MBS WIA Plugin Documentation

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July 16, 2017

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 WIA Plugin

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Image Capture

3.1 class WIADataCallbackMBS

3.1.1 class WIADataCallbackMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Provides an application callback mechanism during data transfers from Windows Image Acquisition (WIA) hardware devices to applications.
Notes: Works on Windows 2000 Professional, Windows XP and Windows Server 2003.

3.1.2 Properties

3.1.3 Handle as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The internal reference to the object.
Notes: (Read and Write property)

3.1.4 Events

3.1.5 BandedDataCallback(message as Integer, Status as Integer, PercentComplete as Integer, Offset as Integer, Length as Integer, Buffer as memoryblock) as Integer

Plugin Version: 10.3, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Function:** Provides data transfer status notifications.

Notes:

Windows Image Acquisition (WIA) data transfer methods of the WiaDataTransfer interface periodically call this method.

Message: Specifies a constant that indicates the reason for the callback. Can be one of the kMessage* constants.
Status: Specifies a constant that indicates the status of the WIA device. Can be set to a combination of the kStatus* constants.
PercentComplete: Specifies the percentage of the total data that has been transferred so far.
Offset: Specifies an offset, in bytes, from the beginning of the buffer where the current band of data begins.
Length: Specifies the length, in bytes, of the current band of data.
Buffer: The data buffer.

Lasterror is set.

Your application must provide the BandedDataCallback event. This event is periodically invoked by the data transfer methods of the WiaDataTransferMBS interface. It provides status messages to the application during the data transfer. By returning false, your program can also use this method to prematurely terminate the data transfer.

When this method is invoked, the Message parameter will contain the reason for the call. Not all parameters will contain data on all calls. For example, when BandedDataCallback is invoked with a message of kMessageTermination, it should not attempt to use the values in the Buffer, Offset, and Length parameters.

If the value of Message is kMessageData, the buffer contains a band of image data. The Offset parameter contains an offset in bytes from the beginning of the buffer where the current band of data begins. The Length parameter specified the length in bytes of the current band of data.

During calls where Message is set to kMessageData or kMessageStatus, the Status parameter contains a valid value. Its contents should not be used when Message contains other values.

If Message is kMessageDataHeader, the Buffer parameter points to a WIA_DATA_CALLBACK_HEADER structure.

When an error has occurred during an image data transfer, the driver sets Message to IT_MSG_DEVICE_STATUS. The proxy callback object calls ReportStatus, which handles the error and displays messages to the user.

3.1.6 Constants

3.1.7 kMessageData = 2

Plugin Version: 10.3. **Function:** One of the constants for the message parameter in the BandedDataCallback callback.
Notes: The WIA system is transferring data to the application.

3.1.8 kMessageDataHeader = 1

Plugin Version: 10.3. **Function:** One of the constants for the message parameter in the BandedDataCallback callback.
Notes: The application is receiving a header prior to receiving the actual data.

3.1.9 kMessageFilePreviewData = 6

Plugin Version: 10.3. **Function:** One of the constants for the message parameter in the BandedDataCallback callback.
Notes: The WIA system is transferring preview data to the application.

3.1.10 kMessageFilePreviewDataHeader = 7

Plugin Version: 10.3. **Function:** One of the constants for the message parameter in the BandedDataCallback callback.
Notes: The application is receiving a header prior to receiving the actual preview data.

3.1.11 kMessageNewPage = 5

Plugin Version: 10.3. **Function:** One of the constants for the message parameter in the BandedDataCallback callback.
Notes: The data transfer is beginning a new page.

3.1.12 kMessageStatus = 3

Plugin Version: 10.3. **Function:** One of the constants for the message parameter in the BandedDataCallback callback.

Notes: This invocation of the callback is sending only status information.

3.1.13   kMessageTermination = 4

Plugin Version: 10.3. **Function:** One of the constants for the message parameter in the BandedDataCall-
back callback.
Notes: The data transfer is complete.

3.1.14   kStatusProcessingData = 2

Plugin Version: 10.3. **Function:** One of the constants for the status parameter in the BandedDataCallback
callback.
Notes: Data is currently being processed.

3.1.15   kStatusTransferFromDevice = 1

Plugin Version: 10.3. **Function:** One of the constants for the status parameter in the BandedDataCallback
callback.
Notes: Data is currently being transferred from the WIA device.

3.1.16   kStatusTransferToClient = 4

Plugin Version: 10.3. **Function:** One of the constants for the status parameter in the BandedDataCallback
callback.
Notes: Data is currently being transferred to the client's data buffer.

3.2 class WIADataTransferInfoMBS

3.2.1 class WIADataTransferInfoMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The WIAData-TransferInfoMBS class is used by applications to describe the buffer used to retrieve bands of data from Windows Image Acquisition (WIA) devices.
Notes: It is primarily used in conjunction with the methods of the IWiaDataTransfer interface.

3.2.2 Properties

3.2.3 BufferSize as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The size in bytes of the buffer that is used for the data transfer.
Notes: (Read and Write property)

3.2.4 DoubleBuffer as Boolean

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Contains true if the device is double buffered, false if the device is not double buffered.
Notes: (Read and Write property)

3.2.5 Section as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Specifies an optional handle to a shared section of memory allocated by the application. If this member is set to nil, GetBanded-Data allocates the shared memory itself.
Notes: (Read and Write property)

3.2.6 Size as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Contains the size of this structure.
Notes: (Read and Write property)

3.3   class WIADataTransferMBS

3.3.1   class WIADataTransferMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The WIAData-TransferMBS interface is a high performance data transfer interface.
Notes:

This interface supports a shared memory window to transfer data from the device object to the application, and eliminates unnecessary data copies during marshalling. A callback mechanism is provided in the form of the WiaDataCallbackMBS interface. It enables applications to obtain data transfer status notification, transfer data from the Windows Image Acquisition (WIA) device to the application, and cancel pending data transfers.

For Windows Vista applications, use IWiaTransfer instead of IWiaDataTransfer.

3.3.2   Methods

3.3.3   EnumerateFormatInfo as WIAFormatInfoEnumeratorMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Returns an enumerator for the format information.
Notes: Lasterror is set.

3.3.4   GetBandedData(DataTransInfo as WIADataTransferInfoMBS, DataCallback as WIADataCallbackMBS)

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The GetBandedData method transfers a band of data from a hardware device to an application.
Notes:

For efficiency, applications retrieve data from Windows Image Acquisition (WIA) hardware devices in successive bands.
Lasterror is set.

3.3.5   GetDataFile(DataCallback as WIADataCallbackMBS) as folderitem

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The GetData method retrieves complete files from a Windows Image Acquisition (WIA) device.
Notes:

Lasterror is set.
Returns the folderitem for the new file. Copy or load the file as this temporary file is deleted as soon as the object is destroyed.

3.3.6   GetDataPath(DataCallback as WIADataCallbackMBS) as string

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The GetData method retrieves complete files from a Windows Image Acquisition (WIA) device.
Notes:

Lasterror is set.
Returns the folderitem for the new file. Copy or load the file as this temporary file is deleted as soon as the object is destroyed.

3.3.7   GetExtendedTransferInfo as WIAExtendedTransferInfoMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The GetExtendedTransferInfo retrieves extended information relating to data transfer buffers in the case of banded data transfers.
Notes:

Applications typically use this method to retrieve driver recommended settings for minimum buffer size, maximum buffer size, and optimal buffer size for banded data transfers.

Lasterror is set.

3.3.8   QueryGetData as WIAFormatInfoMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The QueryGetData method is used by applications to query a Windows Image Acquisition (WIA) device to determine what types of data formats it supports.
Notes: Lasterror is set.

3.3.9   Properties

3.3.10   Handle as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The internal reference to the object.

Notes: (Read and Write property)

3.3.11   Lasterror as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The last error code.
Notes: (Read and Write property)

3.4 class WIADeviceCapabilitiesEnumeratorMBS

3.4.1 class WIADeviceCapabilitiesEnumeratorMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The WIADevice-CapabilitiesEnumeratorMBS class enumerates the currently available Windows Image Acquisition (WIA) hardware device capabilities.
Notes: Device capabilities include commands and events that the device supports.

3.4.2 Methods

3.4.3 Clone as WIADeviceCapabilitiesEnumeratorMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Creates a copy of the WIADeviceCapabilitiesEnumeratorMBS object.
Notes: Lasterror is set.

3.4.4 Count as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Returns the number of items in the enumeration.
Notes: Lasterror is set.

3.4.5 NextItem as WIADeviceCapabilitiesMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Returns the next item in the enumeration.
Notes: Lasterror is set.

3.4.6 Reset

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Resets the enumeration.
Notes: Lasterror is set.

3.4.7   Skip(celt as Integer)

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Skips the given number of entries in the enumeration.
Notes: Lasterror is set.

3.4.8   Properties

3.4.9   Handle as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The internal reference to the object.
Notes: (Read and Write property)

3.4.10   Lasterror as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The last error code.
Notes: (Read and Write property)

3.5 class WIADeviceCapabilitiesMBS

3.5.1 class WIADeviceCapabilitiesMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** A class for device capabilities.

3.5.2 Properties

3.5.3 Commandline as String

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Specifies a string that represents command line arguments.
Notes: (Read and Write property)

3.5.4 Description as String

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Specifies a string that contains a description of the capability that is displayed to the user.
Notes: (Read and Write property)

3.5.5 Flags as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Flags for this capability
Notes: (Read and Write property)

3.5.6 GUID as String

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Specifies a GUID that identifies the device capability.
Notes:

This member can be set to any of the values specified in WIAItemMBS constants for Device Commands (kCommand*) or WIA Event Identifiers (kEvent*).
(Read and Write property)

3.5.7 Icon as String

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Specifies a string that represents the location and resource ID of the icon that represents this capability or handler.
Notes:

The string must be of the following form: drive:\path\module,n, where n is the icon's negated resource ID (that is, if the resource ID of the icon is 100, then n is -100).
(Read and Write property)

3.5.8 Name as String

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Specifies a string that contains a short version of the capability name.
Notes: (Read and Write property)

3.6 class WIADeviceInfoEnumeratorMBS

3.6.1 class WIADeviceInfoEnumeratorMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The WIADevice-InfoEnumeratorMBS class enumerates the currently available Windows Image Acquisition (WIA) hardware devices and their properties.
Notes: Device information properties describe the installation and configuration of WIA hardware devices.

3.6.2 Methods

3.6.3 Clone as WIADeviceInfoEnumeratorMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Creates a copy of the enumerator.
Notes: Lasterror is set.

3.6.4 Count as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Returns the number of items in the enumeration.
Notes: Lasterror is set.

3.6.5 NextItem as WIAPropertyStorageMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Returns the next item in the enumeration.
Notes: Lasterror is set.

3.6.6 Reset

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Resets the enumeration.
Notes: Lasterror is set.

3.6.7   Skip(celt as Integer)

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Skips the given number of entries in the enumeration.
Notes: Lasterror is set.

3.6.8   Properties

3.6.9   Handle as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The internal reference to the object.
Notes: (Read and Write property)

3.6.10   Lasterror as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The last error code.
Notes: (Read and Write property)

3.7 class WIADeviceManager1MBS

3.7.1 class WIADeviceManager1MBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The WIADevice-Manager1MBS interface is used to create and manage image acquisition devices and to register to receive device events.
Notes: WIA 1.x is available on Windows 2000 and newer

3.7.2 Methods

3.7.3 Constructor

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Creates a new WIA 1.0 manager object.
Example:

dim DeviceManager as new WIADeviceManager1MBS

if 0 = DeviceManager.Handle then
MsgBox "Failed to initialize device manager."
else
MsgBox "OK"
end if

3.7.4 CreateDevice(DeviceID as string) as WIAItemMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Creates a hierarchical tree of WiaItem objects for a Windows Image Acquisition device.
Notes:

DeviceID: Specifies the unique identifier of the WIA device.

Lasterror is set.

Applications use the CreateDevice method to create a device object for the WIA devices specified by the DeviceID parameter.

Returns the WIAItemMBS object for the root item. Applications can use this tree of objects to control and retrieve data from the WIA device.

3.7.5   EnumDeviceInfo(flags as Integer = & h10) as WIADeviceInfoEnumeratorMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Creates an enumerator of property information for each available Windows Image Acquisition device.
Example:

dim DeviceManager1 as new WIADeviceManager1MBS

// Enumerate all local devices
dim e as WIADeviceInfoEnumeratorMBS = DeviceManager1.EnumDeviceInfo(DeviceManager1.kEnumLocal)
if e<>Nil then

dim p as WIAPropertyStorageMBS = e.NextItem
while p<>Nil

// display the name of the device in a listbox
Listbox1.AddFolder p.Read(p.kDevicePropertyDevNameString)

p = e.NextItem
wend
end if

Notes:

Flags: Specifies the types of WIA devices to enumerate. Should be set to kEnumLocal.
Lasterror is set.

3.7.6   GetImageDialog(parentWindow as window, DeviceType as Integer, Flags as Integer, Intent as Integer, file as folderitem, rootitem as WIAItemMBS=nil)

Plugin Version: 10.3, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Function:** The GetImageDialog method displays one or more dialog boxes that enable a user to acquire an image from a Windows Image Acquisition (WIA) device and write the image to a specified file.
Notes:

Lasterror is set.

This method combines the functionality of SelectDeviceDialog to completely encapsulate image acquisition within a single API call.

parentWindowHandle: Handle of the window that owns the Get Image dialog box.
DeviceType: Specifies which type of WIA device to use. Is set to kDeviceTypeDefault, kDeviceTypeScanner,

or kDeviceTypeDigitalCamera.

Flags: Specifies dialog box behavior. Can be set to the following constants: kSelectDeviceNoDefault, kDeviceDialogUseCommonUI and kDeviceDialogSingleImage.

Intent: Specifies what type of data the image is intended to represent. Use kIntent* constants.

rootitem: Returns the interface of the hierarchical tree of WiaItem objects returned by CreateDevice.

file: Specifies the name of the file to which the image data is written.

Invoking this method displays a dialog box that enables users to acquire images. It can also display the Select Device dialog box created by the SelectDeviceDlg method.

If the application passes nil for the value of the rootitem parameter, GetImageDlg displays the Select Device dialog box that lets the user select the WIA input device. If the application specifies a WIA input device by passing a pointer to the device's item tree through the pItemRoot parameter, GetImageDlg does not display the Select Device dialog box. Instead, it will use the specified input device to acquire the image.

When using the Select Device dialog box, applications can specify types of WIA input devices. To do so, they must set the rootitem parameter to NULL and pass the appropriate constants through the DeviceType parameter. If more than one device of the specified type is present, the GetImageDlg displays the Select Device dialog box to let the user select which device will be used.

If GetImageDlg finds only one matching device, it will not display the Select Device dialog box. Instead, it will select the matching device. You can override this behavior and force GetImageDlg to display the Select Device dialog box by passing kSelectDeviceNoDefault as the value for the lFlags parameter.

It is recommended that applications make device and image selection available through a menu item named From scanner or camera on the File menu.

The dialog must have sufficient rights to the folder for file that it can save the file with a unique file name. The folder should also be protected with an access control list (ACL) because it contains user data.

See also:

3.7.7 GetImageDialog(parentWindowHandle as Integer, DeviceType as Integer, Flags as Integer, Intent as Integer, file as folderitem, rootitem as WIAItemMBS=nil)

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The GetImageDialog method displays one or more dialog boxes that enable a user to acquire an image from a Windows Image Acquisition (WIA) device and write the image to a specified file.

Notes:

Lasterror is set.

This method combines the functionality of SelectDeviceDialog to completely encapsulate image acquisition within a single API call.

parentWindowHandle: Handle of the window that owns the Get Image dialog box.
DeviceType: Specifies which type of WIA device to use. Is set to kDeviceTypeDefault, kDeviceTypeScanner, or kDeviceTypeDigitalCamera.
Flags: Specifies dialog box behavior. Can be set to the following constants: kSelectDeviceNoDefault, kDeviceDialogUseCommonUI and kDeviceDialogSingleImage.
Intent: Specifies what type of data the image is intended to represent. Use kIntent* constants.
rootitem: Returns the interface of the hierarchical tree of WiaItem objects returned by CreateDevice.
file: Specifies the name of the file to which the image data is written.

Invoking this method displays a dialog box that enables users to acquire images. It can also display the Select Device dialog box created by the SelectDeviceDlg method.

If the application passes nil for the value of the rootitem parameter, GetImageDlg displays the Select Device dialog box that lets the user select the WIA input device. If the application specifies a WIA input device by passing a pointer to the device's item tree through the pItemRoot parameter, GetImageDlg does not display the Select Device dialog box. Instead, it will use the specified input device to acquire the image.

When using the Select Device dialog box, applications can specify types of WIA input devices. To do so, they must set the rootitem parameter to NULL and pass the appropriate constants through the DeviceType parameter. If more than one device of the specified type is present, the GetImageDlg displays the Select Device dialog box to let the user select which device will be used.

If GetImageDlg finds only one matching device, it will not display the Select Device dialog box. Instead, it will select the matching device. You can override this behavior and force GetImageDlg to display the Select Device dialog box by passing kSelectDeviceNoDefault as the value for the lFlags parameter.

It is recommended that applications make device and image selection available through a menu item named From scanner or camera on the File menu.

The dialog must have sufficient rights to the folder for file that it can save the file with a unique file name. The folder should also be protected with an access control list (ACL) because it contains user data.
See also:

3.7.8 SelectDeviceDialog(parentWindow as window, DeviceType as Integer, Flags as Integer) as WIAItemMBS

Plugin Version: 10.3, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Function:** Displays a dialog box that enables the user to select a hardware device for image acquisition.
Example:

dim DeviceManager as new WIADeviceManager1MBS

if 0 = DeviceManager.Handle then
MsgBox "Failed to initialize device manager."
else
dim it as WIAItemMBS = DeviceManager.SelectDeviceDialog(window1, DeviceManager.kDeviceTypeDefault, DeviceManager.kSelectDeviceNoDefault)

if it<>Nil then
dim p as WIAPropertyStorageMBS = it.PropertyStorage
dim name as string = p.Read(p.kItemPropertyItemNameString)
MsgBox name
end if
end if

Notes:

parentWindow: Specifies the parent window of the Select Device dialog box.
DeviceType: Specifies which type of WIA 2.0 device to use. See WIA Device Type Specifiers for a list of possible values.
Flags: Specifies the behavior of the dialog box. The value can be one of the following constants: kSelectDeviceNoDefault
DeviceID: Optional, On output, receives a string which contains the device's identifier string. On input, pass the address of a pointer if this information is needed, or "" if it is not needed.

Returns the WIAItem which was selected.
Lasterror is set.

This method creates and displays the Select Device dialog box so the user can select a WIA device for image acquisition. If a device is successfully selected, the SelectDeviceDialog method creates a hierarchical tree of IWiaItem2 objects for the device. It returns the WiaItemMBS object of the root item.

The application can restrict the devices displayed to the user to particular types by specifying the device types through the DeviceType parameter. If only one device meets the specification, SelectDeviceDialog does not display the Select Device dialog box. Instead it returns the WiaItemMBS tree for the device. You can override this behavior and force SelectDeviceDialog to display the dialog box by specifying kSelectDeviceNoDefault as the value for the Flags parameter. If more than one WIA device matches the specification, all matching devices are displayed in the Select Device dialog box so the user may choose one.

It is recommended that applications make device and image selection available through a menu item named From scanner on the File menu.
See also:

3.7.9   SelectDeviceDialog(parentWindow as window, DeviceType as Integer, Flags as Integer, byref DeviceID as string) as WIAItemMBS

Plugin Version: 10.3, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Function:** Displays a dialog box that enables the user to select a hardware device for image acquisition.
Notes:

parentWindow: Specifies the parent window of the Select Device dialog box.
DeviceType: Specifies which type of WIA 2.0 device to use. See WIA Device Type Specifiers for a list of possible values.
Flags: Specifies the behavior of the dialog box. The value can be one of the following constants: kSelectDeviceNoDefault
DeviceID: Optional, On output, receives a string which contains the device's identifier string. On input, pass the address of a pointer if this information is needed, or ”” if it is not needed.

