes, so this is $16*w*h$
 w is the number of horizontal points you define.
 h is the number of vertical points you define.

Basicly you define for a local point in the window the point onscreen where it is moved to. See the example project for more details.

4.48.13 Width as Double

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The width of this window.

Example:

```

dim co as CGSConnectionMBS
dim cw as CGSWindowMBS

co=new CGSConnectionMBS
cw=co.CGSWindow(window1)

MsgBox str(cw.width)

```

4.48.14 Workspace as CGSWorkspaceMBS

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The workspace where this window is part of.

4.48.15 Properties

4.48.16 Connection as CGSConnectionMBS

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The reference to the connection used.

Notes:

Every CGS class has a reference to the connection so the connection object stays in memory as long as one of the depending objects is being used.

(Read only property)

4.48.17 ConnectionHandle as Integer

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The handle to the CGS connection being used.

Notes:

Most of the functions need this value and it needs to be not zero.

(Read and Write property)

4.48.18 Handle as Integer

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The window handle.

Notes:

This is not a WindowRef or a NSWindow pointer!

(Read and Write property)

4.48.19 LastError as Integer

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Last error code reported.

Notes:

The list of CoreGraphics error (from Mac OS X 10.4)

(Read and Write property)

kCGErrorSuccess	= 0	Success
kCGErrorFailure	= 1000	Failure
kCGErrorIllegalArgument	= 1001	Illegal Argument
kCGErrorInvalidConnection	= 1002	Invalid Connection
kCGErrorInvalidContext	= 1003	Invalid Context
kCGErrorCannotComplete	= 1004	Cannot complete
kCGErrorNameTooLong	= 1005	Name is too long
kCGErrorNotImplemented	= 1006	Not implemented
kCGErrorRangeCheck	= 1007	Out of bounds
kCGErrorTypeCheck	= 1008	Type error
kCGErrorNoCurrentPoint	= 1009	No current point
kCGErrorInvalidOperation	= 1010	Invalid Operation
kCGErrorNoneAvailable	= 1011	internal errors have taken 1012 1013 and 1014
kCGErrorApplicationRequiresNewerSystem	= 1015	the application being launched says in it's bundle info that it requires a newer version of the system than is currently running.
kCGErrorApplicationNotPermittedToExecute	= 1016	Macintosh Manager is active and this application is not permitted to run
kCGErrorApplicationIncorrectExecutableFormatFound	= 1023	the application being launched does not have any executable code for the current system.
kCGErrorApplicationIsLaunching	= 1024	The application is in the process of launching but hasn't checked in yet. Any launch data provided will be given to the application when it does check in.
kCGErrorApplicationAlreadyRunning	= 1025	The application being launched was already running (and had already checked in) and so any launch data provided can not be delivered to in by CPS
kCGErrorApplicationCanOnlyBeRunInOneSessionAtATime	= 1026	The application being launched is incompatible with multiple user sessions and is already running in another session by another user.
kCGErrorClassicApplicationsMustBeLaunchedByClassic	= 1027	To avoid deadlock Classic can't launch another Classic application by going thru CPS. This error gets returned in that case and it signals TruBlueEnvironment that it must handle this launch on its own.
kCGErrorForkFailed	= 1028	CPS was unable to fork a new process in order to launch an application.

4.48.20 AffineTransform as CGAffineTransformMBS

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The transformation of this window.

Example:

```
// rotates the window.
```

```
dim a as CGAffineTransformMBS
```

```
a=CGAffineTransformMBS.MakeRotation(1)
```

```
a=a.Translate(-Width,-Height)
```

```
dim co as CGSConnectionMBS
```

```
dim cw as CGSWindowMBS
```

```
co=new CGSConnectionMBS
```

```
cw=co.CGSWindow(window1)
```

```
cw.AffineTransform=a
```

Notes:

Lasterror is set.

(Read and Write computed property)

4.48.21 Alpha as single

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The alpha value for this window.

Example:

```
dim cw as CGSWindowMBS
dim co as new CGSConnectionMBS
```

```
cw=co.CGSWindow(window1)
cw.Alpha=0.2
```

```
// same as:
```

```
// self.TransparencyMBS=0.2
```

Notes:

0 is invisible and 1.0 is visible.

You may prefer to use the window TransparencyMBS property instead as it uses documented APIs. (Read and Write computed property)

4.48.22 EventMask as Integer

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The event mask of this window.

Notes: (Read and Write computed property)

4.48.23 Constants

4.48.24 kCGSOrderAbove = 1

Plugin Version: 7.4. **Function:** Window is ordered above target.

4.48.25 kCGSOrderBelow = -1

Plugin Version: 7.4. **Function:** Window is ordered below target.

4.48.26 kCGSOrderOut = 0

Plugin Version: 7.4. **Function:** Window is removed from the on-screen.

4.49 class CGSWorkspaceMBS

4.49.1 class CGSWorkspaceMBS

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a workspace to the CoreGraphics System.

Notes:

Requires Mac OS X 10.4.

All functions used by the CGS classes are private APIs, so Apple does not guarantee that they work in future Mac OS X versions.

Not official supported by Apple and some effects don't work well on latest OS X versions!

4.49.2 Methods

4.49.3 GetWorkspaceWindowList as CGSWindowListMBS

Plugin Version: 8.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Returns the list of windows for this workspace.

Notes: Returns nil on any error.

4.49.4 MoveWindows(target as CGSWorkspaceMBS)

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Moves all windows from one workspace to another.

Notes: Lasterror is set.

4.49.5 Properties

4.49.6 Connection as CGSConnectionMBS

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The reference to the connection used.

Notes:

Every CGS class has a reference to the connection so the connection object stays in memory as long as one of the depending objects is being used.

(Read only property)

4.49.7 ConnectionHandle as Integer

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The handle to the CGS connection being used.

Notes:

Most of the functions need this value and it needs to be not zero.
(Read and Write property)

4.49.8 Handle as Integer

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The internal used handle to the workspace.

Notes: (Read and Write property)

4.49.9 LastError as Integer

Plugin Version: 7.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Last error code reported.

Notes:

The list of CoreGraphics error (from Mac OS X 10.4)

kCGErrorSuccess	= 0	Success
kCGErrorFailure	= 1000	Failure
kCGErrorIllegalArgument	= 1001	Illegal Argument
kCGErrorInvalidConnection	= 1002	Invalid Connection
kCGErrorInvalidContext	= 1003	Invalid Context
kCGErrorCannotComplete	= 1004	Cannot complete
kCGErrorNameTooLong	= 1005	Name is too long
kCGErrorNotImplemented	= 1006	Not implemented
kCGErrorRangeCheck	= 1007	Out of bounds
kCGErrorTypeCheck	= 1008	Type error
kCGErrorNoCurrentPoint	= 1009	No current point
kCGErrorInvalidOperation	= 1010	Invalid Operation
kCGErrorNoneAvailable	= 1011	internal errors have taken 1012 1013 and 1014
kCGErrorApplicationRequiresNewerSystem	= 1015	the application being launched says in it's bundle info that it requires a newer version of the system than is currently running.
kCGErrorApplicationNotPermittedToExecute	= 1016	Macintosh Manager is active and this application is not permitted to run
kCGErrorApplicationIncorrectExecutableFormatFound	= 1023	the application being launched does not have any executable code for the current system.
kCGErrorApplicationIsLaunching	= 1024	The application is in the process of launching but hasn't checked in yet. Any launch data provided will be given to the application when it does check in.
kCGErrorApplicationAlreadyRunning	= 1025	The application being launched was already running (and had already checked in) and so any launch data provided can not be delivered to in by CPS
kCGErrorApplicationCanOnlyBeRunInOneSessionAtATime	= 1026	The application being launched is incompatible with multiple user sessions and is already running in another session by another user.
kCGErrorClassicApplicationsMustBeLaunchedByClassic	= 1027	To avoid deadlock Classic can't launch another Classic application by going thru CPS. This error gets returned in that case and it signals TruBlueEnvironment that it must handle this launch on its own.
kCGErrorForkFailed	= 1028	CPS was unable to fork a new process in order to launch an application.

(Read and Write property)

4.50 class OverlayWindowMBS

4.50.1 class OverlayWindowMBS

Plugin Version: 2.9, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for an overlay window.

Notes:

Please consider using OverlayMBS instead of OverlayWindowMBS. OverlayMBS is cross platform for Mac and Windows.

OverlayWindowMBS is not supported for 64 bit targets.

This window can be on top of all other windows or on some layer between. As it can be transparent you can use it to draw on it to draw on the screen.

(e.g. a ruler)

Some Realbasic versions block event handling on Realbasic windows which are behind the overlay window. RB 2006r5 does fix that.

Only supported on Mac OS X with 32 bit. Please use OverlayMBS windows for all new projects.

4.50.2 Methods

4.50.3 AttachToWindow(TargetWindow as window, LiveResize as boolean)

Plugin Version: 3.3, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Attaches the overlay window to flow just over the target RB window.

Notes:

If Liversize is true the BoundsChanged event will fire when the window is being resized or moved, not just after the user finished.

This connection can't currently be removed unless you destroy the Overlay window.

Currently not supported on Cocoa.

See also:

- 4.50.4 AttachToWindow(TargetWindow as window, LiveResize as boolean, KeepEqualSize as boolean)
509
- 4.50.5 AttachToWindow(TargetWindow as window, LiveResize as boolean, KeepEqualSize as boolean, OtherWindow as OverlayWindowMBS) 509

4.50.4 AttachToWindow(TargetWindow as window, LiveResize as boolean, KeepEqualSize as boolean)

Plugin Version: 4.0, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Attaches the overlay window to flow just over the target RB window.

Notes:

Sames as the other AttachToWindow variation, but if KeepEqualSize, the window is not resized to the whole window and the window is not resized if the parent window resizes.

Currently not supported on Cocoa.

See also:

- 4.50.3 AttachToWindow(TargetWindow as window, LiveResize as boolean) 508
- 4.50.5 AttachToWindow(TargetWindow as window, LiveResize as boolean, KeepEqualSize as boolean, OtherWindow as OverlayWindowMBS) 509

4.50.5 AttachToWindow(TargetWindow as window, LiveResize as boolean, KeepEqualSize as boolean, OtherWindow as OverlayWindowMBS)

Plugin Version: 4.0, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Attaches the overlay window to flow just over the target RB window.

Notes:

Sames as theother AttachToWindow variation, but the new window will coexists with another Overlaywindow attached to the same parent window.

(this should work with more than 2 windows, if you just pass an already created window when attaching another one.)

Currently not supported on Cocoa.

See also:

- 4.50.3 AttachToWindow(TargetWindow as window, LiveResize as boolean) 508
- 4.50.4 AttachToWindow(TargetWindow as window, LiveResize as boolean, KeepEqualSize as boolean) 509

4.50.6 close

Plugin Version: 2.9, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Closes the window.

4.50.7 Context as CGContextMBS

Plugin Version: 2.9, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new context object to draw into the window.

Notes: Don't forget to call flush of the context object to make the changes visible.

4.50.8 Create(left as Integer, top as Integer, width as Integer, height as Integer) as Integer

Plugin Version: 2.9, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new window.

Example:

```
// Doing the Dock's poof animation
// No error checking in this code!
```

```
Sub poof(x as Integer,y as Integer)
# pragma disableawaitcursor
```

```
dim f as FolderItem
dim png as PNGpictureMBS
dim o as OverlayWindowMBS
dim p,m as Picture
dim c as CGContextMBS
dim cp as CGImageMBS
dim r as CGRectMBS
dim t,i as Integer
```

```
// 128 is full size
```

```
const targetwidth=128
const targetheight=128
```

```
f=CoreServicesFolderMBS(-32766)
```

```
f=f.Child("Dock.app")
```

```
f=f.Child("Contents")
```

```
f=f.Child("Resources")
```

```
f=f.Child("poof.png")
```

```
png=f.OpenAsPNGMBS(0)
```

```
o=new OverlayWindowMBS
```

```
if o.Create(x,y,targetwidth,targetheight)=0 then
o.Show

for i=0 to 4
c=o.Context

p=NewPicture(targetwidth,targetheight,32)
p.Graphics.DrawPicture png.pict,0,(-128)*i

m=NewPicture(targetwidth,targetheight,32)
m.Graphics.DrawPicture png.mask,0,(-128)*i

cp=CGCreateImageMBS(p,m)

r=CGMakeRectMBS(0,0,targetwidth,targetheight)

c.ClearRect r
c.DrawPicture cp,r

c.Flush

t=ticks
while abs(t-ticks)<5
wend
next

end if

End Sub
```

Notes:

Returns a Mac OS error code. 0 means successful. -1 means that the function is not available, e.g. on Windows. Any other value is a Mac OS error code and you can use the MacErrorString function to get what it means.

Only supported on Mac OS X with 32 bit. Please use OverlayMBS windows for all new projects.

4.50.9 Flush

Plugin Version: 2.9, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Flushes the window's graphics.

4.50.10 Hide

Plugin Version: 2.9, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Hides the window.
Notes: Changes the state of the window to invisible.

4.50.11 InstallEventHandler

Plugin Version: 3.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Registers an event handler so Mac OS X informs us about the mouse events.

4.50.12 RemoveEventHandler

Plugin Version: 3.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Removes the event handler for the mouse events.

4.50.13 SetBounds(left as Integer, top as Integer, width as Integer, height as Integer)

Plugin Version: 5.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Changes the bounds of the overlay window in one run.

Notes: If you change left, top, width and height each after the other you may have several unneeded redraws.

4.50.14 Show

Plugin Version: 2.9, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Shows the window.
Notes: Changes the state of the window to visible.

4.50.15 TransitionOverlay(parent as OverlayWindowMBS, effect as Integer, action as Integer) as Integer

Plugin Version: 8.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Runs window transition.

Notes: see other TransitionOverlay method for details.

See also:

- 4.50.16 TransitionOverlay(parent as OverlayWindowMBS, effect as Integer, action as Integer, Async_ as boolean, duration as Double) as Integer 513
- 4.50.17 TransitionOverlay(parent as OverlayWindowMBS, effect as Integer, action as Integer, left as Integer, top as Integer, width as Integer, height as Integer) as Integer 513
- 4.50.18 TransitionOverlay(parent as OverlayWindowMBS, effect as Integer, action as Integer, left as Integer, top as Integer, width as Integer, height as Integer, Async_ as boolean, duration as Double) as Integer 514

4.50.16 TransitionOverlay(parent as OverlayWindowMBS, effect as Integer, action as Integer, Async_ as boolean, duration as Double) as Integer

Plugin Version: 8.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Runs window transition with additional parameters.

Notes: see other TransitionOverlay method for details.

See also:

- 4.50.15 TransitionOverlay(parent as OverlayWindowMBS, effect as Integer, action as Integer) as Integer 513
- 4.50.17 TransitionOverlay(parent as OverlayWindowMBS, effect as Integer, action as Integer, left as Integer, top as Integer, width as Integer, height as Integer) as Integer 513
- 4.50.18 TransitionOverlay(parent as OverlayWindowMBS, effect as Integer, action as Integer, left as Integer, top as Integer, width as Integer, height as Integer, Async_ as boolean, duration as Double) as Integer 514

4.50.17 TransitionOverlay(parent as OverlayWindowMBS, effect as Integer, action as Integer, left as Integer, top as Integer, width as Integer, height as Integer) as Integer

Plugin Version: 8.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Runs window transition with additional rectangle.

Notes: see other TransitionOverlay method for details.

See also:

- 4.50.15 TransitionOverlay(parent as OverlayWindowMBS, effect as Integer, action as Integer) as Integer 513

- 4.50.16 `TransitionOverlay(parent as OverlayWindowMBS, effect as Integer, action as Integer, Async_ as boolean, duration as Double)` as Integer 513
- 4.50.18 `TransitionOverlay(parent as OverlayWindowMBS, effect as Integer, action as Integer, left as Integer, top as Integer, width as Integer, height as Integer, Async_ as boolean, duration as Double)` as Integer 514

4.50.18 `TransitionOverlay(parent as OverlayWindowMBS, effect as Integer, action as Integer, left as Integer, top as Integer, width as Integer, height as Integer, Async_ as boolean, duration as Double)` as Integer

Plugin Version: 8.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Runs window transition with additional parameters and rectangle.

Notes:

Transitions a window from one state to another with appropriate animation and sound.

<code>self:</code>	The window that should be transitioned.
<code>parent:</code>	For use with <code>kWindowSheetTransitionEffect</code> . This is the parent window of the sheet.
<code>effect:</code>	The type of visual effect to use.
<code>action:</code>	The action to take on the window.
<code>left:</code>	The rectangle to be used.
<code>top:</code>	The rectangle to be used.
<code>width:</code>	The rectangle to be used.
<code>height:</code>	The rectangle to be used.
<code>async:</code>	Whether the transition should run synchronously or asynchronously. If <code>Async</code> is true, <code>TransitionWindow</code> will return immediately, and the transition will run using an event loop timer. You must run your event loop for the transition to occur. If <code>Async</code> is false, <code>TransitionWindow</code> will block until the transition is completed.
<code>duration:</code>	The duration of the fade, in seconds. For use with the Sheet, Slide, Fade, and Genie transition effects; ignored for other effects. You may pass 0 to use the default duration. The effect is not guaranteed to last precisely this long, but should be a close approximation.

Returns Mac OS error code like 0 for success, -1 for parameter error in the plugin or -50 for parameter error.

Visual effects that are provided by `TransitionWindow`:

Actions: Modifications to window state that are provided by `TransitionWindow`

kWindowZoomTransitionEffect	1	Finder-like zoom rectangles. Use with TransitionWindow and Show or Hide transition actions
kWindowSheetTransitionEffect	2	Zoom in/out from parent. Use with TransitionWindowAndParent and Show or Hide transition actions. Available in Mac OS X, and in CarbonLib 1.5 and later.
kWindowSlideTransitionEffect	3	Slide the window into its new position. Use with TransitionWindow and Move or Resize transition actions. Available in Mac OS X, and in CarbonLib 1.5 and later.
kWindowFadeTransitionEffect	4	Fade the window into or out of visibility. Use with the Show or Hide transition actions. Available in Mac OS X 10.3 and later.
kWindowGenieTransitionEffect	5	Use the Genie effect that the Dock uses to minimize or maximize a window to show or hide the window. Use with the Show or Hide transition actions. Available in Mac OS X 10.3 and later.
kWindowShowTransitionAction	1	Shows the window. Use with the Zoom, Sheet, Fade, or Genie transition effects. For the Zoom, Sheet, and Genie effects, the rectangle parameter is the global coordinates from which to start the animation; rectangle is optional for the Zoom and Sheet effects, and in that case, the animation begins at the center of the window. The Genie effect requires a rectangle parameter. The Fade effect does not use the inRect parameter.
kWindowHideTransitionAction	2	Hides the window. Use with the Zoom, Sheet, Fade, or Genie transition effects. For the Zoom, Sheet, and Genie effects, the rectangle parameter is the global coordinates at which to end the animation; Rectangle is optional for the Zoom and Sheet effects, and in that case, the animation ends at the center of the window. The Genie effect requires a rectangle. The Fade effect does not use the inRect parameter.
kWindowMoveTransitionAction	3	Moves the window. Use with the Slide transition effect. The rectangle parameter is the global coordinates of the window's new structure bounds; Rectangle must be provided. Available in Mac OS X, and in CarbonLib 1.5 and later.
kWindowResizeTransitionAction	4	Resizes the window. Use with the Slide transition effect. The rectangle parameter is the global coordinates of the window's new structure bounds; Rectangle must be provided. Available in Mac OS X, and in CarbonLib 1.5 and later.

See also:

- 4.50.15 TransitionOverlay(parent as OverlayWindowMBS, effect as Integer, action as Integer) as Integer 513
- 4.50.16 TransitionOverlay(parent as OverlayWindowMBS, effect as Integer, action as Integer, Async_ as boolean, duration as Double) as Integer 513
- 4.50.17 TransitionOverlay(parent as OverlayWindowMBS, effect as Integer, action as Integer, left as Integer, top as Integer, width as Integer, height as Integer) as Integer 513

4.50.19 TransitionWindow(parent as window, effect as Integer, action as Integer) as Integer

Plugin Version: 8.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Runs window transition.

Notes: see other TransitionWindow method for details.

See also:

- 4.50.20 TransitionWindow(parent as window, effect as Integer, action as Integer, Async_ as boolean, duration as Double) as Integer 516
- 4.50.21 TransitionWindow(parent as window, effect as Integer, action as Integer, left as Integer, top as Integer, width as Integer, height as Integer) as Integer 516
- 4.50.22 TransitionWindow(parent as window, effect as Integer, action as Integer, left as Integer, top as Integer, width as Integer, height as Integer, Async_ as boolean, duration as Double) as Integer 517

4.50.20 TransitionWindow(parent as window, effect as Integer, action as Integer, Async_ as boolean, duration as Double) as Integer

Plugin Version: 8.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Runs window transition with additional parameters.

Notes: see other TransitionWindow method for details.

See also:

- 4.50.19 TransitionWindow(parent as window, effect as Integer, action as Integer) as Integer 515
- 4.50.21 TransitionWindow(parent as window, effect as Integer, action as Integer, left as Integer, top as Integer, width as Integer, height as Integer) as Integer 516
- 4.50.22 TransitionWindow(parent as window, effect as Integer, action as Integer, left as Integer, top as Integer, width as Integer, height as Integer, Async_ as boolean, duration as Double) as Integer 517

4.50.21 TransitionWindow(parent as window, effect as Integer, action as Integer, left as Integer, top as Integer, width as Integer, height as Integer) as Integer

Plugin Version: 8.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Runs window transition with additional rectangle.

Notes: see other TransitionWindow method for details.

See also:

- 4.50.19 TransitionWindow(parent as window, effect as Integer, action as Integer) as Integer 515
- 4.50.20 TransitionWindow(parent as window, effect as Integer, action as Integer, Async_ as boolean, duration as Double) as Integer 516
- 4.50.22 TransitionWindow(parent as window, effect as Integer, action as Integer, left as Integer, top as Integer, width as Integer, height as Integer, Async_ as boolean, duration as Double) as Integer 517

4.50.22 TransitionWindow(parent as window, effect as Integer, action as Integer, left as Integer, top as Integer, width as Integer, height as Integer, Async_ as boolean, duration as Double) as Integer

Plugin Version: 8.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Runs window transition with additional parameters and rectangle.

Notes:

Transitions a window from one state to another with appropriate animation and sound.

self:	The window that should be transitioned.
parent:	For use with kWindowSheetTransitionEffect. This is the parent window of the sheet.
effect:	The type of visual effect to use.
action:	The action to take on the window.
left:	The rectangle to be used.
top:	The rectangle to be used.
width:	The rectangle to be used.
height:	The rectangle to be used.
async:	Whether the transition should run synchronously or asynchronously. If Async is true, TransitionWindow will return immediately, and the transition will run using an event loop timer. You must run your event loop for the transition to occur. If Async is false, TransitionWindow will block until the transition is completed.
duration:	The duration of the fade, in seconds. For use with the Sheet, Slide, Fade, and Genie transition effects; ignored for other effects. You may pass 0 to use the default duration. The effect is not guaranteed to last precisely this long, but should be a close approximation.

Returns Mac OS error code like 0 for success, -1 for parameter error in the plugin or -50 for parameter error.

Visual effects that are provided by TransitionWindow:

Actions: Modifications to window state that are provided by TransitionWindow

See also:

- 4.50.19 TransitionWindow(parent as window, effect as Integer, action as Integer) as Integer 515
- 4.50.20 TransitionWindow(parent as window, effect as Integer, action as Integer, Async_ as boolean, duration as Double) as Integer 516

<code>kWindowZoomTransitionEffect</code>	1	Finder-like zoom rectangles. Use with <code>TransitionWindow</code> and <code>Show</code> or <code>Hide</code> transition actions
<code>kWindowSheetTransitionEffect</code>	2	Zoom in/out from parent. Use with <code>TransitionWindowAndParent</code> and <code>Show</code> or <code>Hide</code> transition actions. Available in Mac OS X, and in CarbonLib 1.5 and later.
<code>kWindowSlideTransitionEffect</code>	3	Slide the window into its new position. Use with <code>TransitionWindow</code> and <code>Move</code> or <code>Resize</code> transition actions. Available in Mac OS X, and in CarbonLib 1.5 and later.
<code>kWindowFadeTransitionEffect</code>	4	Fade the window into or out of visibility. Use with the <code>Show</code> or <code>Hide</code> transition actions. Available in Mac OS X 10.3 and later.
<code>kWindowGenieTransitionEffect</code>	5	Use the Genie effect that the Dock uses to minimize or maximize a window to show or hide the window. Use with the <code>Show</code> or <code>Hide</code> transition actions. Available in Mac OS X 10.3 and later.
<code>kWindowShowTransitionAction</code>	1	Shows the window. Use with the <code>Zoom</code> , <code>Sheet</code> , <code>Fade</code> , or <code>Genie</code> transition effects. For the <code>Zoom</code> , <code>Sheet</code> , and <code>Genie</code> effects, the <code>rectangle</code> parameter is the global coordinates from which to start the animation; <code>rectangle</code> is optional for the <code>Zoom</code> and <code>Sheet</code> effects, and in that case, the animation begins at the center of the window. The <code>Genie</code> effect requires a <code>rectangle</code> parameter. The <code>Fade</code> effect does not use the <code>inRect</code> parameter.
<code>kWindowHideTransitionAction</code>	2	Hides the window. Use with the <code>Zoom</code> , <code>Sheet</code> , <code>Fade</code> , or <code>Genie</code> transition effects. For the <code>Zoom</code> , <code>Sheet</code> , and <code>Genie</code> effects, the <code>rectangle</code> parameter is the global coordinates at which to end the animation; <code>Rectangle</code> is optional for the <code>Zoom</code> and <code>Sheet</code> effects, and in that case, the animation ends at the center of the window. The <code>Genie</code> effect requires a <code>rectangle</code> . The <code>Fade</code> effect does not use the <code>inRect</code> parameter.
<code>kWindowMoveTransitionAction</code>	3	Moves the window. Use with the <code>Slide</code> transition effect. The <code>rectangle</code> parameter is the global coordinates of the window's new structure bounds; <code>Rectangle</code> must be provided. Available in Mac OS X, and in CarbonLib 1.5 and later.
<code>kWindowResizeTransitionAction</code>	4	Resizes the window. Use with the <code>Slide</code> transition effect. The <code>rectangle</code> parameter is the global coordinates of the window's new structure bounds; <code>Rectangle</code> must be provided. Available in Mac OS X, and in CarbonLib 1.5 and later.

- 4.50.21 `TransitionWindow(parent as window, effect as Integer, action as Integer, left as Integer, top as Integer, width as Integer, height as Integer) as Integer` 516

4.50.23 `UnAttachToWindow`

Plugin Version: 4.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Removes the link to the parent window.

4.50.24 `WindowLevelForKey(key as Integer) as Integer`

Plugin Version: 2.9, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A function to get the value for the window level out of a level key.

Example:

```

dim w as OverlayWindowMBS
// Call Create before setting level

w.level=w.WindowLevelForKey(2) // window between desktop picture and desktop icons

```

Notes:

Windows may be assigned to a particular level. When assigned to a level, the window is ordered relative to all other windows in that level. Windows with a higher level are sorted in front of windows with a lower level.

A common set of window levels is defined here for use within higher level frameworks. The levels are accessed via a key and function, so that levels may be changed or adjusted in future releases without breaking binary compatability.

Some constants for the level keys

kCGBaseWindowLevelKey	0
kCGMinimumWindowLevelKey	1
kCGDesktopWindowLevelKey	2
kCGBackstopMenuLevelKey	3
kCGNormalWindowLevelKey	4
kCGFloatingWindowLevelKey	5
kCGTornOffMenuWindowLevelKey	6
kCGDockWindowLevelKey	7
kCGMainMenuWindowLevelKey	8
kCGStatusWindowLevelKey	9
kCGModalPanelWindowLevelKey	10
kCGPopUpMenuWindowLevelKey	11
kCGDraggingWindowLevelKey	12
kCGScreenSaverWindowLevelKey	13
kCGMaximumWindowLevelKey	14
kCGOverlayWindowLevelKey	15
kCGHelpWindowLevelKey	16
kCGUtilityWindowLevelKey	17
kCGDesktopIconWindowLevelKey	18
kCGNumberOfWindowLevelKeys	19

4.50.25 Properties**4.50.26 Handle as Integer**

Plugin Version: 2.9, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The handle to the open window.

Notes:

The Value is of type WindowRef.
(Read and Write property)

4.50.27 Height as Integer

Plugin Version: 2.9, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The height of the window.

Notes:

Only valid if there is a window.
(Read and Write property)

4.50.28 Left as Integer

Plugin Version: 2.9, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The x coordiante of the window.

Notes:

Only valid if there is a window.
(Read and Write property)

4.50.29 Level as Integer

Plugin Version: 2.9, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The level of the window.

Example:

```
dim w as OverlayWindowMBS
// Call Create before setting level
```

```
w.level=w.WindowLevelForKey(2) // window between desktop picture and desktop icons
```

Notes:

See the WindowLevelForKey function for details.
(Read and Write property)

4.50.30 Release as boolean

Plugin Version: 2.9, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** whether the close method or the destructor will close the window.

Notes: (Read and Write property)

4.50.31 Top as Integer

Plugin Version: 2.9, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The y coordiante of the window.

Notes:

Only valid if there is a window.

(Read and Write property)

4.50.32 Width as Integer

Plugin Version: 2.9, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The width of the window.

Notes:

Only valid if there is a window.

(Read and Write property)

4.50.33 WindowID as Integer

Plugin Version: 10.2, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Queries the CoreGraphics Window ID for the given window.

Notes:

Returns 0 on any error.

This ID can be used for CGWindowListCreateImageMBS.

(Read only property)

4.50.34 HasNoShadow as Boolean

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** True if this window has no shadow.

Example:

```
dim thewindow as OverlayWindowMBS  
thewindow.HasNoShadow=true 'remove shadow
```

Notes:

Works only after the window was created.
(Read and Write computed property)

4.50.35 HideOnFullScreen as Boolean

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The window will hide itself if full screen mode is entered by an application or another window.

Notes:

Works only after the window was created.
(Read and Write computed property)

4.50.36 HideOnSuspend as Boolean

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The window will hide itself if the application goes to background.

Notes:

Works only after the window was created.
(Read and Write computed property)

4.50.37 IgnoreClicks as Boolean

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Can be used to control whether mouse clicks are ignored for this window.

Notes:

Works only after the window was created.
(Read and Write computed property)

4.50.38 Transparency as Double

Plugin Version: 5.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The transparency of the window.

Notes:

A value from 0 (invisible) to 1.0 (visible).
(Read and Write computed property)

4.50.39 Events

4.50.40 `MouseDown(x as Double, y as Double, ModifierKeys as Integer, MouseButton as Integer, ClickCount as Integer)` as boolean

Plugin Version: 3.2, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Called when you press a mouse button.

4.50.41 `MouseDragged(x as Double, y as Double, ModifierKeys as Integer, MouseDeltaX as Double, MouseDeltaY as Double, MouseButton as Integer)` as boolean

Plugin Version: 3.2, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Called when you drag the mouse.

Notes: This event is called whether or not you return true in `MouseDown`.

4.50.42 `MouseEnter(x as Double, y as Double, ModifierKeys as Integer)` as boolean

Plugin Version: 9.6, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The mouse was moved into the screen area of the window.

4.50.43 `MouseExit(x as Double, y as Double, ModifierKeys as Integer)` as boolean

Plugin Version: 9.6, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The mouse was moved out of the screen area of the window..

4.50.44 `MouseMove(x as Double, y as Double, ModifierKeys as Integer, MouseDeltaX as Double, MouseDeltaY as Double)` as boolean

Plugin Version: 3.2, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Called when the mouse moves.

4.50.45 `MouseUp(x as Double, y as Double, ModifierKeys as Integer, MouseButton as Integer, ClickCount as Integer)` as boolean

Plugin Version: 3.2, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Called when the mouse button is released.

4.50.46 `MouseWheelMoved(x as Double, y as Double, ModifierKeys as Integer, axis as Integer, delta as Integer)` as boolean

Plugin Version: 3.2, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Called when the mouse wheel moves.

4.50.47 `WindowBoundsChanged`

Plugin Version: 3.3, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The window size or position changed.

4.50.48 `WindowClosed`

Plugin Version: 3.3, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Called when the window is closed.

4.50.49 `WindowHidden`

Plugin Version: 3.3, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Called when the window is hidden.

4.50.50 `WindowPaint`

Plugin Version: 11.0, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** An event called whenever the system requests a paint of the window.

4.50.51 WindowShown

Plugin Version: 3.3, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Called when the window is shown.

4.51 class QDPictMBS

4.51.1 class QDPictMBS

Plugin Version: 9.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class to draw QuickDraw PICT data to a CoreGraphics context.

Deprecated: This item is deprecated and should no longer be used. **Notes:**

Note: QuickDraw picture data typically comes in two forms: a PICT resource that begins the picture header data at the beginning of the resource and PICT files that begin with 512 bytes of arbitrary data, followed by the picture header data. For this reason, the routines that create a QTPict object attempt to find the picture header data beginning at either the first byte of the data provided or at byte 513 of the data provided.

Additionally the Picture Bounds must not be an empty rect.
This class has been deprecated by Apple.

4.51.2 Methods

4.51.3 Constructor(dataProvider as CGDataProviderMBS)

Plugin Version: 9.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new QTPictMBS object based on a data provider.

Notes:

Create a QDPict object, using dataProvider to obtain the QDPict's data.

It is assumed that either the first byte or the 513th byte of data in the file referenced by the URL is the first byte of the picture header. If the URL does not begin PICT data at one of these places in the data fork then the handle property will be 0.

See also:

- 4.51.4 Constructor(file as folderitem) 526
- 4.51.5 Constructor(url as string) 527

4.51.4 Constructor(file as folderitem)

Plugin Version: 9.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new QTPictMBS object based on a file.

See also:

- 4.51.3 Constructor(dataProvider as CGDataProviderMBS) 526
- 4.51.5 Constructor(url as string) 527

4.51.5 Constructor(url as string)

Plugin Version: 12.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new QTPictMBS object based on an url.

Notes:

Create a QDPict from an url.

It is assumed that either the first byte or the 513th byte of data in the file referenced by the URL is the first byte of the picture header. If the URL does not begin PICT data at one of these places in the data fork then the handle property will be 0.

See also:

- 4.51.3 Constructor(dataProvider as CGDataProviderMBS) 526
- 4.51.4 Constructor(file as folderitem) 526

4.51.6 DrawToCGContext(context as CGContextMBS, r as CGRectMBS)

Plugin Version: 9.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Draws the picture into the given context.

Notes:

You can increase the drawing resolution by passing a bigger rectangle.

Lasterror is set. -1 if context or rectangle are invalid.

Draw picture in the rectangular area specified by r. The PICT bounds of the page is scaled, if necessary, to fit into the rectangle. To get unscaled results, supply a rect the size of the rect returned by GetBounds.

4.51.7 GetBounds as CGRectMBS

Plugin Version: 9.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Queries the bounds of the picture.

Notes:

This are the bounds in pixel for 72 dpi.

Return the Picture Bounds of the QuickDraw picture represented by the picture. This rectangle is in the default user space with one unit = 1/72 inch.

4.51.8 GetResolution(byref xRes as single, byref yRes as single)

Plugin Version: 9.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Queries the resolution of the picture.

Notes:

Return the resolution of the QuickDraw picture represented by the picture.

This data, together with the CGRect returned by GetBounds, can be used to compute the size of the picture in pixels, which is what QuickDraw really records into pictures.

4.51.9 Height as Double

Plugin Version: 9.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The height of the picture.

Notes: This value is using 72 dpi.

4.51.10 HorizontalResolution as Double

Plugin Version: 9.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The horizontal resolution.

4.51.11 VerticalResolution as Double

Plugin Version: 9.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The vertical resolution.

4.51.12 Width as Double

Plugin Version: 9.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The width of the picture.

Notes: This value is using 72 dpi.

4.51.13 Properties

4.51.14 Handle as Integer

Plugin Version: 9.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The internal handle.

Notes: (Read and Write property)

4.51.15 LastError as Integer

Plugin Version: 9.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The last error code.
Notes:

Set by DrawToCGContext.
(Read and Write property)

Chapter 5

CoreImage

5.1 class `CIAttributeMBS`

5.1.1 class `CIAttributeMBS`

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for attributes of CoreImage Filters.

5.1.2 Properties

5.1.3 `ClassName` as string

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Class name of the filter.

Notes: (Read only property)

5.1.4 `DefaultAffineTransform` as `NSAffineTransformMBS`

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The default value for this color.

Notes:

Only valid for affine transformations.
(Read only property)

5.1.5 DefaultColor as CIColorMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The default value for this color.

Notes:

Only valid for colors.
(Read only property)

5.1.6 DefaultNumber as Double

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The default value for this color.

Notes:

Only valid for numbers.
(Read only property)

5.1.7 DefaultValue as Variant

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The default value.

Notes: (Read only property)

5.1.8 DefaultVector as CIVectorMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The default value for this color.

Notes:

Only valid for vectors.
(Read only property)

5.1.9 description as string

Plugin Version: 9.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The description of this attribute.

Notes: (Read only property)

5.1.10 DisplayName as string

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The localized display name for the attribute.

Notes:

Not all attributes do have a localized name and not all do have a name at all.
(e.g. outputImage normally has no display name)
(Read only property)

5.1.11 HasMaxNumber as Boolean

Plugin Version: 10.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Whether this attribute has a defined maximum value.

Notes: (Read only property)

5.1.12 HasMinNumber as Boolean

Plugin Version: 10.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Whether this attribute has a defined minimum value.

Notes: (Read only property)

5.1.13 HasSliderMaxNumber as Boolean

Plugin Version: 10.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Whether this attribute has a defined slider maximum value.

Notes: (Read only property)

5.1.14 HasSliderMinNumber as Boolean

Plugin Version: 10.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Whether this attribute has a defined slider minimum value.

Notes: (Read only property)

5.1.15 IdentityAffineTransform as NSAffineTransformMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The value to be used to keep the filter doing nothing.

Notes:

Only valid for affine transformations.
(Read only property)

5.1.16 IdentityNumber as Double

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The value to be used to keep the filter doing nothing.

Notes:

Only valid for numbers.
(Read only property)

5.1.17 IdentityValue as Variant

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The identity value.

Notes: (Read only property)

5.1.18 IdentityVector as CIVectorMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The value to be used to keep the filter doing nothing.

Notes:

Only valid for vectors.
(Read only property)

5.1.19 LocalizedDescription as string

Plugin Version: 9.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Description of the filter intended for UI display (eg. localized)

Notes: (Read only property)

5.1.20 MaxNumber as Double

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Maximum value for the attribute.

Notes:

Only valid for numbers.

If no value is defined, this property is zero and HasMaxNumber returns false.

(Read only property)

5.1.21 MinNumber as Double

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Minimum value for the attribute.

Notes:

Only valid for numbers.

If no value is defined, this property is zero and HasMinNumber returns false.

(Read only property)

5.1.22 Name as string

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The name of this attribute.

Notes: (Read only property)

5.1.23 SliderMaxNumber as Double

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Maximum value for the slider.

Example:

```
dim f as CIFilterEdgesMBS
```

```
dim a as CIAttributeMBS
```

```
f=new CIFilterEdgesMBS
```

```
f.inputImage=NewCIImagewithFileMBS(SpecialFolder.Desktop.Child("Paris.jpg"))
```

```
a=f.AttributeinputIntensity
```

```
Title=str(a.SliderMinNumber)+" "+str(a.SliderMaxNumber)
```

```
f.inputIntensity=a.SliderMaxNumber
```

```
Backdrop=f.outputImage.RenderPicture
```

Notes:

Only valid for numbers.

If no value is defined, this property is zero and HasSliderMaxNumber returns false.
(Read only property)

5.1.24 SliderMinNumber as Double

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Minimum value for the slider.

Notes:

Only valid for numbers.

If no value is defined, this property is zero and HasSliderMinNumber returns false.
(Read only property)

5.1.25 Type as string

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The type of this attribute.

Notes:

Types for numbers:

kCIAAttributeTypeDistance

kCIAAttributeTypeBoolean

kCIAAttributeTypeTime

kCIAAttributeTypeAngle

kCIAAttributeTypeScalar

Types for vectors:

kCIAAttributeTypePosition (2 Dimensions)

kCIAAttributeTypeOffset (2 Dimensions)

kCIAAttributeTypePosition3 (3 Dimensions)

kCIAAttributeTypeRectangle (4 Dimensions)

Types for colors:

kCIAAttributeTypeOpaqueColor

Types for images:

kCIAAttributeTypeGradient

(Read only property)

5.1.26 Values as Dictionary

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Queries all values as dictionary.

Notes: (Read only property)

5.2 class CIColorMBS

5.2.1 class CIColorMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a color in CoreImage.

5.2.2 Methods

5.2.3 colorWithCGColor(ColorValue as CGColorMBS) as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new color based on a CoreGraphics color.

5.2.4 colorWithRGB(Red as Double, Green as Double, Blue as Double) as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a color object using the specified RGB color component values

Notes:

- r: The value of the red component.
- g: The value of the green component.
- b: The value of the blue component.

Initializes Core Image color object that represents an RGB color in the color space specified by the Quartz 2D constant kCGColorSpaceGenericRGB.

See also:

- 5.2.5 colorWithRGB(Red as Double, Green as Double, Blue as Double, Alpha as Double) as CIColorMBS 538

5.2.5 colorWithRGB(Red as Double, Green as Double, Blue as Double, Alpha as Double) as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a color object using the specified RGBA color component values.

Notes:

- r: The value of the red component.
- g: The value of the green component.

b: The value of the blue component.
 a: The value of the alpha component.

Initializes a Core Image color object that represents an RGB color in the color space specified by the Quartz 2D constant `kCGColorSpaceGenericRGB` and an alpha value.

See also:

- 5.2.4 `colorWithRGB(Red as Double, Green as Double, Blue as Double)` as `CIColorMBS` 538

5.2.6 `colorWithString(representation as String)` as `CIColorMBS`

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a color from a color string representation.

5.2.7 `Component(index as UInt32)` as `Double`

Plugin Version: 12.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The color component with the given index.

Notes: Index is from 0 to `NumberOfComponents - 1`.

5.2.8 `Constructor(ColorValue as CGColorMBS)`

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new `CIColor` based on the given `CoreGraphics` color.

Notes: On success, the handle is not zero.

See also:

- 5.2.9 `Constructor(Handle as Integer)` 539
- 5.2.10 `Constructor(Red as Double, Green as Double, Blue as Double)` 540
- 5.2.11 `Constructor(Red as Double, Green as Double, Blue as Double, Alpha as Double)` 540

5.2.9 `Constructor(Handle as Integer)`

Plugin Version: 12.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Initializes object with given object reference.

Notes:

`ref` should be a `CIColor*` and the object is retained.

Raises `UnsupportedOperationException` if object is not a `CIColor`.

See also:

- 5.2.8 Constructor(ColorValue as CGColorMBS) 539
- 5.2.10 Constructor(Red as Double, Green as Double, Blue as Double) 540
- 5.2.11 Constructor(Red as Double, Green as Double, Blue as Double, Alpha as Double) 540

5.2.10 Constructor(Red as Double, Green as Double, Blue as Double)

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a color object using the specified RGB color component values

Notes:

- r: The value of the red component.
- g: The value of the green component.
- b: The value of the blue component.

Initializes Core Image color object that represents an RGB color in the color space specified by the Quartz 2D constant `kCGColorSpaceGenericRGB`.

See also:

- 5.2.8 Constructor(ColorValue as CGColorMBS) 539
- 5.2.9 Constructor(Handle as Integer) 539
- 5.2.11 Constructor(Red as Double, Green as Double, Blue as Double, Alpha as Double) 540

5.2.11 Constructor(Red as Double, Green as Double, Blue as Double, Alpha as Double)

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a color object using the specified RGBA color component values.

Notes:

- r: The value of the red component.
- g: The value of the green component.
- b: The value of the blue component.
- a: The value of the alpha component.

Initializes a Core Image color object that represents an RGB color in the color space specified by the Quartz 2D constant `kCGColorSpaceGenericRGB` and an alpha value.

See also:

- 5.2.8 Constructor(ColorValue as CGColorMBS) 539
- 5.2.9 Constructor(Handle as Integer) 539
- 5.2.10 Constructor(Red as Double, Green as Double, Blue as Double) 540

5.2.12 copy as CIColorMBS

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a copy of the color object.

5.2.13 Properties

5.2.14 Alpha as Double

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The alpha value of the color.

Notes:

Values range between 0.0 to 1.0.
(Read only property)

5.2.15 Blue as Double

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The (unpremultiplied) blue component of the color.

Notes:

Values range between 0.0 to 1.0.
(Read only property)

5.2.16 ColorSpace as CGColorSpaceMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The color space object associated with the color.

Notes:

nil on any error.
(Read only property)

5.2.17 description as String

Plugin Version: 9.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the textual description for this color.

Notes: (Read only property)

5.2.18 Green as Double

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The (unpremultiplied) green component of the color.

Notes:

Values range between 0.0 to 1.0.
(Read only property)

5.2.19 Handle as Integer

Plugin Version: 12.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The handle to the CIColor object used internally.

Notes: (Read only property)

5.2.20 NumberOfComponents as Integer

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The number of color components (including alpha).

Notes: (Read only property)

5.2.21 Red as Double

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The (unpremultiplied) red component of the color.

Notes:

Values range between 0.0 to 1.0.
(Read only property)

5.2.22 StringRepresentation as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a formatted string with the components of the color.

Example:

```
dim c as CIColorMBS
```

```
c=NewCIColorMBS(1,0,0)
```

```
MsgBox c.stringRepresentation // shows "1 0 0 1"
```

Notes:

Returns "" on any error.
(Read only property)

5.3 class CIContextMBS

5.3.1 class CIContextMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a drawing context for CoreImage.

5.3.2 Methods

5.3.3 ClearCaches

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Frees any cached data (such as temporary images) associated with the context.

Notes: This also runs the garbage collector.

5.3.4 Constructor

Plugin Version: 17.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new CIContext without a specific target.

Notes: Great to create a context and render something inside.

See also:

- 5.3.5 Constructor(cgcontext as CGContextMBS) 544
- 5.3.6 Constructor(cgcontext as CGContextMBS, OutputColorSpace as CGColorSpaceMBS, WorkingColorSpace as CGColorSpaceMBS, UseSoftwareRenderer as Boolean) 545
- 5.3.7 Constructor(Handle as Integer) 545
- 5.3.8 Constructor(Pic as Picture) 546

5.3.5 Constructor(cgcontext as CGContextMBS)

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Create a new CoreImage context object, all output will be drawn into the CG context.

Notes: On success, the handle is not zero.

See also:

- 5.3.4 Constructor 544
- 5.3.6 Constructor(cgcontext as CGContextMBS, OutputColorSpace as CGColorSpaceMBS, WorkingColorSpace as CGColorSpaceMBS, UseSoftwareRenderer as Boolean) 545

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5.3.6 Constructor(cgcontext as CGContextMBS, OutputColorSpace as CGColorSpaceMBS, WorkingColorSpace as CGColorSpaceMBS, UseSoftwareRenderer as Boolean)

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Create a new CoreImage context object with options, all output will be drawn into the CG context.

Notes:

OutputColorSpace: A CGColorSpaceMBS object defining the color space in which all intermediate operations are performed.

WorkingColorSpace: A CGColorSpaceRef object defining the color space that images are converted to before rendering into the context.

UseSoftwareRenderer: Whether you want software renderer only.

On success, the handle is not zero.

See also:

• 5.3.4 Constructor	544
• 5.3.5 Constructor(cgcontext as CGContextMBS)	544
• 5.3.7 Constructor(Handle as Integer)	545
• 5.3.8 Constructor(Pic as Picture)	546

5.3.7 Constructor(Handle as Integer)

Plugin Version: 12.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Initializes object with given object reference.

Notes:

ref should be a CIColorContext* and the object is retained.

Raises UnsupportedOperationException if object is not a CIColorContext.

See also:

• 5.3.4 Constructor	544
• 5.3.5 Constructor(cgcontext as CGContextMBS)	544
• 5.3.6 Constructor(cgcontext as CGContextMBS, OutputColorSpace as CGColorSpaceMBS, WorkingColorSpace as CGColorSpaceMBS, UseSoftwareRenderer as Boolean)	545
• 5.3.8 Constructor(Pic as Picture)	546

5.3.8 Constructor(Pic as Picture)

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** Creates a context targeting the picture.

Notes: Works only on Cocoa target.

See also:

- 5.3.4 Constructor 544
- 5.3.5 Constructor(CGContext as CGContextMBS) 544
- 5.3.6 Constructor(CGContext as CGContextMBS, OutputColorSpace as CGColorSpaceMBS, WorkingColorSpace as CGColorSpaceMBS, UseSoftwareRenderer as Boolean) 545
- 5.3.7 Constructor(Handle as Integer) 545

5.3.9 CreateCGImage(image as CIImageMBS, r as CGRectMBS = nil) as CGImageMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new image with the content of the CIImage.

Notes:

Render the region 'r' of image 'im' into a temporary buffer using the context, then create and return a new CoreGraphics image with the results.

If r is nil, the whole image extent is used.

See also:

- 5.3.10 CreateCGImage(image as CIImageMBS, r as CGRectMBS, ColorSpace as CGColorSpaceMBS) as CGImageMBS 546

5.3.10 CreateCGImage(image as CIImageMBS, r as CGRectMBS, ColorSpace as CGColorSpaceMBS) as CGImageMBS

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new image with the content of the CIImage.

Notes:

Render the region 'r' of image 'im' into a temporary buffer using the context, then create and return a new CoreGraphics image with the results.

If r is nil, the whole image extent is used.

See also:

- 5.3.9 CreateCGImage(image as CIImageMBS, r as CGRectMBS = nil) as CGImageMBS 546

5.3.11 createCGLayer(size as CGSizeMBS, info as dictionary = nil) as CGLayerMBS

Plugin Version: 14.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a CGLayer object from the provided parameters.

Notes:

size: The size, in default user space units, of the layer relative to the graphics context.

ifno: A dictionary, which is passed to CGLayerCreateWithContext as the auxiliaryInfo parameter. Pass nil because this parameter is reserved for future use.

Returns a CGLayer object.

After calling this method, Core Image draws content into the CGLayer object. Core Image creates a CGLayer object by calling the Quartz 2D function CGLayerCreateWithContext, whose prototype is:

```
CGLayerRef CGLayerCreateWithContext (
CGContextRef context,
CGSize size,
CFDictionaryRef auxiliaryInfo
);
```

Core Image passes the CIconContext object as the context parameter, the size as the size parameter, and the dictionary as the auxiliaryInfo parameter. For more information on CGLayer objects, see Quartz 2D Programming Guide and CGLayer Reference.

Available in OS X v10.4 and later.

5.3.12 Destructor

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The destructor.

5.3.13 DrawImage(ciImage as CIImageMBS)

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Render the ciImage to the the context's destination.

Notes: Rendering the image will cause the calculations to be done so this call is quite expensive.

5.3.14 DrawImagePoint(ciImage as CIIImageMBS, DestPoint as CGPointMBS, SourceRect as CGRectMBS = nil)

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Render the subregion 'SourceRect' of 'ciImage' to point 'DestPoint' in the context's destination.

Deprecated: This item is deprecated and should no longer be used. You can use DrawImageRect instead.
Notes:

Rendering the image will cause the calculations to be done so this call is quite expensive.
 If SourceRect is nil, we use the extent from image.

5.3.15 DrawImageRect(ciImage as CIIImageMBS, DestRect as CGRectMBS, SourceRect as CGRectMBS = nil)

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Render the rectangle 'SourceRect' of 'ciImage' to the rectangle 'DestRect' in the context's destination.

Notes:

Rendering the image will cause the calculations to be done so this call is quite expensive.
 If SourceRect is nil, we use the extent from image.

5.3.16 Flush

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Flushes drawings to CGContext and target picture (if any).

5.3.17 HEIFRepresentationOfImage(Image as CIIImageMBS, format as Integer = 24, colorSpace as CGColorSpaceMBS = nil, options as dictionary = nil) as MemoryBlock

Plugin Version: 17.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Render a CIIImage to HEIF data.

Example:

```
dim f as FolderItem = SpecialFolder.Desktop.Child("test.png")
dim i as new CIIImageMBS(f)
dim c as new CGContextMBS

dim heifData as MemoryBlock = c.HEIFRepresentationOfImage(i)

Break // see debugger
```

Notes:

Image must have a finite non-empty extent.

The CGColorSpace must be kCGColorSpaceModelRGB or kCGColorSpaceModelMonochrome and must match the specified format.

Supported options keys are kCGImageDestinationLossyCompressionQuality, kCIImageRepresentationAVDepthData, kCIImageRepresentationDepthImage, kCIImageRepresentationDisparityImage.

If colorspace is nil, we use generic RGB colorspace.

Available on macOS 10.13 or later.

5.3.18 JPEGRepresentationOfImage(Image as CIImageMBS, colorSpace as CGColorSpaceMBS = nil, options as dictionary = nil) as MemoryBlock

Plugin Version: 17.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Render a CIImage to JPEG data.

Example:

```
dim f as FolderItem = SpecialFolder.Desktop.Child("test.png")
dim i as new CIImageMBS(f)
dim c as new CIColorContextMBS

dim jpegData as MemoryBlock = c.JPEGRepresentationOfImage(i)
```

Break // see debugger

Notes:

Image must have a finite non-empty extent.

The CGColorSpace must be kCGColorSpaceModelRGB or kCGColorSpaceModelMonochrome.

Supported options keys are kCGImageDestinationLossyCompressionQuality, kCIImageRepresentationAVDepthData, kCIImageRepresentationDepthImage, kCIImageRepresentationDisparityImage.

If colorspace is nil, we use generic RGB colorspace.

Available on macOS 10.12 or later.

5.3.19 kCIContextHighQualityDownsample as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the option keys.

Notes:

A boolean controlling the quality of affine downsample operations.

True imply that more quality is desired.
On iOS the the default value is false.
On OSX the the default value is true.

5.3.20 `kCIContextOutputColorSpace` as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A key for the color space to use for images before they are rendered to the context.

Notes:

By default, Core Image uses the GenericRGB color space, which leaves color matching to the system. You can specify a different output color space by providing a Quartz 2D `CGColorSpace` object (`CGColorSpaceRef`). (See Quartz 2D Programming Guide for information on creating and using `CGColorSpace` objects.)

To request that Core Image perform no color management, specify the `NSNull` object as the value for this key. Use this option for images that dont contain color data (such as elevation maps, normal vector maps, and sampled function tables).

Available in OS X v10.6 and later.

5.3.21 `kCIContextUseSoftwareRenderer` as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A key for enabling software renderer use. If the associated `NSNumber` object is true, then the software renderer is required.

Notes: Available in OS X v10.6 and later.

5.3.22 `kCIContextWorkingColorSpace` as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A key for the color space to use for image operations.

Notes:

By default, Core Image assumes that processing nodes are 128 bits-per-pixel, linear light, premultiplied RGBA floating-point values that use the GenericRGB color space. You can specify a different working color space by providing a Quartz 2D `CGColorSpace` object (`CGColorSpaceRef`). Note that the working color space must be RGB-based. If you have YUV data as input (or other data that is not RGB-based), you can use `ColorSync` functions to convert to the working color space. (See Quartz 2D Programming Guide for information on creating and using `CGColorSpace` objects.)

To request that Core Image perform no color management, specify the `NSNull` object as the value for this key. Use this option for images that dont contain color data (such as elevation maps, normal vector maps,

and sampled function tables).

Available in OS X v10.6 and later.

5.3.23 kCIContextWorkingFormat as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** An option for the color format to use for intermediate results when rendering with the context.

Notes:

The value for this key is an NSNumber object containing a CIColor value. The default working format is kCIColorFormatRGBA8 for CPU rendering and kCIColorFormatRGBAf for GPU rendering. GPU rendering also supports the kCIColorFormatRGBAh format for greater color precision, but this format requires twice as much memory and can be used only with color management enabled.

Available in OS X v10.4 and later.

5.3.24 PNGRepresentationOffImage(Image as CIImageMBS, format as Integer = 24, colorSpace as CGColorSpaceMBS = nil, options as dictionary = nil) as MemoryBlock

Plugin Version: 17.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Render a CIImage to PNG data.

Example:

```
dim f as FolderItem = SpecialFolder.Desktop.Child("test.png")
dim i as new CIImageMBS(f)
dim c as new CIContextMBS

dim pngData as MemoryBlock = c.PNGRepresentationOffImage(i)
```

Break // see debugger

Notes:

Image must have a finite non-empty extent.

The CGColorSpace must be kCGColorSpaceModelRGB or kCGColorSpaceModelMonochrome and must match the specified format.

No options keys are supported at this time.

If colorspace is nil, we use generic RGB colorspace.

Available on macOS 10.13 or later.

5.3.25 ReclaimResources

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Frees temporary memory.

Notes: Runs the context's garbage collector to reclaim any resources that are no longer required (e.g. removes textures from the texture cache that reference deleted images.) This method is called automatically after every rendering operation.

5.3.26 TIFFRepresentationOfImage(Image as CIImageMBS, format as Integer = 24, colorSpace as CGColorSpaceMBS = nil, options as dictionary = nil) as MemoryBlock

Plugin Version: 17.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Render a CIImage to TIFF data.

Example:

```
dim f as FolderItem = SpecialFolder.Desktop.Child("test.png")
dim i as new CIImageMBS(f)
dim c as new CIContextMBS

dim tiffData as MemoryBlock = c.TIFFRepresentationOfImage(i)
```

Break // see debugger

Notes:

Image must have a finite non-empty extent.

The CGColorSpace must be kCGColorSpaceModelRGB or kCGColorSpaceModelMonochrome and must match the specified format.

No options keys are supported at this time.

If colorspace is nil, we use generic RGB colorspace.

Available on macOS 10.12 or later.

5.3.27 writeHEIFRepresentationOfImage(Image as CIImageMBS, file as FolderItem, format as Integer = 24, colorSpace as CGColorSpaceMBS = nil, options as dictionary = nil, byref error as NSErrorMBS) as Boolean

Plugin Version: 17.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Render a CIImage to HEIF file.

Example:

```
dim f as FolderItem = SpecialFolder.Desktop.Child("test.png")
dim i as new CIImageMBS(f)
```



```

dim c as new CIconContextMBS
dim d as FolderItem = SpecialFolder.Desktop.Child("output.heif")

dim e as NSErrorMBS
dim b as Boolean = c.writeHEIFRepresentationOfImage(i, d, e)
if b then
  MsgBox "OK"
else
  MsgBox "Failed" + EndOfLine + e.LocalizedDescription
end if

```

Notes:

Image must have a finite non-empty extent.

The CGColorSpace must be kCGColorSpaceModelRGB or kCGColorSpaceModelMonochrome and must match the specified format.

Supported options keys are kCGImageDestinationLossyCompressionQuality, kCIImageRepresentationAVDepthData, kCIImageRepresentationDepthImage, kCIImageRepresentationDisparityImage.

If colorspace is nil, we use generic RGB colorspace.

Available on macOS 10.13 or later.

5.3.28 writeJPEGRepresentationOfImage(Image as CIImageMBS, file as FolderItem, colorSpace as CGColorSpaceMBS = nil, options as dictionary = nil, byref error as NSErrorMBS) as Boolean

Plugin Version: 17.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Render a CIImage to JPEG file.

Example:

```

dim f as FolderItem = SpecialFolder.Desktop.Child("test.png")
dim i as new CIImageMBS(f)
dim c as new CIconContextMBS
dim d as FolderItem = SpecialFolder.Desktop.Child("output.jpg")

dim e as NSErrorMBS
dim b as Boolean = c.writeJPEGRepresentationOfImage(i, d, e)
if b then
  MsgBox "OK"
else
  MsgBox "Failed" + EndOfLine + e.LocalizedDescription
end if

```

Notes:

Image must have a finite non-empty extent.

The `CGColorSpace` must be `kCGColorSpaceModelRGB` or `kCGColorSpaceModelMonochrome`.

Supported options keys are `kCGImageDestinationLossyCompressionQuality`, `kCIImageRepresentationAVDepthData`, `kCIImageRepresentationDepthImage`, `kCIImageRepresentationDisparityImage`.

If `colorspace` is nil, we use generic RGB colorspace.

Available on macOS 10.12 or later.

5.3.29 `writePNGRepresentationOfImage(Image as CIImageMBS, file as FolderItem, format as Integer = 24, colorSpace as CGColorSpaceMBS = nil, options as dictionary = nil, byref error as NSErrorMBS) as Boolean`

Plugin Version: 17.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Render a `CIImage` to PNG file.

Example:

```
dim f as FolderItem = SpecialFolder.Desktop.Child("test.png")
dim i as new CIImageMBS(f)
dim c as new CIContextMBS
dim d as FolderItem = SpecialFolder.Desktop.Child("output.png")

dim e as NSErrorMBS
dim b as Boolean = c.writePNGRepresentationOfImage(i, d, e)
if b then
  MsgBox "OK"
else
  MsgBox "Failed" + EndOfLine + e.LocalizedDescription
end if
```

Notes:

Image must have a finite non-empty extent.

The `CGColorSpace` must be `kCGColorSpaceModelRGB` or `kCGColorSpaceModelMonochrome` and must match the specified format.

No options keys are supported at this time.

If `colorspace` is nil, we use generic RGB colorspace.

Available on macOS 10.13 or later.

5.3.30 writeTIFFRepresentationOfImage(Image as CIIImageMBS, file as FolderItem, format as Integer = 24, colorSpace as CGColorSpaceMBS = nil, options as dictionary = nil, byref error as NSErrorMBS) as Boolean

Plugin Version: 17.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Render a CIIImage to TIFF file.

Example:

```
dim f as FolderItem = SpecialFolder.Desktop.Child("test.png")
dim i as new CIIImageMBS(f)
dim c as new CIconTextMBS
dim d as FolderItem = SpecialFolder.Desktop.Child("output.tif")

dim e as NSErrorMBS
dim b as Boolean = c.writeTIFFRepresentationOfImage(i, d, e)
if b then
  MsgBox "OK"
else
  MsgBox "Failed" + EndOfLine + e.LocalizedDescription
end if
```

Notes:

Image must have a finite non-empty extent.

The CGColorSpace must be kCGColorSpaceModelRGB or kCGColorSpaceModelMonochrome and must match the specified format.

No options keys are supported at this time.

If colorspace is nil, we use generic RGB colorspace.

Available on macOS 10.12 or later.

5.3.31 Properties

5.3.32 CGContext as CGContextMBS

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The CGContextMBS targeted by this CIconText.

Notes: (Read and Write property)

5.3.33 description as String

Plugin Version: 9.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the textual description for this context.

Notes: (Read only property)

5.3.34 Handle as Integer

Plugin Version: 12.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The handle to the CGContext object used internally.

Notes: (Read only property)

5.3.35 Picture as Picture

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The picture used in the constructor (if any).

Notes: (Read and Write property)

5.3.36 Constants

5.3.37 kCIFORMatA16 = 4

Plugin Version: 17.3. **Function:** One of the image format constants.

Notes:

Alpha with 16-bit.

Available in macOS 10.11 or newer.

5.3.38 kCIFORMatA8 = 3

Plugin Version: 17.3. **Function:** One of the image format constants.

Notes:

Alpha with 8-bit.

Available in macOS 10.11 or newer.

5.3.39 kCIFORMatABGR8 = 46

Plugin Version: 17.3. **Function:** One of the image format constants.

Notes:

ABGR with 8-bit.
Available in macOS 10.11 or newer.

5.3.40 kCIFORMatAf = 6

Plugin Version: 17.3. **Function:** One of the image format constants.
Notes:

Alpha with float values.
Available in macOS 10.11 or newer.

5.3.41 kCIFORMatAh = 5

Plugin Version: 17.3. **Function:** One of the image format constants.
Notes:

Alpha with half floating point.
Available in macOS 10.11 or newer.

5.3.42 kCIFORMatARGB8 = 23

Plugin Version: 17.3. **Function:** One of the image format constants.
Notes: ARGB with 8-bit.

5.3.43 kCIFORMatBGRA8 = 22

Plugin Version: 17.3. **Function:** One of the image format constants.
Notes: BGRA with 8-bit.

5.3.44 kCIFORMatR16 = 37

Plugin Version: 17.3. **Function:** One of the image format constants.
Notes:

Red with 16-bit.
Available in macOS 10.11 or newer.

5.3.45 kCIFORMatR8 = 36

Plugin Version: 17.3. **Function:** One of the image format constants.

Notes:

Red with 8-bit.

Available in macOS 10.11 or newer.

5.3.46 kCIFORMatRf = 39

Plugin Version: 17.3. **Function:** One of the image format constants.

Notes:

Red with floating point.

Available in macOS 10.11 or newer.

5.3.47 kCIFORMatRG16 = 41

Plugin Version: 17.3. **Function:** One of the image format constants.

Notes:

Red and green with 16-bit.

Available in macOS 10.11 or newer.

5.3.48 kCIFORMatRG8 = 40

Plugin Version: 17.3. **Function:** One of the image format constants.

Notes:

Red and green with 8-bit.

Available in macOS 10.11 or newer.

5.3.49 kCIFORMatRGBA16 = 27

Plugin Version: 17.3. **Function:** One of the image format constants.

Notes: RGBA with 16-bit.

5.3.50 kCIFORMatRGBA8 = 24

Plugin Version: 17.3. **Function:** One of the image format constants.
Notes: RGBA with 8-bit.

5.3.51 kCIFORMatRGBAf = 34

Plugin Version: 17.3. **Function:** One of the image format constants.
Notes: RGBA with floating point.

5.3.52 kCIFORMatRGBAh = 31

Plugin Version: 17.3. **Function:** One of the image format constants.
Notes: RGBA values that are IEEE 754-2008 half float compliant.

5.3.53 kCIFORMatRGf = 43

Plugin Version: 17.3. **Function:** One of the image format constants.
Notes:

Red and green with floating point values.
Available in macOS 10.11 or newer.

5.3.54 kCIFORMatRGh = 42

Plugin Version: 17.3. **Function:** One of the image format constants.
Notes:

Red and green with half precision floating point values.
Available in macOS 10.11 or newer.

5.3.55 kCIFORMatRh = 38

Plugin Version: 17.3. **Function:** One of the image format constants.
Notes:

Red with half precision floating point.
Available in macOS 10.11 or newer.

5.4 class CIDetectorMBS

5.4.1 class CIDetectorMBS

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Core Image class to detect features in images.

Notes: This class potentially holds onto a lot of state. Hence it may be beneficial from a performance perspective to re-use the same CIDetector instance. Specifying a CIContext when creating a detector may have an impact on performance since this context may be used when analyzing an image.

5.4.2 Methods

5.4.3 CIDetectorAccuracy as string

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The key in the options dictionary used to specify a accuracy / performance tradeoff to be used.

5.4.4 CIDetectorAccuracyHigh as string

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the values for use with the CIDetectorAccuracy key.

Notes: Lower performance, higher accuracy

5.4.5 CIDetectorAccuracyLow as string

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the values for use with the CIDetectorAccuracy key.

Notes: Lower accuracy, higher performance

5.4.6 CIDetectorAspectRatio as string

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys used in the options dictionary for featuresInImage.

Notes:

An option specifying the aspect ratio (width divided by height) of rectangles to search for.

The value of this key is an NSNumber object whose value is a positive floating-point number. Use this option with the CIDetectorTypeRectangle detector type to fine-tune the accuracy of the detector. For example, to

more accurately find a business card (3.5 x 2 inches) in an image, specify an aspect ratio of 1.75 (3.5 / 2).

5.4.7 CIDetectorEyeBlink as string

Plugin Version: 14.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** An option for whether Core Image will perform additional processing to recognize closed eyes in detected faces.

Notes: Available in OS X v10.9 and later.

5.4.8 CIDetectorFocalLength as string

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys used in the options dictionary for featuresInImage.

Notes:

An option identifying the focal length used in capturing images to be processed by the detector.

The value of this key is an NSNumber object whose value is a floating-point number between -1.0 and 1.0. Use this option with the CIDetectorTypeRectangle detector type to fine-tune the accuracy of the detector.

5.4.9 CIDetectorImageOrientation as string

Plugin Version: 14.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** An option for the display orientation of the image whose features you want to detect.

Notes:

The value of this key is an NSNumber object whose value is an integer between 1 and 8. The TIFF and EXIF specifications define these values to indicate where the pixel coordinate origin (0,0) of the image should appear when it is displayed. The default value is 1, indicating that the origin is in the top left corner of the image. For further details, see `kCGImagePropertyOrientation`.

Core Image only detects faces whose orientation matches that of the image. You should provide a value for this key if you want to detect faces in a different orientation.

Available in OS X v10.8 and later.

5.4.10 CIDetectorMinFeatureSize as string

Plugin Version: 14.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A key used to specify the minimum size that the detector will recognize as a feature.

Notes:

The value for this key is an NSNumber object ranging from 0.0 through 1.0 that represents a fraction of the

minor dimension of the image.
Available in OS X v10.8 and later.

5.4.11 CIDetectorNumberOfAngles as string

Plugin Version: 15.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the configuration keys.

Notes:

The number of perspectives to use for detecting a face in video input.

The value for this key is a number 1, 3, 5, 7, 9, or 11. At higher numbers of angles, face detection in video becomes more accurate, but at a higher computational cost.

Available in OS X 10.11 and later.

5.4.12 CIDetectorSmile as string

Plugin Version: 14.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** An option for whether Core Image will perform additional processing to recognize smiles in detected faces.

Notes: Available in OS X v10.9 and later.

5.4.13 CIDetectorTracking as string

Plugin Version: 14.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A key used to enable or disable face tracking for the detector.

Notes:

Use this option when you want to track faces across frames in a video.

Available in OS X v10.8 and later.

5.4.14 CIDetectorTypeFace as string

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Specifies a detector type for face recognition.

5.4.15 CIDetectorTypeQRCode as string

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the strings used to declare the detector for which you are interested.

Notes: A detector that searches for Quick Response codes (a type of 2D barcode) in a still image or video, returning CIQRCodeFeature objects that provide information about detected barcodes.

5.4.16 CIDetectorTypeRectangle as string

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the strings used to declare the detector for which you are interested.

Notes:

A detector that searches for rectangular areas in a still image or video, returning CIRectangleFeature objects that provide information about detected regions.

The rectangle detector finds areas that are likely to represent rectangular objects that appear in perspective in the image, such as papers or books seen on a desktop.

5.4.17 CIDetectorTypeText as string

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the strings used to declare the detector for which you are interested.

Notes:

A detector that searches for text in a still image or video, returning CITextFeature objects that provide information about detected regions.

The text detector finds areas that are likely to contain upright text, but does not perform optical character recognition.

5.4.18 Constructor(Handle as Integer)

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new CIDetectorMBS object for the given handle.

See also:

- 5.4.19 Constructor(type as string, context as CIContextMBS = nil, options as dictionary = nil) 564

5.4.19 Constructor(type as string, context as CIColorContextMBS = nil, options as dictionary = nil)

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a new detector instance of the given type.

Notes:

The type is used to specify the usage intent.

The context argument specifies the CIColorContext to be used to operate on the image. May be nil.

If the input image to featuresInImage is the output of a CoreImage operation, it may improve performance to specify the same context that was used to operate on that image.

The detector may do image processing in this context and if the image is on the GPU and the specified context is a GPU context this may avoid additional upload to / download from the GPU. If the input image is on the CPU (or the output from a CPU based context) specifying a GPU based context (or vice versa) may reduce performance.

The options parameter lets you optionally specify a accuracy / performance tradeoff. Can be nil or an empty dictionary.

See also:

- 5.4.18 Constructor(Handle as Integer)

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5.4.20 detectorOfType(type as string, context as CIColorContextMBS = nil, options as dictionary = nil) as CIDetectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a new detector instance of the given type.

Notes:

The type is used to specify the usage intent.

The context argument specifies the CIColorContext to be used to operate on the image. May be nil.

If the input image to featuresInImage is the output of a CoreImage operation, it may improve performance to specify the same context that was used to operate on that image.

The detector may do image processing in this context and if the image is on the GPU and the specified context is a GPU context this may avoid additional upload to / download from the GPU. If the input image is on the CPU (or the output from a CPU based context) specifying a GPU based context (or vice versa) may reduce performance.

The options parameter lets you optionally specify a accuracy / performance tradeoff. Can be nil or an empty dictionary.

5.4.21 featuresInImage(image as CIImageMBS) as CIFeatureMBS()

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array of CIFeature instances in the given image.

Notes: The array is sorted by confidence, highest confidence first.

See also:

- 5.4.22 featuresInImage(image as CIImageMBS, options as dictionary) as CIFeatureMBS() 565

5.4.22 featuresInImage(image as CIImageMBS, options as dictionary) as CIFeatureMBS()

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array of CIFeature instances in the given image.

Notes:

The array is sorted by confidence, highest confidence first.

The options dictionary can contain a CIDetectorImageOrientation key value.

See also:

- 5.4.21 featuresInImage(image as CIImageMBS) as CIFeatureMBS() 565

5.4.23 Properties

5.4.24 Handle as Integer

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The internal object reference.

Notes: (Read only property)

5.5 class CIFaceFeatureMBS

5.5.1 class CIFaceFeatureMBS

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A CIFaceFeature object describes a face detected in a picture.

Notes:

Its properties provide locations for the face's eyes and mouth.
All positions are relative to the original image.
Subclass of the CIFeatureMBS class.

5.5.2 Methods

5.5.3 Constructor(Handle as Integer)

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new CIFaceFeature object from a handle value.

5.5.4 faceAngle as Double

Plugin Version: 14.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The rotation of the face. (read-only)

Notes:

Rotation is measured counterclockwise in radians, with zero indicating that a line drawn between the eyes is horizontal relative to the image orientation.

Available in OS X v10.9 and later.

5.5.5 hasFaceAngle as boolean

Plugin Version: 14.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A Boolean value that indicates whether information about face rotation is available. (read-only)

Notes: Available in OS X v10.9 and later.

5.5.6 hasLeftEyePosition as boolean

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A Boolean that indicates whether the detector found the face's left eye. (read-only)

5.5.7 hasMouthPosition as boolean

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A Boolean that indicates whether the detector found the face's mouth. (read-only)

5.5.8 hasRightEyePosition as boolean

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A Boolean that indicates whether the detector found the face's right eye. (read-only)

5.5.9 hasSmile as boolean

Plugin Version: 14.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A Boolean value that indicates whether a smile is detected in the face. (read-only)

Notes:

Available in OS X v10.9 and later.

For smiles to be detected, the key CIDetectorSmile must be present with a value of true in the dictionary passed to a detector's featuresInImage method.

5.5.10 hasTrackingFrameCount as boolean

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Whether there is a tracking frame count.

5.5.11 hasTrackingID as boolean

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Whether the tracking ID is set.

5.5.12 leftEyeClosed as boolean

Plugin Version: 14.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A Boolean value that indicates whether the a closed left eye is detected in the face. (read-only)

Notes:

”Left” is relative to the original (non-mirrored) image orientation, not to the owner of the eye.

For closed eyes to be detected, the key CIDetectorEyeBlink must be present with a value of true in the dictionary passed to a detector’s featuresInImage method.

Available in OS X v10.9 and later.

5.5.13 leftEyePosition as CGPointMBS

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The coordinates of the left eye, in image coordinates. (read-only)

5.5.14 mouthPosition as CGPointMBS

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The coordinates of the mouth eye, in image coordinates (read-only)

5.5.15 rightEyeClosed as boolean

Plugin Version: 14.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A Boolean value that indicates whether the a closed left eye is detected in the face. (read-only)

Notes:

”Right” is relative to the original (non-mirrored) image orientation, not to the owner of the eye.

For closed eyes to be detected, the key CIDetectorEyeBlink must be present with a value of true in the dictionary passed to a detector’s featuresInImage method.

Available in OS X v10.9 and later.

5.5.16 rightEyePosition as CGPointMBS

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The coordinates of the right eye, in image coordinates (read-only)

5.5.17 trackingFrameCount as Integer

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The tracking frame count.

5.5.18 trackingID as Integer

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The tracking ID.

5.6 class CIFeatureMBS

5.6.1 class CIFeatureMBS

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Generic feature found by a CIDetector.

5.6.2 Methods

5.6.3 CIFeatureTypeFace as string

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys that define specific kinds of findable features.

Notes:

The discovered feature is a persons face.

Use the CIFaceFeatureMBS class to find more information about the detected feature.

Available in OS X v10.7 and later.

5.6.4 CIFeatureTypeQRCode as string

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys that define specific kinds of findable features.

Notes:

The discovered feature is a Quick Response code (2D barcode).

Use the CIQRCodeFeature class to find more information about the detected feature.

Available in OS X v10.11 and later.

5.6.5 CIFeatureTypeRectangle as string

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys that define specific kinds of findable features.

Notes:

The discovered feature is a rectangular object, though it might appear in perspective in the image.

Use the CIRectangleFeatureMBS class to find more information about the detected feature.

Available in OS X v10.10 and later.

5.6.6 CIFeatureTypeText as string

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys that define specific kinds of findable features.

Notes:

The discovered feature is a region likely to contain upright text.

Use the CITextFeature class to find more information about the detected feature.

Available in OS X v10.11 and later.

5.6.7 Constructor(Handle as Integer)

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new CIFeature object from a handle value.

5.6.8 Properties

5.6.9 bounds as CGRectMBS

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The bounds of the feature in the image it was detected in.

Notes: (Read only property)

5.6.10 Handle as Integer

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The internal object reference.

Notes: (Read only property)

5.6.11 type as string

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The type of the feature.

Notes: (Read only property)

5.7 class CIFilterAccordionFoldTransitionMBS

5.7.1 class CIFilterAccordionFoldTransitionMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Accordion Fold Transition filter.

Notes:

Details for this filter:

FilterName:	CIAccordionFoldTransition
DisplayName English:	Accordion Fold Transition
DisplayName German:	Leporello-bergang
DisplayName French:	Transition de type accordon
DisplayName Italian:	Transizione foglio a fisarmonica
DisplayName Spanish:	Transicin con pliegues a modo de acorden

Categories:

- CICategoryTransition: Transition
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputTargetImage: Target Image
- inputBottomHeight: BottomHeight
- inputNumberOfFolds: NumberOfFolds
- inputFoldShadowAmount: FoldShadowAmount
- inputTime: Time

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.7.2 Methods

5.7.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.
Notes: On success the handle property is not zero and the filter has the default values set.

5.7.4 Properties

5.7.5 AttributeinputBottomHeight as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Accordion Fold Transition attribute.

Notes:

This attribute should have this content:

Name:	inputBottomHeight
Class:	double
Type:	CIAttributeTypeDistance
DisplayName:	BottomHeight
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.7.6 AttributeinputFoldShadowAmount as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Accordion Fold Transition attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputFoldShadowAmount
Class:	double
Type:	CIAttributeTypeScalar
DisplayName:	FoldShadowAmount
DefaultNumber:	0.1
IdentityNumber:	0
MaxNumber:	1
MinNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

5.7.7 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Accordion Fold Transition attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.7.8 AttributeinputNumberOfFolds as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Accordion Fold Transition attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputNumberOfFolds
Class:	double
Type:	CIAttributeTypeScalar
DisplayName:	NumberOfFolds
DefaultNumber:	3
IdentityNumber:	0
MaxNumber:	50
MinNumber:	1
SliderMaxNumber:	10
SliderMinNumber:	1

5.7.9 AttributeinputTargetImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Accordion Fold Transition attribute.

Notes:

This attribute should have this content:

Name:	inputTargetImage
Class:	CIImageMBS
DisplayName English:	Target Image
DisplayName German:	Zielbild
DisplayName French:	Image cible
DisplayName Italian:	Immagine target
DisplayName Spanish:	Imagen de destino
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.7.10 AttributeinputTime as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Accordion Fold Transition attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputTime
Class:	double
Type:	CIAttributeTypeTime
DisplayName English:	Time
DisplayName German:	Zeit
DisplayName French:	Dure
DisplayName Italian:	Tempo
DisplayName Spanish:	Tiempo
DefaultNumber:	0
IdentityNumber:	0
MaxNumber:	1
MinNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

5.7.11 inputBottomHeight as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute BottomHeight

Notes:

Name:	inputBottomHeight
Class:	double (NSNumber)
DisplayName English:	BottomHeight
DisplayName German:	BottomHeight
DisplayName French:	BottomHeight
DisplayName Italian:	BottomHeight
DisplayName Spanish:	BottomHeight
Type:	CIAttributeTypeDistance

See AttributeinputBottomHeight for more details.
(Read and Write property)

5.7.12 inputFoldShadowAmount as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute FoldShadowAmount

Notes:

See AttributeinputFoldShadowAmount for more details.
(Read and Write property)

Name:	inputFoldShadowAmount
Class:	double (NSNumber)
DisplayName English:	FoldShadowAmount
DisplayName German:	FoldShadowAmount
DisplayName French:	FoldShadowAmount
DisplayName Italian:	FoldShadowAmount
DisplayName Spanish:	FoldShadowAmount
Type:	CIAttributeTypeScalar

5.7.13 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.7.14 inputNumberOfFolds as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute
 NumberOfFolds
Notes:

Name:	inputNumberOfFolds
Class:	double (NSNumber)
DisplayName English:	NumberOfFolds
DisplayName German:	NumberOfFolds
DisplayName French:	NumberOfFolds
DisplayName Italian:	NumberOfFolds
DisplayName Spanish:	NumberOfFolds
Type:	CIAttributeTypeScalar

See AttributeinputNumberOfFolds for more details.

(Read and Write property)

5.7.15 `inputTargetImage` as `CIImageMBS`

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Target Image

Notes:

Name:	<code>inputTargetImage</code>
Class:	<code>CIImageMBS (CIImage)</code>
DisplayName English:	Target Image
DisplayName German:	Zielbild
DisplayName French:	Image cible
DisplayName Italian:	Immagine target
DisplayName Spanish:	Imagen de destino
Type:	

See Attribute(Read and Write property)

5.7.16 `inputTime` as `Double`

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Time

Notes:

Name:	<code>inputTime</code>
Class:	<code>double (NSNumber)</code>
DisplayName English:	Time
DisplayName German:	Zeit
DisplayName French:	Dure
DisplayName Italian:	Tempo
DisplayName Spanish:	Tiempo
Type:	<code>CIAttributeTypeTime</code>

See Attribute(Read and Write property)

5.8 class CIFilterAdditionCompositingMBS

5.8.1 class CIFilterAdditionCompositingMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Addition filter.

Notes:

Details for this filter:

FilterName:	CIAdditionCompositing
DisplayName English:	Addition
DisplayName German:	Addition
DisplayName French:	Addition
DisplayName Italian:	Aggiunta
DisplayName Spanish:	Adicin

Categories:

- CICategoryCompositeOperation: Composite Operation
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryHighDynamicRange: High Dynamic Range
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputBackgroundImage: Background Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.8.2 Methods

5.8.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.8.4 Properties

5.8.5 AttributeinputBackgroundImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Addition attribute.

Notes:

This attribute should have this content:

Name:	inputBackgroundImage
Class:	CIImageMBS
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.8.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Addition attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.8.7 inputBackgroundImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Background Image

Notes:

Name:	inputBackgroundImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
Type:	

See AttributeinputBackgroundImage for more details.
(Read and Write property)

5.8.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See `AttributeinputImage` for more details.
(Read and Write property)

5.9 class CFilterAffineClampMBS

5.9.1 class CFilterAffineClampMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Affine Clamp filter.

Notes:

Details for this filter:

FilterName:	CIAffineClamp
DisplayName English:	Affine Clamp
DisplayName German:	Rand erweitern
DisplayName French:	Attache affine
DisplayName Italian:	Distanza affine
DisplayName Spanish:	Fijacin afn

Categories:

- CICategoryTileEffect: Tile Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputTransform: Transform

Output:

- outputImage

Subclass of the CFilterMBS class.

5.9.2 Methods

5.9.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.9.4 Properties

5.9.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Affine Clamp attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.9.6 AttributeinputTransform as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Affine Clamp attribute.

Notes:

This attribute should have this content:

(Read only property)

Name: inputTransform
 Class: NSAffineTransformMBS
 DisplayName English: Transform
 DisplayName German: Transformation
 DisplayName French: Transformer
 DisplayName Italian: Trasforma
 DisplayName Spanish: Transformacin
 DefaultAffineTransform: [0.4, 0, 0, 0.4, 0, 0]
 IdentityAffineTransform: [1, 0, 0, 1, 0, 0]

5.9.7 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name: inputImage
 Class: CIImageMBS (CIImage)
 DisplayName English: Image
 DisplayName German: Bild
 DisplayName French: Image
 DisplayName Italian: Immagine
 DisplayName Spanish: Imagen
 Type: CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.9.8 inputTransform as NSAffineTransformMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute
 Transform

Notes:

Name: inputTransform
 Class: NSAffineTransformMBS (NSAffineTransform)
 DisplayName English: Transform
 DisplayName German: Transformation
 DisplayName French: Transformer
 DisplayName Italian: Trasforma
 DisplayName Spanish: Transformacin
 Type:

See AttributeinputTransform for more details.

(Read and Write property)

5.10 class CFilterAffineTileMBS

5.10.1 class CFilterAffineTileMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Affine Tile filter.

Notes:

Details for this filter:

FilterName:	CIAffineTile
DisplayName English:	Affine Tile
DisplayName German:	Affin kacheln
DisplayName French:	Mosaque affine
DisplayName Italian:	Mosaico affine
DisplayName Spanish:	Mosaico afn

Categories:

- CICategoryTileEffect: Tile Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputTransform: Transform

Output:

- outputImage

Subclass of the CFilterMBS class.

5.10.2 Methods

5.10.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.10.4 Properties

5.10.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Affine Tile attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.10.6 AttributeinputTransform as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Affine Tile attribute.

Notes:

This attribute should have this content:

(Read only property)

Name: inputTransform
 Class: NSAffineTransformMBS
 DisplayName English: Transform
 DisplayName German: Transformation
 DisplayName French: Transformer
 DisplayName Italian: Trasforma
 DisplayName Spanish: Transformacin
 DefaultAffineTransform: [0.4, 0, 0, 0.4, 0, 0]
 IdentityAffineTransform: [1, 0, 0, 1, 0, 0]

5.10.7 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name: inputImage
 Class: CIImageMBS (CIImage)
 DisplayName English: Image
 DisplayName German: Bild
 DisplayName French: Image
 DisplayName Italian: Immagine
 DisplayName Spanish: Imagen
 Type: CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.10.8 inputTransform as NSAffineTransformMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute
 Transform

Notes:

Name: inputTransform
 Class: NSAffineTransformMBS (NSAffineTransform)
 DisplayName English: Transform
 DisplayName German: Transformation
 DisplayName French: Transformer
 DisplayName Italian: Trasforma
 DisplayName Spanish: Transformacin
 Type:

See AttributeinputTransform for more details.

(Read and Write property)

5.11 class CIFilterAffineTransformMBS

5.11.1 class CIFilterAffineTransformMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Affine Transform filter.

Example:

```
// Rotate image with CoreImage

// load image
dim f as FolderItem = SpecialFolder.Desktop.Child("test.png")
dim image as new CIImageMBS(f)

// rotate 45 degree
dim n as new NSAffineTransformMBS
n.rotateByDegrees(45)

dim TransformFilter as new CIFilterAffineTransformMBS
TransformFilter.inputImage = image
TransformFilter.inputTransform = n

// get result
dim resultImage as CIImageMBS = TransformFilter.outputImage

// for saving to file
dim outputImage as NSImageMBS = resultImage.RenderNSImage(false)

f = SpecialFolder.Desktop.Child("output.png")
dim b as BinaryStream = BinaryStream.Create(f, true)
b.Write outputImage.PNGRepresentation

// as Real Studio picture object for display
dim pic as Picture = outputImage.CopyPictureWithMask

Backdrop = pic
```

Notes:

Details for this filter:

Categories:

- CICategoryGeometryAdjustment: Geometry Adjustment

FilterName:	CIAffineTransform
DisplayName English:	Affine Transform
DisplayName German:	Affin transformieren
DisplayName French:	Affiner, transformer
DisplayName Italian:	Trasformazione affine
DisplayName Spanish:	Transformacin afn

- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputTransform: Transform

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.11.2 Methods

5.11.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.
Notes: On success the handle property is not zero and the filter has the default values set.

5.11.4 Properties

5.11.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Affine Transform attribute.
Notes:

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

This attribute should have this content:

(Read only property)

5.11.6 AttributeinputTransform as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Affine Transform attribute.

Notes:

This attribute should have this content:

Name:	inputTransform
Class:	NSAffineTransformMBS
Type:	CIAttributeTypeTransform
DisplayName English:	Transform
DisplayName German:	Transformation
DisplayName French:	Transformer
DisplayName Italian:	Trasforma
DisplayName Spanish:	Transformacin
DefaultAffineTransform:	[1, 0, 0, 1, 0, 0]
IdentityAffineTransform:	[1, 0, 0, 1, 0, 0]

(Read only property)

5.11.7 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.11.8 inputTransform as NSAffineTransformMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Transform

Example:

```
// Rotate image with CoreImage

// load image
dim f as FolderItem = SpecialFolder.Desktop.Child("test.png")
dim image as new CIImageMBS(f)

// rotate 45 degree
dim n as new NSAffineTransformMBS
n.rotateByDegrees(45)

dim TransformFilter as new CIFilterAffineTransformMBS
TransformFilter.inputImage = image
TransformFilter.inputTransform = n

// get result
dim resultImage as CIImageMBS = TransformFilter.outputImage

// for saving to file
dim outputImage as NSImageMBS = resultImage.RenderNSImage(false)

f = SpecialFolder.Desktop.Child("output.png")
dim b as BinaryStream = BinaryStream.Create(f, true)
b.Write outputImage.PNGRepresentation

// as Real Studio picture object for display
dim pic as Picture = outputImage.CopyPictureWithMask
```

Backdrop = pic

Notes:

Name:	inputTransform
Class:	NSAffineTransformMBS (NSAffineTransform)
DisplayName English:	Transform
DisplayName German:	Transformation
DisplayName French:	Transformer
DisplayName Italian:	Trasforma
DisplayName Spanish:	Transformacin
Type:	CIAttributeTypeTransform

See AttributeinputTransform for more details.
(Read and Write property)

5.12 class CIFilterAreaAverageMBS

5.12.1 class CIFilterAreaAverageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Area Average filter.

Notes:

Details for this filter:

FilterName:	CIAreaAverage
DisplayName English:	Area Average
DisplayName German:	Bereichsdurchschnitt
DisplayName French:	Moyenne de la zone
DisplayName Italian:	Media area
DisplayName Spanish:	Media del rea

Categories:

- CICategoryReduction: Reduction
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputExtent: Extent

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.12.2 Methods

5.12.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.12.4 Properties

5.12.5 AttributeinputExtent as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Area Average attribute.

Notes:

This attribute should have this content:

Name:	inputExtent
Class:	CIVectorMBS
Type:	CIAttributeTypeRectangle
DisplayName English:	Extent
DisplayName German:	Betrag
DisplayName French:	tendue
DisplayName Italian:	Ampiezza
DisplayName Spanish:	Amplitud
DefaultVector:	[0 0 640 80]
IdentityVector:	n/a

(Read only property)

5.12.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Area Average attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.12.7 inputExtent as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Extent

Notes:

Name:	inputExtent
Class:	CIVectorMBS (CIVector)
DisplayName English:	Extent
DisplayName German:	Betrag
DisplayName French:	tendue
DisplayName Italian:	Ampiezza
DisplayName Spanish:	Amplitud
Type:	CIAAttributeTypeRectangle

See AttributeinputExtent for more details.
(Read and Write property)

5.12.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See `AttributeinputImage` for more details.
(Read and Write property)

5.13 class CIFilterAreaHistogramMBS

5.13.1 class CIFilterAreaHistogramMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Area Histogram filter.

Notes:

Details for this filter:

FilterName:	CIAreaHistogram
DisplayName English:	Area Histogram
DisplayName German:	Bereichs-Histogramm
DisplayName French:	Histogramme de la zone
DisplayName Italian:	Istogramma area
DisplayName Spanish:	Histograma del rea

Categories:

- CICategoryReduction: Reduction
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputExtent: Extent
- inputScale: Scale
- inputCount: Count

Output:

- outputData
- outputImage

Subclass of the CIFilterMBS class.

5.13.2 Methods

5.13.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.13.4 Properties

5.13.5 AttributeinputCount as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Area Histogram attribute.

Notes:

This attribute should have this content:

Name:	inputCount
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Count
DisplayName German:	Anzahl
DisplayName French:	Compte
DisplayName Italian:	Conteggio
DisplayName Spanish:	Recuento
DefaultNumber:	64
IdentityNumber:	0
MaxNumber:	0
MinNumber:	1
SliderMaxNumber:	1000
SliderMinNumber:	10

(Read only property)

5.13.6 AttributeinputExtent as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Area Histogram attribute.

Notes:

This attribute should have this content:

Name:	inputExtent
Class:	CIVectorMBS
Type:	CIAttributeTypeRectangle
DisplayName English:	Extent
DisplayName German:	Betrag
DisplayName French:	tendue
DisplayName Italian:	Ampiezza
DisplayName Spanish:	Amplitud
DefaultVector:	[0 0 640 80]
IdentityVector:	n/a

(Read only property)

5.13.7 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Area Histogram attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.13.8 AttributeinputScale as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Area Histogram attribute.

Notes:

This attribute should have this content:

Name:	inputScale
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Scale
DisplayName German:	Skalierung
DisplayName French:	chelle
DisplayName Italian:	Scala
DisplayName Spanish:	Escala
DefaultNumber:	1
IdentityNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

(Read only property)

5.13.9 inputCount as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Count
Notes:

Name:	inputCount
Class:	double (NSNumber)
DisplayName English:	Count
DisplayName German:	Anzahl
DisplayName French:	Compte
DisplayName Italian:	Conteggio
DisplayName Spanish:	Recuento
Type:	CIAttributeTypeScalar

See AttributeinputCount for more details.
 (Read and Write property)

5.13.10 inputExtent as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Extent
Notes:

See AttributeinputExtent for more details.
 (Read and Write property)

Name:	inputExtent
Class:	CIVectorMBS (CIVector)
DisplayName English:	Extent
DisplayName German:	Betrag
DisplayName French:	tendue
DisplayName Italian:	Ampiezza
DisplayName Spanish:	Amplitud
Type:	CIAttributeTypeRectangle

5.13.11 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.13.12 inputScale as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Scale

Notes:

Name:	inputScale
Class:	double (NSNumber)
DisplayName English:	Scale
DisplayName German:	Skalierung
DisplayName French:	chelle
DisplayName Italian:	Scala
DisplayName Spanish:	Escala
Type:	CIAttributeTypeScalar

See AttributeinputScale for more details.
(Read and Write property)

5.14 class CIFilterAreaMaximumAlphaMBS

5.14.1 class CIFilterAreaMaximumAlphaMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Area Maximum Alpha filter.

Notes:

Details for this filter:

FilterName:	CIAreaMaximumAlpha
DisplayName English:	Area Maximum Alpha
DisplayName German:	Bereichsmaximum im Alpha-Kanal
DisplayName French:	Alpha maximum de la zone
DisplayName Italian:	Alfa massimo area
DisplayName Spanish:	Alfa mximo del rea

Categories:

- CICategoryReduction: Reduction
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputExtent: Extent

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.14.2 Methods

5.14.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.14.4 Properties

5.14.5 AttributeinputExtent as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Area Maximum Alpha attribute.

Notes:

This attribute should have this content:

Name:	inputExtent
Class:	CIVectorMBS
Type:	CIAttributeTypeRectangle
DisplayName English:	Extent
DisplayName German:	Betrag
DisplayName French:	tendue
DisplayName Italian:	Ampiezza
DisplayName Spanish:	Amplitud
DefaultVector:	[0 0 640 80]
IdentityVector:	n/a

(Read only property)

5.14.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Area Maximum Alpha attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.14.7 inputExtent as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Extent

Notes:

Name:	inputExtent
Class:	CIVectorMBS (CIVector)
DisplayName English:	Extent
DisplayName German:	Betrag
DisplayName French:	tendue
DisplayName Italian:	Ampiezza
DisplayName Spanish:	Amplitud
Type:	CIAAttributeTypeRectangle

See AttributeinputExtent for more details.
(Read and Write property)

5.14.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See `AttributeinputImage` for more details.
(Read and Write property)

5.15 class CIFilterAreaMaximumMBS

5.15.1 class CIFilterAreaMaximumMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Area Maximum filter.

Notes:

Details for this filter:

FilterName:	CIAreaMaximum
DisplayName English:	Area Maximum
DisplayName German:	Bereichsmaximum
DisplayName French:	Maximum de la zone
DisplayName Italian:	Massimo area
DisplayName Spanish:	Mximo del rea

Categories:

- CICategoryReduction: Reduction
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputExtent: Extent

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.15.2 Methods

5.15.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.15.4 Properties

5.15.5 AttributeinputExtent as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Area Maximum attribute.

Notes:

This attribute should have this content:

Name:	inputExtent
Class:	CIVectorMBS
Type:	CIAttributeTypeRectangle
DisplayName English:	Extent
DisplayName German:	Betrag
DisplayName French:	tendue
DisplayName Italian:	Ampiezza
DisplayName Spanish:	Amplitud
DefaultVector:	[0 0 640 80]
IdentityVector:	n/a

(Read only property)

5.15.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Area Maximum attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.15.7 inputExtent as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Extent

Notes:

Name:	inputExtent
Class:	CIVectorMBS (CIVector)
DisplayName English:	Extent
DisplayName German:	Betrag
DisplayName French:	tendue
DisplayName Italian:	Ampiezza
DisplayName Spanish:	Amplitud
Type:	CIAAttributeTypeRectangle

See AttributeinputExtent for more details.
(Read and Write property)

5.15.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See `AttributeinputImage` for more details.
(Read and Write property)

5.16 class CIFilterAreaMinimumAlphaMBS

5.16.1 class CIFilterAreaMinimumAlphaMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Area Minimum Alpha filter.

Notes:

Details for this filter:

FilterName:	CIAreaMinimumAlpha
DisplayName English:	Area Minimum Alpha
DisplayName German:	Bereichsminimum im Alpha-Kanal
DisplayName French:	Alpha minimum de la zone
DisplayName Italian:	Alfa minimo area
DisplayName Spanish:	Alfa mnimo del rea

Categories:

- CICategoryReduction: Reduction
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputExtent: Extent

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.16.2 Methods

5.16.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.16.4 Properties

5.16.5 AttributeinputExtent as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Area Minimum Alpha attribute.

Notes:

This attribute should have this content:

Name:	inputExtent
Class:	CIVectorMBS
Type:	CIAttributeTypeRectangle
DisplayName English:	Extent
DisplayName German:	Betrag
DisplayName French:	tendue
DisplayName Italian:	Ampiezza
DisplayName Spanish:	Amplitud
DefaultVector:	[0 0 640 80]
IdentityVector:	n/a

(Read only property)

5.16.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Area Minimum Alpha attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.16.7 inputExtent as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Extent

Notes:

Name:	inputExtent
Class:	CIVectorMBS (CIVector)
DisplayName English:	Extent
DisplayName German:	Betrag
DisplayName French:	tendue
DisplayName Italian:	Ampiezza
DisplayName Spanish:	Amplitud
Type:	CIAAttributeTypeRectangle

See AttributeinputExtent for more details.
(Read and Write property)

5.16.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See `AttributeinputImage` for more details.
(Read and Write property)

5.17 class CIFilterAreaMinimumMBS

5.17.1 class CIFilterAreaMinimumMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Area Minimum filter.

Notes:

Details for this filter:

FilterName:	CIAreaMinimum
DisplayName English:	Area Minimum
DisplayName German:	Bereichsminimum
DisplayName French:	Minimum de la zone
DisplayName Italian:	Minimo area
DisplayName Spanish:	Mnimo del rea

Categories:

- CICategoryReduction: Reduction
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputExtent: Extent

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.17.2 Methods

5.17.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.17.4 Properties

5.17.5 AttributeinputExtent as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Area Minimum attribute.

Notes:

This attribute should have this content:

Name:	inputExtent
Class:	CIVectorMBS
Type:	CIAttributeTypeRectangle
DisplayName English:	Extent
DisplayName German:	Betrag
DisplayName French:	tendue
DisplayName Italian:	Ampiezza
DisplayName Spanish:	Amplitud
DefaultVector:	[0 0 640 80]
IdentityVector:	n/a

(Read only property)

5.17.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Area Minimum attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.17.7 inputExtent as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Extent

Notes:

Name:	inputExtent
Class:	CIVectorMBS (CIVector)
DisplayName English:	Extent
DisplayName German:	Betrag
DisplayName French:	tendue
DisplayName Italian:	Ampiezza
DisplayName Spanish:	Amplitud
Type:	CIAAttributeTypeRectangle

See AttributeinputExtent for more details.
(Read and Write property)

5.17.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See `AttributeinputImage` for more details.
(Read and Write property)

5.18 class CIFilterAztecCodeGeneratorMBS

5.18.1 class CIFilterAztecCodeGeneratorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Aztec Code Generator filter.

Notes:

Details for this filter:

FilterName:	CIAztecCodeGenerator
DisplayName English:	Aztec Code Generator
DisplayName German:	CIAztecCodeGenerator
DisplayName French:	Gnrateur de code Aztec
DisplayName Italian:	Generatore codice Aztec
DisplayName Spanish:	Generador de cdigo Aztec

Categories:

- CICategoryGenerator: Generator
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputMessage: Message
- inputCorrectionLevel: CorrectionLevel
- inputLayers: Layers
- inputCompactStyle: CompactStyle

Output:

- outputImage
- outputCGImage

Subclass of the CIFilterMBS class.

5.18.2 Methods

5.18.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.18.4 Properties

5.18.5 AttributeinputCompactStyle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Aztec Code Generator attribute.

Notes:

This attribute should have this content:

Name:	inputCompactStyle
Class:	double
DisplayName:	CompactStyle
DefaultNumber:	0
IdentityNumber:	0
MaxNumber:	1
MinNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

(Read only property)

5.18.6 AttributeinputCorrectionLevel as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Aztec Code Generator attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputCorrectionLevel
Class:	double
DisplayName:	CorrectionLevel
DefaultNumber:	23
IdentityNumber:	0
MaxNumber:	95
MinNumber:	5
SliderMaxNumber:	95
SliderMinNumber:	5

5.18.7 AttributeinputLayers as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Aztec Code Generator attribute.

Notes:

This attribute should have this content:

Name:	inputLayers
Class:	double
DisplayName:	Layers
DefaultNumber:	0
IdentityNumber:	0
MaxNumber:	32
MinNumber:	1
SliderMaxNumber:	32
SliderMinNumber:	1

(Read only property)

5.18.8 AttributeinputMessage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Aztec Code Generator attribute.

Notes:

This attribute should have this content:

(Read only property)

Name: inputMessage
 Class: Memoryblock
 DisplayName: Message
 DefaultNumber: 0
 IdentityNumber: 0

5.18.9 inputCompactStyle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute CompactStyle

Notes:

Name: inputCompactStyle
 Class: double (NSNumber)
 DisplayName English: CompactStyle
 DisplayName German: CompactStyle
 DisplayName French: CompactStyle
 DisplayName Italian: CompactStyle
 DisplayName Spanish: CompactStyle
 Type:

See AttributeinputCompactStyle for more details.
 (Read and Write property)

5.18.10 inputCorrectionLevel as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute CorrectionLevel

Notes:

Name: inputCorrectionLevel
 Class: double (NSNumber)
 DisplayName English: CorrectionLevel
 DisplayName German: CorrectionLevel
 DisplayName French: CorrectionLevel
 DisplayName Italian: CorrectionLevel
 DisplayName Spanish: CorrectionLevel
 Type:

See AttributeinputCorrectionLevel for more details.
 (Read and Write property)

5.18.11 inputLayers as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Layers

Notes:

Name:	inputLayers
Class:	double (NSNumber)
DisplayName English:	Layers
DisplayName German:	Layers
DisplayName French:	Layers
DisplayName Italian:	Layers
DisplayName Spanish:	Layers
Type:	

See AttributeinputLayers for more details.
(Read and Write property)

5.18.12 inputMessage as Memoryblock

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Message

Notes:

Name:	inputMessage
Class:	Memoryblock (NSData)
DisplayName English:	Message
DisplayName German:	Message
DisplayName French:	Message
DisplayName Italian:	Message
DisplayName Spanish:	Message
Type:	

See AttributeinputMessage for more details.
(Read and Write property)

5.19 class CIFilterBarsSwipeTransitionMBS

5.19.1 class CIFilterBarsSwipeTransitionMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Bars Swipe Transition filter.

Notes:

Details for this filter:

FilterName:	CIBarsSwipeTransition
DisplayName English:	Bars Swipe Transition
DisplayName German:	Balken-Swipe-bergang
DisplayName French:	Transition de type balayage
DisplayName Italian:	Transizione colpi a barre
DisplayName Spanish:	Transicin barras araadas

Categories:

- CICategoryTransition: Transition
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputTargetImage: Target Image
- inputAngle: Angle
- inputWidth: Width
- inputBarOffset: Bar Offset
- inputTime: Time

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.19.2 Methods

5.19.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.19.4 Properties

5.19.5 AttributeinputAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Bars Swipe Transition attribute.

Notes:

This attribute should have this content:

Name:	inputAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
DefaultNumber:	3.141593
IdentityNumber:	0
SliderMaxNumber:	6.283185
SliderMinNumber:	0

(Read only property)

5.19.6 AttributeinputBarOffset as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Bars Swipe Transition attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputBarOffset
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Bar Offset
DisplayName German:	Balkenversatz
DisplayName French:	Dcalage de la barre
DisplayName Italian:	Scarto della barra
DisplayName Spanish:	Desviacin barra
DefaultNumber:	10
IdentityNumber:	0
MaxNumber:	0
MinNumber:	1
SliderMaxNumber:	100
SliderMinNumber:	1

5.19.7 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Bars Swipe Transition attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.19.8 AttributeinputTargetImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Bars Swipe Transition attribute.

Notes:

This attribute should have this content:

Name:	inputTargetImage
Class:	CIImageMBS
DisplayName English:	Target Image
DisplayName German:	Zielbild
DisplayName French:	Image cible
DisplayName Italian:	Immagine target
DisplayName Spanish:	Imagen de destino
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.19.9 AttributeinputTime as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Bars Swipe Transition attribute.

Notes:

This attribute should have this content:

Name:	inputTime
Class:	double
Type:	CIAttributeTypeTime
DisplayName English:	Time
DisplayName German:	Zeit
DisplayName French:	Dure
DisplayName Italian:	Tempo
DisplayName Spanish:	Tiempo
DefaultNumber:	0
IdentityNumber:	0
MaxNumber:	1
MinNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

(Read only property)

5.19.10 AttributeinputWidth as CIAAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Bars Swipe Transition attribute.

Notes:

This attribute should have this content:

Name:	inputWidth
Class:	double
Type:	CIAAttributeTypeDistance
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
DefaultNumber:	30
IdentityNumber:	0
MaxNumber:	0
MinNumber:	2
SliderMaxNumber:	300
SliderMinNumber:	2

(Read only property)

5.19.11 inputAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Angle

Notes:

Name:	inputAngle
Class:	double (NSNumber)
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
Type:	CIAAttributeTypeAngle

See AttributeinputAngle for more details.

(Read and Write property)

5.19.12 inputBarOffset as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Bar Offset

Notes:

Name:	inputBarOffset
Class:	double (NSNumber)
DisplayName English:	Bar Offset
DisplayName German:	Balkenversatz
DisplayName French:	Dcalage de la barre
DisplayName Italian:	Scarto della barra
DisplayName Spanish:	Desviacin barra
Type:	CIAttributeTypeScalar

See AttributeinputBarOffset for more details.
(Read and Write property)

5.19.13 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.19.14 inputTargetImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Target Image

Notes:

See AttributeinputTargetImage for more details.

Name:	inputTargetImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Target Image
DisplayName German:	Zielbild
DisplayName French:	Image cible
DisplayName Italian:	Immagine target
DisplayName Spanish:	Imagen de destino
Type:	

(Read and Write property)

5.19.15 inputTime as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Time
Notes:

Name:	inputTime
Class:	double (NSNumber)
DisplayName English:	Time
DisplayName German:	Zeit
DisplayName French:	Dure
DisplayName Italian:	Tempo
DisplayName Spanish:	Tiempo
Type:	CIAttributeTypeTime

See AttributeinputTime for more details.
 (Read and Write property)

5.19.16 inputWidth as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Width
Notes:

See AttributeinputWidth for more details.
 (Read and Write property)

Name:	inputWidth
Class:	double (NSNumber)
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
Type:	CIAttributeTypeDistance

5.20 class CIFilterBlendWithAlphaMaskMBS

5.20.1 class CIFilterBlendWithAlphaMaskMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Blend With Alpha Mask filter.

Notes:

Details for this filter:

FilterName:	CIBlendWithAlphaMask
DisplayName English:	Blend With Alpha Mask
DisplayName German:	Mit Alpha-Maske berblenden
DisplayName French:	Fusion avec masque Alpha
DisplayName Italian:	Sfumatura con maschera alfa
DisplayName Spanish:	Fusionar con la mscara alfa

Categories:

- CICategoryStylize: Stylize
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputBackgroundImage: Background Image
- inputMaskImage: Mask Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.20.2 Methods

5.20.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.20.4 Properties

5.20.5 AttributeinputBackgroundImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Blend With Alpha Mask attribute.

Notes:

This attribute should have this content:

Name:	inputBackgroundImage
Class:	CIImageMBS
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.20.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Blend With Alpha Mask attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.20.7 AttributeinputMaskImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Blend With Alpha Mask attribute.

Notes:

This attribute should have this content:

Name:	inputMaskImage
Class:	CIIImageMBS
DisplayName English:	Mask Image
DisplayName German:	Bild maskieren
DisplayName French:	Image du masque
DisplayName Italian:	Immagine maschera
DisplayName Spanish:	Imagen de mscara
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.20.8 inputBackgroundImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Background Image

Notes:

See AttributeinputBackgroundImage for more details.

(Read and Write property)

Name: inputBackgroundImage
 Class: CIIImageMBS (CIIImage)
 DisplayName English: Background Image
 DisplayName German: Hintergrundbild
 DisplayName French: Image darrire-plan
 DisplayName Italian: Immagine di sfondo
 DisplayName Spanish: Imagen de fondo
 Type:

5.20.9 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name: inputImage
 Class: CIIImageMBS (CIIImage)
 DisplayName English: Image
 DisplayName German: Bild
 DisplayName French: Image
 DisplayName Italian: Immagine
 DisplayName Spanish: Imagen
 Type: CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.20.10 inputMaskImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Mask
 Image
Notes:

Name: inputMaskImage
 Class: CIIImageMBS (CIIImage)
 DisplayName English: Mask Image
 DisplayName German: Bild maskieren
 DisplayName French: Image du masque
 DisplayName Italian: Immagine maschera
 DisplayName Spanish: Imagen de mscara
 Type:

See AttributeinputMaskImage for more details.

(Read and Write property)

5.21 class CIFilterBlendWithMaskMBS

5.21.1 class CIFilterBlendWithMaskMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Blend With Mask filter.

Notes:

Details for this filter:

FilterName:	CIBlendWithMask
DisplayName English:	Blend With Mask
DisplayName German:	Mit Maske berblenden
DisplayName French:	Fusion avec masque
DisplayName Italian:	Sfumatura con maschera
DisplayName Spanish:	Fusionar con la mscara

Categories:

- CICategoryStylize: Stylize
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputBackgroundImage: Background Image
- inputMaskImage: Mask Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.21.2 Methods

5.21.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.21.4 Properties

5.21.5 AttributeinputBackgroundImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Blend With Mask attribute.

Notes:

This attribute should have this content:

Name:	inputBackgroundImage
Class:	CIImageMBS
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.21.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Blend With Mask attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.21.7 AttributeinputMaskImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Blend With Mask attribute.

Notes:

This attribute should have this content:

Name:	inputMaskImage
Class:	CIIImageMBS
DisplayName English:	Mask Image
DisplayName German:	Bild maskieren
DisplayName French:	Image du masque
DisplayName Italian:	Immagine maschera
DisplayName Spanish:	Imagen de mscara
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.21.8 inputBackgroundImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Background Image

Notes:

See AttributeinputBackgroundImage for more details.

(Read and Write property)

Name: inputBackgroundImage
 Class: CIImageMBS (CIImage)
 DisplayName English: Background Image
 DisplayName German: Hintergrundbild
 DisplayName French: Image darrire-plan
 DisplayName Italian: Immagine di sfondo
 DisplayName Spanish: Imagen de fondo
 Type:

5.21.9 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name: inputImage
 Class: CIImageMBS (CIImage)
 DisplayName English: Image
 DisplayName German: Bild
 DisplayName French: Image
 DisplayName Italian: Immagine
 DisplayName Spanish: Imagen
 Type: CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.21.10 inputMaskImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Mask
 Image
Notes:

Name: inputMaskImage
 Class: CIImageMBS (CIImage)
 DisplayName English: Mask Image
 DisplayName German: Bild maskieren
 DisplayName French: Image du masque
 DisplayName Italian: Immagine maschera
 DisplayName Spanish: Imagen de mscara
 Type:

See AttributeinputMaskImage for more details.

(Read and Write property)

5.22 class CIFilterBloomMBS

5.22.1 class CIFilterBloomMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Bloom filter.

Notes:

Details for this filter:

FilterName:	CIBloom
DisplayName English:	Bloom
DisplayName German:	berstrahlen
DisplayName French:	Floraison
DisplayName Italian:	Velatura
DisplayName Spanish:	Veladura

Categories:

- CICategoryStylize: Stylize
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputRadius: Radius
- inputIntensity: Intensity

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.22.2 Methods

5.22.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.22.4 Properties

5.22.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Bloom attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.22.6 AttributeinputIntensity as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Bloom attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputIntensity
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Intensity
DisplayName German:	Intensitt
DisplayName French:	Intensit
DisplayName Italian:	Intensit
DisplayName Spanish:	Intensidad
DefaultNumber:	1
IdentityNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

5.22.7 AttributeinputRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Bloom attribute.

Notes:

This attribute should have this content:

Name:	inputRadius
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
DefaultNumber:	10
IdentityNumber:	0
SliderMaxNumber:	100
SliderMinNumber:	0

(Read only property)

5.22.8 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

(Read and Write property)

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

5.22.9 inputIntensity as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Intensity

Notes:

Name:	inputIntensity
Class:	double (NSNumber)
DisplayName English:	Intensity
DisplayName German:	Intensitt
DisplayName French:	Intensit
DisplayName Italian:	Intensit
DisplayName Spanish:	Intensidad
Type:	CIAttributeTypeScalar

See AttributeinputIntensity for more details.
(Read and Write property)

5.22.10 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Radius

Notes:

See AttributeinputRadius for more details.
(Read and Write property)

Name:	inputRadius
Class:	double (NSNumber)
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
Type:	CIAttributeTypeDistance

5.23 class CIFilterBoxBlurMBS

5.23.1 class CIFilterBoxBlurMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Box Blur filter.

Notes:

Details for this filter:

FilterName:	CIBoxBlur
DisplayName English:	Box Blur
DisplayName German:	Quadratische Unschärfe
DisplayName French:	Flou (Box blur)
DisplayName Italian:	Sfocatura riquadro
DisplayName Spanish:	Caja difuminada

Categories:

- CICategoryBlur: Blur
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputRadius: Radius

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.23.2 Methods

5.23.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.23.4 Properties

5.23.5 Attribute

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Box Blur attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.23.6 Attribute

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Box Blur attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputRadius
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
DefaultNumber:	10
IdentityNumber:	0
MaxNumber:	0
MinNumber:	1
SliderMaxNumber:	100
SliderMinNumber:	1

5.23.7 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.23.8 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Radius
Notes:

See AttributeinputRadius for more details.
 (Read and Write property)

Name:	inputRadius
Class:	double (NSNumber)
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
Type:	CIAttributeTypeDistance

5.24 class CIFilterBumpDistortionLinearMBS

5.24.1 class CIFilterBumpDistortionLinearMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Bump Distortion Linear filter.

Notes:

Details for this filter:

FilterName:	CIBumpDistortionLinear
DisplayName English:	Bump Distortion Linear
DisplayName German:	Verzerrung Bump (Linear)
DisplayName French:	Dformation Bosse linaire
DisplayName Italian:	Lineare distorsione urto
DisplayName Spanish:	Distorsin linear suplementaria

Categories:

- CICategoryDistortionEffect: Distortion Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCenter: Center
- inputRadius: Radius
- inputAngle: Angle
- inputScale: Scale

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.24.2 Methods

5.24.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.24.4 Properties

5.24.5 AttributeinputAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Bump Distortion Linear attribute.

Notes:

This attribute should have this content:

Name:	inputAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
DefaultNumber:	0
IdentityNumber:	0
SliderMaxNumber:	6.283185
SliderMinNumber:	0

(Read only property)

5.24.6 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Bump Distortion Linear attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

5.24.7 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Bump Distortion Linear attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.24.8 AttributeinputRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Bump Distortion Linear attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputRadius
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
DefaultNumber:	300
IdentityNumber:	0
SliderMaxNumber:	600
SliderMinNumber:	0

5.24.9 AttributeinputScale as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Bump Distortion Linear attribute.

Notes:

This attribute should have this content:

Name:	inputScale
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Scale
DisplayName German:	Skalierung
DisplayName French:	chelle
DisplayName Italian:	Scala
DisplayName Spanish:	Escala
DefaultNumber:	0.5
IdentityNumber:	1
MaxNumber:	0
MinNumber:	-1
SliderMaxNumber:	1
SliderMinNumber:	0

(Read only property)

5.24.10 inputAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Angle
Notes:

Name:	inputAngle
Class:	double (NSNumber)
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
Type:	CIAttributeTypeAngle

See AttributeinputAngle for more details.
(Read and Write property)

5.24.11 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center

Notes:

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

See AttributeinputCenter for more details.
(Read and Write property)

5.24.12 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.
(Read and Write property)

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

5.24.13 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Radius

Notes:

Name:	inputRadius
Class:	double (NSNumber)
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
Type:	CIAttributeTypeDistance

See AttributeinputRadius for more details.
(Read and Write property)

5.24.14 inputScale as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Scale

Notes:

Name:	inputScale
Class:	double (NSNumber)
DisplayName English:	Scale
DisplayName German:	Skalierung
DisplayName French:	chelle
DisplayName Italian:	Scala
DisplayName Spanish:	Escala
Type:	CIAttributeTypeScalar

See AttributeinputScale for more details.

(Read and Write property)

5.25 class CIFilterBumpDistortionMBS

5.25.1 class CIFilterBumpDistortionMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Bump Distortion filter.

Notes:

Details for this filter:

FilterName:	CIBumpDistortion
DisplayName English:	Bump Distortion
DisplayName German:	Verzerrung Bump
DisplayName French:	Dformation Bosse
DisplayName Italian:	Distorsione urto
DisplayName Spanish:	Distorsin suplementaria

Categories:

- CICategoryDistortionEffect: Distortion Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCenter: Center
- inputRadius: Radius
- inputScale: Scale

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.25.2 Methods

5.25.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.25.4 Properties

5.25.5 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Bump Distortion attribute.

Notes:

This attribute should have this content:

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

(Read only property)

5.25.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Bump Distortion attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.25.7 AttributeinputRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Bump Distortion attribute.

Notes:

This attribute should have this content:

Name:	inputRadius
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
DefaultNumber:	300
IdentityNumber:	0
SliderMaxNumber:	600
SliderMinNumber:	0

(Read only property)

5.25.8 AttributeinputScale as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Bump Distortion attribute.

Notes:

This attribute should have this content:

Name:	inputScale
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Scale
DisplayName German:	Skalierung
DisplayName French:	chelle
DisplayName Italian:	Scala
DisplayName Spanish:	Escala
DefaultNumber:	0.5
IdentityNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	-1

(Read only property)

5.25.9 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center

Notes:

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

See AttributeinputCenter for more details.

(Read and Write property)

5.25.10 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

(Read and Write property)

Name:	inputImage
Class:	CImageMBS (CImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

5.25.11 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Radius

Notes:

Name:	inputRadius
Class:	double (NSNumber)
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
Type:	CIAAttributeTypeDistance

See AttributeinputRadius for more details.
(Read and Write property)

5.25.12 inputScale as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Scale

Notes:

Name:	inputScale
Class:	double (NSNumber)
DisplayName English:	Scale
DisplayName German:	Skalierung
DisplayName French:	chelle
DisplayName Italian:	Scala
DisplayName Spanish:	Escala
Type:	CIAAttributeTypeScalar

See AttributeinputScale for more details.

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(Read and Write property)

5.26 class CIFilterCheckerboardGeneratorMBS

5.26.1 class CIFilterCheckerboardGeneratorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Checkerboard filter.

Notes:

Details for this filter:

FilterName:	CICheckerboardGenerator
DisplayName English:	Checkerboard
DisplayName German:	Schachbrettmuster
DisplayName French:	Damier
DisplayName Italian:	Scacchiera
DisplayName Spanish:	Tablero

Categories:

- CICategoryGenerator: Generator
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputCenter: Center
- inputColor0: Color 1
- inputColor1: Color 2
- inputWidth: Width
- inputSharpness: Sharpness

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.26.2 Methods

5.26.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.26.4 Properties

5.26.5 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Checkerboard attribute.

Notes:

This attribute should have this content:

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

(Read only property)

5.26.6 AttributeinputColor0 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Checkerboard attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputColor0
Class:	CIColorMBS
DisplayName English:	Color 1
DisplayName German:	Farbe 1
DisplayName French:	Couleur 1
DisplayName Italian:	Colore 1
DisplayName Spanish:	Color 1
DefaultColor:	Red = 1, Green = 1, Blue = 1, Alpha = 1
IdentityNumber:	0

5.26.7 AttributeinputColor1 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Checkerboard attribute.

Notes:

This attribute should have this content:

Name:	inputColor1
Class:	CIColorMBS
DisplayName English:	Color 2
DisplayName German:	Farbe 2
DisplayName French:	Couleur 2
DisplayName Italian:	Colore 2
DisplayName Spanish:	Color 2
DefaultColor:	Red = 0, Green = 0, Blue = 0, Alpha = 1
IdentityNumber:	0

(Read only property)

5.26.8 AttributeinputSharpness as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Checkerboard attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputSharpness
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Sharpness
DisplayName German:	Schrfe
DisplayName French:	Nettet
DisplayName Italian:	Nitidezza
DisplayName Spanish:	Nitidez
DefaultNumber:	1
IdentityNumber:	0
MaxNumber:	1
MinNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

5.26.9 AttributeinputWidth as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Checkerboard attribute.

Notes:

This attribute should have this content:

Name:	inputWidth
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
DefaultNumber:	80
IdentityNumber:	0
SliderMaxNumber:	800
SliderMinNumber:	0

(Read only property)

5.26.10 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center

Notes:

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

See AttributeinputCenter for more details.
(Read and Write property)

5.26.11 inputColor0 as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Color 1

Notes:

Name:	inputColor0
Class:	CIColorMBS (CIColor)
DisplayName English:	Color 1
DisplayName German:	Farbe 1
DisplayName French:	Couleur 1
DisplayName Italian:	Colore 1
DisplayName Spanish:	Color 1
Type:	

See AttributeinputColor0 for more details.
(Read and Write property)

5.26.12 inputColor1 as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Color 2

Notes:

See AttributeinputColor1 for more details.
(Read and Write property)

Name: inputColor1
 Class: CIColorMBS (CIColor)
 DisplayName English: Color 2
 DisplayName German: Farbe 2
 DisplayName French: Couleur 2
 DisplayName Italian: Colore 2
 DisplayName Spanish: Color 2
 Type:

5.26.13 inputSharpness as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Sharpness

Notes:

Name: inputSharpness
 Class: double (NSNumber)
 DisplayName English: Sharpness
 DisplayName German: Schrfe
 DisplayName French: Nettet
 DisplayName Italian: Nitidezza
 DisplayName Spanish: Nitidez
 Type: CIAAttributeTypeScalar

See AttributeinputSharpness for more details.
(Read and Write property)

5.26.14 inputWidth as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Width

Notes:

Name: inputWidth
 Class: double (NSNumber)
 DisplayName English: Width
 DisplayName German: Breite
 DisplayName French: Largeur
 DisplayName Italian: Larghezza
 DisplayName Spanish: Anchura
 Type: CIAAttributeTypeDistance

See AttributeinputWidth for more details.

(Read and Write property)

5.27 class CIFilterCircleSplashDistortionMBS

5.27.1 class CIFilterCircleSplashDistortionMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Circle Splash Distortion filter.

Notes:

Details for this filter:

FilterName:	CICircleSplashDistortion
DisplayName English:	Circle Splash Distortion
DisplayName German:	Verzerrung Kreisfrmiger Platscher
DisplayName French:	Dformation claboussure circulaire
DisplayName Italian:	Distorsione spruzzo circolare
DisplayName Spanish:	Distorsin a modo de salpicadura en crculo

Categories:

- CICategoryDistortionEffect: Distortion Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCenter: Center
- inputRadius: Radius

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.27.2 Methods

5.27.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.27.4 Properties

5.27.5 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Circle Splash Distortion attribute.

Notes:

This attribute should have this content:

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

(Read only property)

5.27.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Circle Splash Distortion attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.27.7 AttributeinputRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Circle Splash Distortion attribute.

Notes:

This attribute should have this content:

Name:	inputRadius
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
DefaultNumber:	150
IdentityNumber:	0
SliderMaxNumber:	1000
SliderMinNumber:	0

(Read only property)

5.27.8 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center

Notes:

See AttributeinputCenter for more details.

(Read and Write property)

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

5.27.9 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.27.10 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute
 Radius
Notes:

Name:	inputRadius
Class:	double (NSNumber)
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
Type:	CIAttributeTypeDistance

See AttributeinputRadius for more details.

(Read and Write property)

5.28 class CIFilterCircularScreenMBS

5.28.1 class CIFilterCircularScreenMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Circular Screen filter.

Notes:

Details for this filter:

FilterName:	CICircularScreen
DisplayName English:	Circular Screen
DisplayName German:	Konzentrisches Halbtonraster
DisplayName French:	cran circulaire
DisplayName Italian:	Schermo circolare
DisplayName Spanish:	Pantalla circular

Categories:

- CICategoryHalftoneEffect: Halftone Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCenter: Center
- inputWidth: Width
- inputSharpness: Sharpness

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.28.2 Methods

5.28.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.28.4 Properties

5.28.5 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Circular Screen attribute.

Notes:

This attribute should have this content:

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

(Read only property)

5.28.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Circular Screen attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.28.7 AttributeinputSharpness as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Circular Screen attribute.

Notes:

This attribute should have this content:

Name:	inputSharpness
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Sharpness
DisplayName German:	Schrfe
DisplayName French:	Nettet
DisplayName Italian:	Nitidezza
DisplayName Spanish:	Nitidez
DefaultNumber:	0.7
IdentityNumber:	0
MaxNumber:	1
MinNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

(Read only property)

5.28.8 AttributeinputWidth as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Circular Screen attribute.

Notes:

This attribute should have this content:

Name:	inputWidth
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
DefaultNumber:	6
IdentityNumber:	0
MaxNumber:	0
MinNumber:	1
SliderMaxNumber:	50
SliderMinNumber:	2

(Read only property)

5.28.9 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center

Notes:

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

See AttributeinputCenter for more details.

(Read and Write property)

5.28.10 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CImageMBS (CImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.28.11 inputSharpness as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Sharpness

Notes:

Name:	inputSharpness
Class:	double (NSNumber)
DisplayName English:	Sharpness
DisplayName German:	Schrfe
DisplayName French:	Nettet
DisplayName Italian:	Nitidezza
DisplayName Spanish:	Nitidez
Type:	CIAAttributeTypeScalar

See AttributeinputSharpness for more details.
(Read and Write property)

5.28.12 inputWidth as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Width

Notes:

See AttributeinputWidth for more details.
(Read and Write property)

Name:	inputWidth
Class:	double (NSNumber)
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
Type:	CIAttributeTypeDistance

5.29 class CIFilterCircularWrapMBS

5.29.1 class CIFilterCircularWrapMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Circular Wrap Distortion filter.

Example:

```
dim p as Picture = LogoMBS(500)
dim data as string = PictureToPNGStringMBS(p,80)
dim i as new CIImageMBS(data)
```

```
dim c as new CIFilterCircularWrapMBS
c.inputImage = i
```

```
dim o as CIImageMBS = c.outputImage
Backdrop = o.RenderPicture
```

Notes:

Details for this filter:

FilterName:	CICircularWrap
DisplayName English:	Circular Wrap Distortion
DisplayName German:	Kreisfrmig krmmen
DisplayName French:	Dformation Bouclage circulaire
DisplayName Italian:	Distorsione involucro circolare
DisplayName Spanish:	Distorsin a modo de envoltura circular

Categories:

- CICategoryDistortionEffect: Distortion Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCenter: Center

- inputRadius: Radius
- inputAngle: Angle

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.29.2 Methods

5.29.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.
Notes: On success the handle property is not zero and the filter has the default values set.

5.29.4 Properties

5.29.5 AttributeinputAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Circular Wrap Distortion attribute.

Notes:

This attribute should have this content:

Name:	inputAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
DefaultNumber:	0
IdentityNumber:	0
SliderMaxNumber:	3.141593
SliderMinNumber:	-3.141593

(Read only property)

5.29.6 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Circular Wrap Distortion attribute.

Notes:

This attribute should have this content:

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

(Read only property)

5.29.7 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Circular Wrap Distortion attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.29.8 AttributeinputRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Circular Wrap Distortion attribute.

Notes:

This attribute should have this content:

Name:	inputRadius
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
DefaultNumber:	150
IdentityNumber:	0
SliderMaxNumber:	600
SliderMinNumber:	0

(Read only property)

5.29.9 inputAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Angle

Example:

```
dim p as Picture = LogoMBS(500)
dim data as string = PictureToPNGStringMBS(p,80)
dim i as new CIImageMBS(data)
```

```
dim c as new CIFilterCircularWrapMBS
c.inputImage = i
c.inputAngle = 0.1
```

```
dim o as CIImageMBS = c.outputImage
Backdrop = o.RenderPicture
```

Notes:

See AttributeinputAngle for more details.

(Read and Write property)

Name:	inputAngle
Class:	double (NSNumber)
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
Type:	CIAttributeTypeAngle

5.29.10 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center

Notes:

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

See AttributeinputCenter for more details.
(Read and Write property)

5.29.11 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Example:

```
dim p as Picture = LogoMBS(500)
dim data as string = PictureToPNGStringMBS(p,80)
dim i as new CIImageMBS(data)
```

```
dim c as new CIFilterCircularWrapMBS
c.inputImage = i
```

```
dim o as CIImageMBS = c.outputImage
Backdrop = o.RenderPicture
```


Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.29.12 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Radius

Notes:

Name:	inputRadius
Class:	double (NSNumber)
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
Type:	CIAttributeTypeDistance

See AttributeinputRadius for more details.
(Read and Write property)

5.30 class CIFilterCMYKHalftoneMBS

5.30.1 class CIFilterCMYKHalftoneMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage CMYK Halftone filter.

Notes:

Details for this filter:

FilterName:	CICMYKHalftone
DisplayName English:	CMYK Halftone
DisplayName German:	CMYK-Halbton
DisplayName French:	Demi-teinte CMJN
DisplayName Italian:	Mezzitoni CMYK
DisplayName Spanish:	Semitono CMYK

Categories:

- CICategoryHalftoneEffect: Halftone Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCenter: Center
- inputWidth: Width
- inputAngle: Angle
- inputSharpness: Sharpness
- inputGCR: Gray Component Replacement
- inputUCR: Under Color Removal

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.30.2 Methods

5.30.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.30.4 Properties

5.30.5 AttributeinputAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the CMYK Halftone attribute.

Notes:

This attribute should have this content:

Name:	inputAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
DefaultNumber:	0
IdentityNumber:	0
SliderMaxNumber:	3.141593
SliderMinNumber:	-3.141593

(Read only property)

5.30.6 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the CMYK Halftone attribute.

Notes:

This attribute should have this content:

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

(Read only property)

5.30.7 AttributeinputGCR as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the CMYK Halftone attribute.

Notes:

This attribute should have this content:

Name:	inputGCR
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Gray Component Replacement
DisplayName German:	Graukomponente ersetzen
DisplayName French:	Remplacement de la composante grise
DisplayName Italian:	Sostituzione componente grigio
DisplayName Spanish:	Sustitucin de componente gris
DefaultNumber:	1
IdentityNumber:	1
SliderMaxNumber:	1
SliderMinNumber:	0

(Read only property)

5.30.8 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the CMYK Halftone attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.30.9 AttributeinputSharpness as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the CMYK Halftone attribute.

