

MBS Real Studio PNG Plugin Documentation

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0.1 Introduction

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

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Chapter 2

Pictures Import and Export

2.1 class PNGOptimizerMBS

```
class PNGOptimizerMBS
```

Plugin Version: 8.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** This class is a wrapper for the OptiPNG command line tool.

Example:

```
dim p as Picture = LogoMBS(500)

dim fi as FolderItem = SpecialFolder.Desktop.Child("test unoptimized.png")
if not fi.SaveAsPNGMBS(p,0) then
MsgBox "Failed to save PNG file."
Return
end if

dim fo as FolderItem = SpecialFolder.Desktop.Child("test optimized.png")
fo.Delete // delete if existed before

dim o as new PNGOptimizerMBS

o.YieldTicks=10 // give time for other threads
o.InputFile=fi
o.OutputFile=fo

if o.Optimize then
MsgBox "OK: Saved " +str(o.BytesSaved)
```

```
fo.Launch
else
MsgBox "failed"
end if
```

Notes:

OptiPNG: Advanced PNG optimization program.
<http://optipng.sourceforge.net/>

Copyright (C) 2001-2008 Cosmin Truta.
OptiPNG is open-source software, and is distributed under the same licensing and warranty terms as libpng.

PNG optimization is described in detail in the PNG-Tech article "A guide to PNG optimization"
<http://www.cs.toronto.edu/~cosmin/pngtech/optipng.html>

The idea of running multiple compression trials with different PNG filters and zlib parameters is inspired from the pngcrush program by Glenn Randers-Pehrson.
The idea of performing lossless image reductions is inspired from the pngrewrite program by Jason Summers.

2.1.1 Methods

Optimize as boolean

Plugin Version: 8.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The main optimization function.

Notes: Returns true on success and false on failure.

2.1.2 Properties

BytesSaved as Integer

Plugin Version: 8.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** After the optimization this property shows how many bytes were saved.

Notes: (Read and Write property)

Force as Boolean

Plugin Version: 8.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Enforce writing of a new output file.

Notes:

If the input image has a digital signature, the library will not optimize the file unless force=true.
(Read and Write property)

full as Boolean

Plugin Version: 8.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Whether to produce a full report on IDAT (might reduce speed).

Notes: (Read and Write property)

InputFile as Folderitem

Plugin Version: 8.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The file to process.

Notes: (Read and Write property)

interlace as Integer

Plugin Version: 8.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The interlace type (0-1).

Notes: (Read and Write property)

KeepBackup as Boolean

Plugin Version: 8.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Whether to keep a backup of the modified files.

Notes:

If the file exists and KeepBackup=false an error is reported. If you set KeepBackup=True the old file is renamed.
(Read and Write property)

NoBitDepthReduction as Boolean

Plugin Version: 8.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Whether to not do a bit depth reduction.

Notes:

Reducing the bit depth of the image data can reduce the file size.
(Read and Write property)

NoColorTypeReduction as Boolean

Plugin Version: 8.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Whether to not do a color type reduction.

Notes:

If your PNG file has only 256 colors in use, the optimizer can use a color palette to save space.
(Read and Write property)

NoIDATRecompression as Boolean

Plugin Version: 8.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Whether to not recompress the image data.

Notes: (Read and Write property)

NoPaletteReduction as Boolean

Plugin Version: 8.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Whether to not reduce the palette.

Notes:

If not all colors are used, the palette can be reduced in its size.
(Read and Write property)

OptimizationLevel as Integer

Plugin Version: 8.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The optimization level.

Notes:

A value between 0 and 7.
Default is 2.
(Read and Write property)

OutputFile as Folderitem

Plugin Version: 8.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The output file.

Notes: (Read and Write property)

Preserve as Boolean

Plugin Version: 8.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Whether to preserve file attributes if possible.

Notes: (Read and Write property)

simulate as Boolean

Plugin Version: 8.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Whether the optimization runs only in simulation mode.