Returns the WIAItem which was selected.
Lasterror is set.

This method creates and displays the Select Device dialog box so the user can select a WIA device for image acquisition. If a device is successfully selected, the SelectDeviceDialog method creates a hierarchical tree of IWiaItem2 objects for the device. It returns the WiaItemMBS object of the root item.

The application can restrict the devices displayed to the user to particular types by specifying the device types through the DeviceType parameter. If only one device meets the specification, SelectDeviceDialog does not display the Select Device dialog box. Instead it returns the WiaItemMBS tree for the device. You can override this behavior and force SelectDeviceDialog to display the dialog box by specifying kSelectDeviceNoDefault as the value for the Flags parameter. If more than one WIA device matches the specification, all matching devices are displayed in the Select Device dialog box so the user may choose one.

It is recommended that applications make device and image selection available through a menu item named From scanner on the File menu.

See also:

3.7.10   SelectDeviceDialog(parentWindowHandle as Integer, DeviceType as Integer, Flags as Integer) as WIAItemMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Displays a dialog box that enables the user to select a hardware device for image acquisition.
Notes:

parentWindow: Specifies the parent window of the Select Device dialog box.
DeviceType: Specifies which type of WIA 2.0 device to use. See WIA Device Type Specifiers for a list of possible values.
Flags: Specifies the behavior of the dialog box. The value can be one of the following constants: kSelectDeviceNoDefault
DeviceID: Optional, On output, receives a string which contains the device's identifier string. On input, pass the address of a pointer if this information is needed, or ”” if it is not needed.

Returns the WIAItem which was selected.
Lasterror is set.

This method creates and displays the Select Device dialog box so the user can select a WIA device for image acquisition. If a device is successfully selected, the SelectDeviceDialog method creates a hierarchical tree of IWiaItem2 objects for the device. It returns the WiaItemMBS object of the root item.

The application can restrict the devices displayed to the user to particular types by specifying the device types through the DeviceType parameter. If only one device meets the specification, SelectDeviceDialog does not display the Select Device dialog box. Instead it returns the WiaItemMBS tree for the device. You can override this behavior and force SelectDeviceDialog to display the dialog box by specifying kSelectDeviceNoDefault as the value for the Flags parameter. If more than one WIA device matches the specification, all matching devices are displayed in the Select Device dialog box so the user may choose one.

It is recommended that applications make device and image selection available through a menu item named From scanner on the File menu.
See also:

3.7.11   SelectDeviceDialog(parentWindowHandle as Integer, DeviceType as Integer, Flags as Integer, byref DeviceID as string) as WIAItemMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Displays a dialog box that enables the user to select a hardware device for image acquisition.
Notes:

parentWindow: Specifies the parent window of the Select Device dialog box.
DeviceType: Specifies which type of WIA 2.0 device to use. See WIA Device Type Specifiers for a list of possible values.
Flags: Specifies the behavior of the dialog box. The value can be one of the following constants: kSelectDeviceNoDefault
DeviceID: Optional, On output, receives a string which contains the device's identifier string. On input, pass the address of a pointer if this information is needed, or ”” if it is not needed.

Returns the WIAItem which was selected.
Lasterror is set.

This method creates and displays the Select Device dialog box so the user can select a WIA device for image acquisition. If a device is successfully selected, the SelectDeviceDialog method creates a hierarchical tree of IWiaItem2 objects for the device. It returns the WiaItemMBS object of the root item.

The application can restrict the devices displayed to the user to particular types by specifying the device types through the DeviceType parameter. If only one device meets the specification, SelectDeviceDialog does not display the Select Device dialog box. Instead it returns the WiaItemMBS tree for the device. You can override this behavior and force SelectDeviceDialog to display the dialog box by specifying kSelectDeviceNoDefault as the value for the Flags parameter. If more than one WIA device matches the specification, all matching devices are displayed in the Select Device dialog box so the user may choose one.

It is recommended that applications make device and image selection available through a menu item named From scanner on the File menu.
See also:

3.7.12 SelectDeviceDialogID(parentWindow as window, DeviceType as Integer, Flags as Integer) as string

Plugin Version: 10.3, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Function:** Displays a dialog box that enables the user to select a hardware device for image acquisition.
Notes:

Lasterror is set.

parentWindow: Specifies the parent window of the Select Device dialog box.
DeviceType: Specifies which type of WIA device to use. See kDeviceType* constants.
Flags: Specifies the behavior of the dialog box. You can pass the following constant: kSelectDeviceNoDefault

Returns the selected DeviceID.

This method creates and displays the Select Device dialog box so the user can select a WIA device for image acquisition. If a device is successfully selected, the SelectDeviceDialogID method retruns its identifier string to the application.

The application can restrict the devices displayed to the user to particular types by specifying the device types through the DeviceType parameter. If only one device meets the specification, SelectDeviceDialogID does not display the Select Device dialog box. Instead it passes the device's identifier string to the application without displaying the dialog box. You can override this behavior and force SelectDeviceDialogID to display the dialog box by passing kSelectDeviceNoDefault as the value for the lFlags parameter. If more than one WIA device matches the specification, all matching devices are displayed in the SelectDevice dialog box so the user may choose one.

Note It is recommended that applications make device and image selection available through a menu item named From scanner on the File menu.
See also:

3.7.13 SelectDeviceDialogID(parentWindowHandle as Integer, DeviceType as Integer, Flags as Integer) as string

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Displays a dialog box that enables the user to select a hardware device for image acquisition.
Notes:

Lasterror is set.

parentWindow: Specifies the parent window of the Select Device dialog box.
DeviceType: Specifies which type of WIA device to use. See kDeviceType* constants.
Flags: Specifies the behavior of the dialog box. You can pass the following constant: kSelectDeviceNoDefault

Returns the selected DeviceID.

This method creates and displays the Select Device dialog box so the user can select a WIA device for image acquisition. If a device is successfully selected, the SelectDeviceDialogID method retruns its identifier string to the application.

The application can restrict the devices displayed to the user to particular types by specifying the device types through the DeviceType parameter. If only one device meets the specification, SelectDeviceDialogID does not display the Select Device dialog box. Instead it passes the device's identifier string to the application without displaying the dialog box. You can override this behavior and force SelectDeviceDialogID to display the dialog box by passing kSelectDeviceNoDefault as the value for the lFlags parameter. If more than one WIA device matches the specification, all matching devices are displayed in the SelectDevice dialog box so the user may choose one.

Note It is recommended that applications make device and image selection available through a menu item named From scanner on the File menu.
See also:

- 3.7.12 SelectDeviceDialogID(parentWindow as window, DeviceType as Integer, Flags as Integer) as string   45

3.7.14   Properties

3.7.15   Handle as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The internal reference to the object.
Notes:

The handle for WIA 1.x.
(Read and Write property)

3.7.16   Lasterror as Integer

Plugin Version: 12.1, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The last error code.
Notes: (Read and Write property)

3.7.17 Constants

3.7.18 kDeviceDialogSingleImage = 2

Plugin Version: 10.3. **Function:** One of the constants for the GetImageDialog method.
Notes:

Restrict image selection to a single image in the device image acquisition dialog box.
Only for WIA 2.x.

3.7.19 kDeviceDialogUseCommonUI = 4

Plugin Version: 10.3. **Function:** One of the constants for the GetImageDialog method.
Notes: Use the system UI, if available, rather than the vendor-supplied UI. If the system UI is not available,
the vendor UI is used. If neither UI is available, the function returns E_NOTIMPL.

3.7.20 kDeviceTypeDefault = 0

Plugin Version: 10.3. **Function:** One of the device type constants.

3.7.21 kDeviceTypeDigitalCamera = 2

Plugin Version: 10.3. **Function:** One of the device type constants.

3.7.22 kDeviceTypeScanner = 1

Plugin Version: 10.3. **Function:** One of the device type constants.

3.7.23 kDeviceTypeStreamingVideo = 3

Plugin Version: 10.3. **Function:** One of the device type constants.

3.7.24   kEnumAll = 15

Plugin Version: 10.3. **Function:** One of the constants for EnumDeviceInfo flags parameter.
Notes: All devices are enumerated, both locally and remote, including inactive (disconnected) devices and legacy STI-only devices.

3.7.25   kEnumLocal = 16

Plugin Version: 10.3. **Function:** One of the constants for EnumDeviceInfo flags parameter.
Notes: Only locally connected active scanner devices are enumerated.

3.7.26   kIntentBestPreview = & h40000

Plugin Version: 10.3. **Function:** One of the intent constants for GetImageDialog.
Notes: Specifies the best quality preview.

3.7.27   kIntentImageTypeColor = 1

Plugin Version: 10.3. **Function:** One of the intent constants for GetImageDialog.
Notes: Preset properties for color content.

3.7.28   kIntentImageTypeGrayscale = 2

Plugin Version: 10.3. **Function:** One of the intent constants for GetImageDialog.
Notes: Preset properties for grayscale content.

3.7.29   kIntentImageTypeMask = & hF

Plugin Version: 10.3. **Function:** One of the intent constants for GetImageDialog.
Notes: Mask for all of the image type flags.

3.7.30   kIntentImageTypeText = 4

Plugin Version: 10.3. **Function:** One of the intent constants for GetImageDialog.
Notes: Preset properties for text content.

3.7.31   kIntentMaximizeQuality = & h20000

Plugin Version: 10.3. **Function:** One of the intent constants for GetImageDialog.
Notes: Preset properties to maximize image quality.

3.7.32   kIntentMinimizeSize = & h10000

Plugin Version: 10.3. **Function:** One of the intent constants for GetImageDialog.
Notes: Preset properties to minimize image size.

3.7.33   kIntentNone = 0

Plugin Version: 10.3. **Function:** One of the intent constants for GetImageDialog.
Notes: Default value. Do not preset any properties.

3.7.34   kIntentSizeMask = & hF0000

Plugin Version: 10.3. **Function:** One of the intent constants for GetImageDialog.
Notes: Mask for all of the size/quality flags.

3.7.35   kSelectDeviceNoDefault = 1

Plugin Version: 10.3. **Function:** One of the constants for the GetImageDialog method.
Notes:

Force this method to display the Select Device dialog box.
Only for WIA 2.x.

3.8   class WIADeviceManager2MBS

3.8.1   class WIADeviceManager2MBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The WIADevice-Manager2MBS interface is used to create and manage image acquisition devices and to register to receive device events.
Notes: WIA 2.x is available on Windows Vista and newer.

3.8.2   Methods

3.8.3   Constructor

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Creates a new WIA 2.0 manager object.
Example:

dim DeviceManager as new WIADeviceManager2MBS

if 0 = DeviceManager.Handle then
MsgBox "Failed to initialize device manager."
else
MsgBox "OK"
end if

3.8.4   CreateDevice(DeviceID as string) as WIAItemMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Creates a hierarchical tree of WiaItem objects for a Windows Image Acquisition device.
Notes:

DeviceID: Specifies the unique identifier of the WIA device.

Lasterror is set.

Applications use the CreateDevice method to create a device object for the WIA devices specified by the DeviceID parameter.

Returns the WIAItemMBS object for the root item. Applications can use this tree of objects to control and retrieve data from the WIA device.

3.8.5 EnumDeviceInfo(flags as Integer = & h10) as WIADeviceInfoEnumeratorMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Creates an enumerator of property information for each available Windows Image Acquisition device.
Example:

dim DeviceManager2 as new WIADeviceManager2MBS

// Enumerate all local devices
dim e as WIADeviceInfoEnumeratorMBS = DeviceManager2.EnumDeviceInfo(DeviceManager2.kEnumLocal)
if e<>Nil then

dim p as WIAPropertyStorageMBS = e.NextItem
while p<>Nil

// display the name of the device in a listbox
Listbox1.AddFolder p.Read(p.kDevicePropertyDevNameString)

p = e.NextItem
wend
end if

Notes:

Flags: Specifies the types of WIA devices to enumerate. Should be set to kEnumLocal or kEnumAll.
Lasterror is set.

3.8.6 GetImageDialog(Flags as Integer, DeviceID as string, parentWindow as window, FolderName as String, Filename as String, byref item as WIAItemMBS) as string()

Plugin Version: 10.3, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Function:** The GetImageDialog method displays one or more dialog boxes that enable a user to acquire an image from a Windows Image Acquisition (WIA) 2.0 device and write the image to a specified file. This method extends the functionality of SelectDeviceDlg to encapsulate image acquisition within a single API call.
Notes:

Lasterror is set.

Flags: Specifies dialog box behavior. Can be set to the following values: kDeviceDialogUseCommonUI
DeviceID: Specifies the scanner to use.
parentWindowHandle: A handle of the window that owns the Get Image dialog box.

FolderName: Specifies the name of the folder ito store the scanned files in.
Filename: Specifies the name of the file to write the image data to.
item: The variable to return the WiaItem that the images were scanned from.

Returns an array with paths to the files that have been scanned.

If the application passes an emapty string for the value of the DeviceID parameter, GetImageDialog displays the Select Device dialog box so that the user can select the WIA 2.0 input device.

Use a menu item named From scanner on the File menu so that device and image selections are available in your application.

The dialog box must have sufficient rights to FolderName so that it can save the files with unique file names. Protect the folder with an access control list (ACL) because it contains user data.
See also:

3.8.7   GetImageDialog(Flags as Integer, DeviceID as string, parentWindowHandle as Integer, FolderName as String, Filename as String, byref item as WIAItemMBS) as string()

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The GetImageDialog method displays one or more dialog boxes that enable a user to acquire an image from a Windows Image Acquisition (WIA) 2.0 device and write the image to a specified file. This method extends the functionality of SelectDeviceDlg to encapsulate image acquisition within a single API call.
Notes:

Lasterror is set.

Flags: Specifies dialog box behavior. Can be set to the following values: kDeviceDialogUseCommonUI
DeviceID: Specifies the scanner to use.
parentWindowHandle: A handle of the window that owns the Get Image dialog box.
FolderName: Specifies the name of the folder ito store the scanned files in.
Filename: Specifies the name of the file to write the image data to.
item: The variable to return the WiaItem that the images were scanned from.

Returns an array with paths to the files that have been scanned.

If the application passes an empty string for the value of the DeviceID parameter, GetImageDialog displays the Select Device dialog box so that the user can select the WIA 2.0 input device.

Use a menu item named From scanner on the File menu so that device and image selections are available in your application.

The dialog box must have sufficient rights to FolderName so that it can save the files with unique file names. Protect the folder with an access control list (ACL) because it contains user data.
See also:

- 3.8.6 GetImageDialog(Flags as Integer, DeviceID as string, parentWindow as window, FolderName as String, Filename as String, byref item as WIAItemMBS) as string() 51

3.8.8 SelectDeviceDialog(parentWindow as window, DeviceType as Integer, Flags as Integer) as WIAItemMBS

Plugin Version: 10.3, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Function:** Displays a dialog box that enables the user to select a hardware device for image acquisition.
Example:

dim DeviceManager as new WIADeviceManager2MBS

if 0 = DeviceManager.Handle then
MsgBox "Failed to initialize device manager."
else
dim it as WIAItemMBS = DeviceManager.SelectDeviceDialog(window1, DeviceManager.kDeviceTypeDefault, DeviceManager.kSelectDeviceNoDefault)

if it<>Nil then
dim p as WIAPropertyStorageMBS = it.PropertyStorage
dim name as string = p.Read(p.kItemPropertyItemNameString)
MsgBox name
end if
end if

Notes:

parentWindow: Specifies the parent window of the Select Device dialog box.
DeviceType: Specifies which type of WIA 2.0 device to use. See WIA Device Type Specifiers for a list of possible values.
Flags: Specifies the behavior of the dialog box. The value can be one of the following constants: kSelectDeviceNoDefault
DeviceID: Optional, On output, receives a string which contains the device's identifier string. On input, pass the address of a pointer if this information is needed, or "" if it is not needed.

Returns the WIAItem which was selected.
Lasterror is set.

This method creates and displays the Select Device dialog box so the user can select a WIA device for image acquisition. If a device is successfully selected, the SelectDeviceDialog method creates a hierarchical tree of IWiaItem2 objects for the device. It returns the WiaItemMBS object of the root item.

The application can restrict the devices displayed to the user to particular types by specifying the device types through the DeviceType parameter. If only one device meets the specification, SelectDeviceDialog does not display the Select Device dialog box. Instead it returns the WiaItemMBS tree for the device. You can override this behavior and force SelectDeviceDialog to display the dialog box by specifying kSelectDeviceNoDefault as the value for the Flags parameter. If more than one WIA device matches the specification, all matching devices are displayed in the Select Device dialog box so the user may choose one.

It is recommended that applications make device and image selection available through a menu item named From scanner on the File menu.
See also:

3.8.9   SelectDeviceDialog(parentWindow as window, DeviceType as Integer, Flags as Integer, byref DeviceID as string) as WIAItemMBS

Plugin Version: 10.3, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Function:** Displays a dialog box that enables the user to select a hardware device for image acquisition.
Notes:

parentWindow: Specifies the parent window of the Select Device dialog box.
DeviceType: Specifies which type of WIA 2.0 device to use. See WIA Device Type Specifiers for a list of possible values.
Flags: Specifies the behavior of the dialog box. The value can be one of the following constants: kSelectDeviceNoDefault
DeviceID: Optional, On output, receives a string which contains the device's identifier string. On input, pass the address of a pointer if this information is needed, or "" if it is not needed.

Returns the WIAItem which was selected.
Lasterror is set.

This method creates and displays the Select Device dialog box so the user can select a WIA device for image acquisition. If a device is successfully selected, the SelectDeviceDialog method creates a hierarchical tree of IWiaItem2 objects for the device. It returns the WiaItemMBS object of the root item.

The application can restrict the devices displayed to the user to particular types by specifying the device types through the DeviceType parameter. If only one device meets the specification, SelectDeviceDialog does not display the Select Device dialog box. Instead it returns the WiaItemMBS tree for the device. You can override this behavior and force SelectDeviceDialog to display the dialog box by specifying kSelectDeviceNoDefault as the value for the Flags parameter. If more than one WIA device matches the specification, all matching devices are displayed in the Select Device dialog box so the user may choose one.

It is recommended that applications make device and image selection available through a menu item named From scanner on the File menu.
See also:

3.8.10 SelectDeviceDialog(parentWindowHandle as Integer, DeviceType as Integer, Flags as Integer) as WIAItemMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Displays a dialog box that enables the user to select a hardware device for image acquisition.
Notes:

parentWindow: Specifies the parent window of the Select Device dialog box.
DeviceType: Specifies which type of WIA 2.0 device to use. See WIA Device Type Specifiers for a list of possible values.
Flags: Specifies the behavior of the dialog box. The value can be one of the following constants: kSelectDeviceNoDefault
DeviceID: Optional, On output, receives a string which contains the device's identifier string. On input, pass the address of a pointer if this information is needed, or ”” if it is not needed.

Returns the WIAItem which was selected.
Lasterror is set.

This method creates and displays the Select Device dialog box so the user can select a WIA device for image acquisition. If a device is successfully selected, the SelectDeviceDialog method creates a hierarchical tree of IWiaItem2 objects for the device. It returns the WiaItemMBS object of the root item.

The application can restrict the devices displayed to the user to particular types by specifying the device types through the DeviceType parameter. If only one device meets the specification, SelectDeviceDialog does not display the Select Device dialog box. Instead it returns the WiaItemMBS tree for the device. You

can override this behavior and force SelectDeviceDialog to display the dialog box by specifying kSelectDeviceNoDefault as the value for the Flags parameter. If more than one WIA device matches the specification, all matching devices are displayed in the Select Device dialog box so the user may choose one.