Notes:

This attribute should have this content:

Name:	inputSharpness
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Sharpness
DisplayName German:	Schrfe
DisplayName French:	Nettet
DisplayName Italian:	Nitidezza
DisplayName Spanish:	Nitidez
DefaultNumber:	0.7
IdentityNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

(Read only property)

5.30.10 AttributeinputUCR as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the CMYK Halftone attribute.

Notes:

This attribute should have this content:

Name:	inputUCR
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Under Color Removal
DisplayName German:	Unterfarben-Korrektur
DisplayName French:	limination des sous-couleurs
DisplayName Italian:	Rimozione colore inferiore
DisplayName Spanish:	Bajo supresin de color
DefaultNumber:	0.5
IdentityNumber:	0.5
SliderMaxNumber:	1
SliderMinNumber:	0

(Read only property)

5.30.11 AttributeinputWidth as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the CMYK Halftone attribute.

Notes:

This attribute should have this content:

(Read only property)

5.30.12 inputAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Angle

Notes:

See AttributeinputAngle for more details.

Name: inputWidth
 Class: double
 Type: CIAAttributeTypeDistance
 DisplayName English: Width
 DisplayName German: Breite
 DisplayName French: Largeur
 DisplayName Italian: Larghezza
 DisplayName Spanish: Anchura
 DefaultNumber: 6
 IdentityNumber: 6
 MaxNumber: 0
 MinNumber: -2
 SliderMaxNumber: 100
 SliderMinNumber: 2

Name: inputAngle
 Class: double (NSNumber)
 DisplayName English: Angle
 DisplayName German: Winkel
 DisplayName French: Angle
 DisplayName Italian: Angolo
 DisplayName Spanish: ngulo
 Type: CIAAttributeTypeAngle

(Read and Write property)

5.30.13 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center

Notes:

Name: inputCenter
 Class: CIVectorMBS (CIVector)
 DisplayName English: Center
 DisplayName German: Mitte
 DisplayName French: Centre
 DisplayName Italian: Centro
 DisplayName Spanish: Centro
 Type: CIAAttributeTypePosition

See AttributeinputCenter for more details.

(Read and Write property)

5.30.14 inputGCR as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Gray Component Replacement

Notes:

Name:	inputGCR
Class:	double (NSNumber)
DisplayName English:	Gray Component Replacement
DisplayName German:	Graukomponente ersetzen
DisplayName French:	Remplacement de la composante grise
DisplayName Italian:	Sostituzione componente grigio
DisplayName Spanish:	Sustitucin de componente gris
Type:	CIAttributeTypeScalar

See AttributeinputGCR for more details.
(Read and Write property)

5.30.15 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.30.16 inputSharpness as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Sharpness

Notes:

Name:	inputSharpness
Class:	double (NSNumber)
DisplayName English:	Sharpness
DisplayName German:	Schrfe
DisplayName French:	Nettet
DisplayName Italian:	Nitidezza
DisplayName Spanish:	Nitidez
Type:	CIAttributeTypeDistance

See AttributeinputSharpness for more details.
(Read and Write property)

5.30.17 inputUCR as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Under Color Removal

Notes:

Name:	inputUCR
Class:	double (NSNumber)
DisplayName English:	Under Color Removal
DisplayName German:	Unterfarben-Korrektur
DisplayName French:	limination des sous-couleurs
DisplayName Italian:	Rimozione colore inferiore
DisplayName Spanish:	Bajo supresin de color
Type:	CIAttributeTypeScalar

See AttributeinputUCR for more details.
(Read and Write property)

5.30.18 inputWidth as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Width

Notes:

Name:	inputWidth
Class:	double (NSNumber)
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
Type:	CIAttributeTypeDistance

See `AttributeinputWidth` for more details.
(Read and Write property)

5.31 class CIFilterCode128BarcodeGeneratorMBS

5.31.1 class CIFilterCode128BarcodeGeneratorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Code128 Barcode Generator filter.

Notes:

Details for this filter:

FilterName:	CICode128BarcodeGenerator
DisplayName English:	Code128 Barcode Generator
DisplayName German:	CICode128BarcodeGenerator
DisplayName French:	Gnrateur de code-barres Code128
DisplayName Italian:	Generatore codice a barre Code128
DisplayName Spanish:	Generador de cdigos de barras Code128

Categories:

- CICategoryGenerator: Generator
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputMessage: Message
- inputQuietSpace: QuietSpace

Output:

- outputImage
- outputCGImage

Subclass of the CIFilterMBS class.

5.31.2 Methods

5.31.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.31.4 Properties

5.31.5 AttributeinputMessage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Code128 Barcode Generator attribute.

Notes:

This attribute should have this content:

Name:	inputMessage
Class:	Memoryblock
DisplayName:	Message
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.31.6 AttributeinputQuietSpace as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Code128 Barcode Generator attribute.

Notes:

This attribute should have this content:

(Read only property)

5.31.7 inputMessage as Memoryblock

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Message

Name: inputQuietSpace
 Class: double
 Type: CIAttributeTypeScalar
 DisplayName: QuietSpace
 DefaultNumber: 7
 IdentityNumber: 0
 MaxNumber: 20
 MinNumber: 0
 SliderMaxNumber: 20
 SliderMinNumber: 0

Notes:

Name: inputMessage
 Class: Memoryblock (NSData)
 DisplayName English: Message
 DisplayName German: Message
 DisplayName French: Message
 DisplayName Italian: Message
 DisplayName Spanish: Message
 Type:

See AttributeinputMessage for more details.
(Read and Write property)

5.31.8 inputQuietSpace as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute QuietSpace

Notes:

Name: inputQuietSpace
 Class: double (NSNumber)
 DisplayName English: QuietSpace
 DisplayName German: QuietSpace
 DisplayName French: QuietSpace
 DisplayName Italian: QuietSpace
 DisplayName Spanish: QuietSpace
 Type: CIAttributeTypeScalar

See AttributeinputQuietSpace for more details.
(Read and Write property)

5.32 class CIColorBlendModeMBS

5.32.1 class CIColorBlendModeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Color Blend Mode filter.

Notes:

Details for this filter:

FilterName:	CIColorBlendMode
DisplayName English:	Color Blend Mode
DisplayName German:	Mischmethode Farbe
DisplayName French:	Mode de fusion des couleurs
DisplayName Italian:	Modalit sfumatura colore
DisplayName Spanish:	Modo de mezcla de color

Categories:

- CIColorCategoryCompositeOperation: Composite Operation
- CIColorCategoryVideo: Video
- CIColorCategoryStillImage: Still Image
- CIColorCategoryInterlaced: Interlaced
- CIColorCategoryNonSquarePixels: Non-Square Pixels
- CIColorCategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputBackgroundImage: Background Image

Output:

- outputImage

Subclass of the CIColorMBS class.

5.32.2 Methods

5.32.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.32.4 Properties

5.32.5 AttributeinputBackgroundImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Blend Mode attribute.

Notes:

This attribute should have this content:

Name:	inputBackgroundImage
Class:	CIImageMBS
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.32.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Blend Mode attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.32.7 inputBackgroundImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Background Image

Notes:

Name:	inputBackgroundImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
Type:	

See AttributeinputBackgroundImage for more details.
(Read and Write property)

5.32.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See `AttributeinputImage` for more details.
(Read and Write property)

5.33 class CIColorBurnBlendModeMBS

5.33.1 class CIColorBurnBlendModeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Color Burn Blend Mode filter.

Notes:

Details for this filter:

FilterName:	CIColorBurnBlendMode
DisplayName English:	Color Burn Blend Mode
DisplayName German:	Mischmethode Farbig nachbelichten
DisplayName French:	Mode de fusion Densit couleur
DisplayName Italian:	Modalit sfumatura colore bruciato
DisplayName Spanish:	Modo de mezcla por sobreexposicin de color

Categories:

- CIColorBurnBlendModeCompositeOperation: Composite Operation
- CIColorBurnBlendModeVideo: Video
- CIColorBurnBlendModeStillImage: Still Image
- CIColorBurnBlendModeInterlaced: Interlaced
- CIColorBurnBlendModeNonSquarePixels: Non-Square Pixels
- CIColorBurnBlendModeBuiltIn: Built-In

Input:

- inputImage: Image
- inputBackgroundImage: Background Image

Output:

- outputImage

Subclass of the CIColorBurnBlendModeMBS class.

5.33.2 Methods

5.33.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.33.4 Properties

5.33.5 AttributeBackgroundImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Burn Blend Mode attribute.

Notes:

This attribute should have this content:

Name:	inputBackgroundImage
Class:	CIImageMBS
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.33.6 AttributeImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Burn Blend Mode attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.33.7 inputBackgroundImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Background Image

Notes:

Name:	inputBackgroundImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
Type:	

See AttributeinputBackgroundImage for more details.
(Read and Write property)

5.33.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See `AttributeinputImage` for more details.
(Read and Write property)

5.34 class CIColorClampMBS

5.34.1 class CIColorClampMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Color Clamp filter.

Notes:

Details for this filter:

FilterName:	CIColorClamp
DisplayName English:	Color Clamp
DisplayName German:	Color Clamp
DisplayName French:	Limitation de la couleur
DisplayName Italian:	Fissaggio colore
DisplayName Spanish:	Fijacin del color

Categories:

- CICategoryColorAdjustment: Color Adjustment
- CICategoryVideo: Video
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputMinComponents: MinComponents
- inputMaxComponents: MaxComponents

Output:

- outputImage

Subclass of the CIColorMBS class.

5.34.2 Methods

5.34.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.34.4 Properties

5.34.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Clamp attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.34.6 AttributeinputMaxComponents as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Clamp attribute.

Notes:

This attribute should have this content:

(Read only property)

Name: inputMaxComponents
 Class: CIVectorMBS
 DisplayName: MaxComponents
 DefaultVector: [1 1 1 1]
 IdentityVector: n/a

5.34.7 AttributeinputMinComponents as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Clamp attribute.

Notes:

This attribute should have this content:

Name: inputMinComponents
 Class: CIVectorMBS
 DisplayName: MinComponents
 DefaultVector: [0 0 0 0]
 IdentityVector: n/a

(Read only property)

5.34.8 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name: inputImage
 Class: CIImageMBS (CIImage)
 DisplayName English: Image
 DisplayName German: Bild
 DisplayName French: Image
 DisplayName Italian: Immagine
 DisplayName Spanish: Imagen
 Type: CIAttributeTypeImage

See AttributeinputImage for more details.

(Read and Write property)

5.34.9 inputMaxComponents as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute MaxComponents

Notes:

Name:	inputMaxComponents
Class:	CIVectorMBS (CIVector)
DisplayName English:	MaxComponents
DisplayName German:	MaxComponents
DisplayName French:	MaxComponents
DisplayName Italian:	MaxComponents
DisplayName Spanish:	MaxComponents
Type:	

See AttributeinputMaxComponents for more details.
(Read and Write property)

5.34.10 inputMinComponents as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute MinComponents

Notes:

Name:	inputMinComponents
Class:	CIVectorMBS (CIVector)
DisplayName English:	MinComponents
DisplayName German:	MinComponents
DisplayName French:	MinComponents
DisplayName Italian:	MinComponents
DisplayName Spanish:	MinComponents
Type:	

See AttributeinputMinComponents for more details.
(Read and Write property)

5.35 class CIFilterColorControlsMBS

5.35.1 class CIFilterColorControlsMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Color Controls filter.

Notes:

Details for this filter:

FilterName:	CIColorControls
DisplayName English:	Color Controls
DisplayName German:	Farbsteuerung
DisplayName French:	Contrle des couleurs
DisplayName Italian:	Controlli colore
DisplayName Spanish:	Controles de color

Categories:

- CICategoryColorAdjustment: Color Adjustment
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputSaturation: Saturation
- inputBrightness: Brightness
- inputContrast: Contrast

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.35.2 Methods

5.35.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.35.4 Properties

5.35.5 AttributeinputBrightness as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Controls attribute.

Notes:

This attribute should have this content:

Name:	inputBrightness
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Brightness
DisplayName German:	Helligkeit
DisplayName French:	Luminosit
DisplayName Italian:	Luminosit
DisplayName Spanish:	Brillo
DefaultNumber:	0
IdentityNumber:	0
MaxNumber:	0
MinNumber:	-1
SliderMaxNumber:	1
SliderMinNumber:	-1

(Read only property)

5.35.6 AttributeinputContrast as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Controls attribute.

Notes:

This attribute should have this content:

Name:	inputContrast
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Contrast
DisplayName German:	Kontrast
DisplayName French:	Contraste
DisplayName Italian:	Contrasto
DisplayName Spanish:	Contraste
DefaultNumber:	1
IdentityNumber:	1
SliderMaxNumber:	4
SliderMinNumber:	0.25

(Read only property)

5.35.7 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Controls attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.35.8 AttributeinputSaturation as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Controls attribute.

Notes:

This attribute should have this content:

Name:	inputSaturation
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Saturation
DisplayName German:	Sttigung
DisplayName French:	Saturation
DisplayName Italian:	Saturazione
DisplayName Spanish:	Saturacin
DefaultNumber:	1
IdentityNumber:	1
SliderMaxNumber:	2
SliderMinNumber:	0

(Read only property)

5.35.9 inputBrightness as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Brightness

Notes:

Name:	inputBrightness
Class:	double (NSNumber)
DisplayName English:	Brightness
DisplayName German:	Helligkeit
DisplayName French:	Luminosit
DisplayName Italian:	Luminosit
DisplayName Spanish:	Brillo
Type:	CIAttributeTypeScalar

See AttributeBrightness for more details.

(Read and Write property)

5.35.10 inputContrast as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Contrast

Notes:

Name:	inputContrast
Class:	double (NSNumber)
DisplayName English:	Contrast
DisplayName German:	Kontrast
DisplayName French:	Contraste
DisplayName Italian:	Contrasto
DisplayName Spanish:	Contraste
Type:	CIAttributeTypeScalar

See AttributeinputContrast for more details.
(Read and Write property)

5.35.11 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.35.12 inputSaturation as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Saturation
Notes:

See AttributeinputSaturation for more details.
(Read and Write property)

Name:	inputSaturation
Class:	double (NSNumber)
DisplayName English:	Saturation
DisplayName German:	Sttigung
DisplayName French:	Saturation
DisplayName Italian:	Saturazione
DisplayName Spanish:	Saturacin
Type:	CIAttributeTypeScalar

5.36 class CIColorCrossPolynomialMBS

5.36.1 class CIColorCrossPolynomialMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Color Cross Polynomial filter.

Notes:

Details for this filter:

FilterName:	CIColorCrossPolynomial
DisplayName English:	Color Cross Polynomial
DisplayName German:	Farbberblend-Polynom
DisplayName French:	Fonction polynomiale croise de couleur
DisplayName Italian:	Polinomio cromatico incrociato
DisplayName Spanish:	Polinomio cruzado cromtico

Categories:

- CIColorCategoryColorEffect: Color Effect
- CIColorCategoryVideo: Video
- CIColorCategoryInterlaced: Interlaced
- CIColorCategoryNonSquarePixels: Non-Square Pixels
- CIColorCategoryStillImage: Still Image
- CIColorCategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputRedCoefficients: RedCoefficients
- inputGreenCoefficients: GreenCoefficients
- inputBlueCoefficients: BlueCoefficients

Output:

- outputImage

Subclass of the CIColorMBS class.

5.36.2 Methods

5.36.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.36.4 Properties

5.36.5 AttributeinputBlueCoefficients as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Cross Polynomial attribute.

Notes:

This attribute should have this content:

```
Name:          inputBlueCoefficients
Class:         CIVectorMBS
DisplayName:   BlueCoefficients
DefaultVector: [ 0 0 1 0 0 0 0 0 0 ]
IdentityVector: [ 0 0 1 0 0 0 0 0 0 ]
```

(Read only property)

5.36.6 AttributeinputGreenCoefficients as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Cross Polynomial attribute.

Notes:

This attribute should have this content:

```
Name:          inputGreenCoefficients
Class:         CIVectorMBS
DisplayName:   GreenCoefficients
DefaultVector: [ 0 1 0 0 0 0 0 0 0 ]
IdentityVector: [ 0 1 0 0 0 0 0 0 0 ]
```

(Read only property)

5.36.7 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Cross Polynomial attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.36.8 AttributeinputRedCoefficients as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Cross Polynomial attribute.

Notes:

This attribute should have this content:

Name:	inputRedCoefficients
Class:	CIVectorMBS
DisplayName:	RedCoefficients
DefaultVector:	[1 0 0 0 0 0 0 0 0]
IdentityVector:	[1 0 0 0 0 0 0 0 0]

(Read only property)

5.36.9 inputBlueCoefficients as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute BlueCoefficients

Notes:

Name:	inputBlueCoefficients
Class:	CIVectorMBS (CIVector)
DisplayName English:	BlueCoefficients
DisplayName German:	BlueCoefficients
DisplayName French:	BlueCoefficients
DisplayName Italian:	BlueCoefficients
DisplayName Spanish:	BlueCoefficients
Type:	

See AttributeinputBlueCoefficients for more details.
(Read and Write property)

5.36.10 inputGreenCoefficients as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute GreenCoefficients

Notes:

Name:	inputGreenCoefficients
Class:	CIVectorMBS (CIVector)
DisplayName English:	GreenCoefficients
DisplayName German:	GreenCoefficients
DisplayName French:	GreenCoefficients
DisplayName Italian:	GreenCoefficients
DisplayName Spanish:	GreenCoefficients
Type:	

See AttributeinputGreenCoefficients for more details.
(Read and Write property)

5.36.11 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

(Read and Write property)

5.36.12 inputRedCoefficients as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute RedCoefficients

Notes:

Name:	inputRedCoefficients
Class:	CIVectorMBS (CIVector)
DisplayName English:	RedCoefficients
DisplayName German:	RedCoefficients
DisplayName French:	RedCoefficients
DisplayName Italian:	RedCoefficients
DisplayName Spanish:	RedCoefficients
Type:	

See AttributeinputRedCoefficients for more details.

(Read and Write property)

5.37 class CIFilterColorCubeMBS

5.37.1 class CIFilterColorCubeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Color Cube filter.

Notes:

Details for this filter:

FilterName:	CIColorCube
DisplayName English:	Color Cube
DisplayName German:	Farbwrfel
DisplayName French:	Cube de couleur
DisplayName Italian:	Cubo colore
DisplayName Spanish:	Cubo de color

Categories:

- CIColorCategoryColorEffect: Color Effect
- CIColorCategoryVideo: Video
- CIColorCategoryInterlaced: Interlaced
- CIColorCategoryNonSquarePixels: Non-Square Pixels
- CIColorCategoryStillImage: Still Image
- CIColorCategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCubeDimension: Cube Dimension
- inputCubeData: Cube Data

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.37.2 Methods

5.37.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.37.4 Properties

5.37.5 AttributeinputCubeData as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Cube attribute.

Notes:

This attribute should have this content:

Name:	inputCubeData
Class:	Memoryblock
DisplayName English:	Cube Data
DisplayName German:	Wrfeldaten
DisplayName French:	Donnes du cube
DisplayName Italian:	Dati cubo
DisplayName Spanish:	Datos del cubo
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.37.6 AttributeinputCubeDimension as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Cube attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputCubeDimension
Class:	double
Type:	CIAttributeTypeCount
DisplayName English:	Cube Dimension
DisplayName German:	Wrfelmae
DisplayName French:	Dimension du cube
DisplayName Italian:	Dimensione cubo
DisplayName Spanish:	Dimensin del cubo
DefaultNumber:	2
IdentityNumber:	2
MaxNumber:	128
MinNumber:	2

5.37.7 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Cube attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.37.8 inputCubeData as Memoryblock

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Cube Data

Notes:

See AttributeinputCubeData for more details.

(Read and Write property)

Name:	inputCubeData
Class:	Memoryblock (NSData)
DisplayName English:	Cube Data
DisplayName German:	Wrfeldaten
DisplayName French:	Donnes du cube
DisplayName Italian:	Dati cubo
DisplayName Spanish:	Datos del cubo
Type:	

5.37.9 inputCubeDimension as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Cube Dimension

Notes:

Name:	inputCubeDimension
Class:	double (NSNumber)
DisplayName English:	Cube Dimension
DisplayName German:	Wrfelmae
DisplayName French:	Dimension du cube
DisplayName Italian:	Dimensione cubo
DisplayName Spanish:	Dimensin del cubo
Type:	CIAttributeTypeCount

See AttributeinputCubeDimension for more details.
(Read and Write property)

5.37.10 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.

(Read and Write property)

5.38 class CIColorCubeWithColorSpaceMBS

5.38.1 class CIColorCubeWithColorSpaceMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Color Cube with ColorSpace filter.

Notes:

Details for this filter:

FilterName:	CIColorCubeWithColorSpace
DisplayName English:	Color Cube with ColorSpace
DisplayName German:	Farbwrfel mit ColorSpace
DisplayName French:	Cube de couleur avec ColorSpace
DisplayName Italian:	Cubo colore con spazio colore
DisplayName Spanish:	Cubo de color con espacio de color

Categories:

- CIColorCategoryColorEffect: Color Effect
- CIColorCategoryVideo: Video
- CIColorCategoryInterlaced: Interlaced
- CIColorCategoryNonSquarePixels: Non-Square Pixels
- CIColorCategoryStillImage: Still Image
- CIColorCategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCubeDimension: Cube Dimension
- inputCubeData: Cube Data
- inputColorSpace: ColorSpace

Output:

- outputImage

Subclass of the CIColorMBS class.

5.38.2 Methods

5.38.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.38.4 Properties

5.38.5 AttributeinputColorSpace as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Cube with ColorSpace attribute.

Notes:

This attribute should have this content:

Name:	inputColorSpace
Class:	CGColorSpaceMBS
DisplayName:	ColorSpace
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.38.6 AttributeinputCubeData as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Cube with ColorSpace attribute.

Notes:

This attribute should have this content:

(Read only property)

5.38.7 AttributeinputCubeDimension as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Cube with ColorSpace attribute.

Name:	inputCubeData
Class:	Memoryblock
DisplayName English:	Cube Data
DisplayName German:	Wrfeldaten
DisplayName French:	Donnes du cube
DisplayName Italian:	Dati cubo
DisplayName Spanish:	Datos del cubo
DefaultNumber:	0
IdentityNumber:	0

Notes:

This attribute should have this content:

Name:	inputCubeDimension
Class:	double
Type:	CIAttributeTypeCount
DisplayName English:	Cube Dimension
DisplayName German:	Wrfelmae
DisplayName French:	Dimension du cube
DisplayName Italian:	Dimensione cubo
DisplayName Spanish:	Dimensin del cubo
DefaultNumber:	2
IdentityNumber:	2
MaxNumber:	128
MinNumber:	2

(Read only property)

5.38.8 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Cube with ColorSpace attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.38.9 inputColorSpace as CGColorSpaceMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute ColorSpace

Notes:

Name:	inputColorSpace
Class:	CGColorSpaceMBS (NSObject)
DisplayName English:	ColorSpace
DisplayName German:	ColorSpace
DisplayName French:	ColorSpace
DisplayName Italian:	ColorSpace
DisplayName Spanish:	ColorSpace
Type:	

See AttributeinputColorSpace for more details.
(Read and Write property)

5.38.10 inputCubeData as Memoryblock

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Cube Data

Notes:

See AttributeinputCubeData for more details.
(Read and Write property)

5.38.11 inputCubeDimension as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Cube Dimension

Name:	inputCubeData
Class:	Memoryblock (NSData)
DisplayName English:	Cube Data
DisplayName German:	Wrfeldaten
DisplayName French:	Donnes du cube
DisplayName Italian:	Dati cubo
DisplayName Spanish:	Datos del cubo
Type:	

Notes:

Name:	inputCubeDimension
Class:	double (NSNumber)
DisplayName English:	Cube Dimension
DisplayName German:	Wrfelmae
DisplayName French:	Dimension du cube
DisplayName Italian:	Dimensione cubo
DisplayName Spanish:	Dimensin del cubo
Type:	CIAttributeTypeCount

See AttributeinputCubeDimension for more details.
(Read and Write property)

5.38.12 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.39 class CIFilterColorDodgeBlendModeMBS

5.39.1 class CIFilterColorDodgeBlendModeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Color Dodge Blend Mode filter.

Notes:

Details for this filter:

FilterName:	CIColorDodgeBlendMode
DisplayName English:	Color Dodge Blend Mode
DisplayName German:	Mischmethode Farbig abwedeln
DisplayName French:	Mode de fusion Densit couleur ngative
DisplayName Italian:	Modalit sfumatura colore schermato
DisplayName Spanish:	Modo de mezcla por evasin de color

Categories:

- CICategoryCompositeOperation: Composite Operation
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputBackgroundImage: Background Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.39.2 Methods

5.39.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.39.4 Properties

5.39.5 AttributeinputBackgroundImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Dodge Blend Mode attribute.

Notes:

This attribute should have this content:

Name:	inputBackgroundImage
Class:	CIImageMBS
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image d'arrière-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.39.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Dodge Blend Mode attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.39.7 inputBackgroundImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Background Image

Notes:

Name:	inputBackgroundImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
Type:	

See AttributeinputBackgroundImage for more details.
(Read and Write property)

5.39.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See `AttributeinputImage` for more details.
(Read and Write property)

5.40 class CIFilterColorInvertMBS

5.40.1 class CIFilterColorInvertMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Color Invert filter.

Notes:

Details for this filter:

FilterName:	CIColorInvert
DisplayName English:	Color Invert
DisplayName German:	Farbe umkehren
DisplayName French:	Inversion de couleur
DisplayName Italian:	Inversione colore
DisplayName Spanish:	Inversin de color

Categories:

- CIColorEffect: Color Effect
- CIColorVideo: Video
- CIColorInterlaced: Interlaced
- CIColorNonSquarePixels: Non-Square Pixels
- CIColorStillImage: Still Image
- CIColorBuiltIn: Built-In

Input:

- inputImage: Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.40.2 Methods

5.40.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.40.4 Properties

5.40.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Invert attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.40.6 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

(Read and Write property)

Name:	inputImage
Class:	UIImageMBS (UIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	UIImageTypeImage

5.41 class CIColorMapMBS

5.41.1 class CIColorMapMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Color Map filter.

Notes:

Details for this filter:

FilterName:	CIColorMap
DisplayName English:	Color Map
DisplayName German:	Farbkarte
DisplayName French:	Carte de couleurs
DisplayName Italian:	Mappa colore
DisplayName Spanish:	Mapa de color

Categories:

- CIColorCategoryColorEffect: Color Effect
- CIColorCategoryVideo: Video
- CIColorCategoryInterlaced: Interlaced
- CIColorCategoryNonSquarePixels: Non-Square Pixels
- CIColorCategoryStillImage: Still Image
- CIColorCategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputGradientImage: Gradient Image

Output:

- outputImage

Subclass of the CIColorMBS class.

5.41.2 Methods

5.41.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.41.4 Properties

5.41.5 AttributeGradientImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Map attribute.

Notes:

This attribute should have this content:

Name:	inputGradientImage
Class:	CIImageMBS
Type:	CIAttributeTypeGradient
DisplayName English:	Gradient Image
DisplayName German:	Bild fr Verlauf
DisplayName French:	Image du dgrad
DisplayName Italian:	Immagine gradiente
DisplayName Spanish:	Imagen degradada
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.41.6 AttributeImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Map attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.41.7 inputGradientImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Gradient Image

Notes:

Name:	inputGradientImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Gradient Image
DisplayName German:	Bild fr Verlauf
DisplayName French:	Image du dgrad
DisplayName Italian:	Immagine gradiente
DisplayName Spanish:	Imagen degradada
Type:	CIAAttributeTypeGradient

See AttributeinputGradientImage for more details.
(Read and Write property)

5.41.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See `AttributeinputImage` for more details.
(Read and Write property)

5.42 class CIFilterColorMatrixMBS

5.42.1 class CIFilterColorMatrixMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Color Matrix filter.

Notes:

Details for this filter:

FilterName:	CIColorMatrix
DisplayName English:	Color Matrix
DisplayName German:	Farbmatrix
DisplayName French:	Matrice de couleurs
DisplayName Italian:	Matrice colore
DisplayName Spanish:	Matriz de color

Categories:

- CICategoryColorAdjustment: Color Adjustment
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputRVector: Red Vector
- inputGVector: Green Vector
- inputBVector: Blue Vector
- inputAVector: Alpha Vector
- inputBiasVector: Bias Vector

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.42.2 Methods

5.42.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.42.4 Properties

5.42.5 AttributeinputAVector as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Matrix attribute.

Notes:

This attribute should have this content:

Name:	inputAVector
Class:	CIVectorMBS
DisplayName English:	Alpha Vector
DisplayName German:	Alpha-Vektor
DisplayName French:	Vecteur alpha
DisplayName Italian:	Vettore alfa
DisplayName Spanish:	Vector alfa
DefaultVector:	[0 0 0 1]
IdentityVector:	[0 0 0 1]

(Read only property)

5.42.6 AttributeinputBiasVector as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Matrix attribute.

Notes:

This attribute should have this content:

Name:	inputBiasVector
Class:	CIVectorMBS
DisplayName English:	Bias Vector
DisplayName German:	Bias-Vektor
DisplayName French:	Vecteur de biais
DisplayName Italian:	Vettore BIAS
DisplayName Spanish:	Vector oblicuo
DefaultVector:	[0 0 0 0]
IdentityVector:	[0 0 0 0]

(Read only property)

5.42.7 AttributeinputBVector as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Matrix attribute.

Notes:

This attribute should have this content:

Name:	inputBVector
Class:	CIVectorMBS
DisplayName English:	Blue Vector
DisplayName German:	Blau-Vektor
DisplayName French:	Vecteur bleu
DisplayName Italian:	Vettore blu
DisplayName Spanish:	Vector azul
DefaultVector:	[0 0 1 0]
IdentityVector:	[0 0 1 0]

(Read only property)

5.42.8 AttributeinputGVector as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Matrix attribute.

Notes:

This attribute should have this content:

Name:	inputGVector
Class:	CIVectorMBS
DisplayName English:	Green Vector
DisplayName German:	Grn-Vektor
DisplayName French:	Vecteur vert
DisplayName Italian:	Vettore verde
DisplayName Spanish:	Vector verde
DefaultVector:	[0 1 0 0]
IdentityVector:	[0 1 0 0]

(Read only property)

5.42.9 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Matrix attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.42.10 AttributeinputRVector as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Matrix attribute.

Notes:

This attribute should have this content:

Name:	inputRVector
Class:	CIVectorMBS
DisplayName English:	Red Vector
DisplayName German:	Rot-Vektor
DisplayName French:	Vecteur rouge
DisplayName Italian:	Vettore rosso
DisplayName Spanish:	Vector rojo
DefaultVector:	[1 0 0 0]
IdentityVector:	[1 0 0 0]

(Read only property)

5.42.11 inputAVector as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Alpha Vector

Notes:

Name:	inputAVector
Class:	CIVectorMBS (CIVector)
DisplayName English:	Alpha Vector
DisplayName German:	Alpha-Vektor
DisplayName French:	Vecteur alpha
DisplayName Italian:	Vettore alfa
DisplayName Spanish:	Vector alfa
Type:	

See AttributeinputAVector for more details.

(Read and Write property)

5.42.12 inputBiasVector as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Bias Vector

Notes:

See AttributeinputBiasVector for more details.

(Read and Write property)

Name: `inputBiasVector`
 Class: `CIVectorMBS (CIVector)`
 DisplayName English: Bias Vector
 DisplayName German: Bias-Vektor
 DisplayName French: Vecteur de biais
 DisplayName Italian: Vettore BIAS
 DisplayName Spanish: Vector oblicuo
 Type:

5.42.13 `inputBVector` as `CIVectorMBS`

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Blue Vector

Notes:

Name: `inputBVector`
 Class: `CIVectorMBS (CIVector)`
 DisplayName English: Blue Vector
 DisplayName German: Blau-Vektor
 DisplayName French: Vecteur bleu
 DisplayName Italian: Vettore blu
 DisplayName Spanish: Vector azul
 Type:

See `AttributeinputBVector` for more details.
(Read and Write property)

5.42.14 `inputGVector` as `CIVectorMBS`

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Green Vector

Notes:

Name: `inputGVector`
 Class: `CIVectorMBS (CIVector)`
 DisplayName English: Green Vector
 DisplayName German: Grn-Vektor
 DisplayName French: Vecteur vert
 DisplayName Italian: Vettore verde
 DisplayName Spanish: Vector verde
 Type:

See `AttributeinputGVector` for more details.

(Read and Write property)

5.42.15 inputImage as CImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CImageMBS (CImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.42.16 inputRVector as CVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Red
Vector

Notes:

Name:	inputRVector
Class:	CVectorMBS (CVector)
DisplayName English:	Red Vector
DisplayName German:	Rot-Vektor
DisplayName French:	Vecteur rouge
DisplayName Italian:	Vettore rosso
DisplayName Spanish:	Vector rojo
Type:	

See AttributeinputRVector for more details.
(Read and Write property)

5.43 class CIFilterColorMonochromeMBS

5.43.1 class CIFilterColorMonochromeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Color Monochrome filter.

Notes:

Details for this filter:

FilterName:	CIColorMonochrome
DisplayName English:	Color Monochrome
DisplayName German:	Einfarbig
DisplayName French:	Couleur monochrome
DisplayName Italian:	Colore monocromo
DisplayName Spanish:	Color monocromo

Categories:

- CIColorEffect: Color Effect
- CIColorVideo: Video
- CIColorInterlaced: Interlaced
- CIColorNonSquarePixels: Non-Square Pixels
- CIColorStillImage: Still Image
- CIColorBuiltIn: Built-In

Input:

- inputImage: Image
- inputColor: Color
- inputIntensity: Intensity

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.43.2 Methods

5.43.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.43.4 Properties

5.43.5 AttributeinputColor as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Monochrome attribute.

Notes:

This attribute should have this content:

Name:	inputColor
Class:	CIColorMBS
Type:	CIAttributeTypeOpaqueColor
DisplayName English:	Color
DisplayName German:	Farbe
DisplayName French:	Couleur
DisplayName Italian:	Colore
DisplayName Spanish:	Color
DefaultColor:	Red = 0.6, Green = 0.45, Blue = 0.3, Alpha = 1
IdentityNumber:	0

(Read only property)

5.43.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Monochrome attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.43.7 AttributeinputIntensity as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Monochrome attribute.

Notes:

This attribute should have this content:

Name:	inputIntensity
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Intensity
DisplayName German:	Intensitt
DisplayName French:	Intensit
DisplayName Italian:	Intensit
DisplayName Spanish:	Intensidad
DefaultNumber:	1
IdentityNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

(Read only property)

5.43.8 inputColor as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Color
Notes:

See AttributeinputColor for more details.

(Read and Write property)

Name:	inputColor
Class:	CIColorMBS (CIColor)
DisplayName English:	Color
DisplayName German:	Farbe
DisplayName French:	Couleur
DisplayName Italian:	Colore
DisplayName Spanish:	Color
Type:	CIAttributeTypeOpaqueColor

5.43.9 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.43.10 inputIntensity as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Intensity
Notes:

Name:	inputIntensity
Class:	double (NSNumber)
DisplayName English:	Intensity
DisplayName German:	Intensitt
DisplayName French:	Intensit
DisplayName Italian:	Intensit
DisplayName Spanish:	Intensidad
Type:	CIAttributeTypeScalar

See AttributeinputIntensity for more details.

(Read and Write property)

5.44 class CIFilterColorPolynomialMBS

5.44.1 class CIFilterColorPolynomialMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Color Polynomial filter.

Notes:

Details for this filter:

FilterName:	CIColorPolynomial
DisplayName English:	Color Polynomial
DisplayName German:	Farb-Polynom
DisplayName French:	Fonction polynomiale de la couleur
DisplayName Italian:	Polinomio cromatico
DisplayName Spanish:	Polinomio cromtico

Categories:

- CICategoryColorAdjustment: Color Adjustment
- CICategoryVideo: Video
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputRedCoefficients: RedCoefficients
- inputGreenCoefficients: GreenCoefficients
- inputBlueCoefficients: BlueCoefficients
- inputAlphaCoefficients: AlphaCoefficients

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.44.2 Methods

5.44.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.44.4 Properties

5.44.5 AttributeinputAlphaCoefficients as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Polynomial attribute.

Notes:

This attribute should have this content:

Name:	inputAlphaCoefficients
Class:	CIVectorMBS
DisplayName:	AlphaCoefficients
DefaultVector:	[0 1 0 0]
IdentityVector:	[0 1 0 0]

(Read only property)

5.44.6 AttributeinputBlueCoefficients as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Polynomial attribute.

Notes:

This attribute should have this content:

(Read only property)

Name: inputBlueCoefficients
 Class: CIVectorMBS
 DisplayName: BlueCoefficients
 DefaultVector: [0 1 0 0]
 IdentityVector: [0 1 0 0]

5.44.7 AttributeinputGreenCoefficients as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Polynomial attribute.

Notes:

This attribute should have this content:

Name: inputGreenCoefficients
 Class: CIVectorMBS
 DisplayName: GreenCoefficients
 DefaultVector: [0 1 0 0]
 IdentityVector: [0 1 0 0]

(Read only property)

5.44.8 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Polynomial attribute.

Notes:

This attribute should have this content:

Name: inputImage
 Class: CIImageMBS
 Type: CIAttributeTypeImage
 DisplayName English: Image
 DisplayName German: Bild
 DisplayName French: Image
 DisplayName Italian: Immagine
 DisplayName Spanish: Imagen
 DefaultNumber: 0
 IdentityNumber: 0

(Read only property)

5.44.9 AttributeinputRedCoefficients as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Polynomial attribute.

Notes:

This attribute should have this content:

Name:	inputRedCoefficients
Class:	CIVectorMBS
DisplayName:	RedCoefficients
DefaultVector:	[0 1 0 0]
IdentityVector:	[0 1 0 0]

(Read only property)

5.44.10 inputAlphaCoefficients as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute AlphaCoefficients

Notes:

Name:	inputAlphaCoefficients
Class:	CIVectorMBS (CIVector)
DisplayName English:	AlphaCoefficients
DisplayName German:	AlphaCoefficients
DisplayName French:	AlphaCoefficients
DisplayName Italian:	AlphaCoefficients
DisplayName Spanish:	AlphaCoefficients
Type:	

See AttributeinputAlphaCoefficients for more details.

(Read and Write property)

5.44.11 inputBlueCoefficients as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute BlueCoefficients

Notes:

Name: inputBlueCoefficients
 Class: CIVectorMBS (CIVector)
 DisplayName English: BlueCoefficients
 DisplayName German: BlueCoefficients
 DisplayName French: BlueCoefficients
 DisplayName Italian: BlueCoefficients
 DisplayName Spanish: BlueCoefficients
 Type:

See AttributeinputBlueCoefficients for more details.
 (Read and Write property)

5.44.12 inputGreenCoefficients as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute GreenCoefficients

Notes:

Name: inputGreenCoefficients
 Class: CIVectorMBS (CIVector)
 DisplayName English: GreenCoefficients
 DisplayName German: GreenCoefficients
 DisplayName French: GreenCoefficients
 DisplayName Italian: GreenCoefficients
 DisplayName Spanish: GreenCoefficients
 Type:

See AttributeinputGreenCoefficients for more details.
 (Read and Write property)

5.44.13 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

(Read and Write property)

5.44.14 inputRedCoefficients as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute RedCoefficients

Notes:

Name:	inputRedCoefficients
Class:	CIVectorMBS (CIVector)
DisplayName English:	RedCoefficients
DisplayName German:	RedCoefficients
DisplayName French:	RedCoefficients
DisplayName Italian:	RedCoefficients
DisplayName Spanish:	RedCoefficients
Type:	

See AttributeinputRedCoefficients for more details.

(Read and Write property)

5.45 class CIColorPosterizeMBS

5.45.1 class CIColorPosterizeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Color Posterize filter.

Notes:

Details for this filter:

FilterName:	CIColorPosterize
DisplayName English:	Color Posterize
DisplayName German:	Farbe auflsen
DisplayName French:	Postriser la couleur
DisplayName Italian:	Posterizzazione colore
DisplayName Spanish:	Posterizacin de color

Categories:

- CIColorCategoryColorEffect: Color Effect
- CIColorCategoryVideo: Video
- CIColorCategoryInterlaced: Interlaced
- CIColorCategoryNonSquarePixels: Non-Square Pixels
- CIColorCategoryStillImage: Still Image
- CIColorCategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputLevels: Levels

Output:

- outputImage

Subclass of the CIColorMBS class.

5.45.2 Methods

5.45.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.45.4 Properties

5.45.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Posterize attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.45.6 AttributeinputLevels as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Color Posterize attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputLevels
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Levels
DisplayName German:	Werte
DisplayName French:	Niveaux
DisplayName Italian:	Livelli
DisplayName Spanish:	Niveles
DefaultNumber:	6
IdentityNumber:	300
MaxNumber:	0
MinNumber:	1
SliderMaxNumber:	30
SliderMinNumber:	2

5.45.7 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.45.8 inputLevels as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Levels
Notes:

See AttributeinputLevels for more details.
 (Read and Write property)

Name:	inputLevels
Class:	double (NSNumber)
DisplayName English:	Levels
DisplayName German:	Werte
DisplayName French:	Niveaux
DisplayName Italian:	Livelli
DisplayName Spanish:	Niveles
Type:	CIAttributeTypeScalar

5.46 class CIFilterColumnAverageMBS

5.46.1 class CIFilterColumnAverageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Column Average filter.

Notes:

Details for this filter:

FilterName:	CIColumnAverage
DisplayName English:	Column Average
DisplayName German:	Spaltendurchschnitt
DisplayName French:	Moyenne des colonnes
DisplayName Italian:	Media colonna
DisplayName Spanish:	Media de la columna

Categories:

- CICategoryReduction: Reduction
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputExtent: Extent

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.46.2 Methods

5.46.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.46.4 Properties

5.46.5 AttributeinputExtent as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Column Average attribute.

Notes:

This attribute should have this content:

Name:	inputExtent
Class:	CIVectorMBS
Type:	CIAttributeTypeRectangle
DisplayName English:	Extent
DisplayName German:	Betrag
DisplayName French:	tendue
DisplayName Italian:	Ampiezza
DisplayName Spanish:	Amplitud
DefaultVector:	[0 0 640 80]
IdentityVector:	n/a

(Read only property)

5.46.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Column Average attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.46.7 inputExtent as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Extent

Notes:

Name:	inputExtent
Class:	CIVectorMBS (CIVector)
DisplayName English:	Extent
DisplayName German:	Betrag
DisplayName French:	tendue
DisplayName Italian:	Ampiezza
DisplayName Spanish:	Amplitud
Type:	CIAAttributeTypeRectangle

See AttributeinputExtent for more details.
(Read and Write property)

5.46.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See `AttributeinputImage` for more details.
(Read and Write property)

5.47 class CIFilterComicEffectMBS

5.47.1 class CIFilterComicEffectMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Comic Effect filter.

Notes:

Details for this filter:

FilterName:	CIComicEffect
DisplayName English:	Comic Effect
DisplayName German:	Comic-Effekt
DisplayName French:	Effet comique
DisplayName Italian:	Effetto fumetto
DisplayName Spanish:	Efecto cmico

Categories:

- CICategoryStylize: Stylize
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.47.2 Methods

5.47.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.47.4 Properties

5.47.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Comic Effect attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.47.6 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

(Read and Write property)

Name:	inputImage
Class:	CImageMBS (CImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

5.48 class CIFilterConstantColorGeneratorMBS

5.48.1 class CIFilterConstantColorGeneratorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Constant Color filter.

Notes:

Details for this filter:

FilterName:	CIConstantColorGenerator
DisplayName English:	Constant Color
DisplayName German:	Konstante Farbe
DisplayName French:	Couleur constante
DisplayName Italian:	Colore costante
DisplayName Spanish:	Color constante

Categories:

- CICategoryGenerator: Generator
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputColor: Color

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.48.2 Methods

5.48.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.48.4 Properties

5.48.5 AttributeinputColor as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Constant Color attribute.

Notes:

This attribute should have this content:

Name:	inputColor
Class:	CIColorMBS
Type:	CIAttributeTypeColor
DisplayName English:	Color
DisplayName German:	Farbe
DisplayName French:	Couleur
DisplayName Italian:	Colore
DisplayName Spanish:	Color
DefaultColor:	Red = 1, Green = 0, Blue = 0, Alpha = 1
IdentityNumber:	0

(Read only property)

5.48.6 inputColor as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Color

Notes:

See AttributeinputColor for more details.

(Read and Write property)

Name:	inputColor
Class:	CIColorMBS (CIColor)
DisplayName English:	Color
DisplayName German:	Farbe
DisplayName French:	Couleur
DisplayName Italian:	Colore
DisplayName Spanish:	Color
Type:	CIAttributeTypeColor

5.49 class CIFilterConvolution3X3MBS

5.49.1 class CIFilterConvolution3X3MBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage 3 by 3 convolution filter.

Notes:

Details for this filter:

FilterName:	CICConvolution3X3
DisplayName English:	3 by 3 convolution
DisplayName German:	3 x 3-Faltung
DisplayName French:	Convolution3 par3
DisplayName Italian:	Convoluzione 3 per 3
DisplayName Spanish:	Convolucin de 3x3

Categories:

- CICategoryStylize: Stylize
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputWeights: Weights
- inputBias: Bias

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.49.2 Methods

5.49.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.49.4 Properties

5.49.5 AttributeinputBias as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the 3 by 3 convolution attribute.

Notes:

This attribute should have this content:

Name:	inputBias
Class:	double
DisplayName:	Bias
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.49.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the 3 by 3 convolution attribute.

Notes:

This attribute should have this content:

(Read only property)

5.49.7 AttributeinputWeights as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the 3 by 3 convolution attribute.

Name: inputImage
 Class: CIImageMBS
 Type: CIAttributeTypeImage
 DisplayName English: Image
 DisplayName German: Bild
 DisplayName French: Image
 DisplayName Italian: Immagine
 DisplayName Spanish: Imagen
 DefaultNumber: 0
 IdentityNumber: 0

Notes:

This attribute should have this content:

Name: inputWeights
 Class: CIVectorMBS
 DisplayName: Weights
 DefaultVector: [0 0 0 0 1 0 0 0 0]
 IdentityVector: [0 0 0 0 1 0 0 0 0]

(Read only property)

5.49.8 inputBias as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Bias

Notes:

Name: inputBias
 Class: double (NSNumber)
 DisplayName English: Bias
 DisplayName German: Bias
 DisplayName French: Bias
 DisplayName Italian: Bias
 DisplayName Spanish: Bias
 Type:

See AttributeinputBias for more details.

(Read and Write property)

5.49.9 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.49.10 inputWeights as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Weights
Notes:

Name:	inputWeights
Class:	CIVectorMBS (CIVector)
DisplayName English:	Weights
DisplayName German:	Weights
DisplayName French:	Weights
DisplayName Italian:	Weights
DisplayName Spanish:	Weights
Type:	

See AttributeinputWeights for more details.
(Read and Write property)

5.50 class CIFilterConvolution5X5MBS

5.50.1 class CIFilterConvolution5X5MBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage 5 by 5 convolution filter.

Notes:

Details for this filter:

FilterName:	CICconvolution5X5
DisplayName English:	5 by 5 convolution
DisplayName German:	5 x 5-Faltung
DisplayName French:	Convolution5 par5
DisplayName Italian:	Convoluzione 5 per 5
DisplayName Spanish:	Convolucin de 5x5

Categories:

- CICategoryStylize: Stylize
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputWeights: Weights
- inputBias: Bias

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.50.2 Methods

5.50.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.50.4 Properties

5.50.5 AttributeinputBias as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the 5 by 5 convolution attribute.

Notes:

This attribute should have this content:

Name:	inputBias
Class:	double
DisplayName:	Bias
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.50.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the 5 by 5 convolution attribute.

Notes:

This attribute should have this content:

(Read only property)

5.50.7 AttributeinputWeights as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the 5 by 5 convolution attribute.

Name: inputImage
 Class: CIImageMBS
 Type: CIAttributeTypeImage
 DisplayName English: Image
 DisplayName German: Bild
 DisplayName French: Image
 DisplayName Italian: Immagine
 DisplayName Spanish: Imagen
 DefaultNumber: 0
 IdentityNumber: 0

Notes:

This attribute should have this content:

Name: inputWeights
 Class: CIVectorMBS
 DisplayName: Weights
 DefaultVector: [0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0]
 IdentityVector: [0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0]

(Read only property)

5.50.8 inputBias as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Bias

Notes:

Name: inputBias
 Class: double (NSNumber)
 DisplayName English: Bias
 DisplayName German: Bias
 DisplayName French: Bias
 DisplayName Italian: Bias
 DisplayName Spanish: Bias
 Type:

See AttributeinputBias for more details.

(Read and Write property)

5.50.9 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.50.10 inputWeights as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Weights
Notes:

Name:	inputWeights
Class:	CIVectorMBS (CIVector)
DisplayName English:	Weights
DisplayName German:	Weights
DisplayName French:	Weights
DisplayName Italian:	Weights
DisplayName Spanish:	Weights
Type:	

See AttributeinputWeights for more details.
 (Read and Write property)

5.51 class CIFilterConvolution7X7MBS

5.51.1 class CIFilterConvolution7X7MBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage 7 by 7 convolution filter.

Notes:

Details for this filter:

FilterName:	CICconvolution7X7
DisplayName English:	7 by 7 convolution
DisplayName German:	7 x 7-Faltung
DisplayName French:	Convolution7 par7
DisplayName Italian:	Convoluzione 7 per 7
DisplayName Spanish:	Convolucin de 7x7

Categories:

- CICategoryStylize: Stylize
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputWeights: Weights
- inputBias: Bias

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.51.2 Methods

5.51.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.51.4 Properties

5.51.5 AttributeinputBias as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the 7 by 7 convolution attribute.

Notes:

This attribute should have this content:

Name:	inputBias
Class:	double
DisplayName:	Bias
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.51.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the 7 by 7 convolution attribute.

Notes:

This attribute should have this content:

(Read only property)

5.51.7 AttributeinputWeights as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the 7 by 7 convolution attribute.

5.51.9 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.51.10 inputWeights as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Weights

Notes:

Name:	inputWeights
Class:	CIVectorMBS (CIVector)
DisplayName English:	Weights
DisplayName German:	Weights
DisplayName French:	Weights
DisplayName Italian:	Weights
DisplayName Spanish:	Weights
Type:	

See AttributeinputWeights for more details.
(Read and Write property)

5.52 class CIFilterConvolution9HorizontalMBS

5.52.1 class CIFilterConvolution9HorizontalMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Horizontal 9 Convolution filter.

Notes:

Details for this filter:

FilterName:	CICconvolution9Horizontal
DisplayName English:	Horizontal 9 Convolution
DisplayName German:	CICconvolution9Horizontal
DisplayName French:	Convolution9 horizontale
DisplayName Italian:	Contorsione orizzontale 9
DisplayName Spanish:	Convolucin horizontal con 9 valores

Categories:

- CICategoryStylize: Stylize
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputWeights: Weights
- inputBias: Bias

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.52.2 Methods

5.52.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.52.4 Properties

5.52.5 AttributeinputBias as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Horizontal 9 Convolution attribute.

Notes:

This attribute should have this content:

Name:	inputBias
Class:	double
DisplayName:	Bias
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.52.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Horizontal 9 Convolution attribute.

Notes:

This attribute should have this content:

(Read only property)

5.52.7 AttributeinputWeights as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Horizontal 9 Convolution attribute.

Name: inputImage
 Class: CIImageMBS
 Type: CIAttributeTypeImage
 DisplayName English: Image
 DisplayName German: Bild
 DisplayName French: Image
 DisplayName Italian: Immagine
 DisplayName Spanish: Imagen
 DefaultNumber: 0
 IdentityNumber: 0

Notes:

This attribute should have this content:

Name: inputWeights
 Class: CIVectorMBS
 DisplayName: Weights
 DefaultVector: [0 0 0 0 1 0 0 0 0]
 IdentityVector: [0 0 0 0 1 0 0 0 0]

(Read only property)

5.52.8 inputBias as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Bias

Notes:

Name: inputBias
 Class: double (NSNumber)
 DisplayName English: Bias
 DisplayName German: Bias
 DisplayName French: Bias
 DisplayName Italian: Bias
 DisplayName Spanish: Bias
 Type:

See AttributeinputBias for more details.

(Read and Write property)

5.52.9 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.52.10 inputWeights as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Weights
Notes:

Name:	inputWeights
Class:	CIVectorMBS (CIVector)
DisplayName English:	Weights
DisplayName German:	Weights
DisplayName French:	Weights
DisplayName Italian:	Weights
DisplayName Spanish:	Weights
Type:	

See AttributeinputWeights for more details.
(Read and Write property)

5.53 class CIFilterConvolution9VerticalMBS

5.53.1 class CIFilterConvolution9VerticalMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Vertical 9 Convolution filter.

Notes:

Details for this filter:

FilterName:	CICconvolution9Vertical
DisplayName English:	Vertical 9 Convolution
DisplayName German:	CICconvolution9Vertical
DisplayName French:	Convolution9 verticale
DisplayName Italian:	Contorsione verticale 9
DisplayName Spanish:	Convolucin vertical con 9 valores

Categories:

- CICategoryStylize: Stylize
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputWeights: Weights
- inputBias: Bias

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.53.2 Methods

5.53.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.53.4 Properties

5.53.5 AttributeinputBias as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Vertical 9 Convolution attribute.

Notes:

This attribute should have this content:

Name:	inputBias
Class:	double
DisplayName:	Bias
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.53.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Vertical 9 Convolution attribute.

Notes:

This attribute should have this content:

(Read only property)

5.53.7 AttributeinputWeights as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Vertical 9 Convolution attribute.

Name: inputImage
 Class: CIImageMBS
 Type: CIAttributeTypeImage
 DisplayName English: Image
 DisplayName German: Bild
 DisplayName French: Image
 DisplayName Italian: Immagine
 DisplayName Spanish: Imagen
 DefaultNumber: 0
 IdentityNumber: 0

Notes:

This attribute should have this content:

Name: inputWeights
 Class: CIVectorMBS
 DisplayName: Weights
 DefaultVector: [0 0 0 0 1 0 0 0 0]
 IdentityVector: [0 0 0 0 1 0 0 0 0]

(Read only property)

5.53.8 inputBias as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Bias

Notes:

Name: inputBias
 Class: double (NSNumber)
 DisplayName English: Bias
 DisplayName German: Bias
 DisplayName French: Bias
 DisplayName Italian: Bias
 DisplayName Spanish: Bias
 Type:

See AttributeinputBias for more details.

(Read and Write property)

5.53.9 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.53.10 inputWeights as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Weights
Notes:

Name:	inputWeights
Class:	CIVectorMBS (CIVector)
DisplayName English:	Weights
DisplayName German:	Weights
DisplayName French:	Weights
DisplayName Italian:	Weights
DisplayName Spanish:	Weights
Type:	

See AttributeinputWeights for more details.
(Read and Write property)

5.54 class CIFilterCopyMachineTransitionMBS

5.54.1 class CIFilterCopyMachineTransitionMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Copy Machine filter.

Notes:

Details for this filter:

FilterName:	CICopyMachineTransition
DisplayName English:	Copy Machine
DisplayName German:	Kopieren
DisplayName French:	Photocopieur
DisplayName Italian:	Fotocopiatrice
DisplayName Spanish:	Copiar mquina

Categories:

- CICategoryTransition: Transition
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputTargetImage: Target Image
- inputExtent: Extent
- inputColor: Color
- inputTime: Time
- inputAngle: Angle
- inputWidth: Width
- inputOpacity: Opacity

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.54.2 Methods

5.54.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.54.4 Properties

5.54.5 AttributeinputAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Copy Machine attribute.

Notes:

This attribute should have this content:

Name:	inputAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
DefaultNumber:	0
IdentityNumber:	0
SliderMaxNumber:	6.283185
SliderMinNumber:	0

(Read only property)

5.54.6 AttributeinputColor as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Copy Machine attribute.

Notes:

This attribute should have this content:

Name:	inputColor
Class:	CIColorMBS
Type:	CIAttributeTypeOpaqueColor
DisplayName English:	Color
DisplayName German:	Farbe
DisplayName French:	Couleur
DisplayName Italian:	Colore
DisplayName Spanish:	Color
DefaultColor:	Red = 0.6, Green = 1, Blue = 0.8, Alpha = 1
IdentityNumber:	0

(Read only property)

5.54.7 AttributeinputExtent as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Copy Machine attribute.

Notes:

This attribute should have this content:

Name:	inputExtent
Class:	CIVectorMBS
Type:	CIAttributeTypeRectangle
DisplayName English:	Extent
DisplayName German:	Betrag
DisplayName French:	tendue
DisplayName Italian:	Ampiezza
DisplayName Spanish:	Amplitud
DefaultVector:	[0 0 300 300]
IdentityVector:	n/a

(Read only property)

5.54.8 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Copy Machine attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.54.9 AttributeinputOpacity as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Copy Machine attribute.

Notes:

This attribute should have this content:

Name:	inputOpacity
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Opacity
DisplayName German:	Deckkraft
DisplayName French:	Opacit
DisplayName Italian:	Opacit
DisplayName Spanish:	Opacidad
DefaultNumber:	1.3
IdentityNumber:	1.3
SliderMaxNumber:	3
SliderMinNumber:	0

(Read only property)

5.54.10 AttributeinputTargetImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Copy Machine attribute.

Notes:

This attribute should have this content:

Name:	inputTargetImage
Class:	CIImageMBS
DisplayName English:	Target Image
DisplayName German:	Zielbild
DisplayName French:	Image cible
DisplayName Italian:	Immagine target
DisplayName Spanish:	Imagen de destino
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.54.11 AttributeinputTime as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Copy Machine attribute.

Notes:

This attribute should have this content:

(Read only property)

5.54.12 AttributeinputWidth as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Copy Machine attribute.

Notes:

This attribute should have this content:

Name:	inputTime
Class:	double
Type:	CIAttributeTypeTime
DisplayName English:	Time
DisplayName German:	Zeit
DisplayName French:	Dure
DisplayName Italian:	Tempo
DisplayName Spanish:	Tiempo
DefaultNumber:	0
IdentityNumber:	0
MaxNumber:	1
MinNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

Name:	inputWidth
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
DefaultNumber:	200
IdentityNumber:	200
MaxNumber:	0
MinNumber:	0.1
SliderMaxNumber:	500
SliderMinNumber:	0.1

(Read only property)

5.54.13 inputAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Angle
Notes:

See AttributeinputAngle for more details.
 (Read and Write property)

Name:	inputAngle
Class:	double (NSNumber)
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
Type:	CIAttributeTypeAngle

5.54.14 inputColor as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Color
Notes:

Name:	inputColor
Class:	CIColorMBS (CIColor)
DisplayName English:	Color
DisplayName German:	Farbe
DisplayName French:	Couleur
DisplayName Italian:	Colore
DisplayName Spanish:	Color
Type:	CIAttributeTypeOpaqueColor

See AttributeinputColor for more details.
 (Read and Write property)

5.54.15 inputExtent as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Extent
Notes:

Name:	inputExtent
Class:	CIVectorMBS (CIVector)
DisplayName English:	Extent
DisplayName German:	Betrag
DisplayName French:	tendue
DisplayName Italian:	Ampiezza
DisplayName Spanish:	Amplitud
Type:	CIAttributeTypeRectangle

See AttributeinputExtent for more details.

(Read and Write property)

5.54.16 `inputImage` as `CIIImageMBS`

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	<code>inputImage</code>
Class:	<code>CIIImageMBS (CIIImage)</code>
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	<code>CIAttributeTypeImage</code>

See `AttributeinputImage` for more details.
 (Read and Write property)

5.54.17 `inputOpacity` as `Double`

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Opacity
Notes:

Name:	<code>inputOpacity</code>
Class:	<code>double (NSNumber)</code>
DisplayName English:	Opacity
DisplayName German:	Deckkraft
DisplayName French:	Opacit
DisplayName Italian:	Opacit
DisplayName Spanish:	Opacidad
Type:	<code>CIAttributeTypeScalar</code>

See `AttributeinputOpacity` for more details.
 (Read and Write property)

5.54.18 inputTargetImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Target Image

Notes:

Name:	inputTargetImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Target Image
DisplayName German:	Zielbild
DisplayName French:	Image cible
DisplayName Italian:	Immagine target
DisplayName Spanish:	Imagen de destino
Type:	

See AttributeinputTargetImage for more details.
(Read and Write property)

5.54.19 inputTime as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Time

Notes:

Name:	inputTime
Class:	double (NSNumber)
DisplayName English:	Time
DisplayName German:	Zeit
DisplayName French:	Dure
DisplayName Italian:	Tempo
DisplayName Spanish:	Tiempo
Type:	CIAttributeTypeTime

See AttributeinputTime for more details.
(Read and Write property)

5.54.20 inputWidth as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Width

Notes:

See AttributeinputWidth for more details.

Name:	inputWidth
Class:	double (NSNumber)
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
Type:	CIAttributeTypeDistance

(Read and Write property)

5.55 class CIFilterCropMBS

5.55.1 class CIFilterCropMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Crop filter.

Notes:

Details for this filter:

FilterName:	CICrop
DisplayName English:	Crop
DisplayName German:	Freistellen
DisplayName French:	Recadrer
DisplayName Italian:	Ritaglia
DisplayName Spanish:	Recortar

Categories:

- CICategoryGeometryAdjustment: Geometry Adjustment
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputRectangle: Rectangle

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.55.2 Methods

5.55.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.55.4 Properties

5.55.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Crop attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.55.6 AttributeinputRectangle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Crop attribute.

Notes:

This attribute should have this content:

(Read only property)

Name: inputRectangle
 Class: CIVectorMBS
 Type: CIAttributeTypeRectangle
 DisplayName English: Rectangle
 DisplayName German: Rechteck
 DisplayName French: Rectangle
 DisplayName Italian: Rettangolo
 DisplayName Spanish: Rectngulo
 DefaultVector: [0 0 300 300]
 IdentityVector: [-1.70141e+38 -1.70141e+38 3.40282e+38 3.40282e+38]

5.55.7 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name: inputImage
 Class: CIImageMBS (CIImage)
 DisplayName English: Image
 DisplayName German: Bild
 DisplayName French: Image
 DisplayName Italian: Immagine
 DisplayName Spanish: Imagen
 Type: CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.55.8 inputRectangle as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Rectangle
Notes:

Name: inputRectangle
 Class: CIVectorMBS (CIVector)
 DisplayName English: Rectangle
 DisplayName German: Rechteck
 DisplayName French: Rectangle
 DisplayName Italian: Rettangolo
 DisplayName Spanish: Rectngulo
 Type: CIAttributeTypeRectangle

See `AttributeinputRectangle` for more details.
(Read and Write property)

5.56 class CIFilterCrystallizeMBS

5.56.1 class CIFilterCrystallizeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Crystallize filter.

Notes:

Details for this filter:

FilterName:	CICrystallize
DisplayName English:	Crystallize
DisplayName German:	Kristallisieren
DisplayName French:	Cristalliser
DisplayName Italian:	Cristallizzazione
DisplayName Spanish:	Cristalizacin

Categories:

- CICategoryStylize: Stylize
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputRadius: Radius
- inputCenter: Center

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.56.2 Methods

5.56.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.56.4 Properties

5.56.5 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Crystallize attribute.

Notes:

This attribute should have this content:

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

(Read only property)

5.56.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Crystallize attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.56.7 AttributeinputRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Crystallize attribute.

Notes:

This attribute should have this content:

Name:	inputRadius
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
DefaultNumber:	20
IdentityNumber:	1
MaxNumber:	0
MinNumber:	1
SliderMaxNumber:	100
SliderMinNumber:	1

(Read only property)

5.56.8 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center

Notes:

See AttributeinputCenter for more details.

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAAttributeTypePosition

(Read and Write property)

5.56.9 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See AttributeinputImage for more details.

(Read and Write property)

5.56.10 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute
 Radius

Notes:

See AttributeinputRadius for more details.

(Read and Write property)

Name:	inputRadius
Class:	double (NSNumber)
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
Type:	CIAttributeTypeDistance

5.57 class CIFilterDarkenBlendModeMBS

5.57.1 class CIFilterDarkenBlendModeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Darken Blend Mode filter.

Notes:

Details for this filter:

FilterName:	CIDarkenBlendMode
DisplayName English:	Darken Blend Mode
DisplayName German:	Mischmethode Abdunkeln
DisplayName French:	Mode de fusion Assombrir
DisplayName Italian:	Modalit sfumatura scura
DisplayName Spanish:	Oscurecer modo de mezcla

Categories:

- CICategoryCompositeOperation: Composite Operation
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputBackgroundImage: Background Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.57.2 Methods

5.57.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.57.4 Properties

5.57.5 AttributeinputBackgroundImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Darken Blend Mode attribute.

Notes:

This attribute should have this content:

Name:	inputBackgroundImage
Class:	CIImageMBS
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.57.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Darken Blend Mode attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.57.7 inputBackgroundImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Background Image

Notes:

Name:	inputBackgroundImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
Type:	

See AttributeinputBackgroundImage for more details.
(Read and Write property)

5.57.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.58 class CIFilterDepthOfFieldMBS

5.58.1 class CIFilterDepthOfFieldMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Depth of Field filter.

Notes:

Details for this filter:

FilterName:	CIDepthOfField
DisplayName English:	Depth of Field
DisplayName German:	Schrfentiefe
DisplayName French:	Profondeur de champ
DisplayName Italian:	Profondit di campo
DisplayName Spanish:	Profundidad de campo

Categories:

- CICategoryStylize: Stylize
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputPoint0: Point 1
- inputPoint1: Point 2
- inputSaturation: Saturation
- inputUnsharpMaskRadius: Unsharp Mask Radius
- inputUnsharpMaskIntensity: Unsharp Mask Intensity
- inputRadius: Radius

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.58.2 Methods

5.58.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.58.4 Properties

5.58.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Depth of Field attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.58.6 AttributeinputPoint0 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Depth of Field attribute.

Notes:

This attribute should have this content:

Name:	inputPoint0
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Point 1
DisplayName German:	Punkt 1
DisplayName French:	Point 1
DisplayName Italian:	Punto 1
DisplayName Spanish:	Punto 1
DefaultVector:	[0 300]
IdentityVector:	n/a

(Read only property)

5.58.7 AttributeinputPoint1 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Depth of Field attribute.

Notes:

This attribute should have this content:

Name:	inputPoint1
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Point 2
DisplayName German:	Punkt 2
DisplayName French:	Point 2
DisplayName Italian:	Punto 2
DisplayName Spanish:	Punto 2
DefaultVector:	[300 300]
IdentityVector:	n/a

(Read only property)

5.58.8 AttributeinputRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Depth of Field attribute.

Notes:

This attribute should have this content:

Name:	inputRadius
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
DefaultNumber:	6
IdentityNumber:	0
SliderMaxNumber:	30
SliderMinNumber:	0

(Read only property)

5.58.9 AttributeinputSaturation as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Depth of Field attribute.

Notes:

This attribute should have this content:

Name:	inputSaturation
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Saturation
DisplayName German:	Sttigung
DisplayName French:	Saturation
DisplayName Italian:	Saturazione
DisplayName Spanish:	Saturacin
DefaultNumber:	1.5
IdentityNumber:	0
SliderMaxNumber:	10
SliderMinNumber:	0

(Read only property)

5.58.10 AttributeinputUnsharpMaskIntensity as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Depth of Field attribute.

Notes:

This attribute should have this content:

Name:	inputUnsharpMaskIntensity
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Unsharp Mask Intensity
DisplayName German:	Intensitt von Unscharf maskieren
DisplayName French:	Intensit du masque flou
DisplayName Italian:	Intensit maschera di contrasto
DisplayName Spanish:	Intensidad de la mscara de desenfoque
DefaultNumber:	0.5
IdentityNumber:	0
SliderMaxNumber:	10
SliderMinNumber:	0

(Read only property)

5.58.11 AttributeinputUnsharpMaskRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Depth of Field attribute.

Notes:

This attribute should have this content:

(Read only property)

5.58.12 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

(Read and Write property)

Name: inputUnsharpMaskRadius
 Class: double
 Type: CIAttributeTypeScalar
 DisplayName English: Unsharp Mask Radius
 DisplayName German: Radius von Unscharf maskieren
 DisplayName French: Rayon du masque flou
 DisplayName Italian: Raggio maschera di contrasto
 DisplayName Spanish: Radio de la mscara de desenfoque
 DefaultNumber: 2.5
 IdentityNumber: 0
 SliderMaxNumber: 10
 SliderMinNumber: 0

Name: inputImage
 Class: CIImageMBS (CIImage)
 DisplayName English: Image
 DisplayName German: Bild
 DisplayName French: Image
 DisplayName Italian: Immagine
 DisplayName Spanish: Imagen
 Type: CIAttributeTypeImage

5.58.13 inputPoint0 as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Point 1

Notes:

Name: inputPoint0
 Class: CIVectorMBS (CIVector)
 DisplayName English: Point 1
 DisplayName German: Punkt 1
 DisplayName French: Point 1
 DisplayName Italian: Punto 1
 DisplayName Spanish: Punto 1
 Type: CIAttributeTypePosition

See AttributeinputPoint0 for more details.
(Read and Write property)

5.58.14 inputPoint1 as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Point 2

Notes:

Name:	inputPoint1
Class:	CIVectorMBS (CIVector)
DisplayName English:	Point 2
DisplayName German:	Punkt 2
DisplayName French:	Point 2
DisplayName Italian:	Punto 2
DisplayName Spanish:	Punto 2
Type:	CIAttributeTypePosition

See AttributeinputPoint1 for more details.
(Read and Write property)

5.58.15 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Radius

Notes:

Name:	inputRadius
Class:	double (NSNumber)
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
Type:	CIAttributeTypeScalar

See AttributeinputRadius for more details.
(Read and Write property)

5.58.16 inputSaturation as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Saturation

Notes:

Name:	inputSaturation
Class:	double (NSNumber)
DisplayName English:	Saturation
DisplayName German:	Sttigung
DisplayName French:	Saturation
DisplayName Italian:	Saturazione
DisplayName Spanish:	Saturacin
Type:	CIAttributeTypeScalar

See AttributeinputSaturation for more details.
(Read and Write property)

5.58.17 inputUnsharpMaskIntensity as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Unsharp Mask Intensity

Notes:

Name:	inputUnsharpMaskIntensity
Class:	double (NSNumber)
DisplayName English:	Unsharp Mask Intensity
DisplayName German:	Intensitt von Unscharf maskieren
DisplayName French:	Intensit du masque flou
DisplayName Italian:	Intensit maschera di contrasto
DisplayName Spanish:	Intensidad de la mscara de desenfoque
Type:	CIAttributeTypeScalar

See AttributeinputUnsharpMaskIntensity for more details.
(Read and Write property)

5.58.18 inputUnsharpMaskRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Unsharp Mask Radius

Notes:

See AttributeinputUnsharpMaskRadius for more details.
(Read and Write property)

Name:	inputUnsharpMaskRadius
Class:	double (NSNumber)
DisplayName English:	Unsharp Mask Radius
DisplayName German:	Radius von Unscharf maskieren
DisplayName French:	Rayon du masque flou
DisplayName Italian:	Raggio maschera di contrasto
DisplayName Spanish:	Radio de la mscara de desenfoque
Type:	CIAttributeTypeScalar

5.59 class CIFilterDifferenceBlendModeMBS

5.59.1 class CIFilterDifferenceBlendModeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Difference Blend Mode filter.

Notes:

Details for this filter:

FilterName:	CIDifferenceBlendMode
DisplayName English:	Difference Blend Mode
DisplayName German:	Mischmethode Differenz
DisplayName French:	Mode de fusion Diffrence
DisplayName Italian:	Modalit sfumatura differenza
DisplayName Spanish:	Diferenciar modo de mezcla

Categories:

- CICategoryCompositeOperation: Composite Operation
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputBackgroundImage: Background Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.59.2 Methods

5.59.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.59.4 Properties

5.59.5 AttributeBackgroundImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Difference Blend Mode attribute.

Notes:

This attribute should have this content:

Name:	inputBackgroundImage
Class:	CIImageMBS
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.59.6 AttributeImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Difference Blend Mode attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.59.7 inputBackgroundImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Background Image

Notes:

Name:	inputBackgroundImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
Type:	

See AttributeinputBackgroundImage for more details.
(Read and Write property)

5.59.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See `AttributeinputImage` for more details.
(Read and Write property)

5.60 class CIFilterDiscBlurMBS

5.60.1 class CIFilterDiscBlurMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Disc Blur filter.

Notes:

Details for this filter:

FilterName:	CIDiscBlur
DisplayName English:	Disc Blur
DisplayName German:	Kreisfrmige Unschrf
DisplayName French:	Flou (Disc Blur)
DisplayName Italian:	Effetto disco
DisplayName Spanish:	Disco difuminado

Categories:

- CICategoryBlur: Blur
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputRadius: Radius

Output:

- outputImageOriginal
- outputImageEnhanced
- outputImage

Subclass of the CIFilterMBS class.

5.60.2 Methods

5.60.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.60.4 Properties

5.60.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Disc Blur attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.60.6 AttributeinputRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Disc Blur attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputRadius
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
DefaultNumber:	8
IdentityNumber:	0
SliderMaxNumber:	100
SliderMinNumber:	0

5.60.7 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.60.8 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute
 Radius
Notes:

See AttributeinputRadius for more details.
 (Read and Write property)

Name:	inputRadius
Class:	double (NSNumber)
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
Type:	CIAttributeTypeDistance

5.61 class CFilterDisintegrateWithMaskTransitionMBS

5.61.1 class CFilterDisintegrateWithMaskTransitionMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Disintegrate With Mask filter.

Notes:

Details for this filter:

FilterName:	CIDisintegrateWithMaskTransition
DisplayName English:	Disintegrate With Mask
DisplayName German:	Mit Maske abbauen
DisplayName French:	Dsintgrer avec masque
DisplayName Italian:	Disintegra con maschera
DisplayName Spanish:	Desintegrar con mscara

Categories:

- CICategoryTransition: Transition
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputTargetImage: Target Image
- inputMaskImage: Mask Image
- inputTime: Time
- inputShadowRadius: Shadow Radius
- inputShadowDensity: Shadow Density
- inputShadowOffset: Shadow Offset

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.61.2 Methods

5.61.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.61.4 Properties

5.61.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Disintegrate With Mask attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.61.6 AttributeinputMaskImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Disintegrate With Mask attribute.

Notes:

This attribute should have this content:

Name:	inputMaskImage
Class:	CIImageMBS
DisplayName English:	Mask Image
DisplayName German:	Bild maskieren
DisplayName French:	Image du masque
DisplayName Italian:	Immagine maschera
DisplayName Spanish:	Imagen de mscara
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.61.7 AttributeinputShadowDensity as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Disintegrate With Mask attribute.

Notes:

This attribute should have this content:

Name:	inputShadowDensity
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Shadow Density
DisplayName German:	Schattendichte
DisplayName French:	Densit de ombre
DisplayName Italian:	Densit ombra
DisplayName Spanish:	Densidad del sombreado
DefaultNumber:	0.65
IdentityNumber:	0
MaxNumber:	1
MinNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

(Read only property)

5.61.8 AttributeinputShadowOffset as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Disintegrate With Mask attribute.

Notes:

This attribute should have this content:

Name:	inputShadowOffset
Class:	CIVectorMBS
Type:	CIAttributeTypeOffset
DisplayName English:	Shadow Offset
DisplayName German:	Schattenabstand
DisplayName French:	Dcalage de ombre
DisplayName Italian:	Offset ombra
DisplayName Spanish:	Proyeccion del sombreado
DefaultVector:	[0 -10]
IdentityVector:	[0 0]

(Read only property)

5.61.9 AttributeinputShadowRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Disintegrate With Mask attribute.

Notes:

This attribute should have this content:

Name:	inputShadowRadius
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Shadow Radius
DisplayName German:	Schattenradius
DisplayName French:	Rayon de ombre
DisplayName Italian:	Raggio dell'ombra
DisplayName Spanish:	Radio del sombreado
DefaultNumber:	8
IdentityNumber:	0
SliderMaxNumber:	50
SliderMinNumber:	0

(Read only property)

5.61.10 AttributeinputTargetImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Disintegrate With Mask attribute.

Notes:

This attribute should have this content:

Name:	inputTargetImage
Class:	CIImageMBS
DisplayName English:	Target Image
DisplayName German:	Zielbild
DisplayName French:	Image cible
DisplayName Italian:	Immagine target
DisplayName Spanish:	Imagen de destino
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.61.11 AttributeinputTime as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Disintegrate With Mask attribute.

Notes:

This attribute should have this content:

(Read only property)

5.61.12 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

(Read and Write property)

Name: inputTime
 Class: double
 Type: CIAttributeTypeTime
 DisplayName English: Time
 DisplayName German: Zeit
 DisplayName French: Dure
 DisplayName Italian: Tempo
 DisplayName Spanish: Tiempo
 DefaultNumber: 0
 IdentityNumber: 0
 MaxNumber: 1
 MinNumber: 0
 SliderMaxNumber: 1
 SliderMinNumber: 0

Name: inputImage
 Class: CIImageMBS (CIImage)
 DisplayName English: Image
 DisplayName German: Bild
 DisplayName French: Image
 DisplayName Italian: Immagine
 DisplayName Spanish: Imagen
 Type: CIAttributeTypeImage

5.61.13 inputMaskImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Mask Image

Notes:

Name: inputMaskImage
 Class: CIImageMBS (CIImage)
 DisplayName English: Mask Image
 DisplayName German: Bild maskieren
 DisplayName French: Image du masque
 DisplayName Italian: Immagine maschera
 DisplayName Spanish: Imagen de mscara
 Type:

See AttributeinputMaskImage for more details.
(Read and Write property)

5.61.14 inputShadowDensity as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Shadow Density

Notes:

Name:	inputShadowDensity
Class:	double (NSNumber)
DisplayName English:	Shadow Density
DisplayName German:	Schattendichte
DisplayName French:	Densit de ombre
DisplayName Italian:	Densit ombra
DisplayName Spanish:	Densidad del sombreado
Type:	CIAttributeTypeScalar

See AttributeinputShadowDensity for more details.
(Read and Write property)

5.61.15 inputShadowOffset as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Shadow Offset

Notes:

Name:	inputShadowOffset
Class:	CIVectorMBS (CIVector)
DisplayName English:	Shadow Offset
DisplayName German:	Schattenabstand
DisplayName French:	Dcalage de ombre
DisplayName Italian:	Offset ombra
DisplayName Spanish:	Proyeccin del sombreado
Type:	CIAttributeTypeOffset

See AttributeinputShadowOffset for more details.
(Read and Write property)

5.61.16 inputShadowRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Shadow Radius

Notes:

Name:	inputShadowRadius
Class:	double (NSNumber)
DisplayName English:	Shadow Radius
DisplayName German:	Schattenradius
DisplayName French:	Rayon de ombre
DisplayName Italian:	Raggio dell'ombra
DisplayName Spanish:	Radio del sombreado
Type:	CIAttributeTypeDistance

See AttributeinputShadowRadius for more details.
(Read and Write property)

5.61.17 inputTargetImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Target Image

Notes:

Name:	inputTargetImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Target Image
DisplayName German:	Zielbild
DisplayName French:	Image cible
DisplayName Italian:	Immagine target
DisplayName Spanish:	Imagen de destino
Type:	

See AttributeinputTargetImage for more details.
(Read and Write property)

5.61.18 inputTime as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Time

Notes:

See AttributeinputTime for more details.
(Read and Write property)

Name:	inputTime
Class:	double (NSNumber)
DisplayName English:	Time
DisplayName German:	Zeit
DisplayName French:	Dure
DisplayName Italian:	Tempo
DisplayName Spanish:	Tiempo
Type:	CIAttributeTypeTime

5.62 class CIFilterDisplacementDistortionMBS

5.62.1 class CIFilterDisplacementDistortionMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Displacement Distortion filter.

Notes:

Details for this filter:

FilterName:	CIDisplacementDistortion
DisplayName English:	Displacement Distortion
DisplayName German:	Verzerrung Verdrngung
DisplayName French:	Dformation Dplacement
DisplayName Italian:	Distorsione spostamento
DisplayName Spanish:	Distorsin de desplazamiento

Categories:

- CICategoryDistortionEffect: Distortion Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputDisplacementImage: Displacement Image
- inputScale: Scale

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.62.2 Methods

5.62.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.62.4 Properties

5.62.5 AttributeinputDisplacementImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Displacement Distortion attribute.

Notes:

This attribute should have this content:

Name:	inputDisplacementImage
Class:	CIImageMBS
DisplayName English:	Displacement Image
DisplayName German:	Bildverschiebung
DisplayName French:	Image du dplacement
DisplayName Italian:	Immagine spostamento
DisplayName Spanish:	Imagen de desplazamiento
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.62.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Displacement Distortion attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.62.7 AttributeinputScale as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Displacement Distortion attribute.

Notes:

This attribute should have this content:

Name:	inputScale
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Scale
DisplayName German:	Skalierung
DisplayName French:	chelle
DisplayName Italian:	Scala
DisplayName Spanish:	Escala
DefaultNumber:	50
IdentityNumber:	0
SliderMaxNumber:	200
SliderMinNumber:	0

(Read only property)

5.62.8 inputDisplacementImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Displacement Image

Notes:

See AttributeinputDisplacementImage for more details.

(Read and Write property)

Name: inputDisplacementImage
 Class: CIIImageMBS (CIIImage)
 DisplayName English: Displacement Image
 DisplayName German: Bildverschiebung
 DisplayName French: Image du dplacement
 DisplayName Italian: Immagine spostamento
 DisplayName Spanish: Imagen de desplazamiento
 Type:

5.62.9 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name: inputImage
 Class: CIIImageMBS (CIIImage)
 DisplayName English: Image
 DisplayName German: Bild
 DisplayName French: Image
 DisplayName Italian: Immagine
 DisplayName Spanish: Imagen
 Type: CIAAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.62.10 inputScale as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Scale

Notes:

Name: inputScale
 Class: double (NSNumber)
 DisplayName English: Scale
 DisplayName German: Skalierung
 DisplayName French: chelle
 DisplayName Italian: Scala
 DisplayName Spanish: Escala
 Type: CIAAttributeTypeDistance

See AttributeinputScale for more details.
(Read and Write property)

5.63 class CIFilterDissolveTransitionMBS

5.63.1 class CIFilterDissolveTransitionMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Dissolve filter.

Notes:

Details for this filter:

FilterName:	CIDissolveTransition
DisplayName English:	Dissolve
DisplayName German:	berblenden
DisplayName French:	Dissoudre
DisplayName Italian:	Dissolvenza
DisplayName Spanish:	Disolucin

Categories:

- CICategoryTransition: Transition
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputTargetImage: Target Image
- inputTime: Time

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.63.2 Methods

5.63.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.63.4 Properties

5.63.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Dissolve attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.63.6 AttributeinputTargetImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Dissolve attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputTargetImage
Class:	CIImageMBS
DisplayName English:	Target Image
DisplayName German:	Zielbild
DisplayName French:	Image cible
DisplayName Italian:	Immagine target
DisplayName Spanish:	Imagen de destino
DefaultNumber:	0
IdentityNumber:	0

5.63.7 AttributeinputTime as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Dissolve attribute.

Notes:

This attribute should have this content:

Name:	inputTime
Class:	double
Type:	CIAttributeTypeTime
DisplayName English:	Time
DisplayName German:	Zeit
DisplayName French:	Dure
DisplayName Italian:	Tempo
DisplayName Spanish:	Tiempo
DefaultNumber:	0
IdentityNumber:	0
MaxNumber:	1
MinNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

(Read only property)

5.63.8 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

See AttributeinputImage for more details.

(Read and Write property)

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

5.63.9 inputTargetImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Target Image

Notes:

Name:	inputTargetImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Target Image
DisplayName German:	Zielbild
DisplayName French:	Image cible
DisplayName Italian:	Immagine target
DisplayName Spanish:	Imagen de destino
Type:	

See AttributeinputTargetImage for more details.
(Read and Write property)

5.63.10 inputTime as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Time

Notes:

Name:	inputTime
Class:	double (NSNumber)
DisplayName English:	Time
DisplayName German:	Zeit
DisplayName French:	Dure
DisplayName Italian:	Tempo
DisplayName Spanish:	Tiempo
Type:	CIAttributeTypeTime

See AttributeinputTime for more details.

(Read and Write property)

5.64 class CIFilterDivideBlendModeMBS

5.64.1 class CIFilterDivideBlendModeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Divide Blend Mode filter.

Notes:

Details for this filter:

FilterName:	CIDivideBlendMode
DisplayName English:	Divide Blend Mode
DisplayName German:	Mischmethode Teilen
DisplayName French:	Mode de fusion Diviser
DisplayName Italian:	Modalit sfumatura dissolvenza
DisplayName Spanish:	Dividir modo de mezcla

Categories:

- CICategoryCompositeOperation: Composite Operation
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputBackgroundImage: Background Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.64.2 Methods

5.64.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.64.4 Properties

5.64.5 AttributeinputBackgroundImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Divide Blend Mode attribute.

Notes:

This attribute should have this content:

Name:	inputBackgroundImage
Class:	CIImageMBS
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.64.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Divide Blend Mode attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.64.7 inputBackgroundImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Background Image

Notes:

Name:	inputBackgroundImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
Type:	

See AttributeinputBackgroundImage for more details.
(Read and Write property)

5.64.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See `AttributeinputImage` for more details.
(Read and Write property)

5.65 class CIFilterDotScreenMBS

5.65.1 class CIFilterDotScreenMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Dot Screen filter.

Notes:

Details for this filter:

FilterName:	CIDotScreen
DisplayName English:	Dot Screen
DisplayName German:	Punktfrmiges Halbtonraster
DisplayName French:	cran en pointill
DisplayName Italian:	Schermo a punti
DisplayName Spanish:	Pantalla punteada

Categories:

- CICategoryHalftoneEffect: Halftone Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCenter: Center
- inputAngle: Angle
- inputWidth: Width
- inputSharpness: Sharpness

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.65.2 Methods

5.65.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.65.4 Properties

5.65.5 AttributeinputAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Dot Screen attribute.

Notes:

This attribute should have this content:

Name:	inputAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
DefaultNumber:	0
IdentityNumber:	0
SliderMaxNumber:	3.141593
SliderMinNumber:	-3.141593

(Read only property)

5.65.6 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Dot Screen attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

5.65.7 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Dot Screen attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.65.8 AttributeinputSharpness as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Dot Screen attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputSharpness
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Sharpness
DisplayName German:	Schrfe
DisplayName French:	Nettet
DisplayName Italian:	Nitidezza
DisplayName Spanish:	Nitidez
DefaultNumber:	0.7
IdentityNumber:	0
MaxNumber:	1
MinNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

5.65.9 AttributeinputWidth as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Dot Screen attribute.

Notes:

This attribute should have this content:

Name:	inputWidth
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
DefaultNumber:	6
IdentityNumber:	0
MaxNumber:	0
MinNumber:	1
SliderMaxNumber:	50
SliderMinNumber:	2

(Read only property)

5.65.10 inputAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Angle
Notes:

Name:	inputAngle
Class:	double (NSNumber)
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
Type:	CIAttributeTypeAngle

See AttributeinputAngle for more details.
(Read and Write property)

5.65.11 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center
Notes:

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

See AttributeinputCenter for more details.
(Read and Write property)

5.65.12 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

See AttributeinputImage for more details.
(Read and Write property)

Name:	inputImage
Class:	CImageMBS (CImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

5.65.13 inputSharpness as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Sharpness

Notes:

Name:	inputSharpness
Class:	double (NSNumber)
DisplayName English:	Sharpness
DisplayName German:	Schrfe
DisplayName French:	Nettet
DisplayName Italian:	Nitidezza
DisplayName Spanish:	Nitidez
Type:	CIAttributeTypeScalar

See AttributeinputSharpness for more details.
(Read and Write property)

5.65.14 inputWidth as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Width

Notes:

Name:	inputWidth
Class:	double (NSNumber)
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
Type:	CIAttributeTypeDistance

See AttributeinputWidth for more details.

(Read and Write property)

5.66 class CIFilterDrosteMBS

5.66.1 class CIFilterDrosteMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Droste filter.

Notes:

Details for this filter:

FilterName:	CIDroste
DisplayName English:	Droste
DisplayName German:	Droste
DisplayName French:	Droste
DisplayName Italian:	Droste
DisplayName Spanish:	Droste

Categories:

- CICategoryDistortionEffect: Distortion Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputInsetPoint0: InsetPoint0
- inputInsetPoint1: InsetPoint1
- inputStrands: Strands
- inputPeriodicity: Periodicity
- inputRotation: Rotation
- inputZoom: Zoom

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.66.2 Methods

5.66.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.66.4 Properties

5.66.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Droste attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.66.6 AttributeinputInsetPoint0 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Droste attribute.

Notes:

This attribute should have this content:

Name: inputInsetPoint0
 Class: CIVectorMBS
 Type: CIAttributeTypePosition
 DisplayName: InsetPoint0
 DefaultVector: [200 200]
 IdentityVector: n/a

(Read only property)

5.66.7 AttributeinputInsetPoint1 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Droste attribute.

Notes:

This attribute should have this content:

Name: inputInsetPoint1
 Class: CIVectorMBS
 Type: CIAttributeTypePosition
 DisplayName: InsetPoint1
 DefaultVector: [400 400]
 IdentityVector: n/a

(Read only property)

5.66.8 AttributeinputPeriodicity as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Droste attribute.

Notes:

This attribute should have this content:

(Read only property)

Name: inputPeriodicity
 Class: double
 Type: CIAttributeTypeScalar
 DisplayName: Periodicity
 DefaultNumber: 1
 IdentityNumber: 0
 MaxNumber: 0
 MinNumber: 1
 SliderMaxNumber: 5
 SliderMinNumber: 1

5.66.9 AttributeinputRotation as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Droste attribute.

Notes:

This attribute should have this content:

Name: inputRotation
 Class: double
 Type: CIAttributeTypeAngle
 DisplayName: Rotation
 DefaultNumber: 0
 IdentityNumber: 0
 SliderMaxNumber: 6.283185
 SliderMinNumber: 0

(Read only property)

5.66.10 AttributeinputStrands as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Droste attribute.

Notes:

This attribute should have this content:

(Read only property)

Name: inputStrands
 Class: double
 Type: CIAAttributeTypeScalar
 DisplayName: Strands
 DefaultNumber: 1
 IdentityNumber: 0
 MaxNumber: 10
 MinNumber: -10
 SliderMaxNumber: 2
 SliderMinNumber: -2

5.66.11 AttributeinputZoom as CIAAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Droste attribute.

Notes:

This attribute should have this content:

Name: inputZoom
 Class: double
 Type: CIAAttributeTypeScalar
 DisplayName: Zoom
 DefaultNumber: 1
 IdentityNumber: 0
 MaxNumber: 0
 MinNumber: 0.01
 SliderMaxNumber: 5
 SliderMinNumber: 0.01

(Read only property)

5.66.12 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

(Read and Write property)

Name:	inputImage
Class:	CImageMBS (CImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

5.66.13 inputInsetPoint0 as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute InsetPoint0

Notes:

Name:	inputInsetPoint0
Class:	CIVectorMBS (CIVector)
DisplayName English:	InsetPoint0
DisplayName German:	InsetPoint0
DisplayName French:	InsetPoint0
DisplayName Italian:	InsetPoint0
DisplayName Spanish:	InsetPoint0
Type:	CIAAttributeTypePosition

See AttributeinputInsetPoint0 for more details.
(Read and Write property)

5.66.14 inputInsetPoint1 as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute InsetPoint1

Notes:

Name:	inputInsetPoint1
Class:	CIVectorMBS (CIVector)
DisplayName English:	InsetPoint1
DisplayName German:	InsetPoint1
DisplayName French:	InsetPoint1
DisplayName Italian:	InsetPoint1
DisplayName Spanish:	InsetPoint1
Type:	CIAAttributeTypePosition

See AttributeinputInsetPoint1 for more details.

(Read and Write property)

5.66.15 inputPeriodicity as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Periodicity

Notes:

Name:	inputPeriodicity
Class:	double (NSNumber)
DisplayName English:	Periodicity
DisplayName German:	Periodicity
DisplayName French:	Periodicity
DisplayName Italian:	Periodicity
DisplayName Spanish:	Periodicity
Type:	CIAttributeTypeScalar

See AttributeinputPeriodicity for more details.
(Read and Write property)

5.66.16 inputRotation as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Rotation

Notes:

Name:	inputRotation
Class:	double (NSNumber)
DisplayName English:	Rotation
DisplayName German:	Rotation
DisplayName French:	Rotation
DisplayName Italian:	Rotation
DisplayName Spanish:	Rotation
Type:	CIAttributeTypeAngle

See AttributeinputRotation for more details.
(Read and Write property)

5.66.17 inputStrands as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Strands

Notes:

Name:	inputStrands
Class:	double (NSNumber)
DisplayName English:	Strands
DisplayName German:	Strands
DisplayName French:	Strands
DisplayName Italian:	Strands
DisplayName Spanish:	Strands
Type:	CIAttributeTypeScalar

See AttributeinputStrands for more details.
(Read and Write property)

5.66.18 inputZoom as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Zoom

Notes:

Name:	inputZoom
Class:	double (NSNumber)
DisplayName English:	Zoom
DisplayName German:	Zoom
DisplayName French:	Zoom
DisplayName Italian:	Zoom
DisplayName Spanish:	Zoom
Type:	CIAttributeTypeScalar

See AttributeinputZoom for more details.
(Read and Write property)

5.67 class CIFilterEdgesMBS

5.67.1 class CIFilterEdgesMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Edges filter.

Notes:

Details for this filter:

FilterName:	CIEdges
DisplayName English:	Edges
DisplayName German:	Kanten
DisplayName French:	Contours
DisplayName Italian:	Estremit
DisplayName Spanish:	Bordes

Categories:

- CICategoryStylize: Stylize
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputIntensity: Intensity

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.67.2 Methods

5.67.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.67.4 Properties

5.67.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Edges attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.67.6 AttributeinputIntensity as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Edges attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputIntensity
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Intensity
DisplayName German:	Intensitt
DisplayName French:	Intensit
DisplayName Italian:	Intensit
DisplayName Spanish:	Intensidad
DefaultNumber:	1
IdentityNumber:	0
SliderMaxNumber:	10
SliderMinNumber:	0

5.67.7 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.67.8 inputIntensity as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Intensity
Notes:

See AttributeinputIntensity for more details.
 (Read and Write property)

Name:	inputIntensity
Class:	double (NSNumber)
DisplayName English:	Intensity
DisplayName German:	Intensitt
DisplayName French:	Intensit
DisplayName Italian:	Intensit
DisplayName Spanish:	Intensidad
Type:	CIAttributeTypeScalar

5.68 class CIFilterEdgeWorkMBS

5.68.1 class CIFilterEdgeWorkMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Edge Work filter.

Notes:

Details for this filter:

FilterName:	CIEdgeWork
DisplayName English:	Edge Work
DisplayName German:	Konturwerte finden
DisplayName French:	Contourage
DisplayName Italian:	Lavoro sull'estremit
DisplayName Spanish:	Trabajo en bordes

Categories:

- CICategoryStylize: Stylize
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputRadius: Radius

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.68.2 Methods

5.68.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.68.4 Properties

5.68.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Edge Work attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.68.6 AttributeinputRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Edge Work attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputRadius
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
DefaultNumber:	3
IdentityNumber:	0
SliderMaxNumber:	20
SliderMinNumber:	0

5.68.7 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.68.8 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute
 Radius
Notes:

See AttributeinputRadius for more details.
 (Read and Write property)

Name:	inputRadius
Class:	double (NSNumber)
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
Type:	CIAttributeTypeDistance

5.69 class CIFilterEightfoldReflectedTileMBS

5.69.1 class CIFilterEightfoldReflectedTileMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Eightfold Reflected Tile filter.

Notes:

Details for this filter:

FilterName:	CIEightfoldReflectedTile
DisplayName English:	Eightfold Reflected Tile
DisplayName German:	8-fach reflektierte Kachel
DisplayName French:	Mosaque rflchie 8 fois
DisplayName Italian:	Mosaico riflesso in otto direzioni
DisplayName Spanish:	Mosaico reflejado ocho veces

Categories:

- CICategoryTileEffect: Tile Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCenter: Center
- inputAngle: Angle
- inputWidth: Width

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.69.2 Methods

5.69.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.69.4 Properties

5.69.5 AttributeinputAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Eightfold Reflected Tile attribute.

Notes:

This attribute should have this content:

Name:	inputAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
DefaultNumber:	0
IdentityNumber:	0
SliderMaxNumber:	3.141593
SliderMinNumber:	-3.141593

(Read only property)

5.69.6 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Eightfold Reflected Tile attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

5.69.7 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Eightfold Reflected Tile attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.69.8 AttributeinputWidth as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Eightfold Reflected Tile attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputWidth
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
DefaultNumber:	100
IdentityNumber:	100
SliderMaxNumber:	200
SliderMinNumber:	1

5.69.9 inputAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Angle
Notes:

Name:	inputAngle
Class:	double (NSNumber)
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
Type:	CIAttributeTypeAngle

See AttributeinputAngle for more details.
 (Read and Write property)

5.69.10 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center
Notes:

See AttributeinputCenter for more details.
 (Read and Write property)

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

5.69.11 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.69.12 inputWidth as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Width
Notes:

Name:	inputWidth
Class:	double (NSNumber)
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
Type:	CIAttributeTypeDistance

See AttributeinputWidth for more details.

(Read and Write property)

5.70 class CIFilterExclusionBlendModeMBS

5.70.1 class CIFilterExclusionBlendModeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Exclusion Blend Mode filter.

Notes:

Details for this filter:

FilterName:	CIExclusionBlendMode
DisplayName English:	Exclusion Blend Mode
DisplayName German:	Mischmethode Ausschluss
DisplayName French:	Mode de fusion Exclusion
DisplayName Italian:	Modalit sfumatura esclusione
DisplayName Spanish:	Modo de mezcla por exclusin

Categories:

- CICategoryCompositeOperation: Composite Operation
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputBackgroundImage: Background Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.70.2 Methods

5.70.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.70.4 Properties

5.70.5 AttributeinputBackgroundImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Exclusion Blend Mode attribute.

Notes:

This attribute should have this content:

Name:	inputBackgroundImage
Class:	CIImageMBS
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.70.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Exclusion Blend Mode attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.70.7 inputBackgroundImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Background Image

Notes:

Name:	inputBackgroundImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
Type:	

See AttributeinputBackgroundImage for more details.
(Read and Write property)

5.70.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See `AttributeinputImage` for more details.
(Read and Write property)

5.71 class CIFilterExposureAdjustMBS

5.71.1 class CIFilterExposureAdjustMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Exposure Adjust filter.

Notes:

Details for this filter:

FilterName:	CIExposureAdjust
DisplayName English:	Exposure Adjust
DisplayName German:	Belichtung anpassen
DisplayName French:	Ajustement dexposition
DisplayName Italian:	Regolazione esposizione
DisplayName Spanish:	Ajuste de exposicin

Categories:

- CICategoryColorAdjustment: Color Adjustment
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryBuiltIn: Built-In
- CICategoryXMPSerializable: CICategoryXMPSerializable

Input:

- inputImage: Image
- inputEV: EV

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.71.2 Methods

5.71.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.
Notes: On success the handle property is not zero and the filter has the default values set.

5.71.4 Properties

5.71.5 AttributeinputEV as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Exposure Adjust attribute.

Notes:

This attribute should have this content:

Name:	inputEV
Class:	double
Type:	CIAttributeTypeScalar
DisplayName:	EV
DefaultNumber:	0
IdentityNumber:	0
SliderMaxNumber:	10
SliderMinNumber:	-10

(Read only property)

5.71.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Exposure Adjust attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.71.7 inputEV as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute EV

Notes:

Name:	inputEV
Class:	double (NSNumber)
DisplayName English:	EV
DisplayName German:	EV
DisplayName French:	EV
DisplayName Italian:	EV
DisplayName Spanish:	EV
Type:	CIAttributeTypeScalar

See AttributeinputEV for more details.
(Read and Write property)

5.71.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.

5.71. CLASS *CIFILTEREXPOSUREADJUSTMBS*

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(Read and Write property)

5.72 class CIFilterFalseColorMBS

5.72.1 class CIFilterFalseColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage False Color filter.

Notes:

Details for this filter:

FilterName:	CIFalseColor
DisplayName English:	False Color
DisplayName German:	Falschfarbendarstellung
DisplayName French:	Fausse couleur
DisplayName Italian:	Colore falso
DisplayName Spanish:	Color falso

Categories:

- CICategoryColorEffect: Color Effect
- CICategoryVideo: Video
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputColor0: Color 1
- inputColor1: Color 2

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.72.2 Methods

5.72.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.72.4 Properties

5.72.5 AttributeinputColor0 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the False Color attribute.

Notes:

This attribute should have this content:

Name:	inputColor0
Class:	CIColorMBS
Type:	CIAttributeTypeColor
DisplayName English:	Color 1
DisplayName German:	Farbe 1
DisplayName French:	Couleur 1
DisplayName Italian:	Colore 1
DisplayName Spanish:	Color 1
DefaultColor:	Red = 0.3, Green = 0, Blue = 0, Alpha = 1
IdentityNumber:	0

(Read only property)

5.72.6 AttributeinputColor1 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the False Color attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputColor1
Class:	CIColorMBS
Type:	CIAttributeTypeColor
DisplayName English:	Color 2
DisplayName German:	Farbe 2
DisplayName French:	Couleur 2
DisplayName Italian:	Colore 2
DisplayName Spanish:	Color 2
DefaultColor:	Red = 1, Green = 0.9, Blue = 0.8, Alpha = 1
IdentityNumber:	0

5.72.7 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the False Color attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.72.8 inputColor0 as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Color 1

Notes:

See AttributeinputColor0 for more details.

(Read and Write property)

Name:	inputColor0
Class:	CIColorMBS (CIColor)
DisplayName English:	Color 1
DisplayName German:	Farbe 1
DisplayName French:	Couleur 1
DisplayName Italian:	Colore 1
DisplayName Spanish:	Color 1
Type:	CIColorMBS

5.72.9 inputColor1 as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Color 2

Notes:

Name:	inputColor1
Class:	CIColorMBS (CIColor)
DisplayName English:	Color 2
DisplayName German:	Farbe 2
DisplayName French:	Couleur 2
DisplayName Italian:	Colore 2
DisplayName Spanish:	Color 2
Type:	CIColorMBS

See AttributeinputColor1 for more details.
(Read and Write property)

5.72.10 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIImageMBS

See AttributeinputImage for more details.

(Read and Write property)

5.73 class CIFilterFlashTransitionMBS

5.73.1 class CIFilterFlashTransitionMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Flash filter.

Notes:

Details for this filter:

FilterName:	CIFlashTransition
DisplayName English:	Flash
DisplayName German:	Blinken
DisplayName French:	Flash
DisplayName Italian:	Flash
DisplayName Spanish:	Flash

Categories:

- CICategoryTransition: Transition
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputTargetImage: Target Image
- inputCenter: Center
- inputExtent: Extent
- inputColor: Color
- inputTime: Time
- inputMaxStriationRadius: Maximum Striation Radius
- inputStriationStrength: Striation Strength
- inputStriationContrast: Striation Contrast
- inputFadeThreshold: Fade Threshold

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.73.2 Methods

5.73.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.
Notes: On success the handle property is not zero and the filter has the default values set.

5.73.4 Properties

5.73.5 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Flash attribute.

Notes:

This attribute should have this content:

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

(Read only property)

5.73.6 AttributeinputColor as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Flash attribute.

Notes:

This attribute should have this content:

Name:	inputColor
Class:	CIColorMBS
Type:	CIAttributeTypeColor
DisplayName English:	Color
DisplayName German:	Farbe
DisplayName French:	Couleur
DisplayName Italian:	Colore
DisplayName Spanish:	Color
DefaultColor:	Red = 1, Green = 0.8, Blue = 0.6, Alpha = 1
IdentityNumber:	0

(Read only property)

5.73.7 AttributeinputExtent as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Flash attribute.

Notes:

This attribute should have this content:

Name:	inputExtent
Class:	CIVectorMBS
Type:	CIAttributeTypeRectangle
DisplayName English:	Extent
DisplayName German:	Betrag
DisplayName French:	tendue
DisplayName Italian:	Ampiezza
DisplayName Spanish:	Amplitud
DefaultVector:	[0 0 300 300]
IdentityVector:	n/a

(Read only property)

5.73.8 AttributeinputFadeThreshold as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Flash attribute.

Notes:

This attribute should have this content:

Name:	inputFadeThreshold
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Fade Threshold
DisplayName German:	Schwellenwert fr berblenden
DisplayName French:	Seuil de dcoloration
DisplayName Italian:	Soglia dissolvenza
DisplayName Spanish:	Umbral de fundido
DefaultNumber:	0.85
IdentityNumber:	0
MaxNumber:	1
MinNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

(Read only property)

5.73.9 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Flash attribute.

Notes:

This attribute should have this content:

(Read only property)

5.73.10 AttributeinputMaxStriationRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Flash attribute.

Notes:

This attribute should have this content:

Name: inputImage
 Class: CIIImageMBS
 Type: CIAttributeTypeImage
 DisplayName English: Image
 DisplayName German: Bild
 DisplayName French: Image
 DisplayName Italian: Immagine
 DisplayName Spanish: Imagen
 DefaultNumber: 0
 IdentityNumber: 0

Name: inputMaxStriationRadius
 Class: double
 Type: CIAttributeTypeScalar
 DisplayName English: Maximum Striation Radius
 DisplayName German: Maximaler Radius fr Riffelung
 DisplayName French: Rayon maximum des stries
 DisplayName Italian: Raggio di massima striatura
 DisplayName Spanish: Radio de estriacin mximo
 DefaultNumber: 2.58
 IdentityNumber: 0
 SliderMaxNumber: 10
 SliderMinNumber: 0

(Read only property)

5.73.11 AttributeinputStriationContrast as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Flash attribute.

Notes:

This attribute should have this content:

(Read only property)

5.73.12 AttributeinputStriationStrength as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Flash attribute.

Notes:

Name:	inputStriationContrast
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Striation Contrast
DisplayName German:	Kontrast fr Riffelung
DisplayName French:	Contraste des stries
DisplayName Italian:	Contrasto striatura
DisplayName Spanish:	Contraste de la estriacin
DefaultNumber:	1.375
IdentityNumber:	0
SliderMaxNumber:	5
SliderMinNumber:	0

This attribute should have this content:

Name:	inputStriationStrength
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Striation Strength
DisplayName German:	Strke der Riffelung
DisplayName French:	Force des stries
DisplayName Italian:	Livello striatura
DisplayName Spanish:	Intensidad de la estriacin
DefaultNumber:	0.5
IdentityNumber:	0
SliderMaxNumber:	3
SliderMinNumber:	0

(Read only property)

5.73.13 AttributeinputTargetImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Flash attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputTargetImage
Class:	CIImageMBS
DisplayName English:	Target Image
DisplayName German:	Zielbild
DisplayName French:	Image cible
DisplayName Italian:	Immagine target
DisplayName Spanish:	Imagen de destino
DefaultNumber:	0
IdentityNumber:	0

5.73.14 AttributeinputTime as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Flash attribute.

Notes:

This attribute should have this content:

Name:	inputTime
Class:	double
Type:	CIAttributeTypeTime
DisplayName English:	Time
DisplayName German:	Zeit
DisplayName French:	Dure
DisplayName Italian:	Tempo
DisplayName Spanish:	Tiempo
DefaultNumber:	0
IdentityNumber:	0
MaxNumber:	1
MinNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

(Read only property)

5.73.15 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center

Notes:

See AttributeinputCenter for more details.

(Read and Write property)

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

5.73.16 inputColor as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Color
Notes:

Name:	inputColor
Class:	CIColorMBS (CIColor)
DisplayName English:	Color
DisplayName German:	Farbe
DisplayName French:	Couleur
DisplayName Italian:	Colore
DisplayName Spanish:	Color
Type:	CIAttributeTypeColor

See AttributeinputColor for more details.
 (Read and Write property)

5.73.17 inputExtent as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Extent
Notes:

See AttributeinputExtent for more details.
 (Read and Write property)

5.73.18 inputFadeThreshold as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Fade Threshold

Name:	inputExtent
Class:	CIVectorMBS (CIVector)
DisplayName English:	Extent
DisplayName German:	Betrag
DisplayName French:	tendue
DisplayName Italian:	Ampiezza
DisplayName Spanish:	Amplitud
Type:	CIAttributeTypeRectangle

Notes:

Name:	inputFadeThreshold
Class:	double (NSNumber)
DisplayName English:	Fade Threshold
DisplayName German:	Schwellenwert fr berblenden
DisplayName French:	Seuil de dcoloration
DisplayName Italian:	Soglia dissolvenza
DisplayName Spanish:	Umbral de fundido
Type:	CIAttributeTypeScalar

See AttributeinputFadeThreshold for more details.
(Read and Write property)

5.73.19 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.73.20 inputMaxStriationRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Maximum Striation Radius

Notes:

Name:	inputMaxStriationRadius
Class:	double (NSNumber)
DisplayName English:	Maximum Striation Radius
DisplayName German:	Maximaler Radius fr Riffelung
DisplayName French:	Rayon maximum des stries
DisplayName Italian:	Raggio di massima striatura
DisplayName Spanish:	Radio de estriacin mximo
Type:	CIAttributeTypeScalar

See AttributeinputMaxStriationRadius for more details.
(Read and Write property)

5.73.21 inputStriationContrast as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Striation Contrast

Notes:

Name:	inputStriationContrast
Class:	double (NSNumber)
DisplayName English:	Striation Contrast
DisplayName German:	Kontrast fr Riffelung
DisplayName French:	Contraste des stries
DisplayName Italian:	Contrasto striatura
DisplayName Spanish:	Contraste de la estriacin
Type:	CIAttributeTypeScalar

See AttributeinputStriationContrast for more details.
(Read and Write property)

5.73.22 inputStriationStrength as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Striation Strength

Notes:

Name:	inputStriationStrength
Class:	double (NSNumber)
DisplayName English:	Striation Strength
DisplayName German:	Strke der Riffelung
DisplayName French:	Force des stries
DisplayName Italian:	Livello striatura
DisplayName Spanish:	Intensidad de la estriacin
Type:	CIAttributeTypeScalar

See AttributeinputStriationStrength for more details.
(Read and Write property)

5.73.23 inputTargetImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Target Image

Notes:

Name:	inputTargetImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Target Image
DisplayName German:	Zielbild
DisplayName French:	Image cible
DisplayName Italian:	Immagine target
DisplayName Spanish:	Imagen de destino
Type:	

See AttributeinputTargetImage for more details.
(Read and Write property)

5.73.24 inputTime as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Time

Notes:

See AttributeinputTime for more details.
(Read and Write property)

Name:	inputTime
Class:	double (NSNumber)
DisplayName English:	Time
DisplayName German:	Zeit
DisplayName French:	Dure
DisplayName Italian:	Tempo
DisplayName Spanish:	Tiempo
Type:	CIAttributeTypeTime

5.74 class CIFilterFourfoldReflectedTileMBS

5.74.1 class CIFilterFourfoldReflectedTileMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Fourfold Reflected Tile filter.

Notes:

Details for this filter:

FilterName:	CIFourfoldReflectedTile
DisplayName English:	Fourfold Reflected Tile
DisplayName German:	4-fach reflektierte Kachel
DisplayName French:	Mosaque rflchie 4 fois
DisplayName Italian:	Mosaico riflesso in quattro direzioni
DisplayName Spanish:	Mosaico reflejado cuatro veces

Categories:

- CICategoryTileEffect: Tile Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCenter: Center
- inputAngle: Angle
- inputWidth: Width
- inputAcuteAngle: Acute Angle

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.74.2 Methods

5.74.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.74.4 Properties

5.74.5 AttributeinputAcuteAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Fourfold Reflected Tile attribute.

Notes:

This attribute should have this content:

Name:	inputAcuteAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Acute Angle
DisplayName German:	Spitzer Winkel
DisplayName French:	Angle aigu
DisplayName Italian:	Angolo acuto
DisplayName Spanish:	ngulo agudo
DefaultNumber:	1.570796
IdentityNumber:	1.570796
SliderMaxNumber:	3.141593
SliderMinNumber:	-3.141593

(Read only property)

5.74.6 AttributeinputAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Fourfold Reflected Tile attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
DefaultNumber:	0
IdentityNumber:	0
SliderMaxNumber:	3.141593
SliderMinNumber:	-3.141593

5.74.7 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Fourfold Reflected Tile attribute.

Notes:

This attribute should have this content:

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

(Read only property)

5.74.8 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Fourfold Reflected Tile attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.74.9 AttributeinputWidth as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Fourfold Reflected Tile attribute.

Notes:

This attribute should have this content:

Name:	inputWidth
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
DefaultNumber:	100
IdentityNumber:	100
SliderMaxNumber:	200
SliderMinNumber:	1

(Read only property)

5.74.10 inputAcuteAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Acute Angle

Notes:

Name:	inputAcuteAngle
Class:	double (NSNumber)
DisplayName English:	Acute Angle
DisplayName German:	Spitzer Winkel
DisplayName French:	Angle aigu
DisplayName Italian:	Angolo acuto
DisplayName Spanish:	ngulo agudo
Type:	CIAttributeTypeAngle

See AttributeinputAcuteAngle for more details.
(Read and Write property)

5.74.11 inputAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Angle
Notes:

Name:	inputAngle
Class:	double (NSNumber)
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
Type:	CIAttributeTypeAngle

See AttributeinputAngle for more details.
(Read and Write property)

5.74.12 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center
Notes:

See AttributeinputCenter for more details.
(Read and Write property)

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

5.74.13 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.74.14 inputWidth as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Width
Notes:

Name:	inputWidth
Class:	double (NSNumber)
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
Type:	CIAttributeTypeDistance

See AttributeinputWidth for more details.

(Read and Write property)

5.75 class CIFilterFourfoldRotatedTileMBS

5.75.1 class CIFilterFourfoldRotatedTileMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Fourfold Rotated Tile filter.

Notes:

Details for this filter:

FilterName:	CIFourfoldRotatedTile
DisplayName English:	Fourfold Rotated Tile
DisplayName German:	4-fach gedrehte Kachel
DisplayName French:	Mosaque pivote 4 fois
DisplayName Italian:	Mosaico ruotato in quattro direzioni
DisplayName Spanish:	Mosaico rotado cuatro veces

Categories:

- CICategoryTileEffect: Tile Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCenter: Center
- inputAngle: Angle
- inputWidth: Width

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.75.2 Methods

5.75.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.75.4 Properties

5.75.5 AttributeinputAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Fourfold Rotated Tile attribute.

Notes:

This attribute should have this content:

Name:	inputAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
DefaultNumber:	0
IdentityNumber:	0
SliderMaxNumber:	3.141593
SliderMinNumber:	-3.141593

(Read only property)

5.75.6 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Fourfold Rotated Tile attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

5.75.7 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Fourfold Rotated Tile attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.75.8 AttributeinputWidth as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Fourfold Rotated Tile attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputWidth
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
DefaultNumber:	100
IdentityNumber:	100
SliderMaxNumber:	200
SliderMinNumber:	1

5.75.9 inputAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Angle
Notes:

Name:	inputAngle
Class:	double (NSNumber)
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
Type:	CIAttributeTypeAngle

See AttributeinputAngle for more details.
 (Read and Write property)

5.75.10 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center
Notes:

See AttributeinputCenter for more details.
 (Read and Write property)

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

5.75.11 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.75.12 inputWidth as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Width
Notes:

Name:	inputWidth
Class:	double (NSNumber)
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
Type:	CIAttributeTypeDistance

See AttributeinputWidth for more details.

5.75. CLASS CIFILTERFOURFOLDROTATEDTILEMBS

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(Read and Write property)

5.76 class CIFilterFourfoldTranslatedTileMBS

5.76.1 class CIFilterFourfoldTranslatedTileMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Fourfold Translated Tile filter.

Notes:

Details for this filter:

FilterName:	CIFourfoldTranslatedTile
DisplayName English:	Fourfold Translated Tile
DisplayName German:	4-fach bersetzte Kachel
DisplayName French:	Mosaque dplace 4 fois
DisplayName Italian:	Mosaico traslato in quattro direzioni
DisplayName Spanish:	Mosaico desplazado cuatro veces

Categories:

- CICategoryTileEffect: Tile Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCenter: Center
- inputAngle: Angle
- inputWidth: Width
- inputAcuteAngle: Acute Angle

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.76.2 Methods

5.76.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.76.4 Properties

5.76.5 AttributeinputAcuteAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Fourfold Translated Tile attribute.

Notes:

This attribute should have this content:

Name:	inputAcuteAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Acute Angle
DisplayName German:	Spitzer Winkel
DisplayName French:	Angle aigu
DisplayName Italian:	Angolo acuto
DisplayName Spanish:	ngulo agudo
DefaultNumber:	1.570796
IdentityNumber:	1.570796
SliderMaxNumber:	3.141593
SliderMinNumber:	-3.141593

(Read only property)

5.76.6 AttributeinputAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Fourfold Translated Tile attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
DefaultNumber:	0
IdentityNumber:	0
SliderMaxNumber:	3.141593
SliderMinNumber:	-3.141593

5.76.7 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Fourfold Translated Tile attribute.

Notes:

This attribute should have this content:

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

(Read only property)

5.76.8 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Fourfold Translated Tile attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.76.9 AttributeinputWidth as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Fourfold Translated Tile attribute.

Notes:

This attribute should have this content:

Name:	inputWidth
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
DefaultNumber:	100
IdentityNumber:	100
SliderMaxNumber:	200
SliderMinNumber:	1

(Read only property)

5.76.10 inputAcuteAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Acute Angle

Notes:

Name:	inputAcuteAngle
Class:	double (NSNumber)
DisplayName English:	Acute Angle
DisplayName German:	Spitzer Winkel
DisplayName French:	Angle aigu
DisplayName Italian:	Angolo acuto
DisplayName Spanish:	ngulo agudo
Type:	CIAttributeTypeAngle

See AttributeinputAcuteAngle for more details.
(Read and Write property)

5.76.11 inputAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Angle
Notes:

Name:	inputAngle
Class:	double (NSNumber)
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
Type:	CIAttributeTypeAngle

See AttributeinputAngle for more details.
(Read and Write property)

5.76.12 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center
Notes:

See AttributeinputCenter for more details.
(Read and Write property)

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

5.76.13 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.76.14 inputWidth as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Width
Notes:

Name:	inputWidth
Class:	double (NSNumber)
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
Type:	CIAttributeTypeDistance

See AttributeinputWidth for more details.

(Read and Write property)

5.77 class CIFilterGammaAdjustMBS

5.77.1 class CIFilterGammaAdjustMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Gamma Adjust filter.

Notes:

Details for this filter:

FilterName:	CIGammaAdjust
DisplayName English:	Gamma Adjust
DisplayName German:	Gamma anpassen
DisplayName French:	Ajustement gamma
DisplayName Italian:	Regolazione gamma
DisplayName Spanish:	Ajuste de gama

Categories:

- CICategoryColorAdjustment: Color Adjustment
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputPower: Power

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.77.2 Methods

5.77.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.77.4 Properties

5.77.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Gamma Adjust attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.77.6 AttributeinputPower as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Gamma Adjust attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputPower
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Power
DisplayName German:	Strke
DisplayName French:	Puissance
DisplayName Italian:	Energia
DisplayName Spanish:	Alimentacin
DefaultNumber:	0.75
IdentityNumber:	1
SliderMaxNumber:	4
SliderMinNumber:	0.25

5.77.7 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.77.8 inputPower as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Power
Notes:

See AttributeinputPower for more details.
 (Read and Write property)

Name:	inputPower
Class:	double (NSNumber)
DisplayName English:	Power
DisplayName German:	Strke
DisplayName French:	Puissance
DisplayName Italian:	Energia
DisplayName Spanish:	Alimentacin
Type:	CIAttributeTypeScalar

5.78 class CIFilterGaussianBlurMBS

5.78.1 class CIFilterGaussianBlurMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Gaussian Blur filter.

Example:

```
dim CIFilter as new CIFilterGaussianBlurMBS
dim ROIpic as Picture = LogoMBS(500)
dim CGImage as CGImageMBS = CGCreateImageMBS(ROIpic)
dim ciimage as CIImageMBS = NewCIImageWithCGImageMBS(CGImage)
```

```
CIFilter.inputImage = CIImage
cifilter.inputRadius = 10 //the property which holds the blur radius
```

```
dim result as CIImageMBS = cifilter.outputImage
```

```
dim r as Picture = result.RenderPicture
```

```
window1.Backdrop = r
```

Notes:

Details for this filter:

FilterName:	CIGaussianBlur
DisplayName English:	Gaussian Blur
DisplayName German:	Gausche Unschrf
DisplayName French:	Flou gaussien
DisplayName Italian:	Sfumatura gaussiana
DisplayName Spanish:	Difuminado gaussiano

Categories:

- CICategoryBlur: Blur
- CICategoryStillImage: Still Image
- CICategoryVideo: Video
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputRadius: Radius

Output:

- outputImageV1
- outputImage

Warning: Due to the blur, the output image may be bigger, so you need to crop space on the border to get back to old size.

Subclass of the CIFilterMBS class.

5.78.2 Methods

5.78.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.78.4 Properties

5.78.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Gaussian Blur attribute.

Notes:

This attribute should have this content:

(Read only property)

5.78.6 AttributeinputRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Gaussian Blur attribute.

Notes:

This attribute should have this content:

Name: inputImage
 Class: CIImageMBS
 Type: CIAttributeTypeImage
 DisplayName English: Image
 DisplayName German: Bild
 DisplayName French: Image
 DisplayName Italian: Immagine
 DisplayName Spanish: Imagen
 DefaultNumber: 0
 IdentityNumber: 0

Name: inputRadius
 Class: double
 Type: CIAttributeTypeScalar
 DisplayName English: Radius
 DisplayName German: Radius
 DisplayName French: Rayon
 DisplayName Italian: Raggio
 DisplayName Spanish: Radio
 DefaultNumber: 10
 IdentityNumber: 0
 SliderMaxNumber: 100
 SliderMinNumber: 0

(Read only property)

5.78.7 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name: inputImage
 Class: CIImageMBS (CIImage)
 DisplayName English: Image
 DisplayName German: Bild
 DisplayName French: Image
 DisplayName Italian: Immagine
 DisplayName Spanish: Imagen
 Type: CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.78.8 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Radius

Notes:

Name:	inputRadius
Class:	double (NSNumber)
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
Type:	CIAttributeTypeScalar

See AttributeinputRadius for more details.
(Read and Write property)

5.79 class CIFilterGaussianGradientMBS

5.79.1 class CIFilterGaussianGradientMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Gaussian Gradient filter.

Notes:

Details for this filter:

FilterName:	CIGaussianGradient
DisplayName English:	Gaussian Gradient
DisplayName German:	Gauscher Verlauf
DisplayName French:	Dgrad gaussien
DisplayName Italian:	Gradiente gaussiano
DisplayName Spanish:	Degradado gaussiano

Categories:

- CICategoryGradient: Gradient
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputCenter: Center
- inputColor0: Color 1
- inputColor1: Color 2
- inputRadius: Radius

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.79.2 Methods

5.79.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.79.4 Properties

5.79.5 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Gaussian Gradient attribute.

Notes:

This attribute should have this content:

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

(Read only property)

5.79.6 AttributeinputColor0 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Gaussian Gradient attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputColor0
Class:	CIColorMBS
Type:	CIAttributeTypeColor
DisplayName English:	Color 1
DisplayName German:	Farbe 1
DisplayName French:	Couleur 1
DisplayName Italian:	Colore 1
DisplayName Spanish:	Color 1
DefaultColor:	Red = 1, Green = 1, Blue = 1, Alpha = 1
IdentityNumber:	0

5.79.7 AttributeinputColor1 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Gaussian Gradient attribute.

Notes:

This attribute should have this content:

Name:	inputColor1
Class:	CIColorMBS
Type:	CIAttributeTypeColor
DisplayName English:	Color 2
DisplayName German:	Farbe 2
DisplayName French:	Couleur 2
DisplayName Italian:	Colore 2
DisplayName Spanish:	Color 2
DefaultColor:	Red = 0, Green = 0, Blue = 0, Alpha = 0
IdentityNumber:	0

(Read only property)

5.79.8 AttributeinputRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Gaussian Gradient attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputRadius
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
DefaultNumber:	300
IdentityNumber:	0
SliderMaxNumber:	800
SliderMinNumber:	0

5.79.9 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center

Notes:

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

See AttributeinputCenter for more details.
(Read and Write property)

5.79.10 inputColor0 as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Color 1

Notes:

See AttributeinputColor0 for more details.
(Read and Write property)

Name:	inputColor0
Class:	CIColorMBS (CIColor)
DisplayName English:	Color 1
DisplayName German:	Farbe 1
DisplayName French:	Couleur 1
DisplayName Italian:	Colore 1
DisplayName Spanish:	Color 1
Type:	CIAttributeTypeColor

5.79.11 inputColor1 as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Color 2

Notes:

Name:	inputColor1
Class:	CIColorMBS (CIColor)
DisplayName English:	Color 2
DisplayName German:	Farbe 2
DisplayName French:	Couleur 2
DisplayName Italian:	Colore 2
DisplayName Spanish:	Color 2
Type:	CIAttributeTypeColor

See AttributeinputColor1 for more details.
(Read and Write property)

5.79.12 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Radius

Notes:

Name:	inputRadius
Class:	double (NSNumber)
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
Type:	CIAttributeTypeDistance

See AttributeinputRadius for more details.

(Read and Write property)

5.80 class CFilterGeneratorMBS

5.80.1 class CFilterGeneratorMBS

Plugin Version: 17.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** An object that creates and configures chains of individual image filters.

Notes:

The CFilterGenerator class provides methods for creating a CFilter object by chaining together existing CFilter objects to create complex effects. (A filter chain refers to the CFilter objects that are connected in the CFilterGenerator object.) The complex effect can be encapsulated as a CFilterGenerator object and saved as a file so that it can be used again. The filter generator file contains an archived instance of all the CFilter objects that are chained together.

Any filter generator files that you copy to /Library/Graphics/Image Units/ are loaded when any of the loading methods provided by the CIPlugIn class are invoked. A CFilterGenerator object is registered by its filename or, if present, by a class attribute that you supply in its description.

You can create a CFilterGenerator object programmatically, using the methods provided by the CFilterGenerator class, or by using the editor view provided by Core Image (see CFilter Image Kit Additions).

5.80.2 Methods

5.80.3 connectObject(sourceObject as Variant, sourceKey as string, targetObject as Variant, targetKey as String)

Plugin Version: 17.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Adds an object to the filter chain.

Notes:

sourceObject: A CFilterMBS object, a CIImageMBS object, or a the path (an string or folderitem object) to an image.

sourceKey: The key that specifies the source object. For example, if the source is the output image of a filter, pass the outputImage key. Pass nil if the source object is used directly.

targetObject: The object that to link the source object to.

targetKey: The key that specifies the target for the source. For example, if you are connecting the source to the input image of a CFilterMBS object, you would pass the inputImage key.

5.80.4 Constructor

Plugin Version: 17.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates and returns an empty filter generator object.

Notes: You use the returned object to connect two or more CIFilter objects and input images. It is also valid to have only one CIFilter object in a filter generator.

See also:

- 5.80.5 Constructor(File as folderItem) 950
- 5.80.6 Constructor(Handle as Integer) 950
- 5.80.7 Constructor(URL as string) 950

5.80.5 Constructor(File as folderItem)

Plugin Version: 17.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates and returns a filter generator object and initializes it with the contents of a filter generator file.

Notes: Raises exception on failure.

See also:

- 5.80.4 Constructor 949
- 5.80.6 Constructor(Handle as Integer) 950
- 5.80.7 Constructor(URL as string) 950

5.80.6 Constructor(Handle as Integer)

Plugin Version: 17.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Initializes Xojo object with given handle to CIFilterGenerator object.

See also:

- 5.80.4 Constructor 949
- 5.80.5 Constructor(File as folderItem) 950
- 5.80.7 Constructor(URL as string) 950

5.80.7 Constructor(URL as string)

Plugin Version: 17.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates and returns a filter generator object and initializes it with the contents of a filter generator file.

Notes: Raises exception on failure.

See also:

- 5.80.4 Constructor 949
- 5.80.5 Constructor(File as folderItem) 950
- 5.80.6 Constructor(Handle as Integer) 950

5.80.8 copy as CIFilterGeneratorMBS

Plugin Version: 17.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a copy of the object.

5.80.9 disconnectObject(sourceObject as Variant, sourceKey as string, targetObject as Variant, targetKey as String)

Plugin Version: 17.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Removes the connection between two objects in the filter chain.

Notes:

sourceObject: A CIFilterMBS object, a CIImageMBS object, or a the path (an string or folderitem object) to an image.

sourceKey: The key that specifies the source object. Pass nil if the source object is used directly.

targetObject: The object that you want to disconnect the source object from.

targetKey: The key that specifies the target that the source object is currently connected to.

5.80.10 exportKey(key as string, targetObject as Variant, exportedKeyName as String)

Plugin Version: 17.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Exports an input or output key of an object in the filter chain.

Notes:

key: The key to export from the target object (for example, inputImage).

targetObject: The object associated with the key (for example, the filter).

exportedKeyName: A unique name to use for the exported key. Pass "" to use the original key name.

When you create a CIFilterMBS object from a CIFilterGeneratorMBS object, you might want the filter client to be able to set some of the parameters associated with the filter chain. You can make a parameter settable by exporting the key associated with the parameter. If the exported key represents an input parameter of the filter, the key is exported as an input key. If the key represents an output parameter, it is exported as an output key.

5.80.11 filterGenerator as CIFilterGeneratorMBS

Plugin Version: 17.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates and returns an empty filter generator object.

Notes: You use the returned object to connect two or more CIFilter objects and input images. It is also valid to have only one CIFilter object in a filter generator.

5.80.12 filterGeneratorWithContentsOfFile(File as folderItem) as CIFilterGeneratorMBS

Plugin Version: 17.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates and returns a filter generator object and initializes it with the contents of a filter generator file.

Notes: Returns a CIFilterGeneratorMBS object; returns nil if the file cant be read.

5.80.13 filterGeneratorWithContentsOfURL(URL as string) as CIFilterGeneratorMBS

Plugin Version: 17.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates and returns a filter generator object and initializes it with the contents of a filter generator file.

Notes: Returns a CIFilterGeneratorMBS object; returns nil if the file cant be read.

5.80.14 kCIFilterGeneratorExportedKey as String

Plugin Version: 17.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the dictionary keys describing exports.

Notes: The key (CIFilterGeneratorExportedKey) for the exported parameter. The associated value is the key name of the parameter you are exporting, such as inputRadius.

5.80.15 kCIFilterGeneratorExportedKeyName as String

Plugin Version: 17.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the dictionary keys describing exports.

Notes: The key (CIFilterGeneratorExportedKey) for the exported parameter. The associated value is the key name of the parameter you are exporting, such as inputRadius.

5.80.16 kCIFilterGeneratorExportedKeyTargetObject as String

Plugin Version: 17.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the dictionary keys describing exports.

Notes: The target object (CIFilterGeneratorExportedKeyTargetObject) for the exported key. The associated value is the name of the object, such as CIMotionBlur.

5.80.17 registerFilterName(name as string)

Plugin Version: 17.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Registers the name associated with a filter chain.

Notes:

name: A unique name for the filter chain you want to register.

This method allows you to register the filter chain as a named filter in the Core Image filter repository. You can then create a CIFilterMBS object from it using the filterWithName method of the CIFilterMBS class.

5.80.18 removeExportedKey(exportedKeyName as string)

Plugin Version: 17.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Removes a key that was previously exported.

5.80.19 setAttributes(attributes as dictionary, ExportedKey as string)

Plugin Version: 17.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Sets a dictionary of attributes for an exported key.

Notes:

attributes: A dictionary that describes the attributes associated with the specified key.

key: The exported key whose attributes you want to set.

By default, the exported key inherits the attributes from its original key and target object. You can use this method to change one or more of the existing attributes for the key, such as the default value or maximum value. For more information on attributes, see CIFilterMBS and Core Image Programming Guide.

5.80.20 writeToFile(File as Folderitem, atomically as Boolean = true) as Boolean

Plugin Version: 17.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Archives a filter generator object to a filter generator file.

Notes:

File: A location for the file generator file.

atomically: Pass true to specify that Core Image should create an interim file to avoid overwriting an existing file.

Returns true if the the object is successfully archived to the file.

Use this method to save your filter chain to a file for later use.

5.80.21 writeToURL(URL as String, atomically as Boolean = true) as Boolean

Plugin Version: 17.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Archives a filter generator object to a filter generator file.

Notes:

URL: A location for the file generator file.

atomically: Pass true to specify that Core Image should create an interim file to avoid overwriting an existing file.

Returns true if the the object is successfully archived to the file.

Use this method to save your filter chain to a file for later use.

5.80.22 Properties

5.80.23 classAttributes as Dictionary

Plugin Version: 17.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The class attributes associated with the filter.

Notes:

For more information about class attributes for a filter, see Core Image Programming Guide and the filter attributes key constants defined in CIFilterMBS.

(Read and Write property)

5.80.24 exportedKeys as Dictionary

Plugin Version: 17.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array of the exported keys.

