

MBS REALbasic PNG Plugin Documentation

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0.1 Introduction

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

0.2 Content

- 1 List of all topics 3
- 2 All items in this plugin 7
- 4 List of all classes 41
- 5 List of all global methods 43

Chapter 1

List of Topics

• 2 Pictures Import and Export	7
– 2.1 class PNGOptimizerMBS	7
* 2.1.1 Optimize as boolean	8
* 2.1.2 BytesSaved as Integer	9
* 2.1.2 Force as Boolean	9
* 2.1.2 full as Boolean	9
* 2.1.2 InputFile as Folderitem	9
* 2.1.2 interlace as Integer	10
* 2.1.2 KeepBackup as Boolean	10
* 2.1.2 NoBitDepthReduction as Boolean	10
* 2.1.2 NoColorTypeReduction as Boolean	11
* 2.1.2 NoIDATRecompression as Boolean	11
* 2.1.2 NoPaletteReduction as Boolean	11
* 2.1.2 OptimizationLevel as Integer	11
* 2.1.2 OutputFile as Folderitem	12
* 2.1.2 Preserve as Boolean	12
* 2.1.2 simulate as Boolean	12
* 2.1.2 YieldTicks as Integer	12
* 2.1.3 Log(message as string)	13
* 2.1.3 Panic(message as string)	13
* 2.1.3 Progress(index as integer, count as integer)	14
* 2.1.3 ProgressBegin	14
* 2.1.3 ProgressEnd	14
• 3 PNG	15
– 3.4 class PNGWriterMBS	30

* 3.4.1 CloseDestination	31
* 3.4.1 Finish as string	32
* 3.4.1 OpenWriteDestination(file as folderitem) as boolean	32
* 3.4.1 PNGLibVersion as string	32
* 3.4.1 SetAlphaData(alphas() as integer, colors() as color) as boolean	32
* 3.4.1 SetAlphas as boolean	33
* 3.4.1 SetGamma(gamma as double) as boolean	33
* 3.4.1 SetHeader(Interlace as boolean, Filter as integer) as boolean	33
* 3.4.1 SetICCProfile(name as string, CompressionType as integer, Profile as string) as boolean	34
* 3.4.1 SetPalette as boolean	34
* 3.4.1 SetPaletteData(colors() as color) as boolean	34
* 3.4.1 SetPalettePicture(pic as picture) as boolean	35
* 3.4.1 SetResolution(ResolutionHorizontal as integer, ResolutionVertical as integer, Unit as integer) as boolean	35
* 3.4.1 SetRGBPicture(pic as picture, mask as picture = nil) as boolean	35
* 3.4.1 SetsRGB(intent as integer) as boolean	36
* 3.4.1 WriteEnd as boolean	36
* 3.4.1 WriteInfo as boolean	36
* 3.4.1 WriteRow(row as memoryblock)	37
* 3.4.1 WriteRows as boolean	37
* 3.4.2 bpc as Integer	37
* 3.4.2 Height as Integer	38
* 3.4.2 Rowbytes as Integer	38
* 3.4.2 Type as Integer	38
* 3.4.2 Width as Integer	39
* 3.4.3 ResolutionDPI = 2	39
* 3.4.3 ResolutionMeter = 1	39
* 3.4.3 ResolutionUnknown = 0	39
– 3.1 Globals	15
* 3.1 PictureToPNGStringMBS(pic as picture, gamma as single) as string	15
* 3.1 PictureToPNGStringMBS(pic as picture, gamma as single, Interlace as Boolean, FilterType as integer) as string	16
* 3.1 PictureToPNGStringMBS(pic as picture, mask as picture, gamma as single) as string	16
* 3.1 PictureToPNGStringMBS(pic as picture, mask as picture, gamma as single, Interlace as Boolean, FilterType as integer) as string	17
* 3.1 PNGStringToPictureMBS(data as string, gamma as single) as picture	18
* 3.1 PNGStringToPNGPictureMBS(data as string, gamma as single) as PNGPictureMBS	18
– 3.3 class PNGpictureMBS	28
* 3.3.1 CombinePictureWithMask as picture	28
* 3.3.1 PNGLibVersion as string	29
* 3.3.2 height as integer	29