It is recommended that applications make device and image selection available through a menu item named From scanner on the File menu.
See also:

3.8.11   SelectDeviceDialog(parentWindowHandle as Integer, DeviceType as Integer, Flags as Integer, byref DeviceID as string) as WIAItemMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Displays a dialog box that enables the user to select a hardware device for image acquisition.
Notes:

parentWindow: Specifies the parent window of the Select Device dialog box.
DeviceType: Specifies which type of WIA 2.0 device to use. See WIA Device Type Specifiers for a list of possible values.
Flags: Specifies the behavior of the dialog box. The value can be one of the following constants: kSelectDeviceNoDefault
DeviceID: Optional, On output, receives a string which contains the device's identifier string. On input, pass the address of a pointer if this information is needed, or "" if it is not needed.

Returns the WIAItem which was selected.
Lasterror is set.

This method creates and displays the Select Device dialog box so the user can select a WIA device for image acquisition. If a device is successfully selected, the SelectDeviceDialog method creates a hierarchical tree of IWiaItem2 objects for the device. It returns the WiaItemMBS object of the root item.

The application can restrict the devices displayed to the user to particular types by specifying the device types through the DeviceType parameter. If only one device meets the specification, SelectDeviceDialog does not display the Select Device dialog box. Instead it returns the WiaItemMBS tree for the device. You can override this behavior and force SelectDeviceDialog to display the dialog box by specifying kSelectDeviceNoDefault as the value for the Flags parameter. If more than one WIA device matches the specification, all matching devices are displayed in the Select Device dialog box so the user may choose one.

It is recommended that applications make device and image selection available through a menu item named From scanner on the File menu.
See also:

- 3.8.8 SelectDeviceDialog(parentWindow as window, DeviceType as Integer, Flags as Integer) as WIAItemMBS 53

- 3.8.9 SelectDeviceDialog(parentWindow as window, DeviceType as Integer, Flags as Integer, byref DeviceID as string) as WIAItemMBS 54

- 3.8.10 SelectDeviceDialog(parentWindowHandle as Integer, DeviceType as Integer, Flags as Integer) as WIAItemMBS 55

3.8.12 SelectDeviceDialogID(parentWindow as window, DeviceType as Integer, Flags as Integer) as string

Plugin Version: 10.3, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Function:** Displays a dialog box that enables the user to select a hardware device for image acquisition.
Notes:

Lasterror is set.

parentWindow: Specifies the parent window of the Select Device dialog box.
DeviceType: Specifies which type of WIA device to use. See kDeviceType* constants.
Flags: Specifies the behavior of the dialog box. You can pass the following constant: kSelectDeviceNoDefault

Returns the selected DeviceID.

This method creates and displays the Select Device dialog box so the user can select a WIA device for image acquisition. If a device is successfully selected, the SelectDeviceDialogID method retruns its identifier string to the application.

The application can restrict the devices displayed to the user to particular types by specifying the device types through the DeviceType parameter. If only one device meets the specification, SelectDeviceDialogID does not display the Select Device dialog box. Instead it passes the device's identifier string to the application without displaying the dialog box. You can override this behavior and force SelectDeviceDialogID to display the dialog box by passing kSelectDeviceNoDefault as the value for the lFlags parameter. If more than one WIA device matches the specification, all matching devices are displayed in the SelectDevice dialog box so the user may choose one.

Note It is recommended that applications make device and image selection available through a menu item named From scanner on the File menu.
See also:

3.8.13   SelectDeviceDialogID(parentWindowHandle as Integer, DeviceType as Integer, Flags as Integer) as string

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Displays a dialog box that enables the user to select a hardware device for image acquisition.
Notes:

Lasterror is set.

parentWindow: Specifies the parent window of the Select Device dialog box.
DeviceType: Specifies which type of WIA device to use. See kDeviceType* constants.
Flags: Specifies the behavior of the dialog box. You can pass the following constant: kSelectDeviceNoDefault

Returns the selected DeviceID.

This method creates and displays the Select Device dialog box so the user can select a WIA device for image acquisition. If a device is successfully selected, the SelectDeviceDialogID method retruns its identifier string to the application.

The application can restrict the devices displayed to the user to particular types by specifying the device types through the DeviceType parameter. If only one device meets the specification, SelectDeviceDialogID does not display the Select Device dialog box. Instead it passes the device's identifier string to the application without displaying the dialog box. You can override this behavior and force SelectDeviceDialogID to display the dialog box by passing kSelectDeviceNoDefault as the value for the lFlags parameter. If more than one WIA device matches the specification, all matching devices are displayed in the SelectDevice dialog box so the user may choose one.

Note It is recommended that applications make device and image selection available through a menu item named From scanner on the File menu.
See also:

3.8.14   Properties

3.8.15   Handle as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The internal reference to the object.

Notes:

The handle for WIA 2.x.
(Read and Write property)

3.8.16 Lasterror as Integer

Plugin Version: 12.1, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The last error code.
Notes: (Read and Write property)

3.8.17 Constants

3.8.18 kDeviceDialogSingleImage = 2

Plugin Version: 10.3. **Function:** One of the constants for the GetImageDialog method.
Notes:

Restrict image selection to a single image in the device image acquisition dialog box.
Only for WIA 2.x.

3.8.19 kDeviceDialogUseCommonUI = 4

Plugin Version: 10.3. **Function:** One of the constants for the GetImageDialog method.
Notes: Use the system UI, if available, rather than the vendor-supplied UI. If the system UI is not available,
the vendor UI is used. If neither UI is available, the function returns E_NOTIMPL.

3.8.20 kDeviceTypeDefault = 0

Plugin Version: 10.3. **Function:** One of the device type constants.

3.8.21 kDeviceTypeDigitalCamera = 2

Plugin Version: 10.3. **Function:** One of the device type constants.

3.8.22   kDeviceTypeScanner = 1

Plugin Version: 10.3. **Function:** One of the device type constants.

3.8.23   kDeviceTypeStreamingVideo = 3

Plugin Version: 10.3. **Function:** One of the device type constants.

3.8.24   kEnumAll = 15

Plugin Version: 10.3. **Function:** One of the constants for EnumDeviceInfo flags parameter.
Notes: All devices are enumerated, both locally and remote, including inactive (disconnected) devices and legacy STI-only devices.

3.8.25   kEnumLocal = 16

Plugin Version: 10.3. **Function:** One of the constants for EnumDeviceInfo flags parameter.
Notes: Only locally connected active scanner devices are enumerated.

3.8.26   kIntentBestPreview = & h40000

Plugin Version: 10.3. **Function:** One of the intent constants for GetImageDialog.
Notes: Specifies the best quality preview.

3.8.27   kIntentImageTypeColor = 1

Plugin Version: 10.3. **Function:** One of the intent constants for GetImageDialog.
Notes: Preset properties for color content.

3.8.28   kIntentImageTypeGrayscale = 2

Plugin Version: 10.3. **Function:** One of the intent constants for GetImageDialog.
Notes: Preset properties for grayscale content.

3.8.29 kIntentImageTypeMask = & hF

Plugin Version: 10.3. **Function:** One of the intent constants for GetImageDialog.
Notes: Mask for all of the image type flags.

3.8.30 kIntentImageTypeText = 4

Plugin Version: 10.3. **Function:** One of the intent constants for GetImageDialog.
Notes: Preset properties for text content.

3.8.31 kIntentMaximizeQuality = & h20000

Plugin Version: 10.3. **Function:** One of the intent constants for GetImageDialog.
Notes: Preset properties to maximize image quality.

3.8.32 kIntentMinimizeSize = & h10000

Plugin Version: 10.3. **Function:** One of the intent constants for GetImageDialog.
Notes: Preset properties to minimize image size.

3.8.33 kIntentNone = 0

Plugin Version: 10.3. **Function:** One of the intent constants for GetImageDialog.
Notes: Default value. Do not preset any properties.

3.8.34 kIntentSizeMask = & hF0000

Plugin Version: 10.3. **Function:** One of the intent constants for GetImageDialog.
Notes: Mask for all of the size/quality flags.

3.8.35 kSelectDeviceNoDefault = 1

Plugin Version: 10.3. **Function:** One of the constants for the GetImageDialog method.
Notes: Force this method to display the Select Device dialog box.

3.9   class WIAExtendedTransferInfoMBS

3.9.1   class WIAExtendedTransferInfoMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The WIAExtendedTransferInfoMBS class specifies extended transfer information for the GetExtendedTransferInfo method.
Notes: Requires Windows 2000 Professional, Windows XP or Windows Server 2003.

3.9.2   Properties

3.9.3   MaxBufferSize as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Driver-recommended maximum buffer size the application could request in a call to GetBandedData.
Notes:

Going over this limit is not detrimental, however, the driver can simply not use the whole buffer and limit each band of data to this maximum size.
(Read and Write property)

3.9.4   MinBufferSize as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Minimum buffer size the application should request in a call to GetBandedData.
Notes: (Read and Write property)

3.9.5   NumBuffers as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** This value is not used and should be ignored.
Notes: (Read and Write property)

3.9.6   OptimalBufferSize as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Driver-recommended buffer size the application should request in a call to GetBandedData.
Notes: (Read and Write property)

3.9.7 Size as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Size of this structure.
Notes: (Read and Write property)

3.10 class WIAFormatInfoEnumeratorMBS

3.10.1 class WIAFormatInfoEnumeratorMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Use the WIAFormatInfoEnumeratorMBS class to enumerate the format and media type information for a device.

3.10.2 Methods

3.10.3 Clone as WIAFormatInfoEnumeratorMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Clones this enumerator.
Notes: Lasterror is set.

3.10.4 Count as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Returns the number of elements stored by this enumerator.
Notes: Lasterror is set.

3.10.5 NextItem as WIAFormatInfoMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Returns the next item in the enumeration.

3.10.6 Reset

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Resets the enumerator.
Notes: Lasterror is set.

3.10.7 Skip(celt as Integer)

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Skips the specified number of structures in the enumeration.

Notes: Lasterror is set.

3.10.8 Properties

3.10.9 Handle as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The internal reference to the object.
Notes: (Read and Write property)

3.10.10 Lasterror as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The last error code.
Notes: (Read and Write property)

3.11   class WIAFormatInfoMBS

3.11.1   class WIAFormatInfoMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The WIAFormat-
InfoMBS class specifies valid format and media type pairs for a device.
Notes: Requires Windows 2000 Professional, Windows XP or Windows Server 2003.

3.11.2   Properties

3.11.3   FormatID as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** GUID that identifies
the format.
Notes: (Read and Write property)

3.11.4   Tymed as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The media type
that corresponds to the guidFormatID member.
Notes: (Read and Write property)

3.12 class WIAGUIDMBS

3.12.1 class WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The class for a Windows unique ID.
Example:

dim w as WIAGUIDMBS = WIAPropertyStorageMBS.kImageFormatTIFF

MsgBox w.DisplayString

Notes: If you need to validate a GUID or UUID, please check the IsGUID function in our FAQ.

3.12.2 Methods

3.12.3 Constructor

Plugin Version: 11.1, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Creates a GUID with only zeros.
Example:

dim g as new WIAGUIDMBS

MsgBox g.DisplayString

See also:

3.12.4 Constructor(value1 as Integer, value2 as Integer, value3 as Integer, value4 as Integer, value5 as Integer, value6 as Integer, value7 as Integer, value8 as Integer, value9 as Integer, value10 as Integer, value11 as Integer, value12 as Integer, value13 as Integer, value14 as Integer, value15 as Integer, value16 as Integer)

Plugin Version: 11.1, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Creates a new GUID with the given byte values.

Example:

dim g as new WIAGUIDMBS(& h14, & h3e, & h4e, & h83, & h64, & h97, & h11, & hd2, & ha2, & h31, & h00, & hc0, & h4f, & ha3, & h18, & h09)

MsgBox g.DisplayString

See also:

3.12.5   DisplayString as string

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The ID well formatted.
Example:

dim w as WIAGUIDMBS = WIAPropertyStorageMBS.kImageFormatTIFF

MsgBox w.DisplayString

3.12.6   Equal(other as WIAGUIDMBS) as boolean

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Checks whether two GUIDs are equal.
Example:

dim w as WIAGUIDMBS = WIAPropertyStorageMBS.kImageFormatTIFF
dim v as WIAGUIDMBS = WIAPropertyStorageMBS.kImageFormatTIFF

if w.Equal(v) then
MsgBox "Equal, right."
else
MsgBox "not equal, a bug."
end if

v = WIAPropertyStorageMBS.kImageFormatBMP

if w.Equal(v) then
MsgBox "Equal, a bug."
else
MsgBox "not equal, right."
end if

Notes: Returns true if both items are equals.

3.12.7 Properties

3.12.8 Byte(index as Integer) as Integer

Plugin Version: 11.1, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Read or write the byte value.
Example:

dim g as new WIAGUIDMBS

g.Byte(1) = 65

MsgBox str(g.Byte(1)) // shows 65

Notes: (Read and Write computed property)

3.12.9 Data as string

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The UID as binary string.
Example:

dim w as WIAGUIDMBS = WIAPropertyStorageMBS.kImageFormatTIFF
MsgBox EncodeBase64(w.Data)

Notes: (Read and Write computed property)

3.13   class WIAItemEnumeratorMBS

3.13.1   class WIAItemEnumeratorMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The WIAItemEnumeratorMBS class is used by applications to enumerate WiaItemMBS objects in the tree's current folder.
Example:

Sub EnumerateItems(root as WIAItemMBS)
dim e as WIAItemEnumeratorMBS = Root.EnumerateChildItems

if e<>Nil then
dim it as WIAItemMBS = e.NextItem

while it<>nil

// do something with item

it = e.NextItem
wend

end if
End Sub

Notes: The Windows Image Acquisition (WIA) run-time system represents every WIA hardware device to applications as a hierarchical tree of WiaItemMBS objects.

3.13.2   Methods

3.13.3   Clone as WIAItemEnumeratorMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Creates an additional instance of the WIAItemEnumeratorMBS object.
Notes: Lasterror is set.

3.13.4   Count as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Returns the number of elements stored by this enumerator.
Notes: Lasterror is set.

3.13.5 NextItem as WIAItemMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Returns the next item in the enumeration.
Example:

```
Sub EnumerateItems(root as WIAItemMBS)
dim e as WIAItemEnumeratorMBS = Root.EnumerateChildItems

if e<>Nil then
dim it as WIAItemMBS = e.NextItem

while it<>nil

// do something with item

it = e.NextItem
wend

end if
End Sub
```

Notes: Lasterror is set.

3.13.6 Reset

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Resets the enumeration.
Notes: Lasterror is set.

3.13.7 Skip(celt as Integer)

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Skips the specified number of items during an enumeration of available WiaItemMBS objects.
Notes: Lasterror is set.

3.13.8   Properties

3.13.9   Handle as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The internal reference to the object.
Notes:

The handle for WIA 1.x or 2.x.
(Read and Write property)

3.13.10   Handle1 as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The internal reference to the object.
Notes:

The handle for WIA 1.x.
(Read and Write property)

3.13.11   Handle2 as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The internal reference to the object.
Notes:

The handle for WIA 2.x.
(Read and Write property)

3.13.12   Lasterror as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The last error code.
Notes: (Read and Write property)

3.14   class WIAItemMBS

3.14.1   class WIAItemMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The class for an item.
Notes:

Each Windows Image Acquisition (WIA) hardware device is represented to an application as a hierarchical tree of WiaItem objects. The WiaItem interface provides applications with the ability to query devices to discover their capabilities. It also provides access to data transfer interfaces and item properties. In addition, the WiaItem interface provides methods to enable applications to control the device.

This class encapsulates transparently the system classes for WIA 1.x and 2.x.

3.14.2   Methods

3.14.3   AnalyzeItem

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The AnalyzeItem method causes the Windows Image Acquisition (WIA) hardware device to acquire and try to detect what data types are present.
Notes:

This method is used with scanners to detect what type of data is on a page. When an application calls this method, the WIA hardware device driver scans and analyzes the current page. For each data type it detects, it creates an WiaItem object to represent the region on the page the data occupies.

Image processing and OCR software can use this capability to detect graphics and text on a page. This method adds the regions it creates into the WIA device's WiaItem tree. The application can select the individual regions and use the standard data transfer methods to acquire data from them.

If necessary, applications can override the regions created by this method.

Works only on WIA 1.x.
Lasterror is set.

3.14.4   CreateChildItem(ItemFlags as Integer, CreationFlags as Integer, Item-Name as string, FullItemName as string) as WIAItemMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The CreateChildItem method is used by applications to add WiaItem objects to the WiaItem tree of a device.
Notes:

ItemFlags: Specifies the WIA item type.
CreationFlags: Specifies how to create the new item. Only for WIA 2.x. Can be 0 to set the default values for the properties of the child. Can be & H40000000 to copy the values of all Read/Write properties from the parent.
ItemName: Specifies the WIA item name, such as "Top". You can think of this parameter as being equivalent to a file name.
FullItemName: Specifies the full WIA item name. You can think of this parameter as equivalent to a full path to a file, such as "003\Root\Top". Only for WIA 1.x.

Lasterror is set.
Returns nil on any error and the new item object on success.

Some WIA hardware devices allow applications to create new items in the WiaItem tree that represents the device. Applications must test the devices to see if they support this capability. Use the EnumerateDevice-Capabilities function to enumerate the current device's capabilities.

If the device allows the creation of new items in the WiaItem tree, invoking CreateChildItem creates a new WiaItem that is a child of the current node.

3.14.5   DataTransfer as WIADataTransferMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Creates a Data transfer object.
Notes:

Lasterror is set.
Only for WIA 1.x.
Returns nil on any error.

3.14.6   DeleteItem

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Removes the current IWiaItem object from the object tree of the device.
Notes:

Lasterror is set.

Available on both WIA 1.x and 2.x.

The Windows Image Acquisition (WIA) run-time system represents each WIA hardware device connected to the user's computer as a hierarchical tree of IWiaItem objects. A given WIA device may or may not allow applications to delete IWiaItem objects from its tree. Use the EnumerateDeviceCapabilities function to query the device for item deletion capability.

If the device supports item deletion in its WiaItem tree, invoke the DeleteItem method to remove the WiaItem object. Note that this method will only delete an object after all references to the object have been released.

3.14.7 DeviceCommand(command as WIAGUIDMBS) as WIAItemMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Issues a command to a Windows Image Acquisition (WIA) hardware device.
Example:

dim targetItem as WIAItemMBS // your item
dim resultItem as WIAItemMBS
resultItem = targetItem.DeviceCommand(targetItem.kCommandTakePicture)

Notes:

Command: Specifies the command to send to the WIA 2.0 device. See kCommand* constants.
Works with WIA 1.x and 2.x.

Applications use this method to send WIA commands to hardware devices.

When the application sends the kCommandTakePicture command to the device, the WIA run-time system creates the WiaItem object to represent the image. The DeviceCommand method returns this new WIAItemMBS object.

3.14.8 DeviceDialog(Flags as Integer, Win as window, FolderName as string, Filename as string, paths() as string, items() as WIAItemMBS)

Plugin Version: 10.3, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Function:** Displays a dialog box to the user to prepare for image acquisition.
Notes:

Lasterror is set.
Only for WIA 2.x.

Flags: Specifies a set of flags that control the dialog box's operation. The value can be either 0 to represent the default behavior or any of the following flags: kDeviceDialogSingleImage, kDeviceDialogUseCommonUI and kSelectDeviceNoDefault
Win: A handle to the parent window.
FolderName: Specifies the folder name where the files are to be transferred.
Filename: Specifies the template file name.
paths: An array to be filled with the file paths.
items: An array to be filled with the wia item objects.

This method displays a dialog box to the user that an application uses to gather all the information required for image acquisition. It is also used to specify image scan properties such as brightness and contrast.