Notes:

An array of dictionaries that describe the exported key and target object. See `kCIFilterGeneratorExportedKey`, `kCIFilterGeneratorExportedKeyTargetObject`, and `kCIFilterGeneratorExportedKey` for keys used in the dictionary.

This method returns the keys that you exported using the `exportKey` method or that were exported before being written to the file from which you read the filter chain.

(Read only property)

5.80.25 filter as CIFilterMBS

Plugin Version: 17.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a filter object based on the filter chain.

Notes:

The topology of the filter chain is immutable, meaning that any changes you make to the filter chain are not reflected in the filter. The returned filter has the input and output keys that are exported.
(Read only property)

5.80.26 Handle as Integer

Plugin Version: 17.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The internal reference to the object.

Notes: (Read only property)

5.81 class CIFilterGlassDistortionMBS

5.81.1 class CIFilterGlassDistortionMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Glass Distortion filter.

Notes:

Details for this filter:

FilterName:	CIGlassDistortion
DisplayName English:	Glass Distortion
DisplayName German:	Verzerrung Glas
DisplayName French:	Dformation Verre
DisplayName Italian:	Distorsione vetro
DisplayName Spanish:	Distorsin vidriosa

Categories:

- CICategoryDistortionEffect: Distortion Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputTexture: Texture
- inputCenter: Center
- inputScale: Scale

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.81.2 Methods

5.81.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.81.4 Properties

5.81.5 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Glass Distortion attribute.

Notes:

This attribute should have this content:

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

(Read only property)

5.81.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Glass Distortion attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.81.7 AttributeinputScale as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Glass Distortion attribute.

Notes:

This attribute should have this content:

Name:	inputScale
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Scale
DisplayName German:	Skalierung
DisplayName French:	chelle
DisplayName Italian:	Scala
DisplayName Spanish:	Escala
DefaultNumber:	200
IdentityNumber:	0
SliderMaxNumber:	500
SliderMinNumber:	0.01

(Read only property)

5.81.8 AttributeinputTexture as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Glass Distortion attribute.

Notes:

This attribute should have this content:

Name:	inputTexture
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Texture
DisplayName German:	Struktur
DisplayName French:	Texture
DisplayName Italian:	Trama
DisplayName Spanish:	Textura
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.81.9 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center

Notes:

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAAttributeTypePosition

See AttributeinputCenter for more details.

(Read and Write property)

5.81.10 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

(Read and Write property)

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

5.81.11 inputScale as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Scale
Notes:

Name:	inputScale
Class:	double (NSNumber)
DisplayName English:	Scale
DisplayName German:	Skalierung
DisplayName French:	chelle
DisplayName Italian:	Scala
DisplayName Spanish:	Escala
Type:	CIAttributeTypeDistance

See AttributeinputScale for more details.
 (Read and Write property)

5.81.12 inputTexture as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Texture
Notes:

Name:	inputTexture
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Texture
DisplayName German:	Struktur
DisplayName French:	Texture
DisplayName Italian:	Trama
DisplayName Spanish:	Textura
Type:	CIAttributeTypeImage

See AttributeinputTexture for more details.

(Read and Write property)

5.82 class CIFilterGlassLozengeMBS

5.82.1 class CIFilterGlassLozengeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Glass Lozenge filter.

Notes:

Details for this filter:

FilterName:	CIGlassLozenge
DisplayName English:	Glass Lozenge
DisplayName German:	Glasrhombus
DisplayName French:	Losange de verre
DisplayName Italian:	Losanga vetro
DisplayName Spanish:	Romboedro vidrioso

Categories:

- CICategoryDistortionEffect: Distortion Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputPoint0: Point 1
- inputPoint1: Point 2
- inputRadius: Radius
- inputRefraction: Refraction

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.82.2 Methods

5.82.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.82.4 Properties

5.82.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Glass Lozenge attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.82.6 AttributeinputPoint0 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Glass Lozenge attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputPoint0
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Point 1
DisplayName German:	Punkt 1
DisplayName French:	Point 1
DisplayName Italian:	Punto 1
DisplayName Spanish:	Punto 1
DefaultVector:	[150 150]
IdentityVector:	n/a

5.82.7 AttributeinputPoint1 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Glass Lozenge attribute.

Notes:

This attribute should have this content:

Name:	inputPoint1
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Point 2
DisplayName German:	Punkt 2
DisplayName French:	Point 2
DisplayName Italian:	Punto 2
DisplayName Spanish:	Punto 2
DefaultVector:	[350 150]
IdentityVector:	n/a

(Read only property)

5.82.8 AttributeinputRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Glass Lozenge attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputRadius
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
DefaultNumber:	100
IdentityNumber:	100
SliderMaxNumber:	1000
SliderMinNumber:	0

5.82.9 AttributeinputRefraction as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Glass Lozenge attribute.

Notes:

This attribute should have this content:

Name:	inputRefraction
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Refraction
DisplayName German:	Lichtbrechung
DisplayName French:	Rfraction
DisplayName Italian:	Rifrazione
DisplayName Spanish:	Refraccin
DefaultNumber:	1.7
IdentityNumber:	0
MaxNumber:	0
MinNumber:	-5
SliderMaxNumber:	5
SliderMinNumber:	-5

(Read only property)

5.82.10 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.82.11 inputPoint0 as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Point 1

Notes:

Name:	inputPoint0
Class:	CIVectorMBS (CIVector)
DisplayName English:	Point 1
DisplayName German:	Punkt 1
DisplayName French:	Point 1
DisplayName Italian:	Punto 1
DisplayName Spanish:	Punto 1
Type:	CIAttributeTypePosition

See AttributeinputPoint0 for more details.
(Read and Write property)

5.82.12 inputPoint1 as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Point 2

Notes:

See AttributeinputPoint1 for more details.
(Read and Write property)

Name:	inputPoint1
Class:	CIVectorMBS (CIVector)
DisplayName English:	Point 2
DisplayName German:	Punkt 2
DisplayName French:	Point 2
DisplayName Italian:	Punto 2
DisplayName Spanish:	Punto 2
Type:	CIAttributeTypePosition

5.82.13 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Radius

Notes:

Name:	inputRadius
Class:	double (NSNumber)
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
Type:	CIAttributeTypeDistance

See AttributeinputRadius for more details.
(Read and Write property)

5.82.14 inputRefraction as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Refraction

Notes:

Name:	inputRefraction
Class:	double (NSNumber)
DisplayName English:	Refraction
DisplayName German:	Lichtbrechung
DisplayName French:	Rfraction
DisplayName Italian:	Rifrazione
DisplayName Spanish:	Refraccin
Type:	CIAttributeTypeScalar

See AttributeinputRefraction for more details.

(Read and Write property)

5.83 class CFilterGlideReflectedTileMBS

5.83.1 class CFilterGlideReflectedTileMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Glide Reflected Tile filter.

Notes:

Details for this filter:

FilterName:	CIGlideReflectedTile
DisplayName English:	Glide Reflected Tile
DisplayName German:	Gleitende reflektierte Kachel
DisplayName French:	Mosaque rflchie Glide
DisplayName Italian:	Mosaico riflesso di scivolamento
DisplayName Spanish:	Mosaico de deslizamiento reflejado

Categories:

- CICategoryTileEffect: Tile Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCenter: Center
- inputAngle: Angle
- inputWidth: Width

Output:

- outputImage

Subclass of the CFilterMBS class.

5.83.2 Methods

5.83.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.83.4 Properties

5.83.5 AttributeinputAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Glide Reflected Tile attribute.

Notes:

This attribute should have this content:

Name:	inputAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
DefaultNumber:	0
IdentityNumber:	0
SliderMaxNumber:	3.141593
SliderMinNumber:	-3.141593

(Read only property)

5.83.6 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Glide Reflected Tile attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

5.83.7 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Glide Reflected Tile attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.83.8 AttributeinputWidth as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Glide Reflected Tile attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputWidth
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
DefaultNumber:	100
IdentityNumber:	100
SliderMaxNumber:	200
SliderMinNumber:	1

5.83.9 inputAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Angle
Notes:

Name:	inputAngle
Class:	double (NSNumber)
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
Type:	CIAttributeTypeAngle

See AttributeinputAngle for more details.
 (Read and Write property)

5.83.10 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center
Notes:

See AttributeinputCenter for more details.
 (Read and Write property)

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

5.83.11 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.83.12 inputWidth as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Width
Notes:

Name:	inputWidth
Class:	double (NSNumber)
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
Type:	CIAttributeTypeDistance

See AttributeinputWidth for more details.

(Read and Write property)

5.84 class CIFilterGloomMBS

5.84.1 class CIFilterGloomMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Gloom filter.

Notes:

Details for this filter:

FilterName:	CIGloom
DisplayName English:	Gloom
DisplayName German:	Dster
DisplayName French:	Tnbres
DisplayName Italian:	Oscurit
DisplayName Spanish:	Oscurecer

Categories:

- CICategoryStylize: Stylize
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputRadius: Radius
- inputIntensity: Intensity

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.84.2 Methods

5.84.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.84.4 Properties

5.84.5 Attribute

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Gloom attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.84.6 Attribute

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Gloom attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputIntensity
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Intensity
DisplayName German:	Intensitt
DisplayName French:	Intensit
DisplayName Italian:	Intensit
DisplayName Spanish:	Intensidad
DefaultNumber:	1
IdentityNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

5.84.7 AttributeinputRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Gloom attribute.

Notes:

This attribute should have this content:

Name:	inputRadius
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
DefaultNumber:	10
IdentityNumber:	0
SliderMaxNumber:	100
SliderMinNumber:	0

(Read only property)

5.84.8 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

(Read and Write property)

Name:	inputImage
Class:	CImageMBS (CImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

5.84.9 inputIntensity as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Intensity

Notes:

Name:	inputIntensity
Class:	double (NSNumber)
DisplayName English:	Intensity
DisplayName German:	Intensitt
DisplayName French:	Intensit
DisplayName Italian:	Intensit
DisplayName Spanish:	Intensidad
Type:	CIAAttributeTypeScalar

See AttributeinputIntensity for more details.
(Read and Write property)

5.84.10 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Radius

Notes:

See AttributeinputRadius for more details.
(Read and Write property)

Name:	inputRadius
Class:	double (NSNumber)
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
Type:	CIAttributeTypeDistance

5.85 class CIFilterHardLightBlendModeMBS

5.85.1 class CIFilterHardLightBlendModeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Hard Light Blend Mode filter.

Notes:

Details for this filter:

FilterName:	CIHardLightBlendMode
DisplayName English:	Hard Light Blend Mode
DisplayName German:	Mischmethode Hartes Licht
DisplayName French:	Mode de fusion Lumire crue
DisplayName Italian:	Modalit sfumatura luce intensa
DisplayName Spanish:	Modo de mezcla por luz directa

Categories:

- CICategoryCompositeOperation: Composite Operation
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputBackgroundImage: Background Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.85.2 Methods

5.85.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.85.4 Properties

5.85.5 AttributeBackgroundImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Hard Light Blend Mode attribute.

Notes:

This attribute should have this content:

Name:	inputBackgroundImage
Class:	CIImageMBS
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.85.6 AttributeImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Hard Light Blend Mode attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.85.7 inputBackgroundImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Background Image

Notes:

Name:	inputBackgroundImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
Type:	

See AttributeinputBackgroundImage for more details.
(Read and Write property)

5.85.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See `AttributeinputImage` for more details.
(Read and Write property)

5.86 class CIFilterHatchedScreenMBS

5.86.1 class CIFilterHatchedScreenMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Hatched Screen filter.

Notes:

Details for this filter:

FilterName:	CIHatchedScreen
DisplayName English:	Hatched Screen
DisplayName German:	Schraffierter Bereich
DisplayName French:	cran traits parallles
DisplayName Italian:	Schermo ombreggiato
DisplayName Spanish:	Pantalla tramada

Categories:

- CICategoryHalftoneEffect: Halftone Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCenter: Center
- inputAngle: Angle
- inputWidth: Width
- inputSharpness: Sharpness

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.86.2 Methods

5.86.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.86.4 Properties

5.86.5 AttributeinputAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Hatched Screen attribute.

Notes:

This attribute should have this content:

Name:	inputAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
DefaultNumber:	0
IdentityNumber:	0
SliderMaxNumber:	3.141593
SliderMinNumber:	-3.141593

(Read only property)

5.86.6 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Hatched Screen attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

5.86.7 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Hatched Screen attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.86.8 AttributeinputSharpness as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Hatched Screen attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputSharpness
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Sharpness
DisplayName German:	Schrfe
DisplayName French:	Nettet
DisplayName Italian:	Nitidezza
DisplayName Spanish:	Nitidez
DefaultNumber:	0.7
IdentityNumber:	0
MaxNumber:	1
MinNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

5.86.9 AttributeinputWidth as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Hatched Screen attribute.

Notes:

This attribute should have this content:

Name:	inputWidth
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
DefaultNumber:	6
IdentityNumber:	0
MaxNumber:	0
MinNumber:	1
SliderMaxNumber:	50
SliderMinNumber:	2

(Read only property)

5.86.10 inputAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Angle
Notes:

Name:	inputAngle
Class:	double (NSNumber)
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
Type:	CIAttributeTypeAngle

See AttributeinputAngle for more details.
 (Read and Write property)

5.86.11 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center
Notes:

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

See AttributeinputCenter for more details.
 (Read and Write property)

5.86.12 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

See AttributeinputImage for more details.
 (Read and Write property)

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

5.86.13 inputSharpness as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Sharpness

Notes:

Name:	inputSharpness
Class:	double (NSNumber)
DisplayName English:	Sharpness
DisplayName German:	Schrfe
DisplayName French:	Nettet
DisplayName Italian:	Nitidezza
DisplayName Spanish:	Nitidez
Type:	CIAttributeTypeScalar

See AttributeinputSharpness for more details.
(Read and Write property)

5.86.14 inputWidth as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Width

Notes:

Name:	inputWidth
Class:	double (NSNumber)
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
Type:	CIAttributeTypeDistance

See AttributeinputWidth for more details.

(Read and Write property)

5.87 class CIFilterHeightFieldFromMaskMBS

5.87.1 class CIFilterHeightFieldFromMaskMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Height Field From Mask filter.

Notes:

Details for this filter:

FilterName:	CIHeightFieldFromMask
DisplayName English:	Height Field From Mask
DisplayName German:	Hhe des Felds von der Maske
DisplayName French:	Champ de hauteur du masque
DisplayName Italian:	Altezza campo dalla maschera
DisplayName Spanish:	Campo de altura a partir de mscara

Categories:

- CICategoryStylize: Stylize
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputRadius: Radius

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.87.2 Methods

5.87.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.87.4 Properties

5.87.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Height Field From Mask attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.87.6 AttributeinputRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Height Field From Mask attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputRadius
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
DefaultNumber:	10
IdentityNumber:	10
SliderMaxNumber:	300
SliderMinNumber:	0

5.87.7 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.87.8 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Radius
Notes:

See AttributeinputRadius for more details.
 (Read and Write property)

Name:	inputRadius
Class:	double (NSNumber)
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
Type:	CIAttributeTypeDistance

5.88 class CIFilterHexagonalPixellateMBS

5.88.1 class CIFilterHexagonalPixellateMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Hexagonal Pixellate filter.

Notes:

Details for this filter:

FilterName:	CIHexagonalPixellate
DisplayName English:	Hexagonal Pixellate
DisplayName German:	Hexagonales Verpixeln
DisplayName French:	Pixelisation hexagonale
DisplayName Italian:	Effetto pixel esagonale
DisplayName Spanish:	Pixelado hexagonal

Categories:

- CICategoryStylize: Stylize
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCenter: Center
- inputScale: Scale

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.88.2 Methods

5.88.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.88.4 Properties

5.88.5 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Hexagonal Pixellate attribute.

Notes:

This attribute should have this content:

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

(Read only property)

5.88.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Hexagonal Pixellate attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.88.7 AttributeinputScale as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Hexagonal Pixellate attribute.

Notes:

This attribute should have this content:

Name:	inputScale
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Scale
DisplayName German:	Skalierung
DisplayName French:	chelle
DisplayName Italian:	Scala
DisplayName Spanish:	Escala
DefaultNumber:	8
IdentityNumber:	1
MaxNumber:	0
MinNumber:	1
SliderMaxNumber:	100
SliderMinNumber:	1

(Read only property)

5.88.8 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center

Notes:

See AttributeinputCenter for more details.

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

(Read and Write property)

5.88.9 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.

(Read and Write property)

5.88.10 inputScale as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Scale
Notes:

See AttributeinputScale for more details.

(Read and Write property)

Name:	inputScale
Class:	double (NSNumber)
DisplayName English:	Scale
DisplayName German:	Skalierung
DisplayName French:	chelle
DisplayName Italian:	Scala
DisplayName Spanish:	Escala
Type:	CIAttributeTypeDistance

5.89 class CIFilterHighlightShadowAdjustMBS

5.89.1 class CIFilterHighlightShadowAdjustMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Highlight and Shadow Adjust filter.

Notes:

Details for this filter:

FilterName:	CIHighlightShadowAdjust
DisplayName English:	Highlight and Shadow Adjust
DisplayName German:	Helle und dunkle Bereiche anpassen
DisplayName French:	Ajuster les lumires et les ombres
DisplayName Italian:	Regolazione luce e ombre
DisplayName Spanish:	Ajuste de resaltados y sombras

Categories:

- CICategoryStylize: Stylize
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputRadius: Radius
- inputShadowAmount: Shadow Amount
- inputHighlightAmount: Highlight Amount

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.89.2 Methods

5.89.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.89.4 Properties

5.89.5 AttributeinputHighlightAmount as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Highlight and Shadow Adjust attribute.

Notes:

This attribute should have this content:

Name:	inputHighlightAmount
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Highlight Amount
DisplayName German:	HighlightAmount
DisplayName French:	Quantit de surbrillance
DisplayName Italian:	Quantit luci
DisplayName Spanish:	Cantidad de resaltados
DefaultNumber:	1
IdentityNumber:	1
MaxNumber:	1
MinNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0.3

(Read only property)

5.89.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Highlight and Shadow Adjust attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.89.7 AttributeinputRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Highlight and Shadow Adjust attribute.

Notes:

This attribute should have this content:

Name:	inputRadius
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
DefaultNumber:	0
IdentityNumber:	0
SliderMaxNumber:	10
SliderMinNumber:	0

(Read only property)

5.89.8 AttributeinputShadowAmount as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Highlight and Shadow Adjust attribute.

Notes:

This attribute should have this content:

Name:	inputShadowAmount
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Shadow Amount
DisplayName German:	ShadowAmount
DisplayName French:	Quantit dombre
DisplayName Italian:	Quantit ombreggiatura
DisplayName Spanish:	Cantidad de sombreado
DefaultNumber:	0
IdentityNumber:	0
MaxNumber:	1
MinNumber:	-1
SliderMaxNumber:	1
SliderMinNumber:	-1

(Read only property)

5.89.9 inputHighlightAmount as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Highlight Amount

Notes:

Name:	inputHighlightAmount
Class:	double (NSNumber)
DisplayName English:	Highlight Amount
DisplayName German:	HighlightAmount
DisplayName French:	Quantit de surbrillance
DisplayName Italian:	Quantit luci
DisplayName Spanish:	Cantidad de resaltados
Type:	CIAttributeTypeScalar

See AttributeinputHighlightAmount for more details.

(Read and Write property)

5.89.10 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.89.11 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Radius

Notes:

Name:	inputRadius
Class:	double (NSNumber)
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
Type:	CIAttributeTypeScalar

See AttributeinputRadius for more details.
(Read and Write property)

5.89.12 inputShadowAmount as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Shadow Amount

Notes:

See AttributeinputShadowAmount for more details.
(Read and Write property)

Name:	inputShadowAmount
Class:	double (NSNumber)
DisplayName English:	Shadow Amount
DisplayName German:	ShadowAmount
DisplayName French:	Quantit dombre
DisplayName Italian:	Quantit ombreggiatura
DisplayName Spanish:	Cantidad de sombreado
Type:	CIAttributeTypeScalar

5.90 class CIFilterHistogramDisplayFilterMBS

5.90.1 class CIFilterHistogramDisplayFilterMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Histogram Display filter.

Notes:

Details for this filter:

FilterName:	CIHistogramDisplayFilter
DisplayName English:	Histogram Display
DisplayName German:	Histogrammanzeige
DisplayName French:	Affichage de l'histogramme
DisplayName Italian:	Visualizzazione istogramma
DisplayName Spanish:	Visualizacin de histograma

Categories:

- CICategoryReduction: Reduction
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputHeight: Height
- inputHighLimit: HighLimit
- inputLowLimit: LowLimit

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.90.2 Methods

5.90.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.90.4 Properties

5.90.5 AttributeinputHeight as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Histogram Display attribute.

Notes:

This attribute should have this content:

Name:	inputHeight
Class:	double
Type:	CIAttributeTypeScalar
DisplayName:	Height
DefaultNumber:	100
IdentityNumber:	0
MaxNumber:	200
MinNumber:	1
SliderMaxNumber:	100
SliderMinNumber:	1

(Read only property)

5.90.6 AttributeinputHighLimit as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Histogram Display attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputHighLimit
Class:	double
Type:	CIAttributeTypeScalar
DisplayName:	HighLimit
DefaultNumber:	1
IdentityNumber:	0
MaxNumber:	1
MinNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

5.90.7 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Histogram Display attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.90.8 AttributeinputLowLimit as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Histogram Display attribute.

Notes:

This attribute should have this content:

(Read only property)

Name: inputLowLimit
 Class: double
 Type: CIAttributeTypeScalar
 DisplayName: LowLimit
 DefaultNumber: 0
 IdentityNumber: 0
 MaxNumber: 1
 MinNumber: 0
 SliderMaxNumber: 1
 SliderMinNumber: 0

5.90.9 inputHeight as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Height

Notes:

Name: inputHeight
 Class: double (NSNumber)
 DisplayName English: Height
 DisplayName German: Height
 DisplayName French: Height
 DisplayName Italian: Height
 DisplayName Spanish: Height
 Type: CIAttributeTypeScalar

See AttributeinputHeight for more details.
(Read and Write property)

5.90.10 inputHighLimit as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute HighLimit

Notes:

See AttributeinputHighLimit for more details.
(Read and Write property)

Name:	inputHighLimit
Class:	double (NSNumber)
DisplayName English:	HighLimit
DisplayName German:	HighLimit
DisplayName French:	HighLimit
DisplayName Italian:	HighLimit
DisplayName Spanish:	HighLimit
Type:	CIAttributeTypeScalar

5.90.11 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.90.12 inputLowLimit as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute
 LowLimit
Notes:

Name:	inputLowLimit
Class:	double (NSNumber)
DisplayName English:	LowLimit
DisplayName German:	LowLimit
DisplayName French:	LowLimit
DisplayName Italian:	LowLimit
DisplayName Spanish:	LowLimit
Type:	CIAttributeTypeScalar

See AttributeinputLowLimit for more details.

(Read and Write property)

5.91 class CIFilterHoleDistortionMBS

5.91.1 class CIFilterHoleDistortionMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Hole Distortion filter.

Notes:

Details for this filter:

FilterName:	CIHoleDistortion
DisplayName English:	Hole Distortion
DisplayName German:	Verzerrung Loch
DisplayName French:	Dformation Orifice
DisplayName Italian:	Distorsione foro
DisplayName Spanish:	Distorsin de orificios

Categories:

- CICategoryDistortionEffect: Distortion Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCenter: Center
- inputRadius: Radius

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.91.2 Methods

5.91.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.
Notes: On success the handle property is not zero and the filter has the default values set.

5.91.4 Properties

5.91.5 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Hole Distortion attribute.

Notes:

This attribute should have this content:

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

(Read only property)

5.91.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Hole Distortion attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.91.7 AttributeinputRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Hole Distortion attribute.

Notes:

This attribute should have this content:

Name:	inputRadius
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
DefaultNumber:	150
IdentityNumber:	0.1
MaxNumber:	0
MinNumber:	0.01
SliderMaxNumber:	1000
SliderMinNumber:	0.01

(Read only property)

5.91.8 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center

Notes:

See AttributeinputCenter for more details.

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAAttributeTypePosition

(Read and Write property)

5.91.9 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See AttributeinputImage for more details.

(Read and Write property)

5.91.10 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute
Radius

Notes:

See AttributeinputRadius for more details.

(Read and Write property)

Name:	inputRadius
Class:	double (NSNumber)
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
Type:	CIAttributeTypeDistance

5.92 class CIFilterHueAdjustMBS

5.92.1 class CIFilterHueAdjustMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Hue Adjust filter.

Notes:

Details for this filter:

FilterName:	CIHueAdjust
DisplayName English:	Hue Adjust
DisplayName German:	Farbton anpassen
DisplayName French:	Ajustement de tonalit
DisplayName Italian:	Regolazione tonalit
DisplayName Spanish:	Ajuste de matiz

Categories:

- CICategoryColorAdjustment: Color Adjustment
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputAngle: Angle

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.92.2 Methods

5.92.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.92.4 Properties

5.92.5 AttributeinputAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Hue Adjust attribute.

Notes:

This attribute should have this content:

Name:	inputAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
DefaultNumber:	0
IdentityNumber:	0
SliderMaxNumber:	3.141593
SliderMinNumber:	-3.141593

(Read only property)

5.92.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Hue Adjust attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.92.7 inputAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Angle

Notes:

Name:	inputAngle
Class:	double (NSNumber)
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
Type:	CIAttributeTypeAngle

See AttributeinputAngle for more details.
(Read and Write property)

5.92.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.

5.93 class CIFilterHueBlendModeMBS

5.93.1 class CIFilterHueBlendModeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Hue Blend Mode filter.

Notes:

Details for this filter:

FilterName:	CIHueBlendMode
DisplayName English:	Hue Blend Mode
DisplayName German:	Mischmethode Farbton
DisplayName French:	Mode de fusion Tonalit
DisplayName Italian:	Modalit sfumatura tonalit
DisplayName Spanish:	Modo de mezcla de matiz

Categories:

- CICategoryCompositeOperation: Composite Operation
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputBackgroundImage: Background Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.93.2 Methods

5.93.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.93.4 Properties

5.93.5 AttributeinputBackgroundImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Hue Blend Mode attribute.

Notes:

This attribute should have this content:

Name:	inputBackgroundImage
Class:	CIImageMBS
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.93.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Hue Blend Mode attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.93.7 inputBackgroundImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Background Image

Notes:

Name:	inputBackgroundImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
Type:	

See AttributeinputBackgroundImage for more details.
(Read and Write property)

5.93.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See `AttributeinputImage` for more details.
(Read and Write property)

5.94 class CIFilterKaleidoscopeMBS

5.94.1 class CIFilterKaleidoscopeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Kaleidoscope filter.

Notes:

Details for this filter:

FilterName:	CIKaleidoscope
DisplayName English:	Kaleidoscope
DisplayName German:	Kaleidoskop
DisplayName French:	Kalidoscope
DisplayName Italian:	Caleidoscopio
DisplayName Spanish:	Caleidoscopio

Categories:

- CICategoryTileEffect: Tile Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCount: Count
- inputCenter: Center
- inputAngle: Angle

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.94.2 Methods

5.94.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.94.4 Properties

5.94.5 AttributeinputAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Kaleidoscope attribute.

Notes:

This attribute should have this content:

Name:	inputAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
DefaultNumber:	0
IdentityNumber:	0
SliderMaxNumber:	3.141593
SliderMinNumber:	-3.141593

(Read only property)

5.94.6 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Kaleidoscope attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

5.94.7 AttributeinputCount as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Kaleidoscope attribute.

Notes:

This attribute should have this content:

Name:	inputCount
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Count
DisplayName German:	Anzahl
DisplayName French:	Compte
DisplayName Italian:	Conteggio
DisplayName Spanish:	Recuento
DefaultNumber:	6
IdentityNumber:	0
MaxNumber:	0
MinNumber:	1
SliderMaxNumber:	64
SliderMinNumber:	1

(Read only property)

5.94.8 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Kaleidoscope attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.94.9 inputAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Angle
Notes:

Name:	inputAngle
Class:	double (NSNumber)
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
Type:	CIAAttributeTypeAngle

See AttributeinputAngle for more details.
 (Read and Write property)

5.94.10 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center
Notes:

See AttributeinputCenter for more details.
 (Read and Write property)

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

5.94.11 inputCount as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Count

Notes:

Name:	inputCount
Class:	double (NSNumber)
DisplayName English:	Count
DisplayName German:	Anzahl
DisplayName French:	Compte
DisplayName Italian:	Conteggio
DisplayName Spanish:	Recuento
Type:	CIAttributeTypeScalar

See AttributeinputCount for more details.
(Read and Write property)

5.94.12 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.95 class CIFilterLanczosScaleTransformMBS

5.95.1 class CIFilterLanczosScaleTransformMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Lanczos Scale Transform filter.

Notes:

Details for this filter:

FilterName:	CILanczosScaleTransform
DisplayName English:	Lanczos Scale Transform
DisplayName German:	Lanczos Skalierungstransformation
DisplayName French:	Transformation dchelle de Lanczos
DisplayName Italian:	Trasforma scala di Lanczos
DisplayName Spanish:	Transformar mediante escala Lanczos

Categories:

- CICategoryGeometryAdjustment: Geometry Adjustment
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputScale: Scale
- inputAspectRatio: Aspect Ratio

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.95.2 Methods

5.95.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.95.4 Properties

5.95.5 AttributeinputAspectRatio as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Lanczos Scale Transform attribute.

Notes:

This attribute should have this content:

Name:	inputAspectRatio
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Aspect Ratio
DisplayName German:	Seitenverhltnis
DisplayName French:	Proportions
DisplayName Italian:	Proporzioni
DisplayName Spanish:	Proporciones
DefaultNumber:	1
IdentityNumber:	1
SliderMaxNumber:	2
SliderMinNumber:	0.5

(Read only property)

5.95.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Lanczos Scale Transform attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.95.7 AttributeinputScale as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Lanczos Scale Transform attribute.

Notes:

This attribute should have this content:

Name:	inputScale
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Scale
DisplayName German:	Skalierung
DisplayName French:	chelle
DisplayName Italian:	Scala
DisplayName Spanish:	Escala
DefaultNumber:	1
IdentityNumber:	1
SliderMaxNumber:	1.5
SliderMinNumber:	0.05

(Read only property)

5.95.8 inputAspectRatio as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Aspect Ratio

Notes:

See AttributeinputAspectRatio for more details.

(Read and Write property)

Name:	inputAspectRatio
Class:	double (NSNumber)
DisplayName English:	Aspect Ratio
DisplayName German:	Seitenverhältnis
DisplayName French:	Proportions
DisplayName Italian:	Proporzioni
DisplayName Spanish:	Proporciones
Type:	CIAttributeTypeScalar

5.95.9 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.95.10 inputScale as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Scale

Notes:

Name:	inputScale
Class:	double (NSNumber)
DisplayName English:	Scale
DisplayName German:	Skalierung
DisplayName French:	chelle
DisplayName Italian:	Scala
DisplayName Spanish:	Escala
Type:	CIAttributeTypeScalar

See AttributeinputScale for more details.
(Read and Write property)

5.96 class CIFilterLenticularHaloGeneratorMBS

5.96.1 class CIFilterLenticularHaloGeneratorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Lenticular Halo filter.

Notes:

Details for this filter:

FilterName:	CILenticularHaloGenerator
DisplayName English:	Lenticular Halo
DisplayName German:	Linsenfrmiges Halo
DisplayName French:	Halo lenticulaire
DisplayName Italian:	Alone lenticolare
DisplayName Spanish:	Halo lenticular

Categories:

- CICategoryGenerator: Generator
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputCenter: Center
- inputColor: Color
- inputHaloRadius: Halo Radius
- inputHaloWidth: Halo Width
- inputHaloOverlap: Halo Overlap
- inputStriationStrength: Striation Strength
- inputStriationContrast: Striation Contrast
- inputTime: Time

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.96.2 Methods

5.96.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.96.4 Properties

5.96.5 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Lenticular Halo attribute.

Notes:

This attribute should have this content:

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

(Read only property)

5.96.6 AttributeinputColor as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Lenticular Halo attribute.

Notes:

This attribute should have this content:

Name:	inputColor
Class:	CIColorMBS
DisplayName English:	Color
DisplayName German:	Farbe
DisplayName French:	Couleur
DisplayName Italian:	Colore
DisplayName Spanish:	Color
DefaultColor:	Red = 1, Green = 0.9, Blue = 0.8, Alpha = 1
IdentityNumber:	0

(Read only property)

5.96.7 AttributeinputHaloOverlap as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Lenticular Halo attribute.

Notes:

This attribute should have this content:

Name:	inputHaloOverlap
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Halo Overlap
DisplayName German:	Halo berappen
DisplayName French:	Superposition de halo
DisplayName Italian:	Sovrapposizione alone
DisplayName Spanish:	Superposicin del halo
DefaultNumber:	0.77
IdentityNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

(Read only property)

5.96.8 AttributeinputHaloRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Lenticular Halo attribute.

Notes:

This attribute should have this content:

Name:	inputHaloRadius
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Halo Radius
DisplayName German:	Radius des Halo
DisplayName French:	Rayon du halo
DisplayName Italian:	Raggio alone
DisplayName Spanish:	Radio del halo
DefaultNumber:	70
IdentityNumber:	0
SliderMaxNumber:	1000
SliderMinNumber:	0

(Read only property)

5.96.9 AttributeinputHaloWidth as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Lenticular Halo attribute.

Notes:

This attribute should have this content:

Name:	inputHaloWidth
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Halo Width
DisplayName German:	Breite des Halo
DisplayName French:	Largeur du halo
DisplayName Italian:	Larghezza alone
DisplayName Spanish:	Anchura del halo
DefaultNumber:	87
IdentityNumber:	0
SliderMaxNumber:	300
SliderMinNumber:	0

(Read only property)

5.96.10 AttributeinputStriationContrast as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Lenticular Halo attribute.

Notes:

This attribute should have this content:

Name:	inputStriationContrast
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Striation Contrast
DisplayName German:	Kontrast fr Riffelung
DisplayName French:	Contraste des stries
DisplayName Italian:	Contrasto striatura
DisplayName Spanish:	Contraste de la estriacin
DefaultNumber:	1
IdentityNumber:	0
SliderMaxNumber:	5
SliderMinNumber:	0

(Read only property)

5.96.11 AttributeinputStriationStrength as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Lenticular Halo attribute.

Notes:

This attribute should have this content:

(Read only property)

5.96.12 AttributeinputTime as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Lenticular Halo attribute.

Notes:

This attribute should have this content:

Name: inputStriationStrength
 Class: double
 Type: CIAttributeTypeScalar
 DisplayName English: Striation Strength
 DisplayName German: Strke der Riffelung
 DisplayName French: Force des stries
 DisplayName Italian: Livello striatura
 DisplayName Spanish: Intensidad de la estriacin
 DefaultNumber: 0.5
 IdentityNumber: 0
 SliderMaxNumber: 3
 SliderMinNumber: 0

Name: inputTime
 Class: double
 Type: CIAttributeTypeScalar
 DisplayName English: Time
 DisplayName German: Zeit
 DisplayName French: Dure
 DisplayName Italian: Tempo
 DisplayName Spanish: Tiempo
 DefaultNumber: 0
 IdentityNumber: 0
 MaxNumber: 1
 MinNumber: 0
 SliderMaxNumber: 1
 SliderMinNumber: 0

(Read only property)

5.96.13 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center

Notes:

See AttributeinputCenter for more details.

(Read and Write property)

Name: inputCenter
 Class: CIVectorMBS (CIVector)
 DisplayName English: Center
 DisplayName German: Mitte
 DisplayName French: Centre
 DisplayName Italian: Centro
 DisplayName Spanish: Centro
 Type: CIAttributeTypePosition

5.96.14 inputColor as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Color
Notes:

Name: inputColor
 Class: CIColorMBS (CIColor)
 DisplayName English: Color
 DisplayName German: Farbe
 DisplayName French: Couleur
 DisplayName Italian: Colore
 DisplayName Spanish: Color
 Type:

See AttributeinputColor for more details.
 (Read and Write property)

5.96.15 inputHaloOverlap as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Halo
 Overlap
Notes:

Name: inputHaloOverlap
 Class: double (NSNumber)
 DisplayName English: Halo Overlap
 DisplayName German: Halo berappen
 DisplayName French: Superposition de halo
 DisplayName Italian: Sovrapposizione alone
 DisplayName Spanish: Superposicin del halo
 Type: CIAttributeTypeScalar

See AttributeinputHaloOverlap for more details.

(Read and Write property)

5.96.16 inputHaloRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Halo Radius

Notes:

Name:	inputHaloRadius
Class:	double (NSNumber)
DisplayName English:	Halo Radius
DisplayName German:	Radius des Halo
DisplayName French:	Rayon du halo
DisplayName Italian:	Raggio alone
DisplayName Spanish:	Radio del halo
Type:	CIAttributeTypeDistance

See AttributeinputHaloRadius for more details.
(Read and Write property)

5.96.17 inputHaloWidth as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Halo Width

Notes:

Name:	inputHaloWidth
Class:	double (NSNumber)
DisplayName English:	Halo Width
DisplayName German:	Breite des Halo
DisplayName French:	Largeur du halo
DisplayName Italian:	Larghezza alone
DisplayName Spanish:	Anchura del halo
Type:	CIAttributeTypeDistance

See AttributeinputHaloWidth for more details.
(Read and Write property)

5.96.18 inputStriationContrast as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Striation Contrast

Notes:

Name:	inputStriationContrast
Class:	double (NSNumber)
DisplayName English:	Striation Contrast
DisplayName German:	Kontrast fr Riffelung
DisplayName French:	Contraste des stries
DisplayName Italian:	Contrasto striatura
DisplayName Spanish:	Contraste de la estriacin
Type:	CIAttributeTypeScalar

See AttributeinputStriationContrast for more details.
(Read and Write property)

5.96.19 inputStriationStrength as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Striation Strength

Notes:

Name:	inputStriationStrength
Class:	double (NSNumber)
DisplayName English:	Striation Strength
DisplayName German:	Strke der Riffelung
DisplayName French:	Force des stries
DisplayName Italian:	Livello striatura
DisplayName Spanish:	Intensidad de la estriacin
Type:	CIAttributeTypeScalar

See AttributeinputStriationStrength for more details.
(Read and Write property)

5.96.20 inputTime as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Time

Notes:

See AttributeinputTime for more details.

Name:	inputTime
Class:	double (NSNumber)
DisplayName English:	Time
DisplayName German:	Zeit
DisplayName French:	Dure
DisplayName Italian:	Tempo
DisplayName Spanish:	Tiempo
Type:	CIAttributeTypeScalar

(Read and Write property)

5.97 class CIFilterLightenBlendModeMBS

5.97.1 class CIFilterLightenBlendModeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Lighten Blend Mode filter.

Notes:

Details for this filter:

FilterName:	CILightenBlendMode
DisplayName English:	Lighten Blend Mode
DisplayName German:	Mischmethode Aufhellen
DisplayName French:	Mode de fusion claircir
DisplayName Italian:	Modalit sfumatura chiara
DisplayName Spanish:	Aclarar modo de mezcla

Categories:

- CICategoryCompositeOperation: Composite Operation
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputBackgroundImage: Background Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.97.2 Methods

5.97.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.97.4 Properties

5.97.5 AttributeinputBackgroundImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Lighten Blend Mode attribute.

Notes:

This attribute should have this content:

Name:	inputBackgroundImage
Class:	CIImageMBS
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.97.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Lighten Blend Mode attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.97.7 inputBackgroundImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Background Image

Notes:

Name:	inputBackgroundImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
Type:	

See AttributeinputBackgroundImage for more details.
(Read and Write property)

5.97.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See `AttributeinputImage` for more details.
(Read and Write property)

5.98 class CIFilterLightTunnelMBS

5.98.1 class CIFilterLightTunnelMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Light Tunnel Distortion filter.

Notes:

Details for this filter:

FilterName:	CILightTunnel
DisplayName English:	Light Tunnel Distortion
DisplayName German:	
DisplayName French:	Dformation du tunnel lumineux
DisplayName Italian:	Distorsione tunnel di luce
DisplayName Spanish:	Distorsin del tnel de luz

Categories:

- CICategoryDistortionEffect: Distortion Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCenter: Center
- inputRotation: Rotation
- inputRadius: Radius

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.98.2 Methods

5.98.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.98.4 Properties

5.98.5 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Light Tunnel Distortion attribute.

Notes:

This attribute should have this content:

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

(Read only property)

5.98.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Light Tunnel Distortion attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.98.7 AttributeinputRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Light Tunnel Distortion attribute.

Notes:

This attribute should have this content:

Name:	inputRadius
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Radius
DisplayName German:	
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
DefaultNumber:	100
IdentityNumber:	0
SliderMaxNumber:	500
SliderMinNumber:	1

(Read only property)

5.98.8 AttributeinputRotation as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Light Tunnel Distortion attribute.

Notes:

This attribute should have this content:

Name:	inputRotation
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Rotation
DisplayName German:	
DisplayName French:	Rotation
DisplayName Italian:	Rotation
DisplayName Spanish:	Rotation
DefaultNumber:	0
IdentityNumber:	0
SliderMaxNumber:	1.570796
SliderMinNumber:	0

(Read only property)

5.98.9 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center

Notes:

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

See AttributeinputCenter for more details.

(Read and Write property)

5.98.10 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

(Read and Write property)

Name:	inputImage
Class:	CImageMBS (CImage)
DisplayName English:	Image
DisplayName German:	
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

5.98.11 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Radius

Notes:

Name:	inputRadius
Class:	double (NSNumber)
DisplayName English:	Radius
DisplayName German:	
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
Type:	CIAAttributeTypeAngle

See AttributeinputRadius for more details.
(Read and Write property)

5.98.12 inputRotation as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Rotation

Notes:

Name:	inputRotation
Class:	double (NSNumber)
DisplayName English:	Rotation
DisplayName German:	
DisplayName French:	Rotation
DisplayName Italian:	Rotation
DisplayName Spanish:	Rotation
Type:	CIAAttributeTypeAngle

See AttributeinputRotation for more details.

(Read and Write property)

5.99 class CIFilterLinearBurnBlendModeMBS

5.99.1 class CIFilterLinearBurnBlendModeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Linear Burn Blend Mode filter.

Notes:

Details for this filter:

FilterName:	CILinearBurnBlendMode
DisplayName English:	Linear Burn Blend Mode
DisplayName German:	Mischmethode Linear nachbelichten
DisplayName French:	Mode de fusion claircissement linair
DisplayName Italian:	Modalit sfumatura bruciata lineare
DisplayName Spanish:	Modo de mezcla por sobreexposicin lineal

Categories:

- CICategoryCompositeOperation: Composite Operation
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputBackgroundImage: Background Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.99.2 Methods

5.99.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.99.4 Properties

5.99.5 AttributeinputBackgroundImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Linear Burn Blend Mode attribute.

Notes:

This attribute should have this content:

Name:	inputBackgroundImage
Class:	CIImageMBS
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.99.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Linear Burn Blend Mode attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.99.7 inputBackgroundImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Background Image

Notes:

Name:	inputBackgroundImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
Type:	

See AttributeinputBackgroundImage for more details.
(Read and Write property)

5.99.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See `AttributeinputImage` for more details.
(Read and Write property)

5.100 class CIFilterLinearDodgeBlendModeMBS

5.100.1 class CIFilterLinearDodgeBlendModeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Linear Dodge Blend Mode filter.

Notes:

Details for this filter:

FilterName:	CILinearDodgeBlendMode
DisplayName English:	Linear Dodge Blend Mode
DisplayName German:	Mischmethode Linear abwedeln
DisplayName French:	Mode de fusion Assombrissement liniaire
DisplayName Italian:	Modalit sfumatura schermata lineare
DisplayName Spanish:	Modo de mezcla por evasin lineal

Categories:

- CICategoryCompositeOperation: Composite Operation
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputBackgroundImage: Background Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.100.2 Methods

5.100.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.100.4 Properties

5.100.5 AttributeinputBackgroundImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Linear Dodge Blend Mode attribute.

Notes:

This attribute should have this content:

Name:	inputBackgroundImage
Class:	CIImageMBS
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image d'arrière-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.100.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Linear Dodge Blend Mode attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.100.7 inputBackgroundImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Background Image

Notes:

Name:	inputBackgroundImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
Type:	

See AttributeinputBackgroundImage for more details.
(Read and Write property)

5.100.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See Attribute(Read and Write property)

5.101 class CIFilterLinearGradientMBS

5.101.1 class CIFilterLinearGradientMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Linear Gradient filter.

Example:

```
// create gradient
dim vektor1 as CIVectorMBS = CIVectorMBS.vectorWithXY(800,600)
dim vektor2 as CIVectorMBS = CIVectorMBS.vectorWithXY(0,0)

dim CiGradientFilter as new CIFilterLinearGradientMBS
CiGradientFilter.SetDefaults
CiGradientFilter.inputPoint0 = vektor1
CiGradientFilter.inputPoint1 = vektor2
CiGradientFilter.inputColor0 = CIColorMBS.colorWithRGB(1,1,1)
CiGradientFilter.inputColor1 = CIColorMBS.colorWithRGB(1,0.5,0.3)

dim r as CIImageMBS = CiGradientFilter.outputImage

Backdrop = r.RenderPicture(800, 600)
```

Notes:

Details for this filter:

FilterName:	CILinearGradient
DisplayName English:	Linear Gradient
DisplayName German:	Linearer Verlauf
DisplayName French:	Dgrad linair
DisplayName Italian:	Gradiente lineare
DisplayName Spanish:	Degradado lineal

Categories:

- CICategoryGradient: Gradient
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputPoint0: Point 1
- inputPoint1: Point 2
- inputColor0: Color 1
- inputColor1: Color 2

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.101.2 Methods

5.101.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.101.4 Properties

5.101.5 AttributeinputColor0 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Linear Gradient attribute.

Notes:

This attribute should have this content:

(Read only property)

5.101.6 AttributeinputColor1 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Linear Gradient attribute.

Notes:

Name: inputColor0
 Class: CIColorMBS
 Type: CIAttributeTypeColor
 DisplayName English: Color 1
 DisplayName German: Farbe 1
 DisplayName French: Couleur 1
 DisplayName Italian: Colore 1
 DisplayName Spanish: Color 1
 DefaultColor: Red = 1, Green = 1, Blue = 1, Alpha = 1
 IdentityNumber: 0

This attribute should have this content:

Name: inputColor1
 Class: CIColorMBS
 Type: CIAttributeTypeColor
 DisplayName English: Color 2
 DisplayName German: Farbe 2
 DisplayName French: Couleur 2
 DisplayName Italian: Colore 2
 DisplayName Spanish: Color 2
 DefaultColor: Red = 0, Green = 0, Blue = 0, Alpha = 1
 IdentityNumber: 0

(Read only property)

5.101.7 AttributeinputPoint0 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Linear Gradient attribute.

Notes:

This attribute should have this content:

(Read only property)

5.101.8 AttributeinputPoint1 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Linear Gradient attribute.

Name: inputPoint0
 Class: CIVectorMBS
 Type: CIAttributeTypePosition
 DisplayName English: Point 1
 DisplayName German: Punkt 1
 DisplayName French: Point 1
 DisplayName Italian: Punto 1
 DisplayName Spanish: Punto 1
 DefaultVector: [0 0]
 IdentityVector: n/a

Notes:

This attribute should have this content:

Name: inputPoint1
 Class: CIVectorMBS
 Type: CIAttributeTypePosition
 DisplayName English: Point 2
 DisplayName German: Punkt 2
 DisplayName French: Point 2
 DisplayName Italian: Punto 2
 DisplayName Spanish: Punto 2
 DefaultVector: [200 200]
 IdentityVector: n/a

(Read only property)

5.101.9 inputColor0 as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Color 1

Notes:

See AttributeinputColor0 for more details.

(Read and Write property)

5.101.10 inputColor1 as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Color 2

Name: inputColor0
 Class: CIColorMBS (CIColor)
 DisplayName English: Color 1
 DisplayName German: Farbe 1
 DisplayName French: Couleur 1
 DisplayName Italian: Colore 1
 DisplayName Spanish: Color 1
 Type: CIAttributeTypeColor

Notes:

Name: inputColor1
 Class: CIColorMBS (CIColor)
 DisplayName English: Color 2
 DisplayName German: Farbe 2
 DisplayName French: Couleur 2
 DisplayName Italian: Colore 2
 DisplayName Spanish: Color 2
 Type: CIAttributeTypeColor

See AttributeinputColor1 for more details.
 (Read and Write property)

5.101.11 inputPoint0 as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Point 1

Notes:

Name: inputPoint0
 Class: CIVectorMBS (CIVector)
 DisplayName English: Point 1
 DisplayName German: Punkt 1
 DisplayName French: Point 1
 DisplayName Italian: Punto 1
 DisplayName Spanish: Punto 1
 Type: CIAttributeTypePosition

See AttributeinputPoint0 for more details.
 (Read and Write property)

5.101.12 inputPoint1 as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Point 2

Notes:

Name:	inputPoint1
Class:	CIVectorMBS (CIVector)
DisplayName English:	Point 2
DisplayName German:	Punkt 2
DisplayName French:	Point 2
DisplayName Italian:	Punto 2
DisplayName Spanish:	Punto 2
Type:	CIAAttributeTypePosition

See AttributeinputPoint1 for more details.
(Read and Write property)

5.102 class CIFilterLinearToSRGBToneCurveMBS

5.102.1 class CIFilterLinearToSRGBToneCurveMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Linear to sRGB Tone Curve filter.

Notes:

Details for this filter:

FilterName:	CILinearToSRGBToneCurve
DisplayName English:	Linear to sRGB Tone Curve
DisplayName German:	Lineare Farbtonkurve in eine sRGB-Farbtonkurve
DisplayName French:	Linaire vers courbe tonale sRGB
DisplayName Italian:	Da lineare a curva tonale sRGB
DisplayName Spanish:	Curva tonal de lineal a sRGB

Categories:

- CICategoryColorAdjustment: Color Adjustment
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.102.2 Methods

5.102.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.102.4 Properties

5.102.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Linear to sRGB Tone Curve attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.102.6 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

(Read and Write property)

Name:	inputImage
Class:	UIImageMBS (UIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	UIImageAttributeTypeImage

5.103 class CIFilterLineOverlayMBS

5.103.1 class CIFilterLineOverlayMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Line Overlay filter.

Notes:

Details for this filter:

FilterName:	CILineOverlay
DisplayName English:	Line Overlay
DisplayName German:	Linienberlagerung
DisplayName French:	Incrustation de lignes
DisplayName Italian:	Sovrapposizione linea
DisplayName Spanish:	Lnea superpuesta

Categories:

- CICategoryBuiltIn: Built-In
- CICategoryStillImage: Still Image
- CICategoryVideo: Video
- CICategoryStylize: Stylize

Input:

- inputImage: Image
- inputNRNoiseLevel: NR Noise Level
- inputNRSharpness: NR Sharpness
- inputEdgeIntensity: Edge Intensity
- inputThreshold: Threshold
- inputContrast: Contrast

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.103.2 Methods

5.103.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.103.4 Properties

5.103.5 AttributeinputContrast as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Line Overlay attribute.

Notes:

This attribute should have this content:

Name:	inputContrast
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Contrast
DisplayName German:	Kontrast
DisplayName French:	Contraste
DisplayName Italian:	Contrasto
DisplayName Spanish:	Contraste
DefaultNumber:	50
IdentityNumber:	1
MaxNumber:	0
MinNumber:	0.25
SliderMaxNumber:	200
SliderMinNumber:	0.25

(Read only property)

5.103.6 AttributeinputEdgeIntensity as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Line Overlay attribute.

Notes:

This attribute should have this content:

Name:	inputEdgeIntensity
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Edge Intensity
DisplayName German:	Edge Intensity
DisplayName French:	Intensit des contours
DisplayName Italian:	Intensit margini
DisplayName Spanish:	Intensidad del borde
DefaultNumber:	1
IdentityNumber:	0
SliderMaxNumber:	200
SliderMinNumber:	0

(Read only property)

5.103.7 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Line Overlay attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.103.8 AttributeinputNRNoiseLevel as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Line Overlay attribute.

Notes:

This attribute should have this content:

Name:	inputNRNoiseLevel
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	NR Noise Level
DisplayName German:	NR Rauschpegel
DisplayName French:	Niveau de bruit NR
DisplayName Italian:	Livello disturbo NS
DisplayName Spanish:	Nivel de ruido NR
DefaultNumber:	0.07
IdentityNumber:	0
SliderMaxNumber:	0.1
SliderMinNumber:	0

(Read only property)

5.103.9 AttributeinputNRSharpness as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Line Overlay attribute.

Notes:

This attribute should have this content:

Name:	inputNRSharpness
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	NR Sharpness
DisplayName German:	NR Schrfe
DisplayName French:	Nettet NR
DisplayName Italian:	Nitidezza NR
DisplayName Spanish:	Nitidez NR
DefaultNumber:	0.71
IdentityNumber:	0
SliderMaxNumber:	2
SliderMinNumber:	0

(Read only property)

5.103.10 AttributeinputThreshold as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Line Overlay attribute.

Notes:

This attribute should have this content:

Name:	inputThreshold
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Threshold
DisplayName German:	Schwellenwert
DisplayName French:	Seuil
DisplayName Italian:	Soglia
DisplayName Spanish:	Umbral
DefaultNumber:	0.1
IdentityNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

(Read only property)

5.103.11 inputContrast as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Contrast

Notes:

Name:	inputContrast
Class:	double (NSNumber)
DisplayName English:	Contrast
DisplayName German:	Kontrast
DisplayName French:	Contraste
DisplayName Italian:	Contrasto
DisplayName Spanish:	Contraste
Type:	CIAttributeTypeScalar

See AttributeinputContrast for more details.

(Read and Write property)

5.103.12 inputEdgeIntensity as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Edge Intensity

Notes:

Name:	inputEdgeIntensity
Class:	double (NSNumber)
DisplayName English:	Edge Intensity
DisplayName German:	Edge Intensity
DisplayName French:	Intensit des contours
DisplayName Italian:	Intensit margini
DisplayName Spanish:	Intensidad del borde
Type:	CIAttributeTypeScalar

See AttributeinputEdgeIntensity for more details.
(Read and Write property)

5.103.13 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.103.14 inputNRNoiseLevel as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute NR Noise Level

Notes:

See AttributeinputNRNoiseLevel for more details.

Name: inputNRNoiseLevel
 Class: double (NSNumber)
 DisplayName English: NR Noise Level
 DisplayName German: NR Rauschpegel
 DisplayName French: Niveau de bruit NR
 DisplayName Italian: Livello disturbo NS
 DisplayName Spanish: Nivel de ruido NR
 Type: CIAttributeTypeScalar

(Read and Write property)

5.103.15 inputNRSharpness as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute NR Sharpness

Notes:

Name: inputNRSharpness
 Class: double (NSNumber)
 DisplayName English: NR Sharpness
 DisplayName German: NR Schrfte
 DisplayName French: Nettet NR
 DisplayName Italian: Nitidezza NR
 DisplayName Spanish: Nitidez NR
 Type: CIAttributeTypeScalar

See AttributeinputNRSharpness for more details.
(Read and Write property)

5.103.16 inputThreshold as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Threshold

Notes:

See AttributeinputThreshold for more details.
(Read and Write property)

Name:	inputThreshold
Class:	double (NSNumber)
DisplayName English:	Threshold
DisplayName German:	Schwellenwert
DisplayName French:	Seuil
DisplayName Italian:	Soglia
DisplayName Spanish:	Umbral
Type:	CIAttributeTypeScalar

5.104 class CIFilterLineScreenMBS

5.104.1 class CIFilterLineScreenMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Line Screen filter.

Notes:

Details for this filter:

FilterName:	CILineScreen
DisplayName English:	Line Screen
DisplayName German:	Liniertes Halbtonraster
DisplayName French:	cran traits
DisplayName Italian:	Schermo lineare
DisplayName Spanish:	Pantalla de lineas

Categories:

- CICategoryHalftoneEffect: Halftone Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCenter: Center
- inputAngle: Angle
- inputWidth: Width
- inputSharpness: Sharpness

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.104.2 Methods

5.104.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.104.4 Properties

5.104.5 AttributeinputAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Line Screen attribute.

Notes:

This attribute should have this content:

Name:	inputAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
DefaultNumber:	0
IdentityNumber:	0
SliderMaxNumber:	3.141593
SliderMinNumber:	-3.141593

(Read only property)

5.104.6 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Line Screen attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

5.104.7 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Line Screen attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.104.8 AttributeinputSharpness as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Line Screen attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputSharpness
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Sharpness
DisplayName German:	Schrfe
DisplayName French:	Nettet
DisplayName Italian:	Nitidezza
DisplayName Spanish:	Nitidez
DefaultNumber:	0.7
IdentityNumber:	0
MaxNumber:	1
MinNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

5.104.9 AttributeinputWidth as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Line Screen attribute.

Notes:

This attribute should have this content:

Name:	inputWidth
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
DefaultNumber:	6
IdentityNumber:	0
MaxNumber:	0
MinNumber:	1
SliderMaxNumber:	50
SliderMinNumber:	2

(Read only property)

5.104.10 inputAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Angle
Notes:

Name:	inputAngle
Class:	double (NSNumber)
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
Type:	CIAttributeTypeAngle

See AttributeinputAngle for more details.
 (Read and Write property)

5.104.11 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center
Notes:

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

See AttributeinputCenter for more details.
 (Read and Write property)

5.104.12 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

See AttributeinputImage for more details.
 (Read and Write property)

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

5.104.13 inputSharpness as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Sharpness

Notes:

Name:	inputSharpness
Class:	double (NSNumber)
DisplayName English:	Sharpness
DisplayName German:	Schrfe
DisplayName French:	Nettet
DisplayName Italian:	Nitidezza
DisplayName Spanish:	Nitidez
Type:	CIAttributeTypeScalar

See AttributeinputSharpness for more details.
(Read and Write property)

5.104.14 inputWidth as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Width

Notes:

Name:	inputWidth
Class:	double (NSNumber)
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
Type:	CIAttributeTypeDistance

See AttributeinputWidth for more details.

5.104. *CLASS CIFILTERLINESCREENMBS*

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(Read and Write property)

5.105 class CIFilterLuminosityBlendModeMBS

5.105.1 class CIFilterLuminosityBlendModeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Luminosity Blend Mode filter.

Notes:

Details for this filter:

FilterName:	CILuminosityBlendMode
DisplayName English:	Luminosity Blend Mode
DisplayName German:	Mischmethode Leuchtkraft
DisplayName French:	Mode de fusion Luminosit
DisplayName Italian:	Modalit sfumatura luminosit
DisplayName Spanish:	Modo de mezcla por luminosidad

Categories:

- CICategoryCompositeOperation: Composite Operation
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputBackgroundImage: Background Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.105.2 Methods

5.105.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.105.4 Properties

5.105.5 AttributeinputBackgroundImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Luminosity Blend Mode attribute.

Notes:

This attribute should have this content:

Name:	inputBackgroundImage
Class:	CIImageMBS
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.105.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Luminosity Blend Mode attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.105.7 inputBackgroundImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Background Image

Notes:

Name:	inputBackgroundImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
Type:	

See AttributeinputBackgroundImage for more details.
(Read and Write property)

5.105.8 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.106 class CIFilterMaskedVariableBlurMBS

5.106.1 class CIFilterMaskedVariableBlurMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Masked Variable Blur filter.

Notes:

Details for this filter:

FilterName:	CIMaskedVariableBlur
DisplayName English:	Masked Variable Blur
DisplayName German:	Maskierte variable Weichzeichnung
DisplayName French:	Flou variable masqu
DisplayName Italian:	Sfocatura variabile mascherata
DisplayName Spanish:	Desenfoque variable con mscara

Categories:

- CICategoryBlur: Blur
- CICategoryStillImage: Still Image
- CICategoryVideo: Video
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputMask: Mask
- inputRadius: Radius

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.106.2 Methods

5.106.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.
Notes: On success the handle property is not zero and the filter has the default values set.

5.106.4 Properties

5.106.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Masked Variable Blur attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.106.6 AttributeinputMask as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Masked Variable Blur attribute.

Notes:

This attribute should have this content:

(Read only property)

Name: inputMask
 Class: CIIImageMBS
 DisplayName: Mask
 DefaultNumber: 0
 IdentityNumber: 0

5.106.7 AttributeinputRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Masked Variable Blur attribute.

Notes:

This attribute should have this content:

Name: inputRadius
 Class: double
 Type: CIAttributeTypeScalar
 DisplayName English: Radius
 DisplayName German: Radius
 DisplayName French: Rayon
 DisplayName Italian: Raggio
 DisplayName Spanish: Radio
 DefaultNumber: 5
 IdentityNumber: 0
 SliderMaxNumber: 10
 SliderMinNumber: 0

(Read only property)

5.106.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

(Read and Write property)

5.106.9 inputMask as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Mask

Notes:

Name: inputImage
 Class: CIIImageMBS (CIIImage)
 DisplayName English: Image
 DisplayName German: Bild
 DisplayName French: Image
 DisplayName Italian: Immagine
 DisplayName Spanish: Imagen
 Type: CIAttributeTypeImage

Name: inputMask
 Class: CIIImageMBS (CIIImage)
 DisplayName English: Mask
 DisplayName German: Mask
 DisplayName French: Mask
 DisplayName Italian: Mask
 DisplayName Spanish: Mask
 Type:

See AttributeinputMask for more details.
(Read and Write property)

5.106.10 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Radius

Notes:

Name: inputRadius
 Class: double (NSNumber)
 DisplayName English: Radius
 DisplayName German: Radius
 DisplayName French: Rayon
 DisplayName Italian: Raggio
 DisplayName Spanish: Radio
 Type: CIAttributeTypeScalar

See AttributeinputRadius for more details.
(Read and Write property)

5.107 class CIFilterMaskToAlphaMBS

5.107.1 class CIFilterMaskToAlphaMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Mask to Alpha filter.

Notes:

Details for this filter:

FilterName:	CIMaskToAlpha
DisplayName English:	Mask to Alpha
DisplayName German:	Mit Alpha-Kanal maskieren
DisplayName French:	Masque vers alpha
DisplayName Italian:	Maschera ad alfa
DisplayName Spanish:	Mscara a alfa

Categories:

- CICategoryColorEffect: Color Effect
- CICategoryVideo: Video
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.107.2 Methods

5.107.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.107.4 Properties

5.107.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Mask to Alpha attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.107.6 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

(Read and Write property)

Name:	inputImage
Class:	UIImageMBS (UIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	UIImageTypeImage

5.108 class CIFilterMaximumComponentMBS

5.108.1 class CIFilterMaximumComponentMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Maximum Component filter.

Notes:

Details for this filter:

FilterName:	CIMaximumComponent
DisplayName English:	Maximum Component
DisplayName German:	Maximaler Kanal
DisplayName French:	Composante maximum
DisplayName Italian:	Componente massimo
DisplayName Spanish:	Componente mximo

Categories:

- CICategoryColorEffect: Color Effect
- CICategoryVideo: Video
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.108.2 Methods

5.108.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.108.4 Properties

5.108.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Maximum Component attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.108.6 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

(Read and Write property)

Name:	inputImage
Class:	CImageMBS (CImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAtributeTypeImage

5.109 class CIFilterMaximumCompositingMBS

5.109.1 class CIFilterMaximumCompositingMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Maximum filter.

Notes:

Details for this filter:

FilterName:	CIMaximumCompositing
DisplayName English:	Maximum
DisplayName German:	Maximum
DisplayName French:	Maximum
DisplayName Italian:	Massima
DisplayName Spanish:	Mximo

Categories:

- CICategoryCompositeOperation: Composite Operation
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryHighDynamicRange: High Dynamic Range
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputBackgroundImage: Background Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.109.2 Methods

5.109.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.109.4 Properties

5.109.5 AttributeinputBackgroundImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Maximum attribute.

Notes:

This attribute should have this content:

Name:	inputBackgroundImage
Class:	CIImageMBS
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.109.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Maximum attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.109.7 inputBackgroundImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Background Image

Notes:

Name:	inputBackgroundImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
Type:	

See AttributeinputBackgroundImage for more details.
(Read and Write property)

5.109.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See `AttributeinputImage` for more details.
(Read and Write property)

5.110 class CIFilterMBS

5.110.1 class CIFilterMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** CIFilter are filter objects for CoreImage that encapsulate the filter with its attributes.

Notes: Mac OS X 10.4 only.

5.110.2 Methods

5.110.3 attributesDictionary as dictionary

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a dictionary of key-value pairs that describe the filter.

Example:

```
dim d as new CIFilterComicEffectMBS
dim a as Dictionary = d.attributesDictionary
```

```
break // see values in debugger
```

Notes: Returns a dictionary that contains a key for each input and output parameter for the filter. Each key is a dictionary that contains all the attributes of an input or output parameter.

5.110.4 AttributesItem(index as Integer) as CIAttributeMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the attribute with the given index.

Notes:

Index is zero based.

Nil on any error.

See also:

- 5.110.5 AttributesItem(name as string) as CIAttributeMBS

1104

5.110.5 AttributesItem(name as string) as CIAttributeMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the attribute with the given name.

Notes: nil on error.

See also:

- 5.110.4 AttributesItem(index as Integer) as CIAttributeMBS 1104

5.110.6 AttributesName(index as Integer) as string

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The name of the attribute with the given index.

5.110.7 Categories as string()

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Array of filter category names.

Notes: nil on any error.

5.110.8 Constructor(Handle as Integer)

Plugin Version: 12.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Initializes object with given object reference.

Notes:

ref should be a CIFilter* and the object is retained.

Raises UnsupportedOperationException if object is not a CIFilter.

5.110.9 filterArrayFromSerializedXMP(xmpData as MemoryBlock, extent as CGRectMBS, byref NSError as Variant) as CIFilterMBS()

Plugin Version: 14.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array of filter objects de-serialized from XMP data.

Notes:

xmpData: The XMP data created previously by calling serializedXMPFromFilters.

extent: The extent of the image from which the XMP data was extracted.

e: The address of an variant for receiving errors, otherwise nil. This is a NSErrorMBS.

Available in OS X v10.9 and later.

5.110.10 FilterNamesInCategories(categories() as String) as string()

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array containing all published filter names that belong to all listed categories.

Notes:

categories: string array with the constants kCICategory*.
Returns nil on any error.

5.110.11 FilterNamesInCategory(category as String) as string()

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array containing all published filter names in a category.

Example:

```
// load list of filters into Listbox

dim a() as string
dim cf as CIFilterMBS

// get all image categories
a=CIFilterMBS.FilterNamesInCategory(CIFilterMBS.kCICategoryStillImage)

StaticText1.text=str(UBound(a))+” filters.”

for each s as string in a

// add to listbox
Listbox1.AddRow s

// load this filter
cf=CIFilterMBS.FilterWithName(s)

// And look into the attributes for the Displayname
if cf<>nil then
Listbox1.cell(Listbox1.LastIndex,1)=cf.DisplayName
end if
next
```

Notes: nil on any error.

5.110.12 FilterWithHandle(handle as Integer) as CIFilterMBS

Plugin Version: 10.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new filter object based on the given handle.

Example:

```
// some filter
dim x as new CIFilterCropMBS

// create a copy
dim f as CIFilterMBS = CIFilterMBS.FilterWithHandle(x.Handle)

// and show name
MsgBox f.FilterName
```

Notes:

The object is retained.
Returns nil on error.

5.110.13 FilterWithName(name as String) as CIFilterMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new filter of type 'name'. All input values will be undefined.

Example:

```
dim cf as CIFilterMBS
// load this filter
cf=CIFilterMBS.FilterWithName("CIAffineTile")
```

Notes: Returns filter object for the name if found.

5.110.14 InputKeys as string()

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array containing the names of all inputs in the filter.

5.110.15 kCIApplOptionColorSpace as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the apply options.

Notes:

If used, the value of the kCIApplOptionColorSpace key be must be an RGB CGColorSpaceMBS.

Using this option specifies that the output of the kernel is in this color space.

If not specified, the output of the kernel is in the working color space of the rendering CIColorContextMBS.

5.110.16 kCIApplOptionDefinition as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the apply options.

5.110.17 kCIApplOptionExtent as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the apply options.

5.110.18 kCIApplOptionUserInfo as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the apply options.

5.110.19 kCIApplOptionAttributeClass as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Class name of the filter.

Notes: The class name of the filter.

5.110.20 kCIApplOptionAttributeDefault as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Default value for the slider.

Notes: The default value, specified as a floating-point value, for a filter parameter.

5.110.21 kCIAtributeDescription as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the filter attributes.

Notes: The localized description of the filter. This description should inform the end user what the filter does and be short enough to display in the user interface for the filter. It is not intended to be technically detailed.

5.110.22 kCIAtributeDisplayName as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Display name of this attribute (localized).

Notes: The localized version of the filter name that is displayed in the user interface.

5.110.23 kCIAtributeFilterAvailable_iOS as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the filter attributes.

Notes: The iOS version in which the filter first became available, specified as a string.

5.110.24 kCIAtributeFilterAvailable_Mac as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the filter attributes.

Notes: The OS X version in which the filter first became available, specified as a string.

5.110.25 kCIAtributeFilterCategories as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Array of filter category names (see below)

Notes: An array of filter category keys that specifies all the categories in which the filter is a member.

5.110.26 kCIAtributeFilterDisplayName as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Name of the filter intended for UI display (eg. localized).

Notes: The localized display name of the attribute.

5.110.27 kCIAAttributeFilterName as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constant for the name of the filter.

5.110.28 kCIAAttributeIdentity as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The identity value for this attribute.

Notes: If supplied as a value for a parameter, the parameter has no effect on the input image.

5.110.29 kCIAAttributeMax as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Maximum value for the attribute.

Notes: The maximum value for a filter parameter, specified as a floating-point value.

5.110.30 kCIAAttributeMin as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Minimum value for the attribute.

Notes: The minimum value for a filter parameter, specified as a floating-point value.

5.110.31 kCIAAttributeName as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the filter attributes.

Notes: The name of the attribute.

5.110.32 kCIAAttributeReferenceDocumentation as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the filter attributes.

Notes: The localized reference documentation for the filter. The reference should provide developers with technical details.

5.110.33 kCIAttributeSliderMax as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Default value for the slider.

Notes: The maximum value, specified as a floating-point value, to use for a slider that controls input values for a filter parameter.

5.110.34 kCIAttributeSliderMin as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Minimum value for the slider.

Notes: The minimum value, specified as a floating-point value, to use for a slider that controls input values for a filter parameter.

5.110.35 kCIAttributeType as string

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Type of the attribute.
Notes:

An attribute may have a type which defines what kind this attribute type is.
e.g. a number attribute may be a time or a distance.

5.110.36 kCIAttributeTypeAngle as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the types for numbers.

Notes: An angle.

5.110.37 kCIAttributeTypeBoolean as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the types for numbers.

Notes: A Boolean value.

5.110.38 kCIAttributeTypeColor as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the attribute data types.

Notes: A Core Image color (CIColor object) that specifies red, green, and blue component values.

5.110.39 kCIAttributeTypeCount as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the attribute data types.

Notes: A positive integer value.

5.110.40 kCIAttributeTypeDistance as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the types for numbers.

Notes: A distance.

5.110.41 kCIAttributeTypeGradient as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the types for colors.

Notes: An n-by-1 gradient image used to describe a color ramp.

5.110.42 kCIAttributeTypeImage as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the attribute data types.

Notes: A CIImage object.

5.110.43 kCIAttributeTypeInteger as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the attribute data types.

Notes: An integer value.

5.110.44 kCIAttributeTypeOffset as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the types for 2-element vectors.

Notes: An offset. (A 2-element vector type.)

5.110.45 kCIAttributeTypeOpaqueColor as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the types for colors.

Notes: A Core Image color (CIColor object) that specifies red, green, and blue component values. Use this key for colors with no alpha component. If the key is not present, Core Image assumes color with alpha.

5.110.46 kCIAttributeTypePosition as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the types for 2-element vectors.

Notes: A two-dimensional location in the working coordinate space. (A 2-element vector type.)

5.110.47 kCIAttributeTypePosition3 as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the types for 3-element vectors.

Notes: A three-dimensional location in the working coordinate space. (A 3-element vector type.)

5.110.48 kCIAttributeTypeRectangle as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the types for 4-element vectors.

Notes: A Core Image vector that specifies the x and y values of the rectangle origin, and the width (w) and height (h) of the rectangle. The vector takes the form [x, y, w, h]. (A 4-element vector type.)

5.110.49 kCIAttributeTypeScalar as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the types for numbers.

Notes: A scalar value.

5.110.50 kCIAttributeTypeTime as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the attribute data types.

Notes: A parametric time for transitions, specified as a floating-point value in the range of 0.0 to 1.0.

5.110.51 kCIAttributeTypeTransform as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the attribute data types.

Notes: An CGAffineTransform is associated with attribute.

5.110.52 kCICategoryBlur as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the categories.

Notes: A filter that softens images, decreasing the contrast between the edges in an image. Examples of blur filters are Gaussian blur and zoom blur.

5.110.53 kCICategoryBuiltIn as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the categories.

Notes: A filter provided by Core Image. This distinguishes built-in filters from plug-in filters.

5.110.54 kCICategoryColorAdjustment as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the categories.

Notes: A filter that changes color values. Color adjustment filters are used to eliminate color casts, adjust hue, and correct brightness and contrast. Color adjustment filters do not perform color management; ColorSync performs color management. You can use Quartz 2D to specify the color space associated with an image.

5.110.55 kCICategoryColorEffect as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the categories.

Notes: A filter that modifies the color of an image to achieve an artistic effect. Examples of color effect filters include filters that change a color image to a sepia image or a monochrome image or that produces such effects as posterizing.

5.110.56 kCICategoryCompositeOperation as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the categories. **Notes:** A filter operates on two image sources, using the color values of one image to operate on the other. Composite filters perform computations such as computing maximum values, minimum values, and multiplying values between input images. You can use compositing filters to add effects to an image, crop an image, and achieve a variety of other effects.

5.110.57 kCICategoryDistortionEffect as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the categories. **Notes:** A filter that reshapes an image by altering its geometry to create a 3D effect. Using distortion filters, you can displace portions of an image, apply lens effects, make a bulge in an image, and perform other operation to achieve an artistic effect.

5.110.58 kCICategoryFilterGenerator as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the categories. **Notes:** A filter created by chaining several filters together and then packaged as a CIFilterGenerator object.

5.110.59 kCICategoryGenerator as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the categories. **Notes:** A filter that generates a pattern, such as a solid color, a checkerboard, or a star shine. The generated output is typically used as input to another filter.

5.110.60 kCICategoryGeometryAdjustment as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the categories. **Notes:** A filter that changes the geometry of an image. Some of these filters are used to warp an image to achieve an artistic effects, but these filters can also be used to correct problems in the source image. For example, you can apply an affine transform to straighten an image that is rotated with respect to the horizon.

5.110.61 kCICategoryGradient as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the categories. **Notes:** A filter that generates a fill whose color varies smoothly. Exactly how color varies depends on the

type of gradientlinear, radial, or Gaussian.

5.110.62 kCICategoryHalftoneEffect as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the categories. **Notes:** A filter that simulates a variety of halftone screens, to mimic the halftone process used in print media. The output of these filters has the familiar newspaper look of the various dot patterns. Filters are typically named after the pattern created by the virtual halftone screen, such as circular screen or hatched screen.

5.110.63 kCICategoryHighDynamicRange as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the categories. **Notes:** A filter that works on high dynamic range pixels.

5.110.64 kCICategoryInterlaced as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the categories. **Notes:** A filter that works on interlaced images.

5.110.65 kCICategoryNonSquarePixels as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the categories. **Notes:** A filter that works on non-square pixels.

5.110.66 kCICategoryReduction as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the categories. **Notes:** A filter that reduces image data. These filters are used to solve image analysis problems.

5.110.67 kCICategorySharpen as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the categories. **Notes:** A filter that sharpens images, increasing the contrast between the edges in an image. Examples of sharpen filters are unsharp mask and sharpen luminance.

5.110.68 kCICategoryStillImage as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the categories.
Notes: A filter that works on still images.

5.110.69 kCICategoryStylize as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the categories.
Notes: A filter that makes a photographic image look as if it was painted or sketched. These filters are typically used alone or in combination with other filters to achieve artistic effects.

5.110.70 kCICategoryTileEffect as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the categories.
Notes: A filter that typically applies an effect to an image and then create smaller versions of the image (tiles), which are then laid out to create a pattern thats infinite in extent.

5.110.71 kCICategoryTransition as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the categories.
Notes: A filter that provides a bridge between two or more images by applying a motion effect that defines how the pixels of a source image yield to that of the destination image.

5.110.72 kCICategoryVideo as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the categories.
Notes: A filter that works on video images.

5.110.73 kCIIInputAngleKey as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the input keys.

5.110.74 kCIInputAspectRatioKey as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the input keys.

5.110.75 kCIInputBackgroundImageKey as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the input keys.

5.110.76 kCIInputBiasKey as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the input keys.

5.110.77 kCIInputBrightnessKey as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the input keys.

5.110.78 kCIInputCenterKey as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the input keys.

5.110.79 kCIInputColorKey as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the input keys.

5.110.80 kCIInputContrastKey as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the input keys.

5.110.81 kCIInputEVKey as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the input keys.

5.110.82 kCIInputExtentKey as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the input keys.

5.110.83 kCIInputGradientImageKey as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the input keys.

5.110.84 kCIInputImageKey as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the input keys.

5.110.85 kCIInputIntensityKey as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the input keys.

5.110.86 kCIInputMaskImageKey as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the input keys.

5.110.87 kCIInputRadiusKey as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the input keys.

5.110.88 kCIInputRefractionKey as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the input keys.

5.110.89 kCIInputSaturationKey as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the input keys.

5.110.90 kCIInputScaleKey as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the input keys.

5.110.91 kCIInputShadingImageKey as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the input keys.

5.110.92 kCIInputSharpnessKey as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the input keys.

5.110.93 kCIInputTargetImageKey as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the input keys.

5.110.94 kCIInputTimeKey as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the input keys.

5.110.95 kCIInputTransformKey as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the input keys.

5.110.96 kCIInputVersionKey as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the input keys.

5.110.97 kCIInputWidthKey as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the input keys.

5.110.98 kCIOutputImageKey as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The key for the output image.

5.110.99 kCIUIParameterSet as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Sets of controls for various user scenarios.

Notes: The set of input parameters to use. The associated value can be kCIUISetBasic, kCIUISetIntermediate, kCIUISetAdvanced, or kCIUISetDevelopment.

5.110.100 kCIUISetAdvanced as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the UI Set constants.

Notes: Controls that are appropriate for an advanced user scenario.

5.110.101 kCIUISetBasic as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the UI Set constants.

Notes: Controls that are appropriate for a basic user scenario, that is, the minimum of settings to control the filter.

5.110.102 kCIUISetDevelopment as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the UI Set constants.

Notes: Controls that should be visible only for development purposes.

5.110.103 kCIUISetIntermediate as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the UI Set constants.

Notes: Controls that are appropriate for an intermediate user scenario.

5.110.104 localizedDescriptionForFilterName(filterName as String) as String

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the localized description of a filter for display in the user interface.

Example:

```
MsgBox CIFilterMBS.localizedDescriptionForFilterName("CIComicEffect")
```

Notes:

filterName: The filter name.

Returns the localized description of the filter.

Available in OS X v10.5 and later.

5.110.105 LocalizedNameForCategory(name as String) as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The localized name of a category.

5.110.106 LocalizedNameForFilterName(name as String) as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the localized name of a filter.

5.110.107 localizedReferenceDocumentationForFilterName(filterName as String) as String

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the location of the localized reference documentation that describes the filter.

Example:

MsgBox CIFilterMBS.localizedReferenceDocumentationForFilterName("CIComicEffect")

Notes:

filterName: The filter name.

Returns an URL that specifies the location of the localized documentation, or "" if the filter does not provide localized reference documentation.

The URL can be a local file or a remote document on a web server. Because filters created prior to OS X v10.5 could return nil, you should be make sure that your code handles this case gracefully.

Available in OS X v10.5 and later.

5.110.108 OutputKeys as string()

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array containing the names of all outputs in the filter.

5.110.109 serializedXMPFromFilters(filters() as CIFilterMBS, extent as CGRectMBS) as Memoryblock

Plugin Version: 14.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Serializes filter parameters into XMP form that is suitable for embedding in an image.

Notes:

filters: The array of filters to serialize. See Discussion for the filters that can be serialized.

extent: The extent of the input image to the filter.

At this time the only filters classes that can be serialized using this method are, CIAffineTransform, CICrop, and the filters returned by the CIImage methods autoAdjustmentFilters and autoAdjustmentFiltersWithOptions. The parameters of other filter classes will not be serialized.

Available in OS X v10.9 and later.

5.110.110 SetDefaults

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Sets all inputs to their default values (where default values are defined, other inputs are left as-is).

5.110.111 Properties

5.110.112 AttributesCount as Integer

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Number of attributes.
Notes: (Read only property)

5.110.113 description as String

Plugin Version: 9.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the textual description for this filter.
Notes: (Read only property)

5.110.114 DisplayName as string

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Name of the filter intended for UI display (eg. localized)
Example:

```
dim cf as new CIFilterLuminosityBlendModeMBS
MsgBox cf.DisplayName // shows: "Luminosity Blend Mode"
```

Notes: (Read only property)

5.110.115 Enabled as Boolean

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Whether filter is enabled for animation.
Notes:

The 'enabled' property is used only by CoreAnimation and is animatable.
In Core Animation, a CIFilter only applied to its input when this property is set to true.
(Read and Write property)

5.110.116 FilterName as string

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Name of the filter.
Notes: (Read only property)

5.110.117 Handle as Integer

Plugin Version: 12.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The handle to the internal used CIFilter reference.
Notes: (Read only property)

5.110.118 Name as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The filter name.
Notes:

On OSX this property is read-write. This can be useful when using CIFilters with CALayers to construct unique keypaths.

For example, to set an attribute of a filter attached to a layer, a path such as "filters.myExposureFilter.inputEV" could be used.

CALayer animations may also access filter attributes via key-paths.

(Read and Write property)

5.110.119 outputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The output image.
Notes:

Available directly on OS X 10.10 or newer, but our plugin implements it also for older versions by using valueForKey internally.

(Read only property)

5.110.120 ValueAsAffineTransform(key as string) as NSAffineTransformMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Get or set a value as an affine transform.

Notes:

On if attributes classname is NSAffineTransform.

(Read and Write computed property)

5.110.121 ValueAsCIColor(key as string) as CIColorMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Get or set a value as a color.

Notes:

On if attributes classname is CIColor.
(Read and Write computed property)

5.110.122 ValueAsCIImage(key as string) as CIImageMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Get or set a value as an image.

Notes:

On if attributes classname is NSImage.
(Read and Write computed property)

5.110.123 ValueAsCIVector(key as string) as CIVectorMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Get or set a value as a vector.

Notes:

On if attributes classname is CIVector.
(Read and Write computed property)

5.110.124 ValueAsData(key as string) as memoryblock

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Get or set a value as a memoryblock.

Notes:

On if attributes classname is memoryblock.
(Read and Write computed property)

5.110.125 ValueAsNumber(key as string) as Double

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Get or set a value as a double.

Notes:

On if attributes classname is number.
(Read and Write computed property)

5.110.126 ValueAsString(key as string) as String

Plugin Version: 11.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Get or set a value as a string.

Notes:

On if attributes classname is NSString.
(Read and Write computed property)

5.111 class CIFilterMedianFilterMBS

5.111.1 class CIFilterMedianFilterMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Median filter.

Notes:

Details for this filter:

FilterName:	CIMedianFilter
DisplayName English:	Median
DisplayName German:	Median
DisplayName French:	Mdian
DisplayName Italian:	Mediana
DisplayName Spanish:	Mediano

Categories:

- CICategoryBlur: Blur
- CICategoryStillImage: Still Image
- CICategoryVideo: Video
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.111.2 Methods

5.111.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.111.4 Properties

5.111.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Median attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.111.6 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

(Read and Write property)

Name:	inputImage
Class:	CImageMBS (CImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAtributeTypeImage

5.112 class CIFilterMinimumComponentMBS

5.112.1 class CIFilterMinimumComponentMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Minimum Component filter.

Notes:

Details for this filter:

FilterName:	CIMinimumComponent
DisplayName English:	Minimum Component
DisplayName German:	Minimaler Kanal
DisplayName French:	Composante minimum
DisplayName Italian:	Componente minimo
DisplayName Spanish:	Componente mnimo

Categories:

- CICategoryColorEffect: Color Effect
- CICategoryVideo: Video
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.112.2 Methods

5.112.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.112.4 Properties

5.112.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Minimum Component attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.112.6 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

(Read and Write property)

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

5.113 class CIFilterMinimumCompositingMBS

5.113.1 class CIFilterMinimumCompositingMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Minimum filter.

Notes:

Details for this filter:

FilterName:	CIMinimumCompositing
DisplayName English:	Minimum
DisplayName German:	Minimum
DisplayName French:	Minimum
DisplayName Italian:	Minima
DisplayName Spanish:	Mnimo

Categories:

- CICategoryCompositeOperation: Composite Operation
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryHighDynamicRange: High Dynamic Range
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputBackgroundImage: Background Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.113.2 Methods

5.113.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.113.4 Properties

5.113.5 AttributeinputBackgroundImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Minimum attribute.

Notes:

This attribute should have this content:

Name:	inputBackgroundImage
Class:	CIImageMBS
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.113.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Minimum attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.113.7 inputBackgroundImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Background Image

Notes:

Name:	inputBackgroundImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image d'arrière-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
Type:	

See AttributeinputBackgroundImage for more details.
(Read and Write property)

5.113.8 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See `AttributeinputImage` for more details.
(Read and Write property)

5.114 class CIFilterModTransitionMBS

5.114.1 class CIFilterModTransitionMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Mod filter.

Notes:

Details for this filter:

FilterName:	CIModTransition
DisplayName English:	Mod
DisplayName German:	Mod
DisplayName French:	Mod
DisplayName Italian:	Mod
DisplayName Spanish:	Mod

Categories:

- CICategoryTransition: Transition
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputTargetImage: Target Image
- inputCenter: Center
- inputTime: Time
- inputAngle: Angle
- inputRadius: Radius
- inputCompression: Compression

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.114.2 Methods

5.114.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.114.4 Properties

5.114.5 AttributeinputAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Mod attribute.

Notes:

This attribute should have this content:

Name:	inputAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
DefaultNumber:	2
IdentityNumber:	0
SliderMaxNumber:	6.283185
SliderMinNumber:	-6.283185

(Read only property)

5.114.6 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Mod attribute.

Notes:

This attribute should have this content:

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

(Read only property)

5.114.7 AttributeinputCompression as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Mod attribute.

Notes:

This attribute should have this content:

Name:	inputCompression
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Compression
DisplayName German:	Komprimierung
DisplayName French:	Compression
DisplayName Italian:	Compressione
DisplayName Spanish:	Compresin
DefaultNumber:	300
IdentityNumber:	0
MaxNumber:	0
MinNumber:	1
SliderMaxNumber:	800
SliderMinNumber:	100

(Read only property)

5.114.8 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Mod attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.114.9 AttributeinputRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Mod attribute.

Notes:

This attribute should have this content:

(Read only property)

5.114.10 AttributeinputTargetImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Mod attribute.

Notes:

This attribute should have this content:

(Read only property)

Name: inputRadius
 Class: double
 Type: CIAttributeTypeDistance
 DisplayName English: Radius
 DisplayName German: Radius
 DisplayName French: Rayon
 DisplayName Italian: Raggio
 DisplayName Spanish: Radio
 DefaultNumber: 150
 IdentityNumber: 0
 MaxNumber: 0
 MinNumber: 1
 SliderMaxNumber: 200
 SliderMinNumber: 1

Name: inputTargetImage
 Class: CIImageMBS
 DisplayName English: Target Image
 DisplayName German: Zielbild
 DisplayName French: Image cible
 DisplayName Italian: Immagine target
 DisplayName Spanish: Imagen de destino
 DefaultNumber: 0
 IdentityNumber: 0

5.114.11 AttributeinputTime as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Mod attribute.

Notes:

This attribute should have this content:

(Read only property)

5.114.12 inputAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Angle

Notes:

See AttributeinputAngle for more details.

(Read and Write property)

Name: inputTime
 Class: double
 Type: CIAAttributeTypeTime
 DisplayName English: Time
 DisplayName German: Zeit
 DisplayName French: Dure
 DisplayName Italian: Tempo
 DisplayName Spanish: Tiempo
 DefaultNumber: 0
 IdentityNumber: 0
 MaxNumber: 1
 MinNumber: 0
 SliderMaxNumber: 1
 SliderMinNumber: 0

Name: inputAngle
 Class: double (NSNumber)
 DisplayName English: Angle
 DisplayName German: Winkel
 DisplayName French: Angle
 DisplayName Italian: Angolo
 DisplayName Spanish: ngulo
 Type: CIAAttributeTypeAngle

5.114.13 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center

Notes:

Name: inputCenter
 Class: CIVectorMBS (CIVector)
 DisplayName English: Center
 DisplayName German: Mitte
 DisplayName French: Centre
 DisplayName Italian: Centro
 DisplayName Spanish: Centro
 Type: CIAAttributeTypePosition

See AttributeinputCenter for more details.
(Read and Write property)

5.114.14 inputCompression as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Compression

Notes:

Name:	inputCompression
Class:	double (NSNumber)
DisplayName English:	Compression
DisplayName German:	Komprimierung
DisplayName French:	Compression
DisplayName Italian:	Compressione
DisplayName Spanish:	Compresin
Type:	CIAttributeTypeDistance

See AttributeinputCompression for more details.
(Read and Write property)

5.114.15 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.114.16 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Radius

Notes:

See AttributeinputRadius for more details.

Name:	inputRadius
Class:	double (NSNumber)
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
Type:	CIAttributeTypeDistance

(Read and Write property)

5.114.17 inputTargetImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Target Image

Notes:

Name:	inputTargetImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Target Image
DisplayName German:	Zielbild
DisplayName French:	Image cible
DisplayName Italian:	Immagine target
DisplayName Spanish:	Imagen de destino
Type:	

See AttributeinputTargetImage for more details.

(Read and Write property)

5.114.18 inputTime as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Time

Notes:

See AttributeinputTime for more details.

(Read and Write property)

Name:	inputTime
Class:	double (NSNumber)
DisplayName English:	Time
DisplayName German:	Zeit
DisplayName French:	Dure
DisplayName Italian:	Tempo
DisplayName Spanish:	Tiempo
Type:	CIAttributeTypeTime

5.115 class CIFilterMotionBlurMBS

5.115.1 class CIFilterMotionBlurMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Motion Blur filter.

Notes:

Details for this filter:

FilterName:	CIMotionBlur
DisplayName English:	Motion Blur
DisplayName German:	Bewegungsunschärfe
DisplayName French:	Flou mouvement
DisplayName Italian:	Sfumatura movimento
DisplayName Spanish:	Difuminado de movimiento

Categories:

- CICategoryBlur: Blur
- CICategoryStillImage: Still Image
- CICategoryVideo: Video
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputRadius: Radius
- inputAngle: Angle

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.115.2 Methods

5.115.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.115.4 Properties

5.115.5 AttributeinputAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Motion Blur attribute.

Notes:

This attribute should have this content:

Name:	inputAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
DefaultNumber:	0
IdentityNumber:	0
SliderMaxNumber:	3.141593
SliderMinNumber:	-3.141593

(Read only property)

5.115.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Motion Blur attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.115.7 AttributeinputRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Motion Blur attribute.

Notes:

This attribute should have this content:

Name:	inputRadius
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
DefaultNumber:	20
IdentityNumber:	0
SliderMaxNumber:	100
SliderMinNumber:	0

(Read only property)

5.115.8 inputAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Angle

Notes:

See AttributeinputAngle for more details.

(Read and Write property)

Name:	inputAngle
Class:	double (NSNumber)
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
Type:	CIAttributeTypeAngle

5.115.9 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.115.10 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Radius
Notes:

Name:	inputRadius
Class:	double (NSNumber)
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
Type:	CIAttributeTypeDistance

See AttributeinputRadius for more details.

(Read and Write property)

5.116 class CIFilterMultiplyBlendModeMBS

5.116.1 class CIFilterMultiplyBlendModeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Multiply Blend Mode filter.

Notes:

Details for this filter:

FilterName:	CIMultiplyBlendMode
DisplayName English:	Multiply Blend Mode
DisplayName German:	Mischmethode Multiplizieren
DisplayName French:	Mode de fusion Multiplication
DisplayName Italian:	Modalit sfumatura moltiplicata
DisplayName Spanish:	Multiplicar modo de mezcla

Categories:

- CICategoryCompositeOperation: Composite Operation
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputBackgroundImage: Background Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.116.2 Methods

5.116.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.116.4 Properties

5.116.5 AttributeinputBackgroundImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Multiply Blend Mode attribute.

Notes:

This attribute should have this content:

Name:	inputBackgroundImage
Class:	CIImageMBS
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.116.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Multiply Blend Mode attribute.

Notes:

This attribute should have this content:

(Read only property)

Name: inputImage
 Class: CIImageMBS
 Type: CIAttributeTypeImage
 DisplayName English: Image
 DisplayName German: Bild
 DisplayName French: Image
 DisplayName Italian: Immagine
 DisplayName Spanish: Imagen
 DefaultNumber: 0
 IdentityNumber: 0

5.116.7 inputBackgroundImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Background Image

Notes:

Name: inputBackgroundImage
 Class: CIImageMBS (CIImage)
 DisplayName English: Background Image
 DisplayName German: Hintergrundbild
 DisplayName French: Image darrire-plan
 DisplayName Italian: Immagine di sfondo
 DisplayName Spanish: Imagen de fondo
 Type:

See AttributeinputBackgroundImage for more details.
(Read and Write property)

5.116.8 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name: inputImage
 Class: CIImageMBS (CIImage)
 DisplayName English: Image
 DisplayName German: Bild
 DisplayName French: Image
 DisplayName Italian: Immagine
 DisplayName Spanish: Imagen
 Type: CIAttributeTypeImage

See `AttributeinputImage` for more details.
(Read and Write property)

5.117 class CIFilterMultiplyCompositingMBS

5.117.1 class CIFilterMultiplyCompositingMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Multiply filter.

Notes:

Details for this filter:

FilterName:	CIMultiplyCompositing
DisplayName English:	Multiply
DisplayName German:	Multiplizieren
DisplayName French:	Multiplier
DisplayName Italian:	Moltiplica
DisplayName Spanish:	Multiplicar

Categories:

- CICategoryCompositeOperation: Composite Operation
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryHighDynamicRange: High Dynamic Range
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputBackgroundImage: Background Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.117.2 Methods

5.117.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.117.4 Properties

5.117.5 AttributeinputBackgroundImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Multiply attribute.

Notes:

This attribute should have this content:

Name:	inputBackgroundImage
Class:	CIImageMBS
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.117.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Multiply attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.117.7 inputBackgroundImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Background Image

Notes:

Name:	inputBackgroundImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
Type:	

See AttributeinputBackgroundImage for more details.
(Read and Write property)

5.117.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See `AttributeinputImage` for more details.
(Read and Write property)

5.118 class CIFilterNoiseReductionMBS

5.118.1 class CIFilterNoiseReductionMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Noise Reduction filter.

Notes:

Details for this filter:

FilterName:	CINoiseReduction
DisplayName English:	Noise Reduction
DisplayName German:	Rauschunterdrckung
DisplayName French:	Rduction du bruit
DisplayName Italian:	Riduzione disturbo
DisplayName Spanish:	Reduccin de ruido

Categories:

- CICategoryBlur: Blur
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputNoiseLevel: Noise Level
- inputSharpness: Sharpness

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.118.2 Methods

5.118.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.118.4 Properties

5.118.5 Attribute

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Noise Reduction attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.118.6 Attribute

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Noise Reduction attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputNoiseLevel
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Noise Level
DisplayName German:	Rauschpegel
DisplayName French:	Niveau de bruit
DisplayName Italian:	Livello disturbo
DisplayName Spanish:	Nivel de ruido
DefaultNumber:	0.02
IdentityNumber:	0
SliderMaxNumber:	0.1
SliderMinNumber:	0

5.118.7 AttributeinputSharpness as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Noise Reduction attribute.

Notes:

This attribute should have this content:

Name:	inputSharpness
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Sharpness
DisplayName German:	Schrfe
DisplayName French:	Nettet
DisplayName Italian:	Nitidezza
DisplayName Spanish:	Nitidez
DefaultNumber:	0.4
IdentityNumber:	0
SliderMaxNumber:	2
SliderMinNumber:	0

(Read only property)

5.118.8 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

(Read and Write property)

Name:	inputImage
Class:	CImageMBS (CImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

5.118.9 inputNoiseLevel as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Noise Level

Notes:

Name:	inputNoiseLevel
Class:	double (NSNumber)
DisplayName English:	Noise Level
DisplayName German:	Rauschpegel
DisplayName French:	Niveau de bruit
DisplayName Italian:	Livello disturbo
DisplayName Spanish:	Nivel de ruido
Type:	CIAAttributeTypeScalar

See AttributeinputNoiseLevel for more details.
(Read and Write property)

5.118.10 inputSharpness as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Sharpness

Notes:

See AttributeinputSharpness for more details.
(Read and Write property)

Name:	inputSharpness
Class:	double (NSNumber)
DisplayName English:	Sharpness
DisplayName German:	Schrfe
DisplayName French:	Nettet
DisplayName Italian:	Nitidezza
DisplayName Spanish:	Nitidez
Type:	CIAttributeTypeScalar

5.119 class CIFilterOpTileMBS

5.119.1 class CIFilterOpTileMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Op Tile filter.

Notes:

Details for this filter:

FilterName:	CIOpTile
DisplayName English:	Op Tile
DisplayName German:	Op kacheln
DisplayName French:	Mosaque oprationnelle
DisplayName Italian:	Mosaico ottico
DisplayName Spanish:	Mosaico ptico

Categories:

- CICategoryTileEffect: Tile Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCenter: Center
- inputScale: Scale
- inputAngle: Angle
- inputWidth: Width

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.119.2 Methods

5.119.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.119.4 Properties

5.119.5 AttributeinputAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Op Tile attribute.

Notes:

This attribute should have this content:

Name:	inputAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
DefaultNumber:	0
IdentityNumber:	0
SliderMaxNumber:	3.141593
SliderMinNumber:	-3.141593

(Read only property)

5.119.6 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Op Tile attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

5.119.7 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Op Tile attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.119.8 AttributeinputScale as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Op Tile attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputScale
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Scale
DisplayName German:	Skalierung
DisplayName French:	chelle
DisplayName Italian:	Scala
DisplayName Spanish:	Escala
DefaultNumber:	2.8
IdentityNumber:	1
SliderMaxNumber:	10
SliderMinNumber:	0.1

5.119.9 AttributeinputWidth as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Op Tile attribute.

Notes:

This attribute should have this content:

Name:	inputWidth
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
DefaultNumber:	65
IdentityNumber:	65
SliderMaxNumber:	1000
SliderMinNumber:	1

(Read only property)

5.119.10 inputAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Angle

Notes:

See AttributeinputAngle for more details.

(Read and Write property)

Name:	inputAngle
Class:	double (NSNumber)
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
Type:	CIAttributeTypeAngle

5.119.11 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center

Notes:

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

See AttributeinputCenter for more details.
(Read and Write property)

5.119.12 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.
(Read and Write property)

5.119.13 inputScale as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Scale

Notes:

Name: inputImage
 Class: CIImageMBS (CIImage)
 DisplayName English: Image
 DisplayName German: Bild
 DisplayName French: Image
 DisplayName Italian: Immagine
 DisplayName Spanish: Imagen
 Type: CIAttributeTypeImage

Name: inputScale
 Class: double (NSNumber)
 DisplayName English: Scale
 DisplayName German: Skalierung
 DisplayName French: chelle
 DisplayName Italian: Scala
 DisplayName Spanish: Escala
 Type: CIAttributeTypeScalar

See AttributeinputScale for more details.
(Read and Write property)

5.119.14 inputWidth as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Width

Notes:

Name: inputWidth
 Class: double (NSNumber)
 DisplayName English: Width
 DisplayName German: Breite
 DisplayName French: Largeur
 DisplayName Italian: Larghezza
 DisplayName Spanish: Anchura
 Type: CIAttributeTypeDistance

See AttributeinputWidth for more details.
(Read and Write property)

5.120 class CIFilterOverlayBlendModeMBS

5.120.1 class CIFilterOverlayBlendModeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Overlay Blend Mode filter.

Notes:

Details for this filter:

FilterName:	CIOverlayBlendMode
DisplayName English:	Overlay Blend Mode
DisplayName German:	Mischmethode berlagerung
DisplayName French:	Mode de fusion Superposition
DisplayName Italian:	Modalit sfumatura sovrapposizione
DisplayName Spanish:	Superponer modo de mezcla

Categories:

- CICategoryCompositeOperation: Composite Operation
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputBackgroundImage: Background Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.120.2 Methods

5.120.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.120.4 Properties

5.120.5 AttributeinputBackgroundImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Overlay Blend Mode attribute.

Notes:

This attribute should have this content:

Name:	inputBackgroundImage
Class:	CIImageMBS
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.120.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Overlay Blend Mode attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.120.7 inputBackgroundImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Background Image

Notes:

Name:	inputBackgroundImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
Type:	

See AttributeinputBackgroundImage for more details.
(Read and Write property)

5.120.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.121 class CIFilterPageCurlTransitionMBS

5.121.1 class CIFilterPageCurlTransitionMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Page Curl filter.

Notes:

Details for this filter:

FilterName:	CIPageCurlTransition
DisplayName English:	Page Curl
DisplayName German:	Umblttern
DisplayName French:	Repli de page
DisplayName Italian:	Ricciolo pagina
DisplayName Spanish:	Ondulacin de pgina

Categories:

- CICategoryTransition: Transition
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputTargetImage: Target Image
- inputBacksideImage: Backside Image
- inputShadingImage: Shading Image
- inputExtent: Extent
- inputTime: Time
- inputAngle: Angle
- inputRadius: Radius

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.121.2 Methods

5.121.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.121.4 Properties

5.121.5 AttributeinputAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Page Curl attribute.

Notes:

This attribute should have this content:

Name:	inputAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
DefaultNumber:	0
IdentityNumber:	0
SliderMaxNumber:	3.141593
SliderMinNumber:	-3.141593

(Read only property)

5.121.6 AttributeinputBacksideImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Page Curl attribute.

Notes:

This attribute should have this content:

Name:	inputBacksideImage
Class:	CIImageMBS
DisplayName English:	Backside Image
DisplayName German:	Bild auf der Hinterseite
DisplayName French:	Image arriere
DisplayName Italian:	Immagine posteriore
DisplayName Spanish:	Imagen de reverso
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.121.7 AttributeinputExtent as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Page Curl attribute.

Notes:

This attribute should have this content:

Name:	inputExtent
Class:	CIVectorMBS
Type:	CIAttributeTypeRectangle
DisplayName English:	Extent
DisplayName German:	Betrag
DisplayName French:	tendue
DisplayName Italian:	Ampiezza
DisplayName Spanish:	Amplitud
DefaultVector:	[0 0 300 300]
IdentityVector:	n/a

(Read only property)

5.121.8 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Page Curl attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.121.9 AttributeinputRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Page Curl attribute.

Notes:

This attribute should have this content:

Name:	inputRadius
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
DefaultNumber:	100
IdentityNumber:	0
MaxNumber:	0
MinNumber:	0.01
SliderMaxNumber:	400
SliderMinNumber:	0.01

(Read only property)

5.121.10 AttributeinputShadingImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Page Curl attribute.

Notes:

This attribute should have this content:

Name:	inputShadingImage
Class:	CIImageMBS
DisplayName English:	Shading Image
DisplayName German:	Bild schattieren
DisplayName French:	Image dombrage
DisplayName Italian:	Immagine ombreggiatura
DisplayName Spanish:	Imagen de sombra
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.121.11 AttributeinputTargetImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Page Curl attribute.

Notes:

This attribute should have this content:

Name:	inputTargetImage
Class:	CIImageMBS
DisplayName English:	Target Image
DisplayName German:	Zielbild
DisplayName French:	Image cible
DisplayName Italian:	Immagine target
DisplayName Spanish:	Imagen de destino
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.121.12 AttributeinputTime as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Page Curl attribute.

Notes:

This attribute should have this content:

Name:	inputTime
Class:	double
Type:	CIAttributeTypeTime
DisplayName English:	Time
DisplayName German:	Zeit
DisplayName French:	Dure
DisplayName Italian:	Tempo
DisplayName Spanish:	Tiempo
DefaultNumber:	0
IdentityNumber:	0
MaxNumber:	1
MinNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

(Read only property)

5.121.13 inputAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Angle

Notes:

Name:	inputAngle
Class:	double (NSNumber)
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
Type:	CIAttributeTypeAngle

See AttributeinputAngle for more details.

(Read and Write property)

5.121.14 inputBacksideImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Backside Image

Notes:

Name:	inputBacksideImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Backside Image
DisplayName German:	Bild auf der Hinterseite
DisplayName French:	Image arriere
DisplayName Italian:	Immagine posteriore
DisplayName Spanish:	Imagen de reverso
Type:	

See AttributeinputBacksideImage for more details.
(Read and Write property)

5.121.15 inputExtent as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Extent

Notes:

Name:	inputExtent
Class:	CIVectorMBS (CIVector)
DisplayName English:	Extent
DisplayName German:	Betrag
DisplayName French:	tendue
DisplayName Italian:	Ampiezza
DisplayName Spanish:	Amplitud
Type:	CIAAttributeTypeRectangle

See AttributeinputExtent for more details.
(Read and Write property)

5.121.16 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

(Read and Write property)

5.121.17 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Radius

Notes:

Name:	inputRadius
Class:	double (NSNumber)
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
Type:	CIAAttributeTypeDistance

See AttributeinputRadius for more details.

(Read and Write property)

5.121.18 inputShadingImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Shading Image

Notes:

See AttributeinputShadingImage for more details.

(Read and Write property)

Name:	inputShadingImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Shading Image
DisplayName German:	Bild schattieren
DisplayName French:	Image dombrage
DisplayName Italian:	Immagine ombreggiatura
DisplayName Spanish:	Imagen de sombra
Type:	

5.121.19 inputTargetImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Target Image

Notes:

Name:	inputTargetImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Target Image
DisplayName German:	Zielbild
DisplayName French:	Image cible
DisplayName Italian:	Immagine target
DisplayName Spanish:	Imagen de destino
Type:	

See AttributeinputTargetImage for more details.
(Read and Write property)

5.121.20 inputTime as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Time

Notes:

Name:	inputTime
Class:	double (NSNumber)
DisplayName English:	Time
DisplayName German:	Zeit
DisplayName French:	Dure
DisplayName Italian:	Tempo
DisplayName Spanish:	Tiempo
Type:	CIAttributeTypeTime

See AttributeinputTime for more details.

(Read and Write property)

5.122 class CIFilterPageCurlWithShadowTransitionMBS

5.122.1 class CIFilterPageCurlWithShadowTransitionMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Page Curl With Shadow filter.

Notes:

Details for this filter:

FilterName:	CIPageCurlWithShadowTransition
DisplayName English:	Page Curl With Shadow
DisplayName German:	Umblttern mit Schatten
DisplayName French:	Repli de page avec ombre
DisplayName Italian:	Piega pagina con ombra
DisplayName Spanish:	Pgina con el borde ondulado y sombra

Categories:

- CICategoryTransition: Transition
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputTargetImage: Target Image
- inputBacksideImage: Backside Image
- inputExtent: Extent
- inputTime: Time
- inputAngle: Angle
- inputRadius: Radius
- inputShadowSize: ShadowSize
- inputShadowAmount: Shadow Amount
- inputShadowExtent: ShadowExtent

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.122.2 Methods

5.122.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.122.4 Properties

5.122.5 AttributeinputAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Page Curl With Shadow attribute.

Notes:

This attribute should have this content:

Name:	inputAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
DefaultNumber:	0
IdentityNumber:	0
SliderMaxNumber:	3.141593
SliderMinNumber:	-3.141593

(Read only property)

5.122.6 AttributeinputBacksideImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Page Curl With Shadow attribute.

Notes:

This attribute should have this content:

Name:	inputBacksideImage
Class:	CIImageMBS
DisplayName English:	Backside Image
DisplayName German:	Bild auf der Hinterseite
DisplayName French:	Image arriere
DisplayName Italian:	Immagine posteriore
DisplayName Spanish:	Imagen de reverso
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.122.7 AttributeinputExtent as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Page Curl With Shadow attribute.

Notes:

This attribute should have this content:

Name:	inputExtent
Class:	CIVectorMBS
Type:	CIAttributeTypeRectangle
DisplayName English:	Extent
DisplayName German:	Betrag
DisplayName French:	tendue
DisplayName Italian:	Ampiezza
DisplayName Spanish:	Amplitud
DefaultVector:	[0 0 0 0]
IdentityVector:	n/a

(Read only property)

5.122.8 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Page Curl With Shadow attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.122.9 AttributeinputRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Page Curl With Shadow attribute.

Notes:

This attribute should have this content:

(Read only property)

5.122.10 AttributeinputShadowAmount as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Page Curl With Shadow attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputRadius
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
DefaultNumber:	100
IdentityNumber:	0
MaxNumber:	0
MinNumber:	0.01
SliderMaxNumber:	400
SliderMinNumber:	0.01

Name:	inputShadowAmount
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Shadow Amount
DisplayName German:	ShadowAmount
DisplayName French:	Quantit dombre
DisplayName Italian:	Quantit ombreggiatura
DisplayName Spanish:	Cantidad de sombreado
DefaultNumber:	0.7
IdentityNumber:	0
MaxNumber:	1
MinNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

5.122.11 Attribute

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Page Curl With Shadow attribute.

Notes:

This attribute should have this content:

(Read only property)

Name: inputShadowExtent
 Class: CIVectorMBS
 Type: CIAttributeTypeRectangle
 DisplayName: ShadowExtent
 DefaultVector: [0 0 0 0]
 IdentityVector: n/a

5.122.12 Attribute

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Page Curl With Shadow attribute.

Notes:

This attribute should have this content:

Name: inputShadowSize
 Class: double
 Type: CIAttributeTypeDistance
 DisplayName: ShadowSize
 DefaultNumber: 0.5
 IdentityNumber: 0
 MaxNumber: 1
 MinNumber: 0
 SliderMaxNumber: 1
 SliderMinNumber: 0

(Read only property)

5.122.13 Attribute

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Page Curl With Shadow attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputTargetImage
Class:	CIImageMBS
DisplayName English:	Target Image
DisplayName German:	Zielbild
DisplayName French:	Image cible
DisplayName Italian:	Immagine target
DisplayName Spanish:	Imagen de destino
DefaultNumber:	0
IdentityNumber:	0

5.122.14 AttributeinputTime as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Page Curl With Shadow attribute.

Notes:

This attribute should have this content:

Name:	inputTime
Class:	double
Type:	CIAttributeTypeTime
DisplayName English:	Time
DisplayName German:	Zeit
DisplayName French:	Dure
DisplayName Italian:	Tempo
DisplayName Spanish:	Tiempo
DefaultNumber:	0
IdentityNumber:	0
MaxNumber:	1
MinNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

(Read only property)

5.122.15 inputAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Angle

Notes:

See AttributeinputAngle for more details.

(Read and Write property)

Name: inputAngle
 Class: double (NSNumber)
 DisplayName English: Angle
 DisplayName German: Winkel
 DisplayName French: Angle
 DisplayName Italian: Angolo
 DisplayName Spanish: ngulo
 Type: CIAAttributeTypeAngle

5.122.16 inputBacksideImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Backside Image

Notes:

Name: inputBacksideImage
 Class: CIIImageMBS (CIIImage)
 DisplayName English: Backside Image
 DisplayName German: Bild auf der Hinterseite
 DisplayName French: Image arriere
 DisplayName Italian: Immagine posteriore
 DisplayName Spanish: Imagen de reverso
 Type:

See AttributeinputBacksideImage for more details.
(Read and Write property)

5.122.17 inputExtent as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Extent

Notes:

Name: inputExtent
 Class: CIVectorMBS (CIVector)
 DisplayName English: Extent
 DisplayName German: Betrag
 DisplayName French: tendue
 DisplayName Italian: Ampiezza
 DisplayName Spanish: Amplitud
 Type: CIAAttributeTypeRectangle

See AttributeinputExtent for more details.

(Read and Write property)

5.122.18 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.122.19 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Radius
Notes:

Name:	inputRadius
Class:	double (NSNumber)
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
Type:	CIAttributeTypeDistance

See AttributeinputRadius for more details.
(Read and Write property)

5.122.20 inputShadowAmount as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Shadow Amount

Notes:

Name:	inputShadowAmount
Class:	double (NSNumber)
DisplayName English:	Shadow Amount
DisplayName German:	ShadowAmount
DisplayName French:	Quantit dombre
DisplayName Italian:	Quantit ombreggiatura
DisplayName Spanish:	Cantidad de sombreado
Type:	CIAttributeTypeDistance

See AttributeinputShadowAmount for more details.
(Read and Write property)

5.122.21 inputShadowExtent as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute ShadowExtent

Notes:

Name:	inputShadowExtent
Class:	CIVectorMBS (CIVector)
DisplayName English:	ShadowExtent
DisplayName German:	ShadowExtent
DisplayName French:	ShadowExtent
DisplayName Italian:	ShadowExtent
DisplayName Spanish:	ShadowExtent
Type:	CIAttributeTypeRectangle

See AttributeinputShadowExtent for more details.
(Read and Write property)

5.122.22 inputShadowSize as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute ShadowSize

Notes:

Name:	inputShadowSize
Class:	double (NSNumber)
DisplayName English:	ShadowSize
DisplayName German:	ShadowSize
DisplayName French:	ShadowSize
DisplayName Italian:	ShadowSize
DisplayName Spanish:	ShadowSize
Type:	CIAttributeTypeDistance

See AttributeinputShadowSize for more details.
(Read and Write property)

5.122.23 inputTargetImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Target Image

Notes:

Name:	inputTargetImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Target Image
DisplayName German:	Zielbild
DisplayName French:	Image cible
DisplayName Italian:	Immagine target
DisplayName Spanish:	Imagen de destino
Type:	

See AttributeinputTargetImage for more details.
(Read and Write property)

5.122.24 inputTime as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Time

Notes:

See AttributeinputTime for more details.
(Read and Write property)

Name:	inputTime
Class:	double (NSNumber)
DisplayName English:	Time
DisplayName German:	Zeit
DisplayName French:	Dure
DisplayName Italian:	Tempo
DisplayName Spanish:	Tiempo
Type:	CIAttributeTypeTime

5.123 class CIFilterParallelogramTileMBS

5.123.1 class CIFilterParallelogramTileMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Parallelogram Tile filter.

Notes:

Details for this filter:

FilterName:	CIParallelogramTile
DisplayName English:	Parallelogram Tile
DisplayName German:	Parallelogramme
DisplayName French:	Mosaque de paralllogrammes
DisplayName Italian:	Mosaico parallelogramma
DisplayName Spanish:	Mosaico paralelogramo

Categories:

- CICategoryTileEffect: Tile Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCenter: Center
- inputAngle: Angle
- inputAcuteAngle: Acute Angle
- inputWidth: Width

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.123.2 Methods

5.123.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.123.4 Properties

5.123.5 AttributeinputAcuteAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Parallelogram Tile attribute.

Notes:

This attribute should have this content:

Name:	inputAcuteAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Acute Angle
DisplayName German:	Spitzer Winkel
DisplayName French:	Angle aigu
DisplayName Italian:	Angolo acuto
DisplayName Spanish:	ngulo agudo
DefaultNumber:	1.570796
IdentityNumber:	1.570796
SliderMaxNumber:	3.141593
SliderMinNumber:	-3.141593

(Read only property)

5.123.6 AttributeinputAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Parallelogram Tile attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
DefaultNumber:	0
IdentityNumber:	0
SliderMaxNumber:	3.141593
SliderMinNumber:	-3.141593

5.123.7 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Parallelogram Tile attribute.

Notes:

This attribute should have this content:

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

(Read only property)

5.123.8 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Parallelogram Tile attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.123.9 AttributeinputWidth as CIAAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Parallelogram Tile attribute.

Notes:

This attribute should have this content:

Name:	inputWidth
Class:	double
Type:	CIAAttributeTypeDistance
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
DefaultNumber:	100
IdentityNumber:	100
SliderMaxNumber:	200
SliderMinNumber:	1

(Read only property)

5.123.10 inputAcuteAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Acute Angle

Notes:

Name:	inputAcuteAngle
Class:	double (NSNumber)
DisplayName English:	Acute Angle
DisplayName German:	Spitzer Winkel
DisplayName French:	Angle aigu
DisplayName Italian:	Angolo acuto
DisplayName Spanish:	ngulo agudo
Type:	CIAttributeTypeAngle

See AttributeinputAcuteAngle for more details.
(Read and Write property)

5.123.11 inputAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Angle
Notes:

Name:	inputAngle
Class:	double (NSNumber)
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
Type:	CIAttributeTypeAngle

See AttributeinputAngle for more details.
(Read and Write property)

5.123.12 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center
Notes:

See AttributeinputCenter for more details.
(Read and Write property)

Name: inputCenter
 Class: CIVectorMBS (CIVector)
 DisplayName English: Center
 DisplayName German: Mitte
 DisplayName French: Centre
 DisplayName Italian: Centro
 DisplayName Spanish: Centro
 Type: CIAttributeTypePosition

5.123.13 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name: inputImage
 Class: CIImageMBS (CIImage)
 DisplayName English: Image
 DisplayName German: Bild
 DisplayName French: Image
 DisplayName Italian: Immagine
 DisplayName Spanish: Imagen
 Type: CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.123.14 inputWidth as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Width
Notes:

Name: inputWidth
 Class: double (NSNumber)
 DisplayName English: Width
 DisplayName German: Breite
 DisplayName French: Largeur
 DisplayName Italian: Larghezza
 DisplayName Spanish: Anchura
 Type: CIAttributeTypeDistance

See AttributeinputWidth for more details.

5.124 class CIFilterPDF417BarcodeGeneratorMBS

5.124.1 class CIFilterPDF417BarcodeGeneratorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage PDF417 Barcode Generator filter.

Notes:

Details for this filter:

FilterName:	CIPDF417BarcodeGenerator
DisplayName English:	PDF417 Barcode Generator
DisplayName German:	
DisplayName French:	Gnrateur de code-barres PDF417
DisplayName Italian:	Generatore codice a barre PDF417
DisplayName Spanish:	Generador de cdigos de barras PDF417

Categories:

- CICategoryGenerator: Generator
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputMessage: Message
- inputMinWidth: MinWidth
- inputMaxWidth: MaxWidth
- inputMinHeight: MinHeight
- inputMaxHeight: MaxHeight
- inputDataColumns: DataColumns
- inputRows: Rows
- inputPreferredAspectRatio: PreferredAspectRatio
- inputCompactionMode: CompactionMode
- inputCompactStyle: CompactStyle

- `inputCorrectionLevel`: `CorrectionLevel`
- `inputAlwaysSpecifyCompaction`: `AlwaysSpecifyCompaction`

Output:

- `outputImage`
- `outputCGImage`

Subclass of the `CIFilterMBS` class.

5.124.2 Methods

5.124.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the `handle` property is not zero and the filter has the default values set.

5.124.4 Properties

5.124.5 `AttributeinputAlwaysSpecifyCompaction` as `CIAttributeMBS`

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the PDF417 Barcode Generator attribute.

Notes:

This attribute should have this content:

(Read only property)

5.124.6 `AttributeinputCompactionMode` as `CIAttributeMBS`

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the PDF417 Barcode Generator attribute.

Notes:

This attribute should have this content:

(Read only property)

Name: inputAlwaysSpecifyCompaction
 Class: double
 DisplayName English: AlwaysSpecifyCompaction
 DisplayName German: AlwaysSpecifyCompaction
 DisplayName French: AlwaysSpecifyCompaction
 DisplayName Italian: AlwaysSpecifyCompaction
 DisplayName Spanish: AlwaysSpecifyCompaction
 DefaultNumber: 0
 IdentityNumber: 0
 MaxNumber: 2.147484e+9
 MinNumber: -2.147484e+9
 SliderMaxNumber: 2.147484e+9
 SliderMinNumber: -2.147484e+9

Name: inputCompactionMode
 Class: double
 DisplayName English: CompactionMode
 DisplayName German: CompactionMode
 DisplayName French: CompactionMode
 DisplayName Italian: CompactionMode
 DisplayName Spanish: CompactionMode
 DefaultNumber: 0
 IdentityNumber: 0
 MaxNumber: 3
 MinNumber: 0
 SliderMaxNumber: 3
 SliderMinNumber: 0

5.124.7 AttributeinputCompactStyle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the PDF417 Barcode Generator attribute.

Notes:

This attribute should have this content:

(Read only property)

5.124.8 AttributeinputCorrectionLevel as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the PDF417 Barcode Generator attribute.

Notes:

Name:	inputCompactStyle
Class:	double
DisplayName English:	CompactStyle
DisplayName German:	
DisplayName French:	CompactStyle
DisplayName Italian:	CompactStyle
DisplayName Spanish:	CompactStyle
DefaultNumber:	0
IdentityNumber:	0
MaxNumber:	1
MinNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

This attribute should have this content:

Name:	inputCorrectionLevel
Class:	double
DisplayName English:	CorrectionLevel
DisplayName German:	
DisplayName French:	CorrectionLevel
DisplayName Italian:	CorrectionLevel
DisplayName Spanish:	CorrectionLevel
DefaultNumber:	0
IdentityNumber:	0
MaxNumber:	8
MinNumber:	0
SliderMaxNumber:	8
SliderMinNumber:	0

(Read only property)

5.124.9 AttributeinputDataColumns as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the PDF417 Barcode Generator attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputDataColumns
Class:	double
DisplayName English:	DataColumns
DisplayName German:	
DisplayName French:	DataColumns
DisplayName Italian:	DataColumns
DisplayName Spanish:	DataColumns
DefaultNumber:	0
IdentityNumber:	0
MaxNumber:	30
MinNumber:	1
SliderMaxNumber:	30
SliderMinNumber:	1

5.124.10 AttributeinputMaxHeight as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the PDF417 Barcode Generator attribute.

Notes:

This attribute should have this content:

Name:	inputMaxHeight
Class:	double
DisplayName English:	MaxHeight
DisplayName German:	
DisplayName French:	MaxHeight
DisplayName Italian:	MaxHeight
DisplayName Spanish:	MaxHeight
DefaultNumber:	0
IdentityNumber:	0
MaxNumber:	283
MinNumber:	13
SliderMaxNumber:	283
SliderMinNumber:	13

(Read only property)

5.124.11 AttributeinputMaxWidth as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the PDF417 Barcode Generator attribute.

Notes:

This attribute should have this content:

Name:	inputMaxWidth
Class:	double
DisplayName English:	MaxWidth
DisplayName German:	
DisplayName French:	MaxWidth
DisplayName Italian:	MaxWidth
DisplayName Spanish:	MaxWidth
DefaultNumber:	0
IdentityNumber:	0
MaxNumber:	583
MinNumber:	56
SliderMaxNumber:	583
SliderMinNumber:	56

(Read only property)

5.124.12 AttributeinputMessage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the PDF417 Barcode Generator attribute.

Notes:

This attribute should have this content:

Name:	inputMessage
Class:	Memoryblock
DisplayName English:	Message
DisplayName German:	
DisplayName French:	Message
DisplayName Italian:	Message
DisplayName Spanish:	Message
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.124.13 AttributeinputMinHeight as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the PDF417 Barcode Generator attribute.

Notes:

This attribute should have this content:

Name:	inputMinHeight
Class:	double
DisplayName English:	MinHeight
DisplayName German:	
DisplayName French:	MinHeight
DisplayName Italian:	MinHeight
DisplayName Spanish:	MinHeight
DefaultNumber:	0
IdentityNumber:	0
MaxNumber:	283
MinNumber:	13
SliderMaxNumber:	283
SliderMinNumber:	13

(Read only property)

5.124.14 AttributeinputMinWidth as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the PDF417 Barcode Generator attribute.

Notes:

This attribute should have this content:

(Read only property)

5.124.15 AttributeinputPreferredAspectRatio as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the PDF417 Barcode Generator attribute.

Notes:

This attribute should have this content:

Name: inputMinWidth
 Class: double
 DisplayName English: MinWidth
 DisplayName German:
 DisplayName French: MinWidth
 DisplayName Italian: MinWidth
 DisplayName Spanish: MinWidth
 DefaultNumber: 0
 IdentityNumber: 0
 MaxNumber: 583
 MinNumber: 56
 SliderMaxNumber: 583
 SliderMinNumber: 56

Name: inputPreferredAspectRatio
 Class: double
 DisplayName English: PreferredAspectRatio
 DisplayName German:
 DisplayName French: PreferredAspectRatio
 DisplayName Italian: PreferredAspectRatio
 DisplayName Spanish: PreferredAspectRatio
 DefaultNumber: 0
 IdentityNumber: 0
 MaxNumber: 2.147484e+9
 MinNumber: 0
 SliderMaxNumber: 2.147484e+9
 SliderMinNumber: 0

(Read only property)

5.124.16 AttributeinputRows as CIAAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the PDF417 Barcode Generator attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputRows
Class:	double
DisplayName English:	Rows
DisplayName German:	
DisplayName French:	Rows
DisplayName Italian:	Rows
DisplayName Spanish:	Rows
DefaultNumber:	0
IdentityNumber:	0
MaxNumber:	90
MinNumber:	3
SliderMaxNumber:	90
SliderMinNumber:	3

5.124.17 inputAlwaysSpecifyCompaction as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute AlwaysSpecifyCompaction

Notes:

Name:	inputAlwaysSpecifyCompaction
Class:	double (NSNumber)
DisplayName English:	AlwaysSpecifyCompaction
DisplayName German:	
DisplayName French:	AlwaysSpecifyCompaction
DisplayName Italian:	AlwaysSpecifyCompaction
DisplayName Spanish:	AlwaysSpecifyCompaction
Type:	

See AttributeinputAlwaysSpecifyCompaction for more details.
(Read and Write property)

5.124.18 inputCompactionMode as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute CompactionMode

Notes:

See AttributeinputCompactionMode for more details.
(Read and Write property)

Name: inputCompactionMode
 Class: double (NSNumber)
 DisplayName English: CompactionMode
 DisplayName German:
 DisplayName French: CompactionMode
 DisplayName Italian: CompactionMode
 DisplayName Spanish: CompactionMode
 Type:

5.124.19 inputCompactStyle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute CompactStyle

Notes:

Name: inputCompactStyle
 Class: double (NSNumber)
 DisplayName English: CompactStyle
 DisplayName German:
 DisplayName French: CompactStyle
 DisplayName Italian: CompactStyle
 DisplayName Spanish: CompactStyle
 Type:

See AttributeinputCompactStyle for more details.
(Read and Write property)

5.124.20 inputCorrectionLevel as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute CorrectionLevel

Notes:

Name: inputCorrectionLevel
 Class: double (NSNumber)
 DisplayName English: CorrectionLevel
 DisplayName German:
 DisplayName French: CorrectionLevel
 DisplayName Italian: CorrectionLevel
 DisplayName Spanish: CorrectionLevel
 Type:

See AttributeinputCorrectionLevel for more details.

(Read and Write property)

5.124.21 inputDataColumns as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute DataColumns

Notes:

Name:	inputDataColumns
Class:	double (NSNumber)
DisplayName English:	DataColumns
DisplayName German:	
DisplayName French:	DataColumns
DisplayName Italian:	DataColumns
DisplayName Spanish:	DataColumns
Type:	

See AttributeinputDataColumns for more details.
(Read and Write property)

5.124.22 inputMaxHeight as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute MaxHeight

Notes:

Name:	inputMaxHeight
Class:	double (NSNumber)
DisplayName English:	MaxHeight
DisplayName German:	
DisplayName French:	MaxHeight
DisplayName Italian:	MaxHeight
DisplayName Spanish:	MaxHeight
Type:	

See AttributeinputMaxHeight for more details.
(Read and Write property)

5.124.23 `inputMaxWidth` as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute `MaxWidth`

Notes:

Name:	<code>inputMaxWidth</code>
Class:	<code>double (NSNumber)</code>
DisplayName English:	<code>MaxWidth</code>
DisplayName German:	
DisplayName French:	<code>MaxWidth</code>
DisplayName Italian:	<code>MaxWidth</code>
DisplayName Spanish:	<code>MaxWidth</code>
Type:	

See `AttributeinputMaxWidth` for more details.
(Read and Write property)

5.124.24 `inputMessage` as Memoryblock

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute `Message`

Notes:

Name:	<code>inputMessage</code>
Class:	<code>Memoryblock (NSData)</code>
DisplayName English:	<code>Message</code>
DisplayName German:	
DisplayName French:	<code>Message</code>
DisplayName Italian:	<code>Message</code>
DisplayName Spanish:	<code>Message</code>
Type:	

See `AttributeinputMessage` for more details.
(Read and Write property)

5.124.25 `inputMinHeight` as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute `MinHeight`

Notes:

Name: inputMinHeight
Class: double (NSNumber)
DisplayName English: MinHeight
DisplayName German:
DisplayName French: MinHeight
DisplayName Italian: MinHeight
DisplayName Spanish: MinHeight
Type:

See AttributeinputMinHeight for more details.
(Read and Write property)

5.124.26 inputMinWidth as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute MinWidth

Notes:

Name: inputMinWidth
Class: double (NSNumber)
DisplayName English: MinWidth
DisplayName German:
DisplayName French: MinWidth
DisplayName Italian: MinWidth
DisplayName Spanish: MinWidth
Type:

See AttributeinputMinWidth for more details.
(Read and Write property)

5.124.27 inputPreferredAspectRatio as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute PreferredAspectRatio

Notes:

See AttributeinputPreferredAspectRatio for more details.
(Read and Write property)

Name: inputPreferredAspectRatio
Class: double (NSNumber)
DisplayName English: PreferredAspectRatio
DisplayName German: PreferredAspectRatio
DisplayName French: PreferredAspectRatio
DisplayName Italian: PreferredAspectRatio
DisplayName Spanish: PreferredAspectRatio
Type:

5.124.28 inputRows as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Rows
Notes:

Name: inputRows
Class: double (NSNumber)
DisplayName English: Rows
DisplayName German: Rows
DisplayName French: Rows
DisplayName Italian: Rows
DisplayName Spanish: Rows
Type:

See AttributeinputRows for more details.
(Read and Write property)

5.125 class CIFilterPerspectiveCorrectionMBS

5.125.1 class CIFilterPerspectiveCorrectionMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Perspective Correction filter.

Notes:

Details for this filter:

FilterName:	CIPerspectiveCorrection
DisplayName English:	Perspective Correction
DisplayName German:	Perspektivenkorrektur
DisplayName French:	Correction de la perspective
DisplayName Italian:	Correzione prospettiva
DisplayName Spanish:	Correccin de la perspectiva

Categories:

- CICategoryGeometryAdjustment: Geometry Adjustment
- CICategoryStillImage: Still Image
- CICategoryVideo: Video
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputTopLeft: Top Left
- inputTopRight: Top Right
- inputBottomRight: Bottom Right
- inputBottomLeft: Bottom Left

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.125.2 Methods

5.125.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.125.4 Properties

5.125.5 AttributeinputBottomLeft as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Perspective Correction attribute.

Notes:

This attribute should have this content:

Name:	inputBottomLeft
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Bottom Left
DisplayName German:	Unten links
DisplayName French:	En bas gauche
DisplayName Italian:	In basso a sinistra
DisplayName Spanish:	Abajo izquierda
DefaultVector:	[155 153]
IdentityVector:	n/a

(Read only property)

5.125.6 AttributeinputBottomRight as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Perspective Correction attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputBottomRight
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Bottom Right
DisplayName German:	Unten rechts
DisplayName French:	En bas droite
DisplayName Italian:	In basso a destra
DisplayName Spanish:	Abajo derecha
DefaultVector:	[548 140]
IdentityVector:	n/a

5.125.7 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Perspective Correction attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.125.8 AttributeinputTopLeft as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Perspective Correction attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputTopLeft
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Top Left
DisplayName German:	Oben links
DisplayName French:	En haut gauche
DisplayName Italian:	In alto a sinistra
DisplayName Spanish:	Arriba izquierda
DefaultVector:	[118 484]
IdentityVector:	n/a

5.125.9 AttributeinputTopRight as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Perspective Correction attribute.

Notes:

This attribute should have this content:

Name:	inputTopRight
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Top Right
DisplayName German:	Oben rechts
DisplayName French:	En haut droite
DisplayName Italian:	Da in alto a destra
DisplayName Spanish:	Arriba derecha
DefaultVector:	[646 507]
IdentityVector:	n/a

(Read only property)

5.125.10 inputBottomLeft as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Bottom Left

Notes:

See AttributeinputBottomLeft for more details.