* 3.3.2 mask as picture	29
* 3.3.2 pict as picture	29
* 3.3.2 width as integer	30
– 3.2 class PNGReaderMBS	19
* 3.2.1 ApplyOptions(gamma as double) as boolean	20
* 3.2.1 CombinePictureWithMask as picture	20
* 3.2.1 Open(file as folderitem, data as string) as boolean	20
* 3.2.1 OpenData(data as string) as boolean	21
* 3.2.1 OpenFile(file as folderitem) as boolean	21
* 3.2.1 OpenSpecialData(data as string) as boolean	21
* 3.2.1 PNGLibVersion as string	22
* 3.2.1 ReadICCPProfile(byref name as string, byref compression as integer, byref profile as string) as boolean	22
* 3.2.1 ReadPicture as boolean	23
* 3.2.1 ReadRow as memoryblock	23
* 3.2.1 ReadsRGBTag(byref file_ srgb_ intent as integer) as boolean	24
* 3.2.1 RowBytes as integer	24
* 3.2.2 BitDepth as Integer	24
* 3.2.2 ColorType as Integer	25
* 3.2.2 Height as Integer	25
* 3.2.2 InterlaceType as Integer	25
* 3.2.2 Interlacing as Integer	25
* 3.2.2 Mask as Picture	26
* 3.2.2 Pict as Picture	26
* 3.2.2 SourceData as String	26
* 3.2.2 SourceFile as FolderItem	27
* 3.2.2 SwapRB as Boolean	27
* 3.2.2 Width as Integer	28

Chapter 2

Pictures Import and Export

2.1 class PNGOptimizerMBS

class PNGOptimizerMBS

class, Pictures Import and Export, MBS REALbasic PNG Plugin (OptimizePNG), Plugin version: 8.7, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

method from class PNGOptimizerMBS, Pictures Import and Export, MBS REALbasic PNG Plugin (OptimizePNG), Plugin version: 8.7, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: The main optimization function.

Notes: Returns true on success and false on failure.

2.1.2 Properties

BytesSaved as Integer

property from class PNGOptimizerMBS, Pictures Import and Export, MBS REALbasic PNG Plugin (OptimizePNG), Plugin version: 8.7, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: After the optimization this property shows how many bytes were saved.

Notes: (Read and Write property)

Force as Boolean

property from class PNGOptimizerMBS, Pictures Import and Export, MBS REALbasic PNG Plugin (OptimizePNG), Plugin version: 8.7, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

property from class PNGOptimizerMBS, Pictures Import and Export, MBS REALbasic PNG Plugin (OptimizePNG), Plugin version: 8.7, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: Whether to produce a full report on IDAT (might reduce speed).

Notes: (Read and Write property)

InputFile as Folderitem

property from class PNGOptimizerMBS, Pictures Import and Export, MBS REALbasic PNG Plugin (OptimizePNG), Plugin version: 8.7, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: The file to process.

Notes: (Read and Write property)

interlace as Integer

property from class PNGOptimizerMBS, Pictures Import and Export, MBS REALbasic PNG Plugin (OptimizePNG), Plugin version: 8.7, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: The interlace type (0-1).

Notes: (Read and Write property)

KeepBackup as Boolean

property from class PNGOptimizerMBS, Pictures Import and Export, MBS REALbasic PNG Plugin (OptimizePNG), Plugin version: 8.7, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

property from class PNGOptimizerMBS, Pictures Import and Export, MBS REALbasic PNG Plugin (OptimizePNG), Plugin version: 8.7, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

property from class PNGOptimizerMBS, Pictures Import and Export, MBS REALbasic PNG Plugin (OptimizePNG), Plugin version: 8.7, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

property from class PNGOptimizerMBS, Pictures Import and Export, MBS REALbasic PNG Plugin (OptimizePNG), Plugin version: 8.7, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: Whether to not recompress the image data.

Notes: (Read and Write property)

NoPaletteReduction as Boolean

property from class PNGOptimizerMBS, Pictures Import and Export, MBS REALbasic PNG Plugin (OptimizePNG), Plugin version: 8.7, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

property from class PNGOptimizerMBS, Pictures Import and Export, MBS REALbasic PNG Plugin (OptimizePNG), Plugin version: 8.7, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: The optimization level.

Notes:

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

OutputFile as Folderitem

property from class PNGOptimizerMBS, Pictures Import and Export, MBS REALbasic PNG Plugin (OptimizePNG), Plugin version: 8.7, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: The output file.

Notes: (Read and Write property)

Preserve as Boolean

property from class PNGOptimizerMBS, Pictures Import and Export, MBS REALbasic PNG Plugin (OptimizePNG), Plugin version: 8.7, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: Whether to preserve file attributes if possible.

Notes: (Read and Write property)

simulate as Boolean

property from class PNGOptimizerMBS, Pictures Import and Export, MBS REALbasic PNG Plugin (OptimizePNG), Plugin version: 8.7, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: Whether the optimization runs only in simulation mode.