After this method returns, the application can use the WiaTransferMBS class to acquire the image.
See also:

3.14.9   DeviceDialog(Flags as Integer, WindowHandle as Integer, FolderName as string, Filename as string, paths() as string, items() as WIAItemMBS)

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Displays a dialog box to the user to prepare for image acquisition.
Notes:

Lasterror is set.
Only for WIA 2.x.

Flags: Specifies a set of flags that control the dialog box's operation. The value can be either 0 to represent the default behavior or any of the following flags: kDeviceDialogSingleImage, kDeviceDialogUseCommonUI and kSelectDeviceNoDefault
WindowHandle: A handle to the parent window.
FolderName: Specifies the folder name where the files are to be transferred.
Filename: Specifies the template file name.
paths: An array to be filled with the file paths.
items: An array to be filled with the wia item objects.

This method displays a dialog box to the user that an application uses to gather all the information required for image acquisition. It is also used to specify image scan properties such as brightness and contrast.

After this method returns, the application can use the WiaTransferMBS class to acquire the image.
See also:

3.14.10 DeviceDialog(Win as window, Flags as Integer, Intent as Integer) as WIAItemMBS()

Plugin Version: 10.3, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Function:** The DeviceDialog method is used by applications to display a dialog box to the user to prepare for image acquisition.
Notes:

win: Handle of the parent window of the dialog box.
Flags: Specifies a set of flags that control the dialog box's operation. Can be set to any of the following values: kDeviceDialogUseCommonUI and kDeviceDialogSingleImage.
Intent: Specifies what type of data the image is intended to represent. For a list of image intent values, kIntent* constants.

Lasterror is set.
Only for WIA 1.x.

This method displays a dialog box to the user that an application uses to gather all the information required for image acquisition. For instance, this dialog box enables the user to select images to download from a camera. When using a scanner, it is also used to specify image scan properties such as brightness and contrast.

After this method returns, the application can use the WiaDataTransferMBS interface to acquire the image.

It is recommended that applications make device and image selection available through a menu item named From scanner or camera on the File menu.
See also:

3.14.11 DeviceDialog(WindowHandle as Integer, Flags as Integer, Intent as Integer) as WIAItemMBS()

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The DeviceDialog method is used by applications to display a dialog box to the user to prepare for image acquisition.
Notes:

WindowHandle: Handle of the parent window of the dialog box.
Flags: Specifies a set of flags that control the dialog box's operation. Can be set to any of the following values: kDeviceDialogUseCommonUI and kDeviceDialogSingleImage.
Intent: Specifies what type of data the image is intended to represent. For a list of image intent values, kIntent* constants.

Lasterror is set.
Only for WIA 1.x.

This method displays a dialog box to the user that an application uses to gather all the information required for image acquisition. For instance, this dialog box enables the user to select images to download from a camera. When using a scanner, it is also used to specify image scan properties such as brightness and contrast.

After this method returns, the application can use the WiaDataTransferMBS interface to acquire the image.

It is recommended that applications make device and image selection available through a menu item named From scanner or camera on the File menu.
See also:

- 3.14.8 DeviceDialog(Flags as Integer, Win as window, FolderName as string, Filename as string, paths() as string, items() as WIAItemMBS) 75

- 3.14.9 DeviceDialog(Flags as Integer, WindowHandle as Integer, FolderName as string, Filename as string, paths() as string, items() as WIAItemMBS) 76

- 3.14.10 DeviceDialog(Win as window, Flags as Integer, Intent as Integer) as WIAItemMBS() 77

3.14.12 EnumerateChildItems(CategoryGUID as WIAGUIDMBS=nil) as WIAItemEnumeratorMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Creates and returns an enumerator object for non-empty folders in a WiaItem tree of a Windows Image Acquisition (WIA) device.
Example:

Sub EnumerateItems(root as WIAItemMBS)
dim e as WIAItemEnumeratorMBS = Root.EnumerateChildItems

if e<>Nil then
dim it as WIAItemMBS = e.NextItem

while it<>nil

// do something with item

it = e.NextItem
wend

end if
End Sub

Notes:

Lasterror is set.
Works for WIA 1.x and WIA 2.x.

CategoryGUID: Specifies a category for which child nodes are enumerated. If nil, then all child nodes are enumerated. This parameter is only used on WIA 2.x.

The WIA run-time system represents each WIA hardware device as a hierarchical tree of WiaItem objects. The EnumerateChildItems method enables applications to enumerate child items in the current item. However, it can only be applied to items that are folders.

If the folder is not empty, it contains a subtree of WiaItem objects. The EnumerateChildItems method enumerates all of the items contained in the folder.

3.14.13   EnumerateDeviceCapabilities(Flags as Integer) as WIADeviceCapabilitiesEnumeratorMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Creates an enumerator that is used to ascertain the commands and events a Windows Image Acquisition (WIA) device supports.
Notes:

Flags: Specifies a flag that selects the type of capabilities to enumerate. Can be a combination of kDeviceCommands and kDeviceEvents.

Works for both WIA 1.x and 2.x
Lasterror is set.

Use this method to create an enumerator object to obtain the set of commands and events that a WIA device supports. You can use the Flags parameter to specify which kinds of device capabilities to enumerate.

3.14.14   FindItemByName(name as string) as WIAItemMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Searches an item's tree of subitems using the name as the search key.
Notes:

name: Specifies the name fo the item to search for.

Lasterror is set.
Works with WIA 1.x and 2.x.

This method searches the current item's tree of sub-items using the name as the search key. If FindItemBy-Name finds the item specified by name, it retruns the WiaItem object.

3.14.15   ItemCategory as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Gets an item's category information.
Notes:

Lasterror is set. Only for WIA 2.x.

Every WiaItemMBS object in the hierarchical tree of objects associated with a Windows Image Acquisition (WIA) 2.0 hardware device has a specific category. This method enables applications to identify the category of any item in a hierarchical tree of item objects in a device.

Requires Windows Vista or Windows Server 2008.

3.14.16   ItemType as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Gets an item's type information.
Example:

```
dim it as WIAItemMBS // your item
if BitwiseAnd(it.ItemType,it.kTypeFolder)=it.kTypeFolder or BitwiseAnd(it.ItemType, it.kTypeHasAttach-
ments)=it.kTypeHasAttachments then
msgbox "may have children."
```

else
msgbox "no children."
end if

Notes:

Works with WIA 1.x and 2.x.
Lasterror is set.

Every WiaItemMBS object in the hierarchical tree of objects associated with a Windows Image Acquisition (WIA) 2.0 hardware device has a specific data type. Item objects represent folders and files. Folders contain file objects. File objects contain data acquired by the device such as images and sounds. This method enables applications to identify the type of any item in a hierarchical tree of item objects in a device.

An item may have more than one type. For example, an item that represents an audio file will have the type attributes WiaItemTypeAudio bitwiseor WiaItemTypeFile.

3.14.17 kCategoryFeeder as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA IPA item category constants
Example:

MsgBox WIAItemMBS.kCategoryFeeder.DisplayString

3.14.18 kCategoryFeederBack as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA IPA item category constants
Example:

MsgBox WIAItemMBS.kCategoryFeederBack.DisplayString

3.14.19 kCategoryFeederFront as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA IPA item category constants
Example:

MsgBox WIAItemMBS.kCategoryFeederFront.DisplayString

3.14.20 kCategoryFilm as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA IPA item category constants
Example:

MsgBox WIAItemMBS.kCategoryFilm.DisplayString

3.14.21 kCategoryFinishedFile as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA IPA item category constants
Example:

MsgBox WIAItemMBS.kCategoryFinishedFile.DisplayString

3.14.22 kCategoryFlatbed as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA IPA item category constants
Example:

MsgBox WIAItemMBS.kCategoryFlatbed.DisplayString

3.14.23 kCategoryFolder as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA IPA item category constants
Example:

MsgBox WIAItemMBS.kCategoryFolder.DisplayString

3.14.24 kCategoryRoot as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA IPA item category constants
Example:

MsgBox WIAItemMBS.kCategoryRoot.DisplayString

3.14.25 kCommandChangeDocument as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA command constants.
Example:

MsgBox WIAItemMBS.kCommandChangeDocument.DisplayString

3.14.26 kCommandDeleteAllItems as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA command constants.
Example:

MsgBox WIAItemMBS.kCommandDeleteAllItems.DisplayString

3.14.27 kCommandDiagnostic as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA command constants.
Example:

MsgBox WIAItemMBS.kCommandDiagnostic.DisplayString

3.14.28 kCommandSynchronize as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA command constants.
Example:

MsgBox WIAItemMBS.kCommandSynchronize.DisplayString

3.14.29   kCommandTakePicture as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA
command constants.

3.14.30   kCommandUnloadDocument as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA
command constants.
Example:

MsgBox WIAItemMBS.kCommandUnloadDocument.DisplayString

3.14.31   ParentItem as WIAItemMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Gets the parent
item in the tree that represents a Windows Image Acquisition (WIA) 2.0 hardware device.
Notes:

Works only in WIA 2.x. Lasterror is set.
Given any WiaItem object in the object tree of a WIA 2.0 hardware device, the application retrieves a
pointer to the parent item by calling this function.

3.14.32   PropertyStorage as WIAPropertyStorageMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Queries properties
for this item.
Example:

Sub ListProperties(it as WIAItemMBS, plist as listbox)
// enumerate properties into a given listbox

// clear list
PList.DeleteAllRows

// get properties
dim p as WIAPropertyStorageMBS = it.PropertyStorage

```
if p<>Nil then
dim e as WIAPropertyEnumeratorMBS = p.Enumerate

if e<>nil then
dim ps as WIAPropertyMBS = e.NextItem

while ps<>Nil
// read the property value
dim v as Variant = p.Read(ps)

// get some identifier string for the listbox, name or id
dim k as string = ps.Name
if len(k)=0 then
k = str(ps.ID)
end if

PList.AddRow k

if v.Type = v.TypeObject then
if v isa WIAGUIDMBS then
dim g as WIAGUIDMBS = v
PList.Cell(PList.LastIndex,1)=g.DisplayString
else
PList.Cell(PList.LastIndex,1)="? some object" // should never happen
end if
else
PList.Cell(PList.LastIndex,1)=v.StringValue
end if

ps = e.NextItem
wend

end if
end if
End Sub
```

Notes:

Lasterror is set.
Returns nil on any error.

3.14.33   RootItem as WIAItemMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Retrieves the root item of a tree of item objects used to represent a Windows Image Acquisition (WIA) hardware device.

Notes:

Lasterror is set.
Works with WIA 1.x and 2.x.

Given any WiaItem object in the object tree of a WIA hardware device, the application retrieves a pointer to the root item by calling this function.

3.14.34   Transfer as WIATransferMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Creates a transfer object for this item.
Notes:

Only available on WIA 2.x.
Lasterror is set.
Returns nil on any error.

3.14.35   Properties

3.14.36   Handle as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The internal reference to the object.
Notes:

The handle for WIA 1.x or 2.x.
(Read and Write property)

3.14.37   Handle1 as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The internal reference to the object.
Notes:

The handle for WIA 1.x.
(Read and Write property)

3.14.38 Handle2 as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The internal reference to the object.
Notes:

The handle for WIA 2.x.
(Read and Write property)

3.14.39 Lasterror as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The last error code.
Notes: (Read and Write property)

3.14.40 Constants

3.14.41 kDeviceCommands = 1

Plugin Version: 10.3. **Function:** One of the flag constants for the EnumerateDeviceCapabilities function.
Notes: Enumerate device commands.

3.14.42 kDeviceDialogSingleImage = 2

Plugin Version: 10.3. **Function:** One of the DeviceDialog and ImageDialog flag constants.
Notes: Only allow one image to be selected

3.14.43 kDeviceDialogUseCommonUI = 4

Plugin Version: 10.3. **Function:** One of the DeviceDialog and ImageDialog flag constants.
Notes: Give preference to the system-provided UI, if available.

3.14.44 kDeviceEvents = 2

Plugin Version: 10.3. **Function:** One of the flag constants for the EnumerateDeviceCapabilities function.
Notes: Enumerate device events.

3.14.45   kIntentBestPreview = & h40000

Plugin Version: 10.3. **Function:** One of the intent constants for GetImageDialog.
Notes: Specifies the best quality preview.

3.14.46   kIntentImageTypeColor = 1

Plugin Version: 10.3. **Function:** One of the intent constants for GetImageDialog.
Notes: Preset properties for color content.

3.14.47   kIntentImageTypeGrayscale = 2

Plugin Version: 10.3. **Function:** One of the intent constants for GetImageDialog.
Notes: Preset properties for grayscale content.

3.14.48   kIntentImageTypeMask = & hF

Plugin Version: 10.3. **Function:** One of the intent constants for GetImageDialog.
Notes: Mask for all of the image type flags.

3.14.49   kIntentImageTypeText = 4

Plugin Version: 10.3. **Function:** One of the intent constants for GetImageDialog.
Notes: Preset properties for text content.

3.14.50   kIntentMaximizeQuality = & h20000

Plugin Version: 10.3. **Function:** One of the intent constants for GetImageDialog.
Notes: Preset properties to maximize image quality.

3.14.51   kIntentMinimizeSize = & h10000

Plugin Version: 10.3. **Function:** One of the intent constants for GetImageDialog.
Notes: Preset properties to minimize image size.

3.14.52   kIntentNone = 0

Plugin Version: 10.3. **Function:** One of the intent constants for GetImageDialog.
Notes: Default value. Do not preset any properties.

3.14.53   kIntentSizeMask = & hF0000

Plugin Version: 10.3. **Function:** One of the intent constants for GetImageDialog.
Notes: Mask for all of the size/quality flags.

3.14.54   kSelectDeviceNoDefault = 1

Plugin Version: 10.3. **Function:** One of the Select Device Dialog and Image Dialog flag constants.

3.14.55   kTypeAnalyze = & h00000010

Plugin Version: 10.3. **Function:** One of the WIA item type constants.

3.14.56   kTypeAudio = & h00000020

Plugin Version: 10.3. **Function:** One of the WIA item type constants.

3.14.57   kTypeBurst = & h00000800

Plugin Version: 10.3. **Function:** One of the WIA item type constants.

3.14.58   kTypeDeleted = & h00000080

Plugin Version: 10.3. **Function:** One of the WIA item type constants.

3.14.59   kTypeDevice = & h00000040

Plugin Version: 10.3. **Function:** One of the WIA item type constants.

3.14.60   kTypeDisconnected = & h00000100

Plugin Version: 10.3. **Function:** One of the WIA item type constants.

3.14.61   kTypeFile = & h00000002

Plugin Version: 10.3. **Function:** One of the WIA item type constants.

3.14.62   kTypeFolder = & h00000004

Plugin Version: 10.3. **Function:** One of the WIA item type constants.
Example:

dim it as WIAItemMBS // your item
if BitwiseAnd(it.ItemType,it.kTypeFolder)=it.kTypeFolder or BitwiseAnd(it.ItemType, it.kTypeHasAttach-
ments)=it.kTypeHasAttachments then
msgbox "may have children."
else
msgbox "no children."
end if

3.14.63   kTypeFree = & h00000000

Plugin Version: 10.3. **Function:** One of the WIA item type constants.

3.14.64   kTypeGenerated = & h00004000

Plugin Version: 10.3. **Function:** One of the WIA item type constants.

3.14.65   kTypeHasAttachments = & h00008000

Plugin Version: 10.3. **Function:** One of the WIA item type constants.
Example:

dim it as WIAItemMBS // your item
if BitwiseAnd(it.ItemType,it.kTypeFolder)=it.kTypeFolder or BitwiseAnd(it.ItemType, it.kTypeHasAttach-
ments)=it.kTypeHasAttachments then

msgbox "may have children."
else
msgbox "no children."
end if

3.14.66   kTypeHPanorama = & h00000200

Plugin Version: 10.3. **Function:** One of the WIA item type constants.

3.14.67   kTypeImage = & h00000001

Plugin Version: 10.3. **Function:** One of the WIA item type constants.

3.14.68   kTypeRoot = & h00000008

Plugin Version: 10.3. **Function:** One of the WIA item type constants.

3.14.69   kTypeStorage = & h00001000

Plugin Version: 10.3. **Function:** One of the WIA item type constants.

3.14.70   kTypeTransfer = & h00002000

Plugin Version: 10.3. **Function:** One of the WIA item type constants.

3.14.71   kTypeVideo = & h00010000

Plugin Version: 10.3. **Function:** One of the WIA item type constants.

3.14.72   kTypeVPanorama = & h00000400

Plugin Version: 10.3. **Function:** One of the WIA item type constants.

3.15   class WIAPropertyEnumeratorMBS

3.15.1   class WIAPropertyEnumeratorMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The class for a property enumerator.
Example:

```
Sub ListProperties(it as WIAItemMBS, plist as listbox)
// enumerate properties into a given listbox

// clear list
PList.DeleteAllRows

// get properties
dim p as WIAPropertyStorageMBS = it.PropertyStorage
if p<>Nil then
dim e as WIAPropertyEnumeratorMBS = p.Enumerate

if e<>nil then
dim ps as WIAPropertyMBS = e.NextItem

while ps<>Nil
// read the property value
dim v as Variant = p.Read(ps)

// get some identifier string for the listbox, name or id
dim k as string = ps.Name
if len(k)=0 then
k = str(ps.ID)
end if

PList.AddRow k

if v.Type = v.TypeObject then
if v isa WIAGUIDMBS then
dim g as WIAGUIDMBS = v
PList.Cell(PList.LastIndex,1)=g.DisplayString
else
PList.Cell(PList.LastIndex,1)="? some object" // should never happen
end if
else
PList.Cell(PList.LastIndex,1)=v.StringValue
end if

ps = e.NextItem
wend
```

end if
end if
End Sub

3.15.2   Methods

3.15.3   Clone as WIAPropertyEnumeratorMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Creates a copy of the enumerator.
Notes: Lasterror is set.

3.15.4   NextItem as WIAPropertyMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Returns the next item.
Example:

```
Sub ListProperties(it as WIAItemMBS, plist as listbox)
// enumerate properties into a given listbox

// clear list
PList.DeleteAllRows

// get properties
dim p as WIAPropertyStorageMBS = it.PropertyStorage
if p<>Nil then
dim e as WIAPropertyEnumeratorMBS = p.Enumerate

if e<>nil then
dim ps as WIAPropertyMBS = e.NextItem

while ps<>Nil
// read the property value
dim v as Variant = p.Read(ps)

// get some identifier string for the listbox, name or id
dim k as string = ps.Name
if len(k)=0 then
k = str(ps.ID)
end if

PList.AddRow k
```

```
if v.Type = v.TypeObject then
if v isa WIAGUIDMBS then
dim g as WIAGUIDMBS = v
PList.Cell(PList.LastIndex,1)=g.DisplayString
else
PList.Cell(PList.LastIndex,1)="? some object" // should never happen
end if
else
PList.Cell(PList.LastIndex,1)=v.StringValue
end if

ps = e.NextItem
wend

end if
end if
End Sub
```

Notes: Lasterror is set.

3.15.5   Reset

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Resets the enumerator.
Notes: Lasterror is set.

3.15.6   Skip(celt as Integer)

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Skips the next items.
Notes: Lasterror is set.