(Read and Write property)

Name: inputBottomLeft
 Class: CIVectorMBS (CIVector)
 DisplayName English: Bottom Left
 DisplayName German: Unten links
 DisplayName French: En bas gauche
 DisplayName Italian: In basso a sinistra
 DisplayName Spanish: Abajo izquierda
 Type: CIAttributeTypePosition

5.125.11 inputBottomRight as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Bottom Right

Notes:

Name: inputBottomRight
 Class: CIVectorMBS (CIVector)
 DisplayName English: Bottom Right
 DisplayName German: Unten rechts
 DisplayName French: En bas droite
 DisplayName Italian: In basso a destra
 DisplayName Spanish: Abajo derecha
 Type: CIAttributeTypePosition

See AttributeinputBottomRight for more details.
(Read and Write property)

5.125.12 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name: inputImage
 Class: CIImageMBS (CIImage)
 DisplayName English: Image
 DisplayName German: Bild
 DisplayName French: Image
 DisplayName Italian: Immagine
 DisplayName Spanish: Imagen
 Type: CIAttributeTypeImage

See AttributeinputImage for more details.

(Read and Write property)

5.125.13 `inputTopLeft` as `CIVectorMBS`

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Top Left

Notes:

Name:	<code>inputTopLeft</code>
Class:	<code>CIVectorMBS (CIVector)</code>
DisplayName English:	Top Left
DisplayName German:	Oben links
DisplayName French:	En haut gauche
DisplayName Italian:	In alto a sinistra
DisplayName Spanish:	Arriba izquierda
Type:	<code>CIAttributeTypePosition</code>

See `AttributeinputTopLeft` for more details.
(Read and Write property)

5.125.14 `inputTopRight` as `CIVectorMBS`

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Top Right

Notes:

Name:	<code>inputTopRight</code>
Class:	<code>CIVectorMBS (CIVector)</code>
DisplayName English:	Top Right
DisplayName German:	Oben rechts
DisplayName French:	En haut droite
DisplayName Italian:	Da in alto a destra
DisplayName Spanish:	Arriba derecha
Type:	<code>CIAttributeTypePosition</code>

See `AttributeinputTopRight` for more details.
(Read and Write property)

5.126 class CIFilterPerspectiveTileMBS

5.126.1 class CIFilterPerspectiveTileMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Perspective Tile filter.

Notes:

Details for this filter:

FilterName:	CIPerspectiveTile
DisplayName English:	Perspective Tile
DisplayName German:	Perspektivisch kacheln
DisplayName French:	Mosaque en perspective
DisplayName Italian:	Mosaico prospettiva
DisplayName Spanish:	Mosaico en perspectiva

Categories:

- CICategoryTileEffect: Tile Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputTopLeft: Top Left
- inputTopRight: Top Right
- inputBottomRight: Bottom Right
- inputBottomLeft: Bottom Left

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.126.2 Methods

5.126.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.126.4 Properties

5.126.5 AttributeinputBottomLeft as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Perspective Tile attribute.

Notes:

This attribute should have this content:

Name:	inputBottomLeft
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Bottom Left
DisplayName German:	Unten links
DisplayName French:	En bas gauche
DisplayName Italian:	In basso a sinistra
DisplayName Spanish:	Abajo izquierda
DefaultVector:	[155 153]
IdentityVector:	n/a

(Read only property)

5.126.6 AttributeinputBottomRight as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Perspective Tile attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputBottomRight
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Bottom Right
DisplayName German:	Unten rechts
DisplayName French:	En bas droite
DisplayName Italian:	In basso a destra
DisplayName Spanish:	Abajo derecha
DefaultVector:	[548 140]
IdentityVector:	n/a

5.126.7 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Perspective Tile attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.126.8 AttributeinputTopLeft as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Perspective Tile attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputTopLeft
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Top Left
DisplayName German:	Oben links
DisplayName French:	En haut gauche
DisplayName Italian:	In alto a sinistra
DisplayName Spanish:	Arriba izquierda
DefaultVector:	[118 484]
IdentityVector:	n/a

5.126.9 AttributeinputTopRight as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Perspective Tile attribute.

Notes:

This attribute should have this content:

Name:	inputTopRight
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Top Right
DisplayName German:	Oben rechts
DisplayName French:	En haut droite
DisplayName Italian:	Da in alto a destra
DisplayName Spanish:	Arriba derecha
DefaultVector:	[646 507]
IdentityVector:	n/a

(Read only property)

5.126.10 inputBottomLeft as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Bottom Left

Notes:

See AttributeinputBottomLeft for more details.

(Read and Write property)

Name:	inputBottomLeft
Class:	CIVectorMBS (CIVector)
DisplayName English:	Bottom Left
DisplayName German:	Unten links
DisplayName French:	En bas gauche
DisplayName Italian:	In basso a sinistra
DisplayName Spanish:	Abajo izquierda
Type:	CIAAttributeTypePosition

5.126.11 inputBottomRight as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Bottom Right

Notes:

Name:	inputBottomRight
Class:	CIVectorMBS (CIVector)
DisplayName English:	Bottom Right
DisplayName German:	Unten rechts
DisplayName French:	En bas droite
DisplayName Italian:	In basso a destra
DisplayName Spanish:	Abajo derecha
Type:	CIAAttributeTypePosition

See AttributeinputBottomRight for more details.
(Read and Write property)

5.126.12 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See AttributeinputImage for more details.

(Read and Write property)

5.126.13 `inputTopLeft` as `CIVectorMBS`

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Top Left

Notes:

Name:	<code>inputTopLeft</code>
Class:	<code>CIVectorMBS (CIVector)</code>
DisplayName English:	Top Left
DisplayName German:	Oben links
DisplayName French:	En haut gauche
DisplayName Italian:	In alto a sinistra
DisplayName Spanish:	Arriba izquierda
Type:	<code>CIAttributeTypePosition</code>

See `AttributeinputTopLeft` for more details.
(Read and Write property)

5.126.14 `inputTopRight` as `CIVectorMBS`

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Top Right

Notes:

Name:	<code>inputTopRight</code>
Class:	<code>CIVectorMBS (CIVector)</code>
DisplayName English:	Top Right
DisplayName German:	Oben rechts
DisplayName French:	En haut droite
DisplayName Italian:	Da in alto a destra
DisplayName Spanish:	Arriba derecha
Type:	<code>CIAttributeTypePosition</code>

See `AttributeinputTopRight` for more details.
(Read and Write property)

5.127 class CIFilterPerspectiveTransformMBS

5.127.1 class CIFilterPerspectiveTransformMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Perspective Transform filter.

Notes:

Details for this filter:

FilterName:	CIPerspectiveTransform
DisplayName English:	Perspective Transform
DisplayName German:	Perspektivisch transformieren
DisplayName French:	Transformation en perspective
DisplayName Italian:	Trasformazione prospettiva
DisplayName Spanish:	Transformacin en perspectiva

Categories:

- CICategoryGeometryAdjustment: Geometry Adjustment
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputTopLeft: Top Left
- inputTopRight: Top Right
- inputBottomRight: Bottom Right
- inputBottomLeft: Bottom Left

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.127.2 Methods

5.127.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.127.4 Properties

5.127.5 AttributeinputBottomLeft as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Perspective Transform attribute.

Notes:

This attribute should have this content:

Name:	inputBottomLeft
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Bottom Left
DisplayName German:	Unten links
DisplayName French:	En bas gauche
DisplayName Italian:	In basso a sinistra
DisplayName Spanish:	Abajo izquierda
DefaultVector:	[155 153]
IdentityVector:	n/a

(Read only property)

5.127.6 AttributeinputBottomRight as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Perspective Transform attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputBottomRight
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Bottom Right
DisplayName German:	Unten rechts
DisplayName French:	En bas droite
DisplayName Italian:	In basso a destra
DisplayName Spanish:	Abajo derecha
DefaultVector:	[548 140]
IdentityVector:	n/a

5.127.7 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Perspective Transform attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.127.8 AttributeinputTopLeft as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Perspective Transform attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputTopLeft
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Top Left
DisplayName German:	Oben links
DisplayName French:	En haut gauche
DisplayName Italian:	In alto a sinistra
DisplayName Spanish:	Arriba izquierda
DefaultVector:	[118 484]
IdentityVector:	n/a

5.127.9 AttributeinputTopRight as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Perspective Transform attribute.

Notes:

This attribute should have this content:

Name:	inputTopRight
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Top Right
DisplayName German:	Oben rechts
DisplayName French:	En haut droite
DisplayName Italian:	Da in alto a destra
DisplayName Spanish:	Arriba derecha
DefaultVector:	[646 507]
IdentityVector:	n/a

(Read only property)

5.127.10 inputBottomLeft as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Bottom Left

Notes:

See AttributeinputBottomLeft for more details.

(Read and Write property)

Name: inputBottomLeft
 Class: CIVectorMBS (CIVector)
 DisplayName English: Bottom Left
 DisplayName German: Unten links
 DisplayName French: En bas gauche
 DisplayName Italian: In basso a sinistra
 DisplayName Spanish: Abajo izquierda
 Type: CIAttributeTypePosition

5.127.11 inputBottomRight as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Bottom Right

Notes:

Name: inputBottomRight
 Class: CIVectorMBS (CIVector)
 DisplayName English: Bottom Right
 DisplayName German: Unten rechts
 DisplayName French: En bas droite
 DisplayName Italian: In basso a destra
 DisplayName Spanish: Abajo derecha
 Type: CIAttributeTypePosition

See AttributeinputBottomRight for more details.
(Read and Write property)

5.127.12 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name: inputImage
 Class: CIImageMBS (CIImage)
 DisplayName English: Image
 DisplayName German: Bild
 DisplayName French: Image
 DisplayName Italian: Immagine
 DisplayName Spanish: Imagen
 Type: CIAttributeTypeImage

See AttributeinputImage for more details.

(Read and Write property)

5.127.13 `inputTopLeft` as `CIVectorMBS`

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Top Left

Notes:

Name:	<code>inputTopLeft</code>
Class:	<code>CIVectorMBS (CIVector)</code>
DisplayName English:	Top Left
DisplayName German:	Oben links
DisplayName French:	En haut gauche
DisplayName Italian:	In alto a sinistra
DisplayName Spanish:	Arriba izquierda
Type:	<code>CIAttributeTypePosition</code>

See `AttributeinputTopLeft` for more details.
(Read and Write property)

5.127.14 `inputTopRight` as `CIVectorMBS`

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Top Right

Notes:

Name:	<code>inputTopRight</code>
Class:	<code>CIVectorMBS (CIVector)</code>
DisplayName English:	Top Right
DisplayName German:	Oben rechts
DisplayName French:	En haut droite
DisplayName Italian:	Da in alto a destra
DisplayName Spanish:	Arriba derecha
Type:	<code>CIAttributeTypePosition</code>

See `AttributeinputTopRight` for more details.
(Read and Write property)

5.128 class CIFilterPerspectiveTransformWithExtentMBS

5.128.1 class CIFilterPerspectiveTransformWithExtentMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Perspective Transform with Extent filter.

Notes:

Details for this filter:

FilterName:	CIPerspectiveTransformWithExtent
DisplayName English:	Perspective Transform with Extent
DisplayName German:	
DisplayName French:	Transformation de perspective avec Extent
DisplayName Italian:	Trasformazione prospettiva con ampiezza
DisplayName Spanish:	Transformacin en perspectiva con amplitud

Categories:

- CICategoryGeometryAdjustment: Geometry Adjustment
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputExtent: Extent
- inputTopLeft: Top Left
- inputTopRight: Top Right
- inputBottomRight: Bottom Right
- inputBottomLeft: Bottom Left

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.128.2 Methods

5.128.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.128.4 Properties

5.128.5 AttributeinputBottomLeft as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Perspective Transform with Extent attribute.

Notes:

This attribute should have this content:

Name:	inputBottomLeft
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Bottom Left
DisplayName German:	
DisplayName French:	En bas gauche
DisplayName Italian:	In basso a sinistra
DisplayName Spanish:	Abajo izquierda
DefaultVector:	[155 153]
IdentityVector:	n/a

(Read only property)

5.128.6 AttributeinputBottomRight as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Perspective Transform with Extent attribute.

Notes:

This attribute should have this content:

(Read only property)

Name: inputBottomRight
 Class: CIVectorMBS
 Type: CIAttributeTypePosition
 DisplayName English: Bottom Right
 DisplayName German:
 DisplayName French: En bas droite
 DisplayName Italian: In basso a destra
 DisplayName Spanish: Abajo derecha
 DefaultVector: [548 140]
 IdentityVector: n/a

5.128.7 AttributeinputExtent as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Perspective Transform with Extent attribute.

Notes:

This attribute should have this content:

Name: inputExtent
 Class: CIVectorMBS
 Type: CIAttributeTypeRectangle
 DisplayName English: Extent
 DisplayName German:
 DisplayName French: tendue
 DisplayName Italian: Ampiezza
 DisplayName Spanish: Amplitud
 DefaultVector: [0 0 300 300]
 IdentityVector: n/a

(Read only property)

5.128.8 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Perspective Transform with Extent attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.128.9 AttributeinputTopLeft as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Perspective Transform with Extent attribute.

Notes:

This attribute should have this content:

Name:	inputTopLeft
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Top Left
DisplayName German:	
DisplayName French:	En haut gauche
DisplayName Italian:	In alto a sinistra
DisplayName Spanish:	Arriba izquierda
DefaultVector:	[118 484]
IdentityVector:	n/a

(Read only property)

5.128.10 AttributeinputTopRight as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Perspective Transform with Extent attribute.

Notes:

This attribute should have this content:

(Read only property)

Name: inputTopRight
 Class: CIVectorMBS
 Type: CIAttributeTypePosition
 DisplayName English: Top Right
 DisplayName German:
 DisplayName French: En haut droite
 DisplayName Italian: Da in alto a destra
 DisplayName Spanish: Arriba derecha
 DefaultVector: [646 507]
 IdentityVector: n/a

5.128.11 inputBottomLeft as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Bottom Left

Notes:

Name: inputBottomLeft
 Class: CIVectorMBS (CIVector)
 DisplayName English: Bottom Left
 DisplayName German:
 DisplayName French: En bas gauche
 DisplayName Italian: In basso a sinistra
 DisplayName Spanish: Abajo izquierda
 Type: CIAttributeTypePosition

See AttributeinputBottomLeft for more details.
(Read and Write property)

5.128.12 inputBottomRight as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Bottom Right

Notes:

See AttributeinputBottomRight for more details.
(Read and Write property)

5.128.13 inputExtent as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Extent

Name: `inputBottomRight`
 Class: `CIVectorMBS (CIVector)`
 DisplayName English: `Bottom Right`
 DisplayName German:
 DisplayName French: `En bas droite`
 DisplayName Italian: `In basso a destra`
 DisplayName Spanish: `Abajo derecha`
 Type: `CIAttributeTypePosition`

Notes:

Name: `inputExtent`
 Class: `CIVectorMBS (CIVector)`
 DisplayName English: `Extent`
 DisplayName German:
 DisplayName French: `tendue`
 DisplayName Italian: `Ampiezza`
 DisplayName Spanish: `Amplitud`
 Type: `CIAttributeTypeRectangle`

See `AttributeinputExtent` for more details.
 (Read and Write property)

5.128.14 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name: `inputImage`
 Class: `CIImageMBS (CIImage)`
 DisplayName English: `Image`
 DisplayName German:
 DisplayName French: `Image`
 DisplayName Italian: `Immagine`
 DisplayName Spanish: `Imagen`
 Type: `CIAttributeTypeImage`

See `AttributeinputImage` for more details.
 (Read and Write property)

5.128.15 inputTopLeft as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Top Left

Notes:

Name:	inputTopLeft
Class:	CIVectorMBS (CIVector)
DisplayName English:	Top Left
DisplayName German:	
DisplayName French:	En haut gauche
DisplayName Italian:	In alto a sinistra
DisplayName Spanish:	Arriba izquierda
Type:	CIAAttributeTypePosition

See AttributeinputTopLeft for more details.
(Read and Write property)

5.128.16 inputTopRight as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Top Right

Notes:

Name:	inputTopRight
Class:	CIVectorMBS (CIVector)
DisplayName English:	Top Right
DisplayName German:	
DisplayName French:	En haut droite
DisplayName Italian:	Da in alto a destra
DisplayName Spanish:	Arriba derecha
Type:	CIAAttributeTypePosition

See AttributeinputTopRight for more details.
(Read and Write property)

5.129 class CIFilterPhotoEffectChromeMBS

5.129.1 class CIFilterPhotoEffectChromeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Photo Effect Chrome filter.

Notes:

Details for this filter:

FilterName:	CIPhotoEffectChrome
DisplayName English:	Photo Effect Chrome
DisplayName German:	Fotoeffekt Chrom
DisplayName French:	Effet de photo Chrom
DisplayName Italian:	Effetto foto cromo
DisplayName Spanish:	Efecto fotografico Cromo

Categories:

- CIColorCategoryColorEffect: Color Effect
- CIColorCategoryVideo: Video
- CIColorCategoryInterlaced: Interlaced
- CIColorCategoryNonSquarePixels: Non-Square Pixels
- CIColorCategoryStillImage: Still Image
- CIColorCategoryBuiltIn: Built-In
- CIColorCategoryXMPSerializable: CIColorCategoryXMPSerializable

Input:

- inputImage: Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.129.2 Methods

5.129.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.129.4 Properties

5.129.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Photo Effect Chrome attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.129.6 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

(Read and Write property)

Name:	inputImage
Class:	UIImageMBS (UIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	UIAttributeTypeImage

5.130 class CIFilterPhotoEffectFadeMBS

5.130.1 class CIFilterPhotoEffectFadeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Photo Effect Fade filter.

Notes:

Details for this filter:

FilterName:	CIPhotoEffectFade
DisplayName English:	Photo Effect Fade
DisplayName German:	Fotoeffekt Alt
DisplayName French:	Effet de photo Fondu
DisplayName Italian:	Effetto foto dissolvenza
DisplayName Spanish:	Efecto fotografico Fundido

Categories:

- CICategoryColorEffect: Color Effect
- CICategoryVideo: Video
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In
- CICategoryXMPSerializable: CICategoryXMPSerializable

Input:

- inputImage: Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.130.2 Methods

5.130.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.130.4 Properties

5.130.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Photo Effect Fade attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.130.6 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

(Read and Write property)

Name:	inputImage
Class:	CImageMBS (CImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAtributeTypeImage

5.131 class CIFilterPhotoEffectInstantMBS

5.131.1 class CIFilterPhotoEffectInstantMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Photo Effect Instant filter.

Notes:

Details for this filter:

FilterName:	CIPhotoEffectInstant
DisplayName English:	Photo Effect Instant
DisplayName German:	Fotoeffekt Sofortbild
DisplayName French:	Effet de photo Instantan
DisplayName Italian:	Effetto foto istante
DisplayName Spanish:	Efecto fotogrifico Instantneo

Categories:

- CICategoryColorEffect: Color Effect
- CICategoryVideo: Video
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In
- CICategoryXMPSerializable: CICategoryXMPSerializable

Input:

- inputImage: Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.131.2 Methods

5.131.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.131.4 Properties

5.131.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Photo Effect Instant attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.131.6 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

(Read and Write property)

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

5.132 class CIFilterPhotoEffectMonoMBS

5.132.1 class CIFilterPhotoEffectMonoMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Photo Effect Mono filter.

Notes:

Details for this filter:

FilterName:	CIPhotoEffectMono
DisplayName English:	Photo Effect Mono
DisplayName German:	Fotoeffekt S/W hell
DisplayName French:	Effet de photo Mono
DisplayName Italian:	Effetto foto mono
DisplayName Spanish:	Efecto fotogrifico Mono

Categories:

- CICategoryColorEffect: Color Effect
- CICategoryVideo: Video
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In
- CICategoryXMPSerializable: CICategoryXMPSerializable

Input:

- inputImage: Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.132.2 Methods

5.132.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.132.4 Properties

5.132.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Photo Effect Mono attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.132.6 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

(Read and Write property)

Name:	inputImage
Class:	CImageMBS (CImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAtributeTypeImage

5.133 class CIFilterPhotoEffectNoirMBS

5.133.1 class CIFilterPhotoEffectNoirMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Photo Effect Noir filter.

Notes:

Details for this filter:

FilterName:	CIPhotoEffectNoir
DisplayName English:	Photo Effect Noir
DisplayName German:	Fotoeffekt S/W dunkel
DisplayName French:	Effet de photo Noir
DisplayName Italian:	Effetto foto noir
DisplayName Spanish:	Efecto fotografico Noir

Categories:

- CIColorEffect: Color Effect
- CIColorVideo: Video
- CIColorInterlaced: Interlaced
- CIColorNonSquarePixels: Non-Square Pixels
- CIColorStillImage: Still Image
- CIColorBuiltIn: Built-In
- CIColorXMPSerializable: CIColorXMPSerializable

Input:

- inputImage: Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.133.2 Methods

5.133.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.133.4 Properties

5.133.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Photo Effect Noir attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.133.6 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

(Read and Write property)

Name:	inputImage
Class:	UIImageMBS (UIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	UIImageAttributeTypeImage

5.134 class CIFilterPhotoEffectProcessMBS

5.134.1 class CIFilterPhotoEffectProcessMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Photo Effect Process filter.

Notes:

Details for this filter:

FilterName:	CIPhotoEffectProcess
DisplayName English:	Photo Effect Process
DisplayName German:	Fotoeffekt Prozess
DisplayName French:	Effet de photo Traitement
DisplayName Italian:	Effetto foto processing
DisplayName Spanish:	Efecto fotografico Procesamiento

Categories:

- CICategoryColorEffect: Color Effect
- CICategoryVideo: Video
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In
- CICategoryXMPSerializable: CICategoryXMPSerializable

Input:

- inputImage: Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.134.2 Methods

5.134.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.134.4 Properties

5.134.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Photo Effect Process attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.134.6 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

(Read and Write property)

Name:	inputImage
Class:	CImageMBS (CImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAtributeTypeImage

5.135 class CIFilterPhotoEffectTonalMBS

5.135.1 class CIFilterPhotoEffectTonalMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Photo Effect Tonal filter.

Notes:

Details for this filter:

FilterName:	CIPhotoEffectTonal
DisplayName English:	Photo Effect Tonal
DisplayName German:	Fotoeffekt S/W mittel
DisplayName French:	Effet de photo Tonalits
DisplayName Italian:	Effetto foto tonale
DisplayName Spanish:	Efecto fotogrifico Tonal

Categories:

- CIColorEffect: Color Effect
- CIColorVideo: Video
- CIColorInterlaced: Interlaced
- CIColorNonSquarePixels: Non-Square Pixels
- CIColorStillImage: Still Image
- CIColorBuiltIn: Built-In
- CIColorXMPSerializable: CIColorXMPSerializable

Input:

- inputImage: Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.135.2 Methods

5.135.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.135.4 Properties

5.135.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Photo Effect Tonal attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.135.6 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

(Read and Write property)

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

5.136 class CIFilterPhotoEffectTransferMBS

5.136.1 class CIFilterPhotoEffectTransferMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Photo Effect Transfer filter.

Notes:

Details for this filter:

FilterName:	CIPhotoEffectTransfer
DisplayName English:	Photo Effect Transfer
DisplayName German:	Fotoeffekt Transfer
DisplayName French:	Effet de photo Transfert
DisplayName Italian:	Effetto foto transfer
DisplayName Spanish:	Efecto fotografico Transferencia

Categories:

- CICategoryColorEffect: Color Effect
- CICategoryVideo: Video
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In
- CICategoryXMPSerializable: CICategoryXMPSerializable

Input:

- inputImage: Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.136.2 Methods

5.136.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.136.4 Properties

5.136.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Photo Effect Transfer attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.136.6 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

(Read and Write property)

Name:	inputImage
Class:	CImageMBS (CImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAtributeTypeImage

5.137 class CIFilterPinchDistortionMBS

5.137.1 class CIFilterPinchDistortionMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Pinch Distortion filter.

Notes:

Details for this filter:

FilterName:	CIPinchDistortion
DisplayName English:	Pinch Distortion
DisplayName German:	Verzerrung Drcken
DisplayName French:	Dformation Pincement
DisplayName Italian:	Distorsione minima
DisplayName Spanish:	Distorsin por contraccin

Categories:

- CICategoryDistortionEffect: Distortion Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCenter: Center
- inputRadius: Radius
- inputScale: Scale

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.137.2 Methods

5.137.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.137.4 Properties

5.137.5 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Pinch Distortion attribute.

Notes:

This attribute should have this content:

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

(Read only property)

5.137.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Pinch Distortion attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.137.7 AttributeinputRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Pinch Distortion attribute.

Notes:

This attribute should have this content:

Name:	inputRadius
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
DefaultNumber:	300
IdentityNumber:	0
SliderMaxNumber:	1000
SliderMinNumber:	0

(Read only property)

5.137.8 AttributeinputScale as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Pinch Distortion attribute.

Notes:

This attribute should have this content:

Name:	inputScale
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Scale
DisplayName German:	Skalierung
DisplayName French:	chelle
DisplayName Italian:	Scala
DisplayName Spanish:	Escala
DefaultNumber:	0.5
IdentityNumber:	0
SliderMaxNumber:	2
SliderMinNumber:	0

(Read only property)

5.137.9 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center

Notes:

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

See AttributeinputCenter for more details.

(Read and Write property)

5.137.10 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

(Read and Write property)

Name:	inputImage
Class:	CImageMBS (CImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

5.137.11 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Radius

Notes:

Name:	inputRadius
Class:	double (NSNumber)
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
Type:	CIAAttributeTypeDistance

See AttributeinputRadius for more details.
(Read and Write property)

5.137.12 inputScale as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Scale

Notes:

Name:	inputScale
Class:	double (NSNumber)
DisplayName English:	Scale
DisplayName German:	Skalierung
DisplayName French:	chelle
DisplayName Italian:	Scala
DisplayName Spanish:	Escala
Type:	CIAAttributeTypeScalar

See AttributeinputScale for more details.

(Read and Write property)

5.138 class CIFilterPinLightBlendModeMBS

5.138.1 class CIFilterPinLightBlendModeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Pin Light Blend Mode filter.

Notes:

Details for this filter:

FilterName:	CIPinLightBlendMode
DisplayName English:	Pin Light Blend Mode
DisplayName German:	Mischmethode Punktuelles Licht
DisplayName French:	pingler le mode de fusion Lumire
DisplayName Italian:	Modalit sfumatura luce puntiforme
DisplayName Spanish:	Modo de mezcla por luz focal

Categories:

- CICategoryCompositeOperation: Composite Operation
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputBackgroundImage: Background Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.138.2 Methods

5.138.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.138.4 Properties

5.138.5 AttributeinputBackgroundImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Pin Light Blend Mode attribute.

Notes:

This attribute should have this content:

Name:	inputBackgroundImage
Class:	CIImageMBS
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.138.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Pin Light Blend Mode attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.138.7 inputBackgroundImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Background Image

Notes:

Name:	inputBackgroundImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
Type:	

See AttributeinputBackgroundImage for more details.
(Read and Write property)

5.138.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

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See `AttributeinputImage` for more details.
(Read and Write property)

5.139 class CIFilterPixellateMBS

5.139.1 class CIFilterPixellateMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Pixelate filter.

Notes:

Details for this filter:

FilterName:	CIPixellate
DisplayName English:	Pixelate
DisplayName German:	Verpixeln
DisplayName French:	Pixliser
DisplayName Italian:	Suddividi in pixel
DisplayName Spanish:	Pixelar

Categories:

- CICategoryStylize: Stylize
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCenter: Center
- inputScale: Scale

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.139.2 Methods

5.139.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.
Notes: On success the handle property is not zero and the filter has the default values set.

5.139.4 Properties

5.139.5 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Pixelate attribute.

Notes:

This attribute should have this content:

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

(Read only property)

5.139.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Pixelate attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.139.7 AttributeinputScale as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Pixelate attribute.

Notes:

This attribute should have this content:

Name:	inputScale
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Scale
DisplayName German:	Skalierung
DisplayName French:	chelle
DisplayName Italian:	Scala
DisplayName Spanish:	Escala
DefaultNumber:	8
IdentityNumber:	0
MaxNumber:	0
MinNumber:	1
SliderMaxNumber:	100
SliderMinNumber:	1

(Read only property)

5.139.8 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center

Notes:

See AttributeinputCenter for more details.

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

(Read and Write property)

5.139.9 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.

(Read and Write property)

5.139.10 inputScale as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Scale
Notes:

See AttributeinputScale for more details.

(Read and Write property)

Name:	inputScale
Class:	double (NSNumber)
DisplayName English:	Scale
DisplayName German:	Skalierung
DisplayName French:	chelle
DisplayName Italian:	Scala
DisplayName Spanish:	Escala
Type:	CIAttributeTypeDistance

5.140 class CIFilterPointillizeMBS

5.140.1 class CIFilterPointillizeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Pointillize filter.

Notes:

Details for this filter:

FilterName:	CIPointillize
DisplayName English:	Pointillize
DisplayName German:	Punktieren
DisplayName French:	Pointilliste
DisplayName Italian:	Divisione in punti
DisplayName Spanish:	Puntilear

Categories:

- CICategoryStylize: Stylize
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputRadius: Radius
- inputCenter: Center

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.140.2 Methods

5.140.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.140.4 Properties

5.140.5 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Pointillize attribute.

Notes:

This attribute should have this content:

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

(Read only property)

5.140.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Pointillize attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.140.7 AttributeinputRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Pointillize attribute.

Notes:

This attribute should have this content:

Name:	inputRadius
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
DefaultNumber:	20
IdentityNumber:	1
MaxNumber:	0
MinNumber:	1
SliderMaxNumber:	100
SliderMinNumber:	1

(Read only property)

5.140.8 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center

Notes:

See AttributeinputCenter for more details.

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAAttributeTypePosition

(Read and Write property)

5.140.9 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See AttributeinputImage for more details.

(Read and Write property)

5.140.10 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute
 Radius

Notes:

See AttributeinputRadius for more details.

(Read and Write property)

Name:	inputRadius
Class:	double (NSNumber)
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
Type:	CIAttributeTypeDistance

5.141 class CIFilterQRCodeGeneratorMBS

5.141.1 class CIFilterQRCodeGeneratorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage QRCode Generator filter.

Notes:

Details for this filter:

FilterName:	CIQRCodeGenerator
DisplayName English:	QRCode Generator
DisplayName German:	CIQRCodeGenerator
DisplayName French:	Gnrateur QRCode
DisplayName Italian:	Generatore QRCode
DisplayName Spanish:	Generador de QRCode

Categories:

- CICategoryGenerator: Generator
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputMessage: Message
- inputCorrectionLevel: CorrectionLevel

Output:

- outputImage
- outputCGImage

Subclass of the CIFilterMBS class.

5.141.2 Methods

5.141.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.
Notes: On success the handle property is not zero and the filter has the default values set.

5.141.4 Properties

5.141.5 AttributeinputCorrectionLevel as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the QRCode Generator attribute.

Notes:

This attribute should have this content:

Name:	inputCorrectionLevel
Class:	String
DisplayName:	CorrectionLevel
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.141.6 AttributeinputMessage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the QRCode Generator attribute.

Notes:

This attribute should have this content:

Name:	inputMessage
Class:	Memoryblock
DisplayName:	Message
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.141.7 inputCorrectionLevel as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute CorrectionLevel

Notes:

Name:	inputCorrectionLevel
Class:	String (NSString)
DisplayName English:	CorrectionLevel
DisplayName German:	CorrectionLevel
DisplayName French:	CorrectionLevel
DisplayName Italian:	CorrectionLevel
DisplayName Spanish:	CorrectionLevel
Type:	

See AttributeinputCorrectionLevel for more details.
(Read and Write property)

5.141.8 inputMessage as Memoryblock

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Message

Notes:

Name:	inputMessage
Class:	Memoryblock (NSData)
DisplayName English:	Message
DisplayName German:	Message
DisplayName French:	Message
DisplayName Italian:	Message
DisplayName Spanish:	Message
Type:	

See AttributeinputMessage for more details.
(Read and Write property)

5.142 class CIFilterRadialGradientMBS

5.142.1 class CIFilterRadialGradientMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Radial Gradient filter.

Notes:

Details for this filter:

FilterName:	CIRadialGradient
DisplayName English:	Radial Gradient
DisplayName German:	Radialer Verlauf
DisplayName French:	Dgrad radial
DisplayName Italian:	Gradiente radiale
DisplayName Spanish:	Degradado radial

Categories:

- CICategoryGradient: Gradient
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputCenter: Center
- inputRadius0: Radius 1
- inputRadius1: Radius 2
- inputColor0: Color 1
- inputColor1: Color 2

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.142.2 Methods

5.142.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.142.4 Properties

5.142.5 Attribute

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Radial Gradient attribute.

Notes:

This attribute should have this content:

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

(Read only property)

5.142.6 Attribute

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Radial Gradient attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputColor0
Class:	CIColorMBS
Type:	CIAttributeTypeColor
DisplayName English:	Color 1
DisplayName German:	Farbe 1
DisplayName French:	Couleur 1
DisplayName Italian:	Colore 1
DisplayName Spanish:	Color 1
DefaultColor:	Red = 1, Green = 1, Blue = 1, Alpha = 1
IdentityNumber:	0

5.142.7 AttributeinputColor1 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Radial Gradient attribute.

Notes:

This attribute should have this content:

Name:	inputColor1
Class:	CIColorMBS
Type:	CIAttributeTypeColor
DisplayName English:	Color 2
DisplayName German:	Farbe 2
DisplayName French:	Couleur 2
DisplayName Italian:	Colore 2
DisplayName Spanish:	Color 2
DefaultColor:	Red = 0, Green = 0, Blue = 0, Alpha = 1
IdentityNumber:	0

(Read only property)

5.142.8 AttributeinputRadius0 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Radial Gradient attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputRadius0
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Radius 1
DisplayName German:	Radius 1
DisplayName French:	Rayon 1
DisplayName Italian:	Raggio 1
DisplayName Spanish:	Radio 1
DefaultNumber:	5
IdentityNumber:	0
SliderMaxNumber:	800
SliderMinNumber:	0

5.142.9 AttributeinputRadius1 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Radial Gradient attribute.

Notes:

This attribute should have this content:

Name:	inputRadius1
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Radius 2
DisplayName German:	Radius 2
DisplayName French:	Rayon 2
DisplayName Italian:	Raggio 2
DisplayName Spanish:	Radio 2
DefaultNumber:	100
IdentityNumber:	0
SliderMaxNumber:	800
SliderMinNumber:	0

(Read only property)

5.142.10 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center

Notes:

See AttributeinputCenter for more details.

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

(Read and Write property)

5.142.11 inputColor0 as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Color 1

Notes:

Name:	inputColor0
Class:	CIColorMBS (CIColor)
DisplayName English:	Color 1
DisplayName German:	Farbe 1
DisplayName French:	Couleur 1
DisplayName Italian:	Colore 1
DisplayName Spanish:	Color 1
Type:	CIAttributeTypeColor

See AttributeinputColor0 for more details.

(Read and Write property)

5.142.12 inputColor1 as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Color 2

Notes:

See AttributeinputColor1 for more details.

(Read and Write property)

Name:	inputColor1
Class:	CIColorMBS (CIColor)
DisplayName English:	Color 2
DisplayName German:	Farbe 2
DisplayName French:	Couleur 2
DisplayName Italian:	Colore 2
DisplayName Spanish:	Color 2
Type:	CIAttributeTypeColor

5.142.13 inputRadius0 as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Radius 1

Notes:

Name:	inputRadius0
Class:	double (NSNumber)
DisplayName English:	Radius 1
DisplayName German:	Radius 1
DisplayName French:	Rayon 1
DisplayName Italian:	Raggio 1
DisplayName Spanish:	Radio 1
Type:	CIAttributeTypeDistance

See AttributeinputRadius0 for more details.
(Read and Write property)

5.142.14 inputRadius1 as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Radius 2

Notes:

Name:	inputRadius1
Class:	double (NSNumber)
DisplayName English:	Radius 2
DisplayName German:	Radius 2
DisplayName French:	Rayon 2
DisplayName Italian:	Raggio 2
DisplayName Spanish:	Radio 2
Type:	CIAttributeTypeDistance

See AttributeinputRadius1 for more details.

(Read and Write property)

5.143 class CIFilterRandomGeneratorMBS

5.143.1 class CIFilterRandomGeneratorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Random Generator filter.

Notes:

Details for this filter:

FilterName:	CIRandomGenerator
DisplayName English:	Random Generator
DisplayName German:	Zufallsgenerator
DisplayName French:	Gnrateur alatoire
DisplayName Italian:	Generatore casuale
DisplayName Spanish:	Generador aleatorio

Categories:

- CICategoryGenerator: Generator
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.143.2 Methods

5.143.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.144 class CIFilterRippleTransitionMBS

5.144.1 class CIFilterRippleTransitionMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Ripple filter.

Notes:

Details for this filter:

FilterName:	CIRippleTransition
DisplayName English:	Ripple
DisplayName German:	Wellen
DisplayName French:	Ondulation
DisplayName Italian:	Incespatura
DisplayName Spanish:	Ondas

Categories:

- CICategoryTransition: Transition
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputTargetImage: Target Image
- inputShadingImage: Shading Image
- inputCenter: Center
- inputExtent: Extent
- inputTime: Time
- inputWidth: Width
- inputScale: Scale

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.144.2 Methods

5.144.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.144.4 Properties

5.144.5 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Ripple attribute.

Notes:

This attribute should have this content:

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

(Read only property)

5.144.6 AttributeinputExtent as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Ripple attribute.

Notes:

This attribute should have this content:

Name:	inputExtent
Class:	CIVectorMBS
Type:	CIAttributeTypeRectangle
DisplayName English:	Extent
DisplayName German:	Betrag
DisplayName French:	tendue
DisplayName Italian:	Ampiezza
DisplayName Spanish:	Amplitud
DefaultVector:	[0 0 300 300]
IdentityVector:	n/a

(Read only property)

5.144.7 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Ripple attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.144.8 AttributeinputScale as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Ripple attribute.

Notes:

This attribute should have this content:

Name:	inputScale
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Scale
DisplayName German:	Skalierung
DisplayName French:	chelle
DisplayName Italian:	Scala
DisplayName Spanish:	Escala
DefaultNumber:	50
IdentityNumber:	0
MaxNumber:	0
MinNumber:	-50
SliderMaxNumber:	50
SliderMinNumber:	-50

(Read only property)

5.144.9 Attribute

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Ripple attribute.

Notes:

This attribute should have this content:

Name:	inputShadingImage
Class:	CIIImageMBS
DisplayName English:	Shading Image
DisplayName German:	Bild schattieren
DisplayName French:	Image dombrage
DisplayName Italian:	Immagine ombreggiatura
DisplayName Spanish:	Imagen de sombra
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.144.10 AttributeinputTargetImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Ripple attribute.

Notes:

This attribute should have this content:

Name:	inputTargetImage
Class:	CIImageMBS
DisplayName English:	Target Image
DisplayName German:	Zielbild
DisplayName French:	Image cible
DisplayName Italian:	Immagine target
DisplayName Spanish:	Imagen de destino
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.144.11 AttributeinputTime as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Ripple attribute.

Notes:

This attribute should have this content:

Name:	inputTime
Class:	double
Type:	CIAttributeTypeTime
DisplayName English:	Time
DisplayName German:	Zeit
DisplayName French:	Dure
DisplayName Italian:	Tempo
DisplayName Spanish:	Tiempo
DefaultNumber:	0
IdentityNumber:	0
MaxNumber:	1
MinNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

(Read only property)

5.144.12 AttributeinputWidth as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Ripple attribute.

Notes:

This attribute should have this content:

Name:	inputWidth
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
DefaultNumber:	100
IdentityNumber:	0
MaxNumber:	0
MinNumber:	1
SliderMaxNumber:	300
SliderMinNumber:	10

(Read only property)

5.144.13 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center

Notes:

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

See AttributeinputCenter for more details.
(Read and Write property)

5.144.14 inputExtent as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Extent

Notes:

Name:	inputExtent
Class:	CIVectorMBS (CIVector)
DisplayName English:	Extent
DisplayName German:	Betrag
DisplayName French:	tendue
DisplayName Italian:	Ampiezza
DisplayName Spanish:	Amplitud
Type:	CIAAttributeTypeRectangle

See AttributeinputExtent for more details.
(Read and Write property)

5.144.15 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.144.16 inputScale as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Scale
Notes:

Name:	inputScale
Class:	double (NSNumber)
DisplayName English:	Scale
DisplayName German:	Skalierung
DisplayName French:	chelle
DisplayName Italian:	Scala
DisplayName Spanish:	Escala
Type:	CIAttributeTypeScalar

See AttributeinputScale for more details.
 (Read and Write property)

5.144.17 inputShadingImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Shading Image
Notes:

Name:	inputShadingImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Shading Image
DisplayName German:	Bild schattieren
DisplayName French:	Image dombrage
DisplayName Italian:	Immagine ombreggiatura
DisplayName Spanish:	Imagen de sombra
Type:	

See AttributeinputShadingImage for more details.
 (Read and Write property)

5.144.18 inputTargetImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Target Image
Notes:

See AttributeinputTargetImage for more details.

Name: inputTargetImage
 Class: CIIImageMBS (CIIImage)
 DisplayName English: Target Image
 DisplayName German: Zielbild
 DisplayName French: Image cible
 DisplayName Italian: Immagine target
 DisplayName Spanish: Imagen de destino
 Type:

(Read and Write property)

5.144.19 inputTime as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Time
Notes:

Name: inputTime
 Class: double (NSNumber)
 DisplayName English: Time
 DisplayName German: Zeit
 DisplayName French: Dure
 DisplayName Italian: Tempo
 DisplayName Spanish: Tiempo
 Type: CIAAttributeTypeTime

See AttributeinputTime for more details.

(Read and Write property)

5.144.20 inputWidth as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Width

Notes:

See AttributeinputWidth for more details.

(Read and Write property)

Name:	inputWidth
Class:	double (NSNumber)
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
Type:	CIAttributeTypeDistance

5.145 class CIFilterRowAverageMBS

5.145.1 class CIFilterRowAverageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Row Average filter.

Notes:

Details for this filter:

FilterName:	CIRowAverage
DisplayName English:	Row Average
DisplayName German:	Zeilendurchschnitt
DisplayName French:	Moyenne de ranges
DisplayName Italian:	Media riga
DisplayName Spanish:	Media de la fila

Categories:

- CICategoryReduction: Reduction
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputExtent: Extent

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.145.2 Methods

5.145.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.145.4 Properties

5.145.5 AttributeinputExtent as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Row Average attribute.

Notes:

This attribute should have this content:

Name:	inputExtent
Class:	CIVectorMBS
Type:	CIAttributeTypeRectangle
DisplayName English:	Extent
DisplayName German:	Betrag
DisplayName French:	tendue
DisplayName Italian:	Ampiezza
DisplayName Spanish:	Amplitud
DefaultVector:	[0 0 640 80]
IdentityVector:	n/a

(Read only property)

5.145.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Row Average attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.145.7 inputExtent as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Extent

Notes:

Name:	inputExtent
Class:	CIVectorMBS (CIVector)
DisplayName English:	Extent
DisplayName German:	Betrag
DisplayName French:	tendue
DisplayName Italian:	Ampiezza
DisplayName Spanish:	Amplitud
Type:	CIAAttributeTypeRectangle

See AttributeinputExtent for more details.
(Read and Write property)

5.145.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See `AttributeinputImage` for more details.
(Read and Write property)

5.146 class CIFilterSaturationBlendModeMBS

5.146.1 class CIFilterSaturationBlendModeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Saturation Blend Mode filter.

Notes:

Details for this filter:

FilterName:	CISaturationBlendMode
DisplayName English:	Saturation Blend Mode
DisplayName German:	Mischmethode Sttigung
DisplayName French:	Mode de fusion Saturation
DisplayName Italian:	Modalit sfumatura saturazione
DisplayName Spanish:	Modo de mezcla de saturacin

Categories:

- CICategoryCompositeOperation: Composite Operation
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputBackgroundImage: Background Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.146.2 Methods

5.146.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.146.4 Properties

5.146.5 AttributeBackgroundImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Saturation Blend Mode attribute.

Notes:

This attribute should have this content:

Name:	inputBackgroundImage
Class:	CIImageMBS
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.146.6 AttributeImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Saturation Blend Mode attribute.

Notes:

This attribute should have this content:

(Read only property)

Name: inputImage
 Class: CIImageMBS
 Type: CIAttributeTypeImage
 DisplayName English: Image
 DisplayName German: Bild
 DisplayName French: Image
 DisplayName Italian: Immagine
 DisplayName Spanish: Imagen
 DefaultNumber: 0
 IdentityNumber: 0

5.146.7 inputBackgroundImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Background Image

Notes:

Name: inputBackgroundImage
 Class: CIImageMBS (CIImage)
 DisplayName English: Background Image
 DisplayName German: Hintergrundbild
 DisplayName French: Image darrire-plan
 DisplayName Italian: Immagine di sfondo
 DisplayName Spanish: Imagen de fondo
 Type:

See AttributeinputBackgroundImage for more details.
(Read and Write property)

5.146.8 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name: inputImage
 Class: CIImageMBS (CIImage)
 DisplayName English: Image
 DisplayName German: Bild
 DisplayName French: Image
 DisplayName Italian: Immagine
 DisplayName Spanish: Imagen
 Type: CIAttributeTypeImage

See `AttributeinputImage` for more details.
(Read and Write property)

5.147 class CIFilterScreenBlendModeMBS

5.147.1 class CIFilterScreenBlendModeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Screen Blend Mode filter.

Notes:

Details for this filter:

FilterName:	CIScreenBlendMode
DisplayName English:	Screen Blend Mode
DisplayName German:	Mischmethode Blende
DisplayName French:	Mode de fusion cran
DisplayName Italian:	Modalit sfumatura schermo
DisplayName Spanish:	Modo de mezcla de pantalla

Categories:

- CICategoryCompositeOperation: Composite Operation
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputBackgroundImage: Background Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.147.2 Methods

5.147.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.147.4 Properties

5.147.5 AttributeinputBackgroundImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Screen Blend Mode attribute.

Notes:

This attribute should have this content:

Name:	inputBackgroundImage
Class:	CIImageMBS
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.147.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Screen Blend Mode attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.147.7 inputBackgroundImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Background Image

Notes:

Name:	inputBackgroundImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
Type:	

See AttributeinputBackgroundImage for more details.
(Read and Write property)

5.147.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See `AttributeinputImage` for more details.
(Read and Write property)

5.148 class CIFilterSepiaToneMBS

5.148.1 class CIFilterSepiaToneMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Sepia Tone filter.

Notes:

Details for this filter:

FilterName:	CISepiaTone
DisplayName English:	Sepia Tone
DisplayName German:	Sepia-Farbtne
DisplayName French:	Ton spia
DisplayName Italian:	Tonalit seppia
DisplayName Spanish:	Tono sepia

Categories:

- CICategoryColorEffect: Color Effect
- CICategoryVideo: Video
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In
- CICategoryXMPSerializable: CICategoryXMPSerializable

Input:

- inputImage: Image
- inputIntensity: Intensity

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.148.2 Methods

5.148.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.148.4 Properties

5.148.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Sepia Tone attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.148.6 AttributeinputIntensity as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Sepia Tone attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputIntensity
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Intensity
DisplayName German:	Intensitt
DisplayName French:	Intensit
DisplayName Italian:	Intensit
DisplayName Spanish:	Intensidad
DefaultNumber:	1
IdentityNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

5.148.7 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.148.8 inputIntensity as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Intensity
Notes:

See AttributeinputIntensity for more details.
 (Read and Write property)

Name:	inputIntensity
Class:	double (NSNumber)
DisplayName English:	Intensity
DisplayName German:	Intensitt
DisplayName French:	Intensit
DisplayName Italian:	Intensit
DisplayName Spanish:	Intensidad
Type:	CIAttributeTypeScalar

5.149 class CIFilterShadedMaterialMBS

5.149.1 class CIFilterShadedMaterialMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Shaded Material filter.

Notes:

Details for this filter:

FilterName:	CIShadedMaterial
DisplayName English:	Shaded Material
DisplayName German:	Schattiertes Material
DisplayName French:	Matriau ombr
DisplayName Italian:	Materiale ombreggiato
DisplayName Spanish:	Material sombreado

Categories:

- CICategoryStylize: Stylize
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputShadingImage: Shading Image
- inputScale: Scale

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.149.2 Methods

5.149.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.149.4 Properties

5.149.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Shaded Material attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.149.6 AttributeinputScale as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Shaded Material attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputScale
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Scale
DisplayName German:	Skalierung
DisplayName French:	chelle
DisplayName Italian:	Scala
DisplayName Spanish:	Escala
DefaultNumber:	10
IdentityNumber:	0
SliderMaxNumber:	200
SliderMinNumber:	0.5

5.149.7 AttributeinputShadingImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Shaded Material attribute.

Notes:

This attribute should have this content:

Name:	inputShadingImage
Class:	CIImageMBS
DisplayName English:	Shading Image
DisplayName German:	Bild schattieren
DisplayName French:	Image dombrage
DisplayName Italian:	Immagine ombreggiatura
DisplayName Spanish:	Imagen de sombra
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.149.8 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

See AttributeinputImage for more details.

(Read and Write property)

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

5.149.9 inputScale as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Scale
Notes:

Name:	inputScale
Class:	double (NSNumber)
DisplayName English:	Scale
DisplayName German:	Skalierung
DisplayName French:	chelle
DisplayName Italian:	Scala
DisplayName Spanish:	Escala
Type:	CIAttributeTypeDistance

See AttributeinputScale for more details.
 (Read and Write property)

5.149.10 inputShadingImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Shading Image
Notes:

Name:	inputShadingImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Shading Image
DisplayName German:	Bild schattieren
DisplayName French:	Image dombrage
DisplayName Italian:	Immagine ombreggiatura
DisplayName Spanish:	Imagen de sombra
Type:	

See AttributeinputShadingImage for more details.

(Read and Write property)

5.150 class CIFilterShapeMBS

5.150.1 class CIFilterShapeMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class to represent a filter shape in Realbasic.

5.150.2 Methods

5.150.3 Constructor(cgrect as CCGRectMBS)

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Create a shape representing the smallest integral rect containing 'cgrect'.

See also:

- 5.150.4 Constructor(Handle as Integer) 1330

5.150.4 Constructor(Handle as Integer)

Plugin Version: 12.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Initializes object with given object reference.

Notes:

ref should be a CIFilterShape* and the object is retained.

Raises UnsupportedOperationException if object is not a CIFilterShape.

See also:

- 5.150.3 Constructor(cgrect as CCGRectMBS) 1330

5.150.5 copy as CIFilterShapeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a copy of the filter shape object.

5.150.6 InsetByX(x as Integer, y as Integer) as CIFilterShapeMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Create a shape representing the shape inset by 'delta'.

5.150.7 IntersectWith(s as CFilterShapeMBS) as CFilterShapeMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Create a shape representing the intersection of the shape and 's'.

5.150.8 IntersectWithRect(cgrect as CRectMBS) as CFilterShapeMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Create a shape representing the intersection of the shape and the smallest integral rect containing 'cgrect'.

5.150.9 shapeWithRect(r as CRectMBS) as CFilterShapeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a filter shape object and initializes it with a rectangle.

Notes: R: A rectangle. The filter shape object will contain the smallest integral rectangle specified by this argument.

5.150.10 TransformBy(CGAffineTransform as NSAffineTransformMBS, flag as boolean) as CFilterShapeMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Create a shape from the result of transforming the shape by CGAffineTransform.

Notes:

If flag is false the new shape will contain all pixels in the transformed shape (and possibly some outside the transformed shape).

If flag is true the new shape will contain a subset of the pixels in the transformed shape (but none of those outside the transformed shape).

5.150.11 UnionWith(s as CFilterShapeMBS) as CFilterShapeMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Create a shape representing the union of the shape and 's'.

5.150.12 UnionWithRect(cgrect as CRectMBS) as CFilterShapeMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Create a shape representing the union of the shape and the smallest integral rect containing 'cgrect'.

5.150.13 Properties

5.150.14 description as String

Plugin Version: 9.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the textual description for this filter shape.

Notes: (Read only property)

5.150.15 extent as CGRectMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The extent of the filter shape.

Notes:

Extent is a rectangle that describes the filter shape in the working coordinate space with a fixed area.

Available in OS X v10.11 and later.

(Read only property)

5.150.16 Handle as Integer

Plugin Version: 12.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The handle to the internal used CIFilterShape reference.

Notes: (Read only property)

5.151 class CIFilterSharpenLuminanceMBS

5.151.1 class CIFilterSharpenLuminanceMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Sharpen Luminance filter.

Notes:

Details for this filter:

FilterName:	CISharpenLuminance
DisplayName English:	Sharpen Luminance
DisplayName German:	Luminanz scharfzeichnen
DisplayName French:	Renforcer la luminance
DisplayName Italian:	Luminosit nitidezza
DisplayName Spanish:	Agudizar luminancia

Categories:

- CICategorySharpen: Sharpen
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputSharpness: Sharpness

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.151.2 Methods

5.151.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.151.4 Properties

5.151.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Sharpen Luminance attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.151.6 AttributeinputSharpness as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Sharpen Luminance attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputSharpness
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Sharpness
DisplayName German:	Schrfe
DisplayName French:	Nettet
DisplayName Italian:	Nitidezza
DisplayName Spanish:	Nitidez
DefaultNumber:	0.4
IdentityNumber:	0
SliderMaxNumber:	2
SliderMinNumber:	0

5.151.7 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.151.8 inputSharpness as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Sharpness
Notes:

See AttributeinputSharpness for more details.
 (Read and Write property)

Name:	inputSharpness
Class:	double (NSNumber)
DisplayName English:	Sharpness
DisplayName German:	Schrfe
DisplayName French:	Nettet
DisplayName Italian:	Nitidezza
DisplayName Spanish:	Nitidez
Type:	CIAttributeTypeScalar

5.152 class CIFilterSixfoldReflectedTileMBS

5.152.1 class CIFilterSixfoldReflectedTileMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Sixfold Reflected Tile filter.

Notes:

Details for this filter:

FilterName:	CISixfoldReflectedTile
DisplayName English:	Sixfold Reflected Tile
DisplayName German:	6-fach reflektierte Kachel
DisplayName French:	Mosaque rflchie 6 fois
DisplayName Italian:	Mosaico riflesso in sei direzioni
DisplayName Spanish:	Mosaico reflejado seis veces

Categories:

- CICategoryTileEffect: Tile Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCenter: Center
- inputAngle: Angle
- inputWidth: Width

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.152.2 Methods

5.152.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.152.4 Properties

5.152.5 AttributeinputAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Sixfold Reflected Tile attribute.

Notes:

This attribute should have this content:

Name:	inputAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
DefaultNumber:	0
IdentityNumber:	0
SliderMaxNumber:	3.141593
SliderMinNumber:	-3.141593

(Read only property)

5.152.6 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Sixfold Reflected Tile attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

5.152.7 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Sixfold Reflected Tile attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.152.8 AttributeinputWidth as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Sixfold Reflected Tile attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputWidth
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
DefaultNumber:	100
IdentityNumber:	100
SliderMaxNumber:	200
SliderMinNumber:	1

5.152.9 inputAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Angle
Notes:

Name:	inputAngle
Class:	double (NSNumber)
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
Type:	CIAttributeTypeAngle

See AttributeinputAngle for more details.
 (Read and Write property)

5.152.10 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center
Notes:

See AttributeinputCenter for more details.
 (Read and Write property)

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

5.152.11 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.152.12 inputWidth as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Width
Notes:

Name:	inputWidth
Class:	double (NSNumber)
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
Type:	CIAttributeTypeDistance

See AttributeinputWidth for more details.

(Read and Write property)

5.153 class CIFilterSixfoldRotatedTileMBS

5.153.1 class CIFilterSixfoldRotatedTileMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Sixfold Rotated Tile filter.

Notes:

Details for this filter:

FilterName:	CISixfoldRotatedTile
DisplayName English:	Sixfold Rotated Tile
DisplayName German:	6-fach gedrehte Kachel
DisplayName French:	Mosaque pivote 6 fois
DisplayName Italian:	Mosaico ruotato in sei direzioni
DisplayName Spanish:	Mosaico rotado seis veces

Categories:

- CICategoryTileEffect: Tile Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCenter: Center
- inputAngle: Angle
- inputWidth: Width

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.153.2 Methods

5.153.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.153.4 Properties

5.153.5 AttributeinputAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Sixfold Rotated Tile attribute.

Notes:

This attribute should have this content:

Name:	inputAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
DefaultNumber:	0
IdentityNumber:	0
SliderMaxNumber:	3.141593
SliderMinNumber:	-3.141593

(Read only property)

5.153.6 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Sixfold Rotated Tile attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

5.153.7 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Sixfold Rotated Tile attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.153.8 AttributeinputWidth as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Sixfold Rotated Tile attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputWidth
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
DefaultNumber:	100
IdentityNumber:	100
SliderMaxNumber:	200
SliderMinNumber:	1

5.153.9 inputAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Angle
Notes:

Name:	inputAngle
Class:	double (NSNumber)
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
Type:	CIAttributeTypeAngle

See AttributeinputAngle for more details.
 (Read and Write property)

5.153.10 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center
Notes:

See AttributeinputCenter for more details.
 (Read and Write property)

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

5.153.11 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.153.12 inputWidth as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Width
Notes:

Name:	inputWidth
Class:	double (NSNumber)
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
Type:	CIAttributeTypeDistance

See AttributeinputWidth for more details.

(Read and Write property)

5.154 class CIFilterSmoothLinearGradientMBS

5.154.1 class CIFilterSmoothLinearGradientMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Smooth Linear Gradient filter.

Notes:

Details for this filter:

FilterName:	CISmoothLinearGradient
DisplayName English:	Smooth Linear Gradient
DisplayName German:	
DisplayName French:	Dgrad linaire lisse
DisplayName Italian:	Gradiente lineare graduale
DisplayName Spanish:	Suavizar el degradado lineal

Categories:

- CICategoryGradient: Gradient
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputPoint0: Point 1
- inputPoint1: Point 2
- inputColor0: Color 1
- inputColor1: Color 2

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.154.2 Methods

5.154.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.154.4 Properties

5.154.5 AttributeinputColor0 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Smooth Linear Gradient attribute.

Notes:

This attribute should have this content:

Name:	inputColor0
Class:	CIColorMBS
Type:	CIAttributeTypeColor
DisplayName English:	Color 1
DisplayName German:	
DisplayName French:	Couleur 1
DisplayName Italian:	Colore 1
DisplayName Spanish:	Color 1
DefaultColor:	Red = 1, Green = 1, Blue = 1, Alpha = 1
IdentityNumber:	0

(Read only property)

5.154.6 AttributeinputColor1 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Smooth Linear Gradient attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputColor1
Class:	CIColorMBS
Type:	CIAttributeTypeColor
DisplayName English:	Color 2
DisplayName German:	
DisplayName French:	Couleur 2
DisplayName Italian:	Colore 2
DisplayName Spanish:	Color 2
DefaultColor:	Red = 0, Green = 0, Blue = 0, Alpha = 1
IdentityNumber:	0

5.154.7 AttributeinputPoint0 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Smooth Linear Gradient attribute.

Notes:

This attribute should have this content:

Name:	inputPoint0
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Point 1
DisplayName German:	
DisplayName French:	Point 1
DisplayName Italian:	Punto 1
DisplayName Spanish:	Punto 1
DefaultVector:	[0 0]
IdentityVector:	n/a

(Read only property)

5.154.8 AttributeinputPoint1 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Smooth Linear Gradient attribute.

Notes:

This attribute should have this content:

(Read only property)

Name: inputPoint1
 Class: CIVectorMBS
 Type: CIAttributeTypePosition
 DisplayName English: Point 2
 DisplayName German:
 DisplayName French: Point 2
 DisplayName Italian: Punto 2
 DisplayName Spanish: Punto 2
 DefaultVector: [200 200]
 IdentityVector: n/a

5.154.9 inputColor0 as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Color 1

Notes:

Name: inputColor0
 Class: CIColorMBS (CIColor)
 DisplayName English: Color 1
 DisplayName German:
 DisplayName French: Couleur 1
 DisplayName Italian: Colore 1
 DisplayName Spanish: Color 1
 Type: CIAttributeTypeColor

See AttributeinputColor0 for more details.
(Read and Write property)

5.154.10 inputColor1 as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Color 2

Notes:

See AttributeinputColor1 for more details.
(Read and Write property)

5.154.11 inputPoint0 as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Point 1

Name: inputColor1
 Class: CIColorMBS (CIColor)
 DisplayName English: Color 2
 DisplayName German:
 DisplayName French: Couleur 2
 DisplayName Italian: Colore 2
 DisplayName Spanish: Color 2
 Type: CIAttributeTypeColor

Notes:

Name: inputPoint0
 Class: CIVectorMBS (CIVector)
 DisplayName English: Point 1
 DisplayName German:
 DisplayName French: Point 1
 DisplayName Italian: Punto 1
 DisplayName Spanish: Punto 1
 Type: CIAttributeTypePosition

See AttributeinputPoint0 for more details.
 (Read and Write property)

5.154.12 inputPoint1 as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Point 2

Notes:

Name: inputPoint1
 Class: CIVectorMBS (CIVector)
 DisplayName English: Point 2
 DisplayName German:
 DisplayName French: Point 2
 DisplayName Italian: Punto 2
 DisplayName Spanish: Punto 2
 Type: CIAttributeTypePosition

See AttributeinputPoint1 for more details.
 (Read and Write property)

5.155 class CIFilterSoftLightBlendModeMBS

5.155.1 class CIFilterSoftLightBlendModeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Soft Light Blend Mode filter.

Notes:

Details for this filter:

FilterName:	CISoftLightBlendMode
DisplayName English:	Soft Light Blend Mode
DisplayName German:	Mischmethode Weiches Licht
DisplayName French:	Mode de fusion Lumire tamise
DisplayName Italian:	Modalit sfumatura luce soffusa
DisplayName Spanish:	Modo de mezcla por luz indirecta

Categories:

- CICategoryCompositeOperation: Composite Operation
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputBackgroundImage: Background Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.155.2 Methods

5.155.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.155.4 Properties

5.155.5 AttributeinputBackgroundImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Soft Light Blend Mode attribute.

Notes:

This attribute should have this content:

Name:	inputBackgroundImage
Class:	CIImageMBS
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.155.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Soft Light Blend Mode attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.155.7 inputBackgroundImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Background Image

Notes:

Name:	inputBackgroundImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
Type:	

See AttributeinputBackgroundImage for more details.
(Read and Write property)

5.155.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.156 class CIFilterSourceAtopCompositingMBS

5.156.1 class CIFilterSourceAtopCompositingMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Source Atop filter.

Notes:

Details for this filter:

FilterName:	CISourceAtopCompositing
DisplayName English:	Source Atop
DisplayName German:	Quelle obenauf
DisplayName French:	Source dessus
DisplayName Italian:	Sorgente sopra
DisplayName Spanish:	Sobre la fuente

Categories:

- CICategoryCompositeOperation: Composite Operation
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryHighDynamicRange: High Dynamic Range
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputBackgroundImage: Background Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.156.2 Methods

5.156.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.156.4 Properties

5.156.5 AttributeinputBackgroundImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Source Atop attribute.

Notes:

This attribute should have this content:

Name:	inputBackgroundImage
Class:	CIImageMBS
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.156.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Source Atop attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.156.7 inputBackgroundImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Background Image

Notes:

Name:	inputBackgroundImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
Type:	

See AttributeinputBackgroundImage for more details.
(Read and Write property)

5.156.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.157 class CIFilterSourceInCompositingMBS

5.157.1 class CIFilterSourceInCompositingMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Source In filter.

Notes:

Details for this filter:

FilterName:	CISourceInCompositing
DisplayName English:	Source In
DisplayName German:	Quelle innen
DisplayName French:	Source lintrieur
DisplayName Italian:	Sorgente ingresso
DisplayName Spanish:	Desde dentro de la fuente

Categories:

- CICategoryCompositeOperation: Composite Operation
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryHighDynamicRange: High Dynamic Range
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputBackgroundImage: Background Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.157.2 Methods

5.157.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.157.4 Properties

5.157.5 AttributeinputBackgroundImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Source In attribute.

Notes:

This attribute should have this content:

Name:	inputBackgroundImage
Class:	CIImageMBS
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.157.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Source In attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.157.7 inputBackgroundImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Background Image

Notes:

Name:	inputBackgroundImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
Type:	

See AttributeinputBackgroundImage for more details.
(Read and Write property)

5.157.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.158 class CIFilterSourceOutCompositingMBS

5.158.1 class CIFilterSourceOutCompositingMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Source Out filter.

Notes:

Details for this filter:

FilterName:	CISourceOutCompositing
DisplayName English:	Source Out
DisplayName German:	Quelle auen
DisplayName French:	Source lextrieur
DisplayName Italian:	Sorgente uscita
DisplayName Spanish:	Desde fuera de la fuente

Categories:

- CICategoryCompositeOperation: Composite Operation
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryHighDynamicRange: High Dynamic Range
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputBackgroundImage: Background Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.158.2 Methods

5.158.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.158.4 Properties

5.158.5 AttributeinputBackgroundImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Source Out attribute.

Notes:

This attribute should have this content:

Name:	inputBackgroundImage
Class:	CIImageMBS
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.158.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Source Out attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.158.7 inputBackgroundImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Background Image

Notes:

Name:	inputBackgroundImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
Type:	

See AttributeinputBackgroundImage for more details.
(Read and Write property)

5.158.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.159 class CIFilterSourceOverCompositingMBS

5.159.1 class CIFilterSourceOverCompositingMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Source Over filter.

Notes:

Details for this filter:

FilterName:	CISourceOverCompositing
DisplayName English:	Source Over
DisplayName German:	Quelle ber
DisplayName French:	Source au-dessus
DisplayName Italian:	Sorgente sovrapposizione
DisplayName Spanish:	Alrededor de la fuente

Categories:

- CICategoryCompositeOperation: Composite Operation
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryHighDynamicRange: High Dynamic Range
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputBackgroundImage: Background Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.159.2 Methods

5.159.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.159.4 Properties

5.159.5 AttributeinputBackgroundImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Source Over attribute.

Notes:

This attribute should have this content:

Name:	inputBackgroundImage
Class:	CIImageMBS
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.159.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Source Over attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.159.7 inputBackgroundImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Background Image

Notes:

Name:	inputBackgroundImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
Type:	

See AttributeinputBackgroundImage for more details.
(Read and Write property)

5.159.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.160 class CIFilterSpotColorMBS

5.160.1 class CIFilterSpotColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Spot Color filter.

Notes:

Details for this filter:

FilterName:	CISpotColor
DisplayName English:	Spot Color
DisplayName German:	Spot-Farbe
DisplayName French:	Couleur de la tache
DisplayName Italian:	Colore occhio di bue
DisplayName Spanish:	Color del punto

Categories:

- CICategoryBuiltIn: Built-In
- CICategoryStillImage: Still Image
- CICategoryVideo: Video
- CICategoryStylize: Stylize

Input:

- inputImage: Image
- inputCenterColor1: Center Color 1
- inputReplacementColor1: Replacement Color 1
- inputCloseness1: Closeness 1
- inputContrast1: Contrast 1
- inputCenterColor2: Center Color 2
- inputReplacementColor2: Replacement Color 2
- inputCloseness2: Closeness 2
- inputContrast2: Contrast 2
- inputCenterColor3: Center Color 3

- inputReplacementColor3: Replacement Color 3
- inputCloseness3: Closeness 3
- inputContrast3: Contrast 3

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.160.2 Methods

5.160.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.160.4 Properties

5.160.5 AttributeinputCenterColor1 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Spot Color attribute.

Notes:

This attribute should have this content:

Name:	inputCenterColor1
Class:	CIColorMBS
DisplayName English:	Center Color 1
DisplayName German:	Mittenfarbe 1
DisplayName French:	Couleur centrale 1
DisplayName Italian:	Colore centrale 1
DisplayName Spanish:	Color del centro 1
DefaultColor:	Red = 0.0784, Green = 0.0627, Blue = 0.0706, Alpha = 1
IdentityNumber:	0

(Read only property)

5.160.6 AttributeinputCenterColor2 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Spot Color attribute.

Notes:

This attribute should have this content:

Name:	inputCenterColor2
Class:	CIColorMBS
DisplayName English:	Center Color 2
DisplayName German:	Mittensfarbe 2
DisplayName French:	Couleur centrale 2
DisplayName Italian:	Colore centrale 2
DisplayName Spanish:	Color del centro 2
DefaultColor:	Red = 0.5255, Green = 0.3059, Blue = 0.3451, Alpha = 1
IdentityNumber:	0

(Read only property)

5.160.7 AttributeinputCenterColor3 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Spot Color attribute.

Notes:

This attribute should have this content:

Name:	inputCenterColor3
Class:	CIColorMBS
DisplayName English:	Center Color 3
DisplayName German:	Mittensfarbe 3
DisplayName French:	Couleur centrale 3
DisplayName Italian:	Colore centrale 3
DisplayName Spanish:	Color del centro 3
DefaultColor:	Red = 0.9216, Green = 0.4549, Blue = 0.3333, Alpha = 1
IdentityNumber:	0

(Read only property)

5.160.8 AttributeinputCloseness1 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Spot Color attribute.

Notes:

This attribute should have this content:

Name:	inputCloseness1
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Closeness 1
DisplayName German:	Nhe 1
DisplayName French:	Rapprochement 1
DisplayName Italian:	Distanza 1
DisplayName Spanish:	Acercamiento 1
DefaultNumber:	0.22
IdentityNumber:	0
SliderMaxNumber:	0.5
SliderMinNumber:	0

(Read only property)

5.160.9 AttributeinputCloseness2 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Spot Color attribute.

Notes:

This attribute should have this content:

(Read only property)

5.160.10 AttributeinputCloseness3 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Spot Color attribute.

Notes:

This attribute should have this content:

Name: inputCloseness2
 Class: double
 Type: CIAttributeTypeScalar
 DisplayName English: Closeness 2
 DisplayName German: Nhe 2
 DisplayName French: Rapprochement 2
 DisplayName Italian: Distanza 2
 DisplayName Spanish: Acercamiento 2
 DefaultNumber: 0.15
 IdentityNumber: 0
 SliderMaxNumber: 0.5
 SliderMinNumber: 0

Name: inputCloseness3
 Class: double
 Type: CIAttributeTypeScalar
 DisplayName English: Closeness 3
 DisplayName German: Nhe 3
 DisplayName French: Rapprochement 3
 DisplayName Italian: Distanza 3
 DisplayName Spanish: Acercamiento 3
 DefaultNumber: 0.5
 IdentityNumber: 0
 SliderMaxNumber: 0.5
 SliderMinNumber: 0

(Read only property)

5.160.11 AttributeinputContrast1 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Spot Color attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputContrast1
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Contrast 1
DisplayName German:	Kontrast 1
DisplayName French:	Contraste 1
DisplayName Italian:	Contrasto 1
DisplayName Spanish:	Contraste 1
DefaultNumber:	0.98
IdentityNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

5.160.12 AttributeinputContrast2 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Spot Color attribute.

Notes:

This attribute should have this content:

Name:	inputContrast2
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Contrast 2
DisplayName German:	Kontrast 2
DisplayName French:	Contraste 2
DisplayName Italian:	Contrasto 2
DisplayName Spanish:	Contraste 2
DefaultNumber:	0.98
IdentityNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

(Read only property)

5.160.13 AttributeinputContrast3 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Spot Color attribute.

Notes:

This attribute should have this content:

Name:	inputContrast3
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Contrast 3
DisplayName German:	Kontrast 3
DisplayName French:	Contraste 3
DisplayName Italian:	Contrasto 3
DisplayName Spanish:	Contraste 3
DefaultNumber:	0.99
IdentityNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

(Read only property)

5.160.14 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Spot Color attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.160.15 AttributeinputReplacementColor1 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Spot Color attribute.

Notes:

This attribute should have this content:

Name:	inputReplacementColor1
Class:	CIColorMBS
DisplayName English:	Replacement Color 1
DisplayName German:	Ersetzungsfarbe 1
DisplayName French:	Couleur de remplacement 1
DisplayName Italian:	Colore di sostituzione 1
DisplayName Spanish:	Color de reemplazamiento 1
DefaultColor:	Red = 0.4392, Green = 0.1922, Blue = 0.1961, Alpha = 1
IdentityNumber:	0

(Read only property)

5.160.16 Attribute

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Spot Color attribute.

Notes:

This attribute should have this content:

Name:	inputReplacementColor2
Class:	CIColorMBS
DisplayName English:	Replacement Color 2
DisplayName German:	Ersetzungsfarbe 2
DisplayName French:	Couleur de remplacement 2
DisplayName Italian:	Colore di sostituzione 2
DisplayName Spanish:	Color de reemplazamiento 2
DefaultColor:	Red = 0.9137, Green = 0.5608, Blue = 0.5059, Alpha = 1
IdentityNumber:	0

(Read only property)

5.160.17 Attribute

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Spot Color attribute.

Notes:

This attribute should have this content:

Name:	inputReplacementColor3
Class:	CIColorMBS
DisplayName English:	Replacement Color 3
DisplayName German:	Ersetzungsfarbe 3
DisplayName French:	Couleur de remplacement 3
DisplayName Italian:	Colore di sostituzione 3
DisplayName Spanish:	Color de reemplazamiento 3
DefaultColor:	Red = 0.9098, Green = 0.7529, Blue = 0.6078, Alpha = 1
IdentityNumber:	0

(Read only property)

5.160.18 inputCenterColor1 as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center Color 1

Notes:

Name:	inputCenterColor1
Class:	CIColorMBS (CIColor)
DisplayName English:	Center Color 1
DisplayName German:	Mittensfarbe 1
DisplayName French:	Couleur centrale 1
DisplayName Italian:	Colore centrale 1
DisplayName Spanish:	Color del centro 1
Type:	

See AttributeinputCenterColor1 for more details.

(Read and Write property)

5.160.19 inputCenterColor2 as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center Color 2

Notes:

See AttributeinputCenterColor2 for more details.

(Read and Write property)

Name: inputCenterColor2
 Class: CIColorMBS (CIColor)
 DisplayName English: Center Color 2
 DisplayName German: Mittenfarbe 2
 DisplayName French: Couleur centrale 2
 DisplayName Italian: Colore centrale 2
 DisplayName Spanish: Color del centro 2
 Type:

5.160.20 inputCenterColor3 as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center Color 3

Notes:

Name: inputCenterColor3
 Class: CIColorMBS (CIColor)
 DisplayName English: Center Color 3
 DisplayName German: Mittenfarbe 3
 DisplayName French: Couleur centrale 3
 DisplayName Italian: Colore centrale 3
 DisplayName Spanish: Color del centro 3
 Type:

See AttributeinputCenterColor3 for more details.
(Read and Write property)

5.160.21 inputCloseness1 as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Closeness 1

Notes:

Name: inputCloseness1
 Class: double (NSNumber)
 DisplayName English: Closeness 1
 DisplayName German: Nhe 1
 DisplayName French: Rapprochement 1
 DisplayName Italian: Distanza 1
 DisplayName Spanish: Acercamiento 1
 Type: CIAAttributeTypeScalar

See AttributeinputCloseness1 for more details.

(Read and Write property)

5.160.22 inputCloseness2 as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Closeness 2

Notes:

Name:	inputCloseness2
Class:	double (NSNumber)
DisplayName English:	Closeness 2
DisplayName German:	Nhe 2
DisplayName French:	Rapprochement 2
DisplayName Italian:	Distanza 2
DisplayName Spanish:	Acercamiento 2
Type:	CIAttributeTypeScalar

See AttributeinputCloseness2 for more details.
(Read and Write property)

5.160.23 inputCloseness3 as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Closeness 3

Notes:

Name:	inputCloseness3
Class:	double (NSNumber)
DisplayName English:	Closeness 3
DisplayName German:	Nhe 3
DisplayName French:	Rapprochement 3
DisplayName Italian:	Distanza 3
DisplayName Spanish:	Acercamiento 3
Type:	CIAttributeTypeScalar

See AttributeinputCloseness3 for more details.
(Read and Write property)

5.160.24 inputContrast1 as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Contrast 1

Notes:

Name:	inputContrast1
Class:	double (NSNumber)
DisplayName English:	Contrast 1
DisplayName German:	Kontrast 1
DisplayName French:	Contraste 1
DisplayName Italian:	Contrasto 1
DisplayName Spanish:	Contraste 1
Type:	CIAttributeTypeScalar

See AttributeinputContrast1 for more details.
(Read and Write property)

5.160.25 inputContrast2 as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Contrast 2

Notes:

Name:	inputContrast2
Class:	double (NSNumber)
DisplayName English:	Contrast 2
DisplayName German:	Kontrast 2
DisplayName French:	Contraste 2
DisplayName Italian:	Contrasto 2
DisplayName Spanish:	Contraste 2
Type:	CIAttributeTypeScalar

See AttributeinputContrast2 for more details.
(Read and Write property)

5.160.26 inputContrast3 as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Contrast 3

Notes:

Name:	inputContrast3
Class:	double (NSNumber)
DisplayName English:	Contrast 3
DisplayName German:	Kontrast 3
DisplayName French:	Contraste 3
DisplayName Italian:	Contrasto 3
DisplayName Spanish:	Contraste 3
Type:	CIAttributeTypeScalar

See AttributeinputContrast3 for more details.
(Read and Write property)

5.160.27 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.160.28 inputReplacementColor1 as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute
Replacement Color 1
Notes:

See AttributeinputReplacementColor1 for more details.
(Read and Write property)

Name: inputReplacementColor1
 Class: CIColorMBS (CIColor)
 DisplayName English: Replacement Color 1
 DisplayName German: Ersetzungsfarbe 1
 DisplayName French: Couleur de remplacement 1
 DisplayName Italian: Colore di sostituzione 1
 DisplayName Spanish: Color de reemplazamiento 1
 Type:

5.160.29 inputReplacementColor2 as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Replacement Color 2

Notes:

Name: inputReplacementColor2
 Class: CIColorMBS (CIColor)
 DisplayName English: Replacement Color 2
 DisplayName German: Ersetzungsfarbe 2
 DisplayName French: Couleur de remplacement 2
 DisplayName Italian: Colore di sostituzione 2
 DisplayName Spanish: Color de reemplazamiento 2
 Type:

See AttributeinputReplacementColor2 for more details.
(Read and Write property)

5.160.30 inputReplacementColor3 as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Replacement Color 3

Notes:

Name: inputReplacementColor3
 Class: CIColorMBS (CIColor)
 DisplayName English: Replacement Color 3
 DisplayName German: Ersetzungsfarbe 3
 DisplayName French: Couleur de remplacement 3
 DisplayName Italian: Colore di sostituzione 3
 DisplayName Spanish: Color de reemplazamiento 3
 Type:

See AttributeinputReplacementColor3 for more details.

(Read and Write property)

5.161 class CIFilterSpotLightMBS

5.161.1 class CIFilterSpotLightMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Spot Light filter.

Notes:

Details for this filter:

FilterName:	CISpotLight
DisplayName English:	Spot Light
DisplayName German:	Rampenlicht
DisplayName French:	Phare
DisplayName Italian:	Occhio di bue
DisplayName Spanish:	Luz concentrada

Categories:

- CICategoryStylize: Stylize
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputLightPosition: Light Position
- inputLightPointsAt: Light Points At
- inputBrightness: Brightness
- inputConcentration: Concentration
- inputColor: Color

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.161.2 Methods

5.161.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.161.4 Properties

5.161.5 AttributeinputBrightness as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Spot Light attribute.

Notes:

This attribute should have this content:

Name:	inputBrightness
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Brightness
DisplayName German:	Helligkeit
DisplayName French:	Luminosit
DisplayName Italian:	Luminosit
DisplayName Spanish:	Brillo
DefaultNumber:	3
IdentityNumber:	1
SliderMaxNumber:	10
SliderMinNumber:	0

(Read only property)

5.161.6 AttributeinputColor as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Spot Light attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputColor
Class:	CIColorMBS
Type:	CIAttributeTypeOpaqueColor
DisplayName English:	Color
DisplayName German:	Farbe
DisplayName French:	Couleur
DisplayName Italian:	Colore
DisplayName Spanish:	Color
DefaultColor:	Red = 1, Green = 1, Blue = 1, Alpha = 1
IdentityNumber:	0

5.161.7 AttributeinputConcentration as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Spot Light attribute.

Notes:

This attribute should have this content:

Name:	inputConcentration
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Concentration
DisplayName German:	Konzentration
DisplayName French:	Concentration
DisplayName Italian:	Concentrazione
DisplayName Spanish:	Concentracin
DefaultNumber:	0.1
IdentityNumber:	20
MaxNumber:	0
MinNumber:	0.001
SliderMaxNumber:	1.5
SliderMinNumber:	0.001

(Read only property)

5.161.8 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Spot Light attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.161.9 AttributeinputLightPointsAt as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Spot Light attribute.

Notes:

This attribute should have this content:

Name:	inputLightPointsAt
Class:	CIVectorMBS
Type:	CIAttributeTypePosition3
DisplayName English:	Light Points At
DisplayName German:	Lichtpunkte bei
DisplayName French:	Points lumineux
DisplayName Italian:	Punti luce a
DisplayName Spanish:	Puntos lumnico en
DefaultVector:	[200 200 0]
IdentityVector:	n/a

(Read only property)

5.161.10 AttributeinputLightPosition as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Spot Light attribute.

Notes:

This attribute should have this content:

Name:	inputLightPosition
Class:	CIVectorMBS
Type:	CIAttributeTypePosition3
DisplayName English:	Light Position
DisplayName German:	Lichtposition
DisplayName French:	Position de la lumire
DisplayName Italian:	Posizione luce
DisplayName Spanish:	Posicin de la luz
DefaultVector:	[400 600 150]
IdentityVector:	n/a

(Read only property)

5.161.11 inputBrightness as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Brightness

Notes:

Name:	inputBrightness
Class:	double (NSNumber)
DisplayName English:	Brightness
DisplayName German:	Helligkeit
DisplayName French:	Luminosit
DisplayName Italian:	Luminosit
DisplayName Spanish:	Brillo
Type:	CIAttributeTypeDistance

See AttributeinputBrightness for more details.

(Read and Write property)

5.161.12 inputColor as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Color

Notes:

See AttributeinputColor for more details.

(Read and Write property)

Name:	inputColor
Class:	CIColorMBS (CIColor)
DisplayName English:	Color
DisplayName German:	Farbe
DisplayName French:	Couleur
DisplayName Italian:	Colore
DisplayName Spanish:	Color
Type:	CIAttributeTypeOpaqueColor

5.161.13 inputConcentration as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Concentration

Notes:

Name:	inputConcentration
Class:	double (NSNumber)
DisplayName English:	Concentration
DisplayName German:	Konzentration
DisplayName French:	Concentration
DisplayName Italian:	Concentrazione
DisplayName Spanish:	Concentracin
Type:	CIAttributeTypeScalar

See AttributeinputConcentration for more details.
(Read and Write property)

5.161.14 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.

(Read and Write property)

5.161.15 inputLightPointsAt as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Light Points At

Notes:

Name:	inputLightPointsAt
Class:	CIVectorMBS (CIVector)
DisplayName English:	Light Points At
DisplayName German:	Lichtpunkte bei
DisplayName French:	Points lumineux
DisplayName Italian:	Punti luce a
DisplayName Spanish:	Puntos lumnico en
Type:	CIAAttributeTypePosition3

See AttributeinputLightPointsAt for more details.
(Read and Write property)

5.161.16 inputLightPosition as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Light Position

Notes:

Name:	inputLightPosition
Class:	CIVectorMBS (CIVector)
DisplayName English:	Light Position
DisplayName German:	Lichtposition
DisplayName French:	Position de la lumire
DisplayName Italian:	Posizione luce
DisplayName Spanish:	Posicin de la luz
Type:	CIAAttributeTypePosition3

See AttributeinputLightPosition for more details.
(Read and Write property)

5.162 class CIFilterSRGBToneCurveToLinearMBS

5.162.1 class CIFilterSRGBToneCurveToLinearMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage sRGB Tone Curve to Linear filter.

Notes:

Details for this filter:

FilterName:	CISRGBToneCurveToLinear
DisplayName English:	sRGB Tone Curve to Linear
DisplayName German:	sRGB-Farbtonkurve in eine lineare Farbtonkurve
DisplayName French:	Courbe tonale sRGB vers linéaire
DisplayName Italian:	Da curva tonale sRGB a lineare
DisplayName Spanish:	Curva tonal de sRGB a lineal

Categories:

- CIColorAdjustment: Color Adjustment
- CIColorVideo: Video
- CIColorStillImage: Still Image
- CIColorInterlaced: Interlaced
- CIColorNonSquarePixels: Non-Square Pixels
- CIColorBuiltIn: Built-In

Input:

- inputImage: Image

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.162.2 Methods

5.162.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.162.4 Properties

5.162.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the sRGB Tone Curve to Linear attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.162.6 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

(Read and Write property)

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

5.163 class CIFilterStarShineGeneratorMBS

5.163.1 class CIFilterStarShineGeneratorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Star Shine filter.

Notes:

Details for this filter:

FilterName:	CIStarShineGenerator
DisplayName English:	Star Shine
DisplayName German:	Sternenlicht
DisplayName French:	Brillance dtoile
DisplayName Italian:	Stella luminosa
DisplayName Spanish:	Brillo estrellado

Categories:

- CICategoryGenerator: Generator
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputCenter: Center
- inputColor: Color
- inputRadius: Radius
- inputCrossScale: Cross Scale
- inputCrossAngle: Cross Angle
- inputCrossOpacity: Cross Opacity
- inputCrossWidth: Cross Width
- inputEpsilon: Epsilon

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.163.2 Methods

5.163.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.163.4 Properties

5.163.5 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Star Shine attribute.

Notes:

This attribute should have this content:

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

(Read only property)

5.163.6 AttributeinputColor as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Star Shine attribute.

Notes:

This attribute should have this content:

Name:	inputColor
Class:	CIColorMBS
DisplayName English:	Color
DisplayName German:	Farbe
DisplayName French:	Couleur
DisplayName Italian:	Colore
DisplayName Spanish:	Color
DefaultColor:	Red = 1, Green = 0.8, Blue = 0.6, Alpha = 1
IdentityNumber:	0

(Read only property)

5.163.7 AttributeinputCrossAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Star Shine attribute.

Notes:

This attribute should have this content:

Name:	inputCrossAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Cross Angle
DisplayName German:	Cross-Winkel
DisplayName French:	Angle crois
DisplayName Italian:	Angolo incrociato
DisplayName Spanish:	ngulo cruzado
DefaultNumber:	0.6
IdentityNumber:	0
SliderMaxNumber:	3.141593
SliderMinNumber:	-3.141593

(Read only property)

5.163.8 AttributeinputCrossOpacity as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Star Shine attribute.

Notes:

This attribute should have this content:

Name:	inputCrossOpacity
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Cross Opacity
DisplayName German:	Cross-Deckkraft
DisplayName French:	Opacit croise
DisplayName Italian:	Opacit incrociata
DisplayName Spanish:	Opacidad cruzada
DefaultNumber:	-2
IdentityNumber:	-2
MaxNumber:	0
MinNumber:	-8
SliderMaxNumber:	0
SliderMinNumber:	-8

(Read only property)

5.163.9 AttributeinputCrossScale as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Star Shine attribute.

Notes:

This attribute should have this content:

Name:	inputCrossScale
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Cross Scale
DisplayName German:	Cross-Skalierung
DisplayName French:	chelle croise
DisplayName Italian:	Scala incrociata
DisplayName Spanish:	Escala cruzada
DefaultNumber:	15
IdentityNumber:	15
SliderMaxNumber:	100
SliderMinNumber:	0

(Read only property)

5.163.10 AttributeinputCrossWidth as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Star Shine attribute.

Notes:

This attribute should have this content:

Name:	inputCrossWidth
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Cross Width
DisplayName German:	Cross-Breite
DisplayName French:	Largeur croise
DisplayName Italian:	Larghezza incrociata
DisplayName Spanish:	Anchura cruzada
DefaultNumber:	2.5
IdentityNumber:	0
SliderMaxNumber:	10
SliderMinNumber:	0.5

(Read only property)

5.163.11 AttributeinputEpsilon as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Star Shine attribute.

Notes:

This attribute should have this content:

(Read only property)

5.163.12 AttributeinputRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Star Shine attribute.

Notes:

Name:	inputEpsilon
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Epsilon
DisplayName German:	Epsilon
DisplayName French:	Epsilon
DisplayName Italian:	Ipsilon
DisplayName Spanish:	psilon
DefaultNumber:	-2
IdentityNumber:	-2
MaxNumber:	0
MinNumber:	-8
SliderMaxNumber:	0
SliderMinNumber:	-8

This attribute should have this content:

Name:	inputRadius
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
DefaultNumber:	50
IdentityNumber:	0
SliderMaxNumber:	300
SliderMinNumber:	0

(Read only property)

5.163.13 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center

Notes:

See AttributeinputCenter for more details.

(Read and Write property)

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

5.163.14 inputColor as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Color
Notes:

Name:	inputColor
Class:	CIColorMBS (CIColor)
DisplayName English:	Color
DisplayName German:	Farbe
DisplayName French:	Couleur
DisplayName Italian:	Colore
DisplayName Spanish:	Color
Type:	

See AttributeinputColor for more details.
 (Read and Write property)

5.163.15 inputCrossAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Cross Angle
Notes:

Name:	inputCrossAngle
Class:	double (NSNumber)
DisplayName English:	Cross Angle
DisplayName German:	Cross-Winkel
DisplayName French:	Angle crois
DisplayName Italian:	Angolo incrociato
DisplayName Spanish:	ngulo cruzado
Type:	CIAttributeTypeAngle

See AttributeinputCrossAngle for more details.

(Read and Write property)

5.163.16 `inputCrossOpacity` as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Cross Opacity

Notes:

Name:	<code>inputCrossOpacity</code>
Class:	<code>double (NSNumber)</code>
DisplayName English:	Cross Opacity
DisplayName German:	Cross-Deckkraft
DisplayName French:	Opacit croise
DisplayName Italian:	Opacit incrociata
DisplayName Spanish:	Opacidad cruzada
Type:	<code>CIAttributeTypeScalar</code>

See `AttributeinputCrossOpacity` for more details.
(Read and Write property)

5.163.17 `inputCrossScale` as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Cross Scale

Notes:

Name:	<code>inputCrossScale</code>
Class:	<code>double (NSNumber)</code>
DisplayName English:	Cross Scale
DisplayName German:	Cross-Skalierung
DisplayName French:	chelle croise
DisplayName Italian:	Scala incrociata
DisplayName Spanish:	Escala cruzada
Type:	<code>CIAttributeTypeScalar</code>

See `AttributeinputCrossScale` for more details.
(Read and Write property)

5.163.18 inputCrossWidth as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Cross Width

Notes:

Name:	inputCrossWidth
Class:	double (NSNumber)
DisplayName English:	Cross Width
DisplayName German:	Cross-Breite
DisplayName French:	Largeur croise
DisplayName Italian:	Larghezza incrociata
DisplayName Spanish:	Anchura cruzada
Type:	CIAttributeTypeDistance

See AttributeinputCrossWidth for more details.
(Read and Write property)

5.163.19 inputEpsilon as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Epsilon

Notes:

Name:	inputEpsilon
Class:	double (NSNumber)
DisplayName English:	Epsilon
DisplayName German:	Epsilon
DisplayName French:	Epsilon
DisplayName Italian:	Ipsilon
DisplayName Spanish:	psilon
Type:	CIAttributeTypeScalar

See AttributeinputEpsilon for more details.
(Read and Write property)

5.163.20 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Radius

Notes:

Name:	inputRadius
Class:	double (NSNumber)
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
Type:	CIAttributeTypeDistance

See `AttributeinputRadius` for more details.
(Read and Write property)

5.164 class CFilterStraightenFilterMBS

5.164.1 class CFilterStraightenFilterMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Straighten filter.

Notes:

Details for this filter:

FilterName:	CIStraightenFilter
DisplayName English:	Straighten
DisplayName German:	Begradigen
DisplayName French:	Redresser
DisplayName Italian:	Raddrizza
DisplayName Spanish:	Enderezar

Categories:

- CICategoryGeometryAdjustment: Geometry Adjustment
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputAngle: Angle

Output:

- outputImage

Subclass of the CFilterMBS class.

5.164.2 Methods

5.164.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.164.4 Properties

5.164.5 AttributeinputAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Straighten attribute.

Notes:

This attribute should have this content:

Name:	inputAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
DefaultNumber:	0
IdentityNumber:	0
SliderMaxNumber:	3.141593
SliderMinNumber:	-3.141593

(Read only property)

5.164.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Straighten attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.164.7 inputAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Angle
Notes:

Name:	inputAngle
Class:	double (NSNumber)
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
Type:	CIAttributeTypeAngle

See AttributeinputAngle for more details.
 (Read and Write property)

5.164.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.

5.165 class CIFilterStretchCropMBS

5.165.1 class CIFilterStretchCropMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Stretch Crop filter.

Notes:

Details for this filter:

FilterName:	CISretchCrop
DisplayName English:	Stretch Crop
DisplayName German:	Schnitt dehnen
DisplayName French:	tirer le recadrage
DisplayName Italian:	Allarga o ritaglia
DisplayName Spanish:	Estirar recorte

Categories:

- CICategoryDistortionEffect: Distortion Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputSize: Size
- inputCropAmount: CropAmount
- inputCenterStretchAmount: CenterStretchAmount

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.165.2 Methods

5.165.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.165.4 Properties

5.165.5 AttributeinputCenterStretchAmount as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Stretch Crop attribute.

Notes:

This attribute should have this content:

Name:	inputCenterStretchAmount
Class:	double
Type:	CIAttributeTypeScalar
DisplayName:	CenterStretchAmount
DefaultNumber:	0.25
IdentityNumber:	0
MaxNumber:	1
MinNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

(Read only property)

5.165.6 AttributeinputCropAmount as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Stretch Crop attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputCropAmount
Class:	double
Type:	CIAttributeTypeScalar
DisplayName:	CropAmount
DefaultNumber:	0.25
IdentityNumber:	0
MaxNumber:	1
MinNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

5.165.7 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Stretch Crop attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.165.8 AttributeinputSize as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Stretch Crop attribute.

Notes:

This attribute should have this content:

(Read only property)

Name: `inputSize`
 Class: `CIVectorMBS`
 Type: `CIAttributeTypePosition`
 DisplayName: `Size`
 DefaultVector: `[1280 720]`
 IdentityVector: `n/a`

5.165.9 `inputCenterStretchAmount` as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute `CenterStretchAmount`

Notes:

Name: `inputCenterStretchAmount`
 Class: `double (NSNumber)`
 DisplayName English: `CenterStretchAmount`
 DisplayName German: `CenterStretchAmount`
 DisplayName French: `CenterStretchAmount`
 DisplayName Italian: `CenterStretchAmount`
 DisplayName Spanish: `CenterStretchAmount`
 Type: `CIAttributeTypeScalar`

See `AttributeinputCenterStretchAmount` for more details.
(Read and Write property)

5.165.10 `inputCropAmount` as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute `CropAmount`

Notes:

Name: `inputCropAmount`
 Class: `double (NSNumber)`
 DisplayName English: `CropAmount`
 DisplayName German: `CropAmount`
 DisplayName French: `CropAmount`
 DisplayName Italian: `CropAmount`
 DisplayName Spanish: `CropAmount`
 Type: `CIAttributeTypeScalar`

See `AttributeinputCropAmount` for more details.
(Read and Write property)

5.165.11 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.165.12 inputSize as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Size
Notes:

Name:	inputSize
Class:	CIVectorMBS (CIVector)
DisplayName English:	Size
DisplayName German:	Size
DisplayName French:	Size
DisplayName Italian:	Size
DisplayName Spanish:	Size
Type:	CIAttributeTypePosition

See AttributeinputSize for more details.
(Read and Write property)

5.166 class CIFilterStripesGeneratorMBS

5.166.1 class CIFilterStripesGeneratorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Stripes filter.

Notes:

Details for this filter:

FilterName:	CIStripesGenerator
DisplayName English:	Stripes
DisplayName German:	Streifen
DisplayName French:	Rayures
DisplayName Italian:	Strisce
DisplayName Spanish:	Franjas

Categories:

- CICategoryGenerator: Generator
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputCenter: Center
- inputColor0: Color 1
- inputColor1: Color 2
- inputWidth: Width
- inputSharpness: Sharpness

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.166.2 Methods

5.166.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.166.4 Properties

5.166.5 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Stripes attribute.

Notes:

This attribute should have this content:

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

(Read only property)

5.166.6 AttributeinputColor0 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Stripes attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputColor0
Class:	CIColorMBS
DisplayName English:	Color 1
DisplayName German:	Farbe 1
DisplayName French:	Couleur 1
DisplayName Italian:	Colore 1
DisplayName Spanish:	Color 1
DefaultColor:	Red = 1, Green = 1, Blue = 1, Alpha = 1
IdentityNumber:	0

5.166.7 AttributeinputColor1 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Stripes attribute.

Notes:

This attribute should have this content:

Name:	inputColor1
Class:	CIColorMBS
DisplayName English:	Color 2
DisplayName German:	Farbe 2
DisplayName French:	Couleur 2
DisplayName Italian:	Colore 2
DisplayName Spanish:	Color 2
DefaultColor:	Red = 0, Green = 0, Blue = 0, Alpha = 1
IdentityNumber:	0

(Read only property)

5.166.8 AttributeinputSharpness as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Stripes attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputSharpness
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Sharpness
DisplayName German:	Schrfe
DisplayName French:	Nettet
DisplayName Italian:	Nitidezza
DisplayName Spanish:	Nitidez
DefaultNumber:	1
IdentityNumber:	0
MaxNumber:	1
MinNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

5.166.9 AttributeinputWidth as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Stripes attribute.

Notes:

This attribute should have this content:

Name:	inputWidth
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
DefaultNumber:	80
IdentityNumber:	0
SliderMaxNumber:	800
SliderMinNumber:	0

(Read only property)

5.166.10 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center

Notes:

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

See AttributeinputCenter for more details.
(Read and Write property)

5.166.11 inputColor0 as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Color 1

Notes:

Name:	inputColor0
Class:	CIColorMBS (CIColor)
DisplayName English:	Color 1
DisplayName German:	Farbe 1
DisplayName French:	Couleur 1
DisplayName Italian:	Colore 1
DisplayName Spanish:	Color 1
Type:	

See AttributeinputColor0 for more details.
(Read and Write property)

5.166.12 inputColor1 as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Color 2

Notes:

See AttributeinputColor1 for more details.
(Read and Write property)

Name: inputColor1
 Class: CIColorMBS (CIColor)
 DisplayName English: Color 2
 DisplayName German: Farbe 2
 DisplayName French: Couleur 2
 DisplayName Italian: Colore 2
 DisplayName Spanish: Color 2
 Type:

5.166.13 inputSharpness as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Sharpness

Notes:

Name: inputSharpness
 Class: double (NSNumber)
 DisplayName English: Sharpness
 DisplayName German: Schrfe
 DisplayName French: Nettet
 DisplayName Italian: Nitidezza
 DisplayName Spanish: Nitidez
 Type: CIAAttributeTypeScalar

See AttributeinputSharpness for more details.
(Read and Write property)

5.166.14 inputWidth as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Width

Notes:

Name: inputWidth
 Class: double (NSNumber)
 DisplayName English: Width
 DisplayName German: Breite
 DisplayName French: Largeur
 DisplayName Italian: Larghezza
 DisplayName Spanish: Anchura
 Type: CIAAttributeTypeDistance

See AttributeinputWidth for more details.

(Read and Write property)

5.167 class CFilterSubtractBlendModeMBS

5.167.1 class CFilterSubtractBlendModeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Subtract Blend Mode filter.

Notes:

Details for this filter:

FilterName:	CISubtractBlendMode
DisplayName English:	Subtract Blend Mode
DisplayName German:	Mischmethode Subtrahieren
DisplayName French:	Mode de fusion Soustraction
DisplayName Italian:	Modalit sfumatura sottrazione
DisplayName Spanish:	Restar modo de mezcla

Categories:

- CCategoryCompositeOperation: Composite Operation
- CCategoryVideo: Video
- CCategoryStillImage: Still Image
- CCategoryInterlaced: Interlaced
- CCategoryNonSquarePixels: Non-Square Pixels
- CCategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputBackgroundImage: Background Image

Output:

- outputImage

Subclass of the CFilterMBS class.

5.167.2 Methods

5.167.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.167.4 Properties

5.167.5 AttributeinputBackgroundImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Subtract Blend Mode attribute.

Notes:

This attribute should have this content:

Name:	inputBackgroundImage
Class:	CIImageMBS
DisplayName English:	Background Image
DisplayName German:	Hintergrundbild
DisplayName French:	Image darrire-plan
DisplayName Italian:	Immagine di sfondo
DisplayName Spanish:	Imagen de fondo
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.167.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Subtract Blend Mode attribute.

Notes:

This attribute should have this content:

(Read only property)

Name: inputImage
 Class: CIImageMBS
 Type: CIAttributeTypeImage
 DisplayName English: Image
 DisplayName German: Bild
 DisplayName French: Image
 DisplayName Italian: Immagine
 DisplayName Spanish: Imagen
 DefaultNumber: 0
 IdentityNumber: 0

5.167.7 inputBackgroundImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Background Image

Notes:

Name: inputBackgroundImage
 Class: CIImageMBS (CIImage)
 DisplayName English: Background Image
 DisplayName German: Hintergrundbild
 DisplayName French: Image darrire-plan
 DisplayName Italian: Immagine di sfondo
 DisplayName Spanish: Imagen de fondo
 Type:

See AttributeinputBackgroundImage for more details.
(Read and Write property)

5.167.8 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name: inputImage
 Class: CIImageMBS (CIImage)
 DisplayName English: Image
 DisplayName German: Bild
 DisplayName French: Image
 DisplayName Italian: Immagine
 DisplayName Spanish: Imagen
 Type: CIAttributeTypeImage

See `AttributeinputImage` for more details.
(Read and Write property)

5.168 class CIFilterSunbeamsGeneratorMBS

5.168.1 class CIFilterSunbeamsGeneratorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Sunbeams filter.

Notes:

Details for this filter:

FilterName:	CISunbeamsGenerator
DisplayName English:	Sunbeams
DisplayName German:	Sonnenstrahlen
DisplayName French:	Rayons solaires
DisplayName Italian:	Raggi di sole
DisplayName Spanish:	Rayos de sol

Categories:

- CICategoryGenerator: Generator
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputCenter: Center
- inputColor: Color
- inputSunRadius: Sun Radius
- inputMaxStriationRadius: Maximum Striation Radius
- inputStriationStrength: Striation Strength
- inputStriationContrast: Striation Contrast
- inputTime: Time

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.168.2 Methods

5.168.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.168.4 Properties

5.168.5 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Sunbeams attribute.

Notes:

This attribute should have this content:

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

(Read only property)

5.168.6 AttributeinputColor as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Sunbeams attribute.

Notes:

This attribute should have this content:

Name:	inputColor
Class:	CIColorMBS
DisplayName English:	Color
DisplayName German:	Farbe
DisplayName French:	Couleur
DisplayName Italian:	Colore
DisplayName Spanish:	Color
DefaultColor:	Red = 1, Green = 0.5, Blue = 0, Alpha = 1
IdentityNumber:	0

(Read only property)

5.168.7 AttributeinputMaxStriationRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Sunbeams attribute.

Notes:

This attribute should have this content:

Name:	inputMaxStriationRadius
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Maximum Striation Radius
DisplayName German:	Maximaler Radius fr Riffelung
DisplayName French:	Rayon maximum des stries
DisplayName Italian:	Raggio di massima striatura
DisplayName Spanish:	Radio de estriacin mximo
DefaultNumber:	2.58
IdentityNumber:	2.58
SliderMaxNumber:	10
SliderMinNumber:	0

(Read only property)

5.168.8 AttributeinputStriationContrast as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Sunbeams attribute.

Notes:

This attribute should have this content:

Name:	inputStriationContrast
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Striation Contrast
DisplayName German:	Kontrast fr Riffelung
DisplayName French:	Contraste des stries
DisplayName Italian:	Contrasto striatura
DisplayName Spanish:	Contraste de la estriacin
DefaultNumber:	1.375
IdentityNumber:	1.375
SliderMaxNumber:	5
SliderMinNumber:	0

(Read only property)

5.168.9 AttributeinputStriationStrength as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Sunbeams attribute.

Notes:

This attribute should have this content:

Name:	inputStriationStrength
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Striation Strength
DisplayName German:	Strke der Riffelung
DisplayName French:	Force des stries
DisplayName Italian:	Livello striatura
DisplayName Spanish:	Intensidad de la estriacin
DefaultNumber:	0.5
IdentityNumber:	0.5
SliderMaxNumber:	3
SliderMinNumber:	0

(Read only property)

5.168.10 AttributeinputSunRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Sunbeams attribute.

Notes:

This attribute should have this content:

Name:	inputSunRadius
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Sun Radius
DisplayName German:	Radius der Sonne
DisplayName French:	Rayon du soleil
DisplayName Italian:	Raggio del sole
DisplayName Spanish:	Radio solar
DefaultNumber:	40
IdentityNumber:	40
SliderMaxNumber:	800
SliderMinNumber:	0

(Read only property)

5.168.11 AttributeinputTime as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Sunbeams attribute.

Notes:

This attribute should have this content:

(Read only property)

5.168.12 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center

Notes:

See AttributeinputCenter for more details.

(Read and Write property)

Name: inputTime
 Class: double
 Type: CIAttributeTypeScalar
 DisplayName English: Time
 DisplayName German: Zeit
 DisplayName French: Dure
 DisplayName Italian: Tempo
 DisplayName Spanish: Tiempo
 DefaultNumber: 0
 IdentityNumber: 0
 MaxNumber: 1
 MinNumber: 0
 SliderMaxNumber: 1
 SliderMinNumber: 0

Name: inputCenter
 Class: CIVectorMBS (CIVector)
 DisplayName English: Center
 DisplayName German: Mitte
 DisplayName French: Centre
 DisplayName Italian: Centro
 DisplayName Spanish: Centro
 Type: CIAttributeTypePosition

5.168.13 inputColor as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Color
Notes:

Name: inputColor
 Class: CIColorMBS (CIColor)
 DisplayName English: Color
 DisplayName German: Farbe
 DisplayName French: Couleur
 DisplayName Italian: Colore
 DisplayName Spanish: Color
 Type:

See AttributeinputColor for more details.
 (Read and Write property)

5.168.14 inputMaxStriationRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Maximum Striation Radius

Notes:

Name:	inputMaxStriationRadius
Class:	double (NSNumber)
DisplayName English:	Maximum Striation Radius
DisplayName German:	Maximaler Radius fr Riffelung
DisplayName French:	Rayon maximum des stries
DisplayName Italian:	Raggio di massima striatura
DisplayName Spanish:	Radio de estriacin mximo
Type:	CIAttributeTypeScalar

See AttributeinputMaxStriationRadius for more details.
(Read and Write property)

5.168.15 inputStriationContrast as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Striation Contrast

Notes:

Name:	inputStriationContrast
Class:	double (NSNumber)
DisplayName English:	Striation Contrast
DisplayName German:	Kontrast fr Riffelung
DisplayName French:	Contraste des stries
DisplayName Italian:	Contrasto striatura
DisplayName Spanish:	Contraste de la estriacin
Type:	CIAttributeTypeScalar

See AttributeinputStriationContrast for more details.
(Read and Write property)

5.168.16 inputStriationStrength as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Striation Strength

Notes:

Name:	inputStriationStrength
Class:	double (NSNumber)
DisplayName English:	Striation Strength
DisplayName German:	Strke der Riffelung
DisplayName French:	Force des stries
DisplayName Italian:	Livello striatura
DisplayName Spanish:	Intensidad de la estriacin
Type:	CIAttributeTypeScalar

See AttributeinputStriationStrength for more details.
(Read and Write property)

5.168.17 inputSunRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Sun Radius

Notes:

Name:	inputSunRadius
Class:	double (NSNumber)
DisplayName English:	Sun Radius
DisplayName German:	Radius der Sonne
DisplayName French:	Rayon du soleil
DisplayName Italian:	Raggio del sole
DisplayName Spanish:	Radio solar
Type:	CIAttributeTypeDistance

See AttributeinputSunRadius for more details.
(Read and Write property)

5.168.18 inputTime as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Time

Notes:

See AttributeinputTime for more details.
(Read and Write property)

Name:	inputTime
Class:	double (NSNumber)
DisplayName English:	Time
DisplayName German:	Zeit
DisplayName French:	Dure
DisplayName Italian:	Tempo
DisplayName Spanish:	Tiempo
Type:	CIAttributeTypeScalar

5.169 class CIFilterSwipeTransitionMBS

5.169.1 class CIFilterSwipeTransitionMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Swipe filter.

Notes:

Details for this filter:

FilterName:	CISwipeTransition
DisplayName English:	Swipe
DisplayName German:	Wischen
DisplayName French:	Balayer
DisplayName Italian:	Colpo
DisplayName Spanish:	Araazo

Categories:

- CICategoryTransition: Transition
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputTargetImage: Target Image
- inputExtent: Extent
- inputColor: Color
- inputTime: Time
- inputAngle: Angle
- inputWidth: Width
- inputOpacity: Opacity

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.169.2 Methods

5.169.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.169.4 Properties

5.169.5 AttributeinputAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Swipe attribute.

Notes:

This attribute should have this content:

Name:	inputAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
DefaultNumber:	0
IdentityNumber:	0
SliderMaxNumber:	3.141593
SliderMinNumber:	-3.141593

(Read only property)

5.169.6 AttributeinputColor as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Swipe attribute.

Notes:

This attribute should have this content:

Name:	inputColor
Class:	CIColorMBS
Type:	CIAttributeTypeOpaqueColor
DisplayName English:	Color
DisplayName German:	Farbe
DisplayName French:	Couleur
DisplayName Italian:	Colore
DisplayName Spanish:	Color
DefaultColor:	Red = 1, Green = 1, Blue = 1, Alpha = 1
IdentityNumber:	0

(Read only property)

5.169.7 Attribute

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Swipe attribute.

Notes:

This attribute should have this content:

Name:	inputExtent
Class:	CIVectorMBS
Type:	CIAttributeTypeRectangle
DisplayName English:	Extent
DisplayName German:	Betrag
DisplayName French:	tendue
DisplayName Italian:	Ampiezza
DisplayName Spanish:	Amplitud
DefaultVector:	[0 0 300 300]
IdentityVector:	n/a

(Read only property)

5.169.8 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Swipe attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.169.9 AttributeinputOpacity as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Swipe attribute.

Notes:

This attribute should have this content:

Name:	inputOpacity
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Opacity
DisplayName German:	Deckkraft
DisplayName French:	Opacit
DisplayName Italian:	Opacit
DisplayName Spanish:	Opacidad
DefaultNumber:	0
IdentityNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

(Read only property)

5.169.10 AttributeinputTargetImage as CIAtributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Swipe attribute.

Notes:

This attribute should have this content:

Name:	inputTargetImage
Class:	CIImageMBS
DisplayName English:	Target Image
DisplayName German:	Zielbild
DisplayName French:	Image cible
DisplayName Italian:	Immagine target
DisplayName Spanish:	Imagen de destino
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.169.11 AttributeinputTime as CIAtributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Swipe attribute.

Notes:

This attribute should have this content:

(Read only property)

5.169.12 AttributeinputWidth as CIAtributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Swipe attribute.

Notes:

This attribute should have this content:

Name: inputTime
 Class: double
 Type: CIAttributeTypeTime
 DisplayName English: Time
 DisplayName German: Zeit
 DisplayName French: Dure
 DisplayName Italian: Tempo
 DisplayName Spanish: Tiempo
 DefaultNumber: 0
 IdentityNumber: 0
 MaxNumber: 1
 MinNumber: 0
 SliderMaxNumber: 1
 SliderMinNumber: 0

Name: inputWidth
 Class: double
 Type: CIAttributeTypeDistance
 DisplayName English: Width
 DisplayName German: Breite
 DisplayName French: Largeur
 DisplayName Italian: Larghezza
 DisplayName Spanish: Anchura
 DefaultNumber: 300
 IdentityNumber: 0
 MaxNumber: 0
 MinNumber: 0.1
 SliderMaxNumber: 800
 SliderMinNumber: 0.1

(Read only property)

5.169.13 inputAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Angle
Notes:

See AttributeinputAngle for more details.
 (Read and Write property)

Name:	inputAngle
Class:	double (NSNumber)
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
Type:	CIAttributeTypeAngle

5.169.14 inputColor as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Color
Notes:

Name:	inputColor
Class:	CIColorMBS (CIColor)
DisplayName English:	Color
DisplayName German:	Farbe
DisplayName French:	Couleur
DisplayName Italian:	Colore
DisplayName Spanish:	Color
Type:	CIAttributeTypeOpaqueColor

See AttributeinputColor for more details.
 (Read and Write property)

5.169.15 inputExtent as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Extent
Notes:

Name:	inputExtent
Class:	CIVectorMBS (CIVector)
DisplayName English:	Extent
DisplayName German:	Betrag
DisplayName French:	tendue
DisplayName Italian:	Ampiezza
DisplayName Spanish:	Amplitud
Type:	CIAttributeTypeRectangle

See AttributeinputExtent for more details.

(Read and Write property)

5.169.16 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.169.17 inputOpacity as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Opacity
Notes:

Name:	inputOpacity
Class:	double (NSNumber)
DisplayName English:	Opacity
DisplayName German:	Deckkraft
DisplayName French:	Opacit
DisplayName Italian:	Opacit
DisplayName Spanish:	Opacidad
Type:	CIAttributeTypeScalar

See AttributeinputOpacity for more details.
(Read and Write property)

5.169.18 inputTargetImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Target Image

Notes:

Name:	inputTargetImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Target Image
DisplayName German:	Zielbild
DisplayName French:	Image cible
DisplayName Italian:	Immagine target
DisplayName Spanish:	Imagen de destino
Type:	

See AttributeinputTargetImage for more details.
(Read and Write property)

5.169.19 inputTime as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Time

Notes:

Name:	inputTime
Class:	double (NSNumber)
DisplayName English:	Time
DisplayName German:	Zeit
DisplayName French:	Dure
DisplayName Italian:	Tempo
DisplayName Spanish:	Tiempo
Type:	CIAttributeTypeTime

See AttributeinputTime for more details.
(Read and Write property)

5.169.20 inputWidth as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Width

Notes:

See AttributeinputWidth for more details.

Name:	inputWidth
Class:	double (NSNumber)
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
Type:	CIAttributeTypeDistance

(Read and Write property)

5.170 class CIFilterTemperatureAndTintMBS

5.170.1 class CIFilterTemperatureAndTintMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Temperature and Tint filter.

Notes:

Details for this filter:

FilterName:	CITemperatureAndTint
DisplayName English:	Temperature and Tint
DisplayName German:	Temperatur und Frbung
DisplayName French:	Temprature et teinte
DisplayName Italian:	Temperatura e tinta
DisplayName Spanish:	Temperatura y tinte

Categories:

- CICategoryColorAdjustment: Color Adjustment
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputNeutral: Neutral
- inputTargetNeutral: TargetNeutral

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.170.2 Methods

5.170.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.
Notes: On success the handle property is not zero and the filter has the default values set.

5.170.4 Properties

5.170.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Temperature and Tint attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.170.6 AttributeinputNeutral as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Temperature and Tint attribute.

Notes:

This attribute should have this content:

(Read only property)

Name: inputNeutral
 Class: CIVectorMBS
 Type: CIAttributeTypeOffset
 DisplayName: Neutral
 DefaultVector: [6500 0]
 IdentityVector: [6500 0]

5.170.7 AttributeinputTargetNeutral as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Temperature and Tint attribute.

Notes:

This attribute should have this content:

Name: inputTargetNeutral
 Class: CIVectorMBS
 Type: CIAttributeTypeOffset
 DisplayName: TargetNeutral
 DefaultVector: [6500 0]
 IdentityVector: [6500 0]

(Read only property)

5.170.8 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name: inputImage
 Class: CIImageMBS (CIImage)
 DisplayName English: Image
 DisplayName German: Bild
 DisplayName French: Image
 DisplayName Italian: Immagine
 DisplayName Spanish: Imagen
 Type: CIAttributeTypeImage

See AttributeinputImage for more details.

(Read and Write property)

5.170.9 inputNeutral as CVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Neutral

Notes:

Name:	inputNeutral
Class:	CVectorMBS (CVector)
DisplayName English:	Neutral
DisplayName German:	Neutral
DisplayName French:	Neutral
DisplayName Italian:	Neutral
DisplayName Spanish:	Neutral
Type:	CIAAttributeTypeOffset

See AttributeinputNeutral for more details.
(Read and Write property)

5.170.10 inputTargetNeutral as CVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute TargetNeutral

Notes:

Name:	inputTargetNeutral
Class:	CVectorMBS (CVector)
DisplayName English:	TargetNeutral
DisplayName German:	TargetNeutral
DisplayName French:	TargetNeutral
DisplayName Italian:	TargetNeutral
DisplayName Spanish:	TargetNeutral
Type:	CIAAttributeTypeOffset

See AttributeinputTargetNeutral for more details.
(Read and Write property)

5.171 class CIFilterToneCurveMBS

5.171.1 class CIFilterToneCurveMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Tone Curve filter.

Notes:

Details for this filter:

FilterName:	CIToneCurve
DisplayName English:	Tone Curve
DisplayName German:	Farbtonkurve
DisplayName French:	Courbe tonale
DisplayName Italian:	Curva tonale
DisplayName Spanish:	Curva tonal

Categories:

- CICategoryColorAdjustment: Color Adjustment
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputPoint0: Point 1
- inputPoint1: Point 2
- inputPoint2: Point2
- inputPoint3: Point3
- inputPoint4: Point4

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.171.2 Methods

5.171.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.171.4 Properties

5.171.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Tone Curve attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.171.6 AttributeinputPoint0 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Tone Curve attribute.

Notes:

This attribute should have this content:

Name:	inputPoint0
Class:	CIVectorMBS
Type:	CIAttributeTypeOffset
DisplayName English:	Point 1
DisplayName German:	Punkt 1
DisplayName French:	Point 1
DisplayName Italian:	Punto 1
DisplayName Spanish:	Punto 1
DefaultVector:	[0 0]
IdentityVector:	[0 0]

(Read only property)

5.171.7 AttributeinputPoint1 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Tone Curve attribute.

Notes:

This attribute should have this content:

Name:	inputPoint1
Class:	CIVectorMBS
Type:	CIAttributeTypeOffset
DisplayName English:	Point 2
DisplayName German:	Punkt 2
DisplayName French:	Point 2
DisplayName Italian:	Punto 2
DisplayName Spanish:	Punto 2
DefaultVector:	[0.25 0.25]
IdentityVector:	[0.25 0.25]

(Read only property)

5.171.8 AttributeinputPoint2 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Tone Curve attribute.

Notes:

This attribute should have this content:

Name: inputPoint2
Class: CIVectorMBS
Type: CIAttributeTypeOffset
DisplayName: Point2
DefaultVector: [0.5 0.5]
IdentityVector: [0.5 0.5]

(Read only property)

5.171.9 AttributeinputPoint3 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Tone Curve attribute.

Notes:

This attribute should have this content:

Name: inputPoint3
Class: CIVectorMBS
Type: CIAttributeTypeOffset
DisplayName: Point3
DefaultVector: [0.75 0.75]
IdentityVector: [0.75 0.75]

(Read only property)

5.171.10 AttributeinputPoint4 as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Tone Curve attribute.

Notes:

This attribute should have this content:

(Read only property)

Name: inputPoint4
 Class: CIVectorMBS
 Type: CIAttributeTypeOffset
 DisplayName: Point4
 DefaultVector: [1 1]
 IdentityVector: [1 1]

5.171.11 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name: inputImage
 Class: CIImageMBS (CIImage)
 DisplayName English: Image
 DisplayName German: Bild
 DisplayName French: Image
 DisplayName Italian: Immagine
 DisplayName Spanish: Imagen
 Type: CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.171.12 inputPoint0 as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Point
 1

Notes:

Name: inputPoint0
 Class: CIVectorMBS (CIVector)
 DisplayName English: Point 1
 DisplayName German: Punkt 1
 DisplayName French: Point 1
 DisplayName Italian: Punto 1
 DisplayName Spanish: Punto 1
 Type: CIAttributeTypeOffset

See AttributeinputPoint0 for more details.
 (Read and Write property)

5.171.13 inputPoint1 as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Point 2

Notes:

Name:	inputPoint1
Class:	CIVectorMBS (CIVector)
DisplayName English:	Point 2
DisplayName German:	Punkt 2
DisplayName French:	Point 2
DisplayName Italian:	Punto 2
DisplayName Spanish:	Punto 2
Type:	CIAAttributeTypeOffset

See AttributeinputPoint1 for more details.
(Read and Write property)

5.171.14 inputPoint2 as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Point2

Notes:

Name:	inputPoint2
Class:	CIVectorMBS (CIVector)
DisplayName English:	Point2
DisplayName German:	Point2
DisplayName French:	Point2
DisplayName Italian:	Point2
DisplayName Spanish:	Point2
Type:	CIAAttributeTypeOffset

See AttributeinputPoint2 for more details.
(Read and Write property)

5.171.15 inputPoint3 as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Point3

Notes:

Name:	inputPoint3
Class:	CIVectorMBS (CIVector)
DisplayName English:	Point3
DisplayName German:	Point3
DisplayName French:	Point3
DisplayName Italian:	Point3
DisplayName Spanish:	Point3
Type:	CIAAttributeTypeOffset

See AttributeinputPoint3 for more details.
(Read and Write property)

5.171.16 inputPoint4 as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Point4

Notes:

Name:	inputPoint4
Class:	CIVectorMBS (CIVector)
DisplayName English:	Point4
DisplayName German:	Point4
DisplayName French:	Point4
DisplayName Italian:	Point4
DisplayName Spanish:	Point4
Type:	CIAAttributeTypeOffset

See AttributeinputPoint4 for more details.
(Read and Write property)

5.172 class CIFilterTorusLensDistortionMBS

5.172.1 class CIFilterTorusLensDistortionMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Torus Lens Distortion filter.

Notes:

Details for this filter:

FilterName:	CITorusLensDistortion
DisplayName English:	Torus Lens Distortion
DisplayName German:	Verzerrung Torus-Linse
DisplayName French:	Dformation Lentille torique
DisplayName Italian:	Distorsione lenti Torus
DisplayName Spanish:	Distorsin por lente toroidal

Categories:

- CICategoryDistortionEffect: Distortion Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCenter: Center
- inputRadius: Radius
- inputWidth: Width
- inputRefraction: Refraction

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.172.2 Methods

5.172.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.172.4 Properties

5.172.5 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Torus Lens Distortion attribute.

Notes:

This attribute should have this content:

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

(Read only property)

5.172.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Torus Lens Distortion attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.172.7 AttributeinputRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Torus Lens Distortion attribute.

Notes:

This attribute should have this content:

Name:	inputRadius
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
DefaultNumber:	160
IdentityNumber:	0
SliderMaxNumber:	500
SliderMinNumber:	0

(Read only property)

5.172.8 AttributeinputRefraction as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Torus Lens Distortion attribute.

Notes:

This attribute should have this content:

Name:	inputRefraction
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Refraction
DisplayName German:	Lichtbrechung
DisplayName French:	Rfraction
DisplayName Italian:	Rifrazione
DisplayName Spanish:	Refraccin
DefaultNumber:	1.7
IdentityNumber:	0
MaxNumber:	0
MinNumber:	-5
SliderMaxNumber:	5
SliderMinNumber:	-5

(Read only property)

5.172.9 AttributeinputWidth as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Torus Lens Distortion attribute.

Notes:

This attribute should have this content:

Name:	inputWidth
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
DefaultNumber:	80
IdentityNumber:	0
SliderMaxNumber:	200
SliderMinNumber:	0

(Read only property)

5.172.10 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center

Notes:

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAAttributeTypePosition

See AttributeinputCenter for more details.
(Read and Write property)

5.172.11 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

See AttributeinputImage for more details.
(Read and Write property)

5.172.12 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Radius

Notes:

See AttributeinputRadius for more details.

Name:	inputRadius
Class:	double (NSNumber)
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
Type:	CIAttributeTypeDistance

(Read and Write property)

5.172.13 inputRefraction as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Refraction

Notes:

Name:	inputRefraction
Class:	double (NSNumber)
DisplayName English:	Refraction
DisplayName German:	Lichtbrechung
DisplayName French:	Rfraction
DisplayName Italian:	Rifrazione
DisplayName Spanish:	Refraccin
Type:	CIAttributeTypeScalar

See AttributeinputRefraction for more details.

(Read and Write property)

5.172.14 inputWidth as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Width

Notes:

See AttributeinputWidth for more details.

(Read and Write property)

Name:	inputWidth
Class:	double (NSNumber)
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
Type:	CIAttributeTypeDistance

5.173 class CIFilterTriangleKaleidoscopeMBS

5.173.1 class CIFilterTriangleKaleidoscopeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Triangle Kaleidoscope filter.

Notes:

Details for this filter:

FilterName:	CITriangleKaleidoscope
DisplayName English:	Triangle Kaleidoscope
DisplayName German:	
DisplayName French:	Kalidoscope en forme de triangle
DisplayName Italian:	Caleidoscopio triangolare
DisplayName Spanish:	Caleidoscopio triangular

Categories:

- CICategoryTileEffect: Tile Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputPoint: Point
- inputSize: Size
- inputRotation: Rotation
- inputDecay: Decay

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.173.2 Methods

5.173.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.173.4 Properties

5.173.5 AttributeinputDecay as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Triangle Kaleidoscope attribute.

Notes:

This attribute should have this content:

Name:	inputDecay
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Decay
DisplayName German:	
DisplayName French:	Decay
DisplayName Italian:	Decay
DisplayName Spanish:	Decay
DefaultNumber:	0.85
IdentityNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

(Read only property)

5.173.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Triangle Kaleidoscope attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.173.7 AttributeinputPoint as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Triangle Kaleidoscope attribute.

Notes:

This attribute should have this content:

Name:	inputPoint
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Point
DisplayName German:	
DisplayName French:	Point
DisplayName Italian:	Punto
DisplayName Spanish:	Punto
DefaultVector:	[150 150]
IdentityVector:	n/a

(Read only property)

5.173.8 AttributeinputRotation as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Triangle Kaleidoscope attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputRotation
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Rotation
DisplayName German:	
DisplayName French:	Rotation
DisplayName Italian:	Rotation
DisplayName Spanish:	Rotation
DefaultNumber:	5.924285
IdentityNumber:	0
SliderMaxNumber:	6.283185
SliderMinNumber:	0

5.173.9 AttributeinputSize as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Triangle Kaleidoscope attribute.

Notes:

This attribute should have this content:

Name:	inputSize
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Size
DisplayName German:	
DisplayName French:	Size
DisplayName Italian:	Size
DisplayName Spanish:	Size
DefaultNumber:	700
IdentityNumber:	0
SliderMaxNumber:	1000
SliderMinNumber:	0

(Read only property)

5.173.10 inputDecay as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Decay

Notes:

See AttributeinputDecay for more details.

(Read and Write property)

Name:	inputDecay
Class:	double (NSNumber)
DisplayName English:	Decay
DisplayName German:	
DisplayName French:	Decay
DisplayName Italian:	Decay
DisplayName Spanish:	Decay
Type:	CIAttributeTypeScalar

5.173.11 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.173.12 inputPoint as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Point
Notes:

Name:	inputPoint
Class:	CIVectorMBS (CIVector)
DisplayName English:	Point
DisplayName German:	
DisplayName French:	Point
DisplayName Italian:	Punto
DisplayName Spanish:	Punto
Type:	CIAttributeTypePosition

See Attribute for more details.
(Read and Write property)

5.173.13 inputRotation as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Rotation

Notes:

Name:	inputRotation
Class:	double (NSNumber)
DisplayName English:	Rotation
DisplayName German:	
DisplayName French:	Rotation
DisplayName Italian:	Rotation
DisplayName Spanish:	Rotation
Type:	CIAttributeTypeAngle

See Attribute for more details.
(Read and Write property)

5.173.14 inputSize as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Size

Notes:

Name:	inputSize
Class:	double (NSNumber)
DisplayName English:	Size
DisplayName German:	
DisplayName French:	Size
DisplayName Italian:	Size
DisplayName Spanish:	Size
Type:	CIAttributeTypeScalar

See Attribute for more details.
(Read and Write property)

5.174 class CIFilterTriangleTileMBS

5.174.1 class CIFilterTriangleTileMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Triangle Tile filter.

Notes:

Details for this filter:

FilterName:	CITriangleTile
DisplayName English:	Triangle Tile
DisplayName German:	Dreieckig kacheln
DisplayName French:	Mosaque de triangles
DisplayName Italian:	Mosaico triangolare
DisplayName Spanish:	Mosaico triangular

Categories:

- CICategoryTileEffect: Tile Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCenter: Center
- inputAngle: Angle
- inputWidth: Width

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.174.2 Methods

5.174.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.174.4 Properties

5.174.5 AttributeinputAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Triangle Tile attribute.

Notes:

This attribute should have this content:

Name:	inputAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
DefaultNumber:	0
IdentityNumber:	0
SliderMaxNumber:	3.141593
SliderMinNumber:	-3.141593

(Read only property)

5.174.6 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Triangle Tile attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

5.174.7 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Triangle Tile attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.174.8 AttributeinputWidth as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Triangle Tile attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputWidth
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
DefaultNumber:	100
IdentityNumber:	0
SliderMaxNumber:	200
SliderMinNumber:	1

5.174.9 inputAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Angle
Notes:

Name:	inputAngle
Class:	double (NSNumber)
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
Type:	CIAttributeTypeAngle

See AttributeinputAngle for more details.
(Read and Write property)

5.174.10 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center
Notes:

See AttributeinputCenter for more details.
(Read and Write property)

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

5.174.11 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.174.12 inputWidth as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Width
Notes:

Name:	inputWidth
Class:	double (NSNumber)
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
Type:	CIAttributeTypeDistance

See AttributeinputWidth for more details.

5.174. *CLASS CIFILTERTRIANGLETILEMBS*

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(Read and Write property)

5.175 class CIFilterTwelvefoldReflectedTileMBS

5.175.1 class CIFilterTwelvefoldReflectedTileMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Twelvefold Reflected Tile filter.

Notes:

Details for this filter:

FilterName:	CITwelvefoldReflectedTile
DisplayName English:	Twelvefold Reflected Tile
DisplayName German:	12-fach reflektierte Kachel
DisplayName French:	Mosaque rflchie 12 fois
DisplayName Italian:	Mosaico riflesso in dodici direzioni
DisplayName Spanish:	Mosaico reflejado doce veces

Categories:

- CICategoryTileEffect: Tile Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCenter: Center
- inputAngle: Angle
- inputWidth: Width

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.175.2 Methods

5.175.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.175.4 Properties

5.175.5 AttributeinputAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Twelfefold Reflected Tile attribute.

Notes:

This attribute should have this content:

Name:	inputAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
DefaultNumber:	0
IdentityNumber:	0
SliderMaxNumber:	3.141593
SliderMinNumber:	-3.141593

(Read only property)

5.175.6 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Twelfefold Reflected Tile attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

5.175.7 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Twelfefold Reflected Tile attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.175.8 AttributeinputWidth as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Twelfefold Reflected Tile attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputWidth
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
DefaultNumber:	100
IdentityNumber:	100
SliderMaxNumber:	200
SliderMinNumber:	1

5.175.9 inputAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Angle
Notes:

Name:	inputAngle
Class:	double (NSNumber)
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
Type:	CIAttributeTypeAngle

See AttributeinputAngle for more details.
(Read and Write property)

5.175.10 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center
Notes:

See AttributeinputCenter for more details.
(Read and Write property)

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

5.175.11 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.175.12 inputWidth as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute
 Width
Notes:

Name:	inputWidth
Class:	double (NSNumber)
DisplayName English:	Width
DisplayName German:	Breite
DisplayName French:	Largeur
DisplayName Italian:	Larghezza
DisplayName Spanish:	Anchura
Type:	CIAttributeTypeDistance

See AttributeinputWidth for more details.

5.175. CLASS CIFILTERTWELVEFOLDREFLECTEDTILEMBS

1483

(Read and Write property)

5.176 class CIFilterTwirlDistortionMBS

5.176.1 class CIFilterTwirlDistortionMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Twirl Distortion filter.

Notes:

Details for this filter:

FilterName:	CITwirlDistortion
DisplayName English:	Twirl Distortion
DisplayName German:	Verzerrung Wirbeln
DisplayName French:	Dformation Spirale
DisplayName Italian:	Distorsione spirale
DisplayName Spanish:	Distorsin por giro

Categories:

- CICategoryDistortionEffect: Distortion Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCenter: Center
- inputRadius: Radius
- inputAngle: Angle

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.176.2 Methods

5.176.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.176.4 Properties

5.176.5 AttributeinputAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Twirl Distortion attribute.

Notes:

This attribute should have this content:

Name:	inputAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
DefaultNumber:	3.141593
IdentityNumber:	0
SliderMaxNumber:	12.56637
SliderMinNumber:	-12.56637

(Read only property)

5.176.6 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Twirl Distortion attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

5.176.7 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Twirl Distortion attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.176.8 AttributeinputRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Twirl Distortion attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputRadius
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
DefaultNumber:	300
IdentityNumber:	300
SliderMaxNumber:	500
SliderMinNumber:	0

5.176.9 inputAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Angle
Notes:

Name:	inputAngle
Class:	double (NSNumber)
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
Type:	CIAttributeTypeAngle

See AttributeinputAngle for more details.
(Read and Write property)

5.176.10 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center
Notes:

See AttributeinputCenter for more details.
(Read and Write property)

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

5.176.11 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.176.12 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Radius
Notes:

Name:	inputRadius
Class:	double (NSNumber)
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
Type:	CIAttributeTypeDistance

See AttributeinputRadius for more details.