Notes:

No file is written in simulation mode.
(Read and Write property)

YieldTicks as Integer

Plugin Version: 8.7 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** How much time is given back to REALbasic for other ticks.

Example:

```
dim p as new PNGOptimizerMBS
p.YieldTicks=6 // only use 1/10th of a second
```

Notes:

If value is greater than zero, the application will yield to another RB thread after the given number of ticks have passed. 60 ticks are one second. Using a small value can slow down processing a lot while a big value keeps your application not responding to mouse clicks.

If you use this property with e.g. 6 as the value, you may also want to use this method in a thread so you can handle mouse events or let REALbasic redraw a progressbar.

(Read and Write property)

2.1.3 Events

Log(message as string)

Plugin Version: 8.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The event to output a message to the log file.

Notes: You may want to show that to your advantaged users.

Panic(message as string)

Plugin Version: 10.4 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Called if something really bad happend and the app needs to quit.

Progress(index as integer, count as integer)

Plugin Version: 8.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The event called for reporting ongoing process in the trials.

Notes: The library will try several PNG settings and report progress so you can update a progress bar.

ProgressBegin

Plugin Version: 8.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** This event is called before the library starts to optimize.

Notes: You may want to show a progress dialog here.

ProgressEnd

Plugin Version: 8.7 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** This event is called after the library finished.

Notes: You may want to hide your progress dialog here.

Chapter 3

PNG

3.1 class PNGpictureMBS

class PNGpictureMBS

Console & Web: Yes Mac: Yes, Win: No, Linux: Yes, . **Function:** A class for a PNG picture.

Notes: Based on LibPNG.

3.1.1 Methods

CombinePictureWithMask as picture

Plugin Version: 4.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Returns a new picture which is created using the picture and it's mask.

Example:

```
dim t as TiffPictureMBS
' ...
canvas1.backdrop=t.CombinePictureWithMask
```

PNGLibVersion as string

Plugin Version: 4.3 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The version of the PNG library compiled into the plugin.

Notes: Please ask if you need a newer version.

3.1.2 Properties**height as integer**

Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The height of the picture.

Notes: (Read and Write property)

mask as picture

Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The mask of the picture.

Notes:

May be nil.

(Read and Write property)

pict as picture

Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The picture data of the picture.

Notes:

If this image is all black, you may use a different gamma setting.

(Read and Write property)

width as integer

Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The width of the picture.

Notes: (Read and Write property)

3.1.3 Constants

kDefaultGamma = 0

Plugin Version: 11.3 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The default gamma constant.

Notes: Pass this value to get the default gamma.

3.2 class PNGReaderMBS

class PNGReaderMBS

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The class for reading PNG files.

Example:

```

dim Current as PictureMBS // global
dim f as FolderItem

f=GetopenFolderItem(FileTypes.Png)

if f<>Nil then
  Current=nil

  dim p as new PNGReaderMBS

  if p.OpenFile(f) then
    if p.ApplyOptions(0) then

      Current=new PictureMBS(p.Width,p.Height,PictureMBS.ImageFormatRGB)

      dim i,c as integer

      c=p.Height-1
      for i=0 to c
        Current.RowInFormat(i, PictureMBS.ImageFormatRGBA)=p.ReadRow
      next

    end if
  end if
end if

```

Notes:

Use this class to read PNG files row by row as memoryblock.

Based on LibPNG.

3.2.1 Methods

ApplyOptions(gamma as double = 0.0) as boolean

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Applies various options.

Notes:

The gamma parameter defines what gamma correction is applied:
positive value: use the value as the gamma correction
zero: use default value (or value saved in file itself)
negative value: do not correct gamma

CombinePictureWithMask as picture

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Combines the pict and the mask property to a picture with mask.

Open(file as folderitem, data as string) as boolean

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Opens either the data string or the file.

Notes: Returns true on success.

OpenData(data as string) as boolean

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Opens a PNG file from the data string.

Notes: Returns true on success.