3.15.7   Properties

3.15.8   Handle as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The internal reference to the object.

Notes: (Read and Write property)

3.15.9   Lasterror as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The last error code.
Notes: (Read and Write property)

3.16   class WIAPropertyMBS

3.16.1   class WIAPropertyMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The WIAProperty-MBS class contains data about a single property in a property set. This data is the property ID and type tag, and the optional string name that may be associated with the property.
Example:

```realbasic
Sub ListProperties(it as WIAItemMBS, plist as listbox)
// enumerate properties into a given listbox

// clear list
PList.DeleteAllRows

// get properties
dim p as WIAPropertyStorageMBS = it.PropertyStorage
if p<>Nil then
dim e as WIAPropertyEnumeratorMBS = p.Enumerate

if e<>nil then
dim ps as WIAPropertyMBS = e.NextItem

while ps<>Nil
// read the property value
dim v as Variant = p.Read(ps)

// get some identifier string for the listbox, name or id
dim k as string = ps.Name
if len(k)=0 then
k = str(ps.ID)
end if

PList.AddRow k

if v.Type = v.TypeObject then
if v isa WIAGUIDMBS then
dim g as WIAGUIDMBS = v
PList.Cell(PList.LastIndex,1)=g.DisplayString
else
PList.Cell(PList.LastIndex,1)="? some object" // should never happen
end if
else
PList.Cell(PList.LastIndex,1)=v.StringValue
end if

ps = e.NextItem
wend
```

end if
end if
End Sub

3.16.2 Properties

3.16.3 ID as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** A 32-bit identifier that uniquely identifies the property within the property set.
Example:

dim ps as WIAPropertyMBS // your property

dim k as string = ps.Name
if len(k)=0 then
k = str(ps.ID)
end if

MsgBox k

Notes:

All properties within property sets must have unique property identifiers.
(Read and Write property)

3.16.4 Name as String

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The string that contains the optional string name associated with the property
Example:

dim ps as WIAPropertyMBS // your property

dim k as string = ps.Name
if len(k)=0 then
k = str(ps.ID)
end if

MsgBox k

Notes: (Read and Write property)

3.16.5 Type as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The property type.
Notes: (Read and Write property)

3.17 class WIAPropertyStorageMBS

3.17.1 class WIAPropertyStorageMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The WIAPropertyStorageMBS class manages the persistent properties of a single property set.
Example:

dim DeviceManager as new WIADeviceManager1MBS

if 0 = DeviceManager.Handle then
MsgBox "Failed to initialize device manager."
else
dim it as WIAItemMBS = DeviceManager.SelectDeviceDialog(window1, DeviceManager.kDeviceTypeDefault, DeviceManager.kSelectDeviceNoDefault)

if it<>Nil then
dim p as WIAPropertyStorageMBS = it.PropertyStorage
dim name as string = p.Read(p.kItemPropertyItemNameString)
MsgBox name
end if
end if

Notes:

Persistent properties consist of information that can be stored persistently in a property set, such as the summary information associated with a file. This contrasts with run-time properties associated with Controls and Automation, which can be used to affect system behavior. Use the methods of the WIAPropertyStorageMBS interface to create or open a persistent property set. An instance of the WIAPropertyStorageMBS interface can manage zero or more WIAPropertyStorageMBS instances.

Each property within a property set is identified by a property identifier (ID), a integer value unique to that set. You can also assign a string name to a property through the WIAPropertyStorageMBS interface.

The automatic conversion to variant supports:
nil, integer, uint32, int64, uint64, single, double, boolean, string and WIAGUIDMBS.

The automatic conversion from variant supports:
integer, boolean, single, double, Int64, string and WIAGUIDMBS.

3.17.2   Methods

3.17.3   Commit(flags as Integer)

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Saves changes made to a property storage object to the parent storage object.
Notes:

See kCommit* flags for the flags parameter.
Lasterror is set.

3.17.4   Count as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Returns the number of properties stored in the property storage.
Notes: Lasterror is set.

3.17.5   Delete(id as Integer)

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Deletes an item by ID.
Notes: Lasterror is set.
See also:

3.17.6   Delete(name as string)

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Deletes an item by name.
Notes: Lasterror is set.
See also:

3.17.7   DeletePropertyName(id as Integer)

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Deletes specified string names from the current property set.
Notes:

Lasterror is set.

id: Property identifier for which string name are to be deleted.

For each property identifier in rgpropid, DeletePropertyName removes any corresponding name-to-property ID mapping. An attempt is silently ignored to delete the name of a property that either does not exist or does not currently have a string name associated with it. This method has no effect on the properties themselves.

3.17.8   Enumerate as WIAPropertyEnumeratorMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Enumerates the properties on this property storage.
Notes: Returns nil on any error. Lasterror is set.

3.17.9   kAudioFormatAIFF as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA audio format constants.
Example:

MsgBox WIAPropertyStorageMBS.kAudioFormatAIFF.DisplayString

3.17.10   kAudioFormatMP3 as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA audio format constants.
Example:

MsgBox WIAPropertyStorageMBS.kAudioFormatMP3.DisplayString

3.17.11   kAudioFormatWAV as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA audio format constants.
Example:

MsgBox WIAPropertyStorageMBS.kAudioFormatWAV.DisplayString

3.17.12 kAudioFormatWMA as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA audio format constants.
Example:

MsgBox WIAPropertyStorageMBS.kAudioFormatWMA.DisplayString

3.17.13 kImageFormatASF as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA misc format constants.
Example:

MsgBox WIAPropertyStorageMBS.kImageFormatASF.DisplayString

3.17.14 kImageFormatAVI as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA audio format constants.
Example:

MsgBox WIAPropertyStorageMBS.kImageFormatAVI.DisplayString

3.17.15 kImageFormatBMP as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA image format constants.
Example:

MsgBox WIAPropertyStorageMBS.kImageFormatBMP.DisplayString

3.17.16 kImageFormatCIFF as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA image format constants.
Example:

MsgBox WIAPropertyStorageMBS.kImageFormatCIFF.DisplayString

3.17.17 kImageFormatDPOF as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA misc format constants.
Example:

MsgBox WIAPropertyStorageMBS.kImageFormatDPOF.DisplayString

3.17.18 kImageFormatEMF as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA image format constants.
Example:

MsgBox WIAPropertyStorageMBS.kImageFormatEMF.DisplayString

3.17.19 kImageFormatExec as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA misc format constants.
Example:

MsgBox WIAPropertyStorageMBS.kImageFormatExec.DisplayString

3.17.20 kImageFormatEXIF as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA image format constants.
Example:

MsgBox WIAPropertyStorageMBS.kImageFormatEXIF.DisplayString

3.17.21   kImageFormatFlashPix as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA image format constants.
Example:

MsgBox WIAPropertyStorageMBS.kImageFormatFlashPix.DisplayString

3.17.22   kImageFormatGIF as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA image format constants.
Example:

MsgBox WIAPropertyStorageMBS.kImageFormatGIF.DisplayString

3.17.23   kImageFormatHTML as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA document format constants.
Example:

MsgBox WIAPropertyStorageMBS.kImageFormatHTML.DisplayString

3.17.24   kImageFormatICO as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA image format constants.
Example:

MsgBox WIAPropertyStorageMBS.kImageFormatICO.DisplayString

3.17.25 kImageFormatJPEG as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA image format constants.
Example:

MsgBox WIAPropertyStorageMBS.kImageFormatJPEG.DisplayString

3.17.26 kImageFormatJPEG2K as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA image format constants.
Example:

MsgBox WIAPropertyStorageMBS.kImageFormatJPEG2K.DisplayString

3.17.27 kImageFormatJPEG2KX as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA image format constants.
Example:

MsgBox WIAPropertyStorageMBS.kImageFormatJPEG2KX.DisplayString

3.17.28 kImageFormatMemoryBMP as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA image format constants.
Example:

MsgBox WIAPropertyStorageMBS.kImageFormatMemoryBMP.DisplayString

3.17.29 kImageFormatMPG as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA audio format constants.
Example:

MsgBox WIAPropertyStorageMBS.kImageFormatMPG.DisplayString

3.17.30   kImageFormatPhotoCD as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA image format constants.
Example:

MsgBox WIAPropertyStorageMBS.kImageFormatPhotoCD.DisplayString

3.17.31   kImageFormatPICT as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA image format constants.
Example:

MsgBox WIAPropertyStorageMBS.kImageFormatPICT.DisplayString

3.17.32   kImageFormatPNG as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA image format constants.
Example:

MsgBox WIAPropertyStorageMBS.kImageFormatPNG.DisplayString

3.17.33   kImageFormatRawRGB as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA image format constants.
Example:

MsgBox WIAPropertyStorageMBS.kImageFormatRawRGB.DisplayString

3.17.34   kImageFormatRTF as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA document format constants.
Example:

MsgBox WIAPropertyStorageMBS.kImageFormatRTF.DisplayString

3.17.35   kImageFormatScript as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA misc format constants.
Example:

MsgBox WIAPropertyStorageMBS.kImageFormatScript.DisplayString

3.17.36   kImageFormatTIFF as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA image format constants.
Example:

MsgBox WIAPropertyStorageMBS.kImageFormatTIFF.DisplayString

3.17.37   kImageFormatTXT as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA document format constants.
Example:

MsgBox WIAPropertyStorageMBS.kImageFormatTXT.DisplayString

3.17.38   kImageFormatUndefined as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA image format constants.
Example:

MsgBox WIAPropertyStorageMBS.kImageFormatUndefined.DisplayString

3.17.39   kImageFormatUnicode16 as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA
misc format constants.
Example:

MsgBox WIAPropertyStorageMBS.kImageFormatUnicode16.DisplayString

3.17.40   kImageFormatWMF as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA
image format constants.
Example:

MsgBox WIAPropertyStorageMBS.kImageFormatWMF.DisplayString

3.17.41   kImageFormatXML as WIAGUIDMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** One of the WIA
document format constants.
Example:

MsgBox WIAPropertyStorageMBS.kImageFormatXML.DisplayString

3.17.42   Read(id as Integer) as Variant

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Reads a property
by id.
Notes: Lasterror is set.
See also:

3.17.43 Read(name as string) as Variant

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Reads a property by name.
Example:

dim DeviceManager as new WIADeviceManager1MBS

if 0 = DeviceManager.Handle then
MsgBox "Failed to initialize device manager."
else
dim it as WIAItemMBS = DeviceManager.SelectDeviceDialog(window1, DeviceManager.kDeviceTypeDefault, DeviceManager.kSelectDeviceNoDefault)

if it<>Nil then
dim p as WIAPropertyStorageMBS = it.PropertyStorage
dim name as string = p.Read(p.kItemPropertyItemNameString)
MsgBox name
end if
end if

Notes: Lasterror is set.
See also:

3.17.44 Read(p as WIAPropertyMBS) as Variant

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Reads a property by a property specification.
Notes: Lasterror is set.
See also:

3.17.45 ReadPropertyName(id as Integer) as string

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Retrieves any existing string name for the specified property ID.
Notes: Lasterror is set.

3.17.46   Revert

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The Revert method discards all changes to the named property set since it was last opened or discards changes that were last committed to the property set.
Notes:

This method has no effect on a direct-mode property set.
Lasterror is set.

3.17.47   Write(id as Integer, value as Variant)

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Writes a property by id.
Notes: Lasterror is set.
See also:

3.17.48   Write(name as string, value as Variant, id as Integer = 0)

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Writes a property by name with optional id.
Notes: Lasterror is set.
See also:

3.17.49   Write(p as WIAPropertyMBS, value as Variant)

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Writes a property by property specification.
Notes: Lasterror is set.
See also:

3.17.50 WritePropertyName(id as Integer, name as string)

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Assigns string names to a specified array of property IDs in the current property set.
Notes:

id: the property ID for which name is to be set.
name: The new name to be assigned to the corresponding property ID in the id parameter. This name may not exceed 255 characters.

Lasterror is set.

3.17.51 Properties

3.17.52 Handle as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The internal reference to the object.
Notes: (Read and Write property)

3.17.53 Lasterror as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The last error code.
Notes: (Read and Write property)

3.17.54 Constants

3.17.55 kCameraDevicePropertyArtist = 2090

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.56 kCameraDevicePropertyArtistString = "Artist"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.57   kCameraDevicePropertyBatteryStatus = 2065

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.58   kCameraDevicePropertyBatteryStatusString = "Battery Status"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.59   kCameraDevicePropertyBurstInterval = 2075

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.60   kCameraDevicePropertyBurstIntervalString = "Burst Interva"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.61   kCameraDevicePropertyBurstNumber = 2076

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.62   kCameraDevicePropertyBurstNumberString = "Burst Number"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.63   kCameraDevicePropertyCaptureDelay = 2082

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.64   kCameraDevicePropertyCaptureDelayString = "Capture Delay"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.65   kCameraDevicePropertyCaptureMode = 2081

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.66   kCameraDevicePropertyCaptureModeString = "Capture Mode"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.67   kCameraDevicePropertyCompressionSetting = 2071

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.68   kCameraDevicePropertyCompressionSettingString = "Compression Setting"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.69   kCameraDevicePropertyContrast = 2080

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.70   kCameraDevicePropertyContrastString = "Contrast"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.71   kCameraDevicePropertyCopyrightInfo = 2091

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.72   kCameraDevicePropertyCopyrightInfoString = "Copyright Info"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.73   kCameraDevicePropertyDigitalZoom = 2078

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.74   kCameraDevicePropertyDigitalZoomString = "Digital Zoom"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.75   kCameraDevicePropertyDimension = 2070

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.76   kCameraDevicePropertyDimensionString = "Dimension"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.77   kCameraDevicePropertyEffectMode = 2077

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.78   kCameraDevicePropertyEffectModeString = "Effect Mode"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.79   kCameraDevicePropertyExposureComp = 2053

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.80   kCameraDevicePropertyExposureCompString = "Exposure Compensation"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.81 kCameraDevicePropertyExposureIndex = 2083

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.82 kCameraDevicePropertyExposureIndexString = "Exposure Index"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.83 kCameraDevicePropertyExposureMeteringMode = 2084

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.84 kCameraDevicePropertyExposureMeteringModeString = "Exposure Metering Mode"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.85 kCameraDevicePropertyExposureMode = 2052

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.86 kCameraDevicePropertyExposureModeString = "Exposure Mode"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.87 kCameraDevicePropertyExposureTime = 2054

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.88 kCameraDevicePropertyExposureTimeString = "Exposure Time"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.89   kCameraDevicePropertyFlashMode = 2056

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.90   kCameraDevicePropertyFlashModeString = "Flash Mode"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.91   kCameraDevicePropertyFnumber = 2055

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.92   kCameraDevicePropertyFnumberString = "F Number"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.93   kCameraDevicePropertyFocalLength = 2086

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.94   kCameraDevicePropertyFocalLengthString = "Focus Length"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.95   kCameraDevicePropertyFocusDistance = 2085

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.96   kCameraDevicePropertyFocusDistanceString = "Focus Distance"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.97 kCameraDevicePropertyFocusManualDist = 2058

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.98 kCameraDevicePropertyFocusManualDistString = "Focus Manual Dist"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.99 kCameraDevicePropertyFocusMeteringMode = 2072

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.100 kCameraDevicePropertyFocusMeteringModeString = "Focus Metering Mode"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.101 kCameraDevicePropertyFocusMode = 2057

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.102 kCameraDevicePropertyFocusModeString = "Focus Mode"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.103 kCameraDevicePropertyPanPosition = 2060

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.104 kCameraDevicePropertyPanPositionString = "Pan Position"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.105   kCameraDevicePropertyPictHeight = 2069

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.106   kCameraDevicePropertyPictHeightString = "Picture Height"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.107   kCameraDevicePropertyPicturesRemaining = 2051

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.108   kCameraDevicePropertyPicturesRemainingString = "Pictures Remaining"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.109   kCameraDevicePropertyPicturesTaken = 2050

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.110   kCameraDevicePropertyPicturesTakenString = "Pictures Taken"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.111   kCameraDevicePropertyPictWidth = 2068

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.112   kCameraDevicePropertyPictWidthString = "Picture Width"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.113   kCameraDevicePropertyPowerMode = 2064

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.114   kCameraDevicePropertyPowerModeString = "Power Mode"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.115   kCameraDevicePropertyRgbGain = 2087

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.116   kCameraDevicePropertyRgbGainString = "RGB Gain"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.117   kCameraDevicePropertySharpness = 2079

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.118   kCameraDevicePropertySharpnessString = "Sharpness"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.119   kCameraDevicePropertyThumbHeight = 2067

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.120   kCameraDevicePropertyThumbHeightString = "Thumbnail Height"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.121   kCameraDevicePropertyThumbWidth = 2066

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.122   kCameraDevicePropertyThumbWidthString = "Thumbnail Width"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.123   kCameraDevicePropertyTiltPosition = 2061

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.124   kCameraDevicePropertyTiltPositionString = "Tilt Position"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.125   kCameraDevicePropertyTimelapseInterval = 2073

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.126   kCameraDevicePropertyTimelapseIntervalString = "Timelapse Interva"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.127   kCameraDevicePropertyTimelapseNumber = 2074

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.128   kCameraDevicePropertyTimelapseNumberString = "Timelapse Number"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.129   kCameraDevicePropertyTimerMode = 2062

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.130   kCameraDevicePropertyTimerModeString = "Timer Mode"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.131   kCameraDevicePropertyTimerValue = 2063

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.132   kCameraDevicePropertyTimerValueString = "Timer Value"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.133   kCameraDevicePropertyUploadUrl = 2089

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.134   kCameraDevicePropertyUploadUrlString = "Upload UR"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.135   kCameraDevicePropertyWhiteBalance = 2088

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.136   kCameraDevicePropertyWhiteBalanceString = "White Balance"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.137   kCameraDevicePropertyZoomPosition = 2059

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.138   kCameraDevicePropertyZoomPositionString = ”Zoom Position”

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.139   kCameraItemPropertyAudioAvailable = 5125

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.140   kCameraItemPropertyAudioAvailableString = ”Audio Available”

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.141   kCameraItemPropertyAudioData = 5127

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.142   kCameraItemPropertyAudioDataFormat = 5126

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.143   kCameraItemPropertyAudioDataFormatString = ”Audio Format”

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.144   kCameraItemPropertyAudioDataString = ”Audio Data”

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.145 kCameraItemPropertyNumPictPerRow = 5128

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.146 kCameraItemPropertyNumPictPerRowString = ”Pictures per Row”

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.147 kCameraItemPropertySequence = 5129

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.148 kCameraItemPropertySequenceString = ”Sequence Number”

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.149 kCameraItemPropertyThumbHeight = 5124

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.150 kCameraItemPropertyThumbHeightString = ”Thumbnail Height”

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.151 kCameraItemPropertyThumbnail = 5122

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.152 kCameraItemPropertyThumbnailString = ”Thumbnail Data”

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.153   kCameraItemPropertyThumbWidth = 5123

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.154   kCameraItemPropertyThumbWidthString = "Thumbnail Width"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.155   kCameraItemPropertyTimedelay = 5130

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.156   kCameraItemPropertyTimedelayString = "Time Delay"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.157   kCommitFlagsConsolidate = 8

Plugin Version: 10.3. **Function:** One of the commit flag constants.

3.17.158   kCommitFlagsDangeroulyCommitMeRelyToDiskCache = 4

Plugin Version: 10.3. **Function:** One of the commit flag constants.

3.17.159   kCommitFlagsDefault = 0

Plugin Version: 10.3. **Function:** One of the commit flag constants.
Notes: Commits per the usual transaction semantics. Last writer wins. This flag may not be specified with other flag values.

3.17.160   kCommitFlagsOnlyIfCurrent = 2

Plugin Version: 10.3. **Function:** One of the commit flag constants.
Notes: Commits the changes only if the current persistent contents of the property set are the ones on

which the changes about to be committed are based. That is, does not commit changes if the contents of the property set have been changed by a commit from another opening of the property set. The error STG_E_NOTCURRENT is returned if the commit does not succeed for this reason.

3.17.161 kCommitFlagsOverwrite = 1

Plugin Version: 10.3. **Function:** One of the commit flag constants.
Notes:

Useful only when committing a transaction that has no further outer nesting level of transactions, though acceptable in all cases.
Note: Indicates that the caller is willing to risk some data corruption at the expense of decreased disk usage on the destination volume. This flag is potentially useful in low disk-space scenarios, though it should be used with caution.