5.176. *CLASS CIFILTERTWIRLDISTORTIONMBS*

1489

(Read and Write property)

5.177 class CIFilterUnsharpMaskMBS

5.177.1 class CIFilterUnsharpMaskMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Unsharp Mask filter.

Notes:

Details for this filter:

FilterName:	CIUnsharpMask
DisplayName English:	Unsharp Mask
DisplayName German:	Unschärf maskieren
DisplayName French:	Rendre le masque flou
DisplayName Italian:	Maschera di contrasto
DisplayName Spanish:	Desenfocar mscara

Categories:

- CIColorSharpen: Sharpen
- CIColorVideo: Video
- CIColorStillImage: Still Image
- CIColorBuiltIn: Built-In

Input:

- inputImage: Image
- inputRadius: Radius
- inputIntensity: Intensity

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.177.2 Methods

5.177.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.177.4 Properties

5.177.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Unsharp Mask attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.177.6 AttributeinputIntensity as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Unsharp Mask attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputIntensity
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Intensity
DisplayName German:	Intensitt
DisplayName French:	Intensit
DisplayName Italian:	Intensit
DisplayName Spanish:	Intensidad
DefaultNumber:	0.5
IdentityNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

5.177.7 AttributeinputRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Unsharp Mask attribute.

Notes:

This attribute should have this content:

Name:	inputRadius
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
DefaultNumber:	2.5
IdentityNumber:	0
SliderMaxNumber:	100
SliderMinNumber:	0

(Read only property)

5.177.8 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

(Read and Write property)

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

5.177.9 inputIntensity as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Intensity

Notes:

Name:	inputIntensity
Class:	double (NSNumber)
DisplayName English:	Intensity
DisplayName German:	Intensitt
DisplayName French:	Intensit
DisplayName Italian:	Intensit
DisplayName Spanish:	Intensidad
Type:	CIAttributeTypeScalar

See AttributeinputIntensity for more details.
(Read and Write property)

5.177.10 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Radius

Notes:

See AttributeinputRadius for more details.
(Read and Write property)

Name:	inputRadius
Class:	double (NSNumber)
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
Type:	CIAttributeTypeDistance

5.178 class CIFilterVibranceMBS

5.178.1 class CIFilterVibranceMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Vibrance filter.

Notes:

Details for this filter:

FilterName:	CIVibrance
DisplayName English:	Vibrance
DisplayName German:	Lebendigkeit
DisplayName French:	Brillance
DisplayName Italian:	Vivacit
DisplayName Spanish:	Vivacidad

Categories:

- CICategoryColorAdjustment: Color Adjustment
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputAmount: Amount

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.178.2 Methods

5.178.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.178.4 Properties

5.178.5 AttributeinputAmount as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Vibrance attribute.

Notes:

This attribute should have this content:

Name:	inputAmount
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Amount
DisplayName German:	Strke
DisplayName French:	Montant
DisplayName Italian:	Quantit
DisplayName Spanish:	Cantidad
DefaultNumber:	0
IdentityNumber:	0
MaxNumber:	1
MinNumber:	-1
SliderMaxNumber:	1
SliderMinNumber:	-1

(Read only property)

5.178.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Vibrance attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.178.7 inputAmount as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Amount

Notes:

Name:	inputAmount
Class:	double (NSNumber)
DisplayName English:	Amount
DisplayName German:	Strke
DisplayName French:	Montant
DisplayName Italian:	Quantit
DisplayName Spanish:	Cantidad
Type:	CIAttributeTypeScalar

See AttributeinputAmount for more details.

(Read and Write property)

5.178.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.

(Read and Write property)

Name:	inputImage
Class:	UIImageMBS (UIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	UIImageTypeImage

5.179 class CIFilterVignetteEffectMBS

5.179.1 class CIFilterVignetteEffectMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Vignette Effect filter.

Notes:

Details for this filter:

FilterName:	CIVignetteEffect
DisplayName English:	Vignette Effect
DisplayName German:	Vignetteneffekt
DisplayName French:	Effet de vignette
DisplayName Italian:	Effetto vignettatura
DisplayName Spanish:	Efecto de degradado

Categories:

- CICategoryColorEffect: Color Effect
- CICategoryVideo: Video
- CICategoryInterlaced: Interlaced
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCenter: Center
- inputRadius: Radius
- inputIntensity: Intensity
- inputFalloff: Falloff

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.179.2 Methods

5.179.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.179.4 Properties

5.179.5 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Vignette Effect attribute.

Notes:

This attribute should have this content:

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

(Read only property)

5.179.6 AttributeinputFalloff as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Vignette Effect attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputFalloff
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Falloff
DisplayName German:	Falloff
DisplayName French:	Attenuation
DisplayName Italian:	Calo
DisplayName Spanish:	Disminucin
DefaultNumber:	0.5
IdentityNumber:	0
MaxNumber:	1
MinNumber:	0
SliderMaxNumber:	1
SliderMinNumber:	0

5.179.7 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Vignette Effect attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.179.8 AttributeinputIntensity as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Vignette Effect attribute.

Notes:

This attribute should have this content:

Name:	inputIntensity
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Intensity
DisplayName German:	Intensitt
DisplayName French:	Intensit
DisplayName Italian:	Intensit
DisplayName Spanish:	Intensidad
DefaultNumber:	1
IdentityNumber:	0
MaxNumber:	1
MinNumber:	-1
SliderMaxNumber:	1
SliderMinNumber:	-1

(Read only property)

5.179.9 AttributeinputRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Vignette Effect attribute.

Notes:

This attribute should have this content:

Name:	inputRadius
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
DefaultNumber:	150
IdentityNumber:	0
SliderMaxNumber:	2000
SliderMinNumber:	0

(Read only property)

5.179.10 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center

Notes:

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

See AttributeinputCenter for more details.
(Read and Write property)

5.179.11 inputFalloff as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Falloff

Notes:

Name:	inputFalloff
Class:	double (NSNumber)
DisplayName English:	Falloff
DisplayName German:	Falloff
DisplayName French:	Attenuation
DisplayName Italian:	Calo
DisplayName Spanish:	Disminucin
Type:	CIAttributeTypeScalar

See AttributeinputFalloff for more details.
(Read and Write property)

5.179.12 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

See AttributeinputImage for more details.
(Read and Write property)

Name:	inputImage
Class:	CImageMBS (CImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAAttributeTypeImage

5.179.13 inputIntensity as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Intensity

Notes:

Name:	inputIntensity
Class:	double (NSNumber)
DisplayName English:	Intensity
DisplayName German:	Intensitt
DisplayName French:	Intensit
DisplayName Italian:	Intensit
DisplayName Spanish:	Intensidad
Type:	CIAAttributeTypeScalar

See AttributeinputIntensity for more details.
(Read and Write property)

5.179.14 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Radius

Notes:

Name:	inputRadius
Class:	double (NSNumber)
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
Type:	CIAAttributeTypeDistance

See AttributeinputRadius for more details.

5.179. *CLASS CIFILTERVIGNETTEEFFECTMBS*

1505

(Read and Write property)

5.180 class CIFilterVignetteMBS

5.180.1 class CIFilterVignetteMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Vignette filter.

Notes:

Details for this filter:

FilterName:	CIVignette
DisplayName English:	Vignette
DisplayName German:	Vignette
DisplayName French:	Vignette
DisplayName Italian:	Vignettatura
DisplayName Spanish:	Degradado

Categories:

- CICategoryColorEffect: Color Effect
- CICategoryVideo: Video
- CICategoryInterlaced: Interlaced
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputIntensity: Intensity
- inputRadius: Radius

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.180.2 Methods

5.180.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.
Notes: On success the handle property is not zero and the filter has the default values set.

5.180.4 Properties

5.180.5 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Vignette attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.180.6 AttributeinputIntensity as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Vignette attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputIntensity
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Intensity
DisplayName German:	Intensitt
DisplayName French:	Intensit
DisplayName Italian:	Intensit
DisplayName Spanish:	Intensidad
DefaultNumber:	0
IdentityNumber:	0
MaxNumber:	1
MinNumber:	-1
SliderMaxNumber:	1
SliderMinNumber:	-1

5.180.7 AttributeinputRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Vignette attribute.

Notes:

This attribute should have this content:

Name:	inputRadius
Class:	double
Type:	CIAttributeTypeScalar
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
DefaultNumber:	1
IdentityNumber:	0
MaxNumber:	2
MinNumber:	0
SliderMaxNumber:	2
SliderMinNumber:	0

(Read only property)

5.180.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.180.9 inputIntensity as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Intensity
Notes:

Name:	inputIntensity
Class:	double (NSNumber)
DisplayName English:	Intensity
DisplayName German:	Intensitt
DisplayName French:	Intensit
DisplayName Italian:	Intensit
DisplayName Spanish:	Intensidad
Type:	CIAttributeTypeScalar

See AttributeinputIntensity for more details.
 (Read and Write property)

5.180.10 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Radius
Notes:

See AttributeinputRadius for more details.

Name:	inputRadius
Class:	double (NSNumber)
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
Type:	CIAttributeTypeScalar

(Read and Write property)

5.181 class CIFilterVortexDistortionMBS

5.181.1 class CIFilterVortexDistortionMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Vortex Distortion filter.

Notes:

Details for this filter:

FilterName:	CIVortexDistortion
DisplayName English:	Vortex Distortion
DisplayName German:	Verzerrung Vortex
DisplayName French:	Dformation Tourbillon
DisplayName Italian:	Distorsione Vortex
DisplayName Spanish:	Distorsin por vrtice

Categories:

- CICategoryDistortionEffect: Distortion Effect
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCenter: Center
- inputRadius: Radius
- inputAngle: Angle

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.181.2 Methods

5.181.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.181.4 Properties

5.181.5 AttributeinputAngle as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Vortex Distortion attribute.

Notes:

This attribute should have this content:

Name:	inputAngle
Class:	double
Type:	CIAttributeTypeAngle
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
DefaultNumber:	56.54867
IdentityNumber:	0
SliderMaxNumber:	94.24778
SliderMinNumber:	-94.24778

(Read only property)

5.181.6 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Vortex Distortion attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

5.181.7 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Vortex Distortion attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.181.8 AttributeinputRadius as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Vortex Distortion attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputRadius
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Radius
DisplayName German:	Radius
DisplayName French:	Rayon
DisplayName Italian:	Raggio
DisplayName Spanish:	Radio
DefaultNumber:	300
IdentityNumber:	0
SliderMaxNumber:	800
SliderMinNumber:	0

5.181.9 inputAngle as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Angle
Notes:

Name:	inputAngle
Class:	double (NSNumber)
DisplayName English:	Angle
DisplayName German:	Winkel
DisplayName French:	Angle
DisplayName Italian:	Angolo
DisplayName Spanish:	ngulo
Type:	CIAttributeTypeAngle

See AttributeinputAngle for more details.
 (Read and Write property)

5.181.10 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center
Notes:

See AttributeinputCenter for more details.
 (Read and Write property)

Name: inputCenter
 Class: CIVectorMBS (CIVector)
 DisplayName English: Center
 DisplayName German: Mitte
 DisplayName French: Centre
 DisplayName Italian: Centro
 DisplayName Spanish: Centro
 Type: CIAAttributeTypePosition

5.181.11 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name: inputImage
 Class: CIImageMBS (CIImage)
 DisplayName English: Image
 DisplayName German: Bild
 DisplayName French: Image
 DisplayName Italian: Immagine
 DisplayName Spanish: Imagen
 Type: CIAAttributeTypeImage

See AttributeinputImage for more details.
 (Read and Write property)

5.181.12 inputRadius as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute
 Radius
Notes:

Name: inputRadius
 Class: double (NSNumber)
 DisplayName English: Radius
 DisplayName German: Radius
 DisplayName French: Rayon
 DisplayName Italian: Raggio
 DisplayName Spanish: Radio
 Type: CIAAttributeTypeDistance

See AttributeinputRadius for more details.

5.182 class CIFilterWhitePointAdjustMBS

5.182.1 class CIFilterWhitePointAdjustMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage White Point Adjust filter.

Notes:

Details for this filter:

FilterName:	CIWhitePointAdjust
DisplayName English:	White Point Adjust
DisplayName German:	Weipunkt anpassen
DisplayName French:	Ajustement du point blanc
DisplayName Italian:	Regolazione punto di bianco
DisplayName Spanish:	Ajuste de punto blanco

Categories:

- CICategoryColorAdjustment: Color Adjustment
- CICategoryVideo: Video
- CICategoryStillImage: Still Image
- CICategoryInterlaced: Interlaced
- CICategoryNonSquarePixels: Non-Square Pixels
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputColor: Color

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.182.2 Methods

5.182.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.182.4 Properties

5.182.5 AttributeinputColor as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the White Point Adjust attribute.

Notes:

This attribute should have this content:

Name:	inputColor
Class:	CIColorMBS
Type:	CIAttributeTypeColor
DisplayName English:	Color
DisplayName German:	Farbe
DisplayName French:	Couleur
DisplayName Italian:	Colore
DisplayName Spanish:	Color
DefaultColor:	Red = 1, Green = 0.9, Blue = 0.8, Alpha = 1
IdentityNumber:	0

(Read only property)

5.182.6 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the White Point Adjust attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputImage
Class:	CIIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

5.182.7 inputColor as CIColorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Color
Notes:

Name:	inputColor
Class:	CIColorMBS (CIColor)
DisplayName English:	Color
DisplayName German:	Farbe
DisplayName French:	Couleur
DisplayName Italian:	Colore
DisplayName Spanish:	Color
Type:	CIAttributeTypeColor

See AttributeinputColor for more details.
 (Read and Write property)

5.182.8 inputImage as CIIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image
Notes:

Name:	inputImage
Class:	CIIImageMBS (CIIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.

5.183 class CIFilterZoomBlurMBS

5.183.1 class CIFilterZoomBlurMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class for the CoreImage Zoom Blur filter.

Notes:

Details for this filter:

FilterName:	CIZoomBlur
DisplayName English:	Zoom Blur
DisplayName German:	Zoom weichzeichnen
DisplayName French:	Zoom flou
DisplayName Italian:	Sfumatura zoom
DisplayName Spanish:	Ampliar difuminado

Categories:

- CICategoryBlur: Blur
- CICategoryStillImage: Still Image
- CICategoryVideo: Video
- CICategoryBuiltIn: Built-In

Input:

- inputImage: Image
- inputCenter: Center
- inputAmount: Amount

Output:

- outputImage

Subclass of the CIFilterMBS class.

5.183.2 Methods

5.183.3 Constructor

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

Notes: On success the handle property is not zero and the filter has the default values set.

5.183.4 Properties

5.183.5 AttributeinputAmount as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Zoom Blur attribute.

Notes:

This attribute should have this content:

Name:	inputAmount
Class:	double
Type:	CIAttributeTypeDistance
DisplayName English:	Amount
DisplayName German:	Strke
DisplayName French:	Montant
DisplayName Italian:	Quantit
DisplayName Spanish:	Cantidad
DefaultNumber:	20
IdentityNumber:	0
SliderMaxNumber:	200
SliderMinNumber:	0

(Read only property)

5.183.6 AttributeinputCenter as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Zoom Blur attribute.

Notes:

This attribute should have this content:

(Read only property)

Name:	inputCenter
Class:	CIVectorMBS
Type:	CIAttributeTypePosition
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
DefaultVector:	[150 150]
IdentityVector:	n/a

5.183.7 AttributeinputImage as CIAttributeMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Details about the Zoom Blur attribute.

Notes:

This attribute should have this content:

Name:	inputImage
Class:	CIImageMBS
Type:	CIAttributeTypeImage
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
DefaultNumber:	0
IdentityNumber:	0

(Read only property)

5.183.8 inputAmount as Double

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Amount

Notes:

See AttributeinputAmount for more details.

(Read and Write property)

Name:	inputAmount
Class:	double (NSNumber)
DisplayName English:	Amount
DisplayName German:	Strke
DisplayName French:	Montant
DisplayName Italian:	Quantit
DisplayName Spanish:	Cantidad
Type:	CIAttributeTypeDistance

5.183.9 inputCenter as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Center

Notes:

Name:	inputCenter
Class:	CIVectorMBS (CIVector)
DisplayName English:	Center
DisplayName German:	Mitte
DisplayName French:	Centre
DisplayName Italian:	Centro
DisplayName Spanish:	Centro
Type:	CIAttributeTypePosition

See AttributeinputCenter for more details.
(Read and Write property)

5.183.10 inputImage as CIImageMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The attribute Image

Notes:

Name:	inputImage
Class:	CIImageMBS (CIImage)
DisplayName English:	Image
DisplayName German:	Bild
DisplayName French:	Image
DisplayName Italian:	Immagine
DisplayName Spanish:	Imagen
Type:	CIAttributeTypeImage

See AttributeinputImage for more details.

5.183. CLASS CIFILTERZOOMBLURMBS

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(Read and Write property)

5.184 class CIImageMBS

5.184.1 class CIImageMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The class for a CoreImage Image object.

5.184.2 Methods

5.184.3 AsNSImageMBS as Variant

Plugin Version: 13.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a NSImageMBS which references the given CIImage.

Example:

```
// make a dummy CIImage
dim Logo as Picture = LogoMBS(500)
dim jpeg as string = PictureToJPEGStringMBS(logo, 80)
dim ci as CIImageMBS = CIImageMBS.imageWithData(jpeg)

// convert to NSImage
dim ni as NSImageMBS = ci.AsNSImageMBS

// and display
Backdrop = ni.CopyPictureWithMask
```

Notes:

Returns nil on error.
Result declared as Variant to avoid plugin dependencies.

5.184.4 autoAdjustmentFilters as CIFilterMBS()

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns all filters that perform auto adjustment.

Example:

```
dim f as FolderItem = SpecialFolder.Desktop.Child("test.jpg")
dim image as CIImageMBS = CIImageMBS.imageWithContentsOfFile(f)

dim filters() as CIFilterMBS = image.autoAdjustmentFilters
```

```

dim beginImage as CIImageMBS = image
for each filter as CIFilterMBS in filters
filter.ValueAsCIImage("inputImage") = beginImage
beginImage = filter.ValueAsCIImage("outputImage")
next

```

```
Backdrop = beginImage.RenderPicture
```

Notes: An array of auto adjustment filters to apply to the image. The filters are preset with values for correcting deficiencies in the supplied image.

5.184.5 autoAdjustmentFiltersWithOptions(options as dictionary) as CIFilterMBS()

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a subset of the filters that perform auto adjustment.

Example:

```

dim f as FolderItem = SpecialFolder.Desktop.Child("test.jpg")
dim image as CIImageMBS = CIImageMBS.imageWithContentsOfFile(f)

```

```

dim options as new Dictionary
options.Value(CIImageMBS.kCIImageAutoAdjustEnhance) = true
options.Value(CIImageMBS.kCIImageAutoAdjustRedEye) = true

```

```
dim filters() as CIFilterMBS = image.autoAdjustmentFiltersWithOptions(options)
```

```

dim beginImage as CIImageMBS = image
for each filter as CIFilterMBS in filters
filter.ValueAsCIImage("inputImage") = beginImage
beginImage = filter.ValueAsCIImage("outputImage")
next

```

```
Backdrop = beginImage.RenderPicture
```

Notes:

options: You can control which filters are returned by supplying one or more of the keys described in "Auto Adjustment Keys."

The options dictionary can also contain a CIDetectorImageOrientation key. This key is a number with the same value as defined by the TIFF and EXIF specifications; values can range from 1 through 8. The value specifies where the origin (0,0) of the image is located. If not present, the default value is 1, which means the origin of the image is top, left. For details on the image origin specified by each value, see kCGImagePropertyOrientation.

Returns an array of auto adjustment filters, filtered by the supplied options, to apply to the image. The filters are preset with values for correcting deficiencies in the supplied image.

5.184.6 Constructor(cgimage as CGImageMBS, cgcolorspace as CGColorSpaceMBS)

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a CIImage based on a CGImage.

Notes:

cgcolorspace: Use this colorspace when opening the image.

On success, the handle is not zero.

See also:

- 5.184.7 Constructor(cgimage as CGImageMBS, options as Dictionary = nil) 1528
- 5.184.8 Constructor(CGLayer as CGLayerMBS, options as Dictionary = nil) 1529
- 5.184.9 Constructor(data as memoryblock) 1529
- 5.184.10 Constructor(data as memoryblock, BytesPerRow as Integer, width as Integer, height as Integer, format as Integer, cgcolorspace as CGColorSpaceMBS) 1530
- 5.184.11 Constructor(data as memoryblock, cgcolorspace as CGColorSpaceMBS) 1531
- 5.184.12 Constructor(data as Memoryblock, Length as Integer, BytesPerRow as Integer, width as Integer, height as Integer, format as Integer, cgcolorspace as CGColorSpaceMBS) 1532
- 5.184.13 Constructor(file as FolderItem) 1532
- 5.184.14 Constructor(file as FolderItem, cgcolorspace as CGColorSpaceMBS) 1533
- 5.184.15 Constructor(Handle as Integer) 1533

5.184.7 Constructor(cgimage as CGImageMBS, options as Dictionary = nil)

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a CIImage based on a CGImage.

Notes: On success, the handle is not zero.

See also:

- 5.184.6 Constructor(cgimage as CGImageMBS, cgcolorspace as CGColorSpaceMBS) 1528
- 5.184.8 Constructor(CGLayer as CGLayerMBS, options as Dictionary = nil) 1529
- 5.184.9 Constructor(data as memoryblock) 1529
- 5.184.10 Constructor(data as memoryblock, BytesPerRow as Integer, width as Integer, height as Integer, format as Integer, cgcolorspace as CGColorSpaceMBS) 1530

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• 5.184.11 Constructor(data as memoryblock, cgcolorspace as CGColorSpaceMBS)	1531
• 5.184.12 Constructor(data as Memoryblock, Length as Integer, BytesPerRow as Integer, width as Integer, height as Integer, format as Integer, cgcolorspace as CGColorSpaceMBS)	1532
• 5.184.13 Constructor(file as FolderItem)	1532
• 5.184.14 Constructor(file as FolderItem, cgcolorspace as CGColorSpaceMBS)	1533
• 5.184.15 Constructor(Handle as Integer)	1533

5.184.8 Constructor(CGLayer as CGLayerMBS, options as Dictionary = nil)

Plugin Version: 14.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates and returns an image object from the contents supplied by a CGLayer object, using the specified options.

Notes:

layer: A CGLayer object. For more information see Quartz 2D Programming Guide and CGLayer Reference.
options: A dictionary specifying image options.

Returns an image object initialized with the contents of the layer object and set up with the specified options.
See also:

• 5.184.6 Constructor(cgimage as CGImageMBS, cgcolorspace as CGColorSpaceMBS)	1528
• 5.184.7 Constructor(cgimage as CGImageMBS, options as Dictionary = nil)	1528
• 5.184.9 Constructor(data as memoryblock)	1529
• 5.184.10 Constructor(data as memoryblock, BytesPerRow as Integer, width as Integer, height as Integer, format as Integer, cgcolorspace as CGColorSpaceMBS)	1530
• 5.184.11 Constructor(data as memoryblock, cgcolorspace as CGColorSpaceMBS)	1531
• 5.184.12 Constructor(data as Memoryblock, Length as Integer, BytesPerRow as Integer, width as Integer, height as Integer, format as Integer, cgcolorspace as CGColorSpaceMBS)	1532
• 5.184.13 Constructor(file as FolderItem)	1532
• 5.184.14 Constructor(file as FolderItem, cgcolorspace as CGColorSpaceMBS)	1533
• 5.184.15 Constructor(Handle as Integer)	1533

5.184.9 Constructor(data as memoryblock)

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a CIImage based on the image file content stored inside the data string.

Example:

```
dim p as Picture = LogoMBS(500)
dim data as string = PictureToPNGStringMBS(p,80)
```

```
dim i as new CIIImageMBS(data)
```

```
dim c as new CIFilterCircularWrapMBS
c.inputImage = i
```

```
dim o as CIIImageMBS = c.outputImage
Backdrop = o.RenderPicture
```

Notes: On success, the handle is not zero.
See also:

- 5.184.6 Constructor(cgimage as CGImageMBS, cgcolorspace as CGColorSpaceMBS) 1528
- 5.184.7 Constructor(cgimage as CGImageMBS, options as Dictionary = nil) 1528
- 5.184.8 Constructor(CGLayer as CGLayerMBS, options as Dictionary = nil) 1529
- 5.184.10 Constructor(data as memoryblock, BytesPerRow as Integer, width as Integer, height as Integer, format as Integer, cgcolorspace as CGColorSpaceMBS) 1530
- 5.184.11 Constructor(data as memoryblock, cgcolorspace as CGColorSpaceMBS) 1531
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- 5.184.13 Constructor(file as FolderItem) 1532
- 5.184.14 Constructor(file as FolderItem, cgcolorspace as CGColorSpaceMBS) 1533
- 5.184.15 Constructor(Handle as Integer) 1533

5.184.10 Constructor(data as memoryblock, BytesPerRow as Integer, width as Integer, height as Integer, format as Integer, cgcolorspace as CGColorSpaceMBS)

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a CIIImage from a RAW memory buffer.

Notes:

Format must be one of this constants: kCIFormatRGBAf, kCIFormatRGBA16 and kCIFormatARGB8.

On success, the handle is not zero.
See also:

- 5.184.6 Constructor(cgimage as CGImageMBS, cgcolorspace as CGColorSpaceMBS) 1528
- 5.184.7 Constructor(cgimage as CGImageMBS, options as Dictionary = nil) 1528

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• 5.184.8 Constructor(CGLayer as CGLayerMBS, options as Dictionary = nil)	1529
• 5.184.9 Constructor(data as memoryblock)	1529
• 5.184.11 Constructor(data as memoryblock, cgcolorspace as CGColorSpaceMBS)	1531
• 5.184.12 Constructor(data as Memoryblock, Length as Integer, BytesPerRow as Integer, width as Integer, height as Integer, format as Integer, cgcolorspace as CGColorSpaceMBS)	1532
• 5.184.13 Constructor(file as FolderItem)	1532
• 5.184.14 Constructor(file as FolderItem, cgcolorspace as CGColorSpaceMBS)	1533
• 5.184.15 Constructor(Handle as Integer)	1533

5.184.11 Constructor(data as memoryblock, cgcolorspace as CGColorSpaceMBS)

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a CIImage based on the image file content stored inside the data string.

Notes:

cgcolorspace: Use this colorspace when opening the image.

On success, the handle is not zero.

See also:

• 5.184.6 Constructor(cgimage as CGImageMBS, cgcolorspace as CGColorSpaceMBS)	1528
• 5.184.7 Constructor(cgimage as CGImageMBS, options as Dictionary = nil)	1528
• 5.184.8 Constructor(CGLayer as CGLayerMBS, options as Dictionary = nil)	1529
• 5.184.9 Constructor(data as memoryblock)	1529
• 5.184.10 Constructor(data as memoryblock, BytesPerRow as Integer, width as Integer, height as Integer, format as Integer, cgcolorspace as CGColorSpaceMBS)	1530
• 5.184.12 Constructor(data as Memoryblock, Length as Integer, BytesPerRow as Integer, width as Integer, height as Integer, format as Integer, cgcolorspace as CGColorSpaceMBS)	1532
• 5.184.13 Constructor(file as FolderItem)	1532
• 5.184.14 Constructor(file as FolderItem, cgcolorspace as CGColorSpaceMBS)	1533
• 5.184.15 Constructor(Handle as Integer)	1533

5.184.12 Constructor(data as Memoryblock, Length as Integer, BytesPerRow as Integer, width as Integer, height as Integer, format as Integer, cgcolorspace as CGColorSpaceMBS)

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a CIIImage from a RAW memory buffer.

Notes:

Data points directly to the row data.

Length is the size of the memoryblock in bytes.

BytesPerRow is the size of a row in bytes.

Width and height are the dimensions of the image.

Format must be one of this constants: kCIFORMatRGBAf, kCIFORMatRGBA16 and kCIFORMatARGB8.

Colorspace is the CoreGraphics Colorspace object to be used.

On success, the handle is not zero.

See also:

- 5.184.6 Constructor(cgimage as CGImageMBS, cgcolorspace as CGColorSpaceMBS) 1528
- 5.184.7 Constructor(cgimage as CGImageMBS, options as Dictionary = nil) 1528
- 5.184.8 Constructor(CGLayer as CGLayerMBS, options as Dictionary = nil) 1529
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- 5.184.10 Constructor(data as memoryblock, BytesPerRow as Integer, width as Integer, height as Integer, format as Integer, cgcolorspace as CGColorSpaceMBS) 1530
- 5.184.11 Constructor(data as memoryblock, cgcolorspace as CGColorSpaceMBS) 1531
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- 5.184.15 Constructor(Handle as Integer) 1533

5.184.13 Constructor(file as FolderItem)

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a CIIImage based on a the content of the file.

Notes: On success, the handle is not zero.

See also:

- 5.184.6 Constructor(cgimage as CGImageMBS, cgcolorspace as CGColorSpaceMBS) 1528
- 5.184.7 Constructor(cgimage as CGImageMBS, options as Dictionary = nil) 1528
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• 5.184.15 Constructor(Handle as Integer)	1533

5.184.14 Constructor(file as FolderItem, cgcolorspace as CGColorSpaceMBS)

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a CIImage based on a the content of the file.

Notes:

cgcolorspace: Use this colorspace when opening the image.

On success, the handle is not zero.

See also:

• 5.184.6 Constructor(cgimage as CGImageMBS, cgcolorspace as CGColorSpaceMBS)	1528
• 5.184.7 Constructor(cgimage as CGImageMBS, options as Dictionary = nil)	1528
• 5.184.8 Constructor(CGLayer as CGLayerMBS, options as Dictionary = nil)	1529
• 5.184.9 Constructor(data as memoryblock)	1529
• 5.184.10 Constructor(data as memoryblock, BytesPerRow as Integer, width as Integer, height as Integer, format as Integer, cgcolorspace as CGColorSpaceMBS)	1530
• 5.184.11 Constructor(data as memoryblock, cgcolorspace as CGColorSpaceMBS)	1531
• 5.184.12 Constructor(data as Memoryblock, Length as Integer, BytesPerRow as Integer, width as Integer, height as Integer, format as Integer, cgcolorspace as CGColorSpaceMBS)	1532
• 5.184.13 Constructor(file as FolderItem)	1532
• 5.184.15 Constructor(Handle as Integer)	1533

5.184.15 Constructor(Handle as Integer)

Plugin Version: 12.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Initializes object with given object reference.

Notes:

ref should be a CIIImage* and the object is retained.

Raises UnsupportedOperationException if object is not a CIIImage.

See also:

- 5.184.6 Constructor(cgimage as CGImageMBS, cgcolorspace as CGColorSpaceMBS) 1528
- 5.184.7 Constructor(cgimage as CGImageMBS, options as Dictionary = nil) 1528
- 5.184.8 Constructor(CGLayer as CGLayerMBS, options as Dictionary = nil) 1529
- 5.184.9 Constructor(data as memoryblock) 1529
- 5.184.10 Constructor(data as memoryblock, BytesPerRow as Integer, width as Integer, height as Integer, format as Integer, cgcolorspace as CGColorSpaceMBS) 1530
- 5.184.11 Constructor(data as memoryblock, cgcolorspace as CGColorSpaceMBS) 1531
- 5.184.12 Constructor(data as Memoryblock, Length as Integer, BytesPerRow as Integer, width as Integer, height as Integer, format as Integer, cgcolorspace as CGColorSpaceMBS) 1532
- 5.184.13 Constructor(file as FolderItem) 1532
- 5.184.14 Constructor(file as FolderItem, cgcolorspace as CGColorSpaceMBS) 1533

5.184.16 CreateCGImage(r as CCGRectMBS = nil) as CGImageMBS

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new image with the content of the CIIImage.

Example:

```
dim logo as Picture = LogoMBS(500)
dim ci as CIIImageMBS = CIIImageMBS.imageWithPicture(logo)
dim cg as CGImageMBS = ci.CreateCGImage
Backdrop = cg.Picture
```

Notes:

Render the region 'r' of image 'im' into a temporary buffer using the context, then create and return a new CoreGraphics image with the results.

If r is nil, the whole image extent is used.

See also:

- 5.184.17 CreateCGImage(r as CCGRectMBS, ColorSpace as CGColorSpaceMBS) as CGImageMBS 1535

5.184.17 CreateCGImage(r as CGRectMBS, ColorSpace as CGColorSpaceMBS) as CGImageMBS

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new image with the content of the CIImage.

Notes:

Render the region 'r' of image 'im' into a temporary buffer using the context, then create and return a new CoreGraphics image with the results.

If r is nil, the whole image extent is used.

See also:

- 5.184.16 CreateCGImage(r as CGRectMBS = nil) as CGImageMBS

1534

5.184.18 emptyImage as CIImageMBS

Plugin Version: 13.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates and returns an empty image object.

Example:

```
dim image as CIImageMBS = CIImageMBS.emptyImage
MsgBox str(image.Width) // shows zero
```

Notes: Available in OS X v10.5 and later.

5.184.19 imageByApplyingOrientation(orientation as Integer) as CIImageMBS

Plugin Version: 15.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a new image representing the original image with a transform applied to it based on an orientation value.

Notes:

Orientation values from 1 to 8 as defined in the TIFF spec are supported.

Returns original image if the image is of infinite extent.

Possible orientation values:

5.184.20 ImageByApplyingTransform(transform as NSAffineTransformMBS) as CIImageMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a new image representing the original image with the transform 'matrix' appended to it.

Value	orientation	details
1	top left	row 0 top, col 0 lhs
2	top right	row 0 top, col 0 rhs
3	bottom right	row 0 bottom, col 0 rhs
4	bottom left	row 0 bottom, col 0 lhs
5	left top	row 0 lhs, col 0 top
6	right top	row 0 rhs, col 0 top
7	right bottom	row 0 rhs, col 0 bottom
8	left bottom	row 0 lhs, col 0 bottom

5.184.21 `imageByClampingToExtent` as `CIImageMBS`

Plugin Version: 15.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return a new infinite image by replicating the pixels of the receiver image's extent.

5.184.22 `imageByCompositingOverImage(dest as CIImageMBS)` as `CIImageMBS`

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a new image created by compositing the original image over the specified destination image.

Notes:

`dest`: An image to serve as the destination of the compositing operation.

Returns an image object representing the result of the compositing operation.

Calling this method is equivalent to using the `CISourceOverCompositing` filter. To use other compositing operations and blending modes, create a `CIFilter` object using one of the built-in filters from the `CICategoryCompositeOperation` category. For details, see Core Image Filter Reference.

Available in OS X v10.4 and later.

5.184.23 `imageByCroppingToRect(r as CGRectMBS)` as `CIImageMBS`

Plugin Version: 13.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a new image that represents the original image after cropping to a rectangle.

Notes: Available in OS X v10.5 and later.

5.184.24 imageWithCGImage(CGImage as CGImageMBS, colorspace as CGColorSpaceMBS) as CIImageMBS

Plugin Version: 13.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates and returns an image object from a Quartz 2D image using the specified color space.

Notes: Returns nil on any error.

See also:

- 5.184.25 imageWithCGImage(CGImage as CGImageMBS, options as Dictionary = nil) as CIImageMBS 1537

5.184.25 imageWithCGImage(CGImage as CGImageMBS, options as Dictionary = nil) as CIImageMBS

Plugin Version: 13.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates and returns an image object from a Quartz 2D image.

Notes: Returns nil on any error.

See also:

- 5.184.24 imageWithCGImage(CGImage as CGImageMBS, colorspace as CGColorSpaceMBS) as CIImageMBS 1537

5.184.26 imageWithCGLayer(CGImage as CGImageMBS, options as Dictionary = nil) as CIImageMBS

Plugin Version: 14.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates and returns an image object from the contents supplied by a CGLayer object, using the specified options.

Notes:

layer: A CGLayer object. For more information see Quartz 2D Programming Guide and CGLayer Reference.
options: A dictionary specifying image options.

An image object initialized with the contents of the layer object and set up with the specified options.

5.184.27 imageWithColor(color as CIColorMBS) as CIImageMBS

Plugin Version: 13.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates and returns an image of infinite extent that is initialized the specified color.

Notes:

Returns the image object initialized with the color represented by the CIColorMBS object.
Available in OS X v10.5 and later.

5.184.28 `imageWithContentsOfFile(file as folderitem) as CIImageMBS`

Plugin Version: 13.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates and returns an image object from the contents of a file.

Example:

```
dim file as FolderItem = SpecialFolder.Desktop.Child("mbs.jpg")
dim image as CIImageMBS = CIImageMBS.imageWithContentsOfFile(file)
Backdrop = image.RenderPicture
```

Notes: Returns nil on any error.

See also:

- 5.184.29 `imageWithContentsOfFile(file as folderitem, colorspace as CGColorSpaceMBS) as CIImageMBS` 1538

5.184.29 `imageWithContentsOfFile(file as folderitem, colorspace as CGColorSpaceMBS) as CIImageMBS`

Plugin Version: 13.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates and returns an image object from the contents of a file.

Notes: Returns nil on any error.

See also:

- 5.184.28 `imageWithContentsOfFile(file as folderitem) as CIImageMBS` 1538

5.184.30 `imageWithContentsOfFileMT(file as folderitem) as CIImageMBS`

Plugin Version: 13.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates and returns an image object from the contents of a file.

Example:

```
dim file as FolderItem = SpecialFolder.Desktop.Child("mbs.jpg")
dim image as CIImageMBS = CIImageMBS.imageWithContentsOfFileMT(file)
Backdrop = image.RenderPicture
```

Notes:

Returns nil on any error.

Must be called inside a Xojo (Real Studio) thread so time yields to main thread and you can keep the GUI running.

See also:

- 5.184.31 `imageWithContentsOfFileMT(file as folderitem, colorspace as CGColorSpaceMBS) as CIImageMBS` 1539

5.184.31 `imageWithContentsOfFileMT(file as folderitem, colorspace as CGColorSpaceMBS) as CIImageMBS`

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates and returns an image object from the contents of a file.

Example:

```
dim file as FolderItem = SpecialFolder.Desktop.Child("mbs.jpg")
dim cs as CGColorSpaceMBS = CGColorSpaceMBS.CreateDeviceRGB
dim image as CIImageMBS = CIImageMBS.imageWithContentsOfFileMT(file, cs)
Backdrop = image.RenderPicture
```

Notes:

Returns nil on any error.

Must be called inside a Xojo (Real Studio) thread so time yields to main thread and you can keep the GUI running.

See also:

- 5.184.30 `imageWithContentsOfFileMT(file as folderitem) as CIImageMBS` 1538

5.184.32 `imageWithContentsOfPath(Path as string, colorspace as CGColorSpaceMBS) as CIImageMBS`

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates and returns an image object from the contents of a file.

Example:

```
// load image
dim inputimage as CIImageMBS = CIImageMBS.imageWithContentsOfPath("/Library/Desktop Pictures/Rice Paddy.jpg", nil)

// rotate 90
dim ScaleXFilter as new CIFilterAffineTransformMBS
ScaleXFilter.inputImage = inputimage
dim af as new NSAffineTransformMBS
af.translate(inputimage.height,0)
af.rotateByDegrees(90)
ScaleXFilter.inputTransform=af

// produce output
dim outputimage as CIImageMBS = ScaleXFilter.outputImage
```

```

dim e as CGRectMBS = outputimage.Extent
Backdrop = outputimage.RenderPicture
Title = Str(Backdrop.Width)+" x "+str(Backdrop.Height)

// write to PNG file
dim n as NSImageMBS = outputimage.AsNSImageMBS
dim data as string = n.PNGRepresentation

dim f as FolderItem = SpecialFolder.Desktop.Child("test.png")
dim b as BinaryStream = BinaryStream.Create(f, true)
b.Write data
b.Close

```

Notes: Returns nil on any error.

5.184.33 imageWithContentsOfURL(url as String) as CIImageMBS

Plugin Version: 13.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates and returns an image object from the contents of a file.

Notes: Returns nil on any error.

See also:

- 5.184.34 imageWithContentsOfURL(URL as string, colorspace as CGColorSpaceMBS) as CIImageMBS
1540

5.184.34 imageWithContentsOfURL(URL as string, colorspace as CGColorSpaceMBS) as CIImageMBS

Plugin Version: 13.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates and returns an image object from the contents of a file.

Notes: Returns nil on any error.

See also:

- 5.184.33 imageWithContentsOfURL(url as String) as CIImageMBS 1540

5.184.35 imageWithData(data as memoryblock, Options as Dictionary = nil) as CIImageMBS

Plugin Version: 13.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates and returns an image object initialized with the supplied image data.

Example:

```

dim logo as Picture = LogoMBS(500)
dim jpegData as string = PictureToJPEGStringMBS(logo, 75)
dim image as CIImageMBS = CIImageMBS.imageWithData(jpegData)
Backdrop = image.RenderPicture

```

Notes:

data: The data object that holds the contents of an image file (such as TIFF, GIF, JPG, or whatever else the system supports). The image data must be premultiplied.

Returns an image object initialized with the supplied data, or nil if the method cannot create an image representation from the contents of the supplied data object.

5.184.36 imageWithDataMT(data as memoryblock, Options as Dictionary = nil) as CIImageMBS

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates and returns an image object initialized with the supplied image data.

Example:

```

dim logo as Picture = LogoMBS(500)
dim jpegData as string = PictureToJPEGStringMBS(logo, 75)
dim image as CIImageMBS = CIImageMBS.imageWithDataMT(jpegData)
Backdrop = image.RenderPicture

```

Notes:

data: The data object that holds the contents of an image file (such as TIFF, GIF, JPG, or whatever else the system supports). The image data must be premultiplied.

Returns an image object initialized with the supplied data, or nil if the method cannot create an image representation from the contents of the supplied data object.

Must be called inside a Xojo (Real Studio) thread so time yields to main thread and you can keep the GUI running.

5.184.37 imageWithPicture(Pic as Picture) as CIImageMBS

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates and returns an image object from a Real Studio Picture.

Example:

```
dim logo as Picture = LogoMBS(500)
dim ci as CIIImageMBS = CIIImageMBS.imageWithPicture(logo)
dim cg as CGImageMBS = ci.CreateCGImage
Backdrop = cg.Picture
```

Notes: Returns nil on any error.

5.184.38 kCIIImageAutoAdjustCrop as string

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A key used to specify whether to return a filter that crops the image to focus on detected features.

Notes:

The value associated with this key is a Boolean value. If true, the returned filters include an operation that crops the image around the features specified with the kCIIImageAutoAdjustFeatures option (or any features detected in the image, if that option is not present). Supply false to indicate not to return a crop filter. If you don't specify this option, Core Image assumes its value is false.

Available in OS X v10.10 and later.

5.184.39 kCIIImageAutoAdjustEnhance as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the Keys used in the options dictionary to control which filters Core Image returns.

Notes:

A key used to specify whether to return enhancement filters.

The value associated with this key is a CFBoolean value. Supply false to indicate not to return enhancement filters. If you don't specify this option, Core Image assumes its value is true.

5.184.40 kCIIImageAutoAdjustFeatures as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the Keys used in the options dictionary to control which filters Core Image returns.

Notes:

A key used to specify an array of features to which to apply enhancement and red eye filter.

The associated value is an array of CIFeatureMBS objects. If you don't supply an array, the receiver will search for features using the CIDetectorMBS class.

5.184.41 kCIImageAutoAdjustLevel as string

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A key used to specify whether to return a filter that rotates the image to keep a level perspective.

Notes:

The value associated with this key is a Boolean value. If true, Core Image analyzes the image to determine whether it would benefit from rotation for example, a landscape photo in which the horizon is not horizontal and returns a filter to perform that rotation. Supply false to indicate not to return a rotation filter. If you don't specify this option, Core Image assumes its value is false.

Available in OS X v10.10 and later.

5.184.42 kCIImageAutoAdjustRedEye as string

Plugin Version: 13.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the Keys used in the options dictionary to control which filters Core Image returns.

Notes:

A key used to specify whether to return a red eye filter.

The value associated with this key is a Boolean value. Supply false to indicate not to return a red eye filter. If you don't specify this option, Core Image assumes its value is true.

5.184.43 kCIImageTextureFormat as string

Plugin Version: 14.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys in the options dictionary when initializing an image.

Notes:

The key for an OpenGL texture format. The value for this key must be an NSNumber object containing a Core Image pixel format constant. (See "Pixel Formats.") You may only use this key when initializing an image using the initWithTexture method.

Available in OS X v10.9 and later.

5.184.44 kCIImageTextureTarget as string

Plugin Version: 14.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys in the options dictionary when initializing an image.

Notes:

The key for an OpenGL texture target. The value for this key must be an NSNumber object containing a supported OpenGL texture target constant, either GL_TEXTURE_2D or GL_TEXTURE_RECTANGLE_ARB. You may only use this key when initializing an image using the initWithTexture method.

Available in OS X v10.9 and later.

5.184.45 properties as Dictionary

Plugin Version: 13.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the meta-data properties of an image.

Notes: If the image is the output of one or more CIFilters, then the metadata of the root inputImage will be returned.

5.184.46 releaseHandle

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Decrements the retain count of a CIImage reference.

Notes:

Each retain must have a release. Too many releases and your app will crash, too many retains and it will leak memory.

Use only if you really know what you are doing.

5.184.47 RenderNSImage(UseSoftwareRenderer as boolean = false) as Variant

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a picture based of the CIImage content.

Example:

```
dim f as CIFilterEdgesMBS
```

```
f=new CIFilterEdgesMBS
```

```
f.inputImage=NewCIImageWithFileMBS(SpecialFolder.Desktop.Child("Paris.jpg"))
```

```
f.inputIntensity=5
```

```
dim n as NSImageMBS
```

```
n=f.outputImage.RenderNSImage(false)
```

Notes:

Creates a new NSImage, creates a CGContext for it, draws the image into the buffer and returns it as a Realbasic object.

Returns nil on failure.

Rendering the image will cause the calculations to be done so this call is quite expensive.

If UseSoftwareRenderer is true, the hardware acceleration is not used.

5.184.48 **RenderPicture(Width as Integer = 0, Height as Integer = 0, UseSoftwareRenderer as boolean = false) as Picture**

Plugin Version: 7.3, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Creates a picture based of the CIIImage content.

Example:

```
dim f as CIFilterEdgesMBS
```

```
f=new CIFilterEdgesMBS  
f.inputImage=NewCIIImagewithFileMBS(SpecialFolder.Desktop.Child("Paris.jpg"))  
f.inputIntensity=5  
Backdrop=f.outputImage.RenderPicture
```

Notes:

Creates a new image buffer, creates a CGContext for it, draws the image into the buffer and returns it as a picture with mask. If you need picture with alpha channel, please use RenderPictureWithAlpha function.

Returns nil on failure.

Rendering the image will cause the calculations to be done so this call is quite expensive.

If UseSoftwareRenderer is true, the hardware acceleration is not used.

5.184.49 **RenderPictureWithAlpha(Width as Integer = 0, Height as Integer = 0, UseSoftwareRenderer as boolean = false) as Picture**

Plugin Version: 15.0, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Creates a picture based of the CIIImage content.

Example:

```
dim f as CIFilterEdgesMBS
```

```
f=new CIFilterEdgesMBS  
f.inputImage=NewCIIImagewithFileMBS(SpecialFolder.Desktop.Child("Paris.jpg"))  
f.inputIntensity=5  
Backdrop= f.outputImage.RenderPictureWithAlphaMT
```

Notes:

Creates a new image buffer, creates a CGContext for it, draws the image into the buffer and returns it as a Xojo picture with alpha channel.

Returns nil on failure.

Rendering the image will cause the calculations to be done so this call is quite expensive.

If UseSoftwareRenderer is true, the hardware acceleration is not used.

5.184.50 RenderPictureWithAlphaMT(Width as Integer = 0, Height as Integer = 0, UseSoftwareRenderer as boolean = false) as Picture

Plugin Version: 15.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Creates a picture based of the CImage content.

Notes:

Same as the other RenderPictureWithAlpha function, but threaded.

Must be called inside a Xojo (Real Studio) thread so time yields to main thread and you can keep the GUI running.

Creates a new image buffer, creates a CGContext for it, draws the image into the buffer and returns it as a Xojo picture with alpha channel.

Returns nil on failure.

Rendering the image will cause the calculations to be done so this call is quite expensive.

If UseSoftwareRenderer is true, the hardware acceleration is not used.

5.184.51 retainHandle

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Increments the retain count of a CImage reference.

Notes:

Each retain must have a release. Too many releases and your app will crash, too many retains and it will leak memory.

Use only if you really know what you are doing.

5.184.52 Properties

5.184.53 colorSpace as CGColorSpaceMBS

Plugin Version: 13.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns if possible the color space of the image it was defined in.

Notes:

This method will return nil, if the color space cannot be determined.
(Read only property)

5.184.54 Definition as CIFilterShapeMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return the Domain of Definition of the image.

Notes:

Nil on any error.
(Read only property)

5.184.55 description as String

Plugin Version: 9.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the textual description for this image.

Example:

```
dim p as Picture = LogoMBS(500)
dim data as string = PictureToPNGStringMBS(p,80)
dim i as new CIImageMBS(data)
MsgBox i.description
```

Notes: (Read only property)

5.184.56 Extent as CGRectMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The extent of the image in world coordinates.

Example:

```
dim f as FolderItem = SpecialFolder.Desktop.Child("test.jpg")
```

```
dim i as new CIImageMBS(f)
dim r as CGRectMBS = i.Extent
```

```
MsgBox str(r.Width)+" x "+str(r.Height)
```

Notes:

Can be undefined. In that case x/y are -Infinity and width/height are Infinity ($3.402823466 * 10^{38}$).
(Read only property)

5.184.57 Handle as Integer

Plugin Version: 12.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The handle to the CIImage object used internally.

Notes: (Read only property)

5.184.58 Height as Double

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The height of the image in pixel.

Notes: (Read only property)

5.184.59 RetainCount as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the retain count of the CIImage reference.

Notes:

This is useful for debugging.

The retain count is for the CIImage reference, not the CIImageMBS object.

(Read only property)

5.184.60 url as string

Plugin Version: 13.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the URL of a file based image.

Notes:

Returns the URL of the image when the image was created using the imageWithContentsOfURL APIs.

This method will return nil, if the URL cannot be determined.
(Read only property)

5.184.61 Width as Double

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The width of the image in pixel.

Notes: (Read only property)

5.184.62 Constants

5.184.63 kCIFORMatARGB8 = 23

Plugin Version: 7.3. **Function:** One of the pixel formats: 32bpp, fixed point.

5.184.64 kCIFORMatRGBA16 = 27

Plugin Version: 7.3. **Function:** One of the pixel formats: 64bpp, fixed point.

5.184.65 kCIFORMatRGBAf = 34

Plugin Version: 7.3. **Function:** One of the pixel formats: 128bpp, floating point.

5.185 class CIQRCodeFeatureMBS

5.185.1 class CIQRCodeFeatureMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The feature for a detected QRCode.

Notes:

A CIQRCodeFeature describes a Quick Response code (a two-dimensional barcode using the ISO/IEC 18004:2006 standard) detected in a video or still image. The properties of a QR code feature identify the corners of the barcode as it appears in perspective in the image and provide the message decoded from the barcode.

To detect QR codes in an image or video, choose the CIDetectorTypeQRCode type when initializing a CIDetector object.

Subclass of the CIFeatureMBS class.

5.185.2 Methods

5.185.3 Constructor(Handle as Integer)

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Initializes an object using the given handle.

5.185.4 Properties

5.185.5 bottomLeft as CGPointMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The lower left corner of the detected barcode, in image coordinates.

Notes: (Read only property)

5.185.6 bottomRight as CGPointMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The lower right corner of the detected barcode, in image coordinates.

Notes: (Read only property)

5.185.7 messageString as string

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The string decoded from the detected barcode.

Notes: (Read only property)

5.185.8 topLeft as CGPointMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The upper left corner of the detected barcode, in image coordinates.

Notes: (Read only property)

5.185.9 topRight as CGPointMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The upper right corner of the detected barcode, in image coordinates.

Notes: (Read only property)

5.186 class CRectangleFeatureMBS

5.186.1 class CRectangleFeatureMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A CRectangleFeature object describes a quadrilateral region detected in a video or still image.

Notes:

A detected rectangle feature is not necessarily rectangular in the plane of the image; rather, the feature identifies a shape that may be rectangular in space but which appears in perspective in the image for example, a paper or book on a desk. The properties of a rectangle feature identify its corners in image coordinates.

For example, you can use rectangle feature detection together with the CIPerspectiveCorrection filter to detect rectangular objects in an image or video and transform them to their original orientation.

To detect rectangles in an image or video, choose the CIDetectorTypeRectangle type when initializing a CIDetector object, and use the CIDetectorAspectRatio option to specify the approximate shape of rectangular features to search for.

Subclass of the CFeatureMBS class.

5.186.2 Methods

5.186.3 Constructor(Handle as Integer)

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new object from a handle.

5.186.4 Properties

5.186.5 bottomLeft as CGPointMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The lower left corner of the detected rectangle, in image coordinates.

Notes: (Read only property)

5.186.6 bottomRight as CGPointMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The lower right corner of the detected rectangle, in image coordinates.

Notes: (Read only property)

5.186.7 topLeft as CGPointMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The upper left corner of the detected rectangle, in image coordinates.

Notes: (Read only property)

5.186.8 topRight as CGPointMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The upper right corner of the detected rectangle, in image coordinates.

Notes: (Read only property)

5.187 class CISamplerMBS

5.187.1 class CISamplerMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Realbasic class to wrap a CoreImage sampler.

5.187.2 Methods

5.187.3 Constructor(ciImage as CIImageMBS)

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new sampler based on the given image.

Notes: On success handle will not be 0.

See also:

- 5.187.4 Constructor(ciImage as CIImageMBS, matrix as NSAffineTransformMBS, WrapMode as String, FilterMode as string) 1554
- 5.187.5 Constructor(Handle as Integer) 1555

5.187.4 Constructor(ciImage as CIImageMBS, matrix as NSAffineTransformMBS, WrapMode as String, FilterMode as string)

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new sampler based on the given image.

Notes:

matrix: An affine transformation [a b c d tx ty] defining the transformation to be applied to the sampler.

wrapmode: A string defining how pixels outside the sampler's extent are produced. Options include kCISamplerWrapBlack (pixels are transparent black, the default) and kCISamplerWrapClamp (coordinates are clamped to the extent).

FilterMode: A string defining the filter to use when sampling the image. One of kCISamplerFilterNearest (point sampling) or kCISamplerFilterLinear (bilinear interpolation, the default).

On success handle will not be 0.

See also:

- 5.187.3 Constructor(ciImage as CIImageMBS) 1554
- 5.187.5 Constructor(Handle as Integer) 1555

5.187.5 Constructor(Handle as Integer)

Plugin Version: 12.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Initializes object with given object reference.

Notes:

ref should be a CISampler* and the object is retained.

Raises UnsupportedOperationException if object is not a CISampler.

See also:

- 5.187.3 Constructor(ciImage as CIImageMBS) 1554
- 5.187.4 Constructor(ciImage as CIImageMBS, matrix as NSAffineTransformMBS, WrapMode as String, FilterMode as string) 1554

5.187.6 copy as CISamplerMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a copy of the sampler.

5.187.7 kCISamplerAffineMatrix as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the option keys for creating a sampler.

Notes:

The key for an affine matrix. The associated value is an NSArray object ([a b c d tx ty]) that defines the transformation to apply to the sampler.

Available in OS X v10.4 and later.

5.187.8 kCISamplerColorSpace as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the option keys for creating a sampler.

Notes:

The key for the color space to use when sampling the image. The associated value must be an RGB CGColorSpaceRef object. Using this option specifies that samples should be converted to this color space before being passed to a kernel. If not specified, samples will be passed to the kernel in the working color space of the Core Image context used to render the image.

Available in OS X v10.4 and later.

5.187.9 `kCISamplerFilterLinear` as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the values for filter modes.

Notes: Bilinear interpolation.

5.187.10 `kCISamplerFilterMode` as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the option keys for creating a sampler.

Notes:

The key for the filtering to use when sampling the image. Possible values are `kCISamplerFilterNearest` and `kCISamplerFilterLinear`.

Available in OS X v10.4 and later.

5.187.11 `kCISamplerFilterNearest` as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the values for filter modes.

Notes: Nearest neighbor sampling.

5.187.12 `kCISamplerWrapBlack` as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the values for wrap modes.

Notes: Pixels are transparent black.

5.187.13 `kCISamplerWrapClamp` as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the values for wrap modes.

Notes: Coordinates are clamped to the extent.

5.187.14 kCISamplerWrapMode as String

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the option keys for creating a sampler.

Notes:

The key for the sampler wrap mode. The wrap mode specifies how Core Image produces pixels that are outside the extent of the sample. Possible values are kCISamplerWrapBlack and kCISamplerWrapClamp.

Available in OS X v10.4 and later.

5.187.15 samplerWithImage(ciImage as CIImageMBS) as CISamplerMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates and returns a sampler that references an image.

Notes: A sampler object that references the image specified by the ciImage argument.

See also:

- 5.187.16 samplerWithImage(ciImage as CIImageMBS, matrix as NSAffineTransformMBS, WrapMode as String, FilterMode as string) as CISamplerMBS 1557
- 5.187.17 samplerWithImage(ciImage as CIImageMBS, Options as Dictionary) as CISamplerMBS 1558

5.187.16 samplerWithImage(ciImage as CIImageMBS, matrix as NSAffineTransformMBS, WrapMode as String, FilterMode as string) as CISamplerMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new sampler based on the given image.

Notes:

- matrix: An affine transformation [a b c d tx ty] defining the transformation to be applied to the sampler.
- wrapmode: A string defining how pixels outside the sampler's extent are produced. Options include kCISamplerWrapBlack (pixels are transparent black, the default) and kCISamplerWrapClamp (coordinates are clamped to the extent).
- FilterMode: A string defining the filter to use when sampling the image. One of kCISamplerFilterNearest (point sampling) or kCISamplerFilterLinear (bilinear interpolation, the default).

On success handle will not be nil.

See also:

- 5.187.15 `samplerWithImage(ciImage as CIImageMBS) as CISamplerMBS` 1557
- 5.187.17 `samplerWithImage(ciImage as CIImageMBS, Options as Dictionary) as CISamplerMBS` 1558

5.187.17 `samplerWithImage(ciImage as CIImageMBS, Options as Dictionary) as CISamplerMBS`

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates and returns a sampler that references an image using options specified in a dictionary.

Notes: See `kCISampler*` shared methods for constants.

See also:

- 5.187.15 `samplerWithImage(ciImage as CIImageMBS) as CISamplerMBS` 1557
- 5.187.16 `samplerWithImage(ciImage as CIImageMBS, matrix as NSAffineTransformMBS, WrapMode as String, FilterMode as string) as CISamplerMBS` 1557

5.187.18 Properties

5.187.19 `Definiton as CIFilterShapeMBS`

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the shape containing the Domain Of Definition (DOD) of the sampler.

Notes:

The DOD is defined such that it contains all non-transparent pixels produced by referencing the sampler. (Read only property)

5.187.20 `description as String`

Plugin Version: 9.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the textual description for this sampler.

Notes: (Read only property)

5.187.21 `Extent as CGRectMBS`

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the extent of the sampler.

Notes:

Sampling outside the extent will bring the sampler's wrap mode into action.

Returns nil on any error.
(Read only property)

5.187.22 Handle as Integer

Plugin Version: 12.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The handle to the internal used CISampler reference.

Notes: (Read only property)

5.188 class CTextFeatureMBS

5.188.1 class CTextFeatureMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The class for a text feature.

Notes:

A CTextFeature object describes a quadrilateral region likely to contain upright text detected in a video or still image. The properties of a text feature identify its corners in image coordinates.

Use this class to locate areas of text within an image for example, to extract and perspective-correct those portions of the image before performing your own optical character recognition or other processing tasks.

To detect rectangles in an image or video, choose the CIDetectorTypeText type when initializing a CIDetector object, and use the CIDetectorImageOrientation option to specify the desired orientation for finding upright text.

Subclass of the CFeatureMBS class.

5.188.2 Methods

5.188.3 Constructor(Handle as Integer)

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor to create an object from a handle.

5.188.4 subFeatures as CFeatureMBS()

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** An array containing additional features detected within the feature.

Notes:

A text detector can identify both a major region that is likely to contain text as well as the areas within that region that likely to contain individual text features. Such features might be single characters, groups of closely-packed characters, or entire words.

Core Image populates this array only if you enable the CIDetectorReturnSubFeatures option when retrieving features.

5.188.5 Properties

5.188.6 bottomLeft as CGPointMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The lower left corner of the detected text region, in image coordinates.

Notes: (Read only property)

5.188.7 bottomRight as CGPointMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The lower right corner of the detected text region, in image coordinates.

Notes: (Read only property)

5.188.8 topLeft as CGPointMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The upper left corner of the detected text region, in image coordinates.

Notes: (Read only property)

5.188.9 topRight as CGPointMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The upper right corner of the detected text region, in image coordinates.

Notes: (Read only property)

5.189 class CIVectorMBS

5.189.1 class CIVectorMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a vector in the CoreImage world.

Notes: May contain one to four floating point values.

5.189.2 Methods

5.189.3 CGAffineTransformValue as CGAffineTransformMBS

Plugin Version: 14.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the values stored in the CIVector object as an affine transform.

Example:

```
dim p as new CGAffineTransformMBS
dim v as new CIVectorMBS(p)
dim x as CGAffineTransformMBS = v.CGAffineTransformValue
MsgBox str(x.A)+" " +str(x.B)+" " +str(x.C)+" " +str(x.D)+" " +str(x.TX)+" " +str(x.TY)
```

Notes:

The first six values in the vector become the values that comprise the affine transform. Available in OS X v10.9 and later.

5.189.4 CGPointValue as CGPointMBS

Plugin Version: 14.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the values stored in the CIVector object as a point.

Example:

```
dim p as new CGPointMBS(10, 20)
dim v as CIVectorMBS = CIVectorMBS.vectorWithCGPoint(p)

dim x as CGPointMBS = v.CGPointValue
MsgBox str(x.x)+" " +str(x.y)
```

Notes:

The vector's X and Y property values become the CGPoint's X and Y values.

Available in OS X v10.9 and later.

5.189.5 CGRectValue as CGRectMBS

Plugin Version: 14.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the values stored in the CIVector object as an rect.

Example:

```
dim p as new CGRectMBS(10, 20, 30, 40)
dim v as CIVectorMBS = CIVectorMBS.vectorWithCGRect(p)

dim x as CGRectMBS = v.CGRectValue
MsgBox str(x.Origin.X)+" "+str(x.Origin.y)+" "+str(x.Size.Width)+" "+str(x.Size.Height)
```

Notes:

The vector's X, Y, Z and W property values become the CGRect's X, Y, height and width values. Available in OS X v10.9 and later.

5.189.6 Constructor(Handle as Integer)

Plugin Version: 12.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Initializes object with given object reference.

Notes:

ref should be a CIVector* and the object is retained.
Raises UnsupportedOperationException if object is not a CIVector.
See also:

- 5.189.7 Constructor(p as CGPointMBS) 1564
- 5.189.8 Constructor(r as CGRectMBS) 1564
- 5.189.9 Constructor(StringRepresentation as String) 1565
- 5.189.10 Constructor(t as CGAffineTransformMBS) 1566
- 5.189.11 Constructor(values() as Double) 1566
- 5.189.12 Constructor(values() as single) 1567
- 5.189.13 Constructor(x as Double) 1568
- 5.189.14 Constructor(x as Double, y as Double) 1568
- 5.189.15 Constructor(x as Double, y as Double, z as Double) 1569
- 5.189.16 Constructor(x as Double, y as Double, z as Double, w as Double) 1570

5.189.7 Constructor(p as CGPointMBS)

Plugin Version: 14.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Initializes a vector that is initialized with values provided by a CGPoint.

Example:

```
dim p as new CGPointMBS(10, 20)
dim v as new CIVectorMBS(p)
```

```
MsgBox str(v.x)+" "+str(v.y)
```

Notes:

The CGPoint's X and Y values are stored in the vector's X and Y properties.

Available in OS X v10.9 and later.

See also:

- 5.189.6 Constructor(Handle as Integer) 1563
- 5.189.8 Constructor(r as CGRectMBS) 1564
- 5.189.9 Constructor(StringRepresentation as String) 1565
- 5.189.10 Constructor(t as CGAffineTransformMBS) 1566
- 5.189.11 Constructor(values() as Double) 1566
- 5.189.12 Constructor(values() as single) 1567
- 5.189.13 Constructor(x as Double) 1568
- 5.189.14 Constructor(x as Double, y as Double) 1568
- 5.189.15 Constructor(x as Double, y as Double, z as Double) 1569
- 5.189.16 Constructor(x as Double, y as Double, z as Double, w as Double) 1570

5.189.8 Constructor(r as CGRectMBS)

Plugin Version: 14.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Initializes a vector that is initialized with values provided by a CGRect.

Example:

```
dim p as new CGRectMBS(10, 20, 30, 40)
dim v as new CIVectorMBS(p)
dim x as CGRectMBS = v.CGRectValue
MsgBox str(x.Origin.X)+" "+str(x.Origin.y)+" "+str(x.Size.Width)+" "+str(x.Size.Height)
```

Notes:

The CGRect structure's X, Y, height and width values are stored in the vector's X, Y, Z and W properties. Available in OS X v10.9 and later.

See also:

- 5.189.6 Constructor(Handle as Integer) 1563
- 5.189.7 Constructor(p as CGPointMBS) 1564
- 5.189.9 Constructor(StringRepresentation as String) 1565
- 5.189.10 Constructor(t as CGAffineTransformMBS) 1566
- 5.189.11 Constructor(values() as Double) 1566
- 5.189.12 Constructor(values() as single) 1567
- 5.189.13 Constructor(x as Double) 1568
- 5.189.14 Constructor(x as Double, y as Double) 1568
- 5.189.15 Constructor(x as Double, y as Double, z as Double) 1569
- 5.189.16 Constructor(x as Double, y as Double, z as Double, w as Double) 1570

5.189.9 Constructor(StringRepresentation as String)

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new vector based on content of the string.

Example:

```
dim v as CIVectorMBS
v=New CIVectorMBS(" [ 1 2 3 ] ")
```

See also:

- 5.189.6 Constructor(Handle as Integer) 1563
- 5.189.7 Constructor(p as CGPointMBS) 1564
- 5.189.8 Constructor(r as CGRectMBS) 1564
- 5.189.10 Constructor(t as CGAffineTransformMBS) 1566
- 5.189.11 Constructor(values() as Double) 1566
- 5.189.12 Constructor(values() as single) 1567
- 5.189.13 Constructor(x as Double) 1568

- 5.189.14 Constructor(x as Double, y as Double) 1568
- 5.189.15 Constructor(x as Double, y as Double, z as Double) 1569
- 5.189.16 Constructor(x as Double, y as Double, z as Double, w as Double) 1570

5.189.10 Constructor(t as CGAffineTransformMBS)

Plugin Version: 14.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Initializes a vector that is initialized with values provided by a CGAffineTransform.

Example:

```
dim p as new CGAffineTransformMBS
dim v as new CIVectorMBS(p)
dim x as CGAffineTransformMBS = v.CGAffineTransformValue
MsgBox str(x.A)+" "+str(x.B)+" "+str(x.C)+" "+str(x.D)+" "+str(x.TX)+" "+str(x.TY)
```

Notes:

The six values that comprise the affine transform fill the first six positions of the resulting CIVector object. Available in OS X v10.9 and later.

See also:

- 5.189.6 Constructor(Handle as Integer) 1563
- 5.189.7 Constructor(p as CGPointMBS) 1564
- 5.189.8 Constructor(r as CGRectMBS) 1564
- 5.189.9 Constructor(StringRepresentation as String) 1565
- 5.189.11 Constructor(values() as Double) 1566
- 5.189.12 Constructor(values() as single) 1567
- 5.189.13 Constructor(x as Double) 1568
- 5.189.14 Constructor(x as Double, y as Double) 1568
- 5.189.15 Constructor(x as Double, y as Double, z as Double) 1569
- 5.189.16 Constructor(x as Double, y as Double, z as Double, w as Double) 1570

5.189.11 Constructor(values() as Double)

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Initializes a new vector with given values.

See also:

5.189. CLASS CIVECTORMBS	1567
• 5.189.6 Constructor(Handle as Integer)	1563
• 5.189.7 Constructor(p as CGPointMBS)	1564
• 5.189.8 Constructor(r as CGRectMBS)	1564
• 5.189.9 Constructor(StringRepresentation as String)	1565
• 5.189.10 Constructor(t as CGAffineTransformMBS)	1566
• 5.189.12 Constructor(values() as single)	1567
• 5.189.13 Constructor(x as Double)	1568
• 5.189.14 Constructor(x as Double, y as Double)	1568
• 5.189.15 Constructor(x as Double, y as Double, z as Double)	1569
• 5.189.16 Constructor(x as Double, y as Double, z as Double, w as Double)	1570

5.189.12 Constructor(values() as single)

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Initializes a new vector with given values.

See also:

• 5.189.6 Constructor(Handle as Integer)	1563
• 5.189.7 Constructor(p as CGPointMBS)	1564
• 5.189.8 Constructor(r as CGRectMBS)	1564
• 5.189.9 Constructor(StringRepresentation as String)	1565
• 5.189.10 Constructor(t as CGAffineTransformMBS)	1566
• 5.189.11 Constructor(values() as Double)	1566
• 5.189.13 Constructor(x as Double)	1568
• 5.189.14 Constructor(x as Double, y as Double)	1568
• 5.189.15 Constructor(x as Double, y as Double, z as Double)	1569
• 5.189.16 Constructor(x as Double, y as Double, z as Double, w as Double)	1570

5.189.13 Constructor(x as Double)

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new vector based on one value.

Example:

```
dim x as Double
dim v as CIVectorMBS
v=New CIVectorMBS(x)
```

See also:

- 5.189.6 Constructor(Handle as Integer) 1563
- 5.189.7 Constructor(p as CGPointMBS) 1564
- 5.189.8 Constructor(r as CGRectMBS) 1564
- 5.189.9 Constructor(StringRepresentation as String) 1565
- 5.189.10 Constructor(t as CGAffineTransformMBS) 1566
- 5.189.11 Constructor(values() as Double) 1566
- 5.189.12 Constructor(values() as single) 1567
- 5.189.14 Constructor(x as Double, y as Double) 1568
- 5.189.15 Constructor(x as Double, y as Double, z as Double) 1569
- 5.189.16 Constructor(x as Double, y as Double, z as Double, w as Double) 1570

5.189.14 Constructor(x as Double, y as Double)

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new vector based on two values.

Example:

```
dim x,y as Double
dim v as CIVectorMBS
v=New CIVectorMBS(x,y)
```

See also:

- 5.189.6 Constructor(Handle as Integer) 1563
- 5.189.7 Constructor(p as CGPointMBS) 1564

5.189. CLASS CIVECTORMBS	1569
• 5.189.8 Constructor(r as CRectMBS)	1564
• 5.189.9 Constructor(StringRepresentation as String)	1565
• 5.189.10 Constructor(t as CGAffineTransformMBS)	1566
• 5.189.11 Constructor(values() as Double)	1566
• 5.189.12 Constructor(values() as single)	1567
• 5.189.13 Constructor(x as Double)	1568
• 5.189.15 Constructor(x as Double, y as Double, z as Double)	1569
• 5.189.16 Constructor(x as Double, y as Double, z as Double, w as Double)	1570

5.189.15 Constructor(x as Double, y as Double, z as Double)

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new vector based on three values.

Example:

```
dim x,y,z as Double
dim v as CVectorMBS
v=New CVectorMBS(x,y,z)
```

See also:

• 5.189.6 Constructor(Handle as Integer)	1563
• 5.189.7 Constructor(p as CGPointMBS)	1564
• 5.189.8 Constructor(r as CRectMBS)	1564
• 5.189.9 Constructor(StringRepresentation as String)	1565
• 5.189.10 Constructor(t as CGAffineTransformMBS)	1566
• 5.189.11 Constructor(values() as Double)	1566
• 5.189.12 Constructor(values() as single)	1567
• 5.189.13 Constructor(x as Double)	1568
• 5.189.14 Constructor(x as Double, y as Double)	1568
• 5.189.16 Constructor(x as Double, y as Double, z as Double, w as Double)	1570

5.189.16 Constructor(x as Double, y as Double, z as Double, w as Double)

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new vector based on 4 values.

Example:

```
dim x,y,z,w as Double
dim v as CIVectorMBS
v=New CIVectorMBS(x,y,z,w)
```

See also:

- 5.189.6 Constructor(Handle as Integer) 1563
- 5.189.7 Constructor(p as CGPointMBS) 1564
- 5.189.8 Constructor(r as CGRectMBS) 1564
- 5.189.9 Constructor(StringRepresentation as String) 1565
- 5.189.10 Constructor(t as CGAffineTransformMBS) 1566
- 5.189.11 Constructor(values() as Double) 1566
- 5.189.12 Constructor(values() as single) 1567
- 5.189.13 Constructor(x as Double) 1568
- 5.189.14 Constructor(x as Double, y as Double) 1568
- 5.189.15 Constructor(x as Double, y as Double, z as Double) 1569

5.189.17 copy as CIVectorMBS

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a copy of the vector object.

5.189.18 Value(index as Integer) as Double

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The value with the given index.

Notes: Index is zero based.

5.189.19 `vectorWithCGAffineTransform(t as CGAffineTransformMBS) as CVectorMBS`

Plugin Version: 14.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates and returns a vector that is initialized with values provided by a CGAffineTransform.

Example:

```
dim p as new CGAffineTransformMBS
dim v as CVectorMBS = CVectorMBS.vectorWithCGAffineTransform(p)
dim x as CGAffineTransformMBS = v.CGAffineTransformValue
MsgBox str(x.A)+" "+str(x.B)+" "+str(x.C)+" "+str(x.D)+" "+str(x.TX)+" "+str(x.TY)
```

Notes:

t: A transform.

Returns a vector initialized with the specified values.

The six values that comprise the affine transform fill the first six positions of the resulting CVector object.

5.189.20 `vectorWithCGPoint(p as CGPointMBS) as CVectorMBS`

Plugin Version: 14.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates and returns a vector that is initialized with values provided by a CGPoint.

Example:

```
dim p as new CGPointMBS(10, 20)
dim v as CVectorMBS = CVectorMBS.vectorWithCGPoint(p)

MsgBox str(v.x)+" "+str(v.y)
```

Notes:

p: A point.

A vector initialized with the specified values.

The CGPoint's X and Y values are stored in the vector's X and Y properties.

5.189.21 `vectorWithCGRect(r as CGRectMBS) as CVectorMBS`

Plugin Version: 14.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates and returns a vector that is initialized with values provided by a CGRect.

Example:

```

dim p as new CGRectMBS(10, 20, 30, 40)
dim v as CIVectorMBS = CIVectorMBS.vectorWithCGRect(p)

dim x as CGRectMBS = v.CGRectValue
MsgBox str(x.Origin.X)+" "+str(x.Origin.y)+" "+str(x.Size.Width)+" "+str(x.Size.Height)

```

Notes:

r: A rect.

Returns a vector initialized with the specified values.
 The CGRect's X, Y, height and width values are stored in the vector's X, Y, Z and W properties.

5.189.22 vectorWithString(s as string) as CIVectorMBS

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new vector based on content of the string.

5.189.23 vectorWithValues(values() as Double) as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new vector based on the given values.

See also:

- 5.189.24 vectorWithValues(values() as single) as CIVectorMBS 1572

5.189.24 vectorWithValues(values() as single) as CIVectorMBS

Plugin Version: 16.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new vector based on the given values.

See also:

- 5.189.23 vectorWithValues(values() as Double) as CIVectorMBS 1572

5.189.25 vectorWithX(x as Double) as CIVectorMBS

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new vector based on one value.

5.189.26 `vectorWithXY(x as Double, y as Double)` as `CIVectorMBS`

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new vector based on two values.

5.189.27 `vectorWithXYZ(x as Double, y as Double, z as Double)` as `CIVectorMBS`

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new vector based on three values.

5.189.28 `vectorWithXYZW(x as Double, y as Double, z as Double, w as Double)` as `CIVectorMBS`

Plugin Version: 12.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new vector based on 4 values.

5.189.29 `Properties`**5.189.30** `Count as Integer`

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return the number of values stored in the vector.

Notes: (Read only property)

5.189.31 `Description as String`

Plugin Version: 9.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the textual description for this vector.

Notes: (Read only property)

5.189.32 `Handle as Integer`

Plugin Version: 12.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The handle to the `CIVector` reference used.

Notes: (Read only property)

5.189.33 StringRepresentation as String

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the vector as a string

Example:

```
dim v as CIVectorMBS
```

```
v=NewCIVectorWithXYZMBS(1,2,3)
```

```
MsgBox v.StringRepresentation // shows " [ 1 2 3 ] "
```

Notes:

Value is "" on any error.
(Read only property)

5.189.34 W as Double

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The W value.
Notes: (Read only property)

5.189.35 X as Double

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The X value.
Notes: (Read only property)

5.189.36 Y as Double

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Y value.
Notes: (Read only property)

5.189.37 Z as Double

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The Z value.
Notes: (Read only property)

5.190 Globals

5.190.1 NewCIColorMBS(red as single, green as single, blue as single, alpha as single=1.0) as CIColorMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new color based on the given values.

Notes:

Returns nil on any error.

Requires Mac OS X 10.4 to work.

5.190.2 NewCIColorWithCGColorMBS(CGColor as Variant) as CIColorMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new CIColor based on the given CoreGraphics color.

Notes:

CGColor parameter must be a CGColorMBS object.

Returns nil on any error.

Requires Mac OS X 10.4 to work.

5.190.3 NewCIColorWithStringMBS(s as String) as CIColorMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new CIColor based on the given string.

Example:

```
dim c as CIColorMBS
```

```
c=NewCIColorWithStringMBS("1 0.5 0 1")
```

```
MsgBox c.stringRepresentation // shows "1 0.5 0 1"
```

Notes:

Returns nil on any error.

Requires Mac OS X 10.4 to work.

5.190.4 NewCIContextMBS(cgcontext as CGContextMBS) as CIContextMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Create a new CoreImage context object without options, all output will be drawn into the CG context.

Notes:

Returns nil on any error.

Requires Mac OS X 10.4 to work.

See also:

- 5.190.5 NewCIContextMBS(cgcontext as CGContextMBS, OutputColorSpace as CGColorSpaceMBS, WorkingColorSpace as CGColorSpaceMBS, UseSoftwareRenderer as Boolean) as CIContextMBS 1576

5.190.5 NewCIContextMBS(cgcontext as CGContextMBS, OutputColorSpace as CGColorSpaceMBS, WorkingColorSpace as CGColorSpaceMBS, UseSoftwareRenderer as Boolean) as CIContextMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Create a new CoreImage context object with options, all output will be drawn into the CG context.

Notes:

OutputColorSpace: A CGColorSpaceMBS object defining the color space in which all intermediate operations are performed.

WorkingColorSpace: A CGColorSpaceRef object defining the color space that images are converted to before rendering into the context.

UseSoftwareRenderer: Whether you want software renderer only.

Returns nil on any error.

Requires Mac OS X 10.4 to work.

See also:

- 5.190.4 NewCIContextMBS(cgcontext as CGContextMBS) as CIContextMBS 1576

5.190.6 NewCIImagewithBitmapDataMBS(data as memoryblock, BytesPerRow as Integer, Width as Integer, Height as Integer, Format as Integer, colorspace as CGColorSpaceMBS) as CIImageMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a CIImage from a RAW memory buffer.

Notes:

Format must be one of this constants: kCIFORMatRGBAf, kCIFORMatRGBA16 and kCIFORMatARGB8.

Returns nil on any error.

Requires Mac OS X 10.4 to work.

5.190.7 NewCIImagewithBitmapMemoryMBS(data as memoryblock, DataLength as Integer, BytesPerRow as Integer, Width as Integer, Height as Integer, Format as Integer, colorspace as CGColorSpaceMBS) as CIImageMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a CIImage from a RAW memory buffer.

Notes:

Data points directly to the row data.

Length is the size of the memoryblock in bytes.

BytesPerRow is the size of a row in bytes.

Width and height are the dimensions of the image.

Format must be one of this constants: kCIFormatRGBAf, kCIFormatRGBA16 and kCIFormatARGB8.

Colorspace is the CoreGraphics Colorspace object to be used.

Returns nil on any error.

Requires Mac OS X 10.4 to work.

5.190.8 NewCIImagewithCGImageMBS(cgimage as CGImageMBS, cgcolorspace as CGColorSpaceMBS) as CIImageMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a CIImage based on a CGImage.

Notes:

cgcolorspace: Use this colorspace when opening the image.

Returns nil on any error.

Requires Mac OS X 10.4 to work.

See also:

- 5.190.9 NewCIImagewithCGImageMBS(cgimage as CGImageMBS, options as dictionary = nil) as CIImageMBS 1577

5.190.9 NewCIImagewithCGImageMBS(cgimage as CGImageMBS, options as dictionary = nil) as CIImageMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a CIImage based on a CGImage.

Notes:

Returns nil on any error.

Requires Mac OS X 10.4 to work.

See also:

- 5.190.8 `NewCIImageWithCGImageMBS(cgimage as CGImageMBS, cgcolorspace as CGColorSpaceMBS) as CIImageMBS` 1577

5.190.10 `NewCIImageWithDataMBS(Data as memoryblock, cgcolorspace as CGColorSpaceMBS) as CIImageMBS`

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a CIImage based on the image file content stored inside the data string.

Notes:

`cgcolorspace`: Use this colorspace when opening the image.

Returns nil on any error.

Requires Mac OS X 10.4 to work.

See also:

- 5.190.11 `NewCIImageWithDataMBS(Data as Memoryblock, Options as Dictionary = nil) as CIImageMBS` 1578

5.190.11 `NewCIImageWithDataMBS(Data as Memoryblock, Options as Dictionary = nil) as CIImageMBS`

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a CIImage based on the image file content stored inside the data string.

Notes:

Returns nil on any error.

Requires Mac OS X 10.4 to work.

See also:

- 5.190.10 `NewCIImageWithDataMBS(Data as memoryblock, cgcolorspace as CGColorSpaceMBS) as CIImageMBS` 1578

5.190.12 `NewCIImageWithFileMBS(file as folderitem) as CIImageMBS`

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a CIImage based on a the content of the file.

Notes:

Returns nil on any error.

Requires Mac OS X 10.4 to work.

In plugin version 7.5 and Mac OS X 10.4.10 this method leaks the data because of a bug in the framework.
See also:

- 5.190.13 NewCIImagewithFileMBS(file as folderitem, cgcolorspace as CGColorSpaceMBS) as CIImageMBS 1579

5.190.13 NewCIImagewithFileMBS(file as folderitem, cgcolorspace as CGColorSpaceMBS) as CIImageMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a CIImage based on a the content of the file.

Notes:

cgcolorspace: Use this colorspace when opening the image.

Returns nil on any error.

Requires Mac OS X 10.4 to work.

In plugin version 7.5 and Mac OS X 10.4.10 this method leaks the data because of a bug in the framework.
See also:

- 5.190.12 NewCIImagewithFileMBS(file as folderitem) as CIImageMBS 1578

5.190.14 NewCIImagewithURLMBS(url as String) as CIImageMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a CIImage based on a the content of the file where the URL points to.

Notes:

Returns nil on any error.

Requires Mac OS X 10.4 to work.

See also:

- 5.190.15 NewCIImagewithURLMBS(url as String, cgcolorspace as CGColorSpaceMBS) as CIImageMBS 1579

5.190.15 NewCIImagewithURLMBS(url as String, cgcolorspace as CGColorSpaceMBS) as CIImageMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a CIImage based on a the content of the file where the URL points to.

Notes:

cgcolorspace: Use this colorspace when opening the image.

Returns nil on any error.

Requires Mac OS X 10.4 to work.

See also:

- 5.190.14 `NewCIImageWithURLMBS(url as String) as CIImageMBS` 1579

5.190.16 `NewCISamplerMBS(ciImage as CIImageMBS) as CISamplerMBS`

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new sampler based on the given image.

Notes:

Returns nil on any error.

Requires Mac OS X 10.4 to work.

See also:

- 5.190.17 `NewCISamplerMBS(ciImage as CIImageMBS, matrix as NSAffineTransformMBS, WrapMode as String, FilterMode as string) as CISamplerMBS` 1580

5.190.17 `NewCISamplerMBS(ciImage as CIImageMBS, matrix as NSAffineTransformMBS, WrapMode as String, FilterMode as string) as CISamplerMBS`

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new sampler based on the given image.

Notes:

- matrix:** An affine transformation [a b c d tx ty] defining the transformation to be applied to the sampler.
- wrapmode:** A string defining how pixels outside the sampler's extent are produced. Options include `kCISamplerWrapBlack` (pixels are transparent black, the default) and `kCISamplerWrapClamp` (coordinates are clamped to the extent).
- FilterMode:** A string defining the filter to use when sampling the image. One of `kCISamplerFilterNearest` (point sampling) or `kCISamplerFilterLinear` (bilinear interpolation, the default).

Returns nil on any error.

Requires Mac OS X 10.4 to work.

See also:

- 5.190.16 `NewCISamplerMBS(ciImage as CIImageMBS) as CISamplerMBS` 1580

5.190.18 NewCIVectorWithStringMBS(s as string) as CIVectorMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new vector based on content of the string.

Example:

```
dim v as CIVectorMBS
v=NewCIVectorWithStringMBS(" [ 1 2 3 ] ")
```

Notes:

Returns nil on any error.
Requires Mac OS X 10.4 to work.

5.190.19 NewCIVectorWithXMBS(x as Double) as CIVectorMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new vector based on one value.

Example:

```
dim x as Double = 1
dim v as CIVectorMBS
v=NewCIVectorWithXMBS(x)
```

Notes:

Returns nil on any error.
Requires Mac OS X 10.4 to work.

5.190.20 NewCIVectorWithXYMBS(x as Double, y as Double) as CIVectorMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new vector based on two values.

Example:

```
dim x as Double = 1
dim y as Double = 2
dim v as CIVectorMBS
v=NewCIVectorWithXYMBS(x,y)
```

Notes:

Returns nil on any error.
Requires Mac OS X 10.4 to work.

5.190.21 NewCIVectorWithXYZMBS(x as Double, y as Double, z as Double) as CIVectorMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new vector based on three values.

Example:

```
dim x as Double = 1
dim y as Double = 2
dim z as Double = 3
dim v as CIVectorMBS
v=NewCIVectorWithXYZMBS(x,y,z)
```

Notes:

Returns nil on any error.
Requires Mac OS X 10.4 to work.

5.190.22 NewCIVectorWithXYZWMBS(x as Double, y as Double, z as Double, w as Double) as CIVectorMBS

Plugin Version: 7.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new vector based on 4 values.

Example:

```
dim x as Double = 1
dim y as Double = 2
dim z as Double = 3
dim w as Double = 4
dim v as CIVectorMBS
v=NewCIVectorWithXYZWMBS(x,y,z,w)
```

Notes:

Returns nil on any error.
Requires Mac OS X 10.4 to work.

Chapter 6

CoreText

6.1 class CoreTextMBS

6.1.1 class CoreTextMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The central CoreText class.

Notes: Some global methods, constants and events for CoreText.

6.1.2 Methods

6.1.3 AutoActivationSetting(BundleID as string) as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The auto-activation setting for the specified bundle identifier.

Notes:

bundleID: The bundle identifier used to specify a particular application bundle. If "", the current application bundle is used. If kCTFontManagerBundleIdentifier is specified, sets global auto-activation.

(Read and Write computed property)

6.1.4 AvailableFontFamilyNames as string()

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array of visible font family names sorted for user interface display.

6.1.5 AvailableFontURLs as string()

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array of font URLs.

6.1.6 AvailablePostScriptNames as string()

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array of unique PostScript font names for the fonts.

6.1.7 CompareFontFamilyNames(name1 as string, name2 as string) as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A comparator function to compare font family names and sort them according to Apple guidelines.

Notes:

family1: The first localized font family name to compare, as a string.

family2: The second localized font family name to compare, as a string.

Returns a `CFComparisonResult` value indicating the sort order for the two family names. `kCFComparisonResultGreaterThan` (1) if family1 is greater than family2, `kCFComparisonResultLessThan` (-1) if family1 is less than family2, and `kCFComparisonResultEqualTo` (0) if they are equal.

This `CFComparatorFunction` function compares font family names and sorts them in the Apple preferred order, accounting for foundry prefix. Family names with recognized prefixes are sorted after the unprefix names in prefix order.

6.1.8 Constructor

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The constructor.

6.1.9 CoreTextVersion as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the version of the CoreText framework.

Notes:

This function returns a number indicating the version of the CoreText framework. Note that framework version is not always an accurate indicator of feature availability. The recommended way to use this function

is first to check that the function pointer is non nil (plugin will do and raise exceptions), followed by calling it and comparing its result to a defined constant (or constants).

Returns the version number. This value is for comparison with the constants beginning with kCTVersion-Number.

6.1.10 CreateFontDescriptorFromData(data as memoryblock) as CTFontDescriptorMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a font descriptor representing the font in the supplied data.

Notes:

Note: the font descriptor is not available through font descriptor matching.

data: A memoryblock containing font data.

Returns a font descriptor created from the data, or nil on error.

See also:

- 6.1.11 CreateFontDescriptorFromData(data as string) as CTFontDescriptorMBS 1585

6.1.11 CreateFontDescriptorFromData(data as string) as CTFontDescriptorMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a font descriptor representing the font in the supplied data.

Notes:

Note: the font descriptor is not available through font descriptor matching.

data: A string containing font data.

Returns a font descriptor created from the data, or nil on error.

See also:

- 6.1.10 CreateFontDescriptorFromData(data as memoryblock) as CTFontDescriptorMBS 1585

6.1.12 CreateFontDescriptorsFromFile(file as folderitem) as CTFontDescriptorMBS()

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array of font descriptors representing each of the fonts in the specified file.

Example:

```

dim file as FolderItem = SpecialFolder.Desktop.Child("Didot.ttf")

dim descriptor() as CTFontDescriptorMBS
dim result() as string

descriptor = CoreTextMBS.CreateFontDescriptorsFromFile(file)

for i as Integer = 0 to descriptor.Ubound
result.append descriptor(i).Displayname
next

MsgBox Join(result, EndOfLine)

```

Notes: file: A folderitem referencing a valid font file.

6.1.13 CreateFontDescriptorsFromURL(URL as string) as CTFontDescriptorMBS()

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array of font descriptors representing each of the fonts in the specified URL.

Notes: URL: A file system URL referencing a valid font file.

6.1.14 Destructor

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The destructor.

6.1.15 EnableFontDescriptors(descriptors() as CTFontDescriptorMBS, enable as boolean)

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Enables or disables the matching font descriptors for font descriptor matching.

Notes:

descriptors: Array of font descriptors.

enable: Boolean value indicating whether the fonts matching descriptors should be enabled for font descriptor matching.

6.1.16 GetScopeForFile(file as folderitem) as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the registration scope of the specified folderitem.

Notes:

The registration scope of the specified file or kCTFontManagerScopeNone if not currently registered. Available in OS X v10.6 and later.

6.1.17 GetScopeForURL(URL as string) as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the registration scope of the specified URL.

Notes:

The registration scope of the specified URL or kCTFontManagerScopeNone if not currently registered. Available in OS X v10.6 and later.

6.1.18 IsSupportedFontFile(file as folderitem) as boolean

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Determines whether the referenced font data is supported on the current platform.

Notes: Returns true if the folderitem refers to a valid font that can be used on the current platform; false otherwise.

6.1.19 IsSupportedFontURL(URL as string) as boolean

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Determines whether the referenced font data (usually by file URL) is supported on the current platform.

Notes: Returns true if the URL refers to a valid font that can be used on the current platform; false otherwise.

6.1.20 kCTBaselineClassAttributeName as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Key to reference a baseline class override.

Notes:

Value must be one of the kCTBaselineClass constants. Normally, glyphs on the line will be assigned baseline classes according to the 'bsln' or 'BASE' table in the font. This attribute may be used to change this

assignment.

see also: `kCTBaselineClassRoman`, `kCTBaselineClassIdeographicCentered`, `kCTBaselineClassIdeographicLow`, `kCTBaselineClassIdeographicHigh`, `kCTBaselineClassHanging`, `kCTBaselineClassMath`.

6.1.21 `kCTBaselineInfoAttributeName` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Key to reference a baseline info dictionary.

Notes: Value must be a `CFDictionaryRef`. Normally, baseline offsets will be assigned based on the 'bsln' or 'BASE' table in the font. This attribute may be used to assign different offsets. Each key in the dictionary is one of the `kCTBaselineClass` constants and the value is a number of the baseline offset in points. You only need to specify the offsets you wish to change.

6.1.22 `kCTBaselineReferenceInfoAttributeName` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Key to reference a baseline info dictionary for the reference baseline.

Notes: Value must be a `Dictionary`. All glyphs in a run are assigned a baseline class and then aligned to the offset for that class in the reference baseline baseline info. See the discussion of `kCTBaselineInfoAttributeName` for information about the contents of the dictionary. You can also use the `kCTBaselineReferenceFont` key to specify that the baseline offsets of a particular `CTFontMBS` should be used as the reference offsets.

6.1.23 `kCTCharacterShapeAttributeName` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Controls glyph selection.

Notes: Value must be a number. Default is value is 0 (disabled). A non-zero value is interpreted as an SFNT `kCharacterShapeType` selector + 1; see `SFNTLayoutTypes.h` for selectors. For example, an attribute value of 1 corresponds to `kTraditionalCharactersSelector`.

6.1.24 `kCTFontAttributeName` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The key for the font.

Notes: Value must be a `CTFontMBS`. Default is Helvetica 12.

6.1.25 kCTFontManagerBundleIdentifier as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** CTFontManager bundle identifier.

Notes: The CTFontManager bundle identifier to be used with get or set global auto-activation settings.

6.1.26 kCTFontManagerErrorDomain as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The error domain for CoreText.

Notes: CFError objects with this domain have error codes corresponding to one of the CTFontManagerError errors listed in "Font Registration Errors" and "Font Unregistration Errors."

6.1.27 kCTFontManagerErrorFontURLsKey as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** User info key to be used with CFError references returned from registration functions.

Notes: The value associated with this key in the user info dictionary of a CFError object is a CFArray of font URLs that failed with the given error.

6.1.28 kCTFontManagerRegisteredFontsChangedNotification as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Notification name for font registry changes.

Notes: This is the string to use as the notification name when subscribing to Core Text Font Manager notifications. This notification is posted when fonts are added to the font registry. The client is responsible for registered with the distributed notification center to receive notifications for changes to the session or user scopes, and with a local notification center for changes to the process scope.

6.1.29 kCTFontSlantTrait as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Dictionary key to access the slant trait value.

Notes: Use this key to access the normalized slant angle from the font traits dictionary. The value returned is a number representing a float value between -1.0 and 1.0 for normalized slant angle. The value of 0.0 corresponds to 0 degree clockwise rotation from the vertical and 1.0 corresponds to 30 degrees clockwise rotation.

6.1.30 `kCTFontSymbolicTrait` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Dictionary key to access the symbolic traits value.

Notes: Use this key to access the symbolic traits value from the font traits dictionary. The value is returned as a number.

6.1.31 `kCTFontWeightTrait` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Dictionary key to access the weight trait value.

Notes: Use this key to access the normalized weight trait from the font traits dictionary. The value returned is a number representing a float value between -1.0 and 1.0 for normalized weight. The value of 0.0 corresponds to the regular or medium font weight.

6.1.32 `kCTFontWidthTrait` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Dictionary key to access the width (condense/expand) trait value.

Notes: Use this key to access the normalized proportion trait from the font traits dictionary. This value corresponds to the relative inter-glyph spacing for a given font. The value returned is a number representing a float between -1.0 and 1.0. The value of 0.0 corresponds to regular glyph spacing while negative values represent condensed glyph spacing.

6.1.33 `kCTForegroundColorAttributeName` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The key for the foreground color..

Notes: Value must be a `CGColorMBS`. Default value is black.

6.1.34 `kCTForegroundColorFromContextAttributeName` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for font attributes.

Notes:

Never set a foreground color in the `CGContext`; use what is set as the context's fill color.

Value must be a boolean. Default is false. The reason why this exists is because an `NSAttributedString`

defaults to a black color if no color attribute is set. This forces CoreText to set the color in the context. This will allow developers to sidestep this, making CoreText set nothing but font information in the CGContext. If set, this attribute also determines the color used by `kCTUnderlineStyleAttributeName`, in which case it overrides the foreground color.

6.1.35 `kCTGlyphInfoAttributeName` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for font attributes.

Notes:

Allows the use of unencoded glyphs.

Value must be a `CTGlyphInfoMBS`. The glyph specified by this `CTGlyphInfo` object is assigned to the entire attribute range, provided that its contents match the specified base string and that the specified glyph is available in the font specified by `kCTFontAttributeName`.

6.1.36 `kCTKernAttributeName` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for font attributes.

Notes:

A kerning adjustment.

Value must be a float. Default is standard kerning. The kerning attribute indicate how many points the following character should be shifted from its default offset as defined by the current character's font in points; a positive kern indicates a shift farther along and a negative kern indicates a shift closer to the current character. If this attribute is not present, standard kerning will be used. If this attribute is set to 0.0, no kerning will be done at all.

6.1.37 `kCTLanguageAttributeName` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for font attributes.

Notes:

Specifies text language.

Value must be a String containing a locale identifier. Default is unset. When this attribute is set to a valid identifier, it will be used to select localized glyphs (if supported by the font) and locale-specific line breaking rules.

6.1.38 `kCTLigatureAttributeName` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for font attributes.

Notes:

Controls ligature formation.

Value must be a number. Default is int value 1. The ligature attribute determines what kinds of ligatures should be used when displaying the string. A value of 0 indicates that only ligatures essential for proper rendering of text should be used, 1 indicates that standard ligatures should be used, and 2 indicates that all available ligatures should be used. Which ligatures are standard depends on the script and possibly the font. Arabic text, for example, requires ligatures for many character sequences, but has a rich set of additional ligatures that combine characters. English text has no essential ligatures, and typically has only two standard ligatures, those for "fi" and "fl" – all others being considered more advanced or fancy.

On iOS releases prior to 6.0 essential ligatures are applied if the font contains glyphs for any of U+FB00 through U+FB04 and the font lacks AAT or OpenType shaping tables, but as of 6.0 shaping tables (or the lack thereof) are treated as definitive. This character-based shaping will still be performed if this attribute is explicitly specified with the default value of 1.

6.1.39 `kCTParagraphStyleAttributeName` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for font attributes.

Notes:

A `CTParagraphStyle` object which is used to specify things like line alignment, tab rulers, writing direction, etc.

Value must be a `CTParagraphStyleMBS`. Default is an empty `CTParagraphStyle` object.

6.1.40 `kCTRunDelegateAttributeName` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for font attributes.

Notes:

Allows customization of certain aspects of a range of text's appearance.

Value must be a `CTRunDelegateMBS`. The values returned by the embedded object for an attribute range apply to each glyph resulting from the text in that range. Because an embedded object is only a display-time modification, care should be taken to avoid applying this attribute to a range of text with complex behavior, such as a change of writing direction, combining marks, etc. Consequently, it is recommended that this

attribute be applied to a range containing the single character U+FFFC.

6.1.41 kCTStrokeColorAttributeName as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for font attributes.

Notes:

The stroke color.

Value must be a CGColorMBS. Default is the foreground color.

6.1.42 kCTStrokeWidthAttributeName as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for font attributes.

Notes:

The stroke width.

Value must be a number. Default value is 0.0, or no stroke. This attribute, interpreted as a percentage of font point size, controls the text drawing mode: positive values effect drawing with stroke only; negative values are for stroke and fill. A typical value for outlined text is 3.0.

6.1.43 kCTSuperscriptAttributeName as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for font attributes.

Notes:

Controls vertical text positioning.

Value must be a number. Default is int value 0. If supported by the specified font, a value of 1 enables superscripting and a value of -1 enables subscripting.

6.1.44 kCTUnderlineColorAttributeName as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for font attributes.

Notes:

The underline color.

Value must be a CGColorMBS. Default is the foreground color.

6.1.45 kCTUnderlineStyleAttributeName as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for font attributes.

Notes:

Allows the setting of an underline to be applied at render time.

Value must be a number. Default is kCTUnderlineStyleNone. Set a value of something other than kCTUnderlineStyleNone to draw an underline. In addition, the CTUnderlineStyleModifiers can be used to modify the look of the underline. The underline color will be determined by the text's foreground color.

6.1.46 kCTVerticalFormsAttributeName as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for font attributes.

Notes:

Controls glyph orientation.

Value must be a boolean. Default is false. A value of false indicates that horizontal glyph forms are to be used, true indicates that vertical glyph forms are to be used.

6.1.47 kCTWritingDirectionAttributeName as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for font attributes.

Notes:

Specifies a bidirectional override or embedding.

Value must be a CFArray of CFNumberRefs, each of which should have a value of either kCTWritingDirectionLeftToRight or kCTWritingDirectionRightToLeft, plus one of kCTWritingDirectionEmbedding or kCTWritingDirectionOverride. This array represents a sequence of nested bidirectional embeddings or overrides, in order from outermost to innermost, with (kCTWritingDirectionLeftToRight | kCTTextWritingDirectionEmbedding) corresponding to a LRE/PDF pair in plain text or `` in HTML, (kCTWritingDirectionRightToLeft | kCTTextWritingDirectionEmbedding) corresponding to a RLE/PDF pair in plain text or a `` in HTML, (kCTWritingDirectionLeftToRight | kCTTextWritingDirectionOverride) corresponding to a LRO/PDF pair in plain text or `<bdo dir="ltr"></bdo>` in HTML, and (kCTWritingDirectionRightToLeft | kCTTextWritingDirectionOverride) corresponding to a RLO/PDF pair in plain text or `<bdo dir="rtl"></bdo>` in HTML.

6.1.48 MatchFontDescriptorsWithProgressHandler(descriptors() as CTFontDescriptorMBS, mandatoryAttributes() as string, tag as Variant = nil) as boolean

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Matches font descriptors in background.

Notes:

This function returns immediately, but can potentially take long time to process. The progress is notified via progress event.

descriptors: An array of descriptors to process.

mandatoryAttributes: some mandatory attributes.

Returns false if it couldn't start the work.

6.1.49 RegisterFontsForFile(file as folderitem, scope as Integer, byref error as CFErrorMBS) as boolean

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Registers fonts from the specified font URL with the Font Manager. Registered fonts are discoverable through font descriptor matching.

Notes:

fontURL: The font URL.

scope: Scope constant defining the availability and lifetime of the registration. See "Font Registration Scope" for values to pass for this parameter.

error: a CFError object which, in case of failed registration, contains error information.

Returns true if registration of the fonts was successful, otherwise false.

6.1.50 RegisterFontsForFiles(files() as folderitem, scope as Integer, errors() as CFErrorMBS) as boolean

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Registers fonts from the specified array of font URLs with the Font Manager. Registered fonts are discoverable through font descriptor matching.

Notes:

files: Array of font files.

scope: Scope constant defining the availability and lifetime of the registration. See "Font Registration Scope" for values to pass for this parameter.

errors: An array of CFError objects which, in case of failed registration, contain error information. Each error contains a CFArray of font URLs corresponding to kCTFontManagerErrorFontURLsKey. These URLs represent the font files that caused the error and were not successfully registered. The array must be released

by the caller. Can be nil.

Returns true if registration of all font URLs was successful, otherwise false.

6.1.51 RegisterFontsForURL(URL as string, scope as Integer, byref error as CFErrorMBS) as boolean

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Registers fonts from the specified font URL with the Font Manager. Registered fonts are discoverable through font descriptor matching.

Notes:

fontURL: The font URL.

scope: Scope constant defining the availability and lifetime of the registration. See "Font Registration Scope" for values to pass for this parameter.

error: a CFError object which, in case of failed registration, contains error information.

Returns true if registration of the fonts was successful, otherwise false.

See also:

- 6.1.52 RegisterFontsForURL(URLs() as string, scope as Integer, errors() as CFErrorMBS) as boolean
1596

6.1.52 RegisterFontsForURL(URLs() as string, scope as Integer, errors() as CFErrorMBS) as boolean

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Registers fonts from the specified array of font URLs with the Font Manager. Registered fonts are discoverable through font descriptor matching.

Notes:

URLs: Array of font URLs.

scope: Scope constant defining the availability and lifetime of the registration. See "Font Registration Scope" for values to pass for this parameter.

errors: Array of CFError objects which, in case of failed registration, contain error information. Each error contains a CFArray of font URLs corresponding to kCTFontManagerErrorFontURLsKey. These URLs represent the font files that caused the error and were not successfully registered. The array must be released by the caller. Can be nil.

Returns true if registration of all font URLs was successful, otherwise false.

See also:

- 6.1.51 RegisterFontsForURL(URL as string, scope as Integer, byref error as CFErrorMBS) as boolean
1596

6.1.53 RegisterGraphicsFont(font as CGFontMBS, byref error as CFErrorMBS) as boolean

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Registers the specified graphics font with the font manager.

Notes:

font: The graphics font to be registered.

error: Returns by indirection an error object in the case of failed registration.

Returns true if registration of the font was successful, otherwise false.

Registered fonts are discoverable through font descriptor matching. Any attempt to register a font that is either already registered or contains the same Postscript of an already registered font will fail. This behavior is useful for fonts that may be embedded in documents or constructed in memory. A graphics font is obtained by calling CGFontMBS.CreateWithDataProvider. Fonts that are backed by files should be registered using CoreTextMBS.RegisterFontsForURL.

6.1.54 UnregisterFontsForFile(file as folderitem, scope as Integer, byref error as CFErrorMBS) as boolean

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Unregisters fonts from the specified font URL with the Font Manager. Unregistered fonts are no longer discoverable through font descriptor matching.

Notes:

URL: The font URL.

scope: Scope constant defining the availability and lifetime of the registration. See "Font Registration Scope" for values to pass for this parameter.

error: A CFError object which, in case of failed registration, contains error information.

Returns true if unregistration of the fonts was successful, otherwise false.

6.1.55 UnregisterFontsForFiles(files() as folderitem, scope as Integer, errors() as CFErrorMBS) as boolean

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Unregisters fonts from the specified array of font URLs with the Font Manager. Unregistered fonts are no longer discoverable through font descriptor matching.

Notes:

files: Array of font folderitems.

scope: Scope constant defining the availability and lifetime of the registration. See "Font Registration Scope"

for values to pass for this parameter.

errors: An array of CFError objects which, in case of failed registration, contain error information. Each error contains a CFArray of font URLs corresponding to kCTFontManagerErrorFontURLsKey. These URLs represent the font files that caused the error and were not successfully registered. The array must be released by the caller.

Returns true if unregistration of all font URLs was successful, otherwise false.

6.1.56 UnregisterFontsForURL(URL as string, scope as Integer, byref error as CFErrorMBS) as boolean

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Unregisters fonts from the specified font URL with the Font Manager. Unregistered fonts are no longer discoverable through font descriptor matching.

Notes:

URL: The font URL.

scope: Scope constant defining the availability and lifetime of the registration. See "Font Registration Scope" for values to pass for this parameter.

error: A CFError object which, in case of failed registration, contains error information.

Returns true if unregistration of the fonts was successful, otherwise false.

6.1.57 UnregisterFontsForURLs(URLs() as string, scope as Integer, errors() as CFErrorMBS) as boolean

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Unregisters fonts from the specified array of font URLs with the Font Manager. Unregistered fonts are no longer discoverable through font descriptor matching.

Notes:

URLs: Array of font URLs.

scope: Scope constant defining the availability and lifetime of the registration. See "Font Registration Scope" for values to pass for this parameter.

errors: An array of CFError objects which, in case of failed registration, contain error information. Each error contains a CFArray of font URLs corresponding to kCTFontManagerErrorFontURLsKey. These URLs represent the font files that caused the error and were not successfully registered. The array must be released by the caller.

Returns true if unregistration of all font URLs was successful, otherwise false.

6.1.58 UnregisterGraphicsFont(font as CGFontMBS, byref error as CFErrorMBS) as boolean

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Unregisters the specified graphics font with the font manager.

Notes:

font: The graphics font to be unregistered.

error: Returns by indirection an error object in the case of failed unregistration.

Returns true if unregistration of the font was successful, otherwise false.

Unregistered fonts are no longer discoverable through font descriptor matching. Fonts that are backed by files should be unregistered using `CTFontManagerUnregisterFontsForURL`.

6.1.59 Events

6.1.60 FontCollectionSortDescriptors(first as CTFontDescriptorMBS, second as CTFontDescriptorMBS, tag as Variant) as Integer

Plugin Version: 14.2, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The event to sort font descriptors..

Notes:

This callback can be specified to obtain the matching font descriptors of a collection in sorted order. Return the appropriate comparison result of first descriptor to second descriptor.

Return -1 if smaller, 0 if equal or 1 if bigger.

6.1.61 Progress(state as Integer, progressParameter as Dictionary, tag as Variant) as boolean

Plugin Version: 14.2, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Progress was made for a call to `MatchFontDescriptorsWithProgressHandler`.

Notes: Return true to continue, and return false to cancel the process.

6.1.62 Constants

6.1.63 `kCTFontClassClarendonSerifs = & H04000000`

Plugin Version: 14.2. **Function:** One of the font class constants.

Notes: Clarendon Serifs

6.1.64 `kCTFontClassFreeformSerifs = & H07000000`

Plugin Version: 14.2. **Function:** One of the font class constants.

Notes: Freeform Serifs

6.1.65 `kCTFontClassMaskShift = 28`

Plugin Version: 14.2. **Function:** One of the font class constants.

Notes:

The font class shift.

This is used to shift the font class to the upper most 4 bits of the symbolic traits.

6.1.66 `kCTFontClassModernSerifs = & H03000000`

Plugin Version: 14.2. **Function:** One of the font class constants.

Notes: Modern Serifs

6.1.67 `kCTFontClassOldStyleSerifs = & H01000000`

Plugin Version: 14.2. **Function:** One of the font class constants.

Notes: OldStyleSerifs

6.1.68 `kCTFontClassOrnamentals = & H09000000`

Plugin Version: 14.2. **Function:** One of the font class constants.

Notes: Ornamentals

6.1.69 kCTFontClassSansSerif = & H080000000

Plugin Version: 14.2. **Function:** One of the font class constants.
Notes: Sans Serif

6.1.70 kCTFontClassScripts = & H0A0000000

Plugin Version: 14.2. **Function:** One of the font class constants.
Notes: Scripts

6.1.71 kCTFontClassSlabSerifs = & H050000000

Plugin Version: 14.2. **Function:** One of the font class constants.
Notes: Slab Serifs

6.1.72 kCTFontClassSymbolic = & H0C0000000

Plugin Version: 14.2. **Function:** One of the font class constants.
Notes: Symbolic

6.1.73 kCTFontClassTransitionalSerifs = & H020000000

Plugin Version: 14.2. **Function:** One of the font class constants.
Notes: Transitional Serifs

6.1.74 kCTFontClassUnknown = & H000000000

Plugin Version: 14.2. **Function:** One of the font class constants.
Notes: Unknown

6.1.75 kCTFontManagerAutoActivationDefault = 0

Plugin Version: 14.2. **Function:** One of the auto-activation constants.
Notes: Default auto-activation setting. When specified, the application uses the global setting.

6.1.76 kCTFontManagerAutoActivationDisabled = 1

Plugin Version: 14.2. **Function:** One of the auto-activation constants.

Notes: Disables auto-activation.

6.1.77 kCTFontManagerAutoActivationEnabled = 2

Plugin Version: 14.2. **Function:** One of the auto-activation constants.

Notes: Enables auto-activation.

6.1.78 kCTFontManagerAutoActivationPromptUser = 3

Plugin Version: 14.2. **Function:** One of the auto-activation constants.

Notes: Requires user input for auto-activation. A dialog is presented to the user to confirm auto-activation of the font.

6.1.79 kCTFontManagerErrorAlreadyRegistered = 105

Plugin Version: 14.2. **Function:** One of the activation errors.

Notes: The file has already been registered in the specified scope.

6.1.80 kCTFontManagerErrorFileNotFound = 101

Plugin Version: 14.2. **Function:** One of the activation errors.

Notes: The file does not exist at the specified URL.

6.1.81 kCTFontManagerErrorInsufficientPermissions = 102

Plugin Version: 14.2. **Function:** One of the activation errors.

Notes: Cannot access the file due to insufficient permissions.

6.1.82 kCTFontManagerErrorInUse = 202

Plugin Version: 14.2. **Function:** One of the errors that would prevent unregistration of fonts for a specified font file URL.

Notes: The font file is actively in use and cannot be unregistered.

6.1.83 kCTFontManagerErrorInvalidFontData = 104

Plugin Version: 14.2. **Function:** One of the activation errors.

Notes: The file contains invalid font data that could cause system problems.

6.1.84 kCTFontManagerErrorNotRegistered = 201

Plugin Version: 14.2. **Function:** One of the errors that would prevent unregistration of fonts for a specified font file URL.

Notes: The file is not registered in the specified scope.

6.1.85 kCTFontManagerErrorSystemRequired = 202

Plugin Version: 14.2. **Function:** One of the errors that would prevent unregistration of fonts for a specified font file URL.

Notes: The file is required by the system and cannot be unregistered.

6.1.86 kCTFontManagerErrorUnrecognizedFormat = 103

Plugin Version: 14.2. **Function:** One of the activation errors.

Notes: The file is not a recognized or supported font file format.

6.1.87 kCTFontManagerScopeNone = 0

Plugin Version: 14.2. **Function:** One of the constants for font registration scope.

Notes: No scope is defined.

6.1.88 kCTFontManagerScopeProcess = 1

Plugin Version: 14.2. **Function:** One of the constants for font registration scope.

Notes: The font is available to the current process for the duration of the process unless directly unregistered.

6.1.89 kCTFontManagerScopeSession = 3

Plugin Version: 14.2. **Function:** One of the constants for font registration scope.

Notes: The font is available to the current user session but will not be available in subsequent sessions.

6.1.90 kCTFontManagerScopeUser = 2

Plugin Version: 14.2. **Function:** One of the constants for font registration scope.

Notes: The font is available to all processes for the current user session and will be available in subsequent sessions unless unregistered.

6.1.91 kCTFontTraitBold = 2

Plugin Version: 14.2. **Function:** One of the constants for Symbolic representation of stylistic font attributes.

Notes:

Bold.

Additional detail available via `kCTFontWeightTrait`

6.1.92 kCTFontTraitClassMask = 4026531840

Plugin Version: 14.2. **Function:** One of the constants for Symbolic representation of stylistic font attributes.

Notes: Mask for the font class

6.1.93 kCTFontTraitColorGlyphs = 8192

Plugin Version: 14.2. **Function:** One of the constants for Symbolic representation of stylistic font attributes.

Notes: Color bitmap glyphs are available.

6.1.94 kCTFontTraitComposite = 16384

Plugin Version: 14.2. **Function:** One of the constants for Symbolic representation of stylistic font attributes.

Notes:

Composite

The font is a CFR (Composite font reference), a cascade list is expected per font.

6.1.95 `kCTFontTraitCondensed = 64`

Plugin Version: 14.2. **Function:** One of the constants for Symbolic representation of stylistic font attributes.
Notes:

Condensed
Additional detail available via `kCTFontWidthTrait`

6.1.96 `kCTFontTraitExpanded = 32`

Plugin Version: 14.2. **Function:** One of the constants for Symbolic representation of stylistic font attributes.
Notes:

Expanded
Expanded and condensed traits are mutually exclusive

6.1.97 `kCTFontTraitItalic = 1`

Plugin Version: 14.2. **Function:** One of the constants for Symbolic representation of stylistic font attributes.
Notes:

Italic
Additional detail available via `kCTFontSlantTrait`

6.1.98 `kCTFontTraitMonoSpace = 1024`

Plugin Version: 14.2. **Function:** One of the constants for Symbolic representation of stylistic font attributes.
Notes:

MonoSpace
Use fixed-pitch glyphs if available. May have multiple glyph advances (most CJK glyphs may contain two spaces)

6.1.99 `kCTFontTraitUIOptimized = 4096`

Plugin Version: 14.2. **Function:** One of the constants for Symbolic representation of stylistic font attributes.
Notes:

UI optimized
Synthesize appropriate attributes for UI rendering such as control titles if necessary

6.1.100 kCTFontTraitVertical = 2048

Plugin Version: 14.2. **Function:** One of the constants for Symbolic representation of stylistic font attributes.
Notes:

Vertical

Use vertical glyph variants and metrics.

6.1.101 kCTUnderlinePatternDash = & h0200

Plugin Version: 14.2. **Function:** One of the underline pattern.
Notes: Dash

6.1.102 kCTUnderlinePatternDashDot = & h0300

Plugin Version: 14.2. **Function:** One of the underline pattern.
Notes: Dash Dot

6.1.103 kCTUnderlinePatternDashDotDot = & h0400

Plugin Version: 14.2. **Function:** One of the underline pattern.
Notes: Dash Dot Dot

6.1.104 kCTUnderlinePatternDot = & h0100

Plugin Version: 14.2. **Function:** One of the underline pattern.
Notes: Dot

6.1.105 kCTUnderlinePatternSolid = & h0000

Plugin Version: 14.2. **Function:** One of the underline pattern.
Notes: Solid

6.1.106 kCTUnderlineStyleDouble = 9

Plugin Version: 14.2. **Function:** One of the underline type specifiers.
Notes: Double underlined.

6.1.107 kCTUnderlineStyleNone = 0

Plugin Version: 14.2. **Function:** One of the underline type specifiers.
Notes: Not underlined.

6.1.108 kCTUnderlineStyleSingle = 1

Plugin Version: 14.2. **Function:** One of the underline type specifiers.
Notes: Single underlined.

6.1.109 kCTUnderlineStyleThick = 2

Plugin Version: 14.2. **Function:** One of the underline type specifiers.
Notes: Thick underlined.

6.1.110 kCTVersionNumber10_5 = & h00020000

Plugin Version: 14.2. **Function:** One of the version constants.
Notes: Mac OS X 10.5

6.1.111 kCTVersionNumber10_5_2 = & h00020001

Plugin Version: 14.2. **Function:** One of the version constants.
Notes: Mac OS X 10.5.2

6.1.112 kCTVersionNumber10_5_3 = & h00020002

Plugin Version: 14.2. **Function:** One of the version constants.
Notes: Mac OS X 10.5.3

6.1.113 kCTVersionNumber10_5_5 = & h00020003

Plugin Version: 14.2. **Function:** One of the version constants.
Notes: Mac OS X 10.5.5

6.1.114 kCTVersionNumber10_6 = & h00030000

Plugin Version: 14.2. **Function:** One of the version constants.
Notes: Mac OS X 10.6

6.1.115 kCTVersionNumber10_7 = & h00040000

Plugin Version: 14.2. **Function:** One of the version constants.
Notes: Mac OS X 10.7

6.1.116 kCTVersionNumber10_8 = & h00050000

Plugin Version: 14.2. **Function:** One of the version constants.
Notes: Mac OS X 10.8

6.1.117 kCTVersionNumber10_9 = & h00060000

Plugin Version: 14.2. **Function:** One of the version constants.
Notes: Mac OS X 10.9

6.1.118 kCTWritingDirectionEmbedding = 0

Plugin Version: 14.2. **Function:** One of the values for kCTWritingDirectionAttributeName attribute.

6.1.119 kCTWritingDirectionOverride = 1

Plugin Version: 14.2. **Function:** One of the values for kCTWritingDirectionAttributeName attribute.

6.2 class CTFontCollectionMBS

6.2.1 class CTFontCollectionMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The CTFontCollection opaque type represents a font collection, that is, a group of font descriptors taken together as a single object.

Notes:

Font collections provide the capabilities of font enumeration, access to global and custom font collections, and access to the font descriptors comprising the collection.

Subclass of the CFontMBS class.

This is an abstract class. You can't create an instance, but you can get one from various plugin functions.

6.2.2 Methods

6.2.3 Available as boolean

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Whether this class is available.

Notes: Returns true in OS X v10.5 and later.

6.2.4 Constructor

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The private constructor.

6.2.5 CopyWithFontDescriptors(queryDescriptors() as CTFontDescriptorMBS, options as dictionary) as CTFontCollectionMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a copy of the original collection augmented with the given new font descriptors.

Notes:

queryDescriptors: An array of font descriptors to augment those of the original collection.

options: The options dictionary.

Returns a copy of the original font collection augmented by the new font descriptors and options.

The new font descriptors are merged with the existing descriptors to create a single set.

Available in OS X v10.5 and later.

6.2.6 CreateCopyWithFontDescriptors(original as CTFontCollectionMBS, queryDescriptors() as CTFontDescriptorMBS, options as dictionary) as CTFontCollectionMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a copy of the original collection augmented with the given new font descriptors.

Notes:

queryDescriptors: An array of font descriptors to augment those of the original collection.

options: The options dictionary.

Returns a copy of the original font collection augmented by the new font descriptors and options.

The new font descriptors are merged with the existing descriptors to create a single set.

Available in OS X v10.5 and later.

6.2.7 CreateFromAvailableFonts(options as Dictionary) as CTFontCollectionMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a new font collection containing all available fonts.

Notes:

options: The options dictionary.

Returns a new collection containing all fonts available to the current application.

6.2.8 CreateWithFontDescriptors(queryDescriptors() as CTFontDescriptorMBS, options as dictionary) as CTFontCollectionMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a new collection based on the array of font descriptors.

Notes:

An array of font descriptors to use for matching.

options: The options dictionary. See constant option keys.

Returns this function creates a new collection based on the provided font descriptors. The contents of this

collection is defined by matching the provided descriptors against all available font descriptors.

6.2.9 ExclusionDescriptors as CTFontDescriptorMBS()

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the array of descriptors to exclude from the match.

6.2.10 FontAttribute(attributeName as string, options as Integer) as Dictionary()

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array of font descriptor attribute values.

Notes:

attributeName: The attribute to retrieve for each descriptor in the collection.

options: Options to alter the return value.

This function returns a retained reference to an array, or nil on error. The caller is responsible for releasing the array. The array contains one value for each descriptor, in the same order as the results from CreateMatchingDescriptors. When the kCTFontCollectionCopyUnique is set, duplicate values will be removed. When kCTFontCollectionCopyStandardSort is set, the values will be sorted in standard UI order.

See also:

- 6.2.11 FontAttribute(attributeNames() as string, options as Integer) as Dictionary() 1612

6.2.11 FontAttribute(attributeNames() as string, options as Integer) as Dictionary()

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array of dictionaries containing font descriptor attribute values.

Notes: This function returns a retained reference to a array, or nil on error. The caller is responsible for releasing the array. The array contains one value for each descriptor, in the same order as the results from CreateMatchingDescriptors. When the kCTFontCollectionCopyUnique is set, duplicate values will be removed. When kCTFontCollectionCopyStandardSort is set, the values will be sorted in standard UI order.

See also:

- 6.2.10 FontAttribute(attributeName as string, options as Integer) as Dictionary() 1612

6.2.12 kCTFontCollectionDisallowAutoActivationOption as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the Collection Matching Options.

Notes:

Option key to avoid auto-activating fonts.

Specify this option key in the options dictionary with a non-zero value to disallow searches for missing fonts (font descriptors returning no results).

6.2.13 kCTFontCollectionIncludeDisabledFontsOption as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the Collection Matching Options.

Notes: Specify this option key in the options dictionary with a non-zero value to enable matching of disabled fonts. You can pass font descriptors specifying disabled fonts to CTFontManagerEnableFontDescriptors, but you cannot use such a font descriptor to query font attributes from the system database or create a CTFontMBS.

6.2.14 kCTFontCollectionRemoveDuplicatesOption as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the Collection Matching Options.

Notes: Option key to specify filtering of duplicates.

6.2.15 MatchingFontDescriptors(options as dictionary = nil) as CTFontDescriptorMBS()

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array of font descriptors matching the collection.

6.2.16 MatchingFontDescriptorsForFamily(familyName as string, options as dictionary = nil) as CTFontDescriptorMBS()

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array of font descriptors matching the specified family, one descriptor for each style in the collection.

6.2.17 MatchingFontDescriptorsSorted(tag as Variant) as CTFontDescriptorMBS()

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the array of matching font descriptors sorted with the callback function.

Notes:

This function returns an array of font descriptors matching the criteria of the collection and sorted by the results of the sorting callback function.

Calls FontCollectionSortDescriptors in CoreTextMBS class.

6.2.18 MutableCopy as CTMutableFontCollectionMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a mutable copy of the original collection.

6.2.19 QueryDescriptors as CTFontDescriptorMBS()

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the array of descriptors to match.

6.2.20 Constants

6.2.21 kCTFontCollectionCopyDefaultOptions = 0

Plugin Version: 14.2. **Function:** One of the Bulk attribute access.

Notes:

Passing this option indicates that defaults are to be used.

Available in OS X v10.7 and later.

6.2.22 kCTFontCollectionCopyStandardSort = 2

Plugin Version: 14.2. **Function:** One of the Bulk attribute access.

Notes:

Passing this option indicates that the return values should be sorted in standard UI order, suitable for display to the user. This is the same sorting behavior used by NSFontPanel and Font Book.

Available in OS X v10.7 and later.

6.2.23 kCTFontCollectionCopyUnique = 1

Plugin Version: 14.2. **Function:** One of the Bulk attribute access.

Notes:

Passing this option indicates that duplicate values should be removed from the results.
Available in OS X v10.7 and later.

6.3 class CTFontDescriptorMBS

6.3.1 class CTFontDescriptorMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The CTFontDescriptor opaque type represents a font descriptor, that is, a dictionary of attributes (such as name, point size, and variation) that can completely specify a font.

Notes:

A font descriptor can be an incomplete specification, in which case the system chooses the most appropriate font to match the given attributes.

Subclass of the CFontMBS class.

This is an abstract class. You can't create an instance, but you can get one from various plugin functions.

6.3.2 Methods

6.3.3 AttributeValue(key as string) as Variant

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the value associated with an arbitrary attribute.

Notes:

key: The requested attribute.

Returns a attribute value, or nil if the requested attribute is not present.

6.3.4 AttributeValues as Dictionary

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the attributes dictionary of the font descriptor.

Notes: The font descriptor attributes dictionary. This dictionary contains the minimum number of attributes to specify fully this particular font descriptor.

6.3.5 Available as boolean

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Whether this class is available.

Notes: Returns true in OS X v10.5 and later.

6.3.6 Constructor

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The private constructor.

6.3.7 CopyWithAttributes(attributeValues as Dictionary) as CTFontDescriptorMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a copy of the original font descriptor with new attributes.

Notes:

attributes: A dictionary containing arbitrary attributes.

Returns a new copy of the original font descriptor with attributes augmented by those specified. If there are conflicts between attributes, the new attributes replace existing ones.

6.3.8 CopyWithFamily(family as String) as CTFontDescriptorMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a new font descriptor in the specified family based on the traits of the original descriptor.

Notes:

family: The name of the desired family.

Returns a new font reference with the original traits in the given family, or nil if none found in the system.

6.3.9 CopyWithFeature(featureTypeIdentifier as Integer, featureSelectorIdentifier as Integer) as CTFontDescriptorMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Copies a font descriptor with new feature settings.

Notes:

featureTypeIdentifier: The feature type identifier.

featureSelectorIdentifier: The feature selector identifier.

Returns a copy of the original font descriptor modified with the given feature settings. This is a convenience method to toggle more easily the state of individual features.

6.3.10 CopyWithSymbolicTraits(symTraitValue as Integer, symTraitMask as Integer) as CTFontDescriptorMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a new font descriptor based on the original descriptor having the specified symbolic traits.

Notes:

symTraitValue: The value of the symbolic traits. This bitfield is used to indicate the desired value for the traits specified by the symTraitMask parameter. Used in conjunction, they can allow for trait removal as well as addition.

symTraitMask: The mask bits of the symbolic traits. This bitfield is used to indicate the traits that should be changed.

Returns a new font descriptor reference in the same family with the given symbolic traits, or nil if none found in the system.

6.3.11 CopyWithVariation(variationIdentifier as Integer, variationValue as Double) as CTFontDescriptorMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a copy of the original font descriptor with a new variation instance.

Notes:

variationIdentifier: The variation axis identifier. This is the four-character code of the variation axis as a number.

variationValue: The value corresponding with the variation instance.

Returns a copy of the original font descriptor with a new variation instance.
This is a convenience method for easily creating new variation font instances.

6.3.12 CreateCopyWithFamily(original as CTFontDescriptorMBS, family as String) as CTFontDescriptorMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a new font descriptor in the specified family based on the traits of the original descriptor.

Notes:

original: The original font descriptor reference.

family: The name of the desired family.

Returns a new font reference with the original traits in the given family, or nil if none found in the system.

6.3.13 CreateCopyWithSymbolicTraits(original as CTFontDescriptorMBS, symTraitValue as Integer, symTraitMask as Integer) as CTFontDescriptorMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a new font descriptor based on the original descriptor having the specified symbolic traits.

Example:

```
// find PostScript names for a font
const nameOfAFont = "Arial"

dim FontName as string
dim FontFamilyName as string
dim FontPostscriptName as string
dim FontPostscriptNameBold as string
dim FontPostscriptNameItalic as string

dim f as CTFontMBS = CTFontMBS.CreateWithName(nameOfAFont, 13)

if f <> nil then
    FontName = f.FullName
    FontFamilyName = f.FamilyName
    FontPostscriptName = f.PostScriptName

    dim d as CTFontDescriptorMBS = f.FontDescriptor

    dim db as CTFontDescriptorMBS = CTFontDescriptorMBS.CreateCopyWithSymbolicTraits(d, CoreTextMBS.kCTFontTraitBold, CoreTextMBS.kCTFontTraitBold)
    dim di as CTFontDescriptorMBS = CTFontDescriptorMBS.CreateCopyWithSymbolicTraits(d, CoreTextMBS.kCTFontTraitItalic, CoreTextMBS.kCTFontTraitItalic)

    dim fb as CTFontMBS = f.CreateCopyWithAttributes(f.Size, nil, db)
    dim fi as CTFontMBS = f.CreateCopyWithAttributes(f.Size, nil, di)

    FontPostscriptNameBold = fb.PostScriptName
    FontPostscriptNameItalic = fi.PostScriptName

end if

Break // read names in debugger
```

Notes:

original: The original font descriptor reference.

symTraitValue: The value of the symbolic traits. This bitfield is used to indicate the desired value for the traits specified by the symTraitMask parameter. Used in conjunction, they can allow for trait removal as well as addition.

`symTraitMask`: The mask bits of the symbolic traits. This bitfield is used to indicate the traits that should be changed.

Returns a new font descriptor reference in the same family with the given symbolic traits, or nil if none found in the system.

Requires Mac OS X 10.9 or newer.

6.3.14 `CreateWithAttributes(attributeValues as Dictionary)` as `CTFontDescriptorMBS`

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new font descriptor reference from a dictionary of attributes.

Notes: The provided attribute dictionary can contain arbitrary attributes that are preserved; however, unrecognized attributes are ignored on font creation and may not be preserved over the round trip from descriptor to font and back to descriptor.

6.3.15 `CreateWithNameAndSize(Name as string, Size as Double = 0.0)` as `CTFontDescriptorMBS`

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new font descriptor with the provided PostScript name and size.

Example:

```
dim c as CTFontDescriptorMBS = CTFontDescriptorMBS.CreateWithNameAndSize("Times", 12)
MsgBox c.AttributeValue(c.kCTFontFamilyNameAttribute)
```

Notes:

`name`: The PostScript name to be used for the font descriptor as a string.

`size`: The point size. If 0.0, the font size attribute (`kCTFontSizeAttribute`) is omitted from the returned font descriptor.

Return sa new font descriptor reference with the given PostScript name and point size.

6.3.16 `kCTFontBaselineAdjustAttribute` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the constants keys for accessing font attributes from a font descriptor.

Notes: Key to specify or obtain the baseline adjustment for a font reference. This is primarily used when defining font descriptors for a cascade list to keep the baseline of all fonts even. The value associated with this is a float represented as a number.

6.3.17 kCTFontCascadeListAttribute as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the constants keys for accessing font attributes from a font descriptor.

Notes: Key to specify or obtain the cascade list used for a font reference. The cascade list is a array containing CTFontDescriptorMBS elements. If unspecified, the global cascade list is used.

6.3.18 kCTFontCharacterSetAttribute as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the constants keys for accessing font attributes from a font descriptor.

Notes: Key to specify or obtain the Unicode character coverage set for a font reference. The value for this key is a CharacterSetMBS object. If specified, this attribute can be used to restrict the font to a subset of its actual character set. If unspecified, this attribute is ignored and the actual character set is used.