OpenFile(file as folderitem) as boolean

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Opens a file.

Notes: Returns true on success.

OpenSpecialData(data as string) as boolean

Plugin Version: 10.3 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Same as OpenData but with special handling of the png data.

Example:

```

dim f as FolderItem = getfolderitem("mbs.png")
dim b as BinaryStream = f.OpenAsBinaryFile(false) // BinaryStream.Open(f) in newer RB versions
dim s as string = b.Read(B.Length)

dim p as new PNGReaderMBS
if p.OpenSpecialData(s) then
if p.ApplyOptions(0) then
if p.ReadPicture then
Backdrop = p.Pict
Title = "OK"
else
Title = "Failed to read picture."
end if
else
Title = "Failed to apply options."
end if
else
Title = "Failed to open picture."
end if

```

Notes: This function can be used to read PNG files made for the Apple iPhone. The PNG is converted from the Apple format to the normal PNG format and passed to OpenData. In the SourceData property

you can get the modified PNG data. Still this modified PNG data has the channels swapped, so you should read the image with the `pict` property.

PNGLibVersion as string

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The version of the PNG library compiled into the plugin.

ReadICCProfile(byref name as string, byref compression as integer, byref profile as string) as boolean

Plugin Version: 9.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Reads the ICC Profile from the PNG file.

Notes:

Name is the profile name, compression the method used to compress the profile data and profile a string with the content of the profile as binary data.

Returns true on success.

ReadPicture as boolean

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Reads the picture into the `pict` and `mask` properties.

Notes: Returns true on success.

ReadRow as memoryblock

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Reads the next row as a memoryblock.

Example:

```
dim fSource as FolderItem = SpecialFolder.Desktop.Child("test.png") // some png with alpha
dim oPNGInput as new PNGReaderMBS
```

```
If oPNGInput.OpenFile(fSource) Then
```

```

If oPNGInput.ApplyOptions(0) Then

dim imgSource as New PictureMBS(oPNGInput.Width, oPNGInput.Height, PictureMBS.ImageFormatRGBA)

' Read row by row the file and puts it in a PictureMBS instance

dim nMax as integer = oPNGInput.Height - 1
For nInd as integer = 0 To nMax
imgSource.RowInFormat(nInd, PictureMBS.ImageFormatRGBA, true) = oPNGInput.ReadRow()
Next

' show only alpha/mask channel
Backdrop=imgSource.AlphaChannel.CopyPicture

' show Picture without mask
Backdrop=imgSource.CopyPicture

' show picture with mask
Backdrop=imgSource.CopyPictureWithMask

End If
End If

```

Notes:

Returns nil on any error.
Format is RGBA as in the example with 4 bytes per pixel.
See also:

- 3.2.1 ReadRow(mem as memoryblock) as boolean

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ReadRow(mem as memoryblock) as boolean

Plugin Version: 11.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Reads the next row into the given memoryblock.

Notes:

Returns false on any error and true on success.
Format is RGBA as in the example with 4 bytes per pixel.
Make sure the memoryblock is big enough. Else you risk a crash.

See also `PNGReaderMBS.RowBytes`.

`ReadRow` with reusing `memoryblock` is faster than allocating a new one for each row.
See also:

- 3.2.1 `ReadRow` as `memoryblock`

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ReadsRGBTag(`byref file_ srgb_ intent as integer`) as boolean

Plugin Version: 9.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Reads the sRGB tag.

Notes: Returns true if the value was read into the given variable.

RowBytes as integer

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The length of each row in bytes.

3.2.2 Properties

AllowDamaged as Boolean

Plugin Version: 11.3 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Whether to return picture for files with damaged content.

Notes:

e.g. a half downloaded PNG file can still be processed and may give you a preview for the file.
(Read and Write property)

BitDepth as Integer

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The bit depth of the PNG file.

Notes: (Read and Write property)

ColorType as Integer

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The color type of the PNG file.