3.17.162 kDevicePropertyBaudrate = 12

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.163 kDevicePropertyBaudrateString = "BaudRate"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.164 kDevicePropertyConnectStatus = 1027

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.165 kDevicePropertyConnectStatusString = "Connect Status"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.166 kDevicePropertyDevDesc = 4

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.167   kDevicePropertyDevDescString = "Description"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.168   kDevicePropertyDeviceTime = 1028

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.169   kDevicePropertyDeviceTimeString = "Device Time"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.170   kDevicePropertyDevId = 2

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.171   kDevicePropertyDevIdString = "Unique Device ID"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.172   kDevicePropertyDevName = 7

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.173   kDevicePropertyDevNameString = "Name"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.174   kDevicePropertyDevType = 5

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.175 kDevicePropertyDevTypeString = "Type"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.176 kDevicePropertyDriverVersion = 15

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.177 kDevicePropertyDriverVersionString = "Driver Version"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.178 kDevicePropertyFirmwareVersion = 1026

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.179 kDevicePropertyFirmwareVersionString = "Firmware Version"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.180 kDevicePropertyHwConfig = 11

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.181 kDevicePropertyHwConfigString = "Hardware Configuration"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.182 kDevicePropertyPortName = 6

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.183   kDevicePropertyPortNameString = "Port"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.184   kDevicePropertyRemoteDevId = 9

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.185   kDevicePropertyRemoteDevIdString = "Remote Device ID"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.186   kDevicePropertyServerName = 8

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.187   kDevicePropertyServerNameString = "Server"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.188   kDevicePropertyStiGenCapabilities = 13

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.189   kDevicePropertyStiGenCapabilitiesString = "STI Generic Capabilities"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.190   kDevicePropertyUiClsid = 10

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.191   kDevicePropertyUiClsidString = "UI Class ID"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.192   kDevicePropertyVendDesc = 3

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.193   kDevicePropertyVendDescString = "Manufacturer"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.194   kDevicePropertyWiaVersion = 14

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.195   kDevicePropertyWiaVersionString = "WIA Version"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.196   kFileSystemPropertyMountPoint = 3330

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.197   kFileSystemPropertyMountPointString = "Directory mount point"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.198   kItemPropertyAccessRights = 4102

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.199   kItemPropertyAccessRightsString = "Access Rights"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.200   kItemPropertyAppColorMapping = 4121

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.201   kItemPropertyAppColorMappingString = "Application Applies Color Mapping"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.202   kItemPropertyBitsPerChannel = 4110

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.203   kItemPropertyBitsPerChannelString = "Bits Per Channe"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.204   kItemPropertyBytesPerLine = 4113

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.205   kItemPropertyBytesPerLineString = "Bytes Per Line"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.206   kItemPropertyChannelsPerPixel = 4109

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.207 kItemPropertyChannelsPerPixelString = "Channels Per Pixe"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.208 kItemPropertyColorProfile = 4117

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.209 kItemPropertyColorProfileString = "Color Profiles"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.210 kItemPropertyCompression = 4107

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.211 kItemPropertyCompressionString = "Compression"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.212 kItemPropertyDatatype = 4103

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.213 kItemPropertyDatatypeString = "Data Type"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.214 kItemPropertyDepth = 4104

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.215   kItemPropertyDepthString = "Bits Per Pixe"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.216   kItemPropertyFilenameExtension = 4123

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.217   kItemPropertyFilenameExtensionString = "Filename extension"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.218   kItemPropertyFormat = 4106

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.219   kItemPropertyFormatString = "Format"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.220   kItemPropertyFullItemName = 4099

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.221   kItemPropertyFullItemNameString = "Full Item Name"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.222   kItemPropertyGammaCurves = 4115

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.223   kItemPropertyGammaCurvesString = "Gamma Curves"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.224   kItemPropertyIcmProfileName = 4120

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.225   kItemPropertyIcmProfileNameString = "Color Profile Name"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.226   kItemPropertyItemFlags = 4101

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.227   kItemPropertyItemFlagsString = "Item Flags"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.228   kItemPropertyItemName = 4098

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.229   kItemPropertyItemNameString = "Item Name"

Plugin Version: 10.3. **Function:** One of the WIA property constants.
Example:

dim DeviceManager as new WIADeviceManager1MBS

if 0 = DeviceManager.Handle then
MsgBox "Failed to initialize device manager."
else
dim it as WIAItemMBS = DeviceManager.SelectDeviceDialog(window1, DeviceManager.kDeviceTypeDefault, DeviceManager.kSelectDeviceNoDefault)

if it<>Nil then
dim p as WIAPropertyStorageMBS = it.PropertyStorage
dim name as string = p.Read(p.kItemPropertyItemNameString)
MsgBox name
end if
end if

3.17.230   kItemPropertyItemSize = 4116

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.231   kItemPropertyItemSizeString = "Item Size"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.232   kItemPropertyItemTime = 4100

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.233   kItemPropertyItemTimeString = "Item Time Stamp"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.234   kItemPropertyMinBufferSize = 4118

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.235   kItemPropertyMinBufferSizeString = "Buffer Size"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.236 kItemPropertyNumberOfLines = 4114

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.237 kItemPropertyNumberOfLinesString = "Number of Lines"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.238 kItemPropertyPixelsPerLine = 4112

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.239 kItemPropertyPixelsPerLineString = "Pixels Per Line"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.240 kItemPropertyPlanar = 4111

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.241 kItemPropertyPlanarString = "Planar"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.242 kItemPropertyPreferredFormat = 4105

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.243 kItemPropertyPreferredFormatString = "Preferred Format"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.244   kItemPropertyPropStreamCompatId = 4122

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.245   kItemPropertyPropStreamCompatIdString = "Stream Compatibility ID"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.246   kItemPropertyRegionType = 4119

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.247   kItemPropertyRegionTypeString = "Region Type"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.248   kItemPropertySuppressPropertyPage = 4124

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.249   kItemPropertySuppressPropertyPageString = "Suppress a property page"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.250   kItemPropertyTymed = 4108

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.251 kItemPropertyTymedString = "Media Type"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.252 kScannerDevicePropertyDitherPatternData = 3075

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.253 kScannerDevicePropertyDitherPatternDataString = "Dither Pattern Data"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.254 kScannerDevicePropertyDitherSelect = 3074

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.255 kScannerDevicePropertyDitherSelectString = "Dither Select"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.256 kScannerDevicePropertyDocumentHandlingCapabilities = 3074

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.257 kScannerDevicePropertyDocumentHandlingCapabilitiesString = "Document Handling Capabilities"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.258   kScannerDevicePropertyDocumentHandlingCapacity = 3075

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.259   kScannerDevicePropertyDocumentHandlingCapacityString = ”Document Handling Capacity”

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.260   kScannerDevicePropertyDocumentHandlingSelect = 3074

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.261   kScannerDevicePropertyDocumentHandlingSelectString = ”Document Handling Select”

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.262   kScannerDevicePropertyDocumentHandlingStatus = 3075

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.263   kScannerDevicePropertyDocumentHandlingStatusString = ”Document Handling Status”

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.264   kScannerDevicePropertyEndorserCharacters = 3074

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.265 kScannerDevicePropertyEndorserCharactersString = "Endorser Characters"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.266 kScannerDevicePropertyEndorserString = 3075

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.267 kScannerDevicePropertyEndorserStringString = "Endorser String"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.268 kScannerDevicePropertyFilterSelect = 3075

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.269 kScannerDevicePropertyFilterSelectString = "Filter Select"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.270 kScannerDevicePropertyHorizontalBedRegistration = 3075

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.271 kScannerDevicePropertyHorizontalBedRegistrationString = "Horizontal Bed Registration"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.272 kScannerDevicePropertyHorizontalBedSize = 3074

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.273 kScannerDevicePropertyHorizontalBedSizeString = "Horizontal Bed Size"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.274 kScannerDevicePropertyHorizontalSheetFeedSize = 3074

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.275 kScannerDevicePropertyHorizontalSheetFeedSizeString = "Horizontal Sheet Feed Size"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.276 kScannerDevicePropertyMaxScanTime = 3075

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.277 kScannerDevicePropertyMaxScanTimeString = "Max Scan Time"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.278 kScannerDevicePropertyMinHorizontalSheetFeedSize = 3074

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.279 kScannerDevicePropertyMinHorizontalSheetFeedSizeString = ”Minimum Horizontal Sheet Feed Size”

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.280 kScannerDevicePropertyMinVerticalSheetFeedSize = 3075

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.281 kScannerDevicePropertyMinVerticalSheetFeedSizeString = ”Minimum Vertical Sheet Feed Size”

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.282 kScannerDevicePropertyOpticalXres = 3074

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.283 kScannerDevicePropertyOpticalXresString = ”Horizontal Optical Resolution”

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.284 kScannerDevicePropertyOpticalYres = 3075

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.285 kScannerDevicePropertyOpticalYresString = ”Vertical Optical Resolution”

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.286   kScannerDevicePropertyPadColor = 3074

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.287   kScannerDevicePropertyPadColorString = "Pad Color"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.288   kScannerDevicePropertyPageHeight = 3075

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.289   kScannerDevicePropertyPageHeightString = "Page Height"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.290   kScannerDevicePropertyPages = 3074

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.291   kScannerDevicePropertyPageSize = 3075

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.292   kScannerDevicePropertyPageSizeString = "Page Size"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.293   kScannerDevicePropertyPagesString = "Pages"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.294   kScannerDevicePropertyPageWidth = 3074

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.295   kScannerDevicePropertyPageWidthString = "Page Width"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.296   kScannerDevicePropertyPlatenColor = 3075

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.297   kScannerDevicePropertyPlatenColorString = "Platen Color"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.298   kScannerDevicePropertyPreview = 3074

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.299   kScannerDevicePropertyPreviewString = "Preview"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.300   kScannerDevicePropertyScanAheadPages = 3074

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.301   kScannerDevicePropertyScanAheadPagesString = "Scan Ahead Pages"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.302   kScannerDevicePropertySheetFeederRegistration = 3074

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.303   kScannerDevicePropertySheetFeederRegistrationString = "Sheet Feeder Registration"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.304   kScannerDevicePropertyShowPreviewControl = 3075

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.305   kScannerDevicePropertyShowPreviewControlString = "Show preview contro"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.306   kScannerDevicePropertyTransparency = 3075

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.307   kScannerDevicePropertyTransparencySelect = 3074

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.308   kScannerDevicePropertyTransparencySelectString = "Transparency Adapter Select"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.309   kScannerDevicePropertyTransparencyString = "Transparency Adapter"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.310   kScannerDevicePropertyVerticalBedRegistration = 3074

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.311   kScannerDevicePropertyVerticalBedRegistrationString = "Vertical Bed Registration"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.312   kScannerDevicePropertyVerticalBedSize = 3075

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.313   kScannerDevicePropertyVerticalBedSizeString = "Vertical Bed Size"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.314   kScannerDevicePropertyVerticalSheetFeedSize = 3075

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.315   kScannerDevicePropertyVerticalSheetFeedSizeString = "Vertical Sheet Feed Size"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.316   kScannerItemPropertyBrightness = 6154

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.317   kScannerItemPropertyBrightnessString = "Brightness"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.318   kScannerItemPropertyContrast = 6155

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.319   kScannerItemPropertyContrastString = "Contrast"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.320   kScannerItemPropertyCurIntent = 6146

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.321   kScannerItemPropertyCurIntentString = "Current Intent"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.322   kScannerItemPropertyInvert = 6160

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.323   kScannerItemPropertyInvertString = "Invert"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.324   kScannerItemPropertyMirror = 6158

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.325   kScannerItemPropertyMirrorString = "Mirror"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.326   kScannerItemPropertyOrientation = 6156

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.327   kScannerItemPropertyOrientationString = "Orientation"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.328   kScannerItemPropertyPhotometricInterp = 6153

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.329   kScannerItemPropertyPhotometricInterpString = "Photometric Interpretation"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.330   kScannerItemPropertyRotation = 6157

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.331   kScannerItemPropertyRotationString = "Rotation"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.332   kScannerItemPropertyThreshold = 6159

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.333   kScannerItemPropertyThresholdString = "Threshold"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.334   kScannerItemPropertyWarmUpTime = 6161

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.335   kScannerItemPropertyWarmUpTimeString = "Lamp Warm up Time"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.336   kScannerItemPropertyXextent = 6151

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.337   kScannerItemPropertyXextentString = "Horizontal Extent"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.338   kScannerItemPropertyXpos = 6149

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.339   kScannerItemPropertyXposString = "Horizontal Start Position"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.340   kScannerItemPropertyXres = 6147

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.341   kScannerItemPropertyXresString = "Horizontal Resolution"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.342   kScannerItemPropertyYextent = 6152

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.343   kScannerItemPropertyYextentString = "Vertical Extent"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.344   kScannerItemPropertyYpos = 6150

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.345   kScannerItemPropertyYposString = "Vertical Start Position"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.346   kScannerItemPropertyYres = 6148

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.347   kScannerItemPropertyYresString = "Vertical Resolution"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.348   kTymedCallback = 128

Plugin Version: 10.3. **Function:** One of the WIA TYMED constants.

3.17.349   kTymedFile = 2

Plugin Version: 10.3. **Function:** One of the WIA TYMED constants.
Notes: Writes data to a file.

3.17.350   kTymedMultiPageCallback = 512

Plugin Version: 10.3. **Function:** One of the WIA TYMED constants.

3.17.351   kTymedMultiPageFile = 256

Plugin Version: 10.3. **Function:** One of the WIA TYMED constants.

3.17.352   kVideoCameraPropertyDShowDevicePath = 3588

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.353   kVideoCameraPropertyDShowDevicePathString = "Directshow Device Path"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.354   kVideoCameraPropertyImagesDirectory = 3587

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.355   kVideoCameraPropertyImagesDirectoryString = "Images Directory"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.356   kVideoCameraPropertyLastPictureTaken = 3586

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.17.357   kVideoCameraPropertyLastPictureTakenString = "Last Picture Taken"

Plugin Version: 10.3. **Function:** One of the WIA property constants.

3.18   class WIAStreamMBS

3.18.1   class WIAStreamMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The WIAStreamMBS interface lets you read and write data to stream objects.
Example:

dim ItemName as string = "Hello.jpg"
dim f as FolderItem = SpecialFolder.Desktop.Child(ItemName)
dim s as new WIAStreamMBS(WIAStreamMBS.kModeWrite + WIAStreamMBS.kModeCreate, f)

Notes: Stream objects contain the data in a structured storage object, where storages provide the structure. Simple data can be written directly to a stream but, most frequently, streams are elements nested within a storage object. They are similar to standard files.

3.18.2   Methods

3.18.3   Clone as WIAStreamMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The Clone method creates a new stream object with its own seek pointer that references the same bytes as the original stream.
Notes:

The Clone method creates a new stream object for accessing the same bytes but using a separate seek pointer. The new stream object sees the same data as the source-stream object. Changes written to one object are immediately visible in the other. Range locking is shared between the stream objects.

The initial setting of the seek pointer in the cloned stream instance is the same as the current setting of the seek pointer in the original stream at the time of the clone operation.

Lasterror is set.

3.18.4   Commit(flags as Integer)

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The Commit method ensures that any changes made to a stream object open in transacted mode are reflected in the parent storage.
Notes:

If the stream object is open in direct mode, Commit has no effect other than flushing all memory buffers to

the next-level storage object. The COM compound file implementation of streams does not support opening streams in transacted mode.
Lasterror is set.

Possible flags: kCommitConsolidate, kCommitDangerouslyCommitMerelyToDiskCache, kCommitDefault, kCommitOnlyIfCurrent and kCommitOverwrite.

3.18.5   Constructor(mode as Integer, file as folderitem)

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Opens or creates a file and retrieves a stream to read or write to that file.
Example:

dim ItemName as string = "Hello.jpg"
dim f as FolderItem = SpecialFolder.Desktop.Child(ItemName)
dim s as new WIAStreamMBS(WIAStreamMBS.kModeWrite + WIAStreamMBS.kModeCreate, f)

Notes:

mode: the flags. Use the kMode* constants.
path: the file path.

Lasterror is set.
See also:

- 3.18.6 Constructor(mode as Integer, path as string)   153

3.18.6   Constructor(mode as Integer, path as string)

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Opens or creates a file and retrieves a stream to read or write to that file.
Notes:

mode: the flags. Use the kMode* constants.
path: the file path.

Lasterror is set.
See also:

- 3.18.5 Constructor(mode as Integer, file as folderitem)   153

3.18.7 CopyTo(other as WIAStreamMBS, length as UInt64)

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The CopyTo method copies a specified number of bytes from the current seek pointer in the stream to the current seek pointer in another stream.
Notes:

other: The destination stream. The stream pointed to by pstm can be a new stream or a clone of the source stream.
length: The number of bytes to copy from the source stream.
ReadSize: Optional, a variable where the actual number of bytes read from the source.
WriteSize: Optional, a variable where the actual number of bytes written to the destination.

Lasterror is set.

The CopyTo method copies the specified bytes from one stream to another. It can also be used to copy a stream to itself. The seek pointer in each stream instance is adjusted for the number of bytes read or written. This method is equivalent to reading cb bytes into memory using Read and then immediately writing them to the destination stream using Write, although CopyTo will be more efficient.

The destination stream can be a clone of the source stream created by calling the Clone method.

If CopyTo returns an error, you cannot assume that the seek pointers are valid for either the source or destination. Additionally, the values of pcbRead and pcbWritten are not meaningful even though they are returned.

If CopyTo returns successfully, the actual number of bytes read and written are the same.

To copy the remainder of the source from the current seek pointer, specify the maximum large integer value for the cb parameter. If the seek pointer is the beginning of the stream, this operation copies the entire stream.
See also:

3.18.8 CopyTo(other as WIAStreamMBS, length as UInt64, byref ReadSize as UInt64, byref WriteSize as UInt64)

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The CopyTo method copies a specified number of bytes from the current seek pointer in the stream to the current seek pointer in another stream.
Notes:

other: The destination stream. The stream pointed to by pstm can be a new stream or a clone of the source

stream.

length: The number of bytes to copy from the source stream.

ReadSize: Optional, a variable where the actual number of bytes read from the source.

WriteSize: Optional, a variable where the actual number of bytes written to the destination.

Lasterror is set.

The CopyTo method copies the specified bytes from one stream to another. It can also be used to copy a stream to itself. The seek pointer in each stream instance is adjusted for the number of bytes read or written. This method is equivalent to reading cb bytes into memory using Read and then immediately writing them to the destination stream using Write, although CopyTo will be more efficient.

The destination stream can be a clone of the source stream created by calling the Clone method.

If CopyTo returns an error, you cannot assume that the seek pointers are valid for either the source or destination. Additionally, the values of pcbRead and pcbWritten are not meaningful even though they are returned.

If CopyTo returns successfully, the actual number of bytes read and written are the same.

To copy the remainder of the source from the current seek pointer, specify the maximum large integer value for the cb parameter. If the seek pointer is the beginning of the stream, this operation copies the entire stream.

See also:

3.18.9   Revert

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The Revert method discards all changes that have been made to a transacted stream since the last Commit call.
Notes:

On streams open in direct mode and streams using the COM compound file implementation of Revert, this method has no effect.
Lasterror is set.

3.18.10   Seek(value as Int64, Origin as Integer) as UInt64

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The Seek method changes the seek pointer to a new location.
Notes:

The new location is relative to either the beginning of the stream, the end of the stream, or the current seek pointer.

value: The displacement to be added to the location indicated by the dwOrigin parameter. If dwOrigin is kSeekSet, this is interpreted as an unsigned value rather than a signed value.

Origin: The origin for the displacement specified in value. The origin can be the beginning of the file (kSeek-Set), the current seek pointer (kSeekCur), or the end of the file (kSeekEnd). For more information about values, see the kSeek* constants.

Retruns the new seek pointer from the beginning of the stream.

Seek changes the seek pointer so that subsequent read and write operations can be performed at a different location in the stream object. It is an error to seek before the beginning of the stream. It is not, however, an error to seek past the end of the stream. Seeking past the end of the stream is useful for subsequent write operations, as the stream byte range will be extended to the new seek position immediately before the write is complete.