6.3.19 kCTFontDescriptorMatchingCurrentAssetSize as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for progressParameter dictionary.

Notes: A number. Total downloaded byte size. Valid during Downloading state.

6.3.20 kCTFontDescriptorMatchingDescriptors as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for progressParameter dictionary.

Notes:

Array of descriptors to be queried.

Valid while downloading or when state is kCTFontDescriptorMatchingWillBeginQuerying.

6.3.21 kCTFontDescriptorMatchingError as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for progressParameter dictionary.

Notes: A CFErrorMBS; Valid when state kCTFontDescriptorMatchingDidFailWithError.

6.3.22 kCTFontDescriptorMatchingPercentage as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for progressParameter dictionary.

Notes: A Number; Download progress in 0 - 100. Valid during Downloading state.

6.3.23 kCTFontDescriptorMatchingResult as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for progressParameter dictionary.

Notes:

Array of matched font descriptors.

Valid when state is kCTFontDescriptorMatchingDidMatch or CTFontDescriptorMatchingEnd.

6.3.24 kCTFontDescriptorMatchingSourceDescriptor as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for progressParameter dictionary.

Notes:

A CTFontDescriptorMBS; The current font descriptor.

Valid when state is kCTFontDescriptorMatchingDidMatch.

6.3.25 kCTFontDescriptorMatchingTotalAssetSize as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for progressParameter dictionary.

Notes:

A Number; Total byte size to download.

Always valid, but may be Zero when information is not available.

6.3.26 kCTFontDescriptorMatchingTotalDownloadedSize as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys for progressParameter dictionary.

Notes: A Number; Total downloaded byte size. Valid during Downloading state.

6.3.27 kCTFontDisplayNameAttribute as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the constants keys for accessing font attributes from a font descriptor.

Notes: Key for accessing the name used to display the font. Most commonly this is the full name. The value associated with this key is a string. If the value is unspecified, it defaults to Helvetica, and if that font is unavailable, it falls back to the global font cascade list.

6.3.28 kCTFontDownloadableAttribute as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the constants keys for accessing font attributes from a font descriptor.

Notes:

The font downloadable state.

The value associated with this key is a Boolean. If it is true, CoreText attempts to download a font if necessary when matching a descriptor.

6.3.29 kCTFontEnabledAttribute as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the constants keys for accessing font attributes from a font descriptor.

Notes:

Key to obtain the font enabled state. The returned value is an integer represented as a number representing a Boolean value. Unregistered font descriptors return nil, which is equivalent to false.

Available in OS X v10.6 and later.

6.3.30 kCTFontFamilyNameAttribute as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the constants keys for accessing font attributes from a font descriptor.

Notes: Key for accessing the font family name from the font descriptor. The value associated with this key is a string.

6.3.31 `kCTFontFeaturesAttribute` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the constants keys for accessing font attributes from a font descriptor.

Notes:

Key to specify or obtain the font features for a font reference. The value associated with this key is a array containing font feature dictionaries. This feature list contains the feature information from the 'feat' table of the font. For more information, see Features.

Available in OS X v10.5 and later.

6.3.32 `kCTFontFeatureSettingsAttribute` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the constants keys for accessing font attributes from a font descriptor.

Notes:

Key to specify or obtain the font features settings for a font reference. The value associated with this key is a `CFArrayRef` object containing font feature-setting dictionaries. A feature-setting dictionary contains a tuple of a `kCTFontFeatureTypeIdentifierKey` key-value pair and a `kCTFontFeatureSelectorIdentifierKey` key-value pair. Each setting dictionary indicates which setting should be turned on. In the case of duplicate or conflicting setting, the last setting in the list takes precedence. It is the caller's responsibility to handle exclusive and nonexclusive settings as necessary.

Available in OS X v10.5 and later.

6.3.33 `kCTFontFixedAdvanceAttribute` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the constants keys for accessing font attributes from a font descriptor.

Notes:

Key to specify a fixed advance to be used for a font reference. If present and specified, this attribute is used to specify a constant advance to override any font values. The value associated with this key is a float represented as a number.

Available in OS X v10.5 and later.

6.3.34 `kCTFontFormatAttribute` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the constants keys for accessing font attributes from a font descriptor.

Notes:

Key to specify or obtain the recognized format of the font. The value associated with this key is an integer

represented as a number containing one of the constants in "Font Format Constants."
Available in OS X v10.6 and later.

6.3.35 kCTFontLanguagesAttribute as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the constants keys for accessing font attributes from a font descriptor.

Notes:

Key to specify or obtain a list of covered languages for a font reference. The value for this key is an array containing string elements. If specified, this attribute restricts the search to matching fonts that support the specified languages. The language identifier string should conform to the RFC 3066bis standard. If unspecified, this attribute is ignored.

Available in OS X v10.5 and later.

6.3.36 kCTFontMacintoshEncodingsAttribute as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the constants keys for accessing font attributes from a font descriptor.

Notes:

Key to specify or obtain the Macintosh encodings for a font reference. The value associated with this key is a number containing a bit field of the Macintosh encodings. This attribute is provided for legacy compatibility. Available in OS X v10.5 and later.

6.3.37 kCTFontMatrixAttribute as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the constants keys for accessing font attributes from a font descriptor.

Notes: Key to specify the font transformation matrix when creating a font. If unspecified it defaults to the unit matrix. The value for this key is a Memoryblock object containing a CGAffineTransform.

6.3.38 kCTFontNameAttribute as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the constants keys for accessing font attributes from a font descriptor.

Notes: Key for accessing the PostScript name from the font descriptor. The value associated with this key is a string. If the value is unspecified, it defaults to Helvetica, and if that font is unavailable, it falls back to the global font cascade list.

6.3.39 `kCTFontOrientationAttribute` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the constants keys for accessing font attributes from a font descriptor.

Notes: Key to specify a particular orientation for the glyphs of the font. The value associated with this key is an integer represented as a number containing one of the constants in "Font Orientation Constants." If you want to receive vertical metrics from a font for vertical rendering, specify `kCTFontVerticalOrientation`. If unspecified, the font uses its native orientation.

6.3.40 `kCTFontPriorityAttribute` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the constants keys for accessing font attributes from a font descriptor.

Notes:

Key to specify or obtain the font priority used by font descriptors when resolving duplicates and sorting match results. The value associated with this key is an integer represented as a `CFNumberRef` object containing one of the values enumerated in "Font Priority Constants." The higher the value, the higher the priority of the font. Only registered fonts have a priority. Unregistered font descriptors return nil. Available in OS X v10.6 and later.

6.3.41 `kCTFontRegistrationScopeAttribute` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the constants keys for accessing font attributes from a font descriptor.

Notes:

Key to specify or obtain the font descriptor's registration scope. The value associated with this key is an integer represented as a number containing one of the `CTFontManagerScope` enumerated values. A value of nil can be returned for font descriptors that are not registered.

Available in OS X v10.6 and later.

6.3.42 `kCTFontSizeAttribute` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the constants keys for accessing font attributes from a font descriptor.

Notes: Key to obtain or specify the font point size. Creating a font with this unspecified will default to a point size of 12.0. The value for this key is represented as a number.

6.3.43 kCTFontStyleNameAttribute as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the constants keys for accessing font attributes from a font descriptor.

Notes: Key for accessing the style name of the font. This name represents the designer's description of the font's style. The value associated with this key is a string.

6.3.44 kCTFontTraitsAttribute as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the constants keys for accessing font attributes from a font descriptor.

Notes: Key for accessing the dictionary of font traits for stylistic information. See "Font Traits" for the list of font traits. The value associated with this key is a dictionary.

6.3.45 kCTFontURLAttribute as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the constants keys for accessing font attributes from a font descriptor.

Notes:

Key for accessing the font URL from the font descriptor. The value associated with this key is an URL string.

Available in OS X v10.6 and later.

6.3.46 kCTFontVariationAttribute as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the constants keys for accessing font attributes from a font descriptor.

Notes: Key to obtain the font variation dictionary instance as a dictionary object. If specified in a font descriptor, fonts with the specified axes are primary match candidates; if no such fonts exist, this attribute is ignored.

6.3.47 LocalizedAttributeValue(key as string, byref lang as string) as Variant

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a localized value for the requested attribute, if available.

Notes:

key: The requested font attribute.

lang: On output, contains a reference to the matched language. The language identifier will conform to the

RFC 3066bis standard.

Returns a localized attribute value based on the global language list.

This function passes back the matched language in `language`. If localization is not possible for the attribute, the behavior matches the value returned from `AttributeValue`. Generally, localization of attributes is applicable to name attributes of only a normalized font descriptor.

6.3.48 `MatchingFontDescriptor(mandatoryAttributes() as String) as CTFontDescriptorMBS`

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the single preferred matching font descriptor based on the original descriptor and system precedence.

Notes:

`mandatoryAttributes`: A set of attribute keys which must be identically matched in any returned font descriptors.

Returns a normalized font descriptor matching the attributes present in descriptor.

The original descriptor may be returned in normalized form. In the context of font descriptors, normalized infers that the input values were matched up with actual existing fonts, and the descriptors for those existing fonts are the returned normalized descriptors.

6.3.49 `MatchingFontDescriptors(mandatoryAttributes() as String) as CTFontDescriptorMBS()`

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array of normalized font descriptors matching the provided descriptor.

Notes:

`mandatoryAttributes`: A set of attribute keys that must be identically matched in any returned font descriptors.

Returns an array of normalized font descriptors matching the attributes present in descriptor.

If descriptor itself is normalized, then the array will contain only one item: the original descriptor. In the context of font descriptors, normalized infers that the input values were matched up with actual existing fonts, and the descriptors for those existing fonts are the returned normalized descriptors.

6.3.50 Properties

6.3.51 DisplayName as String

Plugin Version: 15.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The display name.

Example:

```
dim f as CTFontMBS = CTFontMBS.CreateWithName("Times")
dim d as CTFontDescriptorMBS = f.FontDescriptor
MsgBox d.DisplayName
```

Notes: (Read only property)

6.3.52 FamilyName as String

Plugin Version: 15.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The family name.

Example:

```
dim f as CTFontMBS = CTFontMBS.CreateWithName("Times")
dim d as CTFontDescriptorMBS = f.FontDescriptor
MsgBox d.FamilyName
```

Notes: (Read only property)

6.3.53 File as FolderItem

Plugin Version: 15.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The font file.

Example:

```
dim f as CTFontMBS = CTFontMBS.CreateWithName("Times")
dim d as CTFontDescriptorMBS = f.FontDescriptor
MsgBox d.file.NativePath
```

Notes: (Read only property)

6.3.54 FontSize as Double

Plugin Version: 15.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The font size.

Example:

```
dim f as CTFontMBS = CTFontMBS.CreateWithName("Times")
dim d as CTFontDescriptorMBS = f.FontDescriptor
MsgBox str(d.FontSize)
```

Notes:

Can be zero if unknown.
(Read only property)

6.3.55 Name as String

Plugin Version: 15.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The PostScript name.

Example:

```
dim f as CTFontMBS = CTFontMBS.CreateWithName("Times")
dim d as CTFontDescriptorMBS = f.FontDescriptor
MsgBox d.Name
```

Notes:

When matching, this is treated more generically: the system first tries to find fonts with this PostScript name. If none is found, the system tries to find fonts with this family name, and, finally, if still nothing, tries to find fonts with this display name.
(Read only property)

6.3.56 StyleName as String

Plugin Version: 15.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The style name.

Example:

```
dim f as CTFontMBS = CTFontMBS.CreateWithName("Times")
dim d as CTFontDescriptorMBS = f.FontDescriptor
MsgBox d.StyleName
```

Notes:

This name represents the designer's description of the font's style.
Can be empty if unknown.
(Read only property)

6.3.57 URL as String

Plugin Version: 15.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The font URL.

Example:

```
dim f as CTFontMBS = CTFontMBS.CreateWithName("Times")
dim d as CTFontDescriptorMBS = f.FontDescriptor
MsgBox d.URL
```

Notes: (Read only property)

6.3.58 Constants

6.3.59 kCTFontDescriptorMatchingDidBegin = 0

Plugin Version: 14.2. **Function:** One of the font matching states.

Notes: called once at the beginning.

6.3.60 kCTFontDescriptorMatchingDidFailWithError = 8

Plugin Version: 14.2. **Function:** One of the font matching states.

Notes: called when an error occurred. (may be called multiple times.)

6.3.61 kCTFontDescriptorMatchingDidFinish = 1

Plugin Version: 14.2. **Function:** One of the font matching states.

Notes: called once at the end.

6.3.62 kCTFontDescriptorMatchingDidFinishDownloading = 6

Plugin Version: 14.2. **Function:** One of the font matching states.

Notes: Finished downloading a descriptor.

6.3.63 `kCTFontDescriptorMatchingDidMatch` = 7

Plugin Version: 14.2. **Function:** One of the font matching states.

Notes: called when font descriptor is matched.

6.3.64 `kCTFontDescriptorMatchingDownloading` = 5

Plugin Version: 14.2. **Function:** One of the font matching states.

Notes: Downloading a descriptor.

6.3.65 `kCTFontDescriptorMatchingStalled` = 3

Plugin Version: 14.2. **Function:** One of the font matching states.

Notes: called when stalled. (e.g. while waiting for server response.)

6.3.66 `kCTFontDescriptorMatchingWillBeginDownloading` = 4

Plugin Version: 14.2. **Function:** One of the font matching states.

Notes:

Starts downloading a descriptor.

Downloading part may be skipped if all the assets are already downloaded

6.3.67 `kCTFontDescriptorMatchingWillBeginQuerying` = 2

Plugin Version: 14.2. **Function:** One of the font matching states.

Notes: called once before talking to the server. Skipped if not necessary.

6.3.68 `kCTFontFormatBitmap` = 5

Plugin Version: 14.2. **Function:** One of the font format constants.

Notes: The font is a bitmap only format.

6.3.69 kCTFontFormatOpenTypePostScript = 1

Plugin Version: 14.2. **Function:** One of the font format constants.

Notes: The font is an OpenType format containing PostScript data

6.3.70 kCTFontFormatOpenTypeTrueType = 2

Plugin Version: 14.2. **Function:** One of the font format constants.

Notes: The font is an OpenType format containing TrueType data.

6.3.71 kCTFontFormatPostScript = 4

Plugin Version: 14.2. **Function:** One of the font format constants.

Notes: The font is a recognized PostScript format.

6.3.72 kCTFontFormatTrueType = 3

Plugin Version: 14.2. **Function:** One of the font format constants.

Notes: The font is a recognized TrueType format.

6.3.73 kCTFontFormatUnrecognized = 0

Plugin Version: 14.2. **Function:** One of the font format constants.

Notes: The font is not a recognized format

6.3.74 kCTFontOrientationDefault = 0

Plugin Version: 14.2. **Function:** One of the orientation constants.

Notes: Default

6.3.75 kCTFontOrientationHorizontal = 1

Plugin Version: 14.2. **Function:** One of the orientation constants.

Notes: Horizontal

6.3.76 kCTFontOrientationVertical = 2

Plugin Version: 14.2. **Function:** One of the orientation constants.

Notes: Vertical

6.3.77 kCTFontPriorityComputer = 30000

Plugin Version: 14.2. **Function:** One of the font priorities constants.

Notes: Priority of computer local fonts (located in /Library/Fonts).

6.3.78 kCTFontPriorityDynamic = 50000

Plugin Version: 14.2. **Function:** One of the font priorities constants.

Notes: Priority of fonts registered dynamically, not located in a standard location (either kCTFontManagerScopeUser, or kCTFontManagerScopeSession).

6.3.79 kCTFontPriorityNetwork = 20000

Plugin Version: 14.2. **Function:** One of the font priorities constants.

Notes: Priority of network fonts (located in /Network/Library/Fonts).

6.3.80 kCTFontPriorityProcess = 60000

Plugin Version: 14.2. **Function:** One of the font priorities constants.

Notes: Priority of fonts registered for the process (kCTFontManagerScopeProcess).

6.3.81 kCTFontPrioritySystem = 10000

Plugin Version: 14.2. **Function:** One of the font priorities constants.

Notes: Priority of system fonts (located in /System/Library/Fonts).

6.3.82 kCTFontPriorityUser = 40000

Plugin Version: 14.2. **Function:** One of the font priorities constants.

Notes: Priority of local fonts (located in user's Library/Fonts).

6.4 class CTFontMBS

6.4.1 class CTFontMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The CTFont opaque type represents a Core Text font object.

Example:

```
dim c as CTFontMBS = CTFontMBS.CreateWithName("times", 10)
MsgBox c.FullName
```

Notes:

Font objects represent fonts to an application, providing access to characteristics of the font, such as point size, transform matrix, and other attributes. Fonts provide assistance in laying out glyphs relative to one another and are used to establish the current font when drawing in a graphics context.

Subclass of the CFontMBS class.

This is an abstract class. You can't create an instance, but you can get one from various plugin functions.

6.4.2 Methods

6.4.3 AdvancesForGlyphs(orientation as Integer, glyphs() as Integer) as Double

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Calculates the advances for an array of glyphs and returns the summed advance.

Notes:

font: The font reference.

orientation

The intended drawing orientation of the glyphs. Used to determine which glyph metrics to return.

glyphs: An array of count number of glyphs.

advances: An array of count number of CGSizeMBS objects to receive the computed glyph advances. Optional.

Returns the summed glyph advance of an array of glyphs.

Individual glyph advances are passed back via the advances parameter. These are the ideal metrics for each glyph scaled and transformed in font space.

See also:

- 6.4.4 AdvancesForGlyphs(orientation as Integer, glyphs() as Integer, boundingRects() as CGSizeMBS) as Double 1636

6.4.4 `AdvancesForGlyphs(orientation as Integer, glyphs() as Integer, boundingRects() as CGSizeMBS) as Double`

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Calculates the advances for an array of glyphs and returns the summed advance.

Notes:

font: The font reference.

orientation

The intended drawing orientation of the glyphs. Used to determined which glyph metrics to return.

glyphs: An array of count number of glyphs.

advances: An array of count number of CGSizeMBS objects to receive the computed glyph advances. Optional.

Returns the summed glyph advance of an array of glyphs.

Individual glyph advances are passed back via the advances parameter. These are the ideal metrics for each glyph scaled and transformed in font space.

See also:

- 6.4.3 `AdvancesForGlyphs(orientation as Integer, glyphs() as Integer) as Double`

1635

6.4.5 `AttributeValue(key as string) as Variant`

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the value associated with an arbitrary attribute of the given font.

Notes:

key: The requested attribute.

Returns attribute value or nil if the requested attribute is not present.

Available in OS X v10.5 and later.

6.4.6 `Available as boolean`

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Whether this class is available.

Notes: Returns true in OS X v10.5 and later.

6.4.7 AvailableTables(options as Integer) as String()

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array of font table tags.

Notes:

options: The font table options.

Returns an array of Font Table Tag Constants values for the given font and the supplied options.
Available in OS X v10.5 and later.

6.4.8 BoundingRectsForGlyphs(orientation as Integer, glyphs() as Integer) as CGRectMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Calculates the bounding rects for an array of glyphs and returns the overall bounding rectangle for the glyph run.

Notes:

font: The font reference.

orientation: The intended drawing orientation of the glyphs. Used to determined which glyph metrics to return.

glyphs: An array of count number of glyphs.

boundingRects: Optional. On output, the computed glyph rectangles in an array of count number of CGRect objects.

Returns the overall bounding rectangle for an array or run of glyphs. Returns CGRectNull on error.

The bounding rectangles of the individual glyphs are returned through the boundingRects parameter. These are the design metrics from the font transformed in font space.

See also:

- 6.4.9 BoundingRectsForGlyphs(orientation as Integer, glyphs() as Integer, boundingRects() as CGRectMBS) as CGRectMBS 1637

6.4.9 BoundingRectsForGlyphs(orientation as Integer, glyphs() as Integer, boundingRects() as CGRectMBS) as CGRectMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Calculates the bounding rects for an array of glyphs and returns the overall bounding rectangle for the glyph run.

Notes:

font: The font reference.

orientation: The intended drawing orientation of the glyphs. Used to determined which glyph metrics to return.

glyphs: An array of count number of glyphs.

boundingRects: Optional. On output, the computed glyph rectangles in an array of count number of CGRect objects.

Returns the overall bounding rectangle for an array or run of glyphs. Returns CGRectNull on error.

The bounding rectangles of the individual glyphs are returned through the boundingRects parameter. These are the design metrics from the font transformed in font space.

See also:

- 6.4.8 BoundingRectsForGlyphs(orientation as Integer, glyphs() as Integer) as CGRectMBS 1637

6.4.10 Constructor

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The private constructor.

6.4.11 CreateCopyWithAttributes(size as Double, Matrix as CGAffineTransformMBS, fontAttributes as CTFontDescriptorMBS) as CTFontMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a new font with additional attributes based on the original font.

Example:

```
// find PostScript names for a font
const nameOfAFont = "Arial"

dim FontName as string
dim FontFamilyName as string
dim FontPostscriptName as string
dim FontPostscriptNameBold as string
dim FontPostscriptNameItalic as string

dim f as CTFontMBS = CTFontMBS.CreateWithName(nameOfAFont, 13)

if f <> nil then
    FontName = f.FullName
    FontFamilyName = f.FamilyName
    FontPostscriptName = f.PostScriptName

    dim d as CTFontDescriptorMBS = f.FontDescriptor

    dim db as CTFontDescriptorMBS = CTFontDescriptorMBS.CreateCopyWithSymbolicTraits(d, CoreTextMBS.kCTFontTraitBold, CoreTextMBS.kCTFontTraitBold)
```

```
dim di as CTFontDescriptorMBS = CTFontDescriptorMBS.CreateCopyWithSymbolicTraits(d, CoreTextMBS.kCT-
FontTraitItalic, CoreTextMBS.kCTFontTraitItalic)
```

```
dim fb as CTFontMBS = f.CreateCopyWithAttributes(f.Size, nil, db)
dim fi as CTFontMBS = f.CreateCopyWithAttributes(f.Size, nil, di)
```

```
FontPostscriptNameBold = fb.PostScriptName
FontPostscriptNameItalic = fi.PostScriptName
```

```
end if
```

```
Break // read names in debugger
```

Notes:

size: The point size for the font reference. If 0.0 is specified, the original font's size is preserved.
matrix: The transformation matrix for the font. In most cases, set this parameter to be nil. If nil is specified, the original font's matrix is preserved.
fontAttributes: A font descriptor containing additional attributes that the new font should contain.

Returns a new font reference converted from the original with the specified attributes.

This function provides a mechanism to change attributes quickly on a given font reference in response to user actions. For instance, the size can be changed in response to a user manipulating a size slider. Available in OS X v10.5 and later.

6.4.12 CreateForString(text as string, location as Integer, length as Integer) as CTFontMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a new font reference that can best map the given string range based on the current font.

Notes:

string: A unicode string containing characters that cannot be encoded by the current font.
location and length: The range of the string that needs to be mapped.

Returns the best substitute font from the cascade list of the current font that can encode the specified string range. If the current font is capable of encoding the string range, then it is retained and returned.

6.4.13 CreatePathForGlyph(*glyph* as Integer, *transform* as CGAffineTransformMBS) as CGPathMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a path for the specified glyph.

Notes:

glyph: The glyph.

transform: An affine transform applied to the path. Can be nil. If nil, CGAffineTransformIdentity is used.

Returns a CGPath object containing the glyph outlines, nil on error. Must be released by caller.

Creates a path from the outlines of the glyph for the specified font. The path reflects the font point size, matrix, and transform parameter, applied in that order. The transform parameter is most commonly be used to provide a translation to the desired glyph origin.

6.4.14 CreateUIFontForLanguage(*Type* as Integer, *size* as Double = 0.0, *language* as string = "") as CTFontMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the special user-interface font for the given language and user-interface type.

Notes:

Type: A constant specifying the intended user-interface use for the requested font reference. See Enumerations for possible values.

size: The point size for the font reference. If 0.0 is specified, the default size for the requested user-interface type is used.

language: Language specifier string to select a font for a particular localization. If "" is specified, the current system language is used. The format of the language identifier should conform to the RFC 3066bis standard.

Returns the correct font for various user-interface uses.

The only required parameter is the *Type* selector; the other parameters have default values.

6.4.15 CreateWithFamily(*size* as Double, *Matrix* as CGAffineTransformMBS, *family* as string) as CTFontMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a new font in the specified family based on the traits of the original font.

Notes:

size: The point size for the font reference. If 0.0 is specified, the original fonts size is preserved.

matrix: The transformation matrix for the font. In most cases, set this parameter to be nil. If nil is specified, the original font's matrix is preserved.

family: The name of the desired family.

Returns a new font reference with the original traits in the given family, or nil if none is found in the system. Available in OS X v10.5 and later.

6.4.16 CreateWithFontDescriptor(descriptor as CTFontDescriptorMBS, size as Double = 0.0, matrix as CGAffineTransformMBS = nil, options as Integer = 0) as CTFontMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a new font reference that best matches the given font descriptor.

Notes:

descriptor: A font descriptor containing attributes that specify the requested font.

size: The point size for the font reference. If 0.0 is specified, the default font size of 12.0 is used. This parameter is optional.

matrix: The transformation matrix for the font. In most cases, set this parameter to be nil. If nil is specified, the identity matrix is used. This parameter is optional.

Returns a CTFontMBS that best matches the attributes provided with the font descriptor.

The size and matrix parameters override any specified in the font descriptor unless they are unspecified (0.0 for size and NULL for matrix). A best match font is always returned, and default values are used for any unspecified parameters.

6.4.17 CreateWithGraphicsFont(graphicsFont as CGFontMBS, size as Double = 0.0, matrix as CGAffineTransformMBS = nil, attributeValues as CTFontDescriptorMBS = nil) as CTFontMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new font reference from an existing Core Graphics font reference.

Notes:

graphicsFont: A valid Core Graphics font reference.

size: The point size for the font reference. If 0.0 is specified the default font size of 12.0 is used.

matrix: The transformation matrix for the font. In most cases, set this parameter to be nil. If nil, the identity matrix is used. Optional.

attributes: Additional attributes that should be matched. Optional.

Returns a new font reference for an existing CGFontRef object with the specified size, matrix, and additional attributes.

6.4.18 `CreateWithName(name as string, size as Double = 0.0, matrix as CGAffineTransformMBS = nil, options as Integer = 0) as CTFontMBS`

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a new font reference for the given name.

Example:

```
dim c as CTFontMBS = CTFontMBS.CreateWithName("Times", 12)
MsgBox c.FullName
```

Notes:

name: The font name for which you wish to create a new font reference. A valid PostScript name is preferred, although other font name types are matched in a fallback manner.

size: The point size for the font reference. If 0.0 is specified, the default font size of 12.0 is used. This parameter is optional.

matrix: The transformation matrix for the font. In most cases, set this parameter to be nil. If nil is specified, the identity matrix is used. This parameter is optional.

Returns a CTFontRef that best matches the name provided with size and matrix attributes.

The name parameter is the only required parameter, and default values are used for unspecified parameters (0.0 for size and nil for matrix). If all parameters cannot be matched identically, a best match is found.

6.4.19 `CreateWithPlatformFont(ATSTFontHandle as Integer, size as Double = 0.0, matrix as CGAffineTransformMBS = nil, attributeValues as CTFontDescriptorMBS = nil) as CTFontMBS`

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new font reference from an ATS font reference.

Notes:

ATSTFontHandle: A valid ATSTFontRef object.

size: The point size for the font reference. If 0.0 is specified the default font size of 12.0 is used.

matrix: The transformation matrix for the font. In most cases, set this parameter to be nil. If nil, the identity matrix is used. Optional.

attributes: A CTFontDescriptorMBS containing additional attributes that should be matched. Optional.

Returns a new font reference for an ATSTFontRef with the specified size, matrix, and additional attributes.

6.4.20 CreateWithQuickdrawInstance(name as String, identifier as Integer = 0, Style as Integer = 0, size as Double = 0.0) as CTFontMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a font reference for the given QuickDraw instance.

Notes:

name: The QuickDraw font name. If zero length, identifier must be specified.

identifier: The QuickDraw font identifier. Can be 0, but if so, name must be specified.

style: The QuickDraw font style.

size: The point size for the font reference. If 0.0 is specified, the default size of 12.0 is used.

Returns the best font instance matching the QuickDraw instance information.

This function is provided for compatibility support between Core Text and clients needing to support QuickDraw-style font references. QuickDraw is a deprecated technology in OS X v10.4 and later.

6.4.21 CreateWithSymbolicTraits(size as Double, Matrix as CGAffineTransformMBS, symTraitValue as Integer, symTraitMask as Integer) as CTFontMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a new font in the same font family as the original with the specified symbolic traits.

Example:

```
dim helveticaBold as CTFontMBS = CTFontMBS.CreateWithName("Helvetica-Bold", 12)
MsgBox helveticaBold.FullName
```

```
// now create similar fonts with
```

```
dim Trait as Integer = CoreTextMBS.kCTFontTraitItalic
dim TraitMask as Integer = CoreTextMBS.kCTFontTraitItalic+CoreTextMBS.kCTFontTraitBold
```

```
dim helveticaItalic as CTFontMBS = helveticaBold.CreateWithSymbolicTraits(12, nil, Trait, TraitMask)
MsgBox helveticaItalic.FullName
```

Notes:

size: The point size for the font reference. If 0.0 is specified, the original fonts size is preserved.

matrix: The transformation matrix for the font. In most cases, set this parameter to be nil. If nil is specified, the original font's matrix is preserved.

symTraitValue: The value of the symbolic traits.

symTraitMask: The mask bits of the symbolic traits.

Returns a new font reference in the same family with the given symbolic traits. or nil if none is found in the system.

Available in OS X v10.5 and later.

6.4.22 `DefaultCascadeListForLanguages(languagePrefList() as string) as String()`

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Return an ordered list of `CTFontDescriptorMBS`'s for font fallback derived from the system default fallback region according to the given language preferences.

Notes:

The style of the given is also matched as well as the weight and width of the font is not one of the system UI font, otherwise the UI font fallback is applied.

`languagePrefList`: The language preference list - ordered array of `CFStringRef`'s of ISO language codes.

The ordered list of fallback fonts - ordered array of `CTFontDescriptors`.

6.4.23 `Draw(glyphs() as Integer, positions() as CGPointMBS, context as CGContextMBS)`

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Renders the given glyphs of a font at the specified positions in the supplied graphics context.

Notes:

`font`: The font with glyphs to render. If the font has a size or matrix attribute, context is set with these values.

`glyphs`: The glyphs to be rendered. The glyphs should be the result of proper Unicode text layout operations (such as with `CTLine`). Functions such as `CTFontMBS.GetGlyphsForCharacters` do not perform any Unicode text layout.

`positions`: The positions (origins) for each glyph in `glyphs`. The positions are in user space. The number of positions passed in must match the number of glyphs (in `glyphs`).

`context`: The graphics context used to render the glyphs.

This function modifies graphics state including font, text size, and text matrix if these attributes are specified in font. These attributes are not restored.

Available in OS X v10.7 and later.

6.4.24 Features as Dictionary()

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array of font features.

Notes: Returns an array of font feature dictionaries for the font reference.

6.4.25 FeatureSettings as Dictionary()

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array of font feature-setting tuples.

Notes:

Returns a normalized array of font feature-setting dictionaries. The array contains only the non-default settings that should be applied to the font, or nil if the default settings should be used.

A feature-setting dictionary is a tuple of a `kCTFontFeatureTypeIdentifierKey` key-value pair and a `kCTFontFeatureSelectorIdentifierKey` key-value pair. Each setting dictionary indicates which setting is enabled. It is the caller's responsibility to handle exclusive and nonexclusive settings as necessary.

The feature settings are verified against those that the font supports and any that do not apply are removed. Further, feature settings that represent a default setting for the font are also removed.

6.4.26 GlyphsForCharacters(characters() as Integer) as Integer()

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Provides basic Unicode encoding for the given font, returning by reference an array of `CGGlyph` values corresponding to a given array of Unicode characters for the given font.

Notes: If a glyph could not be encoded, a value of 0 is passed back at the corresponding index in the glyphs array and the function returns `False`. It is the responsibility of the caller to handle the Unicode properties of the input characters.

6.4.27 GlyphWithName(name as string) as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the `CGGlyph` value for the specified glyph name in the given font.

Notes:

Name: The glyph name as a `CFString` object.

Returns the glyph value for the named glyph as a `CGGlyph` object, or if the glyph name is not recognized, the `.notdef` glyph index value.

The returned CGGlyph object can be used with any of the subsequent glyph data accessors or directly with Core Graphics.

6.4.28 GraphicsFont(byref fontAttributes as CTFontDescriptorMBS) as CGFontMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a Core Graphics font reference and attributes.

Notes:

attributes: On output, points to a font descriptor containing additional attributes from the font.

Returns a CGFontMBS object for the given font reference.

6.4.29 kCTBaselineClassHanging as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Key to reference the Hanging baseline class.

Notes: This key can be used with a baseline info dictionary to offset to the Hanging baseline as a float. It can also be used as the value for kCTBaselineClassAttributeName.

6.4.30 kCTBaselineClassIdeographicCentered as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Key to reference the Ideographic Centered baseline class.

Notes: This key can be used with a baseline info dictionary to offset to the Ideographic Centered baseline as a float. It can also be used as the value for kCTBaselineClassAttributeName.

6.4.31 kCTBaselineClassIdeographicHigh as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Key to reference the Ideographic High baseline class.

Notes: This key can be used with a baseline info dictionary to offset to the Ideographic High baseline as a float. It can also be used as the value for kCTBaselineClassAttributeName.

6.4.32 kCTBaselineClassIdeographicLow as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Key to reference the Ideographic Low baseline class.

Notes: This key can be used with a baseline info dictionary to offset to the Ideographic Low baseline as a float. It can also be used as the value for kCTBaselineClassAttributeName.

6.4.33 kCTBaselineClassMath as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Key to reference the Math baseline class.

Notes: This key can be used with a baseline info dictionary to offset to the Math baseline as a float. It can also be used as the value for kCTBaselineClassAttributeName.

6.4.34 kCTBaselineClassRoman as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Key to reference the Roman baseline class.

Notes: This key can be used with a baseline info dictionary to offset to the Roman baseline as a float. It can also be used as the value for kCTBaselineClassAttributeName.

6.4.35 kCTBaselineOriginalFont as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Use the original font for setting the reference baseline.

Notes: This constant can be used as the value for kCTBaselineReferenceFont to specify that the original font should be used for the reference baseline.

6.4.36 kCTBaselineReferenceFont as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Key to reference a font for the reference baseline.

Notes: This key can be used to specify a font for the reference baseline. The value is a CTFontMBS or the kCTBaselineOriginalFont constant.

6.4.37 `kCTFontCopyrightNameKey` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the name specifier constants provide access to the different names associated with a font.

Notes: The name specifier for the copyright name.

6.4.38 `kCTFontDescriptionNameKey` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the name specifier constants provide access to the different names associated with a font.

Notes: The name specifier for the description name.

6.4.39 `kCTFontDesignerNameKey` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the name specifier constants provide access to the different names associated with a font.

Notes: The name specifier for the designer name.

6.4.40 `kCTFontDesignerURLNameKey` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the name specifier constants provide access to the different names associated with a font.

Notes: The name specifier for the vendor URL name.

6.4.41 `kCTFontFamilyNameKey` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the name specifier constants provide access to the different names associated with a font.

Notes: The name specifier for the family name.

6.4.42 `kCTFontFeatureSelectorDefaultKey` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys to font feature dictionary values.

Notes: Key to be used with a selector dictionary to get the default indicator for the selector. This value is a boolean, which if present and true, indicates that this selector is the default setting for the current feature type.

6.4.43 kCTFontFeatureSelectorIdentifierKey as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys to font feature dictionary values.

Notes: Key to be used with a selector dictionary corresponding to a feature type to obtain the selector identifier value as a number.

6.4.44 kCTFontFeatureSelectorNameKey as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys to font feature dictionary values.

Notes: Key to be used with a selector dictionary to get the localized name string for the selector as a string.

6.4.45 kCTFontFeatureSelectorSettingKey as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys to font feature dictionary values.

Notes: Key to be used with a selector dictionary to get or specify the current setting for the selector. This value is a Boolean to indicate whether this selector is on or off. If this key is not present, the default setting is used.

6.4.46 kCTFontFeatureTypeExclusiveKey as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys to font feature dictionary values.

Notes: Key to get the font feature exclusive setting of the feature as a Boolean. The value associated with this key indicates whether the feature selectors associated with this type should be mutually exclusive.

6.4.47 kCTFontFeatureTypeIdentifierKey as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys to font feature dictionary values.

Notes: Key to get the font feature type value as a number.

6.4.48 kCTFontFeatureTypeNameKey as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys to font feature dictionary values.

Notes: Key to get the localized font feature type name as a string.

6.4.49 `kCTFontFeatureTypeSelectorsKey` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys to font feature dictionary values.

Notes: Key to get the the array of font feature selectors as an array. This is an array of selector dictionaries that contain the values for the font feature selector keys listed in this group.

6.4.50 `kCTFontFullNameKey` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the name specifier constants provide access to the different names associated with a font.

Notes: The name specifier for the full name.

6.4.51 `kCTFontLicenseNameKey` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the name specifier constants provide access to the different names associated with a font.

Notes: The name specifier for the license name.

6.4.52 `kCTFontLicenseURLNameKey` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the name specifier constants provide access to the different names associated with a font.

Notes: The name specifier for the license URL name.

6.4.53 `kCTFontManufacturerNameKey` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the name specifier constants provide access to the different names associated with a font.

Notes: The name specifier for the manufacturer name.

6.4.54 kCTFontPostScriptCIDNameKey as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the name specifier constants provide access to the different names associated with a font.

Notes: The name specifier for the PostScript character identifier (CID) font name.

6.4.55 kCTFontPostScriptNameKey as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the name specifier constants provide access to the different names associated with a font.

Notes: The name specifier for the PostScript name.

6.4.56 kCTFontSampleTextNameKey as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the name specifier constants provide access to the different names associated with a font.

Notes: The name specifier for the sample text name string.

6.4.57 kCTFontStyleNameKey as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the name specifier constants provide access to the different names associated with a font.

Notes: The name specifier for the style name.

6.4.58 kCTFontSubFamilyNameKey as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the name specifier constants provide access to the different names associated with a font.

Notes: The name specifier for the subfamily name.

6.4.59 kCTFontTrademarkNameKey as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the name specifier constants provide access to the different names associated with a font.

Notes: The name specifier for the trademark name.

6.4.60 `kCTFontUniqueNameKey` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the name specifier constants provide access to the different names associated with a font.

Notes: The name specifier for the unique name.

6.4.61 `kCTFontVariationAxisDefaultValueKey` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys to font variation axis dictionary.

Notes: Key to get the variation axis default value as a number.

6.4.62 `kCTFontVariationAxisIdentifierKey` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys to font variation axis dictionary.

Notes: Key to get the variation axis identifier value as a number.

6.4.63 `kCTFontVariationAxisMaximumValueKey` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys to font variation axis dictionary.

Notes: Key to get the variation axis maximum value as a number.

6.4.64 `kCTFontVariationAxisMinimumValueKey` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys to font variation axis dictionary.

Notes: Key to get the variation axis minimum value as a number.

6.4.65 `kCTFontVariationAxisNameKey` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the keys to font variation axis dictionary.

Notes: Key to get the localized variation axis name string.

6.4.66 kCTFontVendorURLNameKey as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the name specifier constants provide access to the different names associated with a font.

Notes: The name specifier for the vendor URL name.

6.4.67 kCTFontVersionNameKey as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the name specifier constants provide access to the different names associated with a font.

Notes: The name specifier for the version name.

6.4.68 LigatureCaretPositions(glyph as Integer) as Double()

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns caret positions within a glyph.

Notes:

glyph: A reference to the glyph.

This function is used to obtain caret positions for a specific glyph. The return value is the maximum number of positions possible, and the function will populate the caller's positions buffer with available positions if possible. This function might not be able to produce positions if the font does not have the appropriate data, in which case it will return 0.

6.4.69 Name(nameKey as string) as String

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a reference to the requested name of the given font.

Example:

```
dim c as CTFontMBS = CTFontMBS.CreateWithName("Times", 12)
MsgBox c.name(CTFontMBS.kCTFontFullNameKey)
```

Notes:

nameKey: The name specifier. See Name Specifier Constants for possible values.

Returns The requested name for the font, or "" if the font does not have an entry for the requested name. The Unicode version of the name is preferred, otherwise the first available version is returned.

See also:

- 6.4.70 Name(nameKey as string, byref language as string) as String 1654

6.4.70 Name(nameKey as string, byref language as string) as String

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a reference to a localized name for the given font.

Example:

```
dim c as CTFontMBS = CTFontMBS.CreateWithName("Times", 12)
dim lang as string
MsgBox c.name(CTFontMBS.kCTFontFullNameKey, lang)+EndOfLine+lang
// shows name and "en" as language.
```

Notes:

nameKey: The name specifier. See Name Specifier Constants for possible values.

language: On output, points to the language string of the returned name string. The format of the language identifier conforms to the RFC 3066bis standard.

Returns a specific localized name from the font reference or "" if the font does not have an entry for the requested name key.

The name is localized based on the user's global language preference precedence. That is, the users language preference is a list of languages in order of precedence. So, for example, if the list had Japanese and English, in that order, then a font that did not have Japanese name strings but had English strings would return the English strings.

Available in OS X v10.5 and later.

See also:

- 6.4.69 Name(nameKey as string) as String 1653

6.4.71 OpticalBoundsForGlyphs(glyphs() as Integer, boundingRects() as CGRectMBS, options as Integer = 0) as CGRectMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Calculates the optical bounding rects for an array of glyphs and returns the overall optical bounding rect for the run.

Notes:

Fonts may specify the optical edges of glyphs that can be used to make the edges of lines of text line up in a more visually pleasing way. This function returns bounding rects corresponding to this information if

present in a font, otherwise it returns typographic bounding rects (composed of the font's ascent and descent and a glyph's advance width).

font: The font reference.

glyphs: An array of count number of glyphs.

boundingRects: An array of count number of CGRects to receive the computed glyph rects. Can be nil, in which case only the overall bounding rect is calculated.

options: Reserved, set to zero.

This function returns the overall bounding rectangle for an array or run of glyphs. The bounding rects of the individual glyphs are returned through the boundingRects parameter. These are the design metrics from the font transformed in font space.

See also:

- 6.4.72 OpticalBoundsForGlyphs(glyphs() as Integer, options as Integer = 0) as CGRectMBS 1655

6.4.72 OpticalBoundsForGlyphs(glyphs() as Integer, options as Integer = 0) as CGRectMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Calculates the optical bounding rects for an array of glyphs and returns the overall optical bounding rect for the run.

Notes:

Fonts may specify the optical edges of glyphs that can be used to make the edges of lines of text line up in a more visually pleasing way. This function returns bounding rects corresponding to this information if present in a font, otherwise it returns typographic bounding rects (composed of the font's ascent and descent and a glyph's advance width).

font: The font reference.

glyphs: An array of count number of glyphs.

boundingRects: An array of count number of CGRects to receive the computed glyph rects. Can be nil, in which case only the overall bounding rect is calculated.

options: Reserved, set to zero.

This function returns the overall bounding rectangle for an array or run of glyphs. The bounding rects of the individual glyphs are returned through the boundingRects parameter. These are the design metrics from the font transformed in font space.

See also:

- 6.4.71 OpticalBoundsForGlyphs(glyphs() as Integer, boundingRects() as CGRectMBS, options as Integer = 0) as CGRectMBS 1654

6.4.73 PlatformFont(byref fontAttributes as CTFontDescriptorMBS) as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns an ATS font reference and attributes.

6.4.74 SupportedLanguages as String()

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array of languages supported by the font.

Example:

```
dim c as CTFontMBS = CTFontMBS.CreateWithName("Times", 12)
MsgBox Join(c.SupportedLanguages,EndOfLine)
```

6.4.75 Table(table as string, options as Integer) as Memoryblock

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a reference to the font table data.

Notes:

table: The font table identifier as a Font Table Tag Constants constant. See Font Table Tag Constants for possible values.

options: The font table options.

Returns a retained reference to the font table data as a Memoryblock.

6.4.76 VariationAxes as Dictionary()

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array of variation axes.

Notes: An array of variation axes dictionaries. Each variation axis dictionary contains the five variation axis keys listed in Font Variation Axis Dictionary Keys.

6.4.77 VerticalTranslationsForGlyphs(glyphs() as Integer) as CGSizeMBS()

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Calculates the offset from the default (horizontal) origin to the vertical origin for an array of glyphs.

Notes:

glyphs: An array of count number of glyphs.

Returns the computed origin offsets in an array of count number of CGSizeMBS objects.

6.4.78 Properties

6.4.79 Ascent as Double

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the scaled font-ascent metric of the given font.

Notes:

The font-ascent metric scaled according to the point size and matrix of the font reference.
(Read only property)

6.4.80 BoundingBox as CGRectMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the scaled bounding box of the given font.

Notes:

The design bounding box of the font, which is the rectangle defined by xMin, yMin, xMax, and yMax values for the font. Returns CGRectNull on error.
(Read only property)

6.4.81 CapHeight as Double

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the cap-height metric of the given font.

Notes:

The font cap-height metric scaled according to the point size and matrix of the font reference.
(Read only property)

6.4.82 CharacterSet as Variant

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the Unicode character set of the font.

Notes:

Value is a CFCharacterSetMBS object.

The returned character set covers the nominal referenced by the font's Unicode 'cmap table.

(Read only property)

6.4.83 Descent as Double

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the scaled font-descent metric of the given font.

Notes:

The font-descent metric scaled according to the point size and matrix of the font reference.

(Read only property)

6.4.84 DisplayName as String

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the display name of the given font.

Example:

```
dim c as CTFontMBS = CTFontMBS.CreateWithName("Times", 12)
MsgBox c.DisplayName
```

Notes: (Read only property)

6.4.85 FamilyName as String

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the family name of the given font.

Example:

```
dim c as CTFontMBS = CTFontMBS.CreateWithName("Times", 12)
MsgBox c.FamilyName
```

Notes: (Read only property)

6.4.86 File as FolderItem

Plugin Version: 15.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The font file.

Example:

```
dim f as CTFontMBS = CTFontMBS.CreateWithName("Times")
MsgBox f.file.NativePath
```

Notes: (Read only property)

6.4.87 FontDescriptor as CTFontDescriptorMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the normalized font descriptor for the given font reference.

Notes:

A normalized font descriptor for a font containing enough information to recreate this font at a later time.
(Read only property)

6.4.88 FullName as String

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the full name of the given font.

Example:

```
dim c as CTFontMBS = CTFontMBS.CreateWithName("Times", 12)
MsgBox c.FullName
```

Notes: (Read only property)

6.4.89 GlyphCount as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the number of glyphs of the given font.

Notes: (Read only property)

6.4.90 Leading as Double

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the scaled font-leading metric of the given font.

Notes:

The font-leading metric scaled according to the point size and matrix of the font reference.
(Read only property)

6.4.91 Matrix as CGAffineTransformMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the transformation matrix of the given font.

Notes:

The transformation matrix for the given font reference. This is the matrix that was provided when the font was created.

(Read only property)

6.4.92 PostScriptName as String

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the PostScript name of the given font.

Example:

```
dim c as CTFontMBS = CTFontMBS.CreateWithName("Times", 12)
MsgBox c.PostScriptName
```

Notes: (Read only property)

6.4.93 Size as Double

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the point size of the given font.

Notes:

This is the point size provided when the font was created.

(Read only property)

6.4.94 SlantAngle as Double

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the slant angle of the given font.

Notes:

The transformed slant angle of the font. This is equivalent to the italic or caret angle with any skew from the transformation matrix applied.

(Read only property)

6.4.95 StringEncoding as UInt32

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the best string encoding for legacy format support.

Notes:

The best string encoding for the font.

(Read only property)

6.4.96 SymbolicTraits as UInt32

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the symbolic traits of the given font.

Notes:

The symbolic traits of the font. This is equivalent to the `kCTFontSymbolicTrait` value of the traits dictionary.

(Read only property)

6.4.97 Traits as Dictionary

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the traits dictionary of the given font.

Notes:

A retained reference to the font traits dictionary. Individual traits can be accessed with the trait key constants.

(Read only property)

6.4.98 UnderlinePosition as Double

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the scaled underline position of the given font.

Notes:

The font underline-position metric scaled according to the point size and matrix of the font reference.

(Read only property)

6.4.99 UnderlineThickness as Double

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the scaled underline-thickness metric of the given font.

Notes:

The font underline-thickness metric scaled according to the point size and matrix of the font reference.
(Read only property)

6.4.100 UnitsPerEm as UInt64

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the units-per-em metric of the given font.

Notes: (Read only property)

6.4.101 URL as String

Plugin Version: 15.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The font URL.

Example:

```
dim f as CTFontMBS = CTFontMBS.CreateWithName("Times")
MsgBox f.URL
```

Notes: (Read only property)

6.4.102 Variation as Dictionary

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns a variation dictionary from the font reference.

Notes:

The keys for each variation correspond to the variation identifier obtained via `kCTFontVariationAxisIdentifierKey`, which represents the four-character axis code as a number.
(Read only property)

6.4.103 XHeight as Double

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the x-height metric of the given font.

Notes:

The font x-height metric scaled according to the point size and matrix of the font reference.
(Read only property)

6.4.104 Constants

6.4.105 `kCTFontOptionsDefault = 0`

Plugin Version: 14.2. **Function:** One of the Font Option Constants.
Notes:

Default options are used.
Available in OS X v10.6 and later.

6.4.106 `kCTFontOptionsPreferSystemFont = 4`

Plugin Version: 14.2. **Function:** One of the Font Option Constants.
Notes:

Font matching prefers to match Apple system fonts.
Available in OS X v10.6 and later.

6.4.107 `kCTFontOptionsPreventAutoActivation = 1`

Plugin Version: 14.2. **Function:** One of the Font Option Constants.
Notes:

Prevents automatic font activation.
Available in OS X v10.6 and later.

6.4.108 `kCTFontTableAcnt = "acnt"`

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for accent attachment.

6.4.109 `kCTFontTableAnkr = "ankr"`

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Anchor points

6.4.110 kCTFontTableAvar = "avar"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for axis variation.

6.4.111 kCTFontTableBASE = "BASE"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for the font baseline.

6.4.112 kCTFontTableBdat = "bdat"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for bitmap data.

6.4.113 kCTFontTableBhed = "bhed"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for bitmap font header.

6.4.114 kCTFontTableBloc = "bloc"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for bitmap location.

6.4.115 kCTFontTableBsln = "bsln"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for baseline.

6.4.116 kCTFontTableCFF = "CFF "

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for a PostScript font program.

6.4.117 kCTFontTableCmap = "cmap"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for character-to-glyph mapping.

6.4.118 kCTFontTableCvar = "cvar"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for control value variation, or CVT variation.

6.4.119 kCTFontTableCvt = "cvt "

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for control value table.

6.4.120 kCTFontTableDSIG = "DSIG"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for a digital signature.

6.4.121 kCTFontTableEBDT = "EBDT"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for an embedded bitmap.

6.4.122 kCTFontTableEBLC = "EBLC"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for the embedded bitmap location.

6.4.123 kCTFontTableEBSC = "EBSC"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for embedded bitmap scaling.

6.4.124 kCTFontTableFdsc = "fdsc"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for font descriptor.

6.4.125 kCTFontTableFeat = "feat"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for layout feature.

6.4.126 kCTFontTableFmtx = "fmtx"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for font metrics.

6.4.127 kCTFontTableFpgm = "fpgm"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for font program.

6.4.128 kCTFontTableFvar = "fvar"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for font variation.

6.4.129 kCTFontTableGasp = "gasp"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for grid-fitting/scan-conversion.

6.4.130 kCTFontTableGDEF = "GDEF"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for glyph definition.

6.4.131 kCTFontTableGlyf = "glyf"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for glyph data.

6.4.132 kCTFontTableGPOS = "GPOS"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for glyph positioning.

6.4.133 kCTFontTableGSUB = "GSUB"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for glyph substitution.

6.4.134 kCTFontTableGvar = "gvar"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for glyph variation.

6.4.135 kCTFontTableHdmx = "hdmx"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for horizontal device metrics.

6.4.136 kCTFontTableHead = "head"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for font header.

6.4.137 kCTFontTableHhea = "hhea"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for horizontal header.

6.4.138 kCTFontTableHmtx = "hmtx"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for horizontal metrics.

6.4.139 kCTFontTableHsty = "hsty"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for horizontal style.

6.4.140 kCTFontTableJSTF = "JSTF"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for justification.

6.4.141 kCTFontTableJust = "just"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for justification.

6.4.142 kCTFontTableKern = "kern"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for kerning.

6.4.143 kCTFontTableKerx = "kerx"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for extended kerning.

6.4.144 kCTFontTableLcar = "lcar"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for ligature caret.

6.4.145 `kCTFontTableLoca = "loca"`

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for index to location.

6.4.146 `kCTFontTableLtag = "ltag"`

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Language tags

6.4.147 `kCTFontTableLTSH = "LTSH"`

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for linear threshold.

6.4.148 `kCTFontTableMaxp = "maxp"`

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for maximum profile.

6.4.149 `kCTFontTableMort = "mort"`

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for morph.

6.4.150 `kCTFontTableMorx = "morx"`

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for extended morph.

6.4.151 `kCTFontTableName = "name"`

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for naming table.

6.4.152 kCTFontTableOpbd = "opbd"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for optical bounds.

6.4.153 kCTFontTableOptionExcludeSynthetic = 1

Plugin Version: 14.2. **Function:** One of the Font Table Option Constants.
Notes:

The font table excludes synthetic font data.
Available in OS X v10.5 and later.
Deprecated in OS X v10.8.

6.4.154 kCTFontTableOptionNoOptions = 0

Plugin Version: 14.2. **Function:** One of the Font Table Option Constants.
Notes: No font table options are specified.

6.4.155 kCTFontTableOS2 = "OS/2"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for OS/2 and Windows-specific metrics.

6.4.156 kCTFontTablePCLT = "PCLT"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for PCL 5 data.

6.4.157 kCTFontTablePost = "post"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for PostScript information.

6.4.158 `kCTFontTablePrep` = "prep"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for control value program, 'prep' table.

6.4.159 `kCTFontTableProp` = "prop"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for properties.

6.4.160 `kCTFontTableSbit` = "sbit"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes:

Font table tag for bitmap data.
Available in OS X v10.7 and later.

6.4.161 `kCTFontTableSbix` = "sbix"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes:

Font table tag for extended bitmap data.
Available in OS X v10.7 and later.

6.4.162 `kCTFontTableTrak` = "trak"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for tracking.

6.4.163 `kCTFontTableVDMX` = "VDMX"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for vertical device metrics.

6.4.164 kCTFontTableVhea = "vhea"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for vertical header.

6.4.165 kCTFontTableVmtx = "vmtx"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for vertical metrics.

6.4.166 kCTFontTableVORG = "VORG"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for vertical origin.

6.4.167 kCTFontTableZapf = "Zapf"

Plugin Version: 14.2. **Function:** One of the font table tag constants.
Notes: Font table tag for glyph reference.

6.4.168 kCTFontUIFontAlertHeader = 18

Plugin Version: 14.2. **Function:** One of the User Interface Type Constants
Notes: The font used for alert headers.

6.4.169 kCTFontUIFontApplication = 9

Plugin Version: 14.2. **Function:** One of the User Interface Type Constants
Notes: The default font for text documents.

6.4.170 kCTFontUIFontControlContent = 26

Plugin Version: 14.2. **Function:** One of the User Interface Type Constants
Notes: The font used for contents of user-interface controls.

6.4.171 kCTFontUIFontEmphasizedSystem = 3

Plugin Version: 14.2. **Function:** One of the User Interface Type Constants

Notes: The system font used for emphasis in alerts.

6.4.172 kCTFontUIFontEmphasizedSystemDetail = 20

Plugin Version: 14.2. **Function:** One of the User Interface Type Constants

Notes: The system font used for emphasis in details.

6.4.173 kCTFontUIFontLabel = 10

Plugin Version: 14.2. **Function:** One of the User Interface Type Constants

Notes: The font used for labels and tick marks on full-size sliders.

6.4.174 kCTFontUIFontMenuItem = 12

Plugin Version: 14.2. **Function:** One of the User Interface Type Constants

Notes: The font used for menu items.

6.4.175 kCTFontUIFontMenuItemCmdKey = 14

Plugin Version: 14.2. **Function:** One of the User Interface Type Constants

Notes: The font used for menu-item command-key equivalents.

6.4.176 kCTFontUIFontMenuItemMark = 13

Plugin Version: 14.2. **Function:** One of the User Interface Type Constants

Notes: The font used to draw menu item marks.

6.4.177 kCTFontUIFontMenuItemTitle = 11

Plugin Version: 14.2. **Function:** One of the User Interface Type Constants

Notes: The font used for menu titles.

6.4.178 kCTFontUIFontMessage = 23

Plugin Version: 14.2. **Function:** One of the User Interface Type Constants

Notes: The font used for standard interface items, such as button labels, menu items, and so on.

6.4.179 kCTFontUIFontMiniEmphasizedSystem = 7

Plugin Version: 14.2. **Function:** One of the User Interface Type Constants

Notes: The small system font used for emphasis.

6.4.180 kCTFontUIFontMiniSystem = 6

Plugin Version: 14.2. **Function:** One of the User Interface Type Constants

Notes: The standard small system font used for informative text in alerts, column headings in lists, help tags, and small controls.

6.4.181 kCTFontUIFontNone = -1

Plugin Version: 14.2. **Function:** One of the User Interface Type Constants

Notes: The user-interface font type is not specified.

6.4.182 kCTFontUIFontPalette = 24

Plugin Version: 14.2. **Function:** One of the User Interface Type Constants

Notes: The font used in tool palettes.

6.4.183 kCTFontUIFontPushButton = 16

Plugin Version: 14.2. **Function:** One of the User Interface Type Constants

Notes: The font used for a push button (a rounded rectangular button with a text label on it).

6.4.184 kCTFontUIFontSmallEmphasizedSystem = 5

Plugin Version: 14.2. **Function:** One of the User Interface Type Constants

Notes: The system font used for emphasis in alerts.

6.4.185 kCTFontUIFontSmallSystem = 4

Plugin Version: 14.2. **Function:** One of the User Interface Type Constants

Notes: The standard small system font used for informative text in alerts, column headings in lists, help tags, and small controls.

6.4.186 kCTFontUIFontSmallToolbar = 22

Plugin Version: 14.2. **Function:** One of the User Interface Type Constants

Notes: The small font used for labels of toolbar items.

6.4.187 kCTFontUIFontSystem = 2

Plugin Version: 14.2. **Function:** One of the User Interface Type Constants

Notes: The system font used for standard user-interface items such as button labels, menu items, and so on.

6.4.188 kCTFontUIFontSystemDetail = 19

Plugin Version: 14.2. **Function:** One of the User Interface Type Constants

Notes: The standard system font used for details.

6.4.189 kCTFontUIFontToolbar = 21

Plugin Version: 14.2. **Function:** One of the User Interface Type Constants

Notes: The font used for labels of toolbar items.

6.4.190 kCTFontUIFontToolTip = 25

Plugin Version: 14.2. **Function:** One of the User Interface Type Constants

Notes: The font used for tool tips.

6.4.191 kCTFontUIFontUser = 0

Plugin Version: 14.2. **Function:** One of the User Interface Type Constants

Notes: The font used by default for documents and other text under the users control (that is, text whose

font the user can normally change).

6.4.192 kCTFontUIFontUserFixedPitch = 1

Plugin Version: 14.2. **Function:** One of the User Interface Type Constants

Notes:

The font used by default for documents and other text under the users control when that font is fixed-pitch. Available in OS X v10.5 and later.

6.4.193 kCTFontUIFontUtilityWindowTitle = 17

Plugin Version: 14.2. **Function:** One of the User Interface Type Constants

Notes: The font used for utility window titles.

6.4.194 kCTFontUIFontViews = 8

Plugin Version: 14.2. **Function:** One of the User Interface Type Constants

Notes: The view font used as the default font of text in lists and tables.

6.4.195 kCTFontUIFontWindowTitle = 15

Plugin Version: 14.2. **Function:** One of the User Interface Type Constants

Notes: The font used for utility window titles.

6.5 class CTFrameMBS

6.5.1 class CTFrameMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The CTFrame opaque type represents a frame containing multiple lines of text.

Example:

```
dim longText as string = "Lorem ipsum dolor sit amet..."

dim ct as new CFStringMBS(longText)
dim s as new CFAttributedStringMBS(ct, nil)

// layout master
dim framesetter as CTFramesetterMBS = CTFramesetterMBS.CreateWithAttributedString(s)

// a column
dim ColumnPath as new CGMutablePathMBS
dim Rect as new CGRectMBS(0, 0, g.Width, g.Height)
ColumnPath.AddRect nil, Rect

// context
dim CGContextHandle as Integer = g.Handle(g.HandleTypeCGContextRef)
dim CGContext as CGContextMBS = CGContextMBS.contextWithCGContext(CGContextHandle)

CGContext.SaveGState
// reset text matrix
dim a as CGAffineTransformMBS = CGAffineTransformMBS.Identity
CGContext.TextMatrix = a

dim Frame as CTFrameMBS = framesetter.CreateFrame(0, 0, ColumnPath, nil)

// draw
Frame.Draw(CGContext)

// cleanup
CGContext.RestoreGState
CGContext.Flush
```

Notes:

The frame object is the output resulting from the text-framing process performed by a framesetter object.

You can draw the entire text frame directly into the current graphic context. The frame object contains an array of line objects that can be retrieved for individual rendering or to get glyph information. Subclass of the CFObjctMBS class.

This is an abstract class. You can't create an instance, but you can get one from various plugin functions.

6.5.2 Methods

6.5.3 Available as boolean

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Whether this class is available.

Notes: Returns true in OS X v10.5 and later.

6.5.4 Constructor

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The private constructor.

6.5.5 Draw(context as CGContextMBS)

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Draws an entire frame into a context.

Notes:

context: The context in which to draw the frame.

If both the frame and the context are valid, the frame is drawn in the context. This call can leave the context in any state and does not flush it after the draw operation.

6.5.6 kCTFrameClippingPathsAttributeName as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the attributes keys.

Notes:

Specifies array of paths to clip frame.

The value must be a array containing dictionaries. Each dictionary should have a kCTFramePathClippingPathAttributeName key-value pair, and can have a kCTFramePathFillRuleAttributeName key-value pair and kCTFramePathFillRuleAttributeName key-value pair as optional parameters.

Available in OS X v10.7 and later.

6.5.7 kCTFramePathClippingPathAttributeName as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the attributes keys.

Notes:

Specifies clipping path. This attribute is valid only in a dictionary contained in an array specified by kCTFrameClippingPathsAttributeName.

The value must be a CGPathMBS specifying a clipping path. See kCTFrameClippingPathsAttributeName. Available in OS X v10.7 and later.

6.5.8 kCTFramePathFillRuleAttributeName as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The key used to specify the fill rule for a frame.

Notes:

The value must be a CFNumberRef object containing a CTFramePathFillRule constant. See CTFramePathFillRule Constants for more information. The default value is kCTFramePathFillEvenOdd. Available in OS X v10.7 and later.

6.5.9 kCTFramePathWidthAttributeName as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the attributes keys.

Notes:

The key used to specify the frame width.

The value must be a number containing a value specifying the frame width. The default width value is zero. Available in OS X v10.7 and later.

6.5.10 kCTFrameProgressionAttributeName as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the attributes keys.

Notes:

Specifies progression for a frame.

A number containing a CTFrameProgression constant. The default is kCTFrameProgressionTopToBottom. Available in OS X v10.5 and later.

This value determines the line-stacking behavior for a frame and does not affect the appearance of the glyphs within that frame.

6.5.11 LineOrigins(location as Integer, length as Integer) as CGPointMBS()

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Copies a range of line origins for a frame.

Notes:

location and length: The range of line origins you wish to copy. If the length of the range is 0, then the copy operation continues from the start index of the range to the last line origin.

Returns array with CGPoints. Empty array in case of errors.

Special Considerations

In versions of OS X prior to 10.7 and versions of iOS prior to 4.2, this function may function unpredictably if the frame is not rectangular.

6.5.12 Lines as CTLineMBS()

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns an array of lines stored in the frame.

6.5.13 Properties

6.5.14 FrameAttributes as Dictionary

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the frame attributes used to create the frame.

Notes:

Returns a reference to a NSDictionary object containing the frame attributes that were used to create the frame, or, if the frame was created without any frame attributes, nil.

You can create a frame with an attributes dictionary to control various aspects of the framing process. These attributes are different from the ones used to create an attributed string.

(Read only property)

6.5.15 Path as CGPathMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the path used to create the frame.

Notes: (Read only property)

6.5.16 StringRangeLength as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the range of characters originally requested to fill the frame.

Notes: (Read only property)

6.5.17 StringRangeLocation as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the range of characters originally requested to fill the frame.

Notes: (Read only property)

6.5.18 VisibleStringRangeLength as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the range of characters that actually fit in the frame.

Notes:

This function can be used to cascade frames, because it returns the range of characters that can be seen in the frame. The next frame would start where this frame ends.

(Read only property)

6.5.19 VisibleStringRangeLocation as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the range of characters that actually fit in the frame.

Notes:

This function can be used to cascade frames, because it returns the range of characters that can be seen in the frame. The next frame would start where this frame ends.

(Read only property)

6.5.20 Constants

6.5.21 kCTFramePathFillEvenOdd = 0

Plugin Version: 14.2. **Function:** One of the constants to specify the fill rule used by a frame.

Notes:

Text is filled in the area that would be painted if the path were given to `CGContextMBS.EOFillPath`. Available in OS X v10.7 and later.

6.5.22 kCTFramePathFillWindingNumber = 1

Plugin Version: 14.2. **Function:** One of the constants to specify the fill rule used by a frame.

Notes:

Text is fill in the area that would be painted if the path were given to `CGContextMBS.FillPath`. Available in OS X v10.7 and later.

6.5.23 kCTFrameProgressionLeftToRight = 2

Plugin Version: 14.2. **Function:** One of the constants to specify frame progression types.

Notes:

Lines are stacked left to right for vertical text.

The lines of text within a frame may be stacked for either horizontal or vertical text. Values are enumerated for each stacking type supported by `CTFrame`. Frames created with a progression type specifying vertical text rotate lines 90 degrees counterclockwise when drawing.

6.5.24 kCTFrameProgressionRightToLeft = 1

Plugin Version: 14.2. **Function:** One of the constants to specify frame progression types.

Notes:

Lines are stacked right to left for vertical text.

The lines of text within a frame may be stacked for either horizontal or vertical text. Values are enumerated for each stacking type supported by `CTFrame`. Frames created with a progression type specifying vertical text rotate lines 90 degrees counterclockwise when drawing.

6.5.25 `kCTFrameProgressionTopToBottom = 0`

Plugin Version: 14.2. **Function:** One of the constants to specify frame progression types.

Notes:

Lines are stacked top to bottom for horizontal text.

The lines of text within a frame may be stacked for either horizontal or vertical text. Values are enumerated for each stacking type supported by `CTFrame`. Frames created with a progression type specifying vertical text rotate lines 90 degrees counterclockwise when drawing.

6.6 class CTFramesetterMBS

6.6.1 class CTFramesetterMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The CTFramesetter opaque type is used to generate text frames. That is, CTFramesetter is an object factory for CTFrame objects.

Notes:

The framesetter takes an attributed string object and a shape descriptor object and calls into the typesetter to create line objects that fill that shape. The output is a frame object containing an array of lines. The frame can then draw itself directly into the current graphic context.

Subclass of the CXObjectMBS class.

This is an abstract class. You can't create an instance, but you can get one from various plugin functions.

6.6.2 Methods

6.6.3 Available as boolean

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Whether this class is available.

Notes: Returns true in OS X v10.5 and later.

6.6.4 Constructor

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The private constructor.

6.6.5 CreateFrame(location as Integer, length as Integer, path as CGPathMBS, frameAttributes as dictionary = nil) as CTFrameMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates an immutable frame using a framesetter.

Notes:

location and length: The range, of the attributed string that was used to create the framesetter, that is to be typeset in lines fitted into the frame. If the length portion of the range is set to 0, then the framesetter continues to add lines until it runs out of text or space.

path: A CGPath object that specifies the shape of the frame. The path may be non-rectangular in versions of OS X v10.7 or later and versions of iOS 4.2 or later.

frameAttributes: Additional attributes that control the frame filling process can be specified here, or nil if

there are no such attributes.

Returns a reference to a new CTFrame object if the call was successful; otherwise, nil.

This call creates a frame full of glyphs in the shape of the path provided by the path parameter. The framesetter continues to fill the frame until it either runs out of text or it finds that text no longer fits.

Special Considerations

In versions of OS X prior to 10.7 and versions of iOS prior to 4.2, this function returns NULL if the CGPath specified by the path parameter is not rectangular.

6.6.6 CreateWithAttributedString(s as CFAttributedStringMBS) as CTFramesetterMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates an immutable framesetter object from an attributed string.

Notes:

s: The attributed string with which to construct the framesetter object.

Returns a reference to a CTFramesetter object if the call was successful; otherwise, NULL.

The resultant framesetter object can be used to create and fill text frames with the CreateFrame call.

6.6.7 SuggestFrameSizeWithConstraints(location as Integer, length as Integer, frameAttributes as dictionary, constraints as CGSizeMBS, byref fitRangeLocation as Integer, byref fitRangeLength as Integer) as CGSizeMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Determines the frame size needed for a string range.

Notes:

location and length: The string range to which the frame size applies. The string range is a range over the string used to create the framesetter. If the length portion of the range is set to 0, then the framesetter continues to add lines until it runs out of text or space.

frameAttributes: Additional attributes that control the frame filling process, or NULL if there are no such attributes.

constraints: The width and height to which the frame size is constrained. A value of CGFLOAT_MAX for either dimension indicates that it should be treated as unconstrained.

fitRange: On return, contains the range of the string that actually fit in the constrained size.

Returns the actual dimensions for the given string range and constraints.

This function can be used to determine how much space is needed to display a string, optionally by constraining the space along either dimension.

Available in OS X v10.5 and later.

6.6.8 Properties

6.6.9 TypeSetter as CTypesetterMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the typesetter object being used by the framesetter.

Notes:

Return sa reference to a CTypesetter object if the call was successful; otherwise, nil. The framesetter maintains a reference to the returned object, which should not be released by the caller.

Each framesetter uses a typesetter internally to perform line breaking and other contextual analysis based on the characters in a string; this function returns the typesetter being used by a particular framesetter in case the caller would like to perform other operations on that typesetter.

Available in OS X v10.5 and later.

(Read only property)

6.7 class CTGlyphInfoMBS

6.7.1 class CTGlyphInfoMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The CTGlyphInfo opaque type enables you to override a font's specified mapping from Unicode to the glyph ID.

Notes:

Subclass of the CObjectMBS class.

This is an abstract class. You can't create an instance, but you can get one from various plugin functions.

6.7.2 Methods

6.7.3 Available as boolean

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Whether this class is available.

Notes: Returns true in OS X v10.5 and later.

6.7.4 Constructor

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The private constructor.

6.7.5 CreateWithCharacterIdentifier(cid as Integer, collection as Integer, baseString as string) as CTGlyphInfoMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates an immutable glyph info object with a character identifier.

Notes:

cid: A character identifier.

collection: A character collection identifier.

baseString: The part of the string the returned object is intended to override.

Returns a valid reference to an immutable CTGlyphInfoMBS object if glyph info creation was successful; otherwise, nil.

This function creates an immutable glyph info object for a character identifier and a character collection. Available in OS X v10.5 and later.

6.7.6 CreateWithGlyph(glyph as Integer, font as CTFontMBS, baseString as string) as CTGlyphInfoMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates an immutable glyph info object with a glyph index.

Notes:

glyph: The index of the glyph.

font: The font to be associated with the returned CTGlyphInfoMBS object.

baseString: The part of the string the returned object is intended to override.

Returns a valid reference to an immutable CTGlyphInfoMBS object, If glyph info creation was successful; otherwise, nil.

This function creates an immutable glyph info object for a glyph index using a specified font. Available in OS X v10.5 and later.

6.7.7 CreateWithGlyphName(glyphName as string, font as CTFontMBS, baseString as string) as CTGlyphInfoMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates an immutable glyph info object with a glyph name.

Notes:

glyphName: The name of the glyph.

font: The font to be associated with the returned CTGlyphInfo object.

baseString: The part of the string the returned object is intended to override.

Returns a valid reference to an immutable CTGlyphInfo object if glyph info creation was successful; otherwise, nil.

This function creates an immutable glyph info object for a glyph name such as copyright using a specified font.

Available in OS X v10.5 and later.

6.7.8 Properties

6.7.9 CharacterCollection as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Gets the character collection for a glyph info object.

Notes:

If the glyph info object was created with a glyph name or a glyph index, its character collection is `kCTIdentityMappingCharacterCollection`.

(Read only property)

6.7.10 CharacterIdentifier as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Gets the character identifier for a glyph info object.

Notes: (Read only property)

6.7.11 GlyphName as String

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Gets the glyph name for a glyph info object if that object exists.

Notes: (Read only property)

6.7.12 Constants

6.7.13 `kCTAdobeCNS1CharacterCollection = 1`

Plugin Version: 14.2. **Function:** One of the constants to specify character collections.

Notes: The Adobe-CNS1 mapping.

6.7.14 `kCTAdobeGB1CharacterCollection = 2`

Plugin Version: 14.2. **Function:** One of the constants to specify character collections.

Notes: The Adobe-GB1 mapping.

6.7.15 kCTAdobeJapan1CharacterCollection = 3

Plugin Version: 14.2. **Function:** One of the constants to specify character collections.
Notes: The Adobe-Japan1 mapping.

6.7.16 kCTAdobeJapan2CharacterCollection = 4

Plugin Version: 14.2. **Function:** One of the constants to specify character collections.
Notes: The Adobe-Japan2 mapping.

6.7.17 kCTAdobeKorea1CharacterCollection = 5

Plugin Version: 14.2. **Function:** One of the constants to specify character collections.
Notes: The Adobe-Korea1 mapping.

6.7.18 kCTCharacterCollectionAdobeCNS1 = 1

Plugin Version: 14.2. **Function:** One of the constants to specify character collections.
Notes: The Adobe-CNS1 mapping.

6.7.19 kCTCharacterCollectionAdobeGB1 = 2

Plugin Version: 14.2. **Function:** One of the constants to specify character collections.
Notes: The Adobe-GB1 mapping.

6.7.20 kCTCharacterCollectionAdobeJapan1 = 3

Plugin Version: 14.2. **Function:** One of the constants to specify character collections.
Notes: The Adobe-Japan1 mapping.

6.7.21 kCTCharacterCollectionAdobeJapan2 = 4

Plugin Version: 14.2. **Function:** One of the constants to specify character collections.
Notes: The Adobe-Japan2 mapping.

6.7.22 kCTCharacterCollectionAdobeKorea1 = 5

Plugin Version: 14.2. **Function:** One of the constants to specify character collections.

Notes: The Adobe-Korea1 mapping.

6.7.23 kCTCharacterCollectionIdentityMapping = 0

Plugin Version: 14.2. **Function:** One of the constants to specify character collections.

Notes: The character identifier is equal to the CGGlyph glyph index.

6.7.24 kCTIdentityMappingCharacterCollection = 0

Plugin Version: 14.2. **Function:** One of the constants to specify character collections.

Notes: The character identifier is equal to the CGGlyph glyph index.

6.8 class CTLineMBS

6.8.1 class CTLineMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The CTLine opaque type represents a line of text.

Example:

```
Sub Paint(g As Graphics)
// inside paint event of a Canvas

// create a font, quasi systemFontWithSize:24.0
dim sysUIFont as CTFontMBS = CTFontMBS.CreateUIFontForLanguage(CTFontMBS.kCTFontUIFontSystem, 24.0)

// create a naked string
dim text as string = "Some Text."

// blue
dim cgColor as CGColorMBS = CGColorMBS.CreateGenericRGB(0.0, 0.0, 1.0)

// single underline
dim underline as Integer = CoreTextMBS.kCTUnderlineStyleSingle

// pack it into attributes dictionary
dim attributesDict as new Dictionary
attributesDict.Value(CoreTextMBS.kCTFontAttributeName) = sysUIFont
attributesDict.Value(CoreTextMBS.kCTForegroundColorAttributeName) = cgColor
attributesDict.Value(CoreTextMBS.kCTUnderlineStyleAttributeName) = underline

// make the attributed string
dim cfDic as new CFDictionaryMBS(attributesDict)
dim cfStr as new CFStringMBS(text)
dim stringToDraw as CFAttributedStringMBS = CFAttributedStringMBS.Create( cfStr, cfDic)

// now for the actual drawing

dim CGContextHandle as Integer = g.Handle(g.HandleTypeCGContextRef)
dim CGContext as CGContextMBS = CGContextMBS.contextWithCGContext(CGContextHandle)

CGContext.SaveGState

// reset text matrix
dim a as CGAffineTransformMBS = CGAffineTransformMBS.Identity
CGContext.TextMatrix = a

// draw
dim line as CTLineMBS = CTLineMBS.CreateWithAttributedString(stringToDraw)
```

```

dim x as Integer = 10
dim y as Integer = 10

// plus text height
y = y + 24

// swap y
y = g.Height - y

CGContext.TextPosition = new CGPointMBS(x, y)
line.Draw(CGContext)

CGContext.RestoreGState
CGContext.Flush
End Sub

```

Notes:

A CTLine object contains an array of glyph runs. Line objects are created by the typesetter during a frame-setting operation and can draw themselves directly into a graphics context.

Subclass of the CFObjctMBS class.

This is an abstract class. You can't create an instance, but you can get one from various plugin functions.

6.8.2 Methods**6.8.3 Available as boolean**

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Whether this class is available.

Notes: Returns true in OS X v10.5 and later.

6.8.4 Bounds(options as Integer = 0) as CGRectMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Queries bounds.

6.8.5 Constructor

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The private constructor.

6.8.6 CreateJustifiedLine(justificationFactor as Double, justificationWidth as Double) as CTLineMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a justified line from an existing line.

Notes:

line: The line from which to create a justified line.

justificationFactor: Full or partial justification. When set to 1.0 or greater, full justification is performed. If this parameter is set to less than 1.0, varying degrees of partial justification are performed. If it is set to 0 or less, no justification is performed.

justificationWidth: The width to which the resultant line is justified. If justificationWidth is less than the actual width of the line, then negative justification is performed (that is, glyphs are squeezed together).

Returns a reference to a justified CTLine object if the call was successful; otherwise, nil.

Available in OS X v10.5 and later.

6.8.7 CreateTruncatedLine(width as Double, truncationType as Integer, truncationToken as CTLineMBS = nil) as CTLineMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a truncated line from an existing line.

Notes:

line: The line from which to create a truncated line.

width: The width at which truncation begins. The line is truncated if its width is greater than the width passed in this parameter.

truncationType: The type of truncation to perform if needed. See constants for possible values.

truncationToken: This token is added at the point where truncation took place, to indicate that the line was truncated. Usually, the truncation token is the ellipsis character (U+2026). If this parameter is set to nil, then no truncation token is used and the line is simply cut off.

Returns a reference to a truncated CTLine object if the call was successful; otherwise, NULL.

The line specified in truncationToken should have a width less than the width specified by the width parameter. If the width of the line specified in truncationToken is greater than width and truncation is needed, the function returns nil.

Available in OS X v10.5 and later.

6.8.8 CreateWithAttributedString(s as CFAttributedStringMBS) as CTLineMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a single immutable line object directly from an attributed string.

Notes:

s: The string from which the line is created.

Returns a reference to a CTLine object if the call was successful; otherwise, nil.

This function allows clients who need very simple line generation to create a line without creating a typesetter object. The typesetting is done under the hood. Without a typesetter object, the line cannot be properly broken. However, for simple things like text labels, line breaking is not an issue. Available in OS X v10.5 and later.

6.8.9 Draw(context as CGContextMBS)

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Draws a complete line.

Notes:

context: The context into which the line is drawn.

This is a convenience function because the line could be drawn run-by-run by getting the glyph runs, getting the glyphs out of them, and calling a function such as CGContextMBS.ShowGlyphsAtPositions. This call can leave the graphics context in any state and does not flush the context after the draw operation.

Available in OS X v10.5 and later.

6.8.10 GlyphRuns as CTRunMBS()

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the array of glyph runs that make up the line object.

Notes:

Returns an array containing the CTRunMBS objects that make up the line.

Available in OS X v10.5 and later.

6.8.11 ImageBounds(context as CGContextMBS) as CGRectMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Calculates the image bounds for a line.

Notes:

context: The context for which the image bounds are calculated. This is required because the context could have settings in it that would cause changes in the image bounds.

Returns a rectangle that tightly encloses the paths of the line's glyphs, or, if the line or context is invalid, CGRectNull.

Available in OS X v10.5 and later.

6.8.12 OffsetForStringIndex(charIndex as Integer, byref secondaryOffset as Double) as Double

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Determines the graphical offset or offsets for a string index.

Notes:

charIndex: The string index corresponding to the desired position.

secondaryOffset: On output, the secondary offset along the baseline for charIndex. When a single caret is sufficient for a string index, this value will be the same as the primary offset, which is the return value of this function. May be NULL.

Returns the primary offset along the baseline for charIndex, or 0.0 if the line does not support string access.

This function returns the graphical offset or offsets corresponding to a string index, suitable for movement between adjacent lines or for drawing a custom caret. For moving between adjacent lines, the primary offset can be adjusted for any relative indentation of the two lines; a CGPoint constructed with the adjusted offset for its x value and 0.0 for its y value is suitable for passing to CTLineGetStringIndexForPosition. For drawing a custom caret, the returned primary offset corresponds to the portion of the caret that represents the visual insertion location for a character whose direction matches the line's writing direction.

Available in OS X v10.5 and later.

6.8.13 PenOffsetForFlush(flushFactor as Double, flushWidth as Double) as Double

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Gets the pen offset required to draw flush text.

Notes:

`flushFactor`: Determines the type of flushness. A `flushFactor` of 0 or less indicates left flush. A `flushFactor` of 1.0 or more indicates right flush. Flush factors between 0 and 1.0 indicate varying degrees of center flush, with a value of 0.5 being totally center flush.

`flushWidth`: Specifies the width to which the flushness operation should apply.

Returns the offset from the current pen position for the flush operation.
Available in OS X v10.5 and later.

6.8.14 `StringIndexForPosition(position as CGPointMBS) as Integer`

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Performs hit testing.
Notes:

`position`: The location of the mouse click relative to the line's origin.

Returns the string index for the position, or if the line does not support string access, `kCFNotFound`. Relative to the line's string range, this value can be no less than the first string index and no greater than the last string index plus 1.

This function can be used to determine the string index for a mouse click or other event. This string index corresponds to the character before which the next character should be inserted. This determination is made by analyzing the string from which a typesetter was created and the corresponding glyphs as embodied by a particular line.

Available in OS X v10.5 and later.

6.8.15 `TypographicBounds(byref ascent as Double, byref descent as Double, byref leading as Double) as Double`

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Calculates the typographic bounds of a line.

Notes:

`ascent`: On output, the ascent of the line.

`descent`: On output, the descent of the line.

`leading`: On output, the leading of the line.

Returns the typographic width of the line. If the line is invalid, this function returns 0.

6.8.16 Properties

6.8.17 GlyphCount as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the total glyph count for the line object.

Notes:

The total glyph count is equal to the sum of all of the glyphs in the glyph runs forming the line.
(Read only property)

6.8.18 StringRangeLength as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Gets the range of characters that originally spawned the glyphs in the line.

Notes: (Read only property)

6.8.19 StringRangeLocation as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Gets the range of characters that originally spawned the glyphs in the line.

Notes: (Read only property)

6.8.20 TrailingWhitespaceWidth as Double

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the trailing whitespace width for a line.

Notes:

The width of the line's trailing whitespace. If the line is invalid, this function will always return zero.

Creating a line for a width can result in a line that is actually longer than the desired width due to trailing whitespace. Although this is typically not an issue due to whitespace being invisible, this function can be used to determine what amount of a line's width is due to trailing whitespace.

Available in OS X v10.5 and later.

(Read only property)

6.8.21 Constants

6.8.22 `kCTLineBoundsExcludeTypographicLeading = 1`

Plugin Version: 14.2. **Function:** One of the line bounds constants.

Notes: Pass this option to exclude typographic leading.

6.8.23 `kCTLineBoundsExcludeTypographicShifts = 2`

Plugin Version: 14.2. **Function:** One of the line bounds constants.

Notes: Pass this option to ignore cross-stream shifts due to positioning (such as kerning or baseline alignment).

6.8.24 `kCTLineBoundsUseGlyphPathBounds = 8`

Plugin Version: 14.2. **Function:** One of the line bounds constants.

Notes: Pass this option to use glyph path bounds rather than the default typographic bounds.

6.8.25 `kCTLineBoundsUseHangingPunctuation = 4`

Plugin Version: 14.2. **Function:** One of the line bounds constants.

Notes: Normally line bounds include all glyphs; pass this option to treat standard punctuation hanging off either end of the line as fully hanging.

6.8.26 `kCTLineBoundsUseOpticalBounds = 16`

Plugin Version: 14.2. **Function:** One of the line bounds constants.

Notes: Pass this option to use optical bounds. This option overrides `kCTLineBoundsUseGlyphPathBounds`.

6.8.27 `kCTLineTruncationEnd = 1`

Plugin Version: 14.2. **Function:** One of the values to tell the truncation engine which type of truncation is being requested..

Notes: Truncate the end of the line, leaving the start portion visible.

6.8.28 kCTLineTruncationMiddle = 2

Plugin Version: 14.2. **Function:** One of the values to tell the truncation engine which type of truncation is being requested..

Notes: Truncate the middle of the line, leaving both the start and the end portions visible.

6.8.29 kCTLineTruncationStart = 0

Plugin Version: 14.2. **Function:** One of the values to tell the truncation engine which type of truncation is being requested..

Notes: Truncate the beginning of the line, leaving the end portion visible.

6.9 class CTMutableFontCollectionMBS

6.9.1 class CTMutableFontCollectionMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The mutable font collection class.

Notes:

Subclass of the CTFontCollectionMBS class.

This is an abstract class. You can't create an instance, but you can get one from various plugin functions.

6.9.2 Methods

6.9.3 Constructor

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The private constructor.

6.9.4 SetExclusionDescriptors(descriptors()) as CTFontDescriptorMBS)

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Replaces the array of descriptors to exclude from the match.

6.9.5 SetQueryDescriptors(descriptors()) as CTFontDescriptorMBS)

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Replaces the array of descriptors to match.

6.10 class CTParagraphStyleMBS

6.10.1 class CTParagraphStyleMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The CTParagraphStyle opaque type represents paragraph or ruler attributes in an attributed string.

Notes:

A paragraph style object represents a complex attribute value in an attributed string, storing a number of subattributes that affect paragraph layout for the characters of the string. Among these subattributes are alignment, tab stops, writing direction, line-breaking mode, and indentation settings.

Subclass of the CXObjectMBS class.

6.10.2 Methods

6.10.3 Available as boolean

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Whether this class is available.

Notes: Returns true in OS X v10.5 and later.

6.10.4 Constructor

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates an immutable paragraph style.

Notes:

Returns a valid reference to an immutable CTParagraphStyle object, If the paragraph style creation was successful; otherwise, nil.

Using this function is the easiest and most efficient way to create a paragraph style. Paragraph styles should be kept immutable for totally lock-free operation. If an invalid paragraph style setting specifier is passed into the settings parameter, nothing bad will happen, but you will be unable to query for this value. The reason is to allow backward compatibility with style setting specifiers that may be introduced in future versions.

Available in OS X v10.5 and later.

6.10.5 Create as CTParagraphStyleMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates an immutable paragraph style.

Notes:

Returns a valid reference to an immutable CTParagraphStyle object, If the paragraph style creation was successful; otherwise, nil.

Using this function is the easiest and most efficient way to create a paragraph style. Paragraph styles should be kept immutable for totally lock-free operation. If an invalid paragraph style setting specifier is passed into the settings parameter, nothing bad will happen, but you will be unable to query for this value. The reason is to allow backward compatibility with style setting specifiers that may be introduced in future versions.

Available in OS X v10.5 and later.

See also:

- 6.10.6 Create(settings() as CTParagraphStyleSettingMBS) as CTParagraphStyleMBS 1704

6.10.6 Create(settings() as CTParagraphStyleSettingMBS) as CTParagraphStyleMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates an immutable paragraph style.

Notes:

settings: The settings with which to preload the paragraph style.

Returns a valid reference to an immutable CTParagraphStyle object, If the paragraph style creation was successful; otherwise, nil.

Using this function is the easiest and most efficient way to create a paragraph style. Paragraph styles should be kept immutable for totally lock-free operation. If an invalid paragraph style setting specifier is passed into the settings parameter, nothing bad will happen, but you will be unable to query for this value. The reason is to allow backward compatibility with style setting specifiers that may be introduced in future versions.

Available in OS X v10.5 and later.

See also:

- 6.10.5 Create as CTParagraphStyleMBS 1704

6.10.7 CreateCopy as CTParagraphStyleMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates an immutable copy of a paragraph style.

Notes: A valid reference to an immutable CTParagraphStyle object that is a copy of the one passed into paragraphStyle, If the paragraphStyle reference is valid; otherwise nil, if any error occurred, including being supplied with an invalid reference.

6.10.8 CreateWithAlignment(Alignment as Integer) as CTParagraphStyleMBS

Plugin Version: 15.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates an immutable paragraph style.

Example:

```
dim a as Integer
```

```
dim t as CTParagraphStyleMBS
```

```
a = CTParagraphStyleMBS.kCTTextAlignmentRight
```

```
t = CTParagraphStyleMBS.CreateWithAlignment(a)
```

```
MsgBox str(T.Alignment) // shows 1
```

6.10.9 TabStops as CTTextTabMBS()

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The CTTextTab objects, sorted by location, that define the tab stops for the paragraph style.

Notes: Type: Array of CTTextTabMBS. Default: 12 left-aligned tabs, spaced by 28.0 points. Application: CTFramesetter, CTTypesetter.

6.10.10 Properties

6.10.11 Alignment as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The text alignment. **Notes:**

Natural text alignment is realized as left or right alignment, depending on the line sweep direction of the first script contained in the paragraph. Type: CTTextAlignment. Default: kCTNaturalTextAlignment. Application: CTFramesetter.

(Read only property)

6.10.12 BaseWritingDirection as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The base writing direction of the lines.

Notes:

Type: CTWritingDirection. Default: kCTWritingDirectionNatural. Application: CTFramesetter, CTypesetter.

(Read only property)

6.10.13 DefaultTabInterval as Double

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The documentwide default tab interval.

Notes:

Tabs after the last specified by kCTParagraphStyleSpecifierTabStops are placed at integer multiples of this distance (if positive). Type: CGFloat. Default: 0.0. Application: CTFramesetter, CTypesetter.

(Read only property)

6.10.14 FirstLineHeadIndent as Double

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The distance, in points, from the leading margin of a frame to the beginning of the paragraph's first line.

Notes:

This value is always nonnegative. Type: CGFloat. Default: 0.0. Application: CTFramesetter.

(Read only property)

6.10.15 HeadIndent as Double

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The distance, in points, from the leading margin of a text container to the beginning of lines other than the first.

Notes:

This value is always nonnegative. Type: CGFloat Default: 0.0 Application: CTFramesetter

(Read only property)

6.10.16 LineBoundsOptions as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The options controlling the alignment of the line edges with the leading and trailing margins.

Notes:

Type: CTLineBoundsOptions

Default: 0 (no options)

Application: CTTypesetter

(Read only property)

6.10.17 LineBreakMode as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The mode that should be used to break lines when laying out the paragraph's text.

Notes:

Type: CTLineBreakMode. Default: kCTLineBreakByWordWrapping. Application: CTFramesetter

(Read only property)

6.10.18 LineHeightMultiple as Double

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The line height multiple.

Notes:

The natural line height of the receiver is multiplied by this factor (if positive) before being constrained by minimum and maximum line height. Type: CGFloat. Default: 0.0. Application: CTFramesetter.

(Read only property)

6.10.19 LineSpacingAdjustment as Double

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The space in points added between lines within the paragraph (commonly known as leading).

Notes:

Available in OS X v10.7 and later.

(Read only property)

6.10.20 MaximumLineHeight as Double

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The maximum height that any line in the frame will occupy, regardless of the font size or size of any attached graphic.

Notes:

Glyphs and graphics exceeding this height will overlap neighboring lines. A maximum height of 0 implies no line height limit. This value is always nonnegative. Type: CGFloat. Default: 0.0. Application: CTFrame-setter.

(Read only property)

6.10.21 MaximumLineSpacing as Double

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The maximum space in points between lines within the paragraph (commonly known as leading).

Notes:

This value is always nonnegative.

Available in OS X v10.7 and later.

(Read only property)

6.10.22 MinimumLineHeight as Double

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The minimum height that any line in the frame will occupy, regardless of the font size or size of any attached graphic.

Notes:

This value is always nonnegative. Type: CGFloat. Default: 0.0. Application: CTFramesetter.

(Read only property)

6.10.23 MinimumLineSpacing as Double

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The minimum space in points between lines within the paragraph (commonly known as leading).

Notes:

This value is always nonnegative.

Available in OS X v10.7 and later.

(Read only property)

6.10.24 ParagraphSpacing as Double

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The space added at the end of the paragraph to separate it from the following paragraph.

Notes:

This value is always nonnegative and is determined by adding the previous paragraph's `kCTParagraphStyleSpecifierParagraphSpacing` setting and the current paragraph's `kCTParagraphStyleSpecifierParagraphSpacingBefore` setting. Type: `CGFloat`. Default: 0.0. Application: `CTFramesetter`.
(Read only property)

6.10.25 ParagraphSpacingBefore as Double

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The distance between the paragraph's top and the beginning of its text content.

Notes:

Type: `CGFloat`. Default: 0.0. Application: `CTFramesetter`.
(Read only property)

6.10.26 TailIndent as Double

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The distance, in points, from the margin of a frame to the end of lines.

Notes:

If positive, this value is the distance from the leading margin (for example, the left margin in left-to-right text). If 0 or negative, it's the distance from the trailing margin. Type: `CGFloat`. Default: 0.0. Application: `CTFramesetter`.
(Read only property)

6.10.27 Constants

6.10.28 `kCTLineBreakByCharWrapping = 1`

Plugin Version: 14.2. **Function:** One of the constants to specify what happens when a line is too long for its frame.

Notes: Wrapping occurs before the first character that doesn't fit.

6.10.29 `kCTLineBreakByClipping = 2`

Plugin Version: 14.2. **Function:** One of the constants to specify what happens when a line is too long for its frame.

Notes: Lines are simply not drawn past the edge of the frame.

6.10.30 `kCTLineBreakByTruncatingHead = 3`

Plugin Version: 14.2. **Function:** One of the constants to specify what happens when a line is too long for its frame.

Notes: Each line is displayed so that the end fits in the frame and the missing text is indicated by an ellipsis glyph.

6.10.31 `kCTLineBreakByTruncatingMiddle = 5`

Plugin Version: 14.2. **Function:** One of the constants to specify what happens when a line is too long for its frame.

Notes: Each line is displayed so that the beginning and end fit in the container and the missing text is indicated by an ellipsis glyph in the middle.

6.10.32 `kCTLineBreakByTruncatingTail = 4`

Plugin Version: 14.2. **Function:** One of the constants to specify what happens when a line is too long for its frame.

Notes: Each line is displayed so that the beginning fits in the container and the missing text is indicated by an ellipsis glyph.

6.10.33 `kCTLineBreakByWordWrapping = 0`

Plugin Version: 14.2. **Function:** One of the constants to specify what happens when a line is too long for its frame.

Notes: Wrapping occurs at word boundaries unless the word itself doesn't fit on a single line.

6.10.34 `kCTParagraphStyleSpecifierAlignment = 0`

Plugin Version: 14.2. **Function:** One of the constants used to query and modify the `CTParagraphStyle` object.

Notes:

The text alignment. Natural text alignment is realized as left or right alignment, depending on the line sweep direction of the first script contained in the paragraph. Type: `CTTextAlignment`. Default: `kCTNaturalTextAlignment`. Application: `CTFramesetter`.

Available in OS X v10.5 and later.

6.10.35 `kCTParagraphStyleSpecifierBaseWritingDirection = 13`

Plugin Version: 14.2. **Function:** One of the constants used to query and modify the `CTParagraphStyle` object.

Notes: The base writing direction of the lines. Type: `CTWritingDirection`. Default: `kCTWritingDirectionNatural`. Application: `CTFramesetter`, `CTTypesetter`.

6.10.36 `kCTParagraphStyleSpecifierDefaultTabInterval = 5`

Plugin Version: 14.2. **Function:** One of the constants used to query and modify the `CTParagraphStyle` object.

Notes: The documentwide default tab interval. Tabs after the last specified by `kCTParagraphStyleSpecifierTabStops` are placed at integer multiples of this distance (if positive). Type: `CGFloat`. Default: 0.0. Application: `CTFramesetter`, `CTTypesetter`.

6.10.37 `kCTParagraphStyleSpecifierFirstLineHeadIndent = 1`

Plugin Version: 14.2. **Function:** One of the constants used to query and modify the `CTParagraphStyle` object.

Notes: The distance, in points, from the leading margin of a frame to the beginning of the paragraph's first line. This value is always nonnegative. Type: `CGFloat`. Default: 0.0. Application: `CTFramesetter`.

6.10.38 `kCTParagraphStyleSpecifierHeadIndent = 2`

Plugin Version: 14.2. **Function:** One of the constants used to query and modify the `CTParagraphStyle` object.

Notes: The distance, in points, from the leading margin of a text container to the beginning of lines other than the first. This value is always nonnegative. Type: `CGFloat`. Default: 0.0. Application: `CTFramesetter`.

6.10.39 `kCTParagraphStyleSpecifierLineBoundsOptions = 17`

Plugin Version: 14.2. **Function:** One of the constants used to query and modify the `CTParagraphStyle` object.

Notes:

The options controlling the alignment of the line edges with the leading and trailing margins.

Type: CTLineBoundsOptions

Default: 0 (no options)

Application: CTTypesetter

6.10.40 kCTParagraphStyleSpecifierLineBreakMode = 6

Plugin Version: 14.2. **Function:** One of the constants used to query and modify the CTParagraphStyle object.

Notes: The mode that should be used to break lines when laying out the paragraph's text. Type: CTLineBreakMode. Default: kCTLineBreakByWordWrapping. Application: CTFramesetter

6.10.41 kCTParagraphStyleSpecifierLineHeightMultiple = 7

Plugin Version: 14.2. **Function:** One of the constants used to query and modify the CTParagraphStyle object.

Notes: The line height multiple. The natural line height of the receiver is multiplied by this factor (if positive) before being constrained by minimum and maximum line height. Type: CGFloat. Default: 0.0. Application: CTFramesetter.

6.10.42 kCTParagraphStyleSpecifierLineSpacing = 10

Plugin Version: 14.2. **Function:** One of the constants used to query and modify the CTParagraphStyle object.

Notes: Deprecated. Use kCTParagraphStyleSpecifierMaximumLineSpacing, kCTParagraphStyleSpecifierMinimumLineSpacing, and kCTParagraphStyleSpecifierLineSpaceAdjustment to control space between lines. The space in points added between lines within the paragraph (commonly known as leading). This value is always nonnegative. Type: CGFloat. Default: 0.0. Application: CTFramesetter.

6.10.43 kCTParagraphStyleSpecifierLineSpacingAdjustment = 16

Plugin Version: 14.2. **Function:** One of the constants used to query and modify the CTParagraphStyle object.

Notes:

The space in points added between lines within the paragraph (commonly known as leading). Available in OS X v10.7 and later.

6.10.44 kCTParagraphStyleSpecifierMaximumLineHeight = 8

Plugin Version: 14.2. **Function:** One of the constants used to query and modify the CTParagraphStyle object.

Notes: The maximum height that any line in the frame will occupy, regardless of the font size or size of any attached graphic. Glyphs and graphics exceeding this height will overlap neighboring lines. A maximum height of 0 implies no line height limit. This value is always nonnegative. Type: CGFloat. Default: 0.0. Application: CTFramesetter.

6.10.45 kCTParagraphStyleSpecifierMaximumLineSpacing = 14

Plugin Version: 14.2. **Function:** One of the constants used to query and modify the CTParagraphStyle object.

Notes:

The maximum space in points between lines within the paragraph (commonly known as leading). This value is always nonnegative.

Available in OS X v10.7 and later.

6.10.46 kCTParagraphStyleSpecifierMinimumLineHeight = 9

Plugin Version: 14.2. **Function:** One of the constants used to query and modify the CTParagraphStyle object.

Notes: The minimum height that any line in the frame will occupy, regardless of the font size or size of any attached graphic. This value is always nonnegative. Type: CGFloat. Default: 0.0. Application: CTFrame-setter.

6.10.47 kCTParagraphStyleSpecifierMinimumLineSpacing = 15

Plugin Version: 14.2. **Function:** One of the constants used to query and modify the CTParagraphStyle object.

Notes:

The minimum space in points between lines within the paragraph (commonly known as leading). This value is always nonnegative.

Available in OS X v10.7 and later.

6.10.48 `kCTParagraphStyleSpecifierParagraphSpacing = 11`

Plugin Version: 14.2. **Function:** One of the constants used to query and modify the `CTParagraphStyle` object.

Notes: The space added at the end of the paragraph to separate it from the following paragraph. This value is always nonnegative and is determined by adding the previous paragraph's `kCTParagraphStyleSpecifierParagraphSpacing` setting and the current paragraph's `kCTParagraphStyleSpecifierParagraphSpacingBefore` setting. Type: `CGFloat`. Default: 0.0. Application: `CTFramesetter`.

6.10.49 `kCTParagraphStyleSpecifierParagraphSpacingBefore = 12`

Plugin Version: 14.2. **Function:** One of the constants used to query and modify the `CTParagraphStyle` object.

Notes: The distance between the paragraph's top and the beginning of its text content. Type: `CGFloat`. Default: 0.0. Application: `CTFramesetter`.

6.10.50 `kCTParagraphStyleSpecifierTabStops = 4`

Plugin Version: 14.2. **Function:** One of the constants used to query and modify the `CTParagraphStyle` object.

Notes: The `CTTextTab` objects, sorted by location, that define the tab stops for the paragraph style. Type: `CFArray` of `CTTextTabRef`. Default: 12 left-aligned tabs, spaced by 28.0 points. Application: `CTFramesetter`, `CTTypesetter`.

6.10.51 `kCTParagraphStyleSpecifierTailIndent = 3`

Plugin Version: 14.2. **Function:** One of the constants used to query and modify the `CTParagraphStyle` object.

Notes: The distance, in points, from the margin of a frame to the end of lines. If positive, this value is the distance from the leading margin (for example, the left margin in left-to-right text). If 0 or negative, it's the distance from the trailing margin. Type: `CGFloat`. Default: 0.0. Application: `CTFramesetter`.

6.10.52 `kCTTextAlignmentCenter = 2`

Plugin Version: 14.2. **Function:** One of the constants to specify text alignment.

Notes: Text is visually center aligned.

6.10.53 kCTTextAlignmentJustified = 3

Plugin Version: 14.2. **Function:** One of the constants to specify text alignment.

Notes: Text is fully justified. The last line in a paragraph is naturally aligned.

6.10.54 kCTTextAlignmentLeft = 0

Plugin Version: 14.2. **Function:** One of the constants to specify text alignment.

Notes: Text is visually left aligned.

6.10.55 kCTTextAlignmentNatural = 4

Plugin Version: 14.2. **Function:** One of the constants to specify text alignment.

Notes: Text uses the natural alignment of the text's script.

6.10.56 kCTTextAlignmentRight = 1

Plugin Version: 14.2. **Function:** One of the constants to specify text alignment.

Notes: Text is visually right aligned.

6.10.57 kCTWritingDirectionLeftToRight = 0

Plugin Version: 14.2. **Function:** One of the constants to specify the writing direction.

Notes: The writing direction is left to right.

6.10.58 kCTWritingDirectionNatural = -1

Plugin Version: 14.2. **Function:** One of the constants to specify the writing direction.

Notes: The writing direction is algorithmically determined using the Unicode Bidirectional Algorithm rules P2 and P3.

6.10.59 kCTWritingDirectionRightToLeft = 1

Plugin Version: 14.2. **Function:** One of the constants to specify the writing direction.

Notes: The writing direction is right to left.

6.11 class CTParagraphStyleSettingMBS

6.11.1 class CTParagraphStyleSettingMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** This class is used to alter the paragraph style.

6.11.2 Methods

6.11.3 SetTextTabs(textTabs() as CTextTabMBS)

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Sets the array of text tabs.

Notes: for use with kCTParagraphStyleSpecifierTabStops.

6.11.4 Properties

6.11.5 doubleValue as Double

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The double value.

Notes: (Read and Write property)

6.11.6 intValue as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The integer value.

Notes:

Also used for enumerations.
(Read and Write property)

6.11.7 Spec as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The specifier of the setting.

Notes:

See CTParagraphStyleMBS for possible values.
(Read and Write property)

6.12 class CTRunDelegateMBS

6.12.1 class CTRunDelegateMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The class to get events for CTRun runs.

Notes:

The CTRunDelegate opaque type represents a run delegate, which is assigned to a run (attribute range) to control typographic traits such as glyph ascent, glyph descent, and glyph width.

The events defined for CTRunDelegate are used to modify glyph metrics during layout. The values returned by the delegate are applied to each glyph in the run or runs corresponding to the attribute with that delegate. Subclass of the CObjectMBS class.

6.12.2 Methods

6.12.3 Available as boolean

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Whether this class is available.

Notes: Returns true in OS X v10.5 and later.

6.12.4 Close

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Shuts down the delegate.

Notes: Please call this to explicitly end the delegate and avoid memory leaks.

See also:

- 6.12.7 Close

1718

6.12.5 Constructor

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates an immutable instance of a run delegate.

Notes: The run-delegate object can be used for reserving space in a line or for eliding the glyphs for a range of text altogether.

6.12.6 Events

6.12.7 Close

Plugin Version: 14.2, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Event called when item closes.

See also:

- 6.12.4 Close

1717

6.12.8 GetAscent as Double

Plugin Version: 14.2, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Event that determines typographic ascent of glyphs in the run.

Notes: Returns the typographic ascent of glyphs in the run associated with the run delegate.

6.12.9 GetDescent as Double

Plugin Version: 14.2, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Event that determines typographic descent of glyphs in the run.

Notes: Returns the typographic descent of glyphs in the run associated with the run delegate.

6.12.10 GetWidth as Double

Plugin Version: 14.2, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Event that determines the typographic width of glyphs in the run.

Notes: Returns the typographic width of glyphs in the run associated with the run delegate. A value of 0.0 indicates that the glyphs should not be drawn.

6.13 class CTRunMBS

6.13.1 class CTRunMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The CTRun opaque type represents a glyph run, which is a set of consecutive glyphs sharing the same attributes and direction.

Notes:

The typesetter creates glyph runs as it produces lines from character strings, attributes, and font objects. That is, a line is constructed of one or more glyphs runs. Glyph runs can draw themselves into a graphic context, if desired, although most users have no need to interact directly with glyph runs.

Subclass of the CFOBJECTMBS class.

This is an abstract class. You can't create an instance, but you can get one from various plugin functions.

6.13.2 Methods

6.13.3 Advances as CGSizeMBS()

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Copies a range of glyph advances into an array.

6.13.4 Available as boolean

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Whether this class is available.

Notes: Returns true in OS X v10.5 and later.

6.13.5 Constructor

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The private constructor.

6.13.6 Draw(context as CGContextMBS, location as Integer, length as Integer = 0)

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Draws a complete run or part of one.

Notes:

context: The context into which to draw the run.

range: The portion of the run to draw. If the length of the range is set to 0, then the draw operation continues from the start index of the range to the end of the run.

This is a convenience call, because the run could be drawn by accessing the glyphs. This call can leave the graphics context in any state and does not flush the context after the draw operation.

Available in OS X v10.5 and later.

6.13.7 Glyphs as Integer()

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Copies a range of glyphs into an array.

6.13.8 ImageBounds(context as CGContextMBS, location as Integer, length as Integer) as CGRectMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Calculates the image bounds for a glyph range.

Notes:

context: The context for the image bounds being calculated. This is required because the context could have settings in it that would cause changes in the image bounds.

range: The portion of the run to measure. If the length of the range is set to 0, then the measure operation continues from the start index of the range to the end of the run.

Returns a rectangle that tightly encloses the paths of the run's glyphs, or, if run, context, or range is invalid, CGRectNull.

Available in OS X v10.5 and later.

6.13.9 Positions as CGPointMBS()

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Copies a range of glyph positions into an array.

6.13.10 StringIndices as Integer()

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Copies a range of string indices into an array.

Notes: The indices are the character indices that originally spawned the glyphs that make up the run. They can be used to map the glyphs in the run back to the characters in the backing store.

6.13.11 TypographicBounds(location as Integer, length as Integer, byref ascent as Double, byref descent as Double, byref leading as Double) as Double

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Gets the typographic bounds of the run.

Notes:

range: The portion of the run to measure. If the length of the range is set to 0, then the measure operation continues from the range's start index to the end of the run.

ascent: On output, the ascent of the run.

descent: On output, the descent of the run.

leading: On output, the leading of the run.

Returns the typographic width of the run, or if run or range is invalid, 0.
Available in OS X v10.5 and later.

6.13.12 Properties

6.13.13 AttributeValues as Dictionary

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the attribute dictionary that was used to create the glyph run.

Notes:

Return a valid Dictionary or nil on error or if the run has no attributes.

The dictionary returned is either the same one that was set as an attribute dictionary on the original attributed string or a dictionary that has been manufactured by the layout engine. Attribute dictionaries can be manufactured in the case of font substitution or if the run is missing critical attributes.

(Read only property)

6.13.14 GlyphCount as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Gets the glyph count for the run.

Notes:

run: The run for which to return the glyph count.

Returns the number of glyphs that the run contains, or if there are no glyphs in this run, a value of 0.

Available in OS X v10.5 and later.

(Read only property)

6.13.15 Status as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the run's status.

Notes:

Runs have status that can be used to expedite certain operations. Knowing the direction and ordering of a run's glyphs can aid in string index analysis, whereas knowing whether the positions reference the identity text matrix can avoid expensive comparisons. This status is provided as a convenience, because this information is not strictly necessary but can be helpful in some circumstances.

(Read only property)

6.13.16 StringRangeLength as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Gets the range of characters that originally spawned the glyphs in the run.

Notes:

The range of characters that originally spawned the glyphs, of if run is invalid, an empty range.

(Read only property)

6.13.17 StringRangeLocation as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Gets the range of characters that originally spawned the glyphs in the run.

Notes:

The range of characters that originally spawned the glyphs, of if run is invalid, an empty range.

(Read only property)

6.13.18 TextMatrix as CGAffineTransformMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the text matrix needed to draw this run.

Notes:

To properly draw the glyphs in a run, the fields tx and ty of the CGAffineTransform returned by this function should be set to the current text position.

(Read only property)

6.13.19 Constants

6.13.20 kCTRunStatusHasNonIdentityMatrix = 4

Plugin Version: 14.2. **Function:** One of the possible values for the status bitfield.

Notes:

The run requires a specific text matrix to be set in the current Core Graphics context for proper drawing. Use BitwiseAnd() to check if the status has a given value.

6.13.21 kCTRunStatusNonMonotonic = 2

Plugin Version: 14.2. **Function:** One of the possible values for the status bitfield.

Notes:

The run has been reordered in some way such that the string indices associated with the glyphs are no longer strictly increasing (for left-to-right runs) or decreasing (for right-to-left runs).

Use BitwiseAnd() to check if the status has a given value.

6.13.22 kCTRunStatusNoStatus = 0

Plugin Version: 14.2. **Function:** One of the possible values for the status bitfield.

Notes: The run has no special attributes.

6.13.23 kCTRunStatusRightToLeft = 1

Plugin Version: 14.2. **Function:** One of the possible values for the status bitfield.

Notes:

The run proceeds from right to left.

Use BitwiseAnd() to check if the status has a given value.

6.14 class CTTextTabMBS

6.14.1 class CTTextTabMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The CTTextTab opaque type represents a tab in a paragraph style, storing an alignment type and location.

Notes:

Core Text supports four alignment types: left, center, right, and decimal. These alignment types are absolute, not based on the line sweep direction of text. For example, tabbed text is always positioned to the left of a right-aligned tab, whether the line sweep direction is left to right or right to left. A tab's location, on the other hand, is relative to the back margin. A tab set at 1.5 inches, for example, is at 1.5 inches from the right in right-to-left text.

Subclass of the CObjectMBS class.

This is an abstract class. You can't create an instance, but you can get one from various plugin functions.

6.14.2 Methods

6.14.3 Available as boolean

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Whether this class is available.

Notes: Returns true in OS X v10.5 and later.

6.14.4 Constructor

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The private constructor.

6.14.5 Create(alignment as Integer, location as Double, options as Dictionary = nil) as CTTextTabMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates and initializes a new text tab object.

Notes:

alignment: The tab's alignment. This is used to determine the position of text inside the tab column. This parameter must be set to a valid CTTextAlignment value or this function returns nil.

location: The tab's ruler location, relative to the back margin.

options: Options to pass in when the tab is created. Currently, the only option available is kCTTabColumnTerminatorsAttributeName. This parameter is optional and can be set to nil if not needed.

Return a reference to a `CTTextTab` object if the call was successful; otherwise, nil.
Available in OS X v10.5 and later.

6.14.6 `kCTTabColumnTerminatorsAttributeName` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the options keys.

Notes:

Specifies the terminating character for a tab column.

The value associated with this attribute is a `CFCharacterSet` object. The character set is used to determine the terminating character for a tab column. The tab and newline characters are implied even if they don't exist in the character set. This attribute can be used to implement decimal tabs, for instance. This attribute is optional.

6.14.7 Properties

6.14.8 `Alignment` as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the text alignment of the tab.

Notes: (Read only property)

6.14.9 `Location` as Double

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the tab's ruler location.

Notes:

The tab's ruler location relative to the back margin.
(Read only property)

6.14.10 `Options` as Dictionary

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Returns the dictionary of attributes associated with the tab.

Notes:

The dictionary of attributes associated with the tab, or if no dictionary is present, nil.
(Read only property)

6.15 class CTypesetterMBS

6.15.1 class CTypesetterMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The CTypesetter opaque type represents a typesetter, which performs line layout.

Notes:

Line layout includes word wrapping, hyphenation, and line breaking in either vertical or horizontal rectangles. A typesetter object takes as input an attributed string and produces a line of typeset glyphs (composed into glyph runs) in a CTLine object. The typesetter performs character-to-glyph encoding, glyph ordering, and positional operations, such as kerning, tracking, and baseline adjustments. If multiline layout is needed, it is performed by a framesetter object, which calls into the typesetter to generate the typeset lines to fill the frame.

A framesetter encapsulates a typesetter and provides a reference to it as a convenience, but a caller may also choose to create a freestanding typesetter.

Subclass of the CObjectMBS class.

This is an abstract class. You can't create an instance, but you can get one from various plugin functions.

6.15.2 Methods

6.15.3 Available as boolean

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Whether this class is available.

Notes: Returns true in OS X v10.5 and later.

6.15.4 Constructor

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The private constructor.

6.15.5 CreateLine(location as Integer, length as Integer, offset as Double = 0.0) as CTLineMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates an immutable line from the typesetter at a specified line offset.

Notes:

location and length: The string range on which the line is based. If the length portion of range is set to 0, then the typesetter continues to add glyphs to the line until it runs out of characters in the string. The location and length of the range must be within the bounds of the string, or the call will fail.

offset: The line position offset.

Returns a reference to a CTLine object if the call was successful; otherwise, nil.
The resultant line consists of glyphs in the correct visual order, ready to draw.
Available in OS X v10.6 and later.

6.15.6 CreateWithAttributedString(s as CFAttributedStringMBS) as CTypesetterMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates an immutable typesetter object using an attributed string.

Notes:

s: The attributed string to typeset. This parameter must be filled in with a valid CFAttributedString object.

Returns a reference to a CTypesetter object if the call was successful; otherwise, nil.

The resultant typesetter can be used to create lines, perform line breaking, and do other contextual analysis based on the characters in the string.

Available in OS X v10.5 and later.

See also:

- 6.15.7 CreateWithAttributedString(s as CFAttributedStringMBS, options as dictionary) as CTypesetterMBS 1729

6.15.7 CreateWithAttributedString(s as CFAttributedStringMBS, options as dictionary) as CTypesetterMBS

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates an immutable typesetter object using an attributed string and a dictionary of options.

Notes:

s: The attributed string to typeset. This parameter must be filled in with a valid CFAttributedString object.

options: A dictionary of typesetter options, or nil if there are none.

Returns a reference to a CTypesetter object if the call was successful; otherwise, nil.

The resultant typesetter can be used to create lines, perform line breaking, and do other contextual analysis

based on the characters in the string.

Available in OS X v10.5 and later.

See also:

- 6.15.6 `CreateWithAttributedString(s as CFAttributedStringMBS) as CTTypewriterMBS` 1729

6.15.8 `kCTTypesetterOptionDisableBidiProcessing` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the constants to control aspects of the typesetters bidirectional text processing.

Notes:

Disables bidirectional processing. Value must be a CFBoolean object. Default value is false. Normally, typesetting applies the Unicode Bidirectional Algorithm as described in Unicode Standard Annex # 9. If a typesetter is created with this option set to true, no directional reordering is performed, and any directional control characters are ignored.

Available in OS X v10.5 and later.

Deprecated in OS X v10.8.

6.15.9 `kCTTypesetterOptionForcedEmbeddingLevel` as string

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** One of the constants to control aspects of the typesetters bidirectional text processing.

Notes:

Specifies the embedding level. Value must be a CFNumberRef object. Default is unset. Normally, typesetting applies the Unicode Bidirectional Algorithm as described in Unicode Standard Annex # 9. If present, this option specifies the embedding level, and any directional control characters are ignored.

Available in OS X v10.5 and later.

6.15.10 `SuggestClusterBreak(startIndex as Integer, width as Double) as Integer`

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Suggests a cluster line breakpoint based on the width provided.

Notes:

`startIndex`: The starting point for the typographic cluster-break calculations. The break calculations include the character starting at `startIndex`.

`width`: The requested typographic cluster-break width.

Return a count of the characters from `startIndex` that would cause the cluster break. The value returned can be used to construct a character range for `CTTypesetterCreateLine`.

This cluster break is similar to a character break, except that it does not break apart linguistic clusters. No other contextual analysis is done. This can be used by the caller to implement a different line-breaking scheme, such as hyphenation. A typographic cluster break can also be triggered by a hard-break character in the stream. This function is equivalent to `SuggestClusterBreakWithOffset` with an offset of 0.0.

Available in OS X v10.5 and later.

See also:

- 6.15.11 `SuggestClusterBreak(startIndex as Integer, width as Double, offset as Double) as Integer` 1731

6.15.11 `SuggestClusterBreak(startIndex as Integer, width as Double, offset as Double) as Integer`

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Suggests a cluster line breakpoint based on the specified width and line offset.

Notes:

`startIndex`: The starting point for the typographic cluster-break calculations. The break calculations include the character starting at `startIndex`.

`width`: The requested typographic cluster-break width.

`offset`: The line offset position.

Returns a count of the characters from `startIndex` that would cause the cluster break. The value returned can be used to construct a character range for `CreateLine`.

This cluster break is similar to a character break, except that it does not break apart linguistic clusters. No other contextual analysis is done. This can be used by the caller to implement a different line-breaking scheme, such as hyphenation. A typographic cluster break can also be triggered by a hard-break character in the stream.

Available in OS X v10.6 and later.

See also:

- 6.15.10 `SuggestClusterBreak(startIndex as Integer, width as Double) as Integer` 1730

6.15.12 `SuggestLineBreak(startIndex as Integer, width as Double) as Integer`

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Suggests a contextual line breakpoint based on the width provided.

Notes:

`startIndex`: The starting point for the line-break calculations. The break calculations include the character starting at `startIndex`.

width: The requested line-break width.

Returns a count of the characters from `startIndex` that would cause the line break. The value returned can be used to construct a character range for `CreateLine`.

The line break can be triggered either by a hard-break character in the stream or by filling the specified width with characters. This function is equivalent to `SuggestLineBreakWithOffset` with an offset of 0.0.

Available in OS X v10.5 and later.

See also:

- 6.15.13 `SuggestLineBreak(startIndex as Integer, width as Double, offset as Double)` as Integer 1732

6.15.13 `SuggestLineBreak(startIndex as Integer, width as Double, offset as Double)` as Integer

Plugin Version: 14.2, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Suggests a contextual line breakpoint based on the width provided and the specified offset.

Notes:

`startIndex`: The starting point for the line-break calculations. The break calculations include the character starting at `startIndex`.

`width`: The requested line-break width.

`offset`: The line position offset.

Returns a count of the characters from `startIndex` and `offset` that would cause the line break. The value returned can be used to construct a character range for `CreateLine`.

The line break can be triggered either by a hard-break character in the stream or by filling the specified width with characters.

Available in OS X v10.6 and later.

See also:

- 6.15.12 `SuggestLineBreak(startIndex as Integer, width as Double)` as Integer 1731

Chapter 7

Files

7.1 class Folderitem

7.1.1 class Folderitem

Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** One of Realbasic's base classes.

Notes: Handles access to files.

7.1.2 Methods

7.1.3 NewCGPDFDocumentMBS(MediaBox as CCGRectMBS, title as string, author as string, creator as string) as CGPDFContextMBS

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a PDF document.

Example:

```
// create pdf
dim file as FolderItem = SpecialFolder.Desktop.Child("test.pdf")
dim r as new CCGRectMBS(0,0,500,500)
dim c as CGContextMBS = file.NewCGPDFDocumentMBS(r, "My Title", "My Author", "My Creator")

if c<>Nil then

// create page
c.BeginPage r

// draw something
c.SetRGBFillColor(1.0, 0.0, 0.0, 1.0)
```

```
c.FillRect CGMakeRectMBS(100,100,100,100)
```

```
// close page
c.EndPage
```

```
// flush and show in PDF viewer
c = nil
file.Launch
end if
```

Notes:

Title, author and creator are all optional.

RB 4.5 should do this perfectly, but older RB versions may have problems.

(seems like the file must exist before calling this function)

Requires Mac OS X to work.

See also:

- 7.1.4 NewCGPDFDocumentMBS(MediaBox as CGRectMBS, title as string, author as string, creator as string, subject as string, keywords as string, OwnerPassword as string, UserPassword as string, AllowsPrinting as boolean, AllowsCopy as boolean) as CGPDFContextMBS 1734
- 7.1.5 NewCGPDFDocumentMBS(MediaBox as CGRectMBS, title as string, author as string, creator as string, subject as string, keywords as string, OwnerPassword as string, UserPassword as string, AllowsPrinting as boolean, AllowsCopy as boolean, KeyLength as Integer) as CGPDFContextMBS 1735

7.1.4 NewCGPDFDocumentMBS(MediaBox as CGRectMBS, title as string, author as string, creator as string, subject as string, keywords as string, OwnerPassword as string, UserPassword as string, AllowsPrinting as boolean, AllowsCopy as boolean) as CGPDFContextMBS

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a PDF document.

Example:

```
// create pdf
dim file as FolderItem = SpecialFolder.Desktop.Child("test.pdf")
dim r as new CGRectMBS(0,0,500,500)
dim c as CGContextMBS = file.NewCGPDFDocumentMBS(r, "My Title", "My Author", "My Creator",
"My Subject", "test, pdf, mac", "", "", true, true)
```

```
if c<>Nil then
```

```
// create page
c.BeginPage r
```

```
// draw something
c.SetRGBFillColor(1.0, 0.0, 0.0, 1.0)
c.FillRect CGMakeRectMBS(100,100,100,100)

// close page
c.EndPage

// flush and show in PDF viewer
c = nil
file.Launch
end if
```

Notes:

Title, Author, Creator, Subject and Keywords parameters can be empty.

If OwnerPassword and UserPassword are filled in the PDF is encrypted and AllowsPrinting/AllowsCopy define what the user can do after he entered his password.

Requires Mac OS X to work.

See also:

- 7.1.3 NewCGPDFDocumentMBS(MediaBox as CGRectMBS, title as string, author as string, creator as string) as CGPDFContextMBS 1733
- 7.1.5 NewCGPDFDocumentMBS(MediaBox as CGRectMBS, title as string, author as string, creator as string, subject as string, keywords as string, OwnerPassword as string, UserPassword as string, AllowsPrinting as boolean, AllowsCopy as boolean, KeyLength as Integer) as CGPDFContextMBS 1735

7.1.5 NewCGPDFDocumentMBS(MediaBox as CGRectMBS, title as string, author as string, creator as string, subject as string, keywords as string, OwnerPassword as string, UserPassword as string, AllowsPrinting as boolean, AllowsCopy as boolean, KeyLength as Integer) as CGPDFContextMBS

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a PDF document.

Example:

```
// create pdf
dim file as FolderItem = SpecialFolder.Desktop.Child("test.pdf")
dim r as new CGRectMBS(0,0,500,500)
dim c as CGContextMBS = file.NewCGPDFDocumentMBS(r, "My Title", "My Author", "My Creator",
```

```
"My Subject", "test, pdf, mac", "owner", "user", false, false, 128)
```

```
if c<>Nil then
```

```
  // create page
```

```
  c.BeginPage r
```

```
  // draw something
```

```
  c.SetRGBFillColor(1.0, 0.0, 0.0, 1.0)
```

```
  c.FillRect CGMakeRectMBS(100,100,100,100)
```

```
  // close page
```

```
  c.EndPage
```

```
  // flush and show in PDF viewer
```

```
  c = nil
```

```
  file.Launch
```

```
end if
```

Notes:

Title, Author, Creator, Subject and Keywords parameters can be empty.

If OwnerPassword and UserPassword are filled in the PDF is encrypted and AllowsPrinting/AllowsCopy define what the user can do after he entered his password.

Keylength must be a value between 48 bit and 128 bit in 8 bit steps. 0 uses default value.

Requires Mac OS X to work.

See also:

- 7.1.3 NewCGPDFDocumentMBS(MediaBox as CGRectMBS, title as string, author as string, creator as string) as CGPDFContextMBS 1733
- 7.1.4 NewCGPDFDocumentMBS(MediaBox as CGRectMBS, title as string, author as string, creator as string, subject as string, keywords as string, OwnerPassword as string, UserPassword as string, AllowsPrinting as boolean, AllowsCopy as boolean) as CGPDFContextMBS 1734

7.1.6 NewCGPDFDocumentWithInfoMBS(MediaBox as CGRectMBS, info as object) as CGPDFContextMBS

Plugin Version: 12.0, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Creates a PDF document.

Example:


```

// create pdf
dim file as FolderItem = SpecialFolder.Desktop.Child("test.pdf")
dim r as new CGRectMBS(0,0,500,500)

dim d as new CFMutableDictionaryMBS

d.Add NewCFStringMBS("kCGPDFContextTitle"), NewCFStringMBS("My Title")
d.Add NewCFStringMBS("kCGPDFContextAuthor"), NewCFStringMBS("My Author")
d.Add NewCFStringMBS("kCGPDFContextCreator"), NewCFStringMBS("My Creator")
d.Add NewCFStringMBS("kCGPDFContextSubject"), NewCFStringMBS("My Subject")
d.Add NewCFStringMBS("kCGPDFContextKeywords"), NewCFStringMBS("keyword,mac,pdf")

dim c as CGContextMBS = file.NewCGPDFDocumentWithInfoMBS(r, d)

if c<>Nil then

// create page
c.BeginPage r

// draw something
c.SetRGBFillColor(1.0, 0.0, 0.0, 1.0)
c.FillRect CGMakeRectMBS(100,100,100,100)

// close page
c.EndPage

// flush and show in PDF viewer
c = nil
file.Launch
end if

```

Notes:

The optional info parameter is a CFDictionaryMBS object and contains some information about the PDF file.

Keys for auxiliary info dictionary:

NewCFStringMBS("kCGPDFContextTitle")

The document's title. Optional; if present, the value must be a CFString.

NewCFStringMBS("kCGPDFContextAuthor")

The name of the person who created this document. Optional; if present, the value must be a CFString.

NewCFStringMBS("kCGPDFContextCreator")

The name of the application that created the original data used to create this document. Optional; if present, the value must be a CFString.

`NewCFStringMBS("kCGPDFContextOutputIntent")`

The document's output intent. Optional; if present, the value must be a CFDictionaryMBS. The dictionary is added to the PDF document in the `/OutputIntents` entry in the PDF file's document catalog. The keys and values contained in the dictionary must match those specified in section 9.10.4 of the PDF 1.4 specification, ISO/DIS 15930-3 document published by ISO/TC 130, and Adobe Technical Note # 5413.

The following keys are supported:

"S" - The output intent subtype. This key is required; the value must be a CFString equal to "GTS_PDFX"; otherwise, the dictionary is ignored.

"OutputConditionIdentifier" - A string identifying the intended output device or production condition in a human- or machine-readable form. This key is required; the value must be a CFString. For best results, the string should be representable losslessly in ASCII encoding.

"OutputCondition" - A text string identifying the intended output device or production condition in a human-readable form. This key is optional; if present, the value must be a CFString.

"RegistryName" - A string identifying the registry in which the condition designated by "OutputConditionIdentifier" is defined. This key is optional; if present, the value must be a CFString. For best results, the string should be representable losslessly in ASCII encoding.

"Info" - A human-readable text string containing additional information or comments about the intended target device or production condition. This key is required if "OutputConditionIdentifier" does not specify a standard production condition; it is optional otherwise. If present, the value must be a CFString.

"DestOutputProfile" - An ICC profile stream defined the transformation from the PDF document's source colors to output device colorants. This key is required if "OutputConditionIdentifier" does not specify a standard production condition; it is optional otherwise. If present, the value must be a ICC-based CGColorSpaceMBS.

`NewCFStringMBS("kCGPDFContextOutputIntents")`

The document's output intents. Optional; if present, the value must be a CFArrayMBS containing one or more CFDictionaryMBSs. The array is added to the PDF document in the `/OutputIntents` entry in the PDF file's document catalog. Each dictionary in the array must be of form specified above for the "kCGPDFContextOutputIntent" key, except that only the first dictionary in the array is required to contain the "S" key with a value of "GTS_PDFX". If both the "kCGPDFContextOutputIntent" and "kCGPDFContextOutputIntents" keys are specified, the former will be ignored.

More keys in CGPDFContext.h coming with Xcode.

7.1.7 OpenAsCGPDFDocumentMBS as CGPDFDocumentMBS

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Opens a PDF document.

Notes:

RB 4.5 should do this perfectly, but older RB versions may have problems with longer file names.
Requires Mac OS X to work.

Chapter 8

Graphics & Pictures

8.1 class Graphics

8.1.1 class Graphics

Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Extends Realbasic's Graphics Class.

8.1.2 Methods

8.1.3 DrawCGImageMBS(image as CGImageMBS, r as CCGRectMBS)

Plugin Version: 3.3, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Draws a CGImageMBS in a normal graphics object.

Example:

```
Sub Paint(g As Graphics)
dim im as CGImageMBS
dim f as FolderItem
dim p as CGDataProviderMBS

f=SpecialFolder.Desktop.Child("picture017.jpg")
p=CGDataProviderMBS.CreateWithFile(f)
im=CGCreateImageFromJPEGDataProviderMBS(p,nil,true,0)

g.DrawCGImageMBS im,CGMakeRectMBS(0,0,im.Width,im.Height)
End Sub
```

Deprecated: This item is deprecated and should no longer be used. You can use CGContextMBS instead.

Notes: Note that the destination rectangle uses CG coordinates.

8.1.4 DrawCGImageXYMBS(image as CGImageMBS, x as Integer, y as Integer)

Plugin Version: 3.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Draws a CGImageMBS in a normal graphics object.

Deprecated: This item is deprecated and should no longer be used. You can use CGContextMBS instead.

Notes: Note that the destination point uses CG coordinates.

See also:

- 8.1.5 DrawCGImageXYMBS(image as CGImageMBS, x as Integer, y as Integer, w as Integer, h as Integer) 1742

8.1.5 DrawCGImageXYMBS(image as CGImageMBS, x as Integer, y as Integer, w as Integer, h as Integer)

Plugin Version: 6.4, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** Draws a CGImageMBS in a normal graphics object.

Deprecated: This item is deprecated and should no longer be used. You can use CGContextMBS instead.

Notes: Note that the destination point uses CG coordinates.

See also:

- 8.1.4 DrawCGImageXYMBS(image as CGImageMBS, x as Integer, y as Integer) 1742

8.1.6 DrawCGPDFDocumentMBS(pdf as CGPDFDocumentMBS, r as CRectMBS, page as Integer)

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Draws a PDF on the graphics object inside the given rectangle.

Notes:

Requires Mac OS X to work.

If destination is scaled page size, you need to also scale the rectangle here.