Notes:

The value is a combination of this constants:

```
PNG_COLOR_MASK_PALETTE = 1
PNG_COLOR_MASK_COLOR   = 2
PNG_COLOR_MASK_ALPHA    = 4
```

The PNG library will convert on reading every row into 32bit RGBA, so don't worry about this.
(Read and Write property)

Height as Integer

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The height of the picture in pixels.

Notes: (Read and Write property)

InterlaceType as Integer

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The interlace setting.

Notes: (Read and Write property)

Interlacing as Integer

Plugin Version: 9.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Whether the png file is interlaced.

Notes:

Value is 1 if not interlaced and 7 if interlaced.
(Read and Write property)

Mask as Picture

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The mask of the picture.

Notes: (Read and Write property)

Pict as Picture

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The picture read.

Notes: (Read and Write property)

SourceData as String

Plugin Version: 10.3 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The source data used in Open functions.

Example:

```
dim p as PNGReaderMBS // your reader

// write data to file
dim fo as FolderItem = SpecialFolder.Desktop.Child("mbsout.png")
dim bo as BinaryStream = fo.CreateBinaryFile("") // BinaryStream.Create(fo,true) in newer RB Versions

bo.Write p.SourceData
```

Notes:

If you used OpenSpecialData, the data here is the PNG without the Apple modifications, but still with swapped colors.

This property is set by the OpenSpecialData, Open and OpenData functions.

(Read and Write property)

SourceFile as FolderItem

Plugin Version: 10.3 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The folderitem passed to the Open functions.

Notes:

This property is set by the Open and OpenFile functions.
(Read and Write property)

SwapRB as Boolean

Plugin Version: 10.3 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Whether to swap red and blue channels.

Example:

```
dim p as new PNGReaderMBS
p.SwapRB = true
```

Notes:

The PNG files for the iPhone have swapped channels so the iPhone does not need to swap them for display. One of the tricks Apple uses for making the iPhone faster. This flag is set to true by OpenSpecialData.
(Read and Write property)

Width as Integer

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The width of the picture in pixels.

Notes: (Read and Write property)

3.2.3 Events

Error(msg as string)

Plugin Version: 11.3 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The PNG library has an error message for you.

Notes: Processing will stop soon.

Warning(msg as string)

Plugin Version: 11.3 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The PNG library has a warning for you.

3.3 Globals

PictureToPNGStringMBS(pic as picture, gamma as single = 0.0) as string

Plugin Version: 6.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Saves a picture to a PNG string.

Notes:

If the picture has no mask, no alpha channel is written to the file.

Returns "" on any error.

The gamma parameter defines what gamma correction is applied:

positive value: use the value as the gamma correction

zero: use default value (or value saved in file itself)

negative value: do not correct gamma

See also:

- 3.3 PictureToPNGStringMBS(pic as picture, gamma as single, Interlace as Boolean, FilterType as integer) as string 27
- 3.3 PictureToPNGStringMBS(pic as picture, mask as picture, gamma as single = 0.0) as string 27
- 3.3 PictureToPNGStringMBS(pic as picture, mask as picture, gamma as single, Interlace as Boolean, FilterType as integer) as string 28

PictureToPNGStringMBS(pic as picture, gamma as single, Interlace as Boolean, FilterType as integer) as string

Plugin Version: 8.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Saves a palette based RGB picture as a PNG file.

Notes:

If the picture has no mask, no alpha channel is written to the file.
Colors must be an array with 256 values defining the palette.

Returns true on success and false on failure.