You can also use this method to obtain the current value of the seek pointer by calling this method with the Origin parameter set to kSeekCur and the value parameter set to 0 so that the seek pointer is not changed. The current seek pointer is returned.

Lasterror is set.

3.18.11   SetSize(size as UInt64)

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The SetSize method changes the size of the stream object.
Notes:

SetSize changes the size of the stream object. Call this method to preallocate space for the stream. If the size parameter is larger than the current stream size, the stream is extended to the indicated size by filling the intervening space with bytes of undefined value. This operation is similar to the Write method if the seek pointer is past the current end of stream.

If the size parameter is smaller than the current stream, the stream is truncated to the indicated size.

The seek pointer is not affected by the change in stream size.

Calling SetSize can be an effective way to obtain a large chunk of contiguous space.

Lasterror is set.

3.18.12   Properties

3.18.13   Handle as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The internal reference to the object.
Notes: (Read and Write property)

3.18.14   Lasterror as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The last error code.
Notes: (Read and Write property)

3.18.15   Constants

3.18.16   kCommitConsolidate = 8

Plugin Version: 10.3. **Function:** One of the flags for commit.
Notes: Windows 2000 and Windows XP: Indicates that a storage should be consolidated after it is committed, resulting in a smaller file on disk. This flag is valid only on the outermost storage object that has been opened in transacted mode. It is not valid for streams. The kCommitConsolidate flag can be combined with any other kCommit* flags.

3.18.17   kCommitDangerouslyCommitMerelyToDiskCache = 4

Plugin Version: 10.3. **Function:** One of the flags for commit.
Notes:

Commits the changes to a write-behind disk cache, but does not save the cache to the disk. In a write-behind disk cache, the operation that writes to disk actually writes to a disk cache, thus increasing performance. The cache is eventually written to the disk, but usually not until after the write operation has already returned. The performance increase comes at the expense of an increased risk of losing data if a problem occurs before the cache is saved and the data in the cache is lost.

If you do not specify this value, then committing changes to root-level storage objects is robust even if a disk cache is used. The two-phase commit process ensures that data is stored on the disk and not just to

the disk cache.

3.18.18   kCommitDefault = 0

Plugin Version: 10.3. **Function:** One of the flags for commit.
Notes: You can specify this condition with kCommitConsolidate, or some combination of the other three flags in this list of elements. Use this value to increase the readability of code.

3.18.19   kCommitOnlyIfCurrent = 2

Plugin Version: 10.3. **Function:** One of the flags for commit.
Notes: Prevents multiple users of a storage object from overwriting each other's changes. The commit operation occurs only if there have been no changes to the saved storage object because the user most recently opened it. Thus, the saved version of the storage object is the same version that the user has been editing. If other users have changed the storage object, the commit operation fails and returns the STG_E_NOTCURRENT value. To override this behavior, call the Commit method again using the kCommitDefault value.

3.18.20   kCommitOverwrite = 1

Plugin Version: 10.3. **Function:** One of the flags for commit.
Notes:

The commit operation can overwrite existing data to reduce overall space requirements. This value is not recommended for typical usage because it is not as robust as the default value. In this case, it is possible for the commit operation to fail after the old data is overwritten, but before the new data is completely committed. Then, neither the old version nor the new version of the storage object will be intact.

You can use this value in the following cases:

- The user is willing to risk losing the data.
- The low-memory save sequence will be used to safely save the storage object to a smaller file.
- A previous commit returned STG_E_MEDIUMFULL, but overwriting the existing data would provide enough space to commit changes to the storage object.

Be aware that the commit operation verifies that adequate space exists before any overwriting occurs. Thus, even with this value specified, if the commit operation fails due to space requirements, the old data is safe. It is possible, however, for data loss to occur with the kCommitOverwrite value specified if the commit operation fails for any reason other than lack of disk space.

3.18.21   kModeConvert = & h20000

Plugin Version: 10.3. **Function:** One of the mode constants for the file stream.
Notes: Creates the new object while preserving existing data in a stream named "Contents". In the case of a storage object or a byte array, the old data is formatted into a stream regardless of whether the existing file or byte array currently contains a layered storage object. This flag can only be used when creating a root storage object. It cannot be used within a storage object; for example, in CreateStream. It is also not valid to use this flag and the kModeDeleteOnRelease flag simultaneously.

3.18.22   kModeCreate = & h1000

Plugin Version: 10.3. **Function:** One of the mode constants for the file stream.
Notes:

Undicates that an existing storage object or stream should be removed before the new object replaces it. A new object is created when this flag is specified only if the existing object has been successfully removed.

This flag is used when attempting to create:

- A storage object on a disk, but a file of that name exists.

- An object inside a storage object, but a object with the specified name exists.

- A byte array object, but one with the specified name exists.

3.18.23   kModeDeleteOnRelease = & h4000000

Plugin Version: 10.3. **Function:** One of the mode constants for the file stream.
Notes: Indicates that the underlying file is to be automatically destroyed when the root storage object is released. This feature is most useful for creating temporary files.

3.18.24   kModeFailIfThere = 0

Plugin Version: 10.3. **Function:** One of the mode constants for the file stream.
Notes: Causes the create operation to fail if an existing object with the specified name exists. In this case, STG_E_FILEALREADYEXISTS is returned. This is the default creation mode; that is, if no other create flag is specified, kModeFailIfThere is implied.

3.18.25   kModeRead = 0

Plugin Version: 10.3. **Function:** One of the mode constants for the file stream.
Notes: Indicates that the object is read-only, meaning that modifications cannot be made.

3.18.26   kModeReadWrite = 2

Plugin Version: 10.3. **Function:** One of the mode constants for the file stream.
Notes: Enables access and modification of object data.

3.18.27   kModeShareDenyExclusive = & h10

Plugin Version: 10.3. **Function:** One of the mode constants for the file stream.
Notes: Prevents others from subsequently opening the object in any mode. Be aware that this value is not a simple bitwise OR operation of the kModeShareDenyRead and kModeShareDenyWrite values. In transacted mode, sharing of kModeShareDenyWrite or kModeShareDenyExclusive can significantly improve performance because they do not require snapshots. For more information about transactioning, see the Remarks section.

3.18.28   kModeShareDenyNone = & h40

Plugin Version: 10.3. **Function:** One of the mode constants for the file stream.
Notes: Specifies that subsequent openings of the object are not denied read or write access. If no flag from the sharing group is specified, this flag is assumed.

3.18.29   kModeShareDenyRead = & h30

Plugin Version: 10.3. **Function:** One of the mode constants for the file stream.
Notes: Prevents others from subsequently opening the object in STGM_READ mode. It is typically used on a root storage object.

3.18.30   kModeShareDenyWrite = & h20

Plugin Version: 10.3. **Function:** One of the mode constants for the file stream.
Notes: Prevents others from subsequently opening the object for kModeShareWrite or kModeShareRead-Write access. In transacted mode, sharing of kModeShareDenyWrite or kModeShareDenyExclusive can significantly improve performance because they do not require snapshots.

3.18.31 kModeWrite = 1

Plugin Version: 10.3. **Function:** One of the mode constants for the file stream.
Notes: Enables you to save changes to the object, but does not permit access to its data.

3.18.32 kSeekCur = 1

Plugin Version: 10.3. **Function:** One of the seek constants.
Notes: The new seek pointer is an offset relative to the current seek pointer location. In this case, the dlibMove parameter is the signed displacement from the current seek position.

3.18.33 kSeekEnd = 2

Plugin Version: 10.3. **Function:** One of the seek constants.
Notes: The new seek pointer is an offset relative to the end of the stream. In this case, the dlibMove parameter is the new seek position relative to the end of the stream.

3.18.34 kSeekSet = 0

Plugin Version: 10.3. **Function:** One of the seek constants.
Notes: The new seek pointer is an offset relative to the beginning of the stream. In this case, the dlibMove parameter is the new seek position relative to the beginning of the stream.

3.19   class WIATransferCallbackMBS

3.19.1   class WIATransferCallbackMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The class for transfering data from the device into your application.
Notes: This class is only used for WIA 2.x.

3.19.2   Properties

3.19.3   Handle as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The internal reference to the object.
Notes: (Read and Write property)

3.19.4   Events

3.19.5   GetNextStream(ItemName as string, FullItemName as string) as WIAS-treamMBS

Plugin Version: 10.3, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Function:** Gets a new stream for the specified item.
Notes:

ItemName: Specifies the name of the item to create stream for.
FullItemName: Specifies the full name of the item to create stream for.

Returns a new WIAStreamMBS object or nil for an error.

When this method is implemented by an image processing filter, the Windows Image Acquisition (WIA) 2.0 minidriver calls it during image acquisition to get the destination stream from the client.

A filter's WIATransferCallbackMBS.GetNextStream must delegate to the application's callback method. The filter uses the stream returned by the application callback's WIATransferCallbackMBS.GetNextStream implementation to create its own stream that it passes back to the WIA 2.0 service. The filtering is done when the filter's stream calls the IStream::Write method.

The filter's stream cannot make any assumptions on the number of bytes that are written to it on each write, since the unfiltered image data may come from the WIA 2.0 Preview Component rather than the driver.

The WIA 2.0 Preview Component always writes the whole unfiltered image data into the filter's stream only once, which means that the filter's stream has one source writing into it. If both the driver and the preview component write into the filter's stream, the filter's stream cannot assume, for example, that it will receive the full header the first time IStream::Write is called although its corresponding driver always writes the header data first in one write. Nor can it assume that a subsequent write contains exactly one scan line. So the filtering stream may have to count the number of bytes written to it to determine, for example, where the image data starts.

The image processing filter's WIATransferCallbackMBS.GetNextStream implementation should read the properties needed for its image processing from the item for which the image is being acquired. The filter does not read the properties directly from the pWiaItem2 passed into InitializeFilter. Instead the filter must call FindItemByName on this WIA 2.0 item to obtain the actual WIA 2.0 item. The reason for this is that the image being acquired may actually be a child item of pWiaItem2. For example, during a folder acquisition the filter uses pWiaItem2 to obtain pWiaItem2's child items in WIATransferCallbackMBS.GetNextStream (during a folder acquisition the driver returns the images represented by the child items of WiaItemMBS). The same is true when the WIA 2.0 Preview Component calls into the image processing filter passing a child WIA 2.0 item.

3.19.6   TransferCallback(w as WIATransferParamsMBS) as Integer

Plugin Version: 10.3, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Function:** Provides progress and other notifications during a transfer.
Notes: Returns an error value or zero on success.

3.20 class WIATransferMBS

3.20.1 class WIATransferMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The WIATransferMBS class provides stream-based transfer of data.
Notes: This class is for WIA 2.x.

3.20.2 Methods

3.20.3 Cancel

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Cancels the current transfer operation.
Notes: Lasterror is set.

3.20.4 Download(TransferCallback as WIATransferCallbackMBS)

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Initiates a data download to the caller.
Notes:

TransferCallback: The WIATransferCallbackMBS object to receive progress details and specify the destination.

If a folder is downloaded, then all the child items of that folder are also transferred. Each item is transferred in a separate stream.

Lasterror is set.

3.20.5 EnumerateFormatInfo as WIAFormatInfoEnumeratorMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Creates an enumerator for the transfer formats that the Windows Image Acquisition (WIA) 2.0 device supports.
Notes: Lasterror is set.

3.20.6 Upload(Source as WIAStreamMBS, TransferCallback as WIATransferCallbackMBS)

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Initiates a data upload of a single item from the caller.
Notes:

Source: Specifies a pointer to the Stream data.
TransferCallback: Specifies a pointer to the caller's WIATransferCallbackMBS interface.

Lasterror is set.

3.20.7 Properties

3.20.8 Handle as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The internal reference to the object.
Notes: (Read and Write property)

3.20.9 Lasterror as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The last error code.
Notes: (Read and Write property)

3.21   class WIATransferParamsMBS

3.21.1   class WIATransferParamsMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The class you subclass to get progress of the image transfer.
Notes: The WiaTransferParams is transmitted to an application during a data transfer by the Windows Image Acquisition (WIA) run-time system to the WiaTransferCallbackMBS.TransferCallback method.

3.21.2   Properties

3.21.3   ErrorStatus as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The status, or error state, of the device set by the driver; for example, "warming up".
Notes: (Read and Write property)

3.21.4   Message as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Indicates the status of the data transfer.
Notes:

See the kMessage* constants
(Read and Write property)

3.21.5   PercentComplete as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Indicates the progress of the data transfer as a percentage.
Example:

dim w as WIATransferParamsMBS // your parameters
Progressbar1.maximum = 100
Progressbar1.value = w.PercentComplete

Notes: (Read and Write property)

3.21.6 TransferredBytes as UInt64

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Indicates the amount of data transferred.
Notes: (Read and Write property)

3.21.7 Constants

3.21.8 kMessageDeviceStatus = 4

Plugin Version: 10.3. **Function:** One of the message constants.

3.21.9 kMessageEndOfStream = 2

Plugin Version: 10.3. **Function:** One of the message constants.

3.21.10 kMessageEndOfTransfer = 3

Plugin Version: 10.3. **Function:** One of the message constants.

3.21.11 kMessageNewPage = 5

Plugin Version: 10.3. **Function:** One of the message constants.

3.21.12 kMessageStatus = 1

Plugin Version: 10.3. **Function:** One of the message constants.

3.22   class WIAVideoMBS

3.22.1   class WIAVideoMBS

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The IWiaVideo interface provides methods that allow an application that uses Windows Image Acquisition (WIA) services to acquire still images from a streaming video device.
Notes: Note WIA does not support video devices in Windows Server 2003, Windows Vista, and later. For those versions of the Windows, use DirectShow to acquire images from video.

3.22.2   Methods

3.22.3   Constructor

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The constructor.
Notes: Requires Windows XP or Windows Server 2003.

3.22.4   CreateVideoByDevNum(DeviceNumber as Integer, win as window, StretchToFit-Parent as boolean, AutoBeginPlayback as boolean)

Plugin Version: 10.3, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Function:** The CreateVideoBy-DevNum method creates a connection to a streaming video device with the device number obtained from a Directshow enumeration.
Notes:

DeviceNumber: Specifies the video device's Directshow device number.
win: Specifies the window in which to display the streaming video.
StretchToFitParent: Specifies whether the video display is stretched to fit the parent window. Set this parameter to true if the display should be stretched to fit the parent window; otherwise, set to false.
AutoBeginPlayback: Specifies whether the streaming video begins playback as soon as this method returns. Set this parameter to TRUE to cause immediate playback; set it to false to require a call to Play before video playback begins.

Lasterror is set.
By default, the video is displayed in the video device's default resolution. If bStretchToFitParent is set to TRUE, the video display fills the window.
See also:

- 3.22.5 CreateVideoByDevNum(DeviceNumber as Integer, WindowHandle as Integer, StretchToFitParent as boolean, AutoBeginPlayback as boolean)   169

3.22.5 CreateVideoByDevNum(DeviceNumber as Integer, WindowHandle as Integer, StretchToFitParent as boolean, AutoBeginPlayback as boolean)

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The CreateVideoByDevNum method creates a connection to a streaming video device with the device number obtained from a Directshow enumeration.
Notes:

DeviceNumber: Specifies the video device's Directshow device number.
WindowHandle: Specifies the window in which to display the streaming video.
StretchToFitParent: Specifies whether the video display is stretched to fit the parent window. Set this parameter to true if the display should be stretched to fit the parent window; otherwise, set to false.
AutoBeginPlayback: Specifies whether the streaming video begins playback as soon as this method returns. Set this parameter to TRUE to cause immediate playback; set it to false to require a call to Play before video playback begins.

Lasterror is set.
By default, the video is displayed in the video device's default resolution. If bStretchToFitParent is set to TRUE, the video display fills the window.
See also:

- 3.22.4 CreateVideoByDevNum(DeviceNumber as Integer, win as window, StretchToFitParent as boolean, AutoBeginPlayback as boolean)   168

3.22.6 CreateVideoByName(FriendlyName as string, win as window, StretchToFitParent as boolean, AutoBeginPlayback as boolean)

Plugin Version: 10.3, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Function:** The CreateVideoByName method creates a connection to a streaming video device with the friendly device name obtained from a Directshow enumeration.
Notes:

FriendlyName: Specifies the video device's friendly name obtained from a Directshow device enumeration.
win: Specifies the window in which to display the streaming video.
StretchToFitParent: Specifies whether the video display is stretched to fit the parent window. Set this parameter to true if the display should be stretched to fit the parent window; otherwise, set to false.
AutoBeginPlayback: Specifies whether the streaming video begins playback as soon as this method returns. Set this parameter to TRUE to cause immediate playback; set it to false to require a call to Play before video playback begins.

Lasterror is set.
By default, the video is displayed in the video device's default resolution. If bStretchToFitParent is set to TRUE, the video display fills the window.
See also:

- 3.22.7 CreateVideoByName(FriendlyName as string, WindowHandle as Integer, StretchToFitParent as

boolean, AutoBeginPlayback as boolean)   170

3.22.7 CreateVideoByName(FriendlyName as string, WindowHandle as Integer, StretchToFitParent as boolean, AutoBeginPlayback as boolean)

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The CreateVideoBy-Name method creates a connection to a streaming video device with the friendly device name obtained from a Directshow enumeration.
Notes:

FriendlyName: Specifies the video device's friendly name obtained from a Directshow device enumeration.
win: Specifies the window in which to display the streaming video.
StretchToFitParent: Specifies whether the video display is stretched to fit the parent window. Set this parameter to true if the display should be stretched to fit the parent window; otherwise, set to false.
AutoBeginPlayback: Specifies whether the streaming video begins playback as soon as this method returns. Set this parameter to TRUE to cause immediate playback; set it to false to require a call to Play before video playback begins.

Lasterror is set.
By default, the video is displayed in the video device's default resolution. If bStretchToFitParent is set to TRUE, the video display fills the window.
See also:

3.22.8 CreateVideoByWiaDevID(WiaDeviceID as string, win as window, StretchToFitParent as boolean, AutoBeginPlayback as boolean)

Plugin Version: 10.3, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Function:** The CreateVideoBy-WiaDevID method creates a connection to a streaming video device from its DeviceID.
Notes:

WiaDeviceID: Specifies the value of the video device's DeviceID property.
win: Specifies the window in which to display the streaming video.
StretchToFitParent: Specifies whether the video display is stretched to fit the parent window. Set this parameter to true if the display should be stretched to fit the parent window; otherwise, set to false.
AutoBeginPlayback: Specifies whether the streaming video begins playback as soon as this method returns. Set this parameter to true to cause immediate playback; set it to false to require a call to Play before video playback begins.

Lasterror is set.
By default, the video is displayed in the video device's default resolution. If bStretchToFitParent is set to TRUE, the video display fills the window.

In order for the function to succeed, the ImagesDirectory property must be specified first.
See also:

- 3.22.9 CreateVideoByWiaDevID(WiaDeviceID as string, WindowHandle as Integer, StretchToFitParent as boolean, AutoBeginPlayback as boolean) 171

3.22.9 CreateVideoByWiaDevID(WiaDeviceID as string, WindowHandle as Integer, StretchToFitParent as boolean, AutoBeginPlayback as boolean)

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The CreateVideoByWiaDevID method creates a connection to a streaming video device from its DeviceID.
Notes:

WiaDeviceID: Specifies the value of the video device's DeviceID property.
win: Specifies the window in which to display the streaming video.
StretchToFitParent: Specifies whether the video display is stretched to fit the parent window. Set this parameter to true if the display should be stretched to fit the parent window; otherwise, set to false.
AutoBeginPlayback: Specifies whether the streaming video begins playback as soon as this method returns. Set this parameter to true to cause immediate playback; set it to false to require a call to Play before video playback begins.

Lasterror is set.
By default, the video is displayed in the video device's default resolution. If bStretchToFitParent is set to TRUE, the video display fills the window.