See also:

- 8.1.7 DrawCGPDFDocumentMBS(pdf as CGPDFDocumentMBS, r as CRectMBS, page as Integer, InterpolationQuality as Integer, Antialias as boolean, FontSmoothing as Boolean) 1743

8.1.7 DrawCGPDFDocumentMBS(pdf as CGPDFDocumentMBS, r as CGRectMBS, page as Integer, InterpolationQuality as Integer, Antialias as boolean, FontSmoothing as Boolean)

Plugin Version: 12.3, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Draws a PDF on the graphics object inside the given rectangle.

Notes:

Requires Mac OS X to work.

You can pass for interpolation:

- 0 Let the context decide.
- 1 Never interpolate.
- 2 Low quality, fast interpolation.
- 4 Medium quality, slower than kCGInterpolationLow.
- 3 Highest quality, slower than kCGInterpolationMedium.

Set Antialias to true to allow anti aliasing and to false to disallow.

Set FontSmoothing to true to allow font smoothing and false to disallow it.

If destination is scaled page size, you need to also scale the rectangle here.

See also:

- 8.1.6 DrawCGPDFDocumentMBS(pdf as CGPDFDocumentMBS, r as CGRectMBS, page as Integer)
1742

8.2 class Picture

8.2.1 class Picture

Console & Web: Yes, Mac: Yes, Win: Yes, Linux: Yes. **Function:** Extends Realbasic's Picture Class.

8.2.2 Methods

8.2.3 CGColorSpaceMBS as CGColorSpaceMBS

Plugin Version: 13.4, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Queries the colorspace profile for a picture.

Example:

```
dim p as new Picture(32,32,32)
dim c as CGColorSpaceMBS = p.CGColorSpaceMBS
MsgBox c.Name
```

Notes: Only for Cocoa targets.

Chapter 9

Printing

9.1 Globals

9.1.1 NewCPMPageFormatMBS as CPMPageFormatMBS

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new page format object.

Notes: Returns nil on any error.

9.1.2 NewCPMPrintSessionMBS as CPMPrintSessionMBS

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new print session object.

Example:

```
'get a print session

// print this PDF
dim pathPrinted as FolderItem=GetFolderItem("test.pdf")

dim thePrintSession as CPMPrintSessionMBS = NewCPMPrintSessionMBS
if thePrintSession = nil then Return

'get default page format and print settings and attach it to the print settings
dim thePageFormat as CPMPageFormatMBS = NewCPMPageFormatMBS
dim thePrintSettings as CPMPrintSettingsMBS = NewCPMPrintSettingsMBS
thePrintSession.DefaultPageFormat thePageFormat
thePrintSession.DefaultPrintSettings thePrintSettings
```

```
'show the print dialog
if not thePrintSession.PrintDialog(thePrintSettings,thePageFormat) then return

'open the file which will be printed
dim thePdfDocument as CGPDFDocumentMBS = pathPrinted.OpenAsCGPDFDocumentMBS

' limit page counts to the one we have
dim LastPage as Integer = thePdfDocument.PageCount
if thePrintSettings.LastPage<lastpage then
lastpage=thePrintSettings.LastPage
end if

' you get better progress bar if you tell how many pages will come
thePrintSettings.LastPage=lastpage

'begin the printing
thePrintSession.BeginDocument(thePrintSettings, thePageFormat)

'loop over the number of copies
for currentCopy as Integer = 1 to thePrintSettings.Copies

'loop over the pages
for currentPage as Integer = thePrintSettings.FirstPage to LastPage

'prepage the page
dim PrintRect as CPMRectMBS =thePageFormat.AdjustedPageSize
dim CGRect as CGRectMBS =CGMakeRectMBS(PrintRect.left, PrintRect.top, PrintRect.Width, Print-
Rect.Height)
thePrintSession.BeginPage(thePageFormat, nil)
dim thePrintContext as CGContextMBS = thePrintSession.PageContext
if thePrintContext = Nil then return

'print the page
thePrintContext.DrawCGPDFDocument thePdfDocument, CGRect, currentPage

'end the page
thePrintContext = nil
thePrintSession.EndPage
next

next

'end the printing
thePrintSession.EndDocument
```

Notes: Returns nil on any error.

9.1.3 NewCPMPrintSettingsMBS as CPMPrintSettingsMBS

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new print settings object.

Notes: Returns nil on any error.

9.2 class CPMLanguageInfoMBS

9.2.1 class CPMLanguageInfoMBS

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a language info.

Notes: Only a data class.

9.2.2 Properties

9.2.3 Level as String

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The level string of the printer.

Notes: (Read and Write property)

9.2.4 Release as String

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The release string of the printer.

Notes: (Read and Write property)

9.2.5 Version as String

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The version string of the printer.

Notes: (Read and Write property)

9.3 class CPMPageFormatMBS

9.3.1 class CPMPageFormatMBS

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a page format.

9.3.2 Methods

9.3.3 AdjustedPageSize as CPMRectMBS

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The adjusted page size.

Notes: Lasterror is set.

9.3.4 AdjustedPaperSize as CPMRectMBS

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The adjusted page size.

Notes: Lasterror is set.

9.3.5 Constructor

Plugin Version: 9.3, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new page format object.

9.3.6 CopySettings(Destination as CPMPageFormatMBS)

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Copies the settings to another pageformat object.

9.3.7 CreateDataRepresentation(Format as Integer = 0) as String

Plugin Version: 15.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Returns a data representation of a PMPageFormat object as a data string.

Example:

```

dim p as new CPMPageFormatMBS
p.orientation = p.kPMLandscape
dim d as string = p.CreateDataRepresentation
break // check in debugger

```

Notes:

Use `CreateWithDataRepresentation` to create a `CPMPageFormatMBS` from a string created by this call. Format can be `kPMDDataFormatXMLDefault`, `kPMDDataFormatXMLMinimal` or `kPMDDataFormatXMLCompressed`.

9.3.8 `CreateWithDataRepresentation(Data as String)` as `CPMPageFormatMBS`

Plugin Version: 15.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Creates a `PMPageFormat` object from a data representation created with `CreateDataRepresentation`.

Example:

```

dim p as new CPMPageFormatMBS
p.orientation = p.kPMLandscape
dim d as string = p.CreateDataRepresentation

dim other as CPMPageFormatMBS = CPMPageFormatMBS.CreateWithDataRepresentation(d)
MsgBox str(other.Orientation)

```

Notes: Returns nil in case of error.

9.3.9 `PrinterID` as `String`

Plugin Version: 15.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Obtains the formatting printer for the pageformat.

Notes: Will either return the formatting printer for the pageformat or will return nil if the pageformat doesn't have that information.

9.3.10 `UnadjustedPageSize` as `CPMRectMBS`

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The unadjusted page size.

Notes: `Lasterror` is set.

9.3.11 UnadjustedPaperSize as CPMRectMBS

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The unadjusted page size.

Notes: Lasterror is set.

9.3.12 Properties

9.3.13 handle as Integer

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The handle for the page format.

Notes:

It's a PMPageFormat which you find in CMTypes.h in the Toolbox.
(Read and Write property)

9.3.14 Lasterror as Integer

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The error code from the last command.

Notes:

0 if successful, -1 if function is not available or a required parameter was not set. Else a Mac OS error code.
(Read and Write property)

9.3.15 release as boolean

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** whether the destructor will release the handle.

Notes: (Read and Write property)

9.3.16 Orientation as Integer

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The page orientation.

Example:

```
dim p as new CPMPageFormatMBS
p.orientation = p.kPMLandscape
```

Notes:

Lasterror is set.

Possible values:

kPMPortrait	1	
kPMLandscape	2	
kPMReversePortrait	3	will revert to kPortrait for current drivers
kPMReverseLandscape	4	will revert to kLandscape for current drivers

(Read and Write computed property)

9.3.17 Scale as Double

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The page scaling.

Notes:

Lasterror is set.

Value is 100 for 100% .

(Read and Write computed property)

9.3.18 Constants**9.3.19 kPMDDataFormatXMLCompressed = 2**

Plugin Version: 15.1. **Function:** One of the data formats constants.

Notes: kPMDDataFormatXMLCompressed is only compatible and usable with Mac OS X version 10.5 and later. Data in this format can be only be reconstituted into the equivalent printing manager object with the appropriate PMXXXCreateWithDataRepresentation function. The data representation produced when using kPMDDataFormatXMLCompressed is approximately 20 times smaller than kPMDDataFormatXMLDefault. This format is a good choice when execution on versions of Mac OS X prior to 10.5 is not necessary and the minimum data size is important.

9.3.20 kPMDDataFormatXMLDefault = 0

Plugin Version: 15.1. **Function:** One of the data formats constants.

Notes: Specifies a data format that is compatible with all Mac OS X versions. Data in this format can be used with the PMUnflattenXXX routines present in all versions of Mac OS X prior to 10.5. However, this

data representation is much larger than the more modern data representations described below.

9.3.21 `kPMDDataFormatXMLMinimal = 1`

Plugin Version: 15.1. **Function:** One of the data formats constants.

Notes: XMLMinimal is only compatible and usable with Mac OS X version 10.5 and later. Data in this format can be only be reconstituted into the equivalent printing manager object with the appropriate `CreateWithDataRepresentation` function. The data representation produced when using `kPMDDataFormatXMLMinimal` is approximately 3-5 times smaller than `kPMDDataFormatXMLDefault`. This format is a good choice when execution on versions of Mac OS X prior to 10.5 is not necessary and an uncompressed XML representation of the data is needed.

9.3.22 `kPMLandscape = 2`

Plugin Version: 15.1. **Function:** One of the orientation constants.

Notes: Landscape

9.3.23 `kPMPortrait = 1`

Plugin Version: 15.1. **Function:** One of the orientation constants.

Notes: Portrait

9.3.24 `kPMReverseLandscape = 4`

Plugin Version: 15.1. **Function:** One of the orientation constants.

Notes: Reverse Landscape

9.3.25 `kPMReversePortrait = 3`

Plugin Version: 15.1. **Function:** One of the orientation constants.

Notes: Reverse Portrait

9.4 class CPMPrinterMBS

9.4.1 class CPMPrinterMBS

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a printer.

9.4.2 Methods

9.4.3 Constructor(name as string)

Plugin Version: 12.3, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Initializes a new printer object given the printer name.

Notes:

Raises exception if lookup fails.

This accepts both CUPS names and the Mac GUI names in printing control panel.

9.4.4 CreateFromPrinterID(PrinterID as String) as CPMPrinterMBS

Plugin Version: 15.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Create a PMPrinter instance from the supplied printerID.

Example:

```
dim p as CPMPrinterMBS = CPMPrinterMBS.CreateFromPrinterID("Brother_DCP_8085DN")
MsgBox p.name
```

9.4.5 CreateGenericPrinter as CPMPrinterMBS

Plugin Version: 15.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Creates a generic PMPrinter.

9.4.6 CreateLocalPrinterList as CPMPrinterMBS()

Plugin Version: 15.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Queries list of local printers.

Example:

```
dim a() as CPMPrinterMBS = CPMPrinterMBS.CreateLocalPrinterList
for each p as CPMPrinterMBS in a
```

MsgBox p.Name
next

9.4.7 DescriptionURL as string

Plugin Version: 12.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Returns the description URL for this printer.

Example:

```
dim session as CPMPrintSessionMBS = NewCPMPrintSessionMBS
dim printer as CPMPrinterMBS = session.CurrentPrinter
```

```
MsgBox printer.DescriptionURL
```

Notes:

Should be the path to a PPD file for a laser printer.
LastError is set.

9.4.8 DeviceURI as string

Plugin Version: 12.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Hand back the URI of the printer's device.

Example:

```
dim session as CPMPrintSessionMBS = NewCPMPrintSessionMBS
dim printer as CPMPrinterMBS = session.CurrentPrinter
```

```
MsgBox printer.DeviceURI
```

Notes:

On success returns a CFURLMBS object describing the printer's device.
LastError is set.

9.4.9 DriverCreator as String

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Returns a 4 letter code for the creator of the printer.

Example:

```
dim session as CPMPrintSessionMBS = NewCPMPrintSessionMBS
dim printer as CPMPrinterMBS = session.CurrentPrinter
```

```
MsgBox "DriverCreator: " + str(printer.DriverCreator)
```

Notes: Lasterror is set.

9.4.10 DriverReleaseInfo as CPMVersionMBS

Plugin Version: 15.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Queries printer driver version.

9.4.11 HostName as string

Plugin Version: 9.2, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Hand back the host name of the print server hosting the printer's print queue.

Example:

```
dim session as CPMPrintSessionMBS = NewCPMPrintSessionMBS
dim printer as CPMPrinterMBS = session.CurrentPrinter
```

```
MsgBox "HostName: " + str(printer.HostName)
```

Notes: Lasterror is set.

9.4.12 ID as string

Plugin Version: 9.2, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Returns the ID of the string.

9.4.13 IndexedPrinterResolution(index as Integer) as CPMResolutionMBS

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Returns a printer resolution.

Notes:

Lasterror is set.
Index is from 1 to ResolutionCount.

9.4.14 IsDefault as boolean

Plugin Version: 9.2, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Whether this printer is the default printer.

Example:

```
dim session as CPMPrintSessionMBS = NewCPMPrintSessionMBS
dim printer as CPMPrinterMBS = session.CurrentPrinter
```

```
MsgBox "IsDefault: "+str(printer.IsDefault)
```

9.4.15 IsFavorite as boolean

Plugin Version: 9.2, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Return true if the printer is in the user's favorite printer list.

Example:

```
dim session as CPMPrintSessionMBS = NewCPMPrintSessionMBS
dim printer as CPMPrinterMBS = session.CurrentPrinter
```

```
MsgBox "IsFavorite: "+str(printer.IsFavorite)
```

9.4.16 IsPostScriptCapable as boolean

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Can this printer do postscript?

Example:

```
dim session as CPMPrintSessionMBS = NewCPMPrintSessionMBS
dim printer as CPMPrinterMBS = session.CurrentPrinter
```

```
MsgBox "IsPostScriptCapable: "+str(printer.IsPostScriptCapable)
```

Notes: Lasterror is set.

9.4.17 IsPostScriptPrinter as boolean

Plugin Version: 9.2, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** If the result is true if the printer is a PostScript printer.

Example:

```
dim session as CPMPrintSessionMBS = NewCPMPrintSessionMBS
dim printer as CPMPrinterMBS = session.CurrentPrinter
```

```
MsgBox "IsPostScriptPrinter: "+str(printer.IsPostScriptPrinter)
```

Notes: A PostScript printer is one whose driver takes PostScript directly.

9.4.18 IsRemote as boolean

Plugin Version: 9.2, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Hand back a boolean indicating whether the printer is hosted by remote print server.

Example:

```
dim session as CPMPrintSessionMBS = NewCPMPrintSessionMBS
dim printer as CPMPrinterMBS = session.CurrentPrinter
```

```
MsgBox "IsRemote: "+str(printer.IsRemote)
```

Notes:

If result is true, the print queue represents a printer hosted and managed by a remote print server.

If result is false, the print queue represents a directly connected printer, a network printer, or a remote printer that is locally managed. Consult the queue's device URI to determine the type of connection that is used to communicate with the printer.

Whether a printer is remote is derived from the CUPS printer-type attribute for the print queue.

9.4.19 LanguageInfo as CPMLanguageInfoMBS

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Returns language information about the printer.

Notes: Lasterror is set.

9.4.20 Location as string

Plugin Version: 9.2, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Returns the location of the printer.

9.4.21 MakeAndModelName as string

Plugin Version: 9.2, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** A string with the name for the model and the maker.

Notes:

Lasterror is set.

Returns "" on any error.

9.4.22 Name as string

Plugin Version: 9.2, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Returns the name of the string.

Example:

```
dim session as CPMPrintSessionMBS = NewCPMPrintSessionMBS
dim printer as CPMPrinterMBS = session.CurrentPrinter
```

```
MsgBox printer.name
```

9.4.23 ResolutionCount as Integer

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Returns how much resolutions are supported by the printer.

Notes: Lasterror is set.

9.4.24 SetDefault

Plugin Version: 9.2, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Set the default printer for the current user.

Notes:

It is not typical for an application to set the current default printer for the user; the printing system itself takes care of managing the default printer.

This function should be used only in rare circumstances.

Requires Mac OS X 10.5.

9.4.25 State as Integer

Plugin Version: 15.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Queries printer state.

Example:

```
dim p as CPMPrinterMBS = CPMPrinterMBS.CreateFromPrinterID("Brother_DCP_8085DN")
MsgBox str(p.State)
```

Notes: Can be kPMPrinterIdle, kPMPrinterProcessing or kPMPrinterStopped.

9.4.26 Properties

9.4.27 handle as Integer

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The handle for the printer.

Notes:

It's a PMPrinter which you find in CMTypes.h in the Toolbox.
(Read and Write property)

9.4.28 Lasterror as Integer

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The error code from the last command.

Notes:

0 if successful, -1 if function is not available or a required parameter was not set. Else a Mac OS error code.
(Read and Write property)

9.4.29 release as boolean

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** whether the destructor will release the handle.

Notes: (Read and Write property)

9.4.30 Constants

9.4.31 `kPMPrinterIdle = 3`

Plugin Version: 15.1. **Function:** One of the printer state constants.

Notes: Printer is idle.

9.4.32 `kPMPrinterProcessing = 4`

Plugin Version: 15.1. **Function:** One of the printer state constants.

Notes: Printer is processing.

9.4.33 `kPMPrinterStopped = 5`

Plugin Version: 15.1. **Function:** One of the printer state constants.

Notes: Printer is stopped.

9.5 class CPMPrintSessionMBS

9.5.1 class CPMPrintSessionMBS

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a print session.

Notes: Works only in Carbon Stuff and can only be used with CGContext which works only on Mac OS X.

9.5.2 Methods

9.5.3 BeginDocument(settings as CPMPrintSettingsMBS, pageformat as CPMPageFormatMBS)

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Begins a new document with the given settings.

Notes: Lasterror is set.

9.5.4 BeginDocumentNoDialog(settings as CPMPrintSettingsMBS, pageformat as CPMPageFormatMBS)

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Begins a new document with the given settings.

Notes:

Doesn't use the print progress dialog.

Lasterror is set.

9.5.5 BeginPage(pageformat as CPMPageFormatMBS, rect as CPMRectMBS)

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Begins a new page.

Notes: Lasterror is set.

9.5.6 BeginPageNoDialog(pageformat as CPMPageFormatMBS, rect as CPMRectMBS)

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Begins a new page.

Notes:

Doesn't use the print progress dialog.
Lasterror is set.

9.5.7 Constructor

Plugin Version: 9.3, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new print session object.

9.5.8 CreatePrinterList(list() as string)

Plugin Version: 12.3, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Creates a list of all printers.

Example:

```
dim session as CPMPrintSessionMBS = NewCPMPrintSessionMBS
```

```
dim list() as string  
session.CreatePrinterList(list)
```

```
MsgBox join(list, EndOfLine)
```

Notes:

List is an array of strings with the names of the printers.
Lasterror is set.
See also:

- 9.5.9 CreatePrinterList(list() as string, byref index as Integer, byref currentprinter as CPMPrinterMBS)
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9.5.9 CreatePrinterList(list() as string, byref index as Integer, byref currentprinter as CPMPrinterMBS)

Plugin Version: 12.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Creates a list of all printers.

Example:

```
dim session as CPMPrintSessionMBS = NewCPMPrintSessionMBS
```

```
dim list() as string  
dim currentprinter as CPMPrinterMBS  
dim index as Integer
```

session.CreatePrinterList(list, index, currentprinter)

MsgBox join(list, EndOfLine)

Notes:

List is an array of strings with the names of the printers.

Index is the index of the current printer inside this list.

CurrentPrinter is the current printer selected.

Lasterror is set.

See also:

- 9.5.8 CreatePrinterList(list() as string)

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9.5.10 DefaultPageFormat(pageformat as CPMPageFormatMBS)

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Sets the page format object to the default settings.

Notes: Lasterror is set.

9.5.11 DefaultPrintSettings(printsettings as CPMPrintSettingsMBS)

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Sets the settings object to the default settings.

Notes: Lasterror is set.

9.5.12 EndDocument

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Ends the current document.

Notes: Lasterror is set.

9.5.13 EndDocumentNoDialog

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Ends the current document.

Notes:

Doesn't use the print progress dialog.

Lasterror is set.

9.5.14 EndPage

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Ends the current page.

Notes: Lasterror is set.

9.5.15 EndPageNoDialog

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Ends the current page.

Notes:

Doesn't use the print progress dialog.

Lasterror is set.

9.5.16 GetDestinationFormat(printsettings as CPMPrintSettingsMBS) as String

Plugin Version: 12.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Returns the destination format value.

Notes: Lasterror is set.

9.5.17 GetDestinationLocation(printsettings as CPMPrintSettingsMBS) as String

Plugin Version: 12.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Returns the destination location value.

Notes: Lasterror is set.

9.5.18 GetDestinationType(printsettings as CPMPrintSettingsMBS) as Integer

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Returns the destination type value.

Notes: Lasterror is set.

9.5.19 kPMDocumentFormatDefault as String

Plugin Version: 12.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** One of the constants for the document format.

9.5.20 kPMDocumentFormatPDF as String

Plugin Version: 12.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** One of the constants for the document format.

9.5.21 kPMDocumentFormatPostScript as string

Plugin Version: 12.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** One of the constants for the document format.

9.5.22 kPMGraphicsContextCoreGraphics as string

Plugin Version: 12.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** One of the constants for the graphics context.

9.5.23 kPMGraphicsContextDefault as string

Plugin Version: 12.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** One of the constants for the graphics context.

9.5.24 PageContext as CGContextMBS

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new CGContext object for the current page.

Notes: Lasterror is set.

9.5.25 PageSetupDialog(pageformat as CPMPageFormatMBS) as boolean

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Shows the page setup dialog.

Notes: Lasterror is set.

9.5.26 PrintDialog(settings as CPMPrintSettingsMBS, pageformat as CPM-PageFormatMBS) as boolean

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Shows the print dialog.

Notes: Lasterror is set.

9.5.27 SetDestination(printsettings as CPMPrintSettingsMBS, desttype as Integer, destformat as String, desturl as String)

Plugin Version: 12.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Sets a new destination.

Notes:

Some destinations so you may need to specify a format, else you can pass "" for the default format. Some destinations require a URL to a file.

Destination type codes:

kPMDestinationInvalid	0
kPMDestinationPrinter	1
kPMDestinationFile	2
kPMDestinationFax	3
kPMDestinationPreview	4

Destformat strings:

kPMDocumentFormatPDF	application/pdf
kPMDocumentFormatPICT	application/vnd.apple.printing-pict
kPMDocumentFormatPICTPS	application/vnd.apple.printing-pict-ps
kPMDocumentFormatPostScript	application/postscript

Lasterror is set.

9.5.28 UseSheets(docWindow as window)

Plugin Version: 9.3, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Specifies that a printing dialog should be displayed as a sheet.

Notes:

docWindow: The window to which the sheet dialog should be attached.
Lasterror is set. (-1 for the docWindow parameter being nil)

9.5.29 ValidatePageFormat(pageformat as CPMPageFormatMBS) as boolean

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Validates the page format.

Notes: Lasterror is set.

9.5.30 ValidatePrintSettings(printsettings as CPMPrintSettingsMBS) as boolean

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Validates the print settings.

Notes: Lasterror is set.

9.5.31 Properties**9.5.32 handle as Integer**

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The handle for the print session.

Notes:

It's a PMPrintSession which you find in CMTypes.h in the Toolbox.
(Read and Write property)

9.5.33 Lasterror as Integer

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The error code from the last command.

Notes:

0 if successful, -1 if function is not available or a required parameter was not set. Else a Mac OS error code.
(Read and Write property)

9.5.34 release as boolean

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** whether the destructor will release the handle.

Notes: (Read and Write property)

9.5.35 SheetTarget as Window

Plugin Version: 9.3, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The window set by UseSheets.

Notes:

This property is to reference the window used for the sheets so REALbasic does not destroy the window too early.

(Read and Write property)

9.5.36 CurrentPrinter as CPMPrinterMBS

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The current printer for this session.

Notes:

Lasterror is set.

Setting this can only be done on Mac OS X.

(Read and Write computed property)

9.5.37 CurrentPrinterName as string

Plugin Version: 12.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The current printer for this session by name.

Notes:

Lasterror is set.

(Read and Write computed property)

9.5.38 Events

9.5.39 SheetDone(WindowHandle as Integer, accepted as boolean)

Plugin Version: 9.3, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** This event is called for a finished print sheet.

Notes: Accepted is false if the cancel button was used. True if OK was clicked.

9.5.40 Constants

9.5.41 kPMDestinationFax = 3

Plugin Version: 15.1. **Function:** One of the destination types.

Notes: Fax

9.5.42 kPMDestinationFile = 2

Plugin Version: 15.1. **Function:** One of the destination types.

Notes: File

9.5.43 kPMDestinationInvalid = 0

Plugin Version: 15.1. **Function:** One of the destination types.

Notes: Invalid

9.5.44 kPMDestinationPreview = 4

Plugin Version: 15.1. **Function:** One of the destination types.

Notes: Preview

9.5.45 kPMDestinationPrinter = 1

Plugin Version: 15.1. **Function:** One of the destination types.

Notes: Printer

9.5.46 kPMDestinationProcessPDF = 5

Plugin Version: 15.1. **Function:** One of the destination types.

Notes: Process to PDF

9.5.47 kPMDestinationTypeDefault = 1

Plugin Version: 15.1. **Function:** One of the destination types.

Notes: Default is printer.

9.6 class CPMPrintSettingsMBS

9.6.1 class CPMPrintSettingsMBS

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a print session.

9.6.2 Methods

9.6.3 Constructor

Plugin Version: 9.3, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new print settings object.

9.6.4 CopyPrintSettings(dest as CPMPrintSettingsMBS)

Plugin Version: 15.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Copies the settings to the other settings.

9.6.5 CreateDataRepresentation(Format as Integer = 0) as String

Plugin Version: 15.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Returns a data representation of a PMPageFormat object as a data string.

Example:

```
dim p as new CPMPrintSettingsMBS
p.Collate = true
p.Duplex = p.kPMDuplexTumble
dim data as string = p.CreateDataRepresentation
Break // check in debugger
```

9.6.6 CreateWithDataRepresentation(Data as String) as CPMPrintSettingsMBS

Plugin Version: 15.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Creates a PMPageFormat object from a data representation created with CreateDataRepresentation.

9.6.7 Dictionary as Dictionary

Plugin Version: 15.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Represent these print settings as a dictionary.

9.6.8 GetPageRange(byref minPage as UInt32, byref maxPage as UInt32)

Plugin Version: 15.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Queries the page range to print.

Notes:

Obtains the valid range of pages that can be printed.

The default page range is 1 - (all pages). The page range is something that is set by the application. It is NOT the first and last page to print. It serves as limits for setting the first and last page.

9.6.9 Keys as String()

Plugin Version: 15.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Queries list of keys.

Example:

```
dim p as new CPMPrintSettingsMBS
p.Collate = true
p.Duplex = p.kPMDuplexTumble
dim keys() as string = p.keys
Break // check in debugger
```

9.6.10 SetPageRange(minPage as UInt32, maxPage as UInt32)

Plugin Version: 15.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Sets the page range to print.

9.6.11 Properties

9.6.12 handle as Integer

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The handle for the print settings.

Notes:

It's a PMPrintSettings which you find in CMTypes.h in the Toolbox.
(Read and Write property)

9.6.13 Lasterror as Integer

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The error code from the last command.

Notes:

0 if successful, -1 if function is not available or a required parameter was not set. Else a Mac OS error code.
(Read and Write property)

9.6.14 release as boolean

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** whether the destructor will release the handle.

Notes: (Read and Write property)

9.6.15 Collate as boolean

Plugin Version: 15.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The collate setting.

Notes: (Read and Write computed property)

9.6.16 Copies as Integer

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The number of copies that the user requests to be printed.

Notes:

Lasterror is set.

(Read and Write computed property)

9.6.17 Duplex as Integer

Plugin Version: 15.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The duplex setting.

Notes: (Read and Write computed property)

9.6.18 FirstPage as Integer

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The number of the first page to print.

Notes:

Lasterror is set.
(Read and Write computed property)

9.6.19 JobName as String

Plugin Version: 12.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Specifies the name of a print job.

Notes:

Lasterror is set.
(Read and Write computed property)

9.6.20 LastPage as Integer

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The number of the last page to print.

Example:

```
'get a print session

// print this PDF
dim pathPrinted as FolderItem=GetFolderItem("test.pdf")

dim thePrintSession as CPMPrintSessionMBS = NewCPMPrintSessionMBS
if thePrintSession = nil then Return

'get default page format and print settings and attach it to the print settings
dim thePageFormat as CPMPPageFormatMBS = NewCPMPPageFormatMBS
dim thePrintSettings as CPMPPrintSettingsMBS = NewCPMPPrintSettingsMBS
thePrintSession.DefaultPageFormat thePageFormat
thePrintSession.DefaultPrintSettings thePrintSettings

'show the print dialog
if not thePrintSession.PrintDialog(thePrintSettings,thePageFormat) then return

'open the file which will be printed
dim thePdfDocument as CGPDFDocumentMBS = pathPrinted.OpenAsCGPDFDocumentMBS

' limit page counts to the one we have
```

```

dim LastPage as Integer = thePdfDocument.PageCount
if thePrintSettings.LastPage<lastpage then
lastpage=thePrintSettings.LastPage
end if

' you get better progress bar if you tell how many pages will come
thePrintSettings.LastPage=lastpage

'begin the printing
thePrintSession.BeginDocument(thePrintSettings, thePageFormat)

'loop over the number of copies
for currentCopy as Integer = 1 to thePrintSettings.Copies

'loop over the pages
for currentPage as Integer = thePrintSettings.FirstPage to LastPage

'prepage the page
dim PrintRect as CPMRectMBS =thePageFormat.AdjustedPageSize
dim CGRect as CGRectMBS =CGMakeRectMBS(PrintRect.left, PrintRect.top, PrintRect.Width, Print-
Rect.Height)
thePrintSession.BeginPage(thePageFormat, nil)
dim thePrintContext as CGContextMBS = thePrintSession.PageContext
if thePrintContext = Nil then return

'print the page
thePrintContext.DrawCGPDFDocument thePdfDocument, CGRect, currentPage

'end the page
thePrintContext = nil
thePrintSession.EndPage
next

next

'end the printing
thePrintSession.EndDocument

```

Notes:

Lasterror is set.
(Read and Write computed property)

9.6.21 Value(key as String) as Variant

Plugin Version: 15.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The value in settings.

Example:

```
dim p as new CPMPrintSettingsMBS
p.Collate = true
dim value as Variant = p.value("com.apple.print.PrintSettings.PMCopyCollate")
Break // check in debugger
```

Notes: (Read and Write computed property)

9.6.22 Constants

9.6.23 kPMDuplexNone = 1

Plugin Version: 15.1. **Function:** One of the duplex mode constants.

Notes: Duplex off.

9.6.24 kPMDuplexNoTumble = 2

Plugin Version: 15.1. **Function:** One of the duplex mode constants.

Notes: Duplex with no tumble.

9.6.25 kPMDuplexTumble = 3

Plugin Version: 15.1. **Function:** One of the duplex mode constants.

Notes: Duplex with tumble.

9.6.26 kPMSimplexTumble = 4

Plugin Version: 15.1. **Function:** One of the duplex mode constants.

Notes: No duplex.

9.7 class CPMRectMBS

9.7.1 class CPMRectMBS

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a rectangle.

Notes: Only a data class.

9.7.2 Properties

9.7.3 Bottom as Double

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The bottom distance to the border.

Notes: (Read and Write property)

9.7.4 Height as Double

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The height of the rectangle.

Notes:

Setting the height changes the bottom property.
(Read and Write property)

9.7.5 Left as Double

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The left distance to the border.

Notes: (Read and Write property)

9.7.6 Right as Double

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The right distance to the border.

Notes: (Read and Write property)

9.7.7 Top as Double

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The top distance to the border.

Notes: (Read and Write property)

9.7.8 Width as Double

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The width of the rectangle.

Notes:

Setting the height changes the right property.

(Read and Write property)

9.8 class CPMResolutionMBS

9.8.1 class CPMResolutionMBS

Plugin Version: 2.7, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** A class for a resolution.

Notes: Only a data class.

9.8.2 Properties

9.8.3 Horizontal as Double

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The horizontal resolution.

Notes: (Read and Write property)

9.8.4 Vertical as Double

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The vertical resolution.

Notes: (Read and Write property)

9.9 class CPMVersionMBS

9.9.1 class CPMVersionMBS

Plugin Version: 15.1, Console & Web: Yes, Mac: Yes, Win: No, Linux: No. **Function:** The class for version information.

9.9.2 Properties

9.9.3 CountryCode as Integer

Plugin Version: 15.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The country code.
Notes: (Read and Write property)

9.9.4 LongVersion as String

Plugin Version: 15.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The long version string.
Notes: (Read and Write property)

9.9.5 ShortVersion as String

Plugin Version: 15.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The short version string.
Notes: (Read and Write property)

9.9.6 VersionMajor as Integer

Plugin Version: 15.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The major version number.
Notes: (Read and Write property)

9.9.7 VersionMinor as Integer

Plugin Version: 15.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The minor version number.

Notes: (Read and Write property)

9.9.8 VersionRevision as Integer

Plugin Version: 15.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The reversion number.

Notes: (Read and Write property)

9.9.9 VersionStage as Integer

Plugin Version: 15.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The version stage.

Notes: (Read and Write property)

Chapter 10

Process

10.1 class Application

10.1.1 class Application

Console & Web: Yes, Mac: Yes, Win: Yes, Linux: No. **Function:** Extends the Application class inside Realbasic.

10.1.2 Methods

10.1.3 OverlayApplicationDockTileImageMBS(pic as CGImageMBS) as boolean

Plugin Version: 2.6, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Adds a picture on top of the application dock title.

Example:

```
static n as Integer // global property
dim p as picture
dim m as picture
dim g as graphics
dim s as string
dim w,h,x as Integer

n=n+1 // add one
s=str(n)
m=newpicture(128,128,32)
p=newpicture(128,128,32)

g=p.graphics
```

```

g.textsize=24
w=g.stringwidth(s)
h=g.stringheight(s,0)
x=125-w-10
g.foreColor=rgb(255,0,0)
g.fillRoundRect x,10,10+w,10+h,20,20
g.foreColor=rgb(0,0,0)
g.drawstring s,x+5,15+g.textascent

g=m.graphics
g.foreColor=rgb(0,0,0)
g.fillRoundRect x,10,10+w,10+h,20,20

if app.OverlayApplicationDockTileImageMBS(CGCreateImageMBS(p,m)) then
end if

```

Notes:

Changed in MBS Plugin 2.7 to use CGImages directly.
 Added support for 64-bit in plugin version 16.0.

10.1.4 RestoreApplicationDockTileImageMBS as boolean

Plugin Version: 2.6, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Restores the application dock tile image.

Example:

```

if app.RestoreApplicationDockTileImageMBS then
// ok
end if

```

Notes: Added support for 64-bit in plugin version 16.0.

10.1.5 SetApplicationDockTileImageMBS(pic as CGImageMBS) as boolean

Plugin Version: 2.6, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Sets the application dock tile image.

Example:

```

dim p as CGImageMBS = CGImageMBS.CreateImage(LogoMBS(500))

if app.SetApplicationDockTileImageMBS(p) then

```



```
// ok  
end if
```

Notes:

Changed in MBS Plugin 2.7 to use CGImages directly.
Added support for 64-bit in plugin version 16.0.

Chapter 11

Window

11.1 class GrowIconMBS

11.1.1 class GrowIconMBS

Plugin Version: 8.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** A class to replace the growicon on a composite window on Mac OS X with your own growicon.

Deprecated: This item is deprecated and should no longer be used. **Notes:** The grow icon is the bottom right part of the window where users can change the window size.

11.1.2 Methods

11.1.3 Constructor(target as window)

Plugin Version: 8.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The constructor to link this class to the given window.

Notes: The class keeps a reference to this window.

11.1.4 Properties

11.1.5 ControlHandle as Integer

Plugin Version: 8.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The handle to the growicon control used.

Notes: (Read and Write property)

11.1.6 TargetWindow as Window

Plugin Version: 8.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The window being used.

Notes: (Read and Write property)

11.1.7 Events

11.1.8 Draw(context as CGContextMBS, x as Double, y as Double, width as Double, height as Double)

Plugin Version: 8.1, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** The draw event where you can draw your own growicon.

Example:

```
Sub Draw(context as CGContextMBS, x as Double, y as Double, width as Double, height as Double)
Context.SetRGBFillColor 1,0,0,1
context.FillRect CGMakeRectMBS(x,y,width,height)
End Sub
```

11.2 class Window

11.2.1 class Window

Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Extends Realbasic's Window Class.

Example:

```
window1.HasNoTitleBarMBS = true
```

Notes: In Realbasic 2005 and newer you need to use self. in front of the method as the propertyname alone is not accepted.

11.2.2 Methods

11.2.3 CGContextMBS as CGContextMBS

Plugin Version: 2.7, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Creates a new CGContextMBS object for the given Window.

Example:

```
dim CGContext as CGContextMBS
dim OverlayPic as Picture=LogoMBS(500)
dim contentpicture as CGImageMBS= CGCreateImageMBS(OverlayPic)
```

```
CGContext=window1.CGContextMBS
```

```
CGContext.ClearRect CGMakeRectMBS(0, 0, OverlayPic.width, OverlayPic.height)
CGContext.DrawPicture contentpicture, CGMakeRectMBS(0, 0, OverlayPic.width, OverlayPic.height)
```

Notes:

Requires Mac OS X to work.

Please make sure the CGContextMBS object is released in the paint event if you use it there, so all the drawings are flushed. Not releasing it may be visible in missing statictext or other strange graphics effects.

Version 9.8 adds support for Cocoa target.

But on a Cocoa window the context is not always available, so in the window paint event, you can use GetCurrentCGContextMBS.

11.2.4 DrawIntoDockTileMBS(pic as CGImageMBS, clearbeforedrawing as boolean) as Integer

Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Draws into a window's dock tile.

Notes:

Returns a Mac OS error code (-1 for function not available and 0 for okay).
If clearbeforedrawing=true then the area is cleared before the image is drawn.

Not available on Cocoa.

11.2.5 Properties

11.2.6 CGColorSpaceMBS as CGColorSpaceMBS

Plugin Version: 10.4, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Function:** Get or set the colorspace profile for this window.

Example:

```
dim c as CGColorSpaceMBS = window1.CGColorSpaceMBS
```

```
if c<>Nil then  
  MsgBox str(c.NumberOfComponents)  
else  
  MsgBox "nil"  
end if
```

Notes:

Requires Mac OS X 10.6.

On Cocoa, the NSColorSpace is queried and the matching CGColorspace is returned. For setting a NSColorSpace is created for the given CGColorspace.

In Carbon applications, the CoreGraphics color space is passed directly.

(Read and Write computed property)

Chapter 12

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Chapter 13

The FAQ

13.0.1 Can anyone help me convert seconds to time in this format hh:mm:ss?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Sure, here's a routine I use (which has an advantage over the previously-posted Date-based solution in that you don't have to rely on the creation of an object – all that happens is some division and string concatenation):

Example:

```
Function SecsToTimeString(timeInSecs as Integer, padHours as boolean, padMinutes as boolean) as string
// Given an amount time (in seconds), generates a string representing that amount
// of time. The padHours and padMinutes parameters determine whether to display
// hours and minutes if their values are zero.
```

```
// Examples:
// timeInSecs = 90, padHours = true; returns "00:01:30"
// timeInSecs = 1, padHours = false, padMinutes = true; returns "00:01"
// timeInSecs = 3601, padMinutes = false; returns "01:00:01"
```

```
dim hours, minutes, seconds as Integer
dim hoursString, minutesString as string
```

```
hours = timeInSecs / 3600
minutes = (timeInSecs mod 3600) / 60
seconds = timeInSecs mod 60
```

```
if hours = 0 then
if padHours then
hoursString = "00:"
else
hoursString = ""
end if
else
```

```

hoursString = Format(hours, "# # \:")
end if
if minutes = 0 then
if hours <>0 or padMinutes then
minutesString = "00:"
else
minutesString = ""
end if
else
minutesString = Format(minutes, "00\:")
end if

return hoursString + minutesString + Format(seconds, "00")
End Function

```

Notes: (from the rb mailinglist)

13.0.2 How do I get the proper highlight color on Mac OS X for active/inactive selection?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** You can use functions from NSColor to get proper highlight color in RGB:

Example:

```

Function ProperHighlightColor(active as Boolean) As Color
# if TargetCocoa
Dim theColor As NSColorMBS
If active Then
theColor = NSColorMBS.alternateSelectedControlColor
Else
theColor = NSColorMBS.secondarySelectedControlColor
End If

```

```

Dim rgbColor As NSColorMBS = theColor.colorUsingColorSpaceName(NSColorSpaceMBS.NSCalibratedRGBColorSpace)
If rgbColor <> Nil Then
Dim red as Integer = rgbColor.redComponent * 255.0
Dim green as Integer = rgbColor.greenComponent * 255.0
Dim blue as Integer = rgbColor.blueComponent * 255.0
Return RGB(red, green, blue)
Else
Return HighlightColor
End If
# else

```

```
return HighlightColor
# endif
End Function
```

Notes: As you see we convert color to Calibrated RGB for best results.
See also:

- 13.0.3 How to catch delete key? 1803
- 13.0.4 How to convert cmyk to rgb? 1803
- 13.0.5 How to delete a folder? 1805
- 13.0.6 How to detect if CPU if 64bit processor? 1806
- 13.0.7 How to refresh a htmlviewer on Windows? 1806

13.0.3 How to catch delete key?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** The following is the code in keydown event catches delete or backspace keys.

Example:

```
Function KeyDown(Key As String) As Boolean
if asc(key) = 8 or asc(key) = 127 then
MsgBox "Delete"
Return true
end if
End Function
```

See also:

- 13.0.2 How do I get the proper highlight color on Mac OS X for active/inactive selection? 1802
- 13.0.4 How to convert cmyk to rgb? 1803
- 13.0.5 How to delete a folder? 1805
- 13.0.6 How to detect if CPU if 64bit processor? 1806
- 13.0.7 How to refresh a htmlviewer on Windows? 1806

13.0.4 How to convert cmyk to rgb?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:**

The following is the code to convert cmyk values to an RGB color datatype.

It's just a basic estimate of the color values. If you are looking for completely color accurate solution, this is not it. It should work for most people. :)

Example:

```
Function CMYKToRGB(c as Integer, m as Integer, y as Integer, k as Integer) As color
// converts c,m,y,k values (0-100) to color data type RGB
// place this in a method. Supply C,M,Y,K values-
// it returns color datatype

dim color_RGB as color
dim r, g, b as Integer

r=255-round(2.55*(c+k))
if r<0 then
r=0
end if
g=255-round(2.55*(m+k))
if g<0 then
g=0
end if
b=255-round(2.55*(y+k))
if b<0 then
b=0
end if

color_RGB=RGB(r,g,b)

return color_RGB

End Function
```

Notes: (from the rb mailinglist)

See also:

- 13.0.2 How do I get the proper highlight color on Mac OS X for active/inactive selection? 1802
- 13.0.3 How to catch delete key? 1803
- 13.0.5 How to delete a folder? 1805
- 13.0.6 How to detect if CPU is 64bit processor? 1806
- 13.0.7 How to refresh a htmlviewer on Windows? 1806

13.0.5 How to delete a folder?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** The following is the code deletes a folder recursively.

Example:

```
Sub deletefolder(f as folderitem)
dim files(-1) as FolderItem
```

```
if f=nil then Return
```

```
// delete single file
if f.Directory=false then
f.Delete
Return
end if
```

```
// get a list of all items in that folder
dim i,c as Integer
c=F.Count
for i=1 to c
files.Append f.TrueItem(i)
next
```

```
// delete each item
for each fo as FolderItem in files
if fo=nil then
' ignore
elseif fo.Directory then
deletefolder fo
else ' file
fo.Delete
end if
next
```

```
f.Delete
End Sub
```

See also:

- 13.0.2 How do I get the proper highlight color on Mac OS X for active/inactive selection? 1802
- 13.0.3 How to catch delete key? 1803
- 13.0.4 How to convert cmyk to rgb? 1803
- 13.0.6 How to detect if CPU if 64bit processor? 1806
- 13.0.7 How to refresh a htmlviewer on Windows? 1806

13.0.6 How to detect if CPU is 64bit processor?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Via CPUID you can ask CPU:

Example:

```
dim c as new CPUIDMBS

if c.Flags(CPUIDMBS.kFeatureLM) then
  MsgBox "64-bit CPU"
else
  MsgBox "32-bit CPU"
end if
```

Notes: Should work on all intel compatible CPUs.

See also:

- 13.0.2 How do I get the proper highlight color on Mac OS X for active/inactive selection? 1802
- 13.0.3 How to catch delete key? 1803
- 13.0.4 How to convert cmyk to rgb? 1803
- 13.0.5 How to delete a folder? 1805
- 13.0.7 How to refresh a htmlviewer on Windows? 1806

13.0.7 How to refresh a htmlviewer on Windows?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** You can ask the browser to reload the website with this code line:

Example:

```
call htmlViewer1.IERunJavaScriptMBS("javascript:document.location.reload()")
```

See also:

- 13.0.2 How do I get the proper highlight color on Mac OS X for active/inactive selection? 1802
- 13.0.3 How to catch delete key? 1803
- 13.0.4 How to convert cmyk to rgb? 1803
- 13.0.5 How to delete a folder? 1805
- 13.0.6 How to detect if CPU is 64bit processor? 1806

13.0.8 Is there an example for vector graphics in REALbasic?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Try this example inside the paint event of a window:

Example:

```

dim v as Group2D
dim r as RectShape
dim s as StringShape

const pi=3.14

s=new StringShape
s.Text="Hello World!"
s.TextFont="Geneva"
s.TextSize=24
s.FillColor=rgb(0,0,255)
s.Italic=true
s.y=5
s.x=0

r=new RectShape

r.X=0
r.y=0
r.Height=100
r.Width=180
r.BorderColor=rgb(255,0,0)
r.FillColor=rgb(0,255,0)
r.BorderWidth=5
r.Border=50

v=new Group2d
v.Append r
v.Append s
v.Rotation=pi*-20.0/180.0
v.x=150
v.y=150

g.DrawObject v

```

13.0.9 Picture functions do not preserve resolution values?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Yes, the picture functions return pictures with no/default resolution values.

Example:

```
dim l as Picture = LogoMBS(500)
```

```
l.HorizontalResolution = 300
```

```
l.VerticalResolution = 300
```

```
dim r as Picture = l.Rotate90MBS
```

```
MsgBox str(r.HorizontalResolution)+" x "+str(r.VerticalResolution)
```

```
r.HorizontalResolution = l.HorizontalResolution
```

```
r.VerticalResolution = l.VerticalResolution
```

```
MsgBox str(r.HorizontalResolution)+" x "+str(r.VerticalResolution)
```

Notes:

So please fix them yourself after calling a function.

Maybe in the future this changes, but currently you can't really set this easily from plugin code.

13.0.10 A toolbox call needs a rect - how do I give it one?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: No. **Answer:** Fill a memoryblock like this:

Example:

```
Dim MB As Memoryblock
```

```
MB = NewMemoryBlock(8)
```

```
MB.Short(0) = window1.Top
```

```
MB.Short(2) = window1.Left
```

```
MB.Short(4) = window1.Height+window1.Top // bottom
```

```
MB.Short(6) = window1.Width+window1.Left // right
```

13.0.11 API client not supported?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** If you get this exception message on `SQLConnectionMBS.Connect`, we may have a problem.

Notes:

First case is that the given thing is not supported (e.g. MS SQL directly on Mac).

Second case is that the plugin compilation went wrong and the support for the database was not linked into the plugin. Like MySQL missing or MS SQL on Windows missing. In that case please contact us to fix the plugin.

13.0.12 Can I access Access Database with Java classes?

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** You can use ucanaccess to access databases created with Microsoft

Example:

```

dim options(-1) as string

// load all the jar files we have in a folder called java:

dim appFolder as FolderItem = GetFolderItem("")

Dim count as Integer = appFolder.Parent.Child("java").Count
dim libjs() as string
For i as Integer = 1 to count
Dim f As FolderItem = appFolder.Parent.Child("java").item(i)
If f <> Nil and f.Exists Then
libjs.append f.NativePath+";"
End If
Next

// now init virtual machine
dim library as string = Join(libjs, "")
dim vm as new JavaVMMBS(library)

if vm.Handle = 0 then
MsgBox "Failed to initialize virtual machine"
else
// now make a new database connection with ucanaccess
dim d as new JavaDatabaseMBS(vm,"net.ucanaccess.jdbc.UcanaccessDriver")
Dim DbFile as FolderItem = appFolder.Parent.Child("Database11.accdb")
dim j as JavaConnectionMBS = d.getConnection("jdbc:ucanaccess://" + DbFile.NativePath)

// select and show values
dim r as JavaResultSetMBS = j.MySelectSQL("Select * From test")
while r.NextRecord
MsgBox r.getString("FirstName") + " " + r.getString("LastName")
wend

end if

Exception e as JavaExceptionMBS

```

```
MsgBox e.message+" errorcode: "+str(e.ErrorNumber)
```

Notes:

see website:

<http://ucanaccess.sourceforge.net/site.html>

13.0.13 Can I create PDF from Real Studio Report using DynaPDF?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Sorry, no. We can't provide a graphics subclass from plugin.

Notes:

This is a feature request to allow graphics subclasses:

Feedback case 11391: feedback://showreport?report_id=11391

13.0.14 Can I use AppleScripts in a web application?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Yes, but they run on the server, not on the client.

Example:

```
dim a as new AppleScriptMBS
```

```
// query my application name
```

```
a.Compile "tell application ""System Events"" to return name of current application"
```

```
// run
```

```
a.Execute
```

```
// show result
```

```
label1.text = a.Result
```

```
// shows something like "My Application.fcgi.debug"
```

Notes: This can be useful to control the server from remote, if and only if the your sever is running Mac OS X.

13.0.15 Can I use graphics class with DynaPDF?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Sorry, no. We can't provide a graphics subclass from plugin.

Notes:

The is a feature request to allow graphics subclasses:
Feedback case 11391: [feedback://showreport?report_id=11391](https://feedback.adobe.com/showreport?report_id=11391)

13.0.16 Can I use OGG with REALbasic?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: No. **Answer:** There is a QuickTime plugin for OGG which works with REALbasic.

Notes: That should be a solution for playback and recording on Mac and Windows.

13.0.17 Can I use sockets on a web application?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Yes, but they run on the server, not on the client.

Notes:

You can use HTTPSocket, SMTPSocket, POP3Socket, SMTPSecureSocket, SecurePOP3Socket, EasyTCP-Socket, EasyUDPSocket, AutoDiscovery, our Bonjour classes or our CURL* classes. But all of them work on the server, not on the client.

This means if you search for a printer with Bonjour, you can find the printers in the local network on your server hosting site. Using SMTPSocket may be a good idea for sending emails from the server like notifications.

13.0.18 Can I use your ChartDirector plugin on a web application?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Yes, our ChartDirector plugin works just fine on the Real Studio Web Edition.

Example:

```
// The data for the pie chart
dim data(-1) as Double=array(55.0, 18.0, 25.0, 22.0, 18.0, 30.0, 35.0)

// The labels for the pie chart, Words are choosen random to check font!
dim labels(-1) as string=array("Germany", "Italy", "France", "Spain", "UK", "Poland", "Russia")

// The colors to use for the sectors
```

```

dim colors(-1) as Integer

colors.Append & h66aaee
colors.Append & heebb22
colors.Append & hbbbbbb
colors.Append & h8844ff

if TargetLinux then
CDBaseChartMBS.SetFontSearchPath "/usr/share/fonts/truetype/msttcorefonts"
end if

// Create a PieChart object of size 360 x 300 pixels
dim c as new CDPieChartMBS(700, 600)

c.setBackground(c.linearGradientColor(0, 0, 0, c.getHeight(), & h0000cc, & h000044))
c.setRoundedFrame(& hffffff, 16)
dim tt as CDTextBoxMBS = c.addTitle("ChartDirector Demonstration", "timesbi.ttf", 18)
tt.setMargin(0, 0, 16, 0)
tt.setFontColor(& hFFFFFFF)

// Set the center of the pie at (180, 140) and the radius to 100 pixels
c.setPieSize 350,300,150
// Set the sector colors
c.setColors(c.kDataColor, colors)

// Draw the pie in 3D with a pie thickness of 20 pixels
c.set3D(20)

dim t as CDTextBoxMBS = c.setLabelStyle("arialbd.ttf", 10, & h000000)
t.setBackground(CDPieChartMBS.kSameAsMainColor, CDPieChartMBS.kTransparent, CDPieChartMBS.soft-
Lighting(CDPieChartMBS.kRight, 0))
t.setRoundedCorners(8)

// Use local gradient shading for the sectors, with 5 pixels wide
// semi-transparent white (bbffffff) borders
c.setSectorStyle(CDPieChartMBS.kLocalGradientShading, & hbbffffff, 0)

// Set the pie data and the pie labels
c.setData data,labels
call c.setLabelStyle "arialbd.ttf",18

dim pic as picture = c.makeChartPicture
dim wp as new WebPicture(pic, Picture.FormatJPEG) // JPEG makes it smaller and faster

ImageView1.Picture=wp

```

Notes:

Be aware that our plugin produces pictures for you, which you assign to ImageViews. Transferring those pictures takes time, so you can optimize that with using WebPicture class. There you can decide between different compressions to improve speed (use JPEG instead of PNG).

e.g. if you use ubuntu, you can install the ttf-mscorefonts-installer package and call this method with `"/usr/share/fonts/truetype/msttcorefonts"` as the path. No backslash on the end of a path, please.

13.0.19 Can I use your DynaPDF plugin on a web application?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Yes, our DynaPDF plugin works just fine on the Real Studio Web Edition.

Notes:

PDF files are created on the server. You may want to offer a preview to the user which uses reduced resolution images to reduce the time to download the PDF.

See our Create PDF example for the Real Studio Web Edition.
<http://www.monkeybreadsoftware.de/realbasic/webapps.shtml>

13.0.20 Can I use your plugin controls on a web application?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** No.

13.0.21 Can you get an unique machine ID?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** There is nothing like an unique machine ID.

Notes:

1:

You can use the MAC IDs of the network interfaces.

This can be changed by the user with software tools.

And the list of network interfaces changes if user reorder the interfaces.

2:

You can use the system folder creation date/time.

This may stay equal after cloning machines or after migration to new PC.

3:

You can use the Mac Serialnumber.
Mac only and it can happen that a Mac does not have a serial number.

4:

You can use the x86 CPU ID.
This is x86 CPU only and does not avoid running on the same CPU in different PCs.

13.0.22 ChartDirector: Alignment Specification

Plugin Version: 8.2, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** ChartDirector: Alignment Specification

Notes:

In many ChartDirector objects, you may specify the alignment of the object's content relative to its boundary. For example, for a TextBox object, you may specify the text's alignment relative to the box boundary by using `TextBox.setAlignment`.

The ChartDirector API defines several constants for the alignment options.

ConstantValueDescription

13.0.23 ChartDirector: Color Specification

Plugin Version: 8.2, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** ChartDirector: Color Specification

Notes:

Many functions in the ChartDirector API accept colors as parameters. ChartDirector supports colors specified in web and HTML compatible ARGB format, in which ARGB refers to the Alpha transparency, Red, Green and Blue components of the color.

In addition to ARGB colors, ChartDirector supports "dynamic" colors. A dynamic color is a color that changes depending on the position of the pixels. The "dynamic" colors that ChartDirector supports include "pattern colors", "metal colors", "gradient colors", "zone colors" and "dash line colors".

ChartDirector supports specifying colors indirectly using "palette colors". When a "palette color" is used, the color is specified as an index to a palette. The actual color is looked up from the palette. ARGB Color ARGB color consists of 4 components - alpha transparency, red, green and blue. The four components are encoded as a 32-bit number, with each component occupying 8 bits. In hexadecimal notation, it is AAR-

BottomLeft	1	The leftmost point on the bottom line.
BottomCenter	2	The center point on the bottom line.
BottomRight	3	The rightmost point on the bottom line.
Left	4	The leftmost point on the middle horizontal line.
Center	5	The center point on the middle horizontal line.
Right	6	The rightmost point on the middle horizontal line.
TopLeft	7	The leftmost point on the top line.
TopCenter	8	The center point on the top line.
TopRight	9	The rightmost point on the top line.
Bottom	2	The center point on the bottom line. Same as BottomCenter.
Top	8	The center point on the top line. Same as TopCenter.
TopLeft2	10	An alternative top-left position used in Axis.setTitlePos for axis title positioning only. For a vertical axis, TopLeft2 refers to refers to the left of the top side, while TopLeft refers to the top of the left side. The reverse applies for a horizontal axis.
TopRight2	11	An alternative top-right position used in Axis.setTitlePos for axis title positioning only. For a vertical axis, TopRight2 refers to refers to the right of the top side, while TopRight refers to the top of the right side. The reverse applies for a horizontal axis.
BottomLeft2	12	An alternative bottom-left position used in Axis.setTitlePos for axis title positioning only. For a vertical axis, BottomLeft2 refers to refers to the left of the bottom side, while BottomLeft refers to the bottom of the left side. The reverse applies for a horizontal axis.
BottomRight2	13	An alternative bottom-right position used in Axis.setTitlePos for axis title positioning only. For a vertical axis, BottomRight2 refers to refers to the right of the bottom side, while BottomRight refers to the bottom of the right side. The reverse applies for a horizontal axis.

RGGBB, where AA, RR, GG and BB are the alpha transparency, red, green and blue components.

Each component ranges from 00 - FF (0 - 255), representing its intensity. For example, pure red color is 00FF0000, pure green color is 0000FF00, and pure blue color is 000000FF. White color is 00FFFFFF, and black color is 00000000.

Most programming language requires you to put special prefix in front of hexadecimal characters. For C++, the prefix is "0x". For example, the syntax for the hexadecimal number 00FFFFFF is 0x00FFFFFF, or simply 0xFFFFFF.

For the alpha transparency component, a zero value means the color is not transparent at all. This is equivalent to traditional RGB colors. A non-zero alpha transparency means the the color is partially transparent. The larger the alpha transparency, the more transparent the color will be. If a partially transparent color is used to draw something, the underlying background can still be seen.

For example, 80FF0000 is a partially transparent red color, while 00FF0000 is a non-transparent red color.

Note that ChartDirector's ARGB color is web and HTML compatible. For example, red is FF0000, the same as in HTML. There are many resources on the web that provide tables in which you can click a color and it will show its HTML color code. These color codes can be used in ChartDirector.

If alpha transparency is FF (255), the color is totally transparent. That means the color is invisible. It does not matter what the RGB components are. So in ChartDirector, only one totally transparent color is used - FF000000. All other colors of the form FFnnnnnn are reserved to represent palette colors and dynamic colors, and should not be interpreted as the normal ARGB colors.

The totally transparent color FF000000 is often used in ChartDirector to disable drawing something. For example, if you want to disable drawing the border of a rectangle, you can set the border color to totally transparent.

For convenience, ChartDirector defines a constant called Transparent, which is equivalent to FF000000.Pattern Color

A pattern color is a dynamic color that changes according to a 2D periodic pattern. When it is used to fill an area, the area will look like being tiled with a wallpaper pattern.

Pattern colors are created using BaseChart.patternColor, BaseChart.patternColor2, DrawArea.patternColor and DrawArea.patternColor2. The patternColor method creates pattern colors using an array of colors as a bitmap. The patternColor2 method creates pattern colors by loading the patterns from image files.

These methods return a 32-bit integer acting as a handle to the pattern color. The handle can be used in any ChartDirector API that expects a color as its input.Metal Color

A metal color is a color of which the brightness varies smoothly across the chart surface as to make the surface look shiny and metallic. ChartDirector supports using any color as the base color of the metal color. In particular, using yellow and grey as the base colors will result in metal colors that look gold and silver.

Metal colors are most often used as background colors of charts. They are created using CDBaseChartMBS.metalColor, CDBaseChartMBS.goldColor and CDBaseChartMBS.silverColor. The first method allows you to specify an arbitrary base color. The second and third methods use yellow and grey as the base colors, resulting in gold and silver metal colors.

These methods return a 32-bit integer acting as a handle to the gradient color. The handle can be used in any ChartDirector API that expects a color as its input.Gradient Color

A gradient color is a color that changes progressively across a direction.

Gradient colors are created using BaseChart.gradientColor, BaseChart.gradientColor2, DrawArea.gradientColor and DrawArea.gradientColor2. The gradientColor method creates a 2-point gradient color that changes from color A to color B. The gradientColor2 method creates a multi-point gradient colors that changes from color A to B to C

These methods return a 32-bit integer acting as a handle to the gradient color. The handle can be used in any ChartDirector API that expects a color as its input.

One common use of multi-point gradient colors is to define colors that have metallic look and feel. Please refer to DrawArea.gradientColor2 for details.

Dash Line Colors
A dash line color is a color that switches on and off periodically. When used to draw a line, the line will appear as a dash line.

Dash line colors are created using BaseChart.dashLineColor and DrawArea.dashLineColor. They accept a line color and a dash pattern code as arguments, and return a 32-bit integer acting as a handle to the dash line color. The handle can be used in any ChartDirector API that expects a color as its input.

Zone Colors
A zone color is for XY charts only. It is a color that automatically changes upon reaching a data threshold value along the x-axis or y-axis. Zone colors are created using Layer.xZoneColor, Layer.yZoneColor, XYChart.xZoneColor or XYChart.yZoneColor.

Palette Colors
Palette colors are colors of the format FFFFnnnn, where the least significant 16 bits (nnnn) are the index to the palette. A palette is simply an array of colors. For a palette color, the actual color is obtained by looking up the palette using the index. For example, the color FFFF0001 is the second color in the palette (first color is index 0).

The colors in the palette can be ARGB colors or "dynamic" colors (pattern, gradient and dash line colors).

The first eight palette colors have special significance. The first three palette colors are the background color, default line color, and default text color of the chart. The 4th to 7th palette colors are reserved for future use. The 8th color is a special dynamic color that is equal to the data color of the "current data set".

The 9th color (index = 8) onwards are used for automatic data colors. For example, in a pie chart, if the sector colors are not specified, ChartDirector will automatically use the 9th color for the first sector, the 10th color for the second sector, and so on. Similarly, for a multi-line chart, if the line colors are not specified, ChartDirector will use the 9th color for the first line, the 10th color for the second line, and so on.

The ChartDirector API defines several constants to facilitate using palette colors.

ConstantValueDescription

When a chart is created, it has a default palette. You may modify the palette using BaseChart.setColor, BaseChart.setColors, or BaseChart.setColors2.

The advantages of using palette colors are that you can change the color schemes of the chart in one place. ChartDirector comes with several built-in palettes represented by the following predefined constants.

Palette	FFFF0000	The starting point of the palette. The first palette color is (Palette + 0). The nth palette color is (Palette + n - 1).
BackgroundColor	FFFF0000	The background color.
LineColor	FFFF0001	The default line color.
TextColor	FFFF0002	The default text color.
[Reserved]	FFFF0003 - FFFF0006	These palette positions are reserved. Future versions of ChartDirector may use these palette positions for colors that have special significance.
SameAsMainColor	FFFF0007	A dynamic color that is equal to the data color of the current data set. This color is useful for objects that are associated with data sets. For example, in a pie chart, if the sector label background color is SameAsMainColor, its color will be the same as the corresponding sector color.
DataColor	FFFF0008	The starting point for the automatic data color allocation.

ConstantDescription

defaultPalette	An array of colors representing the default palette. This palette is designed for drawing charts on white backgrounds (or lightly colored backgrounds).
whiteOnBlackPalette	An array of colors useful for drawing charts on black backgrounds (or darkly colored backgrounds).
transparentPalette	An array of colors useful drawing charts on white backgrounds (or lightly colored backgrounds). The data colors in this palette are all semi-transparent.

13.0.24 ChartDirector: Font Specification

Plugin Version: 8.2, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** ChartDirector: Font Specification

Notes:

Font Name

In ChartDirector, the font name is simply the file name that contains the font. For example, under the Windows platform, the "Arial" font is "arial.ttf", while the "Arial Bold" font is "arialbd.ttf".

NOTE: Mac OS X Specific Information

In Mac OS X, in addition to ".ttf", ChartDirector also supports Mac OS X font file formats, such as Font Suitcase files and Datafork files (.dfont). These files often contain multiple fonts. For example, the "GillSans.dfont" file contains 6 fonts.

So in addition to the file name, an index is needed to determine the font. The index is specified by appending a "|" character to the font name, followed by the index number. For example, the third font in "GillSans.dfont" is denoted as "GillSans.dfont | 2". (Note: The first font starts at 0.) If no index number is provided, the first font is assumed.

ChartDirector also supports using Mac OS X Font Manager names. For example, one may use "Gill Sans Light Italic" instead of using "GillSans.dfont | 1" as the font name. However, the Mac OS X Font Manager

is active only if someone has logged into the Mac GUI console, so this method is only recommended for developing applications that run on the GUI console.

The sample programs that come with ChartDirector are designed to run on all operating systems, so they use generic font file names (eg. "arial.ttf") instead of Mac OS X specific names. To allow them to run on Mac OS X, ChartDirector on Mac OS X has a built-in table to map common font file names to Mac OS X font names:

"arial.ttf", "arialbd.ttf", "ariali.ttf" and "arialbi.ttf" are mapped to "Arial | 0" (Arial), "Arial | 1" (Arial Bold), "Arial | 2" (Arial Italic) and "Arial | 3" (Arial Bold Italic)

"times.ttf", "timesbd.ttf", "timesi.ttf" and "timesbi.ttf" are mapped to "Times New Roman | 0" (Times New Roman), "Times New Roman | 1" (Times New Roman Bold), "Times New Roman | 2" (Times New Roman Italic) and "Times New Roman | 3" (Times New Roman Bold Italic)

"cour.ttf", "courbd.ttf", "couri.ttf" and "courbi.ttf" are mapped to "Courier New | 0" (Courier New), "Courier New | 1" (Courier New Bold), "Courier New | 2" (Courier New Italic) and "Courier New | 3" (Courier New Bold Italic)

Font Location

ChartDirector on Windows does not come with any font files. It relies on the operating system's font files in the "[windows] \Fonts" directory. To see what fonts are installed in your operating system and their file names, use the File Explorer to view that directory.

ChartDirector on Windows will also search for the font files in the "fonts" subdirectory (if it exists) under the directory where the ChartDirector DLL "chartdir.dll" is installed. This is useful for private fonts. Also, for some especially secure web servers, the web anonymous user may not have access to the "[windows] \Fonts" directory. In this case, you may copy the font files to the above subdirectory.

ChartDirector on Mac OS X relies on operating system font files in "/Library/Fonts" and "/System/Library/Fonts".

ChartDirector on Linux, FreeBSD and Solaris assume the fonts files are in the "fonts" subdirectory under the directory where the ChartDirector shared object "libchartdir.so" is installed. ChartDirector on Linux, FreeBSD and Solaris come with a number of font files in the "fonts" subdirectory.

To keep the download size small, ChartDirector on Linux, FreeBSD and Solaris only come with some commonly used fonts. You may download additional fonts from the Internet. In particular, the Microsoft fonts at

http://sourceforge.net/project/showfiles.php?group_id=34153&release_id=105355

is highly recommended. Please refer to

<http://www.microsoft.com/typography/faq/faq8.htm>

on how you could use the fonts legally in your system.

ChartDirector supports True Type fonts (.ttf), Type 1 fonts (.pfa and .pfb) and Windows bitmap fonts (.fon). On Mac OS X, ChartDirector also supports Font Suitcase and Datafork (.dfont) files. On Linux, FreeBSD and Solaris, ChartDirector also supports Portable Compiled Fonts (.pcf fonts).

If you want ChartDirector to search other directories for the font files, you may list the directories in an environment variable called "FONTPATH".

If you specify an absolute path name for the font file, ChartDirector will use the absolute path name and will not search other directories.

Artificial Boldening and Italicizing
Whereas most popular font comes with different styles for "normal", "bold", "italic" and "bold italic", some fonts only come with one style (the normal style). For example, the Monotype Corsiva font that comes with MS Office only has the normal style (mtcorsva.ttf). For these cases, you may append the "Bold" and/or "Italic" words after the font file name (separated with a space) to ask ChartDirector to artificially bolden and/or italicize the font. For example, you may specify the font name as "mtcorsva.ttf Bold".

Font List
Instead of specifying a single font file as the font name, you may specify a list of font files as the font name, separated by semi-colons. This is useful when using international characters that are only available in some fonts.

For example, if you would like to use the Arial font ("arial.ttf") for western characters, and the MingLiu font "mingliu.ttc" for Chinese characters (since the Arial font does not have Chinese characters), you may specify the font name as "arial.ttf;mingliu.ttc". In this case, ChartDirector will try the Arial font first. If it cannot find a certain character there, it will try the MingLiu font.

Indirect Font Names
ChartDirector supports several special keywords for specifying the font name indirectly. When these keywords are used as font names, ChartDirector will look up the actual font names from a font table. The keywords are as follows:

KeywordsDescription

"normal"	This default normal font, which is the first font in the font table. This is initially mapped to "arial.ttf" (Arial).
"bold"	The default bold font, which is the second font in the font table. This is initially mapped to "arialbd.ttf" (Arial Bold).
"italic"	The default italic font, which is the third font in the font table. This is initially mapped to "ariali.ttf" (Arial Italic).
"boldItalic"	The default bold-italic font, which is the fourth font in the font table. This is initially mapped to "arialbi.ttf" (Arial Bold Italic).
"fontN"	The (N + 1)th font in the font table (the first font is "font0").

The font table can be modified using BaseChart.setFontTable or DrawArea.setFontTable.

The advantage of using indirect font names is that you can change the fonts in your charts in one place.

Font Index

Most font files contain one font. However, it is possible a font file contains multiple fonts (that is, a font collection). For example, in True Type fonts, font files with extension ".ttc" may represent a font collection.

If a font file contains multiple font, the font index can be used to specify which font to use. By default, the font index is 0, which means the first font in the font file will be used.

Font Size

The font size decides how big a font will appear in the image. The font size is expressed in a font unit called points. This is the same unit used in common word processors.

Instead of specifying font size, some ChartDirector API (eg. `TextBox.setFontSize`) allow you to specify font height and font width separately. You may use different point sizes for font height and font width to create special effects.

Font Color

This is the color to draw the font. (See Color Specification on how colors are represented in ChartDirector.)

Font Angle

This is the angle in degrees by which the font should be rotated anti-clockwise.

Vertical Layout

By default, text are laid out horizontally, with characters being drawn from left to right.

ChartDirector also supports vertical layout, with characters being drawn from top to bottom. For example, you may use `BaseChart.addText` to add text that are laid out vertically. Vertical layout is common for oriental languages such as Chinese, Japanese and Korean.

13.0.25 ChartDirector: Mark Up Language

Plugin Version: 8.2, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** ChartDirector: Mark Up Language

Notes:

ChartDirector Mark Up Language (CDML) is a language for including formatting information in text strings by marking up the text with tags.

CDML allows a single text string to be rendered using multiple fonts, with different colors, and even embed images in the text.

Font Styles

You can change the style of the text by using CDML tags. For example, the line:

```
<*font=timesi.ttf,size=16,color=FF0000>Hello <*font=arial.ttf,size=12,color=8000*>world!
```

will result in the following text rendered:

In general, all tags in CDML are enclosed by `<*` and `*>`. Attributes within the tags determine the styles of the text following the tags within the same block.

If you want to include `<*` in text without being interpreted as CDML tags, use `<<*` as the escape sequence.

The following table describes the supported font style attributes in CDML. See Font Specification for details on various font attributes.

AttributeDescription

font	Starts a new style section, and sets the font name. You may use this attribute without a value (that is, use "font" instead of "font=arial.ttf") to create a new style section without modifying the font name.
size	The font size.
width	The font width. This attribute is used to set the font width and height to different values. If the width and height are the same, use the size attribute.
height	The font height. This attribute is used to set the font width and height to different values. If the width and height are the same, use the size attribute.
color	The text color in hex format.
bgColor	The background color of the text in hex format.
underline	The line width of the line used to underline the following characters. Set to 0 to disable underline.
sub	Set the following text to be in subscript style. This attribute does not need to have a value. (You may use "sub" as the attribute instead of "sub=1".)
super	Set the following text to be in superscript style.

Set the following text to be in superscript style. This attribute does not need to have a value. (You may use "super" as the attribute instead of "super=1".)

xoffset	Draw the following the text by shifting the text horizontally from the original position by the specified offset in pixels.
yoffset	Draw the following the text by shifting the text vertically from the original position by the specified offset in pixels.
advance	Move the cursor forward (to the right) by the number of pixels as specified by the value this attribute.
advanceTo	Move the cursor forward (to the right) to the position as specified by the value this attribute. The position is specified as the number of pixels to the right of the left border of the block. If the cursor has already passed through the specified position, the cursor is not moved.

Note that unlike HTML tags, no double or single quotes are used in the tags. It is because CDML tags are often embedded as string literals in source code. The double or single quotes, if used, will conflict with the string literal quotes in the source code. Therefore in CDML, no quotes are necessary and they must not be

used.

Also, unlike HTML tags, CDML uses the comma character as the delimiter between attributes. It is because certain attributes may contain embed spaces (such as the font file name). So space is not used as the delimiter and the comma character is used instead.

Note the font attribute above starts a new style section, while other attributes just modify the current style section. You may use `</font*>` to terminate a style section, which will restore the font styles to the state before the style section.

Blocks and Lines
In CDML, a text string may contain multiple blocks. A block may contain multiple lines of text by separating them with new line characters (`"\n"`) or with `<br*>`. The latter is useful for programming languages that cannot represent new line characters easily.

For example, the line:

```
<*size=15*><*block*><*color=FF*>BLOCK<*br*>ONE<*/*>and <*block*><*color=FF00*>BLOCK<*br*>TWO
```

will result in the following text rendered:

The above example contains a line of text. The line contains two blocks with the characters `"` and `"` in between. Each block in turn contains two lines. The blocks are defined using `<*block*>` as the start tag and `<*/*>` as the end tag.

When a block ends, font styles will be restored to the state before entering the block.

Embedding Images
CDML supports embedding images in text using the following syntax:

```
<*img=my_image_file.png*>
```

where `my_image_file.png` is the path name of the image file.

For example, the line:

```
<*size=20*>A <*img=sun.png*>day
```

will result in the following text rendered:

ChartDirector will automatically detect the image file format using the file extension, which must either `png`, `jpg`, `jpeg`, `gif`, `wbmp` or `wmp` (case insensitive).

Please refer to `BaseChart.setSearchPath` or `DrawArea.setSearchPath` on the directory that ChartDirector will search for the file.

The `<*img*>` tag may optionally contain width and height attributes to specify its pixel width and height. In this case, ChartDirector will stretch or compress the image if necessary to the required width and

height.Blocks Attributes

CDML supports nesting blocks, that is, a block can contain other sub-blocks. Attributes are supported in the `<*block*>tag` to control the alignment and orientation of the sub-blocks. The `<*img=my_image_file.png*>` is treated as a block for layout purposes.

For example, the line:

```
<*block,valign=absmiddle*><*img=molecule.png*><*block*>Hydrazino\nMolecule<*/*><*/*>
```

will result in the following text rendered:

The the above starts `<*block,valign=absmiddle*>` which specifies its content should align with each others in the vertical direction using the absolute middle alignment. The block contains an image, followed by a space characters, and then another block which has two lines of text.

The following table describes the supported attributes inside `<*block*>tag`:

AttributeDescription

width	The width of the block in pixels. By default, the width is automatically determined to be the width necessary for the contents of the block. If the width attribute is specified, it will be used as the width of the block. If the width is insufficient for the contents, the contents will be wrapped into multiple lines.
height	The height of the block in pixels. By default, the height is automatically determined to be the height necessary for the contents of the block. If the height attribute is specified, it will be used as the height of the block.
maxwidth	The maximum width of the block in pixels. If the content is wider than maximum width, it will be wrapped into multiple lines.
truncate	The maximum number of lines of the block. If the content requires more than the maximum number of lines, it will be truncated. In particular, if truncate is 1, the content will be truncated if it exceeds the maximum width (as specified by maxwidth or width) without wrapping. The last few characters at the truncation point will be replaced with "...".
linespacing	The spacing between lines as a ratio to the default line spacing. For example, a line spacing of 2 means the line spacing is two times the default line spacing. The default line spacing is the line spacing as specified in the font used.
bgColor	The background color of the block in hex format.
valign	The vertical alignment of sub-blocks. This is for blocks that contain sub-blocks. Supported values are baseline, top, bottom, middle and absmiddle.

The value baseline means the baseline of sub-blocks should align with the baseline of the block. The baseline

is the underline position of text. This is normal method of aligning text, and is the default in CDML. For images or blocks that are rotated, the baseline is the same as the bottom.

The value top means the top line of sub-blocks should align with the top line of the block.

The value bottom means the bottom line of sub-blocks should align with the bottom line of the block.

The value middle means the middle line of sub-blocks should align with the the middle line of the block. The middle line is the middle position between the top line and the baseline.

The value absmiddle means the absolute middle line of sub-blocks should align with the absolute middle line of the block. The absolute middle line is the middle position between the top line and the bottom line.

halign The horizontal alignment of lines. This is for blocks that contain multiple lines. Supported values are left, center and right.

The value left means the left border of each line should align with the left border of the block. This is the default.

The value center means the horizontal center of each line should align with the horizontal center of the block.

The value right means the right border of each line should align with the right border of the block.

angle Rotate the content of the block by an angle. The angle is specified in degrees in counter-clockwise direction.

13.0.26 ChartDirector: Parameter Substitution and Formatting

Plugin Version: 8.2, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** ChartDirector: Parameter Substitution and Formatting

Notes:

ChartDirector charts often contain a lot of text strings. For example, sector labels in pie charts, axis labels for x and y axes, data labels for the data points, HTML image maps, etc, are all text strings.

ChartDirector uses parameter substitution to allow you to configure precisely the information contained in the text and their format.

Format Strings

In parameter substitution, format strings are used to specify the entities to be include into labels and how to format numbers and dates.

For example, when drawing a pie chart with side label layout, the default sector label format string is:

```
" { label } ( { percent } % )"
```

When the sector label is actually drawn, ChartDirector will replace " { label } " with the sector name, and " { percent } " with the sector percentage. So the above label format will result is a sector label similar to "ABC (34.56%)" .

You may change the sector label format by changing the format string. For example, you may change it to:

```
" { label } : US$ { value | 2 } K ( { percent } % )"
```

The sector label will then become something like "ABC: US\$ 123.00 (34.56%)" .

In general, in ChartDirector parameter substitution, parameters enclosed by curly brackets will be substituted with their actual values when creating the texts.

For parameters that are numbers or dates/times, ChartDirector supports a special syntax in parameter substitution to allow formatting for these values. Please refer to the Number Formatting and Date/Time Formatting sections below for details.

Parameter Expressions

ChartDirector supports numeric expressions in format strings. They are denoted by enclosing the expression with curly brackets and using "=" as the first character. For example:

```
"USD { value } (Euro { = { value } *0.9 } )"
```

In the above, " { value } " will be substituted with the actual value of the sector. The expression " { = { value } *0.9 } " will be substituted with the actual value of the sector multiplied by 0.9.

ChartDirector parameter expressions support operators "+", "-", "*", "/", "% " (modulo) and "^" (exponentiation). Operators "*", "/", "% ", "^" is computed first, followed by "+" and "-". Operators of the same precedence are computed from left to right). Parenthesis "(" and ")" can be used to change the computation order.

Parameters for Pie Charts

The following table describes the parameters available for pie charts.

Parameters for All XY Chart Layers

The followings are parameters that are apply to all XY Chart layers in general. Some layer types may have

Parameter	Description
sector	The sector number. The first sector is 0, while the nth sector is (n-1).
dataSet	Same as { sector } . See above.
label	The text label of the sector.
dataSetName	Same as { label } . See above.
value	The data value of the sector.
percent	The percentage value of the sector.
fieldN	The (N + 1)th extra field. For example, { field0 } means the first extra field. An extra field is an array of custom elements added using BaseChart.addExtraField or BaseChart.addExtraField2.

additional parameters (see below).

Note that certain parameters are inapplicable in some context. For example, when specifying the aggregate label of a stacked bar chart, the { dataSetName } parameter is inapplicable. It is because a stacked bar is composed of multiple data sets. It does not belong to any particular data set and hence does not have a data set name.

{ fieldN } means the extra field is indexed by the data point number. The Pth data point corresponds to the Pth element of the extra field.

Additional Parameters for Line Layers

The followings are parameters that are in additional to the parameters for all XY Chart layers.

Additional Parameters for Trend Layers

The followings are parameters that are in additional to the parameters for all XY Chart layers.

Additional Parameters for Box-Whisker Layers

The followings are parameters that are in additional to the parameters for all XY Chart layers.

Additional Parameters for HLOC and CandleStick Layers

The followings are parameters that are in additional to the parameters for all XY Chart layers.

Additional Parameters for Vector Layers

The followings are parameters that are in additional to the parameters for all XY Chart layers.

Parameters for All Polar Layers

The followings are parameters that are apply to all Polar Chart layers in general. Some layer types may have additional parameters (see below).

{ fieldN } means the extra field is indexed by the data point number. The Pth data point corresponds to the Pth element of the extra field.

Additional Parameters for PolarVector Layers

The followings are parameters that are in additional to the parameters for all Polar Chart layers.

Parameters for Axis

The following table describes the parameters available for pie charts.

Number Formatting

For parameters that are numbers, ChartDirector supports a number of formatting options in parameter substitution.

For example, if you want a numeric field { value } to have a precision of two digits to the right of the decimal point, use ',' (comma) as the thousand separator, and use '.' (dot) as the decimal point, and you may use { value | 2,. } . The number 123456.789 will then be displayed as 123,456.79.

For numbers, the formatting options are specified using the following syntax:

```
{ [ param ] | [ a ] [ b ] [ c ] [ d ] }
```

where:

If this field starts with "E" or "e", followed by a number, it means formatting the value using scientific notation with the specified number of decimal places. If the "E" or "e" is not followed by a number, 3 is assumed.

For example, { value | E4 } will format the value 10.3 to 1.0300E+1, and { value | e4 } will format the same value to 1.0300e+1.

If this field starts with "G" or "g", followed by a number, it means formatting the value using the scientific notation only if the value is large and requires more than the specified number of digits, or the value is less than 0.001. If scientific notation is used, the number following "G" or "g" also specifies the number of significant digits to use. If the "G" or "g" is not followed by a number, 4 is assumed.

For example, consider the format string { value | G4 } . The value 10 will be formatted to 10. The value 100000 will be formatted to 1.000E+5. Similarly, for { value | g4 } , the value 10 will be formatted to 10, while the value 100000 will be formatted to 1.000e+5.

If you skip this argument, ChartDirector will display the exact value using at most 6 decimal places.

You may skip [b] [c] [d] . In this case, the default will be used.

Date/Time Formatting

For parameters that are dates/times, the formatting options can be specified using the following syntax:

```
{ [ param ] | [ datetime_format_string ] }
```

where [datetime_format_string] must start with an english character (A-Z or a-z) that is not "G", "g", "E" or "e", and may contain any characters except ' ' . (If it starts with "G", "g", "E" or "e", it will be considered as a number format string.)

Certain characters are substituted according to the following table. Characters that are not substituted will be copied to the output.

For example, a parameter substitution format of { value | mm-dd-yyyy } will display a date as something similar to 09-15-2002. A format of { value | dd/mm/yy hh:nn:ss a } will display a date as something similar to 15/09/02 03:04:05 pm.

If you want to include characters in the format string without substitution, you may enclose the characters in single or double quotes.

For example, the format { value | mmm '<*color=dd0000*>'yyyy } will display a date as something like Jan <*color=dd0000*>2005 (the <*color=dd0000*> is a CDML tag to specify red text color). Note that the <*color=dd0000*>tag is copied directly without substitution, even it contains "dd" which normally will be substituted with the day of month.

Escaping URL/HTML/CDML characters

Parameter substitution is often used to create HTML image maps. In HTML, some characters has special meanings and cannot be used reliably. For example, the '>' is used to represent the end of an HTML tag.

Furthermore, if the field happens to be used as an URL, characters such as '?', '&' and '+' also have special meanings.

By default, ChartDirector will escape template fields used in URL and query parameters when generating image maps. It will modify URL special characters to the URL escape format "% XX" (eg. "?" will become "% 3F"). After that, it will modify HTML special characters to the HTML escape format "& amps;# nn;" (eg. ">" will become "& amps;# 62;"). Similarly, it will escape other attributes in the image map using HTML escape format (but not URL escape format).

In addition to escaping HTML and URL special characters, ChartDirector will also remove CDML fields in creating image maps. It is because CDML is only interpreted in ChartDirector, should not be useful outside of ChartDirector (such as in browser tool tips).

In some cases, you may not want ChartDirector to escape the special characters. For example, if the parameters have already been escaped before passing to ChartDirector, you may want to disable ChartDirector from escaping them again.

ChartDirector supports the following special fields to control the escape methods - " { escape_url } ", " { noescape_url } ", " { escape_html } ", " { noescape_html } ", " { escape_cdml } " and " { noescape_cdml } ". These fields enable/disable the escape methods used in the template fields that follow them.

13.0.27 ChartDirector: Shape Specification

Plugin Version: 8.2, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** ChartDirector: Shape Specification

Notes:

Several ChartDirector API accept shape specification as arguments. For example, BarLayer.setBarShape and BarLayer.setBarShape2 can be used to specify shapes of bars in bar charts, while DataSet.setDataSymbol, DataSet.setDataSymbol4, PolarLayer.setDataSymbol and PolarLayer.setDataSymbol4 can be used to specify shapes for data symbols.

Note that in addition to shapes, in many cases ChartDirector also accepts images or custom draw objects for data representation. For example, see DataSet.setDataSymbol2, DataSet.setDataSymbol3, PolarLayer.setDataSymbol2 and PolarLayer.setDataSymbol3.

Built-In Shapes

Built-in shapes are specified as integers. The integers can be explicit constants, or can be generated by a ChartDirector method for parameterized shapes. For example, a circle is represented by an explicit constant CircleShape (=7). On the other hand, the number representing a polygon depends on the number of sides the polygon has, so it is generated by using the PolygonShape method, passing in the number of sides as argument.

The following table illustrates the various ChartDirector shapes:

Custom Shapes

In ChartDirector, custom shapes are specified as an array of integers x0, y0, x1, y1, x2, y2 ... representing the coordinates of the vertices of the custom polygonal shape.

The polygon should be defined with a bounding square of 1000 x 1000 units, in which the x-axis is from -500 to 500 going from left to right, and the y-axis is from 0 to 1000 going from bottom to top.

ChartDirector will automatically scale the polygon so that 1000 units will become to the pixel size as requested by the various ChartDirector API.

As an example, the shape of the standard diamond shape in ChartDirector is represented as an array with 8 numbers:

```
0, 0, 500, 500, 0, 1000, -500, 500
```

13.0.28 Copy styled text?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** How to quickly copy styled text from one textarea to another?

Example:

```
# if TargetWin32 then
TextArea1.WinRTFDataMBS = TextArea2.WinRTFDataMBS
# elseif TargetMacOS then
TextArea1.NSTextViewMBS.textStorage.setAttributedString TextArea2.NSTextViewMBS.textStorage
# else
TextArea1.StyledText = TextArea2.StyledText
# endif
```

Notes: The code above uses special plugin functions on Mac and Windows and falls back to framework for Linux.

13.0.29 Do you have code to validate a credit card number?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** You can check the checksum to tell if a credit card number is not valid.

Example:

```
Dim strNumber As String
Dim nLength as Integer
Dim nValue as Integer
Dim nChecksum as Integer
Dim nIndex as Integer

strNumber = EditField1.Text
nLength = Len(strNumber)
nChecksum = 0

For nIndex = 0 To nLength - 2
```

```

nValue = Val(Mid(strNumber, nLength - (nIndex + 1), 1)) * (2 - (nIndex Mod 2))
If nValue < 10 Then
nChecksum = nChecksum + nValue
Else
nChecksum = nChecksum + (nValue - 9)
End If
Next

If Val(Mid(strNumber, Len(strNumber), 1)) = (10 - (nChecksum Mod 10)) Mod 10 Then
MsgBox("The credit card number looks valid")
Else
MsgBox("The credit card number is invalid")
End If

```

Notes:

Here's some code that will validate the checksum for a credit card. It works for Visa, MasterCard, American Express and Discover. Not sure about others, but I imagine they use the same basic algorithm. Of course, this doesn't actually mean that the credit card is valid, it's only useful for helping the user catch typos.

The above code doesn't have any error checking and it expects that the credit card number will be entered without spaces, dashes or any other non-numeric characters. Addressing those issues will be an exercise left to the reader. :)

(From Mike Stefanik)

13.0.30 Do you have plugins for X-Rite EyeOne, eXact or i1Pro?

Plugin Version: all, Console & Web: No. **Answer:** Our EyeOne plugin is available on request for licensees of the X-Rite SDKs.

Notes:

Please first go to X-Rite and get a SDK license. Then we can talk about the plugin.

13.0.31 Does SQL Plugin handle stored procedures with multiple result sets?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Yes, the plugin can work with multiple recordsets.

Notes:

You need to use SQLCommandMBS class. When you get back results, you use FetchNext to walk over all

records in the first result set. Then you simply start again with FetchNext to get the second record set. Even the RecordSet functions should work, just use them twice to get all records from both record sets.

13.0.32 Does the plugin home home?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Yes, we like to know who is using the plugin, so the plugin may contact our server.

Example:

none.

Notes:

Please note that this does not affect your users as the plugin will only do this in the IDE and the relevant plugin part is never included in your applications.

The plugin if used for some hours, does contact our server to provide statistical data about Xojo version and OS versions. This way we know what versions are used. We can return the version number of the current plugin which may be visible in future versions somehow. And we transmit partial licenses data so we can track use of illegal license keys.

If you do not like to have this, you can block Xojo IDE from contacting our website via your Firewall. Blocking the transfer will not disable the plugin or change the features.
Or contact us for a plugin version which explicitly does not contain this feature.

13.0.33 folderitem.absolutePath is limited to 255 chars. How can I get longer ones?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Paths on a Mac are not unique, so use them only to display them to the user.

Example:

```
Function AbsolutePath(f as FolderItem) As String
Dim s as string
Dim nf as FolderItem
nf = f
s = ""
while nf<>nil
s = nf.name + ":" + s
nf = nf.parent
wend
Return s
```

[End Function](#)

13.0.34 Future of editablemovie class?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** In short, it will go away, so switch to plugin functions soon.

Notes:

The editableMovie class has been deprecated.

Deprecated means that Real Software will remove it someday, but as of today (and probably a few more years) the class will be available and running. Just not forever. The reason is that Apple deprecated the old QuickTime APIs and they are not available for 64 bit.

For 64 bit, you can move to our QTKit plugin.

We expect the old QuickTime classes in Real Studio and our plugins will continue to work in 32 bit applications. Even if editableMovie class is removed next year from Real Studio, our plugin still provides movie class extensions to do similar functions.

13.0.35 Has anyone played round with using CoreImage to do things like add dissolve transitions say when changing from one tab to another within a window?

Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** This code implements animations for a tabpanel change:

Example:

// in a tabpanel.change event:

```

dim r as CGSTransitionRequestMBS
dim co as new CGSConnectionMBS
dim cw as CGSWindowMBS
dim ct as CGSTransitionMBS
static OldTab as Integer

cw=co.CGSWindow(window1)
If cw = Nil Then
return // 10.3...
End If
r=new CGSTransitionRequestMBS
r.TransitionType=r.CGSFlip
r.HasBackGround=false
r.HasBackColor=false
r.Win=cw
// watch the value of the clicked tab versus the last tab

```

```

if tabpanel1.Value=0 or tabpanel1.Value <OldTab then
r.TransitionOption=r.CGSLeft
ct=co.NewTransition(r)
if ct<>Nil then
Refresh
ct.Invoke(1)
ct.Wait(1)
ct.Release
else
MsgBox "Error creating the transition."
end if
else
r.TransitionOption=r.CGSRight
ct=co.NewTransition(r)
if ct<>Nil then
Refresh
ct.Invoke(1)
ct.Wait(1)
ct.Release
else
MsgBox "Error creating the transition."
end if
end if
// Keep track of the last tab clicked
OldTab = tabpanel1.Value

```

Notes: See CGS* classes for more details.

13.0.36 How about Plugin support for older OS X?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** We support in general Mac OS X 10.5 and newer.

Notes:

All the 64-bit plugins on Mac require OS X 10.7.
Intel 32-bit plugins on Mac require OS X 10.5 or newer.

Currently the ChartDirector 6, GraphicsMagick and GameKit plugins requires Mac OS X 10.6.
Also for SQL Plugin the built in SQLite library requires 10.6.

13.0.37 How can I detect whether an Intel CPU is a 64bit CPU?

Plugin Version: all, Console & Web: No. **Answer:** Look on the CPU family returned by sysctl:

Example:

Function is64bit() As Boolean

```
# if TargetLittleEndian
```

```
dim m as MemoryBlock = NewMemoryBlock(8)
```

```
dim family as Integer
```

```
dim s as string
```

```
m=SystemControlNameToMIBMBS("hw.cpufamily")
```

```
m=SystemControlMBS(m)
```

```
if m<>nil then
```

```
m.LittleEndian=True
```

```
family=m.Long(0)
```

```
const CPUFAMILY_INTEL_6_14 = & h73d67300 /* "Intel Core Solo" and "Intel Core Duo" (32-bit Pentium-M with SSE3) */
```

```
const CPUFAMILY_INTEL_6_15 = & h426f69ef /* "Intel Core 2 Duo" */
```

```
const CPUFAMILY_INTEL_6_23 = & h78ea4fbc /* Penryn */
```

```
const CPUFAMILY_INTEL_6_26 = & h6b5a4cd2 /* Nehalem */
```

```
Select case family
```

```
case CPUFAMILY_INTEL_6_14
```

```
Return false
```

```
case CPUFAMILY_INTEL_6_15
```

```
Return true
```

```
case CPUFAMILY_INTEL_6_23
```

```
Return true
```

```
case CPUFAMILY_INTEL_6_26
```

```
Return true
```

```
// newer CPUs may be missing here
```

```
end Select
```

```
end if
```

```
# endif
```

```
Return false
```

```
Exception
```

```
Return false
```

```
End Function
```

Notes: This code is written for Mac OS X where you only have a limited number of possible CPUs.

13.0.38 How can I disable the close box of a window on Windows?

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** The following code will remove the close item from the system menu of the window.

Example:

```
# if TargetWin32 then
Declare Function GetSystemMenu Lib "user32" (hwnd as Integer, bRevert as Integer) as Integer
Declare Function RemoveMenu Lib "user32" (hMenu as Integer, nPosition as Integer, wFlags as Integer) as Integer
Dim hSysMenu as Integer
hSysMenu = GetSystemMenu(me.WinHWND, 0)
RemoveMenu hSysMenu, & HF060, & H0
# endif
```

Notes: The window may not be updated directly.

13.0.39 How can I get all the environment variables from Windows?

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** Try this code:

Example:

```
# if targetWin32
declare function GetEnvironmentStrings Lib "kernel32" () as ptr
dim m as memoryBlock
dim n as Integer

m=GetEnvironmentStrings()

n=0
do
msgBox m.cstring(n)
while m.byte(n)<>0
n=n+1
wend
n=n+1
loop until m.byte(n)=0
# endif
```

Notes: The MBS Plugin has an EnvironmentMBS class for this.

13.0.40 How can i get similar behavior to Roxio Toast or iTunes where clicking a 'burn' button allows the next inserted blank CD-R to bypass the Finder and be accepted by my application?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** You need to get a media reservation.

Example:

```
dim d as DRDeviceMBS // get a device
d.AcquireMediaReservation
```

Notes:

Use the plugin function AcquireMediaReservation and later release it using ReleaseMediaReservation. See plugin examples on how to use it and check Apples DiscRecording framework documentation for more details.

13.0.41 How can I get text from a PDF?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Crossplatform you can use DynaPDF Pro.

Notes:

On Mac OS X you can also use PDFKit for the same job.

While DynaPDF Pro gives you each bit of text with rotation, font information and encoding details, PDFKit gives you only the text string for a PDF page.

13.0.42 How can I get text from a Word Document?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** to get the text string from a doc file, use the NSAttributedStringMBS class.

Notes:

The NSAttributedStringMBS class is Mac OS X only and we have currently no solution for Windows or Linux.

Use the NSAttributedStringMBS.initWithDocFormat(data as string) as boolean method.

13.0.43 How can I get the item string for a given file creator?

Plugin Version: all, Console & Web: No. **Answer:** Try this function:

Example:

```

Sub pullNativeDocs(aCREA As string)
Dim result as Integer
Dim m, k as memoryBlock
Dim f as folderItem
Dim newType as string
Dim anIcon As picture
Dim ofs as Integer

Declare Function GetFileTypesThatAppCanNativelyOpen Lib "Carbon" (appVRefNumHint as Short, appSignature as OSType, nativeTypes as Ptr) as Short Inline68K("701CABFC")
Declare Function GetDocumentKindString Lib "Carbon" (docVRefNum as Short, docType as OSType, docCreator as OSType, kindString as ptr) as Short Inline68K("7016ABFC")

listBox1.deleteAllRows

m = newMemoryBlock(1024)
result = GetFileTypesThatAppCanNativelyOpen(Volume(0).MacVRefNum, aCREA, m)
if result <> 0 then
listBox1.addRow "<Not found.>"
return
end if

do
if m.byte(ofs*4) = 0 then
exit
else
newType = m.OSTypeMBS(ofs*4)
listBox1.addRow newType
k = newMemoryBlock(64)
result = GetDocumentKindString(Volume(0).MacVRefNum, newType, aCREA, k)
if result = 0 then
listBox1.cell(ofs,1) = k.pString(0)
ofs = ofs + 1
else
listBox1.cell(ofs,1) = "(unknown)"
end if

end if
loop

End Sub

```

Notes: Change "Translation" to "CarbonLib" for Mac OS X.

13.0.44 How can I launch an app using it's creator code?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Send an AppleEvent "odoc" with the creator code to the Finder ("MACS"):

Example:

```
Function LaunchByCreator(C As String) As Boolean
Dim A As AppleEvent
A = NewAppleEvent("aevt","odoc","MACS")
A.ObjectSpecifierParam("—") = GetUniqueIDObjectDescriptor("appf",nil,C)
return A.Send
End Function
```

13.0.45 How can I learn what shared libraries are required by a plugin on Linux?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Please use the ldd command in the terminal.

Notes:

You build an app on any platform, but for Linux.

For the resulting .so files in the libs folder, you can run the ldd command with the library path as parameter. It shows you references lib files and you can make sure you have those installed.

This is a sample run of our graphicsmagick plugin:

```
cs@Ubuntu32:
textasciitilde /MeinProgramm/MeinProgramm Libs$ ldd libMBSGraphicsMagickPlugin17744.so
linux-gate.so.1 =>(0xb76ee000)
libdl.so.2 =>/lib/i386-linux-gnu/libdl.so.2 (0xb6f0e000)
libgtk-x11-2.0.so.0 =>/usr/lib/i386-linux-gnu/libgtk-x11-2.0.so.0 (0xb6aa6000)
libpthread.so.0 =>/lib/i386-linux-gnu/libpthread.so.0 (0xb6a8a000)
libstdc++.so.6 =>/usr/lib/i386-linux-gnu/libstdc++.so.6 (0xb69a5000)
libm.so.6 =>/lib/i386-linux-gnu/libm.so.6 (0xb6979000)
libgcc_s.so.1 =>/lib/i386-linux-gnu/libgcc_s.so.1 (0xb695b000)
libc.so.6 =>/lib/i386-linux-gnu/libc.so.6 (0xb67b1000)
/lib/ld-linux.so.2 (0xb76ef000)
libgdk-x11-2.0.so.0 =>/usr/lib/i386-linux-gnu/libgdk-x11-2.0.so.0 (0xb6701000)
libpangocairo-1.0.so.0 =>/usr/lib/i386-linux-gnu/libpangocairo-1.0.so.0 (0xb66f4000)
libX11.so.6 =>/usr/lib/i386-linux-gnu/libX11.so.6 (0xb65c0000)
```



```

libXfixes.so.3 =>/usr/lib/i386-linux-gnu/libXfixes.so.3 (0xb65ba000)
libatk-1.0.so.0 =>/usr/lib/i386-linux-gnu/libatk-1.0.so.0 (0xb659a000)
libcairo.so.2 =>/usr/lib/i386-linux-gnu/libcairo.so.2 (0xb64ce000)
libgdk_pixbuf-2.0.so.0 =>/usr/lib/i386-linux-gnu/libgdk_pixbuf-2.0.so.0 (0xb64ad000)
libgio-2.0.so.0 =>/usr/lib/i386-linux-gnu/libgio-2.0.so.0 (0xb6356000)
libpangoft2-1.0.so.0 =>/usr/lib/i386-linux-gnu/libpangoft2-1.0.so.0 (0xb632a000)
libpango-1.0.so.0 =>/usr/lib/i386-linux-gnu/libpango-1.0.so.0 (0xb62e0000)
libfontconfig.so.1 =>/usr/lib/i386-linux-gnu/libfontconfig.so.1 (0xb62ab000)
libgobject-2.0.so.0 =>/usr/lib/i386-linux-gnu/libgobject-2.0.so.0 (0xb625c000)
libglib-2.0.so.0 =>/lib/i386-linux-gnu/libglib-2.0.so.0 (0xb6163000)
libXext.so.6 =>/usr/lib/i386-linux-gnu/libXext.so.6 (0xb6151000)
libXrender.so.1 =>/usr/lib/i386-linux-gnu/libXrender.so.1 (0xb6147000)
libXinerama.so.1 =>/usr/lib/i386-linux-gnu/libXinerama.so.1 (0xb6142000)
libXi.so.6 =>/usr/lib/i386-linux-gnu/libXi.so.6 (0xb6132000)
libXrandr.so.2 =>/usr/lib/i386-linux-gnu/libXrandr.so.2 (0xb6129000)
libXcursor.so.1 =>/usr/lib/i386-linux-gnu/libXcursor.so.1 (0xb611e000)
libXcomposite.so.1 =>/usr/lib/i386-linux-gnu/libXcomposite.so.1 (0xb611a000)
libXdamage.so.1 =>/usr/lib/i386-linux-gnu/libXdamage.so.1 (0xb6115000)
libfreetype.so.6 =>/usr/lib/i386-linux-gnu/libfreetype.so.6 (0xb607b000)
libxcb.so.1 =>/usr/lib/i386-linux-gnu/libxcb.so.1 (0xb605a000)
libpixman-1.so.0 =>/usr/lib/i386-linux-gnu/libpixman-1.so.0 (0xb5fc2000)
libpng12.so.0 =>/lib/i386-linux-gnu/libpng12.so.0 (0xb5f98000)
libxcb-shm.so.0 =>/usr/lib/i386-linux-gnu/libxcb-shm.so.0 (0xb5f93000)
libxcb-render.so.0 =>/usr/lib/i386-linux-gnu/libxcb-render.so.0 (0xb5f89000)
libz.so.1 =>/lib/i386-linux-gnu/libz.so.1 (0xb5f73000)
libgmodule-2.0.so.0 =>/usr/lib/i386-linux-gnu/libgmodule-2.0.so.0 (0xb5f6e000)
libselinux.so.1 =>/lib/i386-linux-gnu/libselinux.so.1 (0xb5f4f000)
libresolv.so.2 =>/lib/i386-linux-gnu/libresolv.so.2 (0xb5f36000)
libexpat.so.1 =>/lib/i386-linux-gnu/libexpat.so.1 (0xb5f0c000)
libffi.so.6 =>/usr/lib/i386-linux-gnu/libffi.so.6 (0xb5f05000)
libpcre.so.3 =>/lib/i386-linux-gnu/libpcre.so.3 (0xb5ec9000)
librt.so.1 =>/lib/i386-linux-gnu/librt.so.1 (0xb5ec0000)
libXau.so.6 =>/usr/lib/i386-linux-gnu/libXau.so.6 (0xb5ebb000)
libXdmcp.so.6 =>/usr/lib/i386-linux-gnu/libXdmcp.so.6 (0xb5eb4000)
cs@Ubuntu32:
textasciitilde /MeinProgramm/MeinProgramm Libs$

```

As you see all library have been found and their load address is printed behind the na,e.
If a library is missing, you usually see the address missing there or being zero.

13.0.46 How can I validate an email address?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** You can try this code:
Example:

```

Dim re As RegEx
re = New RegEx
Dim rm As RegExMatch

re.SearchPattern = " [ a-z0-9!# $ % & '*+/?^_ ' { | }
textasciitilde - ] +(?:\. [ a-z0-9!# $ % & '*+/?^_ ' { | }
textasciitilde - ] +)*@(?: [ a-z0-9 ] (?: [ a-z0-9- ] * [ a-z0-9 ] )?)\.)+ [ a-z0-9 ] (?: [ a-z0-9- ] * [ a-z0-9 ] )?"
rm = re.Search(editField1.Text)

if rm = Nil Then
StaticText2.text = editField1.Text + " not valid email"
Else
StaticText2.Text = editField1.Text + " is valid"
End if

```

Notes:

Adapted from:
<http://www.regular-expressions.info/email.html>

13.0.47 How do I check if the QuickTime component for the JPEG exporting is available?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: No. **Answer:** If you want to know if the PictureToString functions will work, you may try this function:

Example:

```

Function IsQTJPEGEExporterAvailable() As boolean
dim q as QTComponentInformationMBS

// search for QuickTime JPEG exporter codec
q=new QTComponentInformationMBS

while q.NextComponent
if q.Type="imco" and q.SubType="jpeg" then
Return true
end if
wend

Return false // not found
End Function

```

Notes:

It should work like this for other types like:

```
"tiff" ->TIFF
"PNTG" ->Mac Paint
"gif " ->GIF
"WRLE" ->Windows BMP
"tga " ->Targa
"png " ->PNG
etc.
```

13.0.48 How do I check if the QuickTime component for the JPEG importing is available?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: No. **Answer:** If you want to know if the StringToPicture functions will work, you may try this function:

Example:

Function IsQTJPEGImporterAvailable() **As** boolean
dim q **as** QTComponentInformationMBS

```
// search for QuickTime JPEG importer codec
q=new QTComponentInformationMBS
```

```
while q.NextComponent
if q.Type="imdc" and q.SubType="jpeg" then
Return true
end if
wend
```

```
Return false // not found
End Function
```

Notes:

It should work like this for other types like:

```
"tiff" ->TIFF
"PNTG" ->Mac Paint
"gif " ->GIF
"WRLE" ->Windows BMP
"tga " ->Targa
"png " ->PNG
etc.
```

13.0.49 How do I check if the QuickTime component for the Sequence grabber is available?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: No. **Answer:** If you want to know if the QTGrabberClass will work, you can use this code:

Example:

```
Function IsQTGrabberAvailable() As boolean
dim q as QTComponentInformationMBS

q=new QTComponentInformationMBS

while q.NextComponent
if q.Type="barg" then
Return true
end if
wend

Return false // not found
End Function
```

Notes: Don't forget that you need to check for each other component you use like the compression functions.

13.0.50 How do I decode correctly an email subject?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** The following code can be used to decode an email subject including several encodings including Base 64.

Example:

```
dim src as string // input

dim theRegex as Regex
dim theRegexMatch as RegexMatch
dim result, infoCharset, encodedPart as string
dim theStart as Integer

if instr(src, "=?") >0 then
theRegex = new Regex
theRegex.Options.Greedy = false
theRegex.searchPattern = "(.*)=?(.+)\?(Q | B)\?(.+)\?="
theRegexMatch = theRegex.search(src)
while theRegexMatch <>nil
theStart = theRegexMatch.subExpressionStartB(0) + len(theRegexMatch.subExpressionString(0))

result = result + theRegexMatch.subExpressionString(1)
```

```

infoCharset = theRegexMatch.subExpressionString(2)
encodedPart = theRegexMatch.subExpressionString(4)
if theRegexMatch.subExpressionString(3) = "B" then
encodedPart = DecodeBase64(encodedPart)
elseif theRegexMatch.subExpressionString(3) = "Q" then
encodedPart = DecodeQuotedPrintable(encodedPart)
end if
if right(result, 1) = " " then
result = mid(result, 1, len(result)-1)
end if
encodedPart = encodedPart.DefineEncoding(GetInternetTextEncoding(infoCharset))
result = result + encodedPart

theRegex.SearchStartPosition = theStart
theRegexMatch = theRegex.search()
wend

result = result + mid(src, theStart+1)

else
result = src
end if
// theRegexMatch = theRegex.search

msgbox result

```

Notes: May not look nice depending on the controls used.

13.0.51 How do I enable/disable a single tab in a tabpanel?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Use the TabpanelEnabledMBS method.

Example:

```
TabpanelEnabledMBS(tabpanel1, 1, false)
```

Notes:

Use Carbon for MachO and CarbonLib for Mac Carbon and AppearanceLib for Mac OS Classic as library. For Cocoa, please use enabled property of NSTabViewItemMBS class.

13.0.52 How do I find the root volume for a file?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Try this function:

Example:

```
Function GetRootVolume(f as FolderItem) as FolderItem
dim root, dum as folderItem
if f <> nil then
root = f // f might be the volume
do
dum = root.parent
if dum <> nil then
root = dum
end if
loop until dum = nil
return root
end if
End Function
```

13.0.53 How do I get the current languages list?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Try this code:

Example:

```
dim p as new CFPreferencesMBS
dim a as CFArrayMBS
dim s as CFStringMBS
dim o as CFObjectMBS
dim sa(-1) as string

o=p.CopyAppValue("AppleLanguages", ".GlobalPreferences")

if o<>Nil then
a=CFArrayMBS(o)

dim i,c as Integer

c=a.Count-1
for i=0 to c
o=a.Item(i)

if o isa CFStringMBS then
s=CFStringMBS(o)
sa.Append s.str
end if
```

```
next
end if
```

```
MsgBox Join(sa,EndOfLine)
```

Notes:

On Mac OS X you can get the list of current languages like this list:

```
de
en
ja
fr
es
it
pt
pt-PT
nl
sv
nb
da
fi
ru
pl
zh-Hans
zh-Hant
ko
```

Which has German (de) on the top for a German user.

This code has been tested on Mac OS X 10.5 only.

13.0.54 How do I get the Mac OS Version?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Try this code:

Example:

```
dim i as Integer
if system.gestalt("sysv", i) then
//do this in an 'If' in case you don't get any value back at all and system.gestalt returns boolean
if i = & h750 then //If OS is 7.5
//do stuff
elseif i = & h761 then //If OS is 7.6.1
//do stuff
end if
```

end if

Notes: The MBS Plugin has a function `SystemInformationMBS.OSVersionString` for this.

13.0.55 How do I get the printer name?

Plugin Version: all, Console & Web: No. **Answer:** For Mac OS Classic see the code below and for Mac OS X use the Carbon Print Manager Classes from the MBS Plugin.

Example:

```
dim s as String
dim i as Integer

s=app.ResourceFork.GetResource("STR ",-8192)
if s<>"" then
i=ascb(leftb(s,1))
s=mid(s,2,i)

MsgBox s
end if
```

Notes:

A note from Craig Hoyt:

After looking at your example I had a little deja-vu experience. Several years ago I played around with this same code in FutureBasic. I discovered that it did not and still doesn't provide the 'Printer Name', it does return the print driver name. If it returns 'LaserWriter 8' as the print driver you can look into this file and get the 'PAPA' resource # -8192 to get the actual Printer Name. Unfortunately this does not hold true for other printers. My Epson and HP Printers (the Epson has an Ethernet Card and the HP is USB) do not provide this info in their drivers. As far as I can tell it only returns the name by polling the printer itself.

13.0.56 How do I make a metal window if RB does not allow me this?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** The following declare turns any window on Mac OS X 10.2 or newer into a metal one.

Example:


```
declare sub ChangeWindowAttributes lib "Carbon" (win as windowptr, a as Integer, b as Integer)
```

```
ChangeWindowAttributes window1,256,0
```

Notes: May not look nice depending on the controls used.

13.0.57 How do I make a smooth color transition?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:**

I'd like to show in a report some bars, which start with color A and end with color B.

The color change should be very smooth.

My problem: If I would start from 255,0,0 and end by 0,0,0, I would have 255 different colors. If the bars are longer than 255 pixels, would this look nice?

Example:

```
// Window.Paint:
Sub Paint(g As Graphics)
dim w,w1,x,p as Integer
dim c1,c2,c as color
dim p1,p2 as Double

c1=rgb(255,0,0) // start color
c2=rgb(0,255,0) // end color

w=g.Width
w1=w-1

for x=0 to w1
p1=x/w1
p2=1.0-p1

c=rgb(c1.red*p1+c2.red*p2, c1.green*p1+c2.green*p2, c1.blue*p1+c2.blue*p2)

g.ForeColor=c
g.DrawLine x,0,x,g.Height

next
End Sub
```

Notes: Try the code above in a window paint event handler.

13.0.58 How do I read the applications in the dock app?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Use CFPreferencesMBS class like in this example:

Example:

```
// Reads file names from persistent dock applications and puts them into the list

dim pref as new CFPreferencesMBS

dim persistentapps as CFStringMBS = NewCFStringMBS("persistent-apps")
dim ApplicationID as CFStringMBS = NewCFStringMBS("com.apple.dock")
dim tiledata as CFStringMBS = NewCFStringMBS("tile-data")
dim filelabel as CFStringMBS = NewCFStringMBS("file-label")

// get the array of persistent applications from dock preferences
dim o as CObjectMBS = pref.CopyValue(persistentapps, ApplicationID, pref.kCFPreferencesCurrentUser,
pref.kCFPreferencesAnyHost)

if o isa CFArrayMBS then
dim a as CFArrayMBS = CFArrayMBS(o)

// walk over all items in array
dim c as Integer = a.Count-1
for i as Integer = 0 to c

// get dictionary describing item
o = a.Item(i)

if o isa CFDictionaryMBS then
dim d as CFDictionaryMBS = CFDictionaryMBS(o)

// and pick tile data dictionary
o = d.Value(tiledata)
if o isa CFDictionaryMBS then
d = CFDictionaryMBS(o)

// and pick there the file label
o = d.Value(filelabel)
if o isa CFStringMBS then
// and display it
dim name as string = CFStringMBS(o).str
List.AddRow name
```

```

end if
end if
end if

next

else
MsgBox "Failed to read dock preferences."
end if

```

Notes: You can use the `CFPreferencesMBS.SetValue` to change a value and `CFPreferencesMBS.Synchronize` to write the values to disc. You may need to restart the `Dock.app` if you modified things.

13.0.59 How do I truncate a file?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** In a `binarystream` you can set the `length` property to truncate.

13.0.60 How do update a Finder's windows after changing some files?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Try this code:

Example:

```

dim f as folderitem // some file
dim ae as appleevent
ae=newappleevent("fndr", "fupd", "MACS")
ae.folderitemparam("—")=f
if not ae.send then
//something went wrong
end if

```

Notes: The `folderitem.finderupdate` from the MBS Plugin does something like this.

13.0.61 How to access a USB device directly?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** First, it depends on the device.

Notes:

Some devices can be talked directly from user mode code, but some require a kernel driver.

For some devices you can use plugins to access them like:

- Audio and Video sources using the QTGrabberClassMBS
- Mass storage devices using the folderitem class.
- Serial devices using the System.SerialPort function.
- HID USB devices can be used with MacHIDMBS, WinHIDMBS or LinuxHIDInterface class.
- Any USB device may be used with MacUSBMBS or WinUSBMBS classes.

In general it is always the best to take the most high level access to have others do the work for the details.

13.0.62 How to add icon to file on Mac?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** You can use Folderitem.AddCustomIcon or NSWorkspaceMBS.setIcon functions.

Notes: Please close any open stream for the file you want to add an icon.

13.0.63 How to ask the Mac for the Name of the Machine?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Using Apple Events you can use this code:

Example:

Function Computername() *As string*

```
dim theEvent as AppleEvent
dim err as boolean
```

```
theEvent = newAppleEvent("mchn", "getd", "MACS")
```

```
err = theEvent.send
```

```
return theevent.ReplyString
```

End Function

Notes:

Code above is for Mac OS 9!

Also the MBS Plugin has a function for this which may be faster and work also on Macs without Filesharing (which handles this event).

13.0.64 How to automatically enable retina in my apps?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** You can run a build script on each build with this code:

Example:

```
Dim App As String = CurrentBuildLocation + "/" + CurrentBuildAppName + ".app"
Call DoShellCommand("/usr/bin/defaults write " + App + "/Contents/Info ""NSHighResolutionCapable"" YES")
```

Notes: This will set the NSHighResolutionCapable flag to YES.

13.0.65 How to avoid leaks with Cocoa functions?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** You can try this code on Mac OS X:

Example:

```
// in a Timer Action event:
Sub Action()
static LastPool as NSAutoreleasePoolMBS = nil
static CurrentPool as NSAutoreleasePoolMBS = nil

LastPool = CurrentPool
CurrentPool = new NSAutoreleasePoolMBS
End Sub
```

Notes:

With REALbasic 2009r4 the code above should not be needed as REALbasic runtime does automatically handle the NSAutoreleasePools for you. For older REALbasic versions you need to use code with a timer with the action event above to avoid memory leaks.

Please do not use REALbasic 2009r4 and newer with plugins before version 9.5. You can get crashes there which typically show a line with a objc_msgSend call.

13.0.66 How to avoid trouble connecting to oracle database with SQL Plugin?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** For oracle the most important thing is to point the plugin to the libraries from oracle.

Notes:

In environment variables, the paths like ORACLE_HOME must be defined.

On Mac OS X you also need to define DYLD_LIBRARY_PATH to point to the dylib files from oracle.

For that you need to modify /etc/launchd.conf for Mac OS X 10.8 and newer.

In older versions those variables in .MacOSX/environment.plist file in user's home.

Another way for the case you bundle things inside your app is to use the LSEnvironment key in info.plist.

In info.plist it looks like this:

```
<key>LSEnvironment</key>
<dict>
<key>test</key>
<string>Hello World</string>
</dict>
```

13.0.67 How to avoid __NSAutoreleaseNoPool console messages in threads?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** You need to use your own NSAutoreleasePool on a thread like this:

Example:

```
sub MyThread.run
dim pool as new NSAutoreleasePoolMBS
// do work here

pool=nil
end sub
```

Notes:

For more details read here:

http://developer.apple.com/mac/library/documentation/Cocoa/Reference/Foundation/Classes/NSAutoreleasePool_Class/Reference/Reference.html

13.0.68 How to bring app to front?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** On Mac you can use this code:

Example:

```
// First way:
app.FrontMostMBS = true

// second way:
dim p as new ProcessMBS
p.GetCurrentProcess
p.FrontProcess = true

// third way:
NSApplicationMBS.sharedApplication.activateIgnoringOtherApps(true)

// for Windows:
RemoteControlMBS.WinBringWindowToTop
```

Notes: This will bring a Mac app to the front layer.

13.0.69 How to bring my application to front?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** This makes SimpleText (Code txt) to the frontmost application:

Example:

```
Dim A As AppleEvent
A = NewAppleEvent("misc", "actv", "")
If Not A.Send then
Beep
end if
```

Notes: (Code is Mac only)

13.0.70 How to catch Control-C on Mac or Linux in a console app?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** You can use SignalHandlerMBS class for this.

Example:

```
// watch for Control-C on Mac
call SignalHandlerMBS.SetFlagHandler(2)

dim ende as boolean = false
do
if SignalHandlerMBS.IsFlagSet(2) then
Print "Flag 2 set. Existing..."
ende = true
end if

DoEvents 1
loop until ende
```

Notes: The signal is caught, a flag is set and you can ask later in your normal application flow for the result.

13.0.71 How to change name of application menu?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: No. **Answer:** Use this code to change the application menu name on Mac OS X:

Example:

```
dim mb as new MenubarMBS
dim m as MenuMBS = mb.item(1) // 1 is in my tests the app menu
if m<>Nil then
m.MenuTitle = "Hello World"
end if
```

Notes: This code is for Carbon only.

13.0.72 How to change the name in the menubar of my app on Mac OS X?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:**

You mean it screws up if the file name of the bundle itself is different than the name of the executable file in the MacOS folder within the bundle? If so, you should find something like this within your Info.plist file (or the 'plst' resource that the RB IDE builds for you):

```
<key>CFBundleExecutable</key>
<string>Executable file name here</string>
```


Just make sure that file name matches.

However, if your question involves how you can change the name of the app that appears in the menu and the dock, that's different. You can make this name different from the file name by changing the CFBundleName key:

```
<key>CFBundleName</key>
<string>Name for menu here</string>
```

Note that if you use my free AppBundler program, this second part is taken care of for you – just fill in a custom name in the right field. You can find AppBundler (from Thomas Reed) at <http://www.bitjuggler.com/products/appbundler/> .

13.0.73 How to check if a folder/directory has subfolders?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** You can use code like this to check all items in a folder:

Example:

```
Function HasSubFolder(folder as FolderItem) As Boolean
dim c as Integer = folder.Count
```

```
for i as Integer = 1 to c
dim item as FolderItem = folder.TrueItem(i)
```

```
if item<>Nil and item.Directory then
Return true
end if
next
```

```
End Function
```

Notes:

We use trueitem() here to avoid resolving alias/link files. Also we check for nil as we may not have permission to see all items. And if one is a directory, we return without checking the rest.

13.0.74 How to check if Macbook runs on battery or AC power?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Please use our IOPowerSourcesMBS class like this:

Example:

```
Function PowerSourceState() as Integer
dim p as new IOPowerSourcesMBS

// check all power sources
dim u as Integer = p.Count-1
for i as Integer = 0 to u
dim d as CFDictionaryMBS = p.Item(i)
if d<>nil then
// check if they have a power source state key:
dim o as CFObjectMBS = d.Value(NewCFStringMBS("Power Source State"))
if o isa CFStringMBS then
dim s as string = CFStringMBS(o).str

'MsgBox s

if s = "AC Power" then
Return 1
elseif s = "Battery Power" then
Return 2
end if
end if
end if
next
Return 0 // unknown
End Function
```

Notes: If you want to check the CFDictionaryMBS content, simply use a line like "dim x as dictionary = d.dictionary" and check the contents in the debugger.

13.0.75 How to check if Microsoft Outlook is installed?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** If you need Outlook for Scripting, you should simply check registry for the required Outlook.Application class:

Example:

```
Function OutlookInstalled() As Boolean
# if TargetWin32 then

try
```

```

dim r as new RegistryItem("HKEY_CLASSES_ROOT\Outlook.Application\CLSID", false)

Return true

catch r as RegistryAccessErrorException
// not installed
Return false

end try

# else

// Windows only, so false on other platforms
Return false

# endif

End Function

```

13.0.76 How to check on Mac OS which country or language is currently selected?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** The code below returns a country value.

Example:

```

dim result as Integer

IF TargetMacOS THEN

CONST smScriptLang = 28
CONST smSystemScript = -1

DECLARE FUNCTION GetScriptManagerVariable LIB "Carbon" ( selector as Integer) as Integer
DECLARE FUNCTION GetScriptVariable LIB "Carbon" ( script as Integer, selector as Integer) as Integer

result=GetScriptVariable(smSystemScript, smScriptLang)

END IF

```

Notes:

Returns values like:

For more values, check "Script.h" in the frameworks.

13.0.77 How to code sign my app with plugins?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** When you try to code sign the application with plugin dylibs on Mac OS X, you may see error message that there is actually a signature included.

Notes:

Please use the -f command line parameter with codesign utility to overwrite our MBS signature. We sign our plugins for Mac and Windows to make sure they have not been modified.

In terminal, you do like this:

```
cd <Path to folder of app>
```

```
codesign -f -s "Developer ID Application: <Your Name>" "<Appname>.app/Contents/Frameworks/*.dylib"
codesign -f -s "Developer ID Application: <Your Name>" "<Appname>.app/Contents/Frameworks/*.framework"
codesign -f -s "Developer ID Application: <Your Name>" "<Appname>.app"
```

Please use the name of your certificate (See keychain), the name of your app and the path to the app folder. If you have helper apps you need to sign them first. You can use a build step to automatically sign your app on build.

13.0.78 How to collapse a window?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Use this function (Mac only):

Example:

```
Sub CollapseRBwindow(w as window, CollapseStatus as boolean)
dim state, err as Integer
dim wh as MemoryBlock
```

```
Declare Function CollapseWindow Lib "Carbon" (window as Integer, collapse as Integer) as Integer
```

```
IF CollapseStatus THEN
state = 1
ELSE
state = 0
END IF
```

```
err = CollapseWindow(w.MacWindowPtr, state)
```

```
End Sub
```

Notes:

Also the MBS Plugin has a window.collapsedmbs property you can set.
For Windows the MBS Plugin has a window.isiconicmbs property.

13.0.79 How to compare two pictures?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** You can try this code:

Example:

```
Function ComparePictures(p as picture,q as picture) as Integer
```

```
dim r,u as RGBSurface
```

```
dim x,y,n,m,h,w as Integer
```

```
dim w1,w2,h1,h2,d1,d2 as Integer
```

```
dim c1,c2 as color
```

```
h1=p.Height
```

```
h2=q.Height
```

```
w1=p.Width
```

```
w2=q.Width
```

```
d1=p.Depth
```

```
d2=q.Depth
```

```
if d1<>d2 then
```

```
Return 1
```

```
elseif w1<>w2 then
```

```
return 2
```

```
elseif h1<>h2 then
```

```
Return 3
```

```
else
```

```
r=p.RGBSurface
```

```
u=q.RGBSurface
```

```
if r=nil or u=nil then
```

```
Return -1
```

```
else
```

```
h=h1-1
```

```
w=w1-1
```

```
m=min(w,h)
```

```
for n=0 to m
c1=r.Pixel(n,n)
c2=u.Pixel(n,n)
if c1<>c2 then
Return 4
end if
next

for y=0 to h
for x=0 to w
c1=r.Pixel(x,y)
c2=u.Pixel(x,y)
if c1<>c2 then
Return 5
end if
next
next

// 0 for equal
// -1 for error (no RGBsurface)
// 1 for different depth
// 2 for different width
// 3 for different height
// 4 for different pixels (fast test)
// 5 for different pixels (slow test)
end if
end if

Exception
Return -1
End Function
```

Notes: Remember that this only works on bitmap pictures, so the `picture.BitmapMBS` function may be useful.

13.0.80 How to compile PHP library?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** You have to download the source code and compile a static version of the library.

Notes:

This instructions were written based on PHP 5.2.6 on Mac OS X:

- Best take a new Mac with current Xcode version installed.

- Download the source code archive. e.g. "php-5.2.6.tar.bz2"
- Expand that archive on your harddisc.
- Open terminal window
- change directory to the php directory. e.g. "cd /php-5.2.6"
- execute this two lines to define the supported CPU types and the minimum Mac OS X version:
- export CFLAGS="-arch ppc -arch i386 -mmacosx-version-min=10.3"
- export CXXFLAGS="-arch ppc -arch i386 -mmacosx-version-min=10.3"
- the command "./configure help" does show the configure options.
- use configure with a line like this:
- ./configure --enable-embed --with-curl --enable-ftp --enable-zip --enable-sockets --enable-static --enable-soap --with-zlib --with-bz2 --enable-exif --enable-bcmath --enable-calendar
- start the compilation with "make all"
- other option is to use "make install" which first does the same as "make all" and than does some installation scripts.
- you may get an error about a duplicate symbole _yytext. Search the file "zend_ini_scanner.c", search a line with "char *yytext;" and change it to "extern char *yytext;".
- On the end you get a lot of error messages, but you have a working library (named libphp5.so) file in the invisible ".libs" folder inside your php source folder.

Possible problems and solutions:

- If the path to your files has spaces, you can get into trouble. e.g. "/RB Plugins/PHP" is bad as files will be searched sometimes in "/RB".
- If you have in /usr/local/lib libraries which conflict with the default libraries, you can get into trouble.
- If you installed some open source tools which compiled their own libraries, you can get into conflicts.
- if you have to reconfigure or after a problem, you may need to use "make clean" before you start "make all" again.

Feel free to install additional libraries and add more packages to the configure line.

13.0.81 How to convert a `BrowserType` to a `String` with `WebSession.Browser`?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Use code like this:

Example:

```
Function GetBrowserName(s as WebSession.BrowserType) As string
Select case s
case WebSession.BrowserType.Android
Return "Andriod"
case WebSession.BrowserType.Blackberry
Return "Blackberry"
case WebSession.BrowserType.Chrome
Return "Chrome"
case WebSession.BrowserType.ChromeOS
Return "ChromeOS"
case WebSession.BrowserType.Firefox
Return "Firefox"
case WebSession.BrowserType.InternetExplorer
Return "InternetExplorer"
case WebSession.BrowserType.Opera
Return "Opera"
case WebSession.BrowserType.Safari
Return "Safari"
case WebSession.BrowserType.SafariMobile
Return "SafariMobile"
case WebSession.BrowserType.Unknown
Return "Unknown"
else
Return "Unkown: " +str(integer(s))
end Select

End Function
```

13.0.82 How to convert a `EngineType` to a `String` with `WebSession.Engine`?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Use code like this:

Example:

```
Function GetRenderingEngineName(s as WebSession.EngineType) As string
Select case s
case WebSession.EngineType.Gecko
Return "Gecko"
case WebSession.EngineType.Presto
Return "Presto"
case WebSession.EngineType.Trident
```



```

Return "Trident"
case WebSession.EngineType.Unknown
Return "Unknown"
case WebSession.EngineType.WebKit
Return "WebKit"
else
Return "Unkown: " +str(integer(s))
end Select

End Function

```

13.0.83 How to convert a PlatformType to a String with WebSession.Platform?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Use code like this:

Example:

```

Function GetPlatformName(s as WebSession.PlatformType) As string
Select case s
case WebSession.PlatformType.Blackberry
Return "Blackberry"
case WebSession.PlatformType.iPad
Return "iPad"
case WebSession.PlatformType.iPhone
Return "iPhone"
case WebSession.PlatformType.iPodTouch
Return "iPodTouch"
case WebSession.PlatformType.Linux
Return "Linux"
case WebSession.PlatformType.Macintosh
Return "Macintosh"
case WebSession.PlatformType.PS3
Return "PS3"
case WebSession.PlatformType.Unknown
Return "Unknown"
case WebSession.PlatformType.WebOS
Return "WebOS"
case WebSession.PlatformType.Wii
Return "Wii"
case WebSession.PlatformType.Windows
Return "Windows"
else
Return "Unkown: " +str(integer(s))
end Select

End Function

```

13.0.84 How to convert a text to iso-8859-1 using the TextEncoder?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:**

This code can help you although it's not perfect.

You need to set lc to the current color you use.

Example:

```
dim outstring as string
dim theMac, thePC as textencoding
dim Mac2PC as textconverter

theMac = getTextEncoding(0) // MacRoman
thePC = getTextEncoding(& h0201) // ISOLatin1

Mac2PC = getTextConverter(theMac, thePC)
// if you wanted to do the opposite just create a converter
// PC2Mac = getTextConverter(thePC, theMac)

outstring = Mac2PC.convert("Bjrn, this text should be converted")
Mac2PC.clear
```

Notes: You have to call Mac2PC.clear after every conversion to reset the encoding engine.

13.0.85 How to convert ChartTime back to Xojo date?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** We have this example code:

Example:

```
Function ChartTimeToDate(ChartTime as Double) As date
static diff as Double = 0.0

if diff = 0.0 then
dim d2 as Double = CDBaseChartMBS.chartTime(2015, 1, 1)
dim da as new date(2015, 1, 1)
dim ts as Double = da.TotalSeconds

diff = ts - d2
end if
```

```
dim d as new date
d.TotalSeconds = diff + ChartTime
```

```
Return d
End Function
```

Notes: As you see we calculate the difference in base date from Date and ChartTime and later use difference to convert.

13.0.86 How to convert line endings in text files?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** You can simply read file with TextInputStream and write with new line endings using TextOutputStream class.

Example:

```
dim inputfile as FolderItem = SpecialFolder.Desktop.Child("test.txt")
dim outputfile as FolderItem = SpecialFolder.Desktop.Child("output.txt")
dim it as TextInputStream = TextInputStream.Open(inputfile)
dim ot as TextOutputStream = TextOutputStream.Create(outputfile)
```

```
ot.Delimiter = EndOfLine.Windows // new line ending
while not it.EOF
ot.WriteLine it.ReadLine
wend
```

Notes: TextInputStream will read any input line endings and with delimiter property in TextOutputStream you can easily define your new delimiter.