The gamma parameter defines what gamma correction is applied:
positive value: use the value as the gamma correction
zero: use default value (or value saved in file itself)
negative value: do not correct gamma

If Interlace is true the Adam7 interlacing is used.
FilterType specifies the filter:

```
const PNG_NO_FILTERS      = 0
const PNG_FILTER_NONE    = 8
const PNG_FILTER_SUB     = 16
const PNG_FILTER_UP      = 32
const PNG_FILTER_AVG     = 64
const PNG_FILTER_PAETH   = 128
const PNG_FILTER_ALL     = 248
```

See also:

- 3.3 PictureToPNGStringMBS(pic as picture, gamma as single = 0.0) as string 26
- 3.3 PictureToPNGStringMBS(pic as picture, mask as picture, gamma as single = 0.0) as string 27
- 3.3 PictureToPNGStringMBS(pic as picture, mask as picture, gamma as single, Interlace as Boolean, FilterType as integer) as string 28

PictureToPNGStringMBS(pic as picture, mask as picture, gamma as single = 0.0) as string

Plugin Version: 6.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Saves a picture to a PNG string.

Notes:

Returns "" on any error.

It uses the mask passed. If nil, no alpha channel is written to the file.
The mask from the picture is ignored.

The gamma parameter defines what gamma correction is applied:

positive value: use the value as the gamma correction

zero: use default value (or value saved in file itself)

negative value: do not correct gamma

See also:

- 3.3 PictureToPNGStringMBS(pic as picture, gamma as single = 0.0) as string 26
- 3.3 PictureToPNGStringMBS(pic as picture, gamma as single, Interlace as Boolean, FilterType as integer) as string 27
- 3.3 PictureToPNGStringMBS(pic as picture, mask as picture, gamma as single, Interlace as Boolean, FilterType as integer) as string 28

PictureToPNGStringMBS(pic as picture, mask as picture, gamma as single, Interlace as Boolean, FilterType as integer) as string

Plugin Version: 6.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Saves a picture to a PNG string.

Notes:

Returns "" on any error.

It uses the mask passed. If nil, no alpha channel is written to the file.
The mask from the picture is ignored.

The gamma parameter defines what gamma correction is applied:

positive value: use the value as the gamma correction

zero: use default value (or value saved in file itself)

negative value: do not correct gamma

If Interlace is true the Adam7 interlacing is used.

FilterType specifies the filter:

```
const PNG_NO_FILTERS      = 0
const PNG_FILTER_NONE    = 8
const PNG_FILTER_SUB     = 16
const PNG_FILTER_UP      = 32
const PNG_FILTER_AVG     = 64
const PNG_FILTER_PAETH   = 128
const PNG_FILTER_ALL     = 248
```

See also:

- 3.3 PictureToPNGStringMBS(pic as picture, gamma as single = 0.0) as string 26
- 3.3 PictureToPNGStringMBS(pic as picture, gamma as single, Interlace as Boolean, FilterType as integer) as string 27
- 3.3 PictureToPNGStringMBS(pic as picture, mask as picture, gamma as single = 0.0) as string 27

PNGStringToPictureMBS(data as string, gamma as single = 0.0, AllowDamaged as boolean = false) as picture

Plugin Version: 6.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Reads PNG data from a string variable.

Notes:

If the picture has an alpha channel the returned picture will have a mask.

Returns picture on success and nil on failure.

The gamma parameter defines what gamma correction is applied:

positive value: use the value as the gamma correction

zero: use default value (or value saved in file itself)

negative value: do not correct gamma

AllowDamaged: Whether to allow damaged PNG files to return a part of the image as picture.

PNGStringToPNGPictureMBS(data as string, gamma as single = 0.0, AllowDamaged as boolean = false) as PNGPictureMBS

Plugin Version: 6.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Reads PNG data from a string variable.

Notes:

Returns PNGPictureMBS object on success and nil on failure.

The gamma parameter defines what gamma correction is applied:
 positive value: use the value as the gamma correction
 zero: use default value (or value saved in file itself)
 negative value: do not correct gamma

AllowDamaged: Whether to allow damaged PNG files to return a part of the image as picture.

3.4 class PNGWriterMBS

class PNGWriterMBS

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The class to write a PNG file.