In order for the function to succeed, the ImagesDirectory property must be specified first.
See also:

- 3.22.8 CreateVideoByWiaDevID(WiaDeviceID as string, win as window, StretchToFitParent as boolean, AutoBeginPlayback as boolean) 170

3.22.10 CurrentState as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Queries the state of the video stream.
Notes: See the kState* constants.

3.22.11 DestroyVideo

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The DestroyVideo method shuts down the streaming video.
Notes:

To restart video playback, the application must call one of the CreateVideo methods again.
Lasterror is set.

Call this method only after a successful call to CreateVideoByWiaDevID, CreateVideoByDevNum, or CreateVideoByName.

3.22.12   Pause

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The Pause method
pauses video playback.
Notes:

Call this method only after a successful call to CreateVideoByWiaDevID, CreateVideoByDevNum, or CreateVideoByName.
Lasterror is set.

3.22.13   Play

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Begins playback of
streaming video.
Notes:

Call this method only after a successful call to CreateVideoByWiaDevID, CreateVideoByDevNum, or CreateVideoByName.
Lasterror is set.

3.22.14   ResizeVideo(StretchToFitParent as boolean)

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The ResizeVideo
method resizes the video playback to the largest supported resolution that fits inside the parent window.
Notes:

Call this method whenever the parent window is moved or resized.

By default, the video is displayed in a supported resolution smaller than the parent window. If bStretchToFitParent is set to true, the video display fills the window.

Lasterror is set.

3.22.15   TakePicture as folderitem

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The TakePicture method extracts a still image from the video stream, and saves the image as a JPEG file.
Notes:

Returns the full path and filename of the JPEG file that this method creates.
Lasterror is set.

The path and directory where the image file is saved are specified by the ImagesDirectory or ImageFolder property.
See also:

- 3.22.16 TakePicture as string   173

3.22.16   TakePicture as string

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The TakePicture method extracts a still image from the video stream, and saves the image as a JPEG file.
Notes:

Returns the full path and filename of the JPEG file that this method creates.
Lasterror is set.

The path and directory where the image file is saved are specified by the ImagesDirectory or ImageFolder property.
See also:

- 3.22.15 TakePicture as folderitem   173

3.22.17   Properties

3.22.18   Handle as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The internal reference to the object.
Notes: (Read and Write property)

3.22.19   Lasterror as Integer

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The last error code.
Notes: (Read and Write property)

3.22.20   ImagesDirectory as string

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Specifies the full path and directory where images are stored when calling the TakePicture method.
Notes:

Lasterror is set.
(Read and Write computed property)

3.22.21   ImagesFolder as folderitem

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** Specifies the folder where TakePicture stores the images.
Notes:

Lasterror is set.
(Read and Write computed property)

3.22.22   PreviewVisible as boolean

Plugin Version: 10.3, Console & Web: Yes, Mac: No, Win: Yes, Linux: No. **Function:** The PreviewVisible property specifies whether the video playback is visible in its parent window.
Notes:

This does not affect the state of the video.
Lasterror is set.
(Read and Write computed property)

3.22.23   Constants

3.22.24   kStateCreatingVideo = 2

Plugin Version: 10.3. **Function:** One of the constants for the video state.
Notes: One of the WiaVideoMBS CreateVideo methods was called and WIA is in the process of creating the video stream.

3.22.25   kStateDestroyingVideo = 6

Plugin Version: 10.3. **Function:** One of the constants for the video state.
Notes: The application called DestroyVideo method, and WIA is in the process of destroying the video

stream.

3.22.26   kStateNoVideo = 1

Plugin Version: 10.3. **Function:** One of the constants for the video state.
Notes: No video stream exists. Call CreateVideoByWiaDevID, CreateVideoByDevNum, or CreateVideoBy-Name to create a video.

3.22.27   kStateVideoCreated = 3

Plugin Version: 10.3. **Function:** One of the constants for the video state.
Notes: A video stream has been successfully created, but playback has not yet started.

3.22.28   kStateVideoPaused = 5

Plugin Version: 10.3. **Function:** One of the constants for the video state.
Notes: A video stream has been successfully created, and the video is paused. The application can now call the TakePicture method.

3.22.29   kStateVideoPlaying = 4

Plugin Version: 10.3. **Function:** One of the constants for the video state.
Notes: A video stream has been successfully created, and the video is playing. The application can now call the TakePicture method.

Chapter 4

List of Questions in the FAQ

Chapter 5

The FAQ

5.0.1 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

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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)

5.0.2   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.NSCalibrate-
dRGBColorSpace)
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:

5.0.3 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:

5.0.4 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:

5.0.5 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:

5.0.6   How to detect if CPU if 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:

5.0.7   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:

5.0.8   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
```

5.0.9   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.

5.0.10   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

5.0.11   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.

5.0.12 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 librery as string = Join(libjs, "")
dim vm as new JavaVMMBS(librery)

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

5.0.13   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:

The is a feature request to allow graphics subclasses:
Feedback case 11391: feedback://showreport?report_id=11391

5.0.14   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.

5.0.15 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

5.0.16 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.

5.0.17 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.

5.0.18 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(& hFFFFFF)

// 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. Tranfserring 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.

5.0.19   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

5.0.20   Can I use your plugin controls on a web application?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** No.

5.0.21   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.

5.0.22 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

5.0.23 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 all at. 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 looks 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, XY-Chart.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.

5.0.24   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 "Gill-Sans.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 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.

5.0.25   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.

5.0.26   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 "ˆ" (exponentiation). Operators "*", "/", "% ", "ˆ" 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.

5.0.27   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

5.0.28   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.

5.0.29   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)

5.0.30   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.
Than we can talk about the plugin.

5.0.31   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. Than 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.

5.0.32 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.

5.0.33 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

5.0.34   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.

5.0.35   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.

5.0.36   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.

5.0.37   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.

5.0.38 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.

5.0.39 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.

5.0.40   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.

5.0.41   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.

5.0.42   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.

5.0.43 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.

5.0.44 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
```

5.0.45 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.

5.0.46 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

5.0.47   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 IsQTJPEGExporerAvailable() 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.

5.0.48 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.

5.0.49   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.

5.0.50   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.

5.0.51   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.

5.0.52   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
```

5.0.53   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.

5.0.54   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.

5.0.55   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 if 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.

5.0.56   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.

5.0.57   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.

5.0.58   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 CFObjectMBS = 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.

5.0.59 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.

5.0.60 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.

5.0.61 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.

5.0.62   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.

5.0.63   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).

5.0.64 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.

5.0.65 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.

5.0.66   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>
```

5.0.67   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/NSAutorelease-Pool_Class/Reference/Reference.html

5.0.68 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.

5.0.69 How to bring my application to front?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: No, Linux: No. **Answer:** This makes SimpleText (Code ttxt) 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)

5.0.70 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 catched, a flag is set and you can ask later in your normal application flow for the result.

5.0.71   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.

5.0.72   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/ .

5.0.73   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.

5.0.74   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.

5.0.75   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

5.0.76 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.

5.0.77   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/*.frame-
work"
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.

5.0.78   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.

5.0.79   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.

5.0.80   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.

5.0.81   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

5.0.82   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

5.0.83 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

5.0.84   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 althrough 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.

5.0.85   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.

5.0.86 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.

5.0.87 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

5.0.88   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.

5.0.89   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.

5.0.90   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.

5.0.91   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.

5.0.92   How to create a GUID?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Use the UUIDMBS class for this.

5.0.93   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("AQAAAAAAAAAAAAAAAACAFRDRVIAAAABAAAAAAAAABUQ0lQAAAAA
r.AddResource(data,"drag",128,"") 'ditto
r.Close

Notes: In general Apple has deprecated this, but a few application still support clippings.

5.0.94   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.

5.0.95   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.

5.0.96   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.

5.0.97   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 intrepreted 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/f2f4e540bf8bb60f61cfcd4328001c59 -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)

5.0.98 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.

5.0.99 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".

5.0.100 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)

5.0.101 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.

5.0.102   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.

5.0.103   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.

5.0.104   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)
```

```
for i=0 to m
n(i)=i+1
next

' unsort them by exchanging random ones
m=max*10
for i=1 to m
a=rnd*max
b=rnd*max

d=n(a)
n(a)=n(b)
n(b)=d
next

' get the first count to the dest array
m=count-1
redim z(m)
for i=0 to m
z(i)=n(i)
next

'sort the result
z.sort
End Sub

Sub Open()
// Test it

dim za(0) as Integer ' the array of the numbers

lotto 49,6,za ' 6 of 49 in Germany


' and display them
staticText1.text=str(za(0))+chr(13)+str(za(1))+chr(13)+str(za(2))+chr(13)+str(za(3))+chr(13)+str(za(4))+chr(13)+str(za
End Sub
```

5.0.105 How to do an asycron DNS lookup?

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** use CFHostMBS class (Mac OS X only).
Notes:

REALbasic internal functions and plugin DNS functions are sycronized.

You can use DNSLookupThreadMBS class for doing them asyncron.

5.0.106   How to draw a dushed pattern line?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** You can try this code:
Example:

```
// call like this: DrawDushedPatternLine g,0,0,width,height,10

Sub DrawDushedPatternLine(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.

5.0.107   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 althrough 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.

5.0.108   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)

5.0.109   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

5.0.110   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.

5.0.111   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.

5.0.112   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.

5.0.113   How to extract text from HTML?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Use both Remove-HTMLTagsMBS 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 & auml; to .

5.0.114   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
```

5.0.115   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

5.0.116   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.

5.0.117   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".

5.0.118   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/

5.0.119   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.

5.0.120   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
```

5.0.121   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
```

5.0.122   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 CFGregorianDateMBS
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.

5.0.123   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
```

5.0.124   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.

5.0.125   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.

5.0.126   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.

5.0.127   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

5.0.128   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.

5.0.129 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.

5.0.130 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 requuire 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.

5.0.131   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” ...

5.0.132   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 ThreadCurrentStackSpace lib "Carbon" (threadid as Integer, byref size as Integer) as short

if GetCurrentThread(threadid)=0 then
if 0=ThreadCurrentStackSpace(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 if you like for that.

5.0.133   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 CFTimeZoneMBS 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
```

5.0.134   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 Accessibilty 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
```

5.0.135   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.

5.0.136   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.folderItemItem(i)

dateiname=f.name
// editfield1 with property "mulitline=true"!
```

editfield1.text=editfield1.text + dateiname + chr(13)
next
end if

5.0.137   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
```

5.0.138   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.

5.0.139   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.

5.0.140   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!

5.0.141 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

5.0.142 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.

5.0.143 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.

5.0.144   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.

5.0.145   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.

5.0.146   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
```

5.0.147   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).

5.0.148 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.

5.0.149 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.

5.0.150 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 underlaying NSTextViewMBS object via TextArea.NSTextViewMBS method.

5.0.151   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
```

5.0.152   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
```

5.0.153   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.

5.0.154 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.

5.0.155 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 than 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.

5.0.156   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 althrough 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 carefull! It crashes sometimes for an unknown reason!?

5.0.157   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.

5.0.158   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.

5.0.159   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.

5.0.160   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
```

5.0.161   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.

5.0.162 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.

5.0.163 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.

5.0.164 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
```

5.0.165   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

5.0.166   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.

5.0.167   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

5.0.168   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 GetDblTime Lib "Carbon" () as Integer
doubleClickTime = GetDblTime()
# 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 occured close enough together in space
if abs(X - lastClickX) <= 5 and abs(Y - LastClickY) <= 5 then
DoubleClick //a double click has occured 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

5.0.169   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.

5.0.170   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?

5.0.171   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 OSType, 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))
```

5.0.172   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.

5.0.173   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.

5.0.174   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)

5.0.175   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 RNTO with the new file name. To delete use DELE and the file path.

5.0.176   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.

5.0.177   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.

5.0.178   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

5.0.179   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.

5.0.180   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
```

5.0.181   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.

5.0.182   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

5.0.183   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.

5.0.184   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 javscript.
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. Than 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 element.</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)+";")

5.0.185   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

5.0.186 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.

5.0.187 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.

5.0.188   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.

5.0.189   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.

5.0.190   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.

5.0.191   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.

5.0.192   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
```

5.0.193   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 OptionResume-From is used. Store there (or in OptionResumeFromLarge) your start value.
Don't forget to implement the read event and return data there as requested.

5.0.194   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.

5.0.195   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

5.0.196 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.

5.0.197 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))
```

5.0.198 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.

5.0.199   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.rtfd")

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 underlaying NSTextViewMBS object via TextArea.NSTextViewMBS
method.

5.0.200   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 ProportinalScaledWithMask(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)

// 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.

5.0.201   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)

5.0.202   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.

5.0.203   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

5.0.204   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
```

5.0.205   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.

5.0.206   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

5.0.207   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

5.0.208   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/KeyboardViewerServer.app"

set POSIXPath to ((POSIX file thePath) as string)
tell application "System Events" to set isRunning to 0 <(count (application processes whose name is theApplication))
if isRunning then tell application POSIXPath to quit
delay 0.15

ignoring application responses
tell application POSIXPath to run
end ignoring

5.0.209   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.

5.0.210   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
immediataly: No document asked to be saved, all applications quitting
without knowing).

```
Declare Sub ShutDwnPower Lib "Carbon" ()
ShutDwnPower
```

5.0.211   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
```

5.0.212   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.

5.0.213   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.

5.0.214   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""."

5.0.215   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

5.0.216 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 Preferencefolder.
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!

5.0.217 How to use the IOPMCopyScheduledPowerEvents function in Realbasic?

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 CFDictionaries
'* 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.

5.0.218   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 = "ˆ(\{ { 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".

5.0.219   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.

5.0.220 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.

5.0.221   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 tempory 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.

5.0.222   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=NewCFURLMBSCFStringMBS(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.

5.0.223   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 cliping and an offset which the plugin doesn't know about.

5.0.224   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.

5.0.225 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)

5.0.226 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.

5.0.227 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

5.0.228   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.

5.0.229   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
```

5.0.230 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
```

5.0.231 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

5.0.232 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)

5.0.233   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?

5.0.234 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.

5.0.235 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.

5.0.236 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 prefered to use 50 MB and for an application a 10 MB partition is a good way to start.

5.0.237 SQLDatabase not initialized error?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Before you can use SQLDatabaseMBS, it must be initialized.
Example:

dim d as new SQLDatabaseMBS

Notes:

This happens normally when you use "new SQLDatabaseMBS".
But if you just have a SQLConnectionMBS and get a recordset there, the initialization may not have happend, yet.
So please simply add a line "dim d as new SQLDatabaseMBS" to your app.open code after registration, so the plugin part can initialize and late provide recordsets.

5.0.238 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.

5.0.239   The type translation between CoreFoundation/Foundation and Real-basic 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 ->NSDate

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 CFTypeRef:

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.

5.0.240   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.

5.0.241   What classes to use for hotkeys?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:** Please use Carbon-
HotKeyMBS class on Mac and WindowsKeyFilterMBS on Windows.
Notes: CarbonHotKeyMBS will also work fine in Cocoa apps.

5.0.242 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.

5.0.243 What does the NAN code mean?

Plugin Version: all, Console & Web: No, Mac: Yes, Win: Yes, Linux: Yes. **Answer:**

5.0.244   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
fontStyle 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
```

5.0.245   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.

5.0.246   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.

5.0.247   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.

5.0.248   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.TOOL-BAR, 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, COR-REL, COS, COSH, COUNT, COUNTA, COUNTBLANK, COUNTIF, COVAR, CREATE.OBJECT, CRIT-BINOM, CUSTOM.REPEAT, CUSTOM.UNDO, DATE, DATEDIF, DATESTRING, DATEVALUE, DAV-ERAGE, DAY, DAYS360, DB, DBCS, DCOUNT, DCOUNTA, DDB, DEGREES, DELETE.BAR, DELETE.COM-MAND, 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, EVAL-UATE, 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.TOOL-BAR, GET.WINDOW, GET.WORKBOOK, GET.WORKSPACE, GETPIVOTDATA, GOTO, GROUP, GROWTH, HALT, HARMEAN, HELP, HLOOKUP, HOUR, HYPERLINK, HYPGEOMDIST, IF, IN-DEX, INDIRECT, INFO, INITIATE, INPUT, INT, INTERCEPT, IPMT, IRR, ISBLANK, ISERR, ISER-ROR, 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.COM-MAND, N, NA, NAMES, NEGBINOMDIST, NEXT, NORMDIST, NORMINV, NORMSDIST, NORM-SINV, NOT, NOTE, NOW, NPER, NPV, NUMBERSTRING, ODD, OFFSET, OPEN.DIALOG, OP-TIONS.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, REFTEXT, REGISTER, REGISTER.ID, RELREF, RENAME.COMMAND, REPLACE, REPLACEB, REPT, REQUEST, RESET.TOOLBAR, RESTART, RESULT, RESUME, RETURN, RIGHT, RIGHTB, ROMAN, ROUND, ROUNDBAHTDOWN, ROUND-BAHTUP, 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, STANDARD-IZE, STDEV, STDEVA, STDEVP, STDEVPA, STEP, STEYX, SUBSTITUTE, SUBTOTAL, SUM, SUMIF, SUMPRODUCT, SUMSQ, SUMX2MY2, SUMX2PY2, SUMXMY2, SYD, T, TAN, TANH, TDIST, TER-MINATE, TEXT, TEXT.BOX, TEXTREF, THAIDAYOFWEEK, THAIDIGIT, THAIMONTHOFYEAR, THAINUMSOUND, THAINUMSTRING, THAISTRINGLENGTH, THAIYEAR, TIME, TIMEVALUE, TINV, TODAY, TRANSPOSE, TREND, TRIM, TRIMMEAN, TRUE, TRUNC, TTEST, TYPE, UNREG-ISTER, UPPER, USDOLLAR, USERDEFINED, VALUE, VAR, VARA, VARP, VARPA, VDB, VIEW.GET, VLOOKUP, VOLATILE, WEEKDAY, WEIBULL, WHILE, WINDOW.TITLE, WINDOWS, YEAR and ZTEST.

5.0.249   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.

5.0.250   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.

5.0.251 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 NSExceptionMBS 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.

5.0.252 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.

5.0.253 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 syncronized 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.

5.0.254   Where is CGGetActiveDisplayListMBS?

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** This is now CGDisplayMBS.GetActiveDisplayList.

5.0.255   Where is CGGetDisplaysWithPointMBS?

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** This is now CGDisplayMBS.GetDisplaysWithPoint.

5.0.256   Where is CGGetDisplaysWithRectMBS?

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** This is now CGDisplayMBS.GetDisplaysWithRect.

5.0.257   Where is CGGetOnlineDisplayListMBS?

Plugin Version: all, Console & Web: No, Mac: No, Win: Yes, Linux: No. **Answer:** This is now CGDisplayMBS.GetOnlineDisplayList.

5.0.258   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.

5.0.259 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 basicly it's not useful. If you want to check whether you have a network, than do a DNS resolve:
Example:

```
// two independend domain names
const domain1 = "www.google.com"
const domain2 = "www.macsw.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.

5.0.260 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.

5.0.261 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: This classes have been removed XLSCellMBS, XLSDocumentMBS, XLSFormatRecordMBS, XLSMergedCellsMBS, XLSRowMBS and XLSSheetMBS.

5.0.262   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

5.0.263   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

5.0.264   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.

5.0.265 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.

5.0.266 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.

5.0.267 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.

5.0.268 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.

5.0.269 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.

5.0.270   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.

5.0.271   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.

5.0.272   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.

5.0.273   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 Axis.setLabels 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 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 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 LineLayer.setSymbolScale.
zy	The symbol scale in the y dimension. Applicable for layers with symbol scales set by LineLayer.setSymbolScale.
z	The symbol scale without distinguishing the dimension to use. Applicable for layers with symbol scales set by LineLayer.setSymbolScale.

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.
The negative sign character. Use '

[d]

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 adds 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,,