13.0.87 How to convert picture to string and back?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Use this plugin functions:

Notes:

JPEG:

```
JPEGStringToPictureMBS(buf as string) as picture
JPEGStringToPictureMBS(buf as string,allowdamaged as Boolean) as picture
PictureToJPEGStringMBS(pic as picture,quality as Integer) as string
```

PNG:

```
PictureToPNGStringMBS(pic as picture, gamma as single) as string
PictureToPNGStringMBS(pic as picture, mask as picture, gamma as single) as string
PictureToPNGStringMBS(pic as picture, gamma as single, Interlace as Boolean, FilterType as Integer) as string
PictureToPNGStringMBS(pic as picture, mask as picture, gamma as single, Interlace as Boolean, FilterType as Integer) as string
PNGStringToPictureMBS(data as string, gamma as single) as picture
PNGStringToPNGPictureMBS(data as string, gamma as single) as PNGpictureMBS
```

Tiff:

```
TIFFStringToPictureMBS(data as string) as picture
TIFFStringToTiffPictureMBS(data as string) as TiffPictureMBS
```

BMP:

```
BMPStringtoPictureMBS(data as string) as picture
Picture.BMPDataMBS(ResolutionValueDPI as Integer=72) as string
```

GIF:

```
GifStringToGifMBS(data as string) as GIFMBS
GifStringToPictureMBS(data as string) as Picture
```

13.0.88 How to copy an array?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** You can use a function like this to copy an array:

Example:

```
Function CopyArray(a() as Double) as Double()
dim r() as Double
for each v as Double in a
r.Append v
next
Return r
End Function
```

Notes:

If needed make several copies of this method with different data types, not just double.
 For a deep copy of an array of objects, you need to change code to also make a copy of those objects.

13.0.89 How to copy an dictionary?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** You can use a function like this to copy a dictionary:

Example:

```
Function CopyDictionary(d as Dictionary) As Dictionary
dim r as new Dictionary
for each key as Variant in d.keys
r.Value(key) = d.Value(key)
next
Return r
End Function
```

Notes:

If needed make several copies of this method with different data types, not just double.
 For a deep copy of an dictionary of objects, you need to change code to also make a copy of those objects.

13.0.90 How to copy parts of a movie to another one?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: No. **Answer:** The code below copies ten seconds of the snowman movie to the dummy movie starting at the 5th second.

Example:

```
dim f as FolderItem
dim md as EditableMovie
dim ms as EditableMovie

f=SpecialFolder.Desktop.Child("Our First Snowman.mov")
ms=f.OpenEditableMovie

ms.SelectionStartMBS=5
ms.SelectionLengthMBS=10

f=SpecialFolder.Desktop.Child("dummy.mov")
md=f.CreateMovie

msgbox str(md.AddMovieSelectionMBS(ms))
```

Notes: If result is not 0, the method fails.

13.0.91 How to create a birthday like calendar event?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Try this code:

Example:

```
// start a connection to the calendar database
dim s as new CalCalendarStoreMBS

// needed for the error details
dim e as NSErrorMBS

dim r as CalRecurrenceRuleMBS = CalRecurrenceRuleMBS.initYearlyRecurrence(1, nil) // repeat every
year without end

dim a as new CalAlarmMBS // add alarm
a.action = a.CalAlarmActionDisplay
a.relativeTrigger = -3600*24 // 24 Hours before

// create a new calendar
dim c as new CalEventMBS

dim d as new date(2011, 04, 20) // the date

dim calendars() as CalCalendarMBS = s.calendars

// set properties
c.Title="Test Birthday"
c.startDate=d
c.recurrenceRule = r
c.calendar=calendars(0) // add to first calendar
c.addAlarm(a)
c.endDate = d
c.isAllDay = true

// save event
call s.saveEvent(c,s.CalSpanAllEvents, e)
if e<>nil then
MsgBox e.localizedDescription
else
MsgBox "New event was created."
end if
```

Notes: This adds an event to iCal for the given date with alarm to remember you and repeats it every year.

13.0.92 How to create a GUID?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Use the UUIDMBS class for this.

13.0.93 How to create a Mac picture clip file?

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** You can use code like this one.

Example:

```

dim f As FolderItem
dim p As Picture

f=SpecialFolder.Desktop.Child("Test.pictClipping")
if f=nil then Return

p=new Picture(300,200,32) 'Make a sample picture
p.Graphics.ForeColor=RGB(0,255,255)
p.Graphics.FillOval 0,0,99,99
p.Graphics.ForeColor=RGB(255,0,0)
p.Graphics.DrawOval 0,0,99,99

dim r As ResourceFork 'ResourceFork is needed for a clip file

// Please define a file type Any
r=f.CreateResourceFork("Any")

// get PICT data using plugin function
dim pictdata as string = p.PicHandleDataMBS
r.AddResource(pictdata,"PICT",256,"Picture")

dim m as new MemoryBlock(8)

m.LittleEndian = false
m.Int16Value(0) = 0
m.Int16Value(2) = 0
m.Int16Value(4) = p.Width
m.Int16Value(6) = p.Height

```

```
r.AddResource(m,"RECT",256,"")
```

'Values taken from a sample file and irrelevant to the problem

```
dim data as string = DecodeBase64("AQAAAAAAAAAAAAAAAAACAFRDRVIAAABAAAAAAAAAABUQ0IQAAAAA")
r.AddResource(data,"drag",128,"") 'ditto
r.Close
```

Notes: In general Apple has deprecated this, but a few application still support clippings.

13.0.94 How to create a PDF file in REALbasic?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Check our DynaPDF plugin and the examples.

Notes:

An alternative can be to use the CoreGraphics and Cocoa functions on Mac OS X. For Windows, we can only suggest our DynaPDF plugin.

13.0.95 How to create EmailAttachment for PDF Data in memory?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** You can use code like the one below:

Example:

```
Function EmailAttachmentFromPDFData(PDFData as string, filename as string) As EmailAttachment
dim a as new EmailAttachment
```

```
a.data = EncodeBase64(PDFData, 76)
a.ContentEncoding = "base64"
a.MIMEType = "application/pdf"
a.MacType = "PDF "
a.MacCreator = "prvw"
a.Name = filename
```

Return a

End Function

Notes:

Compared to sample code from Xojo documentation, we set the mime type correct for PDF. The MacType/MacCreator codes are deprecated, but you can still include them for older Mac email clients. "prvw" is the creator code for Apple's preview app.

13.0.96 How to create PDF for image files?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** You can use DynaPDF like this:

Example:

```
Function CreatePrintPDF(jpgFiles() as folderitem, pdfFile as FolderItem, PageWidth as Integer, PageHeight
as Integer) As Boolean
// have files?
If pdfFile = Nil Then Return False
If jpgFiles = Nil Then Return False

If jpgFiles.Ubound <0 Then Return False

// new DynaPDF
Dim pdf As New MyDynapdfMBS

// page width/height in MilliMeter
Dim pdfWidth as Integer = PageWidth * 72 / 25.4
Dim pdfHeight as Integer = PageHeight * 72 / 25.4

// put your license here
Call pdf.SetLicenseKey "Starter"

// create pdf
Call pdf.CreateNewPDF pdfFile

// set a couple of options
Call pdf.SetPageCoords(MyDynaPDFMBS.kpcTopDown)
Call pdf.SetResolution(300)
Call pdf.SetUseTransparency(False)
Call pdf.SetSaveNewImageFormat(False)
Call pdf.SetGStateFlags(MyDynaPDFMBS.kgfUseImageColorSpace, False)
Call pdf.SetJPEGQuality(100)

// set page size
Call pdf.SetBBox(MyDynaPDFMBS.kpbMediaBox, 0, 0, pdfWidth, pdfHeight)
Call pdf.SetPageWidth(pdfWidth)
Call pdf.SetPageHeight(pdfHeight)

// append pages with one image per page
For i as Integer = 0 To jpgFiles.Ubound
Call pdf.Append
Call pdf.InsertImageEx(0, 0, pdfWidth, pdfHeight, jpgFiles(i), 1)
Call pdf.EndPage
```

Next

```
// close
Call pdf.CloseFile
```

```
Return True
End Function
```

Notes:

This is to join image files in paper size to a new PDF.
e.g. scans in A4 into an A4 PDF.

13.0.97 How to CURL Options translate to Plugin Calls?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Below a few tips on how to translate command line CURL calls to plugin calls.

Notes:

```
curl -vX PUT http://localhost:5984/appserials/78569238475/DocumentRegister.docx?rev=3-25634563456
-data-binary @DocumentRegister.docx -H "Content-Type: application/msword"
```

- The option -v means verbose. You can use OptionVerbose and listen for messages in the DebugMessage event.
- The option -X PUT means we want to do a HTTP PUT Request. So set OptionPut to true. Also you will want to set OptionUpload to true as you upload data.
- We have the URL which you put into OptionURL property.
- The -data-binary option tells CURL to pass the given data. With the @ before the data, it is interpreted as a file name, so the data is read from the given file. You'll need to open this file and pass data with the Read event as needed. (See CURLS ftp file upload example project)
- The last option -H specifies an additional header for the upload. Pas this additional header with the SetOptionHTTPHeader method.

```
curl -X PUT http://127.0.0.1:5984/appserials/f2f4e540bf8bb60f61cfd4328001c59 -d '{ "type": "Product", "description": "Application Serial", "acronym": "AppSerial", "dateAdded": "2011-03-21 14:57:36" }'
```

- Option -X PUT like above.
- Pass the URL again in OptionURL
- This time data is passed in command line for CURL. You'd put this data in the quotes into a string and make it available in the Read event. (See CURLS ftp upload example project)

13.0.98 How to delete file with ftp and curl plugin?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** You can set post/pre quotes to have ftp commands executed before or after the download/upload.

Example:

```
dim d as CURLMBS // your curl object
```

```
// delete file
```

```
dim ws() As String
```

```
ws.Append "DELE Temp.txt"
```

```
d.SetOptionPostQuote(ws)
```

Notes:

Use SetOptionPostQuote, SetOptionPreQuote or SetOptionQuote.

The ftp commands you pass here are native ftp commands and not the commands you use with ftp applications. To delete use DELE and the file path.

13.0.99 How to detect display resolution changed?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** On Mac OS X simply listen for display changed notifications.

Notes: Use the "Distribution Notification Center.rbp" example project as a base and use it to listen to notifications with the name "O3DeviceChanged".

13.0.100 How to detect retina?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Please use Window.BackingScaleFactorMBS to query the factor.

Example:

```
msgbox str(window1.BackingScaleFactorMBS)
```

13.0.101 How to disable force quit?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:**

Please visit this website and get the control panel for Mac OS 9 there:

<http://www3.sk.sympatico.ca/tinyjohn/DFQ.html>

For Mac OS X use the MBS Plugin with the SetSystemUIModeMBS method.

Notes: Please use presentationOptions in NSApplicationMBS for Cocoa applications.

13.0.102 How to disable the error dialogs from Internet Explorer on javascript errors?

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** You can use this code in the htmlviewer open event:

Example:

```
if targetwin32 then
htmlviewer1..ole.Content.value("Silent") = True
end if
```

Notes: This disables the error dialogs from Internet Explorer.

13.0.103 How to display a PDF file in REALbasic?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** On Mac OS X you can use CoreGraphics or PDFKit to display a PDF.

Notes:

An alternative can be to load the PDF into a htmlviewer so the PDF plugin can display it. On Windows you may need to use the Acrobat ActiveX control from Adobe or launch Acrobat Reader.

13.0.104 How to do a lottery in RB?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Try this function:

Example:

```
Sub Lotto(max as Integer,count as Integer,z() as Integer)
// Lotto count numbers of max put into the array z beginning at index 0
dim n(0) as Integer ' all the numbers
dim m as Integer ' the highest field in the current array
dim i,a,b,d as Integer ' working variables

'fill the array with the numbers
m=max-1
redim n(m)
```


You can use `DNSLookupThreadMBS` class for doing them asynchron.

13.0.106 How to draw a dashed pattern line?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** You can try this code:

Example:

// call like this: DrawDashedPatternLine g,0,0,width,height,10

```
Sub DrawDashedPatternLine(g as graphics,x1 as Integer,y1 as Integer,x2 as Integer,y2 as Integer, partlen
as Integer)
dim x,y,ox,oy as Double
dim dx,dy as Double
dim w,h,d as Double
dim b as Boolean

w=x2-x1
h=y2-y1

d=sqrt(w*w+h*h)

dx=w/d*partlen
dy=h/d*partlen

b=true
x=x1
while (x<x2) and (y<y2)
ox=x
oy=y

x=x+dx
y=y+dy

if b then
g.DrawLine ox,oy,x,y
end if

b=not b
wend

End Sub
```

Notes: It would be possible to add this to the plugin, but I think it's better if you do it in plain Realbasic code, so it even works on Windows.

13.0.107 How to draw a nice antialiased line?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:**

This code can help you although it's not perfect.

You need to set lc to the current color you use.

Example:

```
Sub drawLine(xs as Integer, ys as Integer, xe as Integer, ye as Integer, face as RGBSurface, lineColor as
color)
dim intX, intY, count, n, xDiff, yDiff as Integer
dim v, v1, floatX, floatY, xx, yy, xStep, yStep as Double
dim c as color

const st=1.0

xDiff=xe-xs
yDiff=ye-ys
count=max(abs(xDiff), abs(yDiff))
xStep=xDiff/count
yStep=yDiff/count
xx=xs
yy=ys
for n=1 to count
intX=xx
intY=yy
floatX=xx-intX
floatY=yy-intY

v=(1-floatX)*(1-floatY)*st
v1=1-v
c=face.pixel(intX, intY)
face.pixel(intX, intY)=rgb(v*lineColor.red+v1*c.red, v*lineColor.green+v1*c.green, v*lineColor.blue+v1*c.blue)
v=floatX*(1-floatY)*st
v1=1-v
c=face.pixel(intX+1, intY)
face.pixel(intX+1, intY)=rgb(v*lineColor.red+v1*c.red, v*lineColor.green+v1*c.green, v*lineColor.blue+v1*c.blue)
v=(1-floatX)*floatY*st
v1=1-v
c=face.pixel(intX, intY+1)
face.pixel(intX, intY+1)=rgb(v*lineColor.red+v1*c.red, v*lineColor.green+v1*c.green, v*lineColor.blue+v1*c.blue)
v=floatX*floatY*st
v1=1-v
c=face.pixel(intX+1, intY+1)
face.pixel(intX+1, intY+1)=rgb(v*lineColor.red+v1*c.red, v*lineColor.green+v1*c.green, v*lineColor.blue+v1*c.blue)
```

```
xx=xx+xStep
yy=yy+yStep
next
```

End Sub

Notes: PS: st should be 1 and face should be a RGBSurface or a Graphics object.

13.0.108 How to draw with CGContextMBS using my own handle?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** You can try this code:

Example:

```
Soft Declare Function QDBeginCGContext Lib "Carbon" (port as Integer, ByRef contextHandle as Integer)
as Integer
dim contextRef as Integer
call QDBeginCGContext(g.handle(graphics.HandleTypeCGrafPtr), contextRef)
dim c as new CGContextMBS(contextRef)
```

```
c.BeginPath
c.SetLineWidth(3)
c.SetRGBFillColor(1,0,0,0.5)
c.FillRect(CGMakeRectMBS(0,0,100,100))
c.DrawPath(c.kCGPathFillStroke)
c.Flush // and so on
```

```
Soft Declare Function QDEndCGContext Lib "Carbon" (port as Integer, ByRef contextHandle as Integer)
as Integer
dim h as Integer = c.Handle
call QDEndCGContext(g.handle(graphics.HandleTypeCGrafPtr), h)
c.Handle=0
```

Notes: Basicly you can provide your own handle to CGContextMBS. But if you do not set it back to 0 the CGContextMBS destructor will release the handle which can result into a crash. (if the reference count is wrong)

13.0.109 How to dump java class interface?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** In terminal you can use "javap -s <classname>" to display the class with the method names and parameters.

Notes: For example show ResultSet class: javap -s java.sql.ResultSet

13.0.110 How to duplicate a picture with mask or alpha channel?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** You can use code like this function:

Example:

```
Function Duplicate(extends p as Picture) As Picture
# if RBVersion >= 2011.04 then
if p.HasAlphaChannel then

// create nw picture and copy content:
dim q as new Picture(p.Width, p.Height)
q.Graphics.DrawPicture p,0,0

Return q

end if
# endif

// create new picture
dim q as new Picture(p.Width, p.Height, 32)

// get mask
dim oldMask as Picture = p.mask(false)
if oldMask = nil then
// no mask, so simple copy
q.Graphics.DrawPicture p,0,0
Return q
end if

// remove mask
p.mask = nil

// copy picture and mask
q.Graphics.DrawPicture p, 0, 0
q.mask.Graphics.DrawPicture oldMask,0,0

// restore mask
p.mask = oldmask

Return q
End Function
```

Notes:

Simply copy it to a module and call it like this: `q = p.duplicate`.

The code above works with old Real Studio versions because of the `#` if even if your RS version does not support alpha channel pictures. This way it's future proof.

13.0.111 How to enable assistive devices?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** You can use AppleScript code like below:

Notes:

```
tell application "System Events"
activate
```

```
set UI elements enabled to true
```

```
return UI elements enabled
end tell
```

You can run this with AppleScriptMBS class.

13.0.112 How to encrypt a file with Blowfish?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** You can use code like this:

Example:

```
dim fi as FolderItem = SpecialFolder.Desktop.Child("test.xojo_binary_project")
dim fo as FolderItem = SpecialFolder.Desktop.Child("test.encrypted")
```

```
// read input
dim bi as BinaryStream = BinaryStream.Open(fi)
dim si as string = bi.Read(bi.Length)
bi.Close
```

```
// encrypt
dim so as string = BlowfishMBS.Encrypt("MyKey",si)
```

```
// write output
dim bo as BinaryStream = BinaryStream.Create(fo)
bo.Write so
bo.Close
```

Notes: Of course you can decrypt same way, just use Decrypt function and of course swap files.

13.0.113 How to extract text from HTML?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Use both RemoveHTMLTagsMBS and DecodingFromHTMLMBS like this:

Example:

```
dim html as string = "<p><B>Gr&uuml;&szlig;e</B></P>"
dim htmltext as string = RemoveHTMLTagsMBS(html)
dim text as string = DecodingFromHTMLMBS(htmltext)
```

MsgBox text // shows: Gre

Notes:

You can use it together with RemoveHTMLTagsMBS to remove html tags. What you get will be the text without tags.

DecodingFromHTMLMBS turns HTML escapes back to unicode characters. Like ä to .

13.0.114 How to find empty folders in a folder?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Try this code:

Example:

```
dim folder as folderitem // your folder

dim c as Integer = folder.count
for i as Integer = 1 to c
dim item as folderitem = folder.trueitem(i)
if item = nil then
// ignore
elseif item.directory then
// folder
if item.count = 0 then
// found empty folder
end if
end if
next
```

13.0.115 How to find iTunes on a Mac OS X machine fast?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** You can try Launch Services.

Example:

```
dim f as FolderItem
```

```
f=LaunchServicesFindApplicationForInfoMBS("hook","com.apple.iTunes","iTunes.app")
```

```
MsgBox f.AbsolutePath
```

13.0.116 How to find network interface for a socket by it's name?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** You can use our plugin to build a lookup table.

Example:

```
Function FindNetworkInterface(name as string) As NetworkInterface
name = name.trim
```

```
if name.len = 0 then Return nil
```

```
// search by IP/MAC
```

```
dim u as Integer = System.NetworkInterfaceCount-1
for i as Integer = 0 to u
dim n as NetworkInterface = System.GetNetworkInterface(i)
if n.IPAddress = name or n.MACAddress = name then
Return n
end if
next
```

```
// use MBS Plugin to build a mapping
```

```
dim interfaces() as NetworkInterfaceMBS = NetworkInterfaceMBS.AllInterfaces
dim map as new Dictionary
```

```
for each n as NetworkInterfaceMBS in interfaces
```

```
dim IPv4s() as string = n.IPv4s
```

```
dim IPv6s() as string = n.IPv6s
```

```
for each IPv4 as string in IPv4s
```

```
map.Value(IPv4) = n.Name
```

```
next
```

```
for each IPv6 as string in IPv6s
```

```
map.Value(IPv6) = n.Name
```

```

next
if n.MAC<>"" then
map.Value(n.MAC) = n.Name
end if
next

// now search interfaces by name, IPv4 or IPv6
for i as Integer = 0 to u
dim n as NetworkInterface = System.GetNetworkInterface(i)
if map.Lookup(n.IPAddress, "") = name then
Return n
end if

if map.Lookup(n.MACAddress, "") = name then
Return n
end if
next

End Function

```

Notes: The code above uses a lookup table build using NetworkInterfaceMBS class to find the network interface by name.

13.0.117 How to find version of Microsoft Word?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** You can use code like this:

Example:

```

// find Word
dim f as FolderItem = LaunchServicesFindApplicationForInfoMBS("", "com.microsoft.Word", "")

// open bundle
dim c as new NSBundleMBS(f)

// read info
dim d as Dictionary = c.infoDictionary

// show version
MsgBox d.Lookup("CFBundleVersion", "")

```

Notes: Older versions of Word can be found with creator code "MSWD".

13.0.118 How to fix CURL error 60/53 on connecting to server?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** You probably connect with SSL and you have no valid certificate.

Example:

```
dim d as new CURLSMBS

// Disable SSL verification
d.OptionSSLVerifyHost = 0 // don't verify server
d.OptionSSLVerifyPeer = 0 // don't proofs certificate is authentic

// With SSL Verification:
dim cacert as FolderItem = Getfolderitem("cacert.pem")
d.OptionCAInfo = cacert.UnixpathMBS
d.OptionSSLVerifyHost = 2 // verify server
d.OptionSSLVerifyPeer = 1 // proofs certificate is authentic
```

Notes:

You can either use the code above to disable the SSL verification and have no security. Or you use the cacert file and enable the verification. Than you only get a connection if the server has a valid certificate.

see also:

<http://curl.haxx.se/ca/>

13.0.119 How to format double with n digits?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** You can use the FormatMBS function for this.

Example:

```
dim d as Double = 123.4567890
listbox1.AddRow FormatMBS("% f", d)
listbox1.AddRow FormatMBS("% e", d)
listbox1.AddRow FormatMBS("% g", d)

listbox1.AddRow FormatMBS("% 5.5f", d)
listbox1.AddRow FormatMBS("% 5.5e", d)
listbox1.AddRow FormatMBS("% 5.5g", d)

d = 0.000000123456
listbox1.AddRow FormatMBS("% f", d)
listbox1.AddRow FormatMBS("% e", d)
```

```
listbox1.AddRow FormatMBS("% g", d)

listbox1.AddRow FormatMBS("% 5.5f", d)
listbox1.AddRow FormatMBS("% 5.5e", d)
listbox1.AddRow FormatMBS("% 5.5g", d)
```

Notes:

see FormatMBS for details.

In general % f is normal style, % e is scientific and % g is whichever gives best result for given space.

13.0.120 How to get a time converted to user time zone in a web app?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Use the WebSession.GMTOffset property.

Example:

```
Sub Open()
// current date on server
dim d as new date
dim s as string = d.LongTime

// adjust to client GMT offset
d.GMTOffset = d.GMTOffset + Session.GMTOffset

dim t as string = D.LongTime

MsgBox s+EndOfLine+t
End Sub
```

13.0.121 How to get an handle to the frontmost window on Windows?

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** This function returns a handle for the frontmost window:

Example:

```
Function GetForegroundWindowHandle() as Integer
# if targetwin32 then
declare function GetForegroundWindow Lib "user32.dll" as Integer
Return GetForegroundWindow()
# endif
End Function
```

13.0.122 How to get CFAbsoluteTime from date?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: No. **Answer:** Use code like this:

Example:

```
dim d as new date
dim t as CFTimeZoneMBS = SystemCFTimeZoneMBS
dim g as new CFGregorianCalendarMBS
g.Day = d.Day
g.Month = d.Month
g.Year = d.Year
g.Minute = d.Minute
g.Hour = d.Hour
g.Second = d.Second
```

```
dim at as CFAbsoluteTimeMBS = g.AbsoluteTime(t)
dim x as Double = at.Value
```

```
MsgBox str(x)
```

Notes:

As you see we need a timezone and put the date values in a gregorian date record. Now we can query absolute time for the given timezone.

13.0.123 How to get client IP address on web app?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Use the `WebSession.RemoteAddress` property.

Example:

```
Sub Open()
Title = Session.RemoteAddress
End Sub
```


13.0.124 How to get fonts to load in charts on Linux?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Please use the SetFontSearchPath method in the CDBaseChartMBS class to specify where your fonts are.

Example:

```
if TargetLinux then
CDBaseChartMBS.SetFontSearchPath "/usr/share/fonts/truetype"
else
// on Mac and Windows we use system fonts.
end if
```

Notes:

On Mac OS X and Windows, the fonts are loaded from the system's font folder.

e.g. if you use ubuntu, you can install the ttf-mscorefonts-installer package and call this method with "/usr/share/fonts/truetype/msttcorefonts" as the path. No backslash on the end of a path, please.

13.0.125 How to get fonts to load in DynaPDF on Linux?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Please use the AddFontSearchPath method in the DynaPDFMBS class to specify where your fonts are.

Example:

```
dim d as new DynaPDFMBS
if TargetLinux then
call d.AddFontSearchPath "/usr/share/fonts/truetype", true
else
// on Mac and Windows we use system fonts.
end if
```

Notes:

On Mac OS X and Windows, the fonts are loaded from the system's font folder.

e.g. if you use ubuntu, you can install the ttf-mscorefonts-installer package and call this method with "/usr/share/fonts/truetype/msttcorefonts" as the path. No backslash on the end of a path, please.

13.0.126 How to get GMT time and back?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** You can use the date class and the GMTOffset property.

Example:

```
// now
dim d as new date

// now in GMT
dim e as new date
e.GMTOffset = 0

// show
MsgBox str(d.TotalSeconds,"0.0")+ " " +str(e.TotalSeconds, "0.0")

dim GMTTimeStamp as Double = e.TotalSeconds

// restore
dim f as new date

// add GMT offset here
f.TotalSeconds = GMTTimeStamp + f.GMTOffset*3600
// because here it's removed
f.GMTOffset = f.GMTOffset

MsgBox d.ShortTime+ " (" +str(d.GMTOffset)+") " +str(d.TotalSeconds,"0.0")+EndOfLine+_
e.ShortTime+ " (" +str(e.GMTOffset)+") " +str(e.TotalSeconds,"0.0")+EndOfLine+_
f.ShortTime+ " (" +str(f.GMTOffset)+") " +str(f.TotalSeconds,"0.0")
```

Notes: It's sometimes a bit tricky with the date class as setting one property often changes the others.

13.0.127 How to get good crash reports?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Check this website from the webkit website:

Notes: <http://webkit.org/quality/crashlogs.html>

13.0.128 How to get list of all threads?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** You can use the runtime module like in this function:

Example:

```

Function Threads() As Thread()
# pragma DisableBackgroundTasks
dim t() as Thread

Dim o as Runtime.ObjectIterator=Runtime.IterateObjects
While o.MoveNext
if o.Current isa Thread then
t.Append thread(o.current)
end if
Wend

Return t
End Function

```

Notes:

This returns an array of all thread objects currently in memory.
The pragma is important here as it avoids thread switches which may cause a thread to be created or deleted.

13.0.129 How to get parameters from webpage URL in Real Studio Web Edition?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Use the Webpage.ParametersReceived event.

Example:

```

Sub ParametersReceived(Variables As Dictionary)
for each key as Variant in Variables.keys
MsgBox key+" ->" +Variables.Value(key)
next
End Sub

```

Notes: The text encodings of this strings is not defined in Real Studio 2010r5. Please use DefineEncoding.

13.0.130 How to get Real Studio apps running Linux?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** You need to install some require packages.

Notes:

You need CUPS as well as GTK packages. On 64 bit systems also the ia32-libs package.

Please note that you need a x86 compatible Linux. So no PPC, Power, ARM or other CPUs.

13.0.131 How to get the color for disabled textcolor?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Ask the appearance manager:

Example:

```
Function GetThemeTextColor(inColor as Integer, inDepth as Integer, inColorDev as Boolean) As Color
declare function GetThemeTextColor lib "Carbon" (inColor as Integer, inDepth as Integer, inColorDev as
Boolean, outColor as Ptr) as Integer
```

```
dim i as Integer
dim col as MemoryBlock
```

```
col = newMemoryBlock(6)
```

```
i = GetThemeTextColor(inColor, inDepth, inColorDev, col)
```

```
return RGB(col.UShort(0)\256, col.UShort(2)\256, col.UShort(4)\256)
End Function
```

Notes:

The color for this is:

```
const kThemeTextColorDialogInactive = 2.
```

```
c = GetThemeTextColor(kThemeTextColorDialogInactive, Screen(0).Depth, true)
```

For Mac OS X you should use "CarbonLib" instead of "AppearanceLib" ...

13.0.132 How to get the current free stack space?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** You can something like the code below:

Example:

```

Sub ShowStackSize()
dim threadid as Integer
dim size as Integer

declare function GetCurrentThread lib "Carbon" (byref threadid as Integer) as short
declare function ThreadCurrentStackSize lib "Carbon" (threadid as Integer, byref size as Integer) as short

if GetCurrentThread(threadid)=0 then
if 0=ThreadCurrentStackSize(threadid,size) then
MsgBox str(size)
end if
end if
End Sub

```

Notes: For Mac OS 9, use "ThreadLib" instead of "CarbonLib". You can use # if you like for that.

13.0.133 How to get the current timezone?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: No. **Answer:**

You can use the TimeZoneMBS class or the CTimeZoneMBS class.

Or code like below:

Example:

```

Function GMTOffsetInMinutes() as Integer
// Returns the offset of the current time to GMT in minutes.
// supports Mac OS and Windows, but not Linux yet (let me know if
// you have code for that, please)
//
// Note that the offset is not always an even multiple of 60, but
// there are also half hour offsets, even one 5:45h offset

// This version by Thomas Tempelmann (rb@tempel.org) on 25 Nov 2005
// with a fix that should also make it work with future Intel Mac targets.
//
// Using code from various authors found on the RB NUG mailing list

dim result, bias, dayLightbias as Integer
dim info as memoryBlock
dim offset as Integer

# if targetMacOS then

Declare Sub ReadLocation lib "Carbon" (location As ptr)

```

```

info = NewMemoryBlock(12)
ReadLocation info
if false then
// bad, because it does not work on Intel Macs:
`offset = info.short(9) * 256 + info.byte(11)
else
offset = BitwiseAnd (info.long(8), & hFFFFFF)
end

offset = info.short(9) * 256 + info.byte(11)
offset = offset \60
return offset

# endif

# if targetWin32 then

Declare Function GetTimeZoneInformation Lib "Kernel32" ( tzInfoPointer as Ptr ) as Integer
// returns one of
// TIME_ZONE_ID_UNKNOWN 0
// - Note: e.g. New Delhi (GMT+5:30) and Newfoundland (-3:30) return this value 0
// TIME_ZONE_ID_STANDARD 1
// TIME_ZONE_ID_DAYLIGHT 2

info = new MemoryBlock(172)
result = GetTimeZoneInformation(info)

bias = info.Long(0)
// note: the original code I found in the NUG archives used Long(84) and switched to Long(0)
// only for result=1 and result=2, but my tests found that Long(0) is also the right value for result=0

if result = 2 then
daylightBias = info.long(168)
end if
offset = - (bias + dayLightbias)
return offset

# endif

End Function

```

13.0.134 How to get the current window title?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** The code below returns the current window title for the frontmost window on Mac OS X if Accessibility services are

Example:

```

Function CurrentWindowTitle() As string
dim SystemWideElement,FocusedApplicationElement,FocusedWindowElement as AXUIElementMBS
dim FocusedApplication,FocusedWindow,Title as AXValueMBS
dim s as String
dim cs as CFStringMBS

SystemWideElement=AccessibilityMBS.SystemWideAXUIElement
if SystemWideElement<>nil then
FocusedApplication=SystemWideElement.AttributeValue(AccessibilityMBS.kAXFocusedApplicationAttribute)
if FocusedApplication.Type=AccessibilityMBS.kAXUIElementMBSTypeID then
FocusedApplicationElement=new AXUIElementMBS
FocusedApplicationElement.Handle=FocusedApplication.Handle
FocusedApplicationElement.RetainObject

FocusedWindow=FocusedApplicationElement.AttributeValue(AccessibilityMBS.kAXFocusedWindowAttribute)

if FocusedWindow<>nil and AccessibilityMBS.kAXUIElementMBSTypeID=FocusedWindow.Type then

FocusedWindowElement=new AXUIElementMBS
FocusedWindowElement.Handle=FocusedWindow.Handle
FocusedWindowElement.RetainObject

Title=FocusedWindowElement.AttributeValue(AccessibilityMBS.kAXTitleAttribute)
if Title<>nil and Title.Type=kCFStringMBSTypeID then
cs=new CFStringMBS
cs.handle=Title.Handle
cs.RetainObject
Return cs.str
end if
end if
end if
end if
End Function

```

13.0.135 How to get the cursor blink interval time?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** On Mac OS you can use GetCaretTime from the toolbox.

Example:

```

declare function GetCaretTime lib "Carbon" () as Integer

MsgBox str(GetCaretTime()+” ticks”

```

Notes: 60 ticks make one second.

13.0.136 How to get the list of the current selected files in the Finder?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:**

Use the AppleScript like this one:

```
tell application "finder"
return selection
end tell
```

Which translates into this AppleEvent:

```
Process("Finder").SendAE "core,getd,'—':obj { form:prop, want:type(prop), seld:type(sele), from:'null'() }
"
```

and as Realbasic code it looks like this:

Example:

```
dim ae as appleevent
dim o1 as appleeventObjectSpecifier
dim f as folderItem
dim alist as appleeventdescList
dim i as Integer
dim dateiname as string

// setup the AppleEvent
o1=getpropertyObjectDescriptor( nil, "sele")
ae= newappleEvent("core", "getd", "MACS")
ae.objectSpecifierParam("—")=o1

// send it
if ae.send then
// got the list
alist=ae.replyDescList

// now show the list of filename into an editfield:

for i=1 to alist.count
f=alist.folderItem(i)

dateiname=f.name
```



```
// editfield1 with property "multiline=true"!
editfield1.text=editfield1.text + dateiname + chr(13)
next
end if
```

13.0.137 How to get the Mac OS system version?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** The following code queries the value and displays the version number:

Example:

```
dim first as Integer
dim second as Integer
dim third as Integer
dim l as Integer

if System.Gestalt("sysv",l) then

Third=Bitwiseand(l,15)
second=Bitwiseand(l\16,15)
first=Bitwiseand(l\256,15)+10*Bitwiseand(l\256\16,15)
end if

if First>=10 then
msgbox "Mac OS X "+str(First)+". "+str(Second)+". "+str(third)
else
msgbox "Mac OS "+str(First)+". "+str(Second)+". "+str(third)
end if
```

13.0.138 How to get the Mac OS Version using System.Gestalt?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Try this code:

Example:

```
Dim s As String
Dim b As Boolean
Dim i, resp as Integer

// Systemversion
b = System.Gestalt("sysv", resp)
If b then
s = Hex(resp)
```

```

For i =Len(s)-1 DownTo 1
s=Left(s,i)+"."+Mid(s,i+1)
Next
MsgBox "Systemversion: Mac OS" + s
end if

```

Notes: The MBS Plugin has a SystemInformationMBS.OSVersionString function for this.

13.0.139 How to get the screensize excluding the task bar?

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** Try this code:

Notes: Use the Screen class with the available* properties.

13.0.140 How to get the size of the frontmost window on Windows?

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** Try this code:

Notes:

Make yourself a class for the WindowRect with four properties:

```

Bottom as Integer
Left as Integer
Right as Integer
Top as Integer

```

Add the following method to your class:

```

Sub GetWindowRect(windowhandle as Integer)
dim err as Integer
dim mem as memoryBlock
# if targetwin32 then
Declare Function GetWindowRect Lib "user32.dll" (hwnd as Integer, ipRect As Ptr) as Integer

mem = newmemoryBlock(16)
err = GetWindowRect(windowhandle, mem)
Left = mem.long(0)
Top = mem.Long(4)
Right = mem.Long(8)
Bottom = mem.Long(12)
# endif

```

End Sub

Good to use for the MDI Master Window!

13.0.141 How to get the source code of a HTMLViewer?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Try this code:

Example:

// for Windows:

```
msgbox HTMLViewer1.IEHTMLTextMBS
```

// for Mac OS X:

```
msgbox HTMLViewer1.mainFrameMBS.dataSource.data
```

13.0.142 How to handle really huge images with GraphicsMagick or ImageMagick?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Sometimes it may be better to use an extra application to process images.

Notes:

A typical 32 bit app made with Xojo (Real Studio) can use around 1.8 GB on Windows and 3 GB on Mac OS X. Some images may be huge, so that processing them causes several copies of the image to be in memory. With a 500 MB image in memory, doing a scale or rotation may require a temp image. So with source, temp and dest images with each 500 MB plus your normal app memory usage, you may hit the limit of Windows with 1.8 GB.

In that case it may be worth running a tool like gm in the shell class. gm is the command line version of GraphicsMagick. There you can run the 64 bit version which is not limited in memory like your own application. Also you can monitor progress and keep your app responsive.

13.0.143 How to handle tab key for editable cells in listbox?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Use code like this function:

Example:

```
Function HandleTabInList(list as listbox, row as Integer, column as Integer, key as String) As Boolean
// Handle tab character in Listbox.CellKeyDown event
```

```
Select case asc(key)
case 9
if Keyboard.AsyncShiftKey then
// back

// look for column left
for i as Integer = column-1 downto 0
if list.ColumnType(i) >= list.TypeEditable then
list.EditCell(row, i)
Return true
end if
next

// not found, so look in row before
row = row - 1
if row >= 0 then
for i as Integer = list.ColumnCount-1 downto 0
if list.ColumnType(i) >= list.TypeEditable then
list.EditCell(row, i)
Return true
end if
next
end if
else
// forward

// look for column right
for i as Integer = column+1 to list.ColumnCount-1
if list.ColumnType(i) >= list.TypeEditable then
list.EditCell(row, i)
Return true
end if
next

// not found, so look in row below
row = row + 1
if row <list.ListCount then
for i as Integer = 0 to list.ColumnCount-1
if list.ColumnType(i) >= list.TypeEditable then
list.EditCell(row, i)
Return true
end if
next
end if
end if
```

```
end Select
End Function
```

Notes:

You call it from CellKeyDown event like this:

```
EventHandler Function CellKeyDown(row as Integer, column as Integer, key as String) As Boolean
if HandleTabInList(me, row, column, key) then Return true
End EventHandler
```

As you see in the code, we handle tab and shift + tab for moving back and forward. Also we wrap to previous/next row if needed. Feel free to extend this to wrap from last to first row or create a new row for editing.

13.0.144 How to hard link MapKit framework?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Our MapKit classes weak link the framework. If you need hard linking it for the App Store, you can add this method to a class:

Example:

```
Sub ReferenceMapKit()
// just put this in window or app class

# if TargetMachO and Target64Bit then
Declare sub testing Lib "MapKit" Selector "test" (id as ptr)
testing(nil)
# endif

End Sub
```

Notes:

No need to call the method.

Just having it in a window or app, will cause the compiler to hard link the framework.

13.0.145 How to have a PDF downloaded to the user in a web application?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** You can use a WebHTMLViewer control and load the PDF file with the PDF plugin from the browser.

Example:

```

dim CurrentFile as WebFile // a property of the WebPage

// define the PDF file
CurrentFile = new WebFile
CurrentFile.Filename = "test.pdf"
CurrentFile.MIMEType = "application/pdf"
CurrentFile.Data = "some pdf data" // MyDynaPDF.GetBuffer
CurrentFile.ForceDownload = true

// start the download
showurl(CurrentFile.url)

```

Notes: See our Create PDF example for the Real Studio Web Edition.

13.0.146 How to hide all applications except mine?

Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** The code below will on Mac OS hide all applications except your one:

Example:

```

dim p as new ProcessMBS

p.GetFirstProcess
do
if not p.FrontProcess then
p.Visible=false
end if
loop until not p.GetNextProcess

```

13.0.147 How to hide script errors in HTMLViewer on Windows?

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** Set Internet Explorer to silent mode with code like this:

Example:

```

htmlviewer1..ole.Content.value("Silent") = True

```

Notes: Simply put this code in the open event of your htmlviewer control (using me instead of htmlviewer1).

13.0.148 How to hide the grid/background/border in ChartDirector?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** If you want to hide something in a chart, simply assign the kTransparent constant as color.

13.0.149 How to hide the mouse cursor on Mac?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Try this declare:

Example:

```
Declare Sub HideCursor Lib "Carbon" () Inline68K("A852")
```

```
HideCursor
```

Notes: The MBS Plugin has this function and supports it on Windows, too.

13.0.150 How to insert image to NSTextView or TextArea?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** With NSTextViewMBS you can use this code to insert file:

Example:

```
// insert a file to textview
```

```
Public Sub InsertFile(textview as NSTextViewMBS, f as FolderItem)
```

```
// read to file
```

```
dim b as BinaryStream = BinaryStream.Open(f)
```

```
dim s as string = b.Read(b.Length)
```

```
// build wrapper
```

```
dim fileWrapper as NSFileWrapperMBS = NSFileWrapperMBS.initRegularFileWithContents(s)
```

```
fileWrapper.preferredFilename = f.name
```

```
// make attachment
```

```
dim fileAttachment as new NSTextAttachmentMBS(fileWrapper)
```

```
dim attributedString as NSAttributedStringMBS = NSAttributedStringMBS.attributedStringWithAttachment(fileAttachment)
```

```
// add to a NSTextViewMBS
```

```
textview.insertText attributedString
```

```
End Sub
```

Notes: For TextArea you can query the underlying NSTextViewMBS object via TextArea.NSTextViewMBS method.

13.0.151 How to jump to an anchor in a htmlviewer?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: No. **Answer:** You can use javascript to change the current window's location.

Example:

```
// load website
htmlviewer1.LoadURL "http://www.monkeybreadsoftware.net/addressbook-abpersonmbs.shtml"

// later jump to anchor named "16":

if TargetWin32 then
call HTMLViewer1.IERunJavaScriptMBS "window.location = ""# 16""
elseif TargetMacOS then
call HTMLViewer1.EvaluateJavaScriptMBS "window.location = ""# 16""
else
// not supported
end if
```

13.0.152 How to keep a movieplayer unclickable?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** To keep the user away from clicking on a playing Movie you can just drop a Canvas in front of the Movieplayer and take the clicks there.

Example:

```
Function Canvas1.MouseDown(X as Integer, Y as Integer) as boolean
return true // take it and do nothing
End Function
```

13.0.153 How to keep my web app from using 100% CPU time?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** On Linux and Mac OS X you can use renice command in the terminal. On Windows use the task manager to reduce priority.

Notes:

If you launch your app with nohup on Linux or Mac OS X like this from the terminal or a script:

```
nohup /webapps/MyApp/MyApp &
```

you can simply have a second line saying this:

```
renice 20 $ !
```

which tells the system to lower priority to lowest value for the latest background process.

13.0.154 How to kill a process by name?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** You can kill a process (or application) by name if you loop over all the processes and kill the one you need.

Example:

```
dim p as new ProcessMBS
p.GetfirstProcess ' get first
do
if p.name = "TextEdit" then
call p.KillProcess
Return
end if
loop until not p.GetNextProcess
```

Notes: You may want to check the result of killProcess function. Not every user is allowed to kill every application.

13.0.155 How to know how many CPUs are present?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Try this function:

Example:

```
Function GetCPUCount() as Integer
Declare Function MPProcessors Lib "Carbon" () as Integer

Return MPProcessors()
End Function
```

Notes: Your app will then need that library to launch on Classic. To avoid this the MBS plugin checks if this library is available and return 1 if it's not available.

13.0.156 How to know if a movie is finished?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: No. **Answer:** This code can help you although it's not perfect:

Example:

```
Declare Function IsMovieDone Lib "QuickTime" (theMovie as Integer) as Integer
```

```
if IsMovieDone(moviePlayer1.movie.handle) <>0 then
//movie is finished
end if
```

Notes: But be careful! It crashes sometimes for an unknown reason!?

13.0.157 How to know if QuickTime is installed on any target and can play MPEG 4 movies?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: No. **Answer:** Try this code:

Example:

```
dim q as QTComponentInformationMBS

q=new QTComponentInformationMBS

// "eat " = Movie importers
while q.NextComponentOfType("eat ")
if q.SubType="MP4 " then
MsgBox "found: "+q.Name+ " codec"
end if
wend
```

Notes: If you find a MP4 movie importing codec you can be sure that a MP4 movie can be opened.

13.0.158 How to know if QuickTime is installed on any target?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: No. **Answer:** Try this function:

Example:

```
Dim theEffect as QTEffect

theEffect=GetQTCrossFadeEffect

if theEffect = nil then
msgBox "QuickTime is not installed."
else
msgBox "Quicktime is installed."
end if
```

Notes: The problem with this code is that it checks only if the QuickTime part of the cross fade effect is available. Use the QTComponentInformationMBS to check for the features you really need.

13.0.159 How to know the calling function?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** On Mac you can use a helper function like this this code:

Example:

```
Public Function CallingFunction() as string
// Query name of calling function of a function

# Pragma BreakOnExceptions false

try

// raise a dummy exception
dim r as new NilObjectException
raise r

catch x as NilObjectException

// get stack
dim stack() as string = x.Stack

// pick function name and return
dim name as string = stack(2)
Return name

end try
```

End Function

Notes: You need to include function names in your application.

13.0.160 How to launch an app using it's creator code?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Send an AppleEvent "oapp" with the creator code to the Finder ("MACS"):

Example:

```
Dim a as AppleEvent
dim creator as string

creator = "MSIE" ' here the Internet Explorer

a = NewAppleEvent("aevt", "odoc", "MACS")
a.Timeout = -1

a.ObjectSpecifierParam("—") = GetUniqueIDObjectDescriptor("appf", nil, creator)

if not a.send then
msgBox "An error has occured"
else

end if
```

13.0.161 How to launch disc utility?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** You can use this code:

Example:

```
dim f as FolderItem = LaunchServicesFindApplicationForInfoMBS("", "com.apple.DiskUtility", "")

if f<>Nil then
f.Launch
end if
```

Notes: This works even if people renamed the disc utility or moved it to another folder.

13.0.162 How to make a lot of changes to a REAL SQL Database faster?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** You may try to embed your changes to the database between two transaction calls.

Example:

```
dim db as Database // some database

db.SQLExecute "BEGIN TRANSACTION"
// Do some Stuff
db.SQLExecute "END TRANSACTION"
```

Notes: This can increase speed by some factors.

13.0.163 How to make a NSImage object for my retina enabled app?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** You can use code like this:

Example:

```
Function NewRetinaImage(pic as Picture, mask as Picture = nil) As NSImageMBS
// first make a NSImageMBS from it
dim n as new NSImageMBS(pic, mask)

// now set to half the size, so we have 2x pixels for the image
n.size = new NSSizeMBS(n.width/2, n.height/2)

// and return
Return n
End Function
```

Notes:

The thing to do is to have 2x the pixels, but assign a size to the image which gives it the right size in points. You can pass the NSImageMBS from here to NSMenuItemMBS. For Retina displays, the full resolution is used. For others it will be reduced.

13.0.164 How to make a window borderless on Windows?

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** Try this declares:

Example:

```

// Sets window to borderless popup type, and sets its initial dimensions.
// Call this method, then Win32SetBorderlessPos, and then RB's Show
// method. Use RB Frame type 7 (Global Floating Window).

Const SWP_NOMOVE = & H2
Const SWP_FRAMECHANGED = & H20
Const HWND_TOPMOST = -1
Const GWL_STYLE = -16
Const WS_POPUPWINDOW = & H80880000

Dim styleFlags as Integer

# If TargetWin32 Then

Declare Function SetWindowLong Lib "user32" Alias "SetWindowLongA" (hwnd as Integer, nIndex as Integer, dwNewLong as Integer) as Integer
Declare Function SetWindowPos Lib "user32" (hwnd as Integer, hWndInstertAfter as Integer, x as Integer, y as Integer, cx as Integer, cy as Integer, flags as Integer) as Integer

styleFlags = SetWindowLong( w.WinHWND, GWL_STYLE, WS_POPUPWINDOW )
styleFlags = BitwiseOr( SWP_FRAMECHANGED, SWP_NOMOVE )
styleFlags = SetWindowPos( w.WinHWND, HWND_TOPMOST, 0, 0, wd, ht, styleFlags )

# EndIf

```

13.0.165 How to make an alias using AppleEvents?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Try this code:

Example:

```

Sub MakeAlias(folder as folderitem, target as folderitem, aliasname as string)
dim ev as AppleEvent
dim myResult as boolean
dim properties as AppleEventRecord

ev = NewAppleEvent("core", "crel", "MACS")
ev.MacTypeParam("kocl") = "alis"
ev.FolderItemParam("to ") = target
ev.FolderItemParam("insh") = folder

properties=new AppleEventRecord
properties.StringParam("pnam")=aliasname

ev.RecordParam("prdt")=properties

```

```
myResult = ev.send
// true on success, false on error
End Sub
```

Notes:

Call it like this:

```
MakeAlias SpecialFolder.Desktop, SpecialFolder.Desktop.Child("Gif Copy.rb"), "test.rb alias"
```

Seems to not work on Mac OS X 10.6

13.0.166 How to make an application smaller?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:**

If you use an older copy of REALbasic, you should try to compile for 68k only instead of PPC. It's a little bit slower, but code is much smaller.

On any Mac OS target you can save your images as JPEG and drop the into your application. REALbasic will include them as JPEGs into the Mac applications (convert to BMP for Windows). This will make the resources of your application smaller, but requires that the user has QuickTime 2.5 or newer installed.

13.0.167 How to make AppleScripts much faster?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** use "ignoring application responses" like in this example:

Notes:

```
on run { fn, fpx, fpy }
ignoring application responses
tell app "Finder" to set the position of folder fn to fpx, fpy
end ignoring
end run
```

13.0.168 How to make double clicks on a canvas?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:**

Update: Newer Xojo versions support DoubleClick event, so you don't need this code.

Here's my tip from the tips list on how to add a double-click event to the Canvas control. The technique could easily be used for a window or any Rectcontrol:

Because of its built-in drawing methods, the Canvas control is often used to create custom interface controls. But while the Canvas control has event handlers for most mouse events, it doesn't have an event handler for DoubleClick events. Fortunately, you can add a double-click event handler to a Canvas control easily. Basically, you're going to create a new class based on Canvas and add a double-click event to that. You can then use the new class anytime you need a Canvas with a double-click event.

To create a new Canvas class with a DoubleClick event handler, do this:

1. Add a new class to your project.
2. Set the Super property of the new class to "Canvas".
3. Change the name of this new class to "DoubleClickCanvas".

A double-click occurs when two clicks occur within the users double-click time (set in the Mouse control panel on both Macintosh and Windows) and within five pixels of each other. So, you'll need a few properties to store when and where the last click occurred.

4. Add a new property with the following declaration and mark it as private: lastClickTicks as Integer
5. Add a new property with the following declaration and mark it as private: lastClickX as Integer
6. Add a new property with the following declaration and mark it as private: lastClickY as Integer

Since the Canvas control doesn't have a DoubleClick event, you will need to add one.

7. Add a new event to your class by choosing New Event from the Edit menu and enter "DoubleClick" as the event name.

Double-clicks occur on MouseUp. In order for the mouseUp event to fire, you must return True in the MouseDown event.

8. In the MouseDown event, add the following code:
Return True

In the MouseUp event, you will need to determine what the users double-click time is. This value is represented on both the Mac and Windows in ticks. A tick is 1/60th of a second. Since there isn't a built-in function for this, you'll need to make a toolbox call. The mouseUp event code below makes the appropriate toolbox call for both Macintosh and Windows. It then compares the time of the users last click to the time of the current click and compares the location of the users last click to the location of the current click.

9. Add the following code to the MouseUp event:


```

dim doubleClickTime, currentClickTicks as Integer

# if targetMacOS then
Declare Function GetDbfTime Lib "Carbon" () as Integer
doubleClickTime = GetDbfTime()
# endif

# if targetWin32 then
Declare Function GetDoubleClickTime Lib "User32.DLL" () as Integer
doubleClickTime = GetDoubleClickTime()/60 // convert to ticks from milliseconds
# endif

currentClickTicks = ticks
//if the two clicks happened close enough together in time
if (currentClickTicks - lastClickTicks) <= doubleClickTime then
//if the two clicks occurred close enough together in space
if abs(X - lastClickX) <= 5 and abs(Y - LastClickY) <= 5 then
DoubleClick //a double click has occurred so call the event
end if
end if
lastClickTicks = currentClickTicks
lastClickX = X
lastClickY = Y

```

10. Now to test out your new DoubleClickCanvas, drag the class from the Project window to a window in your project to create an instance of it.

11. Double-click on the canvas you just added to your window to open the Code Editor. Notice that the canvas has a DoubleClick event handler. In this event handler, add the following code:
BEEP

13.0.169 How to make my Mac not sleeping?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Just inform the Mac OS about some system activity with code like this:

Example:

```

Sub UpdateSystemActivity()

# if TargetCarbon
declare function myUpdateSystemActivity lib "Carbon" alias "UpdateSystemActivity" (activity as Integer)
as short

```

```

const OverallAct = 0 // Delays idle sleep by small amount */
const UsrActivity = 1 // Delays idle sleep and dimming by timeout time */
const NetActivity = 2 // Delays idle sleep and power cycling by small amount */
const HDActivity = 3 // Delays hard drive spindown and idle sleep by small amount */
const IdleActivity = 4 // Delays idle sleep by timeout time */

dim e as Integer

e=myUpdateSystemActivity(UsrActivity)

// you may react on an error if e is not 0 after the call.

# endif
End Sub

```

Notes:

You may use another constant if you prefer some different behavior. Call it maybe every second.

13.0.170 How to make my own registration code scheme?

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** There are excellent articles about how to make a registratin code scheme, but you can also simply use our RegistrationEngineMBS class.

Notes: If you need a license text, why not use the one from Real Studio as a starting point?

13.0.171 How to make small controls on Mac OS X?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** You can try this code on Mac OS X:

Example:

```

'/*
** Use the control's default drawing variant. This does not apply to
** Scroll Bars, for which Normal is Large.
**/
const kControlSizeNormal = 0

'/*
** Use the control's small drawing variant. Currently supported by
** the Check Box, Combo Box, Radio Button, Scroll Bar, Slider and Tab
** controls.

```

```

*/
const kControlSizeSmall = 1

*/
/* Use the control's small drawing variant. Currently supported by
/* the Indeterminate Progress Bar, Progress Bar and Round Button
/* controls.
*/
const kControlSizeLarge = 2

*/
/* Control drawing variant determined by the control's bounds. This
/* ControlSize is only available with Scroll Bars to support their
/* legacy behavior of drawing differently within different bounds.
*/
const kControlSizeAuto = & hFFFF

const kControlSizeTag = "size"

declare function SetControlData lib "Carbon" (controlhandle as Integer, part as short, tagname as OS-
Type, size as Integer, data as ptr) as short

dim m as MemoryBlock

m=NewMemoryBlock(2)
m.UShort(0)=kControlSizeSmall

Title=str(SetControlData(CheckBox1.Handle, 0, kControlSizeTag, 2, m))

```

13.0.172 How to mark my Mac app as background only?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** You can run a build script on each build with this code:

Example:

```

Dim App As String = CurrentBuildLocation + "/" + CurrentBuildAppName + ".app"
Call DoShellCommand("/usr/bin/defaults write " + App + "/Contents/Info ""NSUIElement"" YES")

```

Notes: This will set the NSUIElement flag to YES.

13.0.173 How to move a file or folder to trash?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Use code like below:
Example:

```
Function MoveToTrash(f as FolderItem) As Boolean
# if TargetMacOS then
dim r as FolderItem
dim e as Integer = MacFileOperationMBS.MoveObjectToTrashSync(f, r, MacFileOperationMBS.kFSFile-
OperationDefaultOptions)

if e = 0 then
Return true // Ok
end if

# elseif TargetWin32 then
dim w as new WindowsFileCopyMBS

dim flags as Integer = w.FileOperationAllowUndo + w.FileOperationNoErrorUI + w.FileOperationSilent
+ w.FileOperationNoConfirmation
if w.FileOperationDelete(f, flags) then
Return true // OK
end if

flags = w.FileOperationNoErrorUI + w.FileOperationSilent + w.FileOperationNoConfirmation
if w.FileOperationDelete(f, flags) then
Return true // OK
end if
# else
// Target not supported
break
Return false
# endif
End Function
```

Notes:

If you want to move a file to trash, you could use `f.movefileto f.trashfolder`, but that will overwrite existing files in the trash. You can use our `MacFileOperationMBS` class to move a file on Mac to the trash. And it uses the same code as the Finder, so files are renamed when the same name is already in use in the trash:

On Windows we use `WindowsFileCopyMBS` class.
 Requires Mac OS X 10.5.

13.0.174 How to move an application to the front using the creator code?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** This makes SimpleText (Code ttxt) to the frontmost application:

Example:

```
dim a as appleevent

a=newappleEvent("misc","actv","ttxt")

if a.send then
end if
```

Notes: (Code is Mac only)

13.0.175 How to move file with ftp and curl plugin?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** You can set post/pre quotes to have ftp commands executed before or after the download/upload.

Example:

```
dim d as CURLMBS // your curl object

// rename/move file
dim ws() As String
ws.Append "RNFR Temp.txt"
ws.append "RNTO MyFile.txt"

d.SetOptionPostQuote(ws)
```

Notes:

Use SetOptionPostQuote, SetOptionPreQuote or SetOptionQuote.

The ftp commands you pass here are native ftp commands and not the commands you use with ftp applications. So rename is two commands. First RNFR to tell where to rename from and second RNTD with the new file name. To delete use DELE and the file path.

13.0.176 How to normalize string on Mac?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Use code like below:

Example:

```

Function Normalize(t as string) As string
const kCFStringNormalizationFormD = 0 // Canonical Decomposition
const kCFStringNormalizationFormKD = 1 // Compatibility Decomposition
const kCFStringNormalizationFormC = 2 // Canonical Decomposition followed by Canonical Composition
const kCFStringNormalizationFormKC = 3 // Compatibility Decomposition followed by Canonical Composition

dim s as CFStringMBS = NewCFStringMBS(t)
dim m as CFMutableStringMBS = s.Normalize(kCFStringNormalizationFormD)

Return m.str
End Function

```

Notes: This uses Apple's CFString functions to normalize unicode variants.

13.0.177 How to obscure the mouse cursor on Mac?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Try this declare:

Example:

```
Declare Sub ObscureCursor Lib "Carbon" ()
```

```
ObscureCursor
```

Notes: The MBS Plugin has this function, but it's not supported for Windows.

13.0.178 How to open icon file on Mac?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Use the NSImageMBS class like this:

Example:

```
dim f as FolderItem = SpecialFolder.Desktop.Child("test.ico")
dim n as new NSImageMBS(f)
```

```
window1.Backdrop = n.CopyPictureWithMask
```

13.0.179 How to open PDF in acrobat reader?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Try this code:

Example:

```
dim pdf as FolderItem = SpecialFolder.Desktop.Child("test.pdf")

// open PDF in Acrobat Reader on Mac:

// find app
dim bundleID as string = "com.adobe.Reader"
dim app as FolderItem = LaunchServicesFindApplicationForInfoMBS("", bundleID, "")

if app<>nil then

// launch app with parameters

dim docs() as FolderItem
docs.Append pdf

dim param as new LaunchServicesLaunchParameterMBS
param.Defaults = true
param.Application = app

dim x as FolderItem = LaunchServicesOpenXMBS(docs, param)

// on failure, simply launch it
if x = nil then
pdf.Launch(true)
end if

else
pdf.Launch(true)
end if
```

Notes: On Windows, simply use pdf.launch or WindowsShellExecuteMBS.

13.0.180 How to open printer preferences on Mac?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** You can use our OpenMacOSXPreferencesPaneMBS function like this:

Example:

```
dim e as Integer = OpenMacOSXPreferencesPaneMBS("PrintAndFax")
if 0 = e then
```

```
MsgBox "OK"  
elseif e = -43 then  
MsgBox "File not found."  
else  
MsgBox "Error: " +str(e)  
end if
```

13.0.181 How to open special characters panel on Mac?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** We have functions for that in Cocoa and Carbon.

Example:

```
dim a as new NSApplicationMBS  
a.orderFrontCharacterPalette
```

Notes:

For Cocoa, you can use `orderFrontCharacterPalette` method in `NSApplicationMBS` class.

Or simply for Carbon and Cocoa the `ShowCharacterPaletteMBS` method.

13.0.182 How to optimize picture loading in Web Edition?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Use the `WebPicture` class.

Notes:

Take your picture and create a `WebPicture` object. Store this `WebPicture` in a property of the `WebPage`, `Session` or `app` (as global as possible). On the first time you use this picture on an user session, the browser will load it. Second time you use it, the browser will most likely pick it from the cache.

Having pictures in `App` or some module reuses the same picture for all sessions which reduces memory footprint.

This does not work well with pictures you change very often or use only for one webpage on one user.

If you like to see an example, check our `Map` example:

<http://www.monkeybreadsoftware.de/realbasic/webapps.shtml>

13.0.183 How to parse XML?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** You can use code like this:

Example:

```
dim s as string = "<test><test /></test>"
```

```
try
dim x as new XmlDocument(s)
MsgBox "OK"
catch xe as XmlException
MsgBox "invalid XML"
end try
```

Notes: If you got an exception, you have a parse error.

13.0.184 How to play audio in a web app?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** You can use the HTML5 audio tag and control it with javascript.

Notes:

See our web apps here:

<http://www.monkeybreadsoftware.de/realbasic/webapps.shtml>

This is just another example app I made today. It plays a christmas song. The audio file is provided by the application to the server, so no external web server is needed and this application can run stand alone. To compile and run you need Real Studio 2010r5.

In the open event we search the audio files and open them as binarystreams. We create the two webfile objects. Those webfiles are part of the app class, so we have them globally. There we set the data with the content of our streams. We also define file names and mime types. They are needed so browser know what we have here:

```
audioFileM4V = new WebFile
audioFileM4V.Data = bM.Read(BM.Length)
audioFileM4V.Filename = "music.m4a"
audioFileM4V.MIMETYPE = "audio/m4a"
```

```
audioFileOGG = new WebFile
audioFileOGG.Data = bO.Read(BO.Length)
```

```
audioFileOGG.Filename = "music.ogg"
audioFileOGG.MIMEType = "audio/ogg"
```

Next in the open event of the webpage we have a PageSource control. The location is set to be before content. In the open event we define the html code for this. First we pick the URLs for the audio files. Then we build the html to use the audio tag. As you see, we give it an ID for later use and have it preload automatically. If you add an autoplay tag, you can have the audio play right away. Inside the audio tag we have two sources so we provide audio for both Firefox (OGG) and Safari (MPEG4). Finally we have a text to display if HTML5 audio tag is not supported.

You can set the source in the EditSource event:

```
dim urlo as string = app.audioFileOGG.URL
dim urlm as string = app.audioFileM4V.URL
me.Source = "<audio id=""mymusic"" preload=""auto""><source src="""+urlo+""" type=""audio/ogg""
/><source src="""+urlm+""" type=""audio/mpeg"" />Your browser does not support the audio ele-
ment.</audio>"
```

Next in the Play button we execute code to play the audio. This is a short javascript code which searches in the html document for the element with the ID "mymusic" which is the ID of our audio tag above. Once we got the object, we call it's play method to start playback.

```
me.ExecuteJavaScript("document.getElementById('mymusic').play();")
```

same for pause:

```
me.ExecuteJavaScript("document.getElementById('mymusic').pause();")
```

and finally for changing volume:

```
me.ExecuteJavaScript("document.getElementById('mymusic').volume="+str(me.Value/100.0)+"");")
```

13.0.185 How to pretty print xml?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Use the XML Transform method with the right XLS.

Notes:

Learn more here:

<http://docs.xojo.com/index.php/XMLDocument.Transform>

13.0.186 How to print to PDF?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** This code below shows how to redirect printing to a PDF file on Mac OS X.

Example:

```
// get Xojo printer setup
dim p as new PrinterSetup

// now put it into NSPrintInfo to manipulate
dim n as new NSPrintInfoMBS
n.SetupString = p.SetupString

// change destination to file
dim f as FolderItem = SpecialFolder.Desktop.Child("test.pdf")
n.SetSaveDestination(f)

// move back
p.SetupString = n.SetupString

// and print as usual
dim g as Graphics = OpenPrinter(p)
g.DrawString "Hello World", 20, 20
```

Notes: And you can use normal graphics class for that.

13.0.187 How to query Spotlight's Last Open Date for a file?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** You can use a MDItemMBS objec to query this value:

Example:

```
Function LastOpenedDate(Extends F As FolderItem, DefaultOtherDates As Boolean = True) As Date
# If TargetMacOS Then
Dim xMDItem as New MDItemMBS(F)
Dim xDate as Variant

If xMDItem <> Nil Then
xDate = xMDItem.GetAttribute(xMDItem.kMDItemLastUsedDate).DateValue
If xDate IsA Date Then Return xDate
Else
If xDate <> Nil Then Break
End If
# EndIf
```

```

If DefaultOtherDates Then
If F.ModificationDate <>Nil Then Return F.ModificationDate
If F.CreationDate <>Nil Then Return F.CreationDate
End If
End Function

```

Notes: Thanks for Josh Hoggan for this example code.

13.0.188 How to quit windows?

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** Try this code:

Example:

```

# if targetwin32 then
dim i1,i2,r as Integer
declare function ExitWindowsEx lib "user32" (uFlags as Integer, dwReserved as Integer) as Integer
i1 = 2
i2 = 0
r = ExitWindowsEx(i1,i2)
if r<>0 then
' Error()
end if

# endif

```

Notes:

uFlags parameters:

```

'4 = EWX_Force
'0 = EWX_Logoff
'2 = EWX_Reboot
'1 = EWX_shutdown, should shut down computer

```

Also check the ExitWindowsMBS method.

13.0.189 How to read a CSV file correctly?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** With all the rules for quotes and delimiters, you can simply use the SplitCommaSeparatedValuesMBS method in our plugins like

this:

Example:

```

dim f as FolderItem = SpecialFolder.Desktop.Child("test.csv")
dim t as TextInputStream = f.OpenAsTextFile

while not t.EOF
dim s as string = t.ReadLine(encodings.ASCII)

dim items() as string = SplitCommaSeparatedValuesMBS(s, ";", """")

List.AddRow ""
dim u as Integer = UBound(items)
for i as Integer = 0 to u
List.Cell(List.LastIndex,i) = items(i)
next

wend

```

Notes: Please make sure you choose the right text encoding.

13.0.190 How to read the command line on windows?

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** Try this code:

Example:

```

# if targetwin32 then
dim line as string
Dim mem as MemoryBlock

Declare Function GetCommandLineA Lib "kernel32" () As Ptr

mem=GetCommandLineA()
s=mem.cstring(0)

# endif

```

Notes: Newer Realbasic versions have a system.commandline property.

13.0.191 How to render PDF pages with PDF Kit?

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** Try this code:

Example:

```
// choose a file
dim f as FolderItem = SpecialFolder.Desktop.Child("test.pdf")

// open it as PDF Document
dim sourceFile as New PDFDocumentMBS(f)

if sourceFile.handle <>0 then // it is a PDF file

// get upper bound of pages
dim c as Integer = sourceFile.pageCount-1

// from first to last page
for n as Integer = 0 to c

// pick that page
dim page as PDFPageMBS = sourceFile.pageAtIndex(n)

// render to image
dim p as NSImageMBS = page.Render

// and convert to RB picture and display
Backdrop = p.CopyPictureWithMask

next

end if
```

Notes: PDFKit works only on Mac OS X.

13.0.192 How to restart a Mac?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Ask the Finder via Apple Events:

Example:

```
dim ae as appleevent
ae=newappleEvent("FNDR", "rest", "MACS")
if not ae.send then
msgBox "The computer couldn't be restarted."
end if
```

13.0.193 How to resume ftp upload with curl plugin?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** CURL supports that and you simply need to set the right options.

Notes:

First of course OptionUpload must be true. Second OptionFTPAppend must be true so the OptionResumeFrom is used. Store there (or in OptionResumeFromLarge) your start value. Don't forget to implement the read event and return data there as requested.

13.0.194 How to rotate a PDF page with CoreGraphics?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** This code opens a PDF and draws the first page into a new PDF with 90 rotation.

Example:

```
// Rotate a PDF page

// our files
dim sourcefile as FolderItem = SpecialFolder.Desktop.Child("test.pdf")
dim destfile as FolderItem = SpecialFolder.Desktop.Child("rotated.pdf")

// open PDF
dim pdf as CGPDFDocumentMBS = sourcefile.OpenAsCGPDFDocumentMBS

// query media size of first page
dim r as CGRectMBS = pdf.MediaBox(1)

// create new PDF
dim c as CGContextMBS = destfile.NewCGPDFDocumentMBS(r,"title","Author","Creator")

// create rotated rectangle
dim nr as new CGRectMBS(0,0,r.Height,r.Width)

// create new page
c.BeginPage nr
c.SaveGState

const pi = 3.14159265

// rotate by 90
c.RotateCTM pi*1.5
```

```

// fix origin
c.TranslateCTM -r.width,0

// draw PDF
c.DrawCGPDFDocument pdf,r,1

// cleanup
c.RestoreGState
c.EndPage

c = nil

// show in PDF viewer
destfile.Launch

```

Notes: This code is Mac only as it needs CoreGraphics.

13.0.195 How to rotate image with CoreImage?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Use the code like the one below:

Example:

```

// Rotate image with CoreImage

// load image
dim f as FolderItem = SpecialFolder.Desktop.Child("test.png")
dim image as new CIImageMBS(f)

// rotate 45 degree
dim n as new NSAffineTransformMBS
n.rotateByDegrees(45)

dim TransformFilter as new CIFilterAffineTransformMBS
TransformFilter.inputImage = image
TransformFilter.inputTransform = n

// get result
dim resultImage as CIImageMBS = TransformFilter.outputImage

// for saving to file
dim outputImage as NSImageMBS = resultImage.RenderNSImage(false)

f = SpecialFolder.Desktop.Child("output.png")
dim b as BinaryStream = BinaryStream.Create(f, true)

```


b. Write `outputImage.PNGRepresentation`

```
// as Real Studio picture object for display
dim pic as Picture = outputImage.CopyPictureWithMask
```

```
Backdrop = pic
```

13.0.196 How to run a 32 bit application on a 64 bit Linux?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Install 32 bit compatibility libraries.

Notes:

The package is called `ia32-libs` for ubuntu (and others).

Some applications need to be run on a 32 bit system as they need some hardware related libraries. Like `libUSB` or `libHID` for USB devices.

13.0.197 How to save a quicktime movie as a reference movie?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: No. **Answer:** Example code is below:

Example:

```
// save as reference movie
dim f as FolderItem
dim m as movie

f=SpecialFolder.Desktop.Child("test.mov")
m=f.OpenAsMovie

f=SpecialFolder.Desktop.Child("new movie.mov")

msgbox str(m.SaveMBS(f,false,false))
```

13.0.198 How to save HTMLViewer to PDF with landscape orientation?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** You can use `NSPrint-InfoMBS` to change the options for `PrintToPDFFile` function.

Example:

```
// make it landscape
dim n as NSPrintInfoMBS = NSPrintInfoMBS.sharedPrintInfo
```

```
n.orientation = n.NSLandscapeOrientation

// save html to file
dim f as FolderItem = SpecialFolder.Desktop.Child("test.pdf")
call HTMLViewer1.PrintToPDFFileMBS(f,10,30,10,30)
```

Notes:

You may want to reset options later.
This code is only for Mac OS X.

13.0.199 How to save RTFD?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** With NSTextViewMBS you can use this code to save to RTFD:

Example:

```
// save text as RTFD including image attachments
dim f as FolderItem = GetSaveFolderItem(FileTypes1.ApplicationRtfd, "test.rtf")

if f = nil then Return

dim a as NSAttributedStringMBS = textView.textStorage
dim w as NSFileWrapperMBS = a.RTFDFileWrapperFromRange(0, a.length, DocumentAttributes)

dim e as NSErrorMBS
if w.writeToFile(f, e) then

else
  MsgBox e.LocalizedDescription
end if
```

Notes: For TextArea you can query the underlying NSTextViewMBS object via TextArea.NSTextViewMBS method.

13.0.200 How to scale a picture proportionally with mask?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** For a proportional scaling, we calculate the new picture size relative to the target maximum size.

Example:

```

Function ProportionalScaledWithMask(extends pic as Picture, Width as Integer, Height as Integer) As Pic-
ture
// Calculate scale factor

dim faktor as Double = min( Height / Pic.Height, Width / Pic.Width)

// Calculate new size
dim w as Integer = Pic.Width * faktor
dim h as Integer = Pic.Height * faktor

// create new picture
dim NewPic as new Picture(w,h,32)

// check if we have a mask and clear it
dim m as picture = pic.mask(False)
pic.mask = nil

// draw picture in the new size
NewPic.Graphics.DrawPicture Pic, 0, 0, w, h, 0, 0, Pic.Width, Pic.Height

if m <>nil then
// restore mask and scale it
pic.mask = m
NewPic.mask.Graphics.DrawPicture m, 0, 0, w, h, 0, 0, Pic.Width, Pic.Height
end if

// return result
Return NewPic
End Function

```

Notes: This version handles mask. As you see we actually have to remove mask in order to copy the picture part correctly.

13.0.201 How to scale a picture proportionally?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** For a proportional scaling, we calculate the new picture size relative to the target maximum size.

Example:

```

Function ProportionalScaled(extends pic as Picture, Width as Integer, Height as Integer) As Picture
// Calculate scale factor

dim faktor as Double = min( Height / Pic.Height, Width / Pic.Width)

```

```

// Calculate new size
dim w as Integer = Pic.Width * faktor
dim h as Integer = Pic.Height * faktor

// create new picture
dim NewPic as new Picture(w,h,32)

// draw picture in the new size
NewPic.Graphics.DrawPicture Pic, 0, 0, w, h, 0, 0, Pic.Width, Pic.Height

// return result
Return NewPic
End Function

```

Notes:

This does not handle mask, but you can scale the mask the same way and assign it to the new picture. (see other FAQ entry with mask)

13.0.202 How to scale/resize a picture?

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** There are several ways to scale or resize a picture. The easiest way may be the ScaleMBS function in the Picture class.

Example:

```

dim Original,Scaled as Picture

Original=LogoMBS(500)
Scaled=Original.ScaleMBS(100,100,true)

```

Notes:

The plugin ways:

- The GWorld class which uses QuickTime. Includes nice Bicubic scaling with QuickTime 6.
- QTGraphicsImporterMBS and QTGraphicsExporterMBS can scale/resize.
- CoreImage scale filter may result in the fastest and best images on Mac OS X 10.4.
- NSImageMBS can scale, but is Mac OS X only.
- CGImageMBS can scale, but is Mac OS X only.
- CIImageMBS can scale, but is Mac OS X only.
- QuickTime Graphics exporter and importer can be connected to scale. (this was used more often a few years ago)
- ImageMagick can scale very nice and crossplatform. But the ImageMagick libraries are big.
- The picture.ScaleMBS function is self written and results in equal output on Mac, Windows and Linux without any additional libraries installed.

- Picture.ScalingMBS does crossplatform scaling with several modes.

with pure REALbasic:

- make a new picture and draw the old one with new size inside.

13.0.203 How to search with regex and use unicode codepoints?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** You can specify unicode characters in search string with backslash x and digits.

Example:

```

dim r as RegExMbs
dim s as string
dim c as Integer

s="123 ABC 456"

r=new RegExMBS
if r.Compile(".*") then
c=r.Execute(s,0)
MsgBox str(c)+" "+str(r.Offset(0))+" "+str(r.Offset(1))
// shows: 1 4 10
// 1 for ubound of the offset array
// 4 for 4 bytes before the matched pattern
// 10 for the 10 bytes before the end of the matched pattern
end if

r=new RegExMBS
if r.Compile(".\xF6.") then // finds using Unicode codepoint
c=r.Execute(s,0)
MsgBox str(c)+" "+str(r.Offset(0))+" "+str(r.Offset(1))
// shows: 1 4 10
// 1 for ubound of the offset array
// 4 for 4 bytes before the matched pattern
// 10 for the 10 bytes before the end of the matched pattern
end if

```

13.0.204 How to see if a file is invisible for Mac OS X?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Try this function:

Example:

```

Function Invisible(F As FolderItem) As Boolean
Dim TIS As TextInputStream
Dim S,All As String
Dim I as Integer
dim g as folderitem

If Left(F.Name,1)="." or not f.visible Then
Return True
End If

g=F.Parent.Child(".hidden")
If g.Exists Then
TIS=g.OpenAsTextFile
if tis<>Nil then
All=TIS.ReadAll
For I=1 to CountFields(All,Chr(11))
S=NthField(All, Chr(11), I)
If S=F.name Then
Return True
End If
Next
end if
End if
End Function

```

13.0.205 How to set cache size for SQLite or REALSQLDatabase?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** You use the pragma cache_size command on the database.

Example:

```

// set cache size to 20000 pages which is about 20 MB for default page size
dim db as REALSQLDatabase
db.SQLExecute "PRAGMA cache_size = 20000"

```

Notes:

Default cache size is 2000 pages which is not much.

You get best performance if whole database fits in memory.

At least you should try to have a cache big enough so you can do queries in memory.

You only need to call this pragma command once after you opened the database.

13.0.206 How to set the modified dot in the window?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Try this declares:

Example:

```
window1.ModifiedMBS=true
```

13.0.207 How to show a PDF file to the user in a Web Application?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** You can use a WebHTMLViewer control and load the

Example:

```
dim CurrentFile as WebFile // a property of the WebPage

// define the PDF file
CurrentFile = new WebFile
CurrentFile.Filename = "test.pdf"
CurrentFile.MIMEType = "application/pdf"
CurrentFile.Data = "some pdf data" // MyDynaPDF.GetBuffer

// load into html viewer
HTMLViewer1.URL = CurrentFile.URL
```

Notes:

See our Create PDF example for the Real Studio Web Edition.
<http://www.monkeybreadsoftware.de/realbasic/webapps.shtml>

13.0.208 How to show Keyboard Viewer programmatically?

Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Use Realbasic or AppleScript to launch the KeyboardViewerServer.app.

Example:

```
dim a as new AppleScriptMBS
dim text as string
dim lines(-1) as string

lines.append "set theApplication to ""KeyboardViewerServer""
lines.append "set thePath to ""/System/Library/Components/KeyboardViewer.component/Contents/Shared-Support/KeyboardViewerServer.app""
lines.append ""
```

```

lines.append "set POSIXPath to ((POSIX file thePath) as string)"
lines.append "tell application ""System Events"" to set isRunning to 0 <(count (application processes whose
name is theApplication))"
lines.append "if isRunning then tell application POSIXPath to quit"
lines.append "delay 0.15"
lines.append ""
lines.append "ignoring application responses"
lines.append " tell application POSIXPath to run"
lines.append "end ignoring"

```

```
text=join(lines,EndOfLine.macintosh)
```

```
a.Compile text
```

```
a.Execute
```

Notes:

AppleScript code:

```

set theApplication to "KeyboardViewerServer"
set thePath to "/System/Library/Components/KeyboardViewer.component/Contents/SharedSupport/Key-
boardViewerServer.app"

```

```

set POSIXPath to ((POSIX file thePath) as string)
tell application "System Events" to set isRunning to 0 <(count (application processes whose name is theAp-
plication))
if isRunning then tell application POSIXPath to quit
delay 0.15

```

```

ignoring application responses
tell application POSIXPath to run
end ignoring

```

13.0.209 How to show the mouse cursor on Mac?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Try this declare:

Example:

```
Declare Sub ShowCursor Lib "Carbon" ()
```

```
ShowCursor
```


Notes: The MBS Plugin has this function and supports it on Windows, too.

13.0.210 How to shutdown a Mac?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Ask the Finder via Apple Events:

Example:

```
dim ae as appleevent
ae=newappleEvent("FNDR", "shut", "MACS")
if not ae.send then
msgBox "The computer couldn't be shutdown."
end if
```

Notes:

Or toolbox call (Attention: This method will stop the computer immediatly: No document asked to be saved, all applications quitting without knowing).

```
Declare Sub ShutDownPower Lib "Carbon" ()
ShutDownPower
```

13.0.211 How to sleep a Mac?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Ask the Finder via Apple Events:

Example:

```
dim ae as appleevent
ae=newappleEvent("FNDR", "slep", "MACS")
if not ae.send then
msgBox "The computer doesn't want to sleep."
end if
```

13.0.212 How to speed up rasterizer for displaying PDFs with DynaPDF?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Here a few speed tips:
Notes:

- Use the DynaPDFRasterizerMBS function instead of our render functions.
- Reuse DynaPDFRasterizerMBS as long as the target picture size doesn't change.
- Import only the PDF pages you want to display.
- Let DynaPDF do zooming, rotating or other effects instead of you change it.

13.0.213 How to use PDFLib in my RB application?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** The PDFlib plugin was discontinued in favor of our DynaPDF plugin.
Notes: If you need help to move, please contact us.

13.0.214 How to use quotes in a string?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Just double them.

Example:

```
msgbox "This String contains ""quotes""."
```

13.0.215 How to use Sybase in Web App?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Please use our MBS Real Studio SQL Plugin to connect to a Sybase Database in your web application.

Notes:

If you see db.Connect giving the error message "cs.ctx_alloc ->CS_MEM_ERROR", than some things are not setup right for Sybase.

The Apache process may not have all the SYBASE environment variables being set when the CGI was launched.

Adding these lines to /etc/httpd/conf/httpd.conf stopped the faux memory errors for us:

```
SetEnv LD_LIBRARY_PATH /opt/sybase/OCS-15.0/lib:/opt/sybase/OCS-15.0/lib3p64:/opt/sybase/OCS-15.0/lib3p:  
SetEnv SYBROOT /opt/sybase  
SetEnv SYBASE_OCS /opt/sybase
```

```
SetEnv SYBASE /opt/sybase
```

13.0.216 How to use the Application Support folder?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:**

I was saving a registration code for an app to the Preference folder. People on the list have suggested that it would be better in the ApplicationSupportFolder. How do I save the file called CWWPrefs into that folder using MBS?

I have checked for examples and the docs but can't see how to apply it

```
//f = SpecialFolder.Preferences.child("CWWPrefs")
f = ApplicationSupportFolderMBS(-32768)
```

Example:

```
dim folder,file as FolderItem
```

```
folder = createApplicationSupportFolderMBS(-32763)
```

```
if folder=nil then
// Some very old Mac OS Versions may not support it
// or the plugin may fail for any reason
folder=SpecialFolder.Preferences
end if
```

```
file=folder.Child("CWWPrefs")
```

```
MsgBox file.UnixpathMBS
```

Notes: You may not be able to write there with a normal user account!

13.0.217 How to use the IOPMCopyScheduledPowerEvents function in Real-basic?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** You can use the following code which does this using the SoftDeclareMBS class.

Example:

```
Sub Open()
dim c as CFDateMBS
```

```

dim t as CFAbsoluteTimeMBS

// get current date
c=NewCFDateMBS

// in absolute time (seconds since x)
t=c.AbsoluteTime

// add 600 seconds (= 10 Minutes)
t.Value=t.Value+600

// Make a Date from it
c=t.Date

// Schedule the event
// 0 on success
// E00002C1 for missing root rights
Title=hex(schedulePowerEvent(c, "wake"))

// Just for information, display the scheduled stuff
CFShowMBS CopyScheduledPowerEvents
End Sub

Function CopyScheduledPowerEvents() As cfarrayMBS
dim s as SoftDeclareMBS
dim m as MemoryBlock

s=new SoftDeclareMBS

if s.LoadLibrary("IOKit.framework") then
if s.LoadFunction("IOPMCopyScheduledPowerEvents") then
if s.CallFunction(0,nil) then
Return NewCFArrayMBSHandle(s.Result,true)
else
MsgBox "Failed to Call IOPMCopyScheduledPowerEvents."
end if
else
MsgBox "Failed to load IOPMCopyScheduledPowerEvents."
end if
else
MsgBox "Failed to load IOKit."
end if

Return nil
End Function

Function SchedulePowerEvent(time_to_wake as CFDateMBS, Type as CFStringMBS) as Integer
dim s as SoftDeclareMBS

```

```

dim m as MemoryBlock

'/*
' * Types of power event
' * These are potential arguments to IOPMSchedulePowerEvent().
' * These are all potential values of the kIOPMPowerEventTypeKey in the CFDictionaryes
' * returned by IOPMCopyScheduledPowerEvents().
' */
'/*!
'@define kIOPMAutoWake
'@abstract Value for scheduled wake from sleep.
' */
'# define kIOPMAutoWake "wake"
,

'/*!
'@define kIOPMAutoPowerOn
'@abstract Value for scheduled power on from off state.
' */
'# define kIOPMAutoPowerOn "poweron"
,

'/*!
'@define kIOPMAutoWakeOrPowerOn
'@abstract Value for scheduled wake from sleep, or power on. The system will either wake OR
'power on, whichever is necessary.
' */
,
'# define kIOPMAutoWakeOrPowerOn "wakepoweron"
'/*!
'@define kIOPMAutoSleep
'@abstract Value for scheduled sleep.
' */
,
'# define kIOPMAutoSleep "sleep"
'/*!
'@define kIOPMAutoShutdown
'@abstract Value for scheduled shutdown.
' */
,
'# define kIOPMAutoShutdown "shutdown"

s=new SoftDeclareMBS

if s.LoadLibrary("IOKit.framework") then
if s.LoadFunction("IOPMSchedulePowerEvent") then

m=NewMemoryBlock(12)
m.Long(0)=time_to_wake.handle
m.Long(4)=0 // nil

```

```

m.Long(8)=type.Handle

if s.CallFunction(3,m) then
Return s.Result
end if
end if
end if

End Function

```

Notes: Requires Mac OS X and to execute root rights.

13.0.218 How to validate a GUID?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** You can use this function below which uses a regular expression to verify that the string is a valid UUID/GUID:

Example:

```

Function IsGUID(guid as string) As Boolean
dim r as new RegEx

```

```

r.SearchPattern = "^(\{ { 0,1 } ( [ 0-9a-fA-F ] ) { 8 } -( [ 0-9a-fA-F ] ) { 4 } -( [ 0-9a-fA-F ] ) { 4 }
-( [ 0-9a-fA-F ] ) { 4 } -( [ 0-9a-fA-F ] ) { 12 } \} { 0,1 } )$"

```

```

Return r.Search(guid)<>nil
End Function

```

Notes: Simply parsing the GUID with CFUUIDMBS does not give the same result as CFUUIDMBS will also take a string like "DDDD".

13.0.219 How to walk a folder hierarchie non recursively?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Use code like this one:

Example:

```

Sub Walk(folder as FolderItem)
dim folders() as FolderItem

folders.Append folder

while UBound(folders)>=0

```

```

dim currentFolder as FolderItem = folders.pop

dim c as Integer = currentFolder.Count
for i as Integer = 1 to c
dim item as FolderItem = currentFolder.TrueItem(i)

if item = Nil then
// no permission
elseif item.Visible then // only visible

if item.Directory then
folders.Append item
else
// work with file here
end if

end if

next

wend
End Sub

```

Notes:

As you see we go with a long loop which runs until we don't have more folders to process.

We ignore items we can't access due to permission limits.

And we only work visible items.

If you like, check `folderitem.isBundleMBS` on item to handle packages and applications better on Mac OS X.

13.0.220 I got this error: PropVal, QDPictMBS.Name (property value), Type mismatch error. Expected CGDataProviderMBS, but got Variant, Name:QDPictMBS

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** The plugins MacOSX and MacOSXCF belong together. If you use one part, please also install the other part.

Notes: We splitted the plugin because the Real Studio IDE on Windows crashed on compilation.

13.0.221 I registered the MBS Plugins in my application, but later the registration dialog is shown.

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** There are two main reasons.

Notes:

1. you may use the plugin before registering them. This is often the case if you register in a window open event and use the plugin in a control open event.

On the console on Mac OS X or Windows, you may see a message like this "MBS Plugins were used by the application before the RegisterMBSPlugin function was called. Please fix this in your code!".

2. you may have mixed different plugin versions which are not compatible.

In this case you can see a message "Internal plugin registration error." on the console on Mac OS X. Newer plugins may show a message dialog reporting this. Older version simply think they are not registered.

If the installer just merges old and new applications, users may have libraries of older and newer plugin versions in the libs folder. If your application loads the wrong version, the registration fails.

If you use remote debugging, make sure you clear the temporary files there, too. Otherwise you may have old DLLs on your hard disc which may disturb your application.

You can run into issues if you use your registration code on different places of your app. Please register only once in app.open (or app Constructor). If you have several codes, simply call them one after the other.

Also check that you only call RegisterMBSPlugin with valid serial number. If you later call RegisterMBSPlugin with Demo like in example code above, you remove the license.

Finally make sure you use the right serial number. Not an older one or a misspelled one.

13.0.222 I want to accept Drag & Drop from iTunes

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** You need to accept AcceptMacDataDrop "itun" and Handle the DropObject.

Example:

```
Sub Open()
window1.AcceptMacDataDrop "itun"
End Sub
```

```
Sub DropObject(obj As DragItem)
dim s as string
dim f as folderItem
```



```

dim d as CFDictionaryMBS
dim o as CFOBJECTMBS
dim key as CFStringMBS
dim dl as CFDictionaryListMBS
dim i,c as Integer
dim u as CFURLMBS
dim file as FolderItem

if obj.MacDataAvailable("itun") then
s = obj.MacData("itun")

// Parse XML
o=NewCFOBJECTMBSFromXML(NewCFBinaryDataMBSStr(s))

// Make dictionary
if o isa CFDictionaryMBS then
d=CFDictionaryMBS(o)

// get Tracks Dictionary
key=NewCFStringMBS("Tracks")
o=d.Value(key)

if o isa CFDictionaryMBS then
d=CFDictionaryMBS(o)
dl=d.List

// Walk over all entries in the Tracks dictionary
c=dl.Count-1
for i=0 to c
o=dl.Value(i)

if o isa CFDictionaryMBS then
d=CFDictionaryMBS(o)

key=NewCFStringMBS("Location")
o=d.Value(key)
if o isa CFStringMBS then
u=NewCFURLMBS CFStringMBS(CFStringMBS(o),nil)

file=u.file
if file<>nil then
MsgBox file.UnixpathMBS
end if
end if
end if
next
end if
end if

```

```
end if
End Sub
```

Notes: The code above inside a window on Realbasic 5.5 with MBS Plugin 5.3 will do it nice and show the paths.

13.0.223 I'm drawing into a listbox but don't see something.

Plugin Version: all, Console & Web: No. **Answer:** If you draw this in a listbox cellbackground, you need to draw on the correct position

Example:

```
Function CellBackgroundPaint(g As Graphics, row as Integer, column as Integer) As Boolean
dim f as FolderItem
f=SpecialFolder.Desktop
f.DrawWideIconMBS(g,listbox1.left,listbox1.top+row*20,16)
Return true
End Function
```

Notes: Try this in a listbox. The Graphics object there has a clipping and an offset which the plugin doesn't know about.

13.0.224 I'm searching for a method or so to move a window from position x.y to somewhere else on the screen.

Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:**

The code I produced in RB isn't smooth enough. Is there a call in MBS, if not, can it be done? The speed of it has to be like the show of a DrawerWindow.

Try the declare below for Carbon. With WindowLib it will work on Mac OS 8.5 and newer.

Notes: See Window.Transition functions.

13.0.225 If I use one of your plug-ins under windows, would this then impose the use of dll after compilation or my would my compiled soft still be a stand-alone single file software?

Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Stand alone.

Notes:

REALbasic compiles all used plugins into the application binary.

Some plugin parts need external dlls but you will find that in the documentation. (e.g. pdflib for some classes)

13.0.226 Is the fn key on a powerbook keyboard down?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** I am unable to figure out how or if it is possible to detect if the fn key is down on a powerbook keyboard. Is it possible?

Example:

' Window.Open Event of a blank project:

```
dim i as Integer
```

```
for i=0 to 127
```

```
if keyboard.asynckeydown(i) then
```

```
title=str(i) // found
```

```
return
```

```
end if
```

```
next
```

```
title="" // not found
```

Notes: This test application shows the keycode (decimal) 63 for the fn key.

13.0.227 Is there a case sensitive Dictionary?

Plugin Version: all, Console & Web: No. **Answer:** The MBS Plugin has several classes which can work as a replacement.

Notes:

First you could use VariantToVariantHashMapMBS or VariantToVariantOrderedMapMBS.

If you know that all keys are Strings or Integers only, you can use the specialized classes which are a little bit faster due to avoiding variants:

IntegerToIntegerHashMapMBS class

IntegerToIntegerOrderedMapMBS class

IntegerToStringHashMapMBS class
 IntegerToStringOrderedMapMBS class
 IntegerToVariantHashMapMBS class
 IntegerToVariantOrderedMapMBS class
 StringToStringHashMapMBS class
 StringToStringOrderedMapMBS class
 StringToVariantHashMapMBS class
 StringToVariantOrderedMapMBS class

13.0.228 Is there a way to use the MBS plugin to get only the visible item and folder count on a volume?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** You can use the DirectorySizeMBS class for this as in the example below:

Example:

```
dim d as DirectorySizeMBS

d=new DirectorySizeMBS

// volume(1) as my boot volume is very full
if d.update(volume(1),true,0) then
MsgBox str(d.VisibleItemCount)+" visible items, "+str(d.HiddenItemCount)+" invisible items."
end if
```

Notes:

Complete Question: Is there a way to use the MBS plugin to get only the visible item and folder count on a volume? The FileCount and FolderCount properties of VolumeInformationMBS seem to provide the total # of items including invisible items such as .DS_Store and more importantly .Trashes which is causing me a great amount of difficulty during a recursive scan of a volume. I've got a progress bar which uses the total of the filecount and foldercount properties as the maximum value, but my routine needs to filter out all invisible items, as it is creating a catalog of a volume for archiving purposes. Any thoughts how I could get accurate number.

13.0.229 Is there an easy way I can launch the Displays preferences panel?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Use the code below:

Example:

```

dim error as Integer

error=OpenMacOSXPreferencesPaneMBS("Displays")
if error<>0 then
MsgBox "Failed to launch QuickTime System Preferences panel."
end if

```

13.0.230 Is there an easy way I can launch the Quicktime preferences panel?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Use the code below:
Example:

```

dim error as Integer

error=OpenMacOSXPreferencesPaneMBS("QuickTime")
if error<>0 then
MsgBox "Failed to launch QuickTime System Preferences panel."
end if

```

13.0.231 List of Windows Error codes?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** We have a list of windows error codes on our website.

Notes: <http://www.monkeybreadsoftware.de/xojo/winerror.shtml>

13.0.232 Midi latency on Windows problem?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** The issue is system related, not a problem with RB or the plugin.

Notes:

Two things will adversely affect the timing:

(1) latency of the software synthesizer output driver. The default Windows wavetable synthesizer has considerable latency. I don't know how many milliseconds, but it is noticeable.

(2) latency of the digital audio output driver. Different systems have different drivers for different audio hardware. My Dell laptop has a minimum 15ms latency in the audio driver.

These two things put together were causing a very sluggish MIDI response. I was able to verify these as the culprits by routing MIDI directly out of RB into a sample player, which only introduces the latency of (2) and does not include latency of (1).

I don't know how widely known are these facts, if not then you may want to add this information to the documentation, since Windows programmers using the MIDI plugin may not know those problems, and might mistakenly blame your plugin, as I did :) Sorry about that!

(From Aaron Andrew Hunt)

13.0.233 My Xojo Web App does not launch. Why?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Here is a list of checks to do for linux apache installations with Xojo or Real Studio Web applications:

Notes:

Just a list of checks to do for linux apache installations:

- You have 64bit linux? Than you need 32 bit compatibility libraries.
- The folder of your app is writable? Set permissions to 777.
- The cgi script is executable? Set permissions to 755.
- The app file itself is executable? Set permissions to 755.
- You uploaded cgi file as text, so it has unix line endings? (this often gives error "Premature end of script headers" in apache log)
- You uploaded config.cfg file and made it writable? Set permissions to 666.
- Your apache allows execution of cgi scripts? You enabled cgi for apache and uncommented addhandler command for CGI on a new apache installation?
- You uploaded the app file and libraries as binary files? Upload as text breaks them.
- You did upload the libs folder?
- You don't have code in app.open, session.open and other events which crashes app right at launch?
- You don't have a print command in your app.open event? (see feedback case 23817)
- You allowed htaccess file to overwrite permissions?

13.0.234 Pictures are not shown in my application. Why?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: No. **Answer:**

On Mac OS Classic, please check the memory partition size which may be too low.
Else (most times on Windows) you are simple missing the part of QuickTime to load images.

13.0.235 Realbasic doesn't work with your plugins on Windows 98.

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** Upgrade your Windows version or complain to Realsoftware.

13.0.236 REALbasic or my RB application itself crashes on launch on Mac OS Classic. Why?

Plugin Version: all, Console & Web: No. **Answer:**

You may check if the application has enough memory to be loaded.
RB should have on Mac OS Classic more than 20 MB of RAM.
I preferred to use 50 MB and for an application a 10 MB partition is a good way to start.

13.0.237 SQLiteDatabase not initialized error?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Before you can use SQLiteDatabaseMBS, it must be initialized.

Example:

```
dim d as new SQLiteDatabaseMBS
```

Notes:

This happens normally when you use "new SQLiteDatabaseMBS".
But if you just have a SQLConnectionMBS and get a recordset there, the initialization may not have happened, yet.
So please simply add a line "dim d as new SQLiteDatabaseMBS" to your app.open code after registration, so the plugin part can initialize and late provide recordsets.

13.0.238 Textconverter returns only the first x characters. Why?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:**

Some older REALbasic versions limit the Textconverter to around 1024 characters in input and output. This should be fixed with RB5.

Notes: REALbasic seems not to support Textconverters at all on Windows.

13.0.239 The type translation between CoreFoundation/Foundation and Realbasic data types.

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** The plugin does conversion between Cocoa/Carbon data types and native REALbasic data types. The following list help you knowing what the current plugins support:

Notes:

Cocoa NSObject to Variant:

```

nil ->nil
NSDictionary ->Dictionary
NSData ->MemoryBlock
NSString ->String
NSAttributedString ->NSAttributedStringMBS
NSDate ->Date
NSNumber ->double/integer/Int64/UInt64/UInt32/Boolean
NSURL ->String
NSValue with NSRect ->NSRectMBS
NSValue with NSPoint ->NSPointMBS
NSValue with NSSize ->NSSizeMBS
NSValue with NSRange ->NSRangeMBS
NSValue with QTTime ->QTTimeMBS
NSValue with QTTimeRange ->QTTimeRangeMBS
NSArray ->Array of Variant
QuartzFilter ->QuartzFilterMBS

```

- ->*MBS

Variant to Cocoa NSObject:

```

nil ->nil
Dictionary ->NSDictionary
Boolean ->NSNumber
Integer ->NSNumber
Color ->NSColor
Int64 ->NSNumber
Single ->NSNumber
Double ->NSNumber
Date ->NSDate

```


MemoryBlock ->NSData
 String ->NSString
 NSImageMBS ->NSImage
 NSAttributedStringMBS ->NSAttributedString
 NSColorMBS ->NSColor
 NSRectMBS ->NSValue with NSRect
 NSSizeMBS ->NSValue with NSSize
 NSPointMBS ->NSValue with NSPoint
 NSRangeMBS ->NSValue with NSRange
 NSBurnMBS ->NSBurn
 NSViewMBS ->NSView
 NSFontMBS ->NSFont
 NSParagraphStyleMBS ->NSParagraphStyle
 NSAttributedStringMBS ->NSAttributedString
 WebPolicyDelegateMBS ->WebPolicyDelegate
 WebUIDelegateMBS ->WebUIDelegate
 WebFrameLoadDelegateMBS ->WebFrameLoadDelegate
 WebResourceLoadDelegateMBS ->WebResourceLoadDelegate
 NSIndexSetMBS ->NSIndexSet
 QTTimeMBS ->QTTime
 QTTimeRangeMBS ->QTTimeRange
 Array of Variant ->NSArray
 Array of String ->NSArray
 CFStringMBS ->NSString
 CFNumberMBS ->NSNumber
 CFDataMBS ->NSData
 CFURLMBS ->NSURL
 CFArrayMBS ->NSArray
 CFDictionaryMBS ->NSDictionary
 CFBinaryDataMBS ->NSData

Carbon CFTypeRef to Variant:

CFDictionaryRef ->Dictionary
 CFStringRef ->String
 CFDataRef ->String
 CFURL ->String
 CFNumber ->Integer/Double/Int64
 CFArray ->Array
 CFDate ->date
 nil ->nil
 CGColorSpace ->CGColorSpaceMBS
 CGColor ->CGColorMBS
 CGImage ->CGImageMBS
 CF* ->CF*MBS

Variant to Carbon CTypeRef:

Dictionary ->CFDictionaryRef
 Boolean ->CFBooleanRef
 Color ->CFNumberRef
 Integer ->CFNumberRef
 Int64 ->CFNumberRef
 Single ->CFNumberRef
 Double ->CFNumberRef
 String ->CFStringRef
 Color ->CGColorRef
 Date ->CFDateRef
 nil ->nil
 Memoryblock ->CFDataRef
 Folderitem ->CFURLRef
 Dictionary ->CFDictionaryRef
 Array of Variant/String/Date/Double/Single/Int64/Integer ->CFArray
 CGRectMBS ->CGRect as CFDataRef
 CGSizeMBS ->CGSize as CFDataRef
 CGPointMBS ->CGPoint as CFDataRef
 CGColorMBS ->CGColor
 CGColorSpaceMBS ->CGColorSpace
 CGImageMBS ->CGImage
 CGDataConsumerMBS ->CGDataConsumer
 CGDataProviderMBS ->CGDataProvider
 CF*MBS ->CF*

Strings without encodings should be put into dictionaries as memoryblocks.

13.0.240 Uploaded my web app with FTP, but it does not run on the server!

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** If you see errors like a simple "Segmentation Fault" on Linux or some other wired errors, you may want to check your FTP upload mode. It must be binary for web apps. ASCII mode corrupts the application.

13.0.241 What classes to use for hotkeys?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Please use CarbonHotKeyMBS class on Mac and WindowsKeyFilterMBS on Windows.

Notes: CarbonHotKeyMBS will also work fine in Cocoa apps.

13.0.242 What do I need for Linux to get picture functions working?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** In order to get our plugins working on Linux systems without GUI, the plugin loads graphics libraries dynamically.

Notes:

To get it working, the plugin tries to load gtk with this paths:

- libgtk-x11-2.0.so”
- libgtk-x11-2.0.so.0”
- /usr/lib/libgtk-x11-2.0.so”
- /usr/lib32/libgtk-x11-2.0.so”
- /usr/lib/libgtk-x11-2.0.so.0”
- /usr/lib32/libgtk-x11-2.0.so.0”

gdk is loaded with this paths:

- libgdk-x11-2.0.so”
- libgdk-x11-2.0.so.0”
- /usr/lib/libgdk-x11-2.0.so”
- /usr/lib32/libgdk-x11-2.0.so”
- /usr/lib/libgdk-x11-2.0.so.0”
- /usr/lib32/libgdk-x11-2.0.so.0”

For the paths without explicit path, the system will search in /lib, /usr/lib and all directories in the LD_LIBRARY_PATH environment variable.

13.0.243 What does the NAN code mean?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:**

13.0.244 What font is used as a 'small font' in typical Mac OS X apps?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:**

REALbasic 4.5 has a constant "SmallSystem" to use for a font name.

For older versions try this code:

Example:

```
Sub GetThemeFont(fontType as Integer, ByRef fontName as String, ByRef fontSize as Integer, ByRef
fontName as Integer)
dim err as Integer
dim theFont, theFontSize, theFontStyle as MemoryBlock
```

```
const smSystemScript = -1
```

```
Declare Function GetThemeFont Lib "Carbon" (inFontID as Integer, inScript as Integer, outFontName
as Ptr, outFontSize as Ptr, outStyle as Ptr) as Integer
```

```
theFont = NewMemoryBlock(256) //Str255
theFontSize = NewMemoryBlock(2) //SInt16
theFontStyle = NewMemoryBlock(1) //Style
```

```
err = GetThemeFont(fontType, smSystemScript, theFont, theFontSize, theFontStyle)
```

```
if err = 0 then
fontName = theFont.PString(0)
fontSize = theFontSize.UShort(0)
fontStyle = theFontStyle.Byte(0)
else
fontName = ""
fontSize = 0
fontStyle = 0
end if
End Sub
```

13.0.245 What is last plugin version to run on Mac OS X 10.4?

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** Last Version with 10.4 support is version 15.4.

Notes:

With version 15.4 you can build applications for OS X 10.4 and newer.

For Version 16.0 we disabled 10.4 and moved minimum to 10.5. We may be able to enable it again to build a version of 16.x, but may need to charge for this by hour.

13.0.246 What is last plugin version to run on PPC?

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** Last Version with PPC is 15.4.

Notes:

With version 15.4 you can build PPC applications for OS X 10.4 and newer.

For Version 16.0 we disabled PPC. We may be able to enable it again to build a PPC version of 16.x, but may need to charge for this by hour.

13.0.247 What is the difference between Timer and WebTimer?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Time is server side and WebTimer client side.

Notes: Timer is the normal timer class in Real Studio. It runs on the server. On the side the WebTimer runs on the client. It triggers a request to the server to perform the action. So a WebTimer is good to keep the connection running and the website updated regularly. A timer on the server is good to make regular jobs like starting a database backup every 24 hours.

13.0.248 What is the list of Excel functions?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Below a list of function names known by LibXL.

Notes:

LibXL parses the functions and writes tokens to the excel file. So even if Excel can do more functions, we can only accept the ones known by LibXL.

ABS, ABSREF, ACOS, ACOSH, ACTIVE.CELL, ADD.BAR, ADD.COMMAND, ADD.MENU, ADD.TOOLBAR, ADDRESS, AND, APP.TITLE, AREAS, ARGUMENT, ASC, ASIN, ASINH, ATAN, ATAN2, ATANH, AVEDEV, AVERAGE, AVERAGEA, BAHTTEXT, BETADIST, BETAINV, BINOMDIST, BREAK, CALL, CALLER, CANCEL.KEY, CEILING, CELL, CHAR, CHECK.COMMAND, CHIDIST, CHIINV, CHITEST, CHOOSE, CLEAN, CODE, COLUMN, COLUMNS, COMBIN, CONCATENATE, CONFIDENCE, CORREL, COS, COSH, COUNT, COUNTA, COUNTBLANK, COUNTIF, COVAR, CREATE.OBJECT, CRITBINOM, CUSTOM.REPEAT, CUSTOM.UNDO, DATE, DATEDIF, DATESTRING, DATEVALUE, DAVERAGE, DAY, DAYS360, DB, DBCS, DCOUNT, DCOUNTA, DDB, DEGREES, DELETE.BAR, DELETE.COMMAND, DELETE.MENU, DELETE.TOOLBAR, Deref, DEVSQ, DGET, DIALOG.BOX, DIRECTORY, DMAX, DMIN, DOCUMENTS, DOLLAR, DPRODUCT, DSTDEV, DSTDEVP, DSUM, DVAR, DVARP, ECHO, ELSE, ELSE.IF, ENABLE.COMMAND, ENABLE.TOOL, END.IF, ERROR, ERROR.TYPE, EVALUATE, EVEN, EXACT, EXEC, EXECUTE, EXP, EXPONDIST, FACT, FALSE, FCLOSE, FDIST, FILES, FIND, FINDB, FINV, FISHER, FISHERINV, FIXED, FLOOR, FOPEN, FOR, FOR.CELL, FORECAST, FORMULA.CONVERT, FPOS, FREAD, FREADLN, FREQUENCY, FSIZE, FTEST, FV, FWRITE, FWRITELN, GAMMADIST, GAMMAINV, GAMMALN, GEOMEAN, GET.BAR, GET.CELL, GET.CHART.ITEM, GET.DEF, GET.DOCUMENT, GET.FORMULA, GET.LINK.INFO, GET.MOVIE, GET.NAME, GET.NOTE,

GET.OBJECT, GET.PIVOT.FIELD, GET.PIVOT.ITEM, GET.PIVOT.TABLE, GET.TOOL, GET.TOOLBAR, GET.WINDOW, GET.WORKBOOK, GET.WORKSPACE, GETPIVOTDATA, GOTO, GROUP, GROWTH, HALT, HARMEAN, HELP, HLOOKUP, HOUR, HYPERLINK, HYPGEOMDIST, IF, INDEX, INDIRECT, INFO, INITIATE, INPUT, INT, INTERCEPT, IPMT, IRR, ISBLANK, ISERR, ISERROR, ISLOGICAL, ISNA, ISNONTEXT, ISNUMBER, ISPMT, ISREF, ISTEXT, ISTHAIDIGIT, KURT, LARGE, LAST.ERROR, LEFT, LEFTB, LEN, LENB, LINEST, LINKS, LN, LOG, LOG10, LOGEST, LOGINV, LOGNORMDIST, LOOKUP, LOWER, MATCH, MAX, MAXA, MDETERM, MEDIAN, MID, MIDB, MIN, MINA, MINUTE, MINVERSE, MIRR, MMULT, MOD, MODE, MONTH, MOVIE.COMMAND, N, NA, NAMES, NEGBINOMDIST, NEXT, NORMDIST, NORMINV, NORMSDIST, NORMSINV, NOT, NOTE, NOW, NPER, NPV, NUMBERSTRING, ODD, OFFSET, OPEN.DIALOG, OPTIONS.LISTS.GET, OR, PAUSE, PEARSON, PERCENTILE, PERCENTRANK, PERMUT, PHONETIC, PI, PIVOT.ADD.DATA, PMT, POISSON, POKE, POWER, PPMT, PRESS.TOOL, PROB, PRODUCT, PROPER, PV, QUARTILE, RADIANS, RAND, RANK, RATE, REFTTEXT, REGISTER, REGISTER.ID, RELREF, RENAME.COMMAND, REPLACE, REPLACEB, REPT, REQUEST, RESET.TOOLBAR, RESTART, RESULT, RESUME, RETURN, RIGHT, RIGHTB, ROMAN, ROUND, ROUNDBAHTDOWN, ROUNDBAHTUP, ROUNDDOWN, ROUNDUP, ROW, ROWS, RSQ, RTD, SAVE.DIALOG, SAVE.TOOLBAR, SCENARIO.GET, SEARCH, SEARCHB, SECOND, SELECTION, SERIES, SET.NAME, SET.VALUE, SHOW.BAR, SIGN, SIN, SINH, SKEW, SLN, SLOPE, SMALL, SPELLING.CHECK, SQRT, STANDARDIZE, STDEV, STDEVA, STDEVP, STDEVPA, STEP, STEYX, SUBSTITUTE, SUBTOTAL, SUM, SUMIF, SUMPRODUCT, SUMSQ, SUMX2MY2, SUMX2PY2, SUMXMY2, SYD, T, TAN, TANH, TDIST, TERMINATE, TEXT, TEXT.BOX, TEXTREF, THAIDAYOFWEEK, THAIDIGIT, THAIMONTHOFYEAR, THAINUMSOUND, THAINUMSTRING, THAISTRINGLENGTH, THAIYEAR, TIME, TIMEVALUE, TINV, TODAY, TRANSPOSE, TREND, TRIM, TRIMMEAN, TRUE, TRUNC, TTEST, TYPE, UNREGISTER, UPPER, USDOLLAR, USERDEFINED, VALUE, VAR, VARA, VARP, VARPA, VDB, VIEW.GET, VLOOKUP, VOLATILE, WEEKDAY, WEIBULL, WHILE, WINDOW.TITLE, WINDOWS, YEAR and ZTEST.

13.0.249 What is the replacement for PluginMBS?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Use the SoftDeclareMBS class to load libraries dynamically.

13.0.250 What to do on Realbasic reporting a conflict?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:**

I get an error like "This item conflicts with another item of the same name" when using one of the plugin functions.

REALbasic just wants to tell you that you dropped something in the plugins folder what is not a plugin.

Notes: Some users dropped the examples, the documentation or other files into the plugins folder. Don't do it.

13.0.251 What to do with a NSImageCacheException?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: No. **Answer:** You need to add exception handlers for NSExcptionMBS in order to catch this exception.

Notes:

You may also add code to write the stack of the exception into a log file for later locating the error source.

A NSImage has several image representations in memory. So basicly you pass in the base image and for whatever size an image is needed, the NSImage class will create a cache image representation of the requested size so on the next query it can use that cache for the same requested size.

13.0.252 What to do with MySQL Error 2014?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** You can get this error on MySQL if you have a recordset open while you create another one.

13.0.253 What ways do I have to ping?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: No. **Answer:** You have different ways

Notes:

1. Use the shell class and the ping utility.
2. Use the MBS Network Plugin and there the SuperSocket part:
 - a) On Windows the ICMPPingMBS works to ping.
 - b) On Mac OS X it uses OpenTransport and needs root rights. You need to use sudo to run this application. This does not work on Intel Macs, because the plugin is not endian safe.

3. The DarwinPingMBS.Ping method:

Compiled for Mac OS X Macho target it works as a synchronized ping method.
The Windows version had a bug and was fixed in plugin version 8.2pr4. So it works now.

4. The DarwinPingMBS.SimplePing method:

Works on Mac OS X Macho target.

But this method can be called from a thread to make it working in background.

13.0.254 Where is CGGetActiveDisplayListMBS?

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** This is now CGDisplayMBS.GetActiveDisplayList.

13.0.255 Where is CGGetDisplaysWithPointMBS?

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** This is now CGDisplayMBS.GetDisplaysWithPoint.

13.0.256 Where is CGGetDisplaysWithRectMBS?

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** This is now CGDisplayMBS.GetDisplaysWithRect.

13.0.257 Where is CGGetOnlineDisplayListMBS?

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** This is now CGDisplayMBS.GetOnlineDisplayList.

13.0.258 Where is GetObjectClassNameMBS?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Please use this replacement method:

Example:

```
Function GetObjectClassNameMBS(o as Object) As string
dim t as Introspection.TypeInfo = Introspection.GetType(o)
Return t.FullName
End Function
```

Notes: GetObjectClassNameMBS was removed from the plugins.

13.0.259 Where is NetworkAvailableMBS?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** We removed NetworkAvailableMBS some versions ago. It was not working right and basically it's not useful. If you want to check whether you have a network, then do a DNS resolve:

Example:

```
// two independent domain names
const domain1 = "www.google.com"
const domain2 = "www.macs.w.de"

// resolve IPs
dim ip1 as string = DNSNameToAddressMBS(Domain1)
dim ip2 as string = DNSNameToAddressMBS(Domain2)

// if we got IPs and not the same IPs (error/login pages)
if len(ip1)=0 or len(ip2)=0 or ip1=ip2 then
  MsgBox "no connection"
else
  MsgBox "have connection"
end if
```

Notes: This way you can detect whether you got something from DNS. And you can make sure that a DNS redirection to a login page won't catch you.

13.0.260 Where is StringHeight function in DynaPDF?

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** Use the function GetFTextHeight or GetFTextHeightEx.

Notes: Be aware that GetFTextHeight works with format commands and you may want to escape your text if you don't use them.

13.0.261 Where is XLSDocumentMBS class?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** This class has been removed in favor of XLBookMBS class.

Notes: These classes have been removed XLSCellMBS, XLSDocumentMBS, XLSFormatRecordMBS, XLSMergedCellsMBS, XLSRowMBS and XLSSheetMBS.

13.0.262 Where to get information about file formats?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:**

Please visit this web page:

<http://www.wotsit.org>

13.0.263 Where to register creator code for my application?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:**

Register at Apple:

<http://developer.apple.com/dev/cftype/information.html>

13.0.264 Which Mac OS X frameworks are 64bit only?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Some frameworks from Mac OS X do not support 32 bit applications, so we can't provide plugins for Xojo until 64bit target is available.

Notes:

For Mac OS X 10.8:

- Accounts
- EventKit
- GLKit
- Social

and in 10.9:

- Accounts
- AVKit
- EventKit
- GameController
- GLKit
- MapKit

- MediaLibrary
- Social
- SpriteKit

In general Apple makes all new frameworks being 64 bit only.

13.0.265 Which plugins are 64bit only?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** Some of our plugins work only in 64 bit modes as operation systems do not provide 32 bit code.

Notes: This effects currently: EventKit, Accounts, Social frameworks from Apple and our matching plugins.

13.0.266 Why application doesn't launch because of a missing ddraw.dll!?

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** Some RB versions require that you install DirectX from Microsoft on your Windows.

13.0.267 Why application doesn't launch because of a missing shlwapi.dll!?

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** Some RB versions require that you install the Internet Explorer from Microsoft on your Windows.

Notes: This bug is for several older Windows 95 editions.

13.0.268 Why do I hear a beep on keydown?

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** When the user presses a key, RB goes through all keydown event handlers till on returns true.

Notes: If no keydown event handler returns true for the key, a beep is performed.

13.0.269 Why does folderitem.item return nil?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Because Realbasic fails to make a folderitem for you. Reason may be an alias file which can't be resolved or simply that you don't have enough access rights to read the folder content.

Notes: A more rarely reason is that the directory changed and the file with the given index or name does no longer exist.

13.0.270 Why doesn't showurl work?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:**

There are three main reasons:

1. showurl is not supported by REALbasic in 68k applications.
2. there is now application defined for the protocol (e.g. http) in the Internet Control panel.
3. You don't have Internet Config installed.

You can use the InternetConfigMBS class to check for this stuff.

13.0.271 Why have I no values in my chart?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: No. **Answer:** You have no data points visible, there may be several reasons:

Notes:

For example one of the data values may be infinite or invalid.
Or the scaling may be out of range, so you simply see nothing.

13.0.272 Will application size increase with using plugins?

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** All plugins used by your application will be included in the application.

Notes:

If you use no plugins, your application will not change size.
And if you use one class from the plugins, your application size will increase by a few kilobytes.
The documentation of the plugins include a list of all plugin parts and their sizes for the different platforms.

13.0.273 XLS: Custom format string guidelines

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** You have to download the source code and compile a static version of the library.

Notes:

Up to four sections of format codes can be specified. The format codes, separated by semicolons, define the formats for positive numbers, negative numbers, zero values, and text, in that order. If only two sections are specified, the first is used for positive numbers and zeros, and the second is used for negative numbers. If only one section is specified, it is used for all numbers. Four sections example:

,# # # .00.); [Red] (# ,# # # .00);0.00;"sales"@

The following table describes the different symbols that are available for use in custom number formats.

Specify colors

To set the text color for a section of the format, type the name of one of the following eight colors in square brackets in the section. The color code must be the first item in the section.

Instead of using the name of the color, the color index can be used, like this [Color3] for Red. Valid numeric indexes for color range from 1 to 56, which reference by index to the legacy color palette.

Specify conditions

To set number formats that will be applied only if a number meets a specified condition, enclose the condition in square brackets. The condition consists of a comparison operator and a value. Comparison operators include: = Equal to; >Greater than; <Less than; >= Greater than or equal to, <= Less than or equal to, and <>Not equal to. For example, the following format displays numbers that are less than or equal to 100 in a red font and numbers that are greater than 100 in a blue font.

[Red] [<=100] ; [Blue] [>100]

If the cell value does not meet any of the criteria, then pound signs ("# ") are displayed across the width of the cell.

Dates and times

Examples

Parameter	Description
x	The x value of the data point. For an enumerated x-axis (see <code>Axis.setLabels</code> on what is an enumerated axis), the first data point is 0, and the nth data point is (n-1).
xLabel	The bottom x-axis label of the data point.
x2Label	The top x-axis label of the data point.
value	The value of the data point.
accValue	The sum of values of all data points that are in the same x position and same data group as the current data point, and with data set number less than or equal to the current data point. This is useful for stacked charts, such as stacked bar chart and stacked area chart.
totalValue	The sum of values of all data points that are in the same x position and same data group as the current data point. This is useful for stacked charts, such as stacked bar chart and stacked area chart.
percent	The percentage of the data point based on the total value of all data points that are in the same x position and same data group as the current data point. This is useful for stacked charts, such as stacked bar chart and stacked area chart.
accPercent	The accumulated percentage of the data point based on the total value of all data points that are in the same x position and same data group as the current data point. This is useful for stacked charts, such as stacked bar chart and stacked area chart.
gpercent	The percentage of the data point based on the total value of all data points in a layer.
dataSet	The data set number to which the data point belongs. The first data set is 0. The nth data set is (n-1).
dataSetName	The name of the data set to which the data point belongs.
dataItem	The data point number within the data set. The first data point is 0. The nth data point is (n-1).
dataGroup	The data group number to which the data point belongs. The first data group is 0. The nth data group is (n-1).
dataGroupName	The name of the data group to which the data point belongs.
layerId	The layer number to which the data point belongs. The first layer is 0. The nth layer is (n-1).
fieldN	The (N + 1)th extra field. For example, { field0 } means the first extra field. An extra field is an array of custom elements added using <code>Layer.addExtraField</code> , <code>Layer.addExtraField2</code> , <code>BaseChart.addExtraField</code> or <code>BaseChart.addExtraField2</code> .

diFieldN	Same as fieldN. See above.
dsFieldN	Similar to fieldN, except that dsFieldN means the extra field is indexed by data set number. The Pth data set corresponds to the Pth element of the extra field.
dsdiFieldN	Similar to fieldN, except that dsdiFieldN means the extra fields are indexed by both the data set number and data point number. The Pth data item of the Qth data set corresponds to the Pth element of the (N + Q)th extra field.

Parameter	Description
zx	The symbol scale in the x dimension. Applicable for layers with symbol scales set by <code>LineStyle.setSymbolScale</code> .
zy	The symbol scale in the y dimension. Applicable for layers with symbol scales set by <code>LineStyle.setSymbolScale</code> .
z	The symbol scale without distinguishing the dimension to use. Applicable for layers with symbol scales set by <code>LineStyle.setSymbolScale</code> .

Parameter	Description
slope	The slope of the trend line.
intercept	The y-intercept of the trend line.
corr	The correlation coefficient in linear regression analysis.
stderr	The standard error in linear regression analysis.

Parameter	Description
top	The value of the top edge of the box-whisker symbol.
bottom	The value of the bottom edge of the box-whisker symbol.
max	The value of the maximum mark of the box-whisker symbol.
min	The value of the minimum mark of the box-whisker symbol.
med	The value of the median mark of the box-whisker symbol.

Parameter	Description
high	The high value.
low	The low value.
open	The open value.
close	The close value.

Parameter	Description
dir	The direction of the vector.
len	The length of the vector.

Parameter	Description
radius	The radial value of the data point.
value	Same as { radius } . See above.
angle	The angular value of the data point.
x	Same as { angle } . See above.
label	The angular label of the data point.
xLabel	Same as { label } . See above.
name	The name of the layer to which the data point belongs.
dataSetName	Same as { name } . See above.
i	The data point number. The first data point is 0. The nth data point is (n-1).
dataItem	Same as { i } . See above.
z	The symbol scale. Applicable for layers with symbol scales set by Polar-Layer.setSymbolScale.
fieldN	The (N + 1)th extra field. For example, { field0 } means the first extra field. An extra field is an array of custom elements added using Layer.addExtraField, Layer.addExtraField2, BaseChart.addExtraField or BaseChart.addExtraField2.
diFieldN	Same as fieldN. See above.
dsFieldN	Similar to fieldN, except that dsFieldN means the extra field is indexed by layer index. The Pth layer corresponds to the Pth element of the extra field.
dsdiFieldN	Similar to fieldN, except that dsdiFieldN means the extra fields are indexed by both the data set number and data point number. The Pth data item of the Qth layer corresponds to the Pth element of the (N + Q)th extra field.
Parameter	Description
dir	The direction of the vector.
len	The length of the vector.
Parameter	Description
value	The axis value at the tick position.
label	The axis label at the tick position.
Parameter	Description
[param]	The name of the parameter
[a]	If this field a number, it specifies the number of decimal places (digits to the right of the decimal point).

[b]	The thousand separator. Should be a non-alphanumeric character (not 0-9, A-Z, a-z). Use ' '.
textasciitilde ' for no thousand separator. The default is ' '.	
textasciitilde ', which can be modified using BaseChart.setNumberFormat.	
[c]	The decimal point character. The default is '.', which can be modified using BaseChart.setNumberFormat.
[d]	The negative sign character. Use ' '.
textasciitilde ' for no negative sign character. The default is '-', which can be modified using BaseChart.setNumberFormat.	

Parameter	Description
yyyy	The year in 4 digits (e.g. 2002)
yyy	The year showing only the least significant 3 digits (e.g. 002 for the year 2002)
yy	The year showing only the least significant 2 digits (e.g. 02 for the year 2002)
y	The year showing only the least significant 1 digits (e.g. 2 for the year 2002)
mmm	The month formatted as its name. The default is to use the first 3 characters of the english month name (Jan, Feb, Mar ...). The names can be configured using BaseChart.setMonthNames.
mm	The month formatted as 2 digits from 01 - 12, adding leading zero if necessary.
m	The month formatted using the minimum number of digits from 1 - 12.
MMM	The first 3 characters of the month name converted to upper case. The names can be configured using BaseChart.setMonthNames.
MM	The first 2 characters of the month name converted to upper case. The names can be configured using BaseChart.setMonthNames.
M	The first character of the month name converted to upper case. The names can be configured using BaseChart.setMonthNames.
dd	The day of month formatted as 2 digits from 01 - 31, adding leading zero if necessary.
d	The day of month formatted using the minimum number of digits from 1 - 31.
w	The name of the day of week. The default is to use the first 3 characters of the english day of week name (Sun, Mon, Tue ...). The names can be configured using BaseChart.setWeekDayNames.
hh	The hour of day formatted as 2 digits, adding leading zero if necessary. The 2 digits will be 00 - 23 if the 'a' option (see below) is not specified, otherwise it will be 01 - 12.
h	The hour of day formatted using the minimum number of digits. The digits will be 0 - 23 if the 'a' option (see below) is not specified, otherwise it will be 01 - 12.
nn	The minute formatted as 2 digits from 00 - 59, adding leading zero if necessary.
n	The minute formatted using the minimum number of digits from 00 - 59.
ss	The second formatted as 2 digits from 00 - 59, adding leading zero if necessary.
s	The second formatted using the minimum number of digits from 00 - 59.
a	Display either 'am' or 'pm', depending on whether the time is in the morning or afternoon. The text 'am' and 'pm' can be modified using BaseChart.setAMPM.

Shape Id	Value	Description
SquareShape	1	Square shape. See (1, 1) above.
DiamondShape	2	Diamond shape. See (2, 1) above.
TriangleShape	3	Triangle shape pointing upwards. See (3, 1) above.
RightTriangleShape	4	Triangle shape pointing rightwards. See (4, 1) above.
LeftTriangleShape	5	Triangle shape pointing leftwards. See (5, 1) above.
InvertedTriangleShape	6	Triangle shape pointing downwards. See (1, 2) above.
CircleShape	7	Circle shape. See (2, 2) above.
StarShape	[Method]	Star shapes of various points. See (2, 3), (2, 4), (2, 5), (3, 1), (3, 2), (3, 3), (3, 4), (3, 5) above for stars with 3 to 10 points.
PolygonShape	[Method]	Polygon shapes symmetrical about a vertical axis with a vertex at the top center position. See (4, 1), (4, 3), (4, 5), (5, 1) for polygons of 5 to 8 sides.
Polygon2Shape	[Method]	Polygon shapes symmetrical about a vertical axis but without any vertex at the top center position. See (4, 2), (4, 4) for polygons of 5 and 6 sides.
CrossShape	[Method]	'+' shapes. See (5, 2), (5, 3), (5, 4), (5, 5), (6, 1), (6, 2), (6, 3) for '+' shape with arm width of 0.1 - 0.7.
Cross2Shape	[Method]	'X' shapes. See (6, 4), (6, 5), (7, 1), (7, 2), (7, 3), (7, 4), (7, 5) for 'X' shapes with arm width of 0.1 - 0.7.

langEnglish	0	Roman script
langFrench	1	Roman script
langGerman	2	Roman script
langItalian	3	Roman script
langDutch	4	Roman script
langSwedish	5	Roman script
langSpanish	6	Roman script
langDanish	7	Roman script
langPortuguese	8	Roman script
langNorwegian	9	Roman script
langHebrew	10	Hebrew script
langJapanese	11	Japanese script
langArabic	12	Arabic script
langFinnish	13	Roman script
langGreek	14	Greek script using smRoman script code
langIcelandic	15	modified smRoman/Icelandic script
langMaltese	16	Roman script
langTurkish	17	modified smRoman/Turkish script
langCroatian	18	modified smRoman/Croatian script
langTradChinese	19	Chinese (Mandarin) in traditional characters
langUrdu	20	Arabic script
langHindi	21	Devanagari script
langThai	22	Thai script
langKorean	23	Korean script

Nan	Meaning
1	Invalid square root (negative number, usually)
2	Invalid addition (indeterminate such as infinity + (-infinity))
4	Invalid division (indeterminate such as 0/0)
8	Invalid multiplication (indeterminate such as 0*infinity)
9	Invalid modulo such as (a mod 0)
17	Try to convert invalid string to a number like val("x7")
33	Invalid argument in a trig function
34	Invalid argument in an inverse trig function
36	Invalid argument in a log function
37	Invalid argument in Pow function
38	Invalid argument in toolbox financial function
40	Invalid argument in hyperbolic function
42	Invalid argument in a gamma function

Symbol	Description and result
0	Digit placeholder. For example, if the value 8.9 is to be displayed as 8.90, use the format #.00
#	Digit placeholder. This symbol follows the same rules as the 0 symbol. However, the application shall not display extra zeros when the number typed has fewer digits on either side of the decimal than there are # symbols in the format. For example, if the custom format is #.# #, and 8.9 is in the cell, the number 8.9 is displayed.
?	Digit placeholder. This symbol follows the same rules as the 0 symbol. However, the application shall put a space for insignificant zeros on either side of the decimal point so that decimal points are aligned in the column. For example, the custom format 0.0? aligns the decimal points for the numbers 8.9 and 88.99 in a column.
. (period)	Decimal point.
%	Percentage. If the cell contains a number between 0 and 1, and the custom format 0% is used, the application shall multiply the number by 100 and add the percentage symbol in the cell.
, (comma)	Thousands separator. The application shall separate thousands by commas if the format contains a comma that is enclosed by number signs (#) or by zeros. A comma that follows a placeholder scales the number by one thousand. For example, if the format is #.0,, and the cell value is 12,200,000 then the number 12.2 is displayed.
E- E+ e- e+	Scientific format. The application shall display a number to the right of the "E" symbol that corresponds to the number of places that the decimal point was moved. For example, if the format is 0.00E+00, and the value 12,200,000 is in the cell, the number 1.22E+07 is displayed. If the number format is #0.0E+0, then the number 12.2E+6 is displayed.
\$ -+/():space	Displays the symbol. If it is desired to display a character that differs from one of these symbols, precede the character with a backslash (\). Alternatively, enclose the character in quotation marks. For example, if the number format is (000), and the value 12 is in the cell, the number (012) is displayed.
\	Display the next character in the format. The application shall not display the backslash. For example, if the number format is 0\!, and the value 3 is in the cell, the value 3! is displayed.
*	Repeat the next character in the format enough times to fill the column to its current width. There shall not be more than one asterisk in one section of the format. If more than one asterisk appears in one section of the format, all but the last asterisk shall be ignored. For example, if the number format is 0*x, and the value 3 is in the cell, the value 3xxxxxx is displayed. The number of x characters that are displayed in the cell varies based on the width of the column.
_ (underline)	Skip the width of the next character. This is useful for lining up negative and positive values in different cells of the same column. For example, the number format _(0.0.);(0.0) aligns the numbers 2.3 and -4.5 in the column even though the negative number is enclosed by parentheses.
"text"	Display whatever text is inside the quotation marks. For example, the format 0.00 "dollars" displays 1.23 dollars when the value 1.23 is in the cell.
@	Text placeholder. If text is typed in the cell, the text from the cell is placed in the format where the at symbol (@) appears. For example, if the number format is "Bob "@ Smith" (including quotation marks), and the value "John" is in the cell, the value Bob John Smith is displayed.

[Black] [Green] [White] [Blue] [Magenta] [Yellow] [Cyan] [Red]

To display	As	Use this code
Months	1-12	m
Months	01-12	mm
Months	Jan-Dec	mmm
Months	January-December	mmmm
Months	J-D	mmmmm
Days	1-31	d
Days	01-31	dd
Days	Sun-Sat	ddd
Days	Sunday-Saturday	dddd
Years	00-99	yy
Years	1900-9999	yyyy
Hours	0-23	h
Hours	00-23	hh
Minutes	0-59	m
Minutes	00-59	mm
Seconds	0-59	s
Seconds	00-59	ss
Time	4 AM	h AM/PM
Time	4:36 PM	h:mm AM/PM
Time	4:36:03 P	h:mm:ss A/P
Time	4:36:03.75	h:mm:ss.00
Elapsed time	1:02	[h] :mm
Elapsed time	62:16	[mm] :ss
Elapsed time	3735.80	[ss] .00

To display	As	Use this code
1234.59	1234.6	# # # # .#
8.9	8.900	# .000
.631	0.6	0.#
12	12.0	# .0#
1234.568	1234.57	# .0#
44.398	44.398	???.???
102.65	102.65	???.???
2.8	2.8	???.???
5.25	5 1/4	# ??/??
5.3	5 3/10	# ??/??
12000	12,000	# ,# # #
12000	12	# ,
12400000	12.4	0.0,,