Example:

```
dim Current as PictureMBS // your picture
dim f as FolderItem

f=GetsaveFolderItem(FileTypes.Png,"test.png")

if f<>Nil then
const PNG_COLOR_MASK_PALETTE = 1
const PNG_COLOR_MASK_COLOR = 2
const PNG_COLOR_MASK_ALPHA = 4

dim p as new PNGWriterMBS

p.Width=Current.Width
p.Height=Current.Height
p.Type=PNG_COLOR_MASK_COLOR
p.bpc=3
```

```
p.Rowbytes=p.Width*p.bpc

if p.OpenWriteDestination(f) then
if p.SetHeader(false, -1) then
if p.SetGamma(0) then
if p.WriteInfo then
dim i,c as integer

c=p.Height-1
for i=0 to c
p.WriteRow current.RowInFormat(i, Current.ImageFormatRGB)
next

if p.WriteEnd then
MsgBox "OK"
end if
end if
end if
end if
end if
end if
```

Notes:

You can use this class to write PNG files by row.

Based on LibPNG.

3.4.1 Methods

CloseDestination

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Closes the file.

Finish as string

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Finishes the PNG file and returns the PNG file content as string.

Notes: Returns "" on any error.

OpenWriteDestination(file as folderitem) as boolean

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Opens the file to write.

Notes: If you pass nil for the file, the data is collected in memory and you can get it on the end using the Finish method.

PNGLibVersion as string

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The version of the PNG library compiled into the plugin.

SetAlphaData(alphas() as integer, colors() as color) as boolean

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the alpha data and the color palette.

Notes:

The array can have up to 256 colors.

The color and the alpha arrays must have the same size.

Returns true on success.

SetAlphas as boolean

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Writes the alpha data to the file.

Notes:

You must call SetAlphaData before.
Returns true on success.

SetGamma(gamma as double = 0.0) as boolean

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Defines the gamma value and other options for the PNG file.

Notes:

Returns on success.

The gamma parameter defines what gamma correction is applied:
positive value: use the value as the gamma correction
zero: use default value (or value saved in file itself)
negative value: do not correct gamma

SetHeader(Interlace as boolean, Filter as integer) as boolean

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Defines the header options for the PNG file.

Notes:

Interlace is true the Adam7 interlacing is used.
FilterType specifies the filter:

```
const PNG_NO_FILTERS      = 0
const PNG_FILTER_NONE    = 8
const PNG_FILTER_SUB     = 16
const PNG_FILTER_UP      = 32
const PNG_FILTER_AVG     = 64
const PNG_FILTER_PAETH   = 128
const PNG_FILTER_ALL     = 248
```

SetICCProfile(name as string, CompressionType as integer, Profile as string) as boolean

Plugin Version: 9.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Adds a ICC Profile to the PNG.

Notes:

Name is the profile name as an ASCII string.

CompressionType is always 0 (PNG_COMPRESSION_TYPE_BASE).

SetPalette as boolean

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the palette data.

Notes: Returns true on success.

SetPaletteData(colors() as color) as boolean

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the color palette.

Notes:

The array can have up to 256 colors.

Returns true on success.

SetPalettePicture(pict as picture) as boolean

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Copies a picture into the internal buffers.

Notes:

You need to define the color palette before calling this method.

This method sets width, height, type and bpc properties.

Returns true on success.

SetResolution(ResolutionHorizontal as integer, ResolutionVertical as integer, Unit as integer) as boolean

Plugin Version: 10.1 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the resolution of the PNG.

Notes:

Unit is ResolutionUnknown, ResolutionMeter or ResolutionDPI.

Internally the PNG saves only in dots per meter, so the plugin converts DPI to DPM for you.

SetRGBPicture(pict as picture, mask as picture = nil) as boolean

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Copies a picture into the internal buffers.

Example:

```
// Write a RGBA PNG file
dim current as Picture = LogoMBS(500)

// create a mask
dim g as Graphics = current.Mask.Graphics
g.ForeColor = &cFFFFFF
g.FillRect 0,0,500,500
g.ForeColor = &c000000
g.FillOval 0,0,500,500

// show in window
window1.Backdrop = current

// and write to file
dim f as FolderItem = SpecialFolder.Desktop.Child("test.png")

dim p as new PNGWriterMBS

if p.OpenWriteDestination(f) then // open file
if p.SetRGBPicture(current, current.mask) then // set picture to write
if p.SetHeader(false, -1) then // setup file header
if p.SetGamma(0) then // and default gamma
if p.WriteInfo then // write file header
if p.WriteRows then // write pixels
if p.WriteEnd then // and write file end
p = nil // cleanup
f.Launch
end if
end if
end if
end if
end if
end if
```

end if

Notes:

This method sets width, height, type and bpc properties.
Returns true on success.

Mask can be nil.

SetsRGB(intent as integer) as boolean

Plugin Version: 9.4 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Sets the sRGB intent.

Notes:

Possible values:

```
const PNG_sRGB_INTENT_PERCEPTUAL = 0
const PNG_sRGB_INTENT_RELATIVE     = 1
const PNG_sRGB_INTENT_SATURATION   = 2
const PNG_sRGB_INTENT_ABSOLUTE     = 3
```

WriteEnd as boolean

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Finishes the writing.

Notes:

Returns true on success.

Do not call if you use WriteRows.

WriteInfo as boolean

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Writes the PNG file header.

Notes:

Returns true on success.

Do not call if you use WriteRows.

WriteRow(row as memoryblock)

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Writes one row of image data.

Notes:

The data must be in the RGBA format with one byte per value.
(4 bytes per Pixel)

Returns true on success.

Do not call if you use WriteRows.

WriteRows as boolean

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** Writes the picture from memory to the file.

Example:

```
// Write a RGB PNG file
dim current as Picture = LogoMBS(500)
dim f as FolderItem = SpecialFolder.Desktop.Child("test.png")

dim p as new PNGWriterMBS

if p.OpenWriteDestination(f) then // open file
if p.SetRGBPicture(current) then // set picture to write
if p.SetHeader(false, -1) then // setup file header
if p.SetGamma(0) then // and default gamma
if p.WriteInfo then // write file header
if p.WriteRows then // write pixels
if p.WriteEnd then // and write file end
```

```
p = nil // cleanup
f.Launch
end if
end if
end if
end if
end if
end if
end if
```

Notes: If you call this method, you need to call `SetRGBPicture` or `SetPalettePicture` before and you can't call `WriteInfo`, `WriteRow` and `WriteEnd`.

3.4.2 Properties

bpc as Integer

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The bytes per pixel.
Notes:

Should be 3 for RGB, 1 for palette pictures and 4 for RGB with Alpha.
(Read and Write property)

Height as Integer

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The height of the picture to write.
Notes: (Read and Write property)

Rowbytes as Integer

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The bytes per row.
Notes: (Read and Write property)

Type as Integer

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The color type.
Notes:

The value is a combination of this constants:

```
PNG_COLOR_MASK_PALETTE = 1
PNG_COLOR_MASK_COLOR   = 2
PNG_COLOR_MASK_ALPHA   = 4
```

(Read and Write property)

Width as Integer

Plugin Version: 9.0 Console & Web: Yes Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The width of the picture to write.
Notes: (Read and Write property)

3.4.3 Events

Error(msg as string)

Plugin Version: 11.3 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The PNG library has an error message for you.
Notes: Processing will stop soon.

Warning(msg as string)

Plugin Version: 11.3 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** The PNG library has a warning for you.

3.4.4 Constants

ResolutionDPI = 2

Plugin Version: 10.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the resolution unit type constants.

Notes: The unit for points per inch.

ResolutionMeter = 1

Plugin Version: 10.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the resolution unit type constants.

Notes: The unit for points per meter.

ResolutionUnknown = 0

Plugin Version: 10.1 Console & Web: No Mac: Yes, Win: Yes, Linux: Yes, . **Function:** One of the resolution unit type constants.

Chapter 4

List of all classes

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Chapter 5

List of all global methods

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