Notes:

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

YieldTicks as Integer

property from class PNGOptimizerMBS, Pictures Import and Export, MBS REALbasic PNG Plugin (OptimizePNG), Plugin version: 8.7, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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)

event from class PNGOptimizerMBS, Pictures Import and Export, MBS REALbasic PNG Plugin (OptimizePNG), Plugin version: 8.7, not console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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)

event from class PNGOptimizerMBS, Pictures Import and Export, MBS REALbasic PNG Plugin (OptimizePNG), Plugin version: 10.4, not console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: Called if something really bad happend and the app needs to quit.

Progress(index as integer, count as integer)

event from class PNGOptimizerMBS, Pictures Import and Export, MBS REALbasic PNG Plugin (OptimizePNG), Plugin version: 8.7, not console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

event from class PNGOptimizerMBS, Pictures Import and Export, MBS REALbasic PNG Plugin (OptimizePNG), Plugin version: 8.7, not console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: This event is called before the library starts to optimize.

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

ProgressEnd

event from class PNGOptimizerMBS, Pictures Import and Export, MBS REALbasic PNG Plugin (OptimizePNG), Plugin version: 8.7, not console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: This event is called after the library finished.

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

Chapter 3

PNG

3.1 Globals

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

global method, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 6.4, console safe in REAL Studio 2010r3 or newer, Mac OS X: Works, Windows: Works, Linux x86: Works.

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:

- 3.1 PictureToPNGStringMBS(pic as picture, mask as picture, gamma as single) as string

16

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

global method, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 8.4, console safe in REAL Studio 2010r3 or newer, Mac OS X: Works, Windows: Works, Linux x86: Works.

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:

- 3.1 PictureToPNGStringMBS(pic as picture, mask as picture, gamma as single, Interlace as Boolean, FilterType as integer) as string 17

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

global method, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 6.4, console safe in REAL Studio 2010r3 or newer, Mac OS X: Works, Windows: Works, Linux x86: Works.

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:

- 3.1 PictureToPNGStringMBS(pic as picture, gamma as single) as string

15

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

global method, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 6.4, console safe in REAL Studio 2010r3 or newer, Mac OS X: Works, Windows: Works, Linux x86: Works.

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:

- 3.1 PictureToPNGStringMBS(pic as picture, gamma as single, Interlace as Boolean, FilterType as integer) as string 16

PNGStringToPictureMBS(data as string, gamma as single) as picture

global method, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 6.4, console safe in REAL Studio 2010r3 or newer, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

PNGStringToPNGPictureMBS(data as string, gamma as single) as PNGPictureMBS

global method, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 6.4, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

3.2 class PNGReaderMBS

class PNGReaderMBS

class, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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) as boolean

method from class PNGReaderMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

method from class PNGReaderMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe in REAL Studio 2010r3 or newer, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: Combines the pict and the mask property to a picture with mask.

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

method from class PNGReaderMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: Opens either the data string or the file.

Notes: Returns true on success.

OpenData(data as string) as boolean

method from class PNGReaderMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: Opens a PNG file from the data string.

Notes: Returns true on success.

OpenFile(file as folderitem) as boolean

method from class PNGReaderMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: Opens a file.

Notes: Returns true on success.

OpenSpecialData(data as string) as boolean

method from class PNGReaderMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 10.3, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

shared method from class PNGReaderMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

method from class PNGReaderMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.4, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

method from class PNGReaderMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe in REAL Studio 2010r3 or newer, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: Reads the picture into the pict and mask properties.

Notes: Returns true on success.

ReadRow as memoryblock

method from class PNGReaderMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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.

ReadsRGBTag(byref file_ srgb_ intent as integer) as boolean

method from class PNGReaderMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.4, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: Reads the sRGB tag.

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

RowBytes as integer

method from class PNGReaderMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: The length of each row in bytes.

3.2.2 Properties

BitDepth as Integer

property from class PNGReaderMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: The bit depth of the PNG file.

Notes: (Read and Write property)

ColorType as Integer

property from class PNGReaderMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

property from class PNGReaderMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: The height of the picture in pixels.

Notes: (Read and Write property)

InterlaceType as Integer

property from class PNGReaderMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: The interlace setting.

Notes: (Read and Write property)

Interlacing as Integer

property from class PNGReaderMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.1, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

property from class PNGReaderMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe in REAL Studio 2010r3 or newer, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: The mask of the picture.

Notes: (Read and Write property)

Pict as Picture

property from class PNGReaderMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe in REAL Studio 2010r3 or newer, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: The picture read.

Notes: (Read and Write property)

SourceData as String

property from class PNGReaderMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 10.3, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

property from class `PNGReaderMBS`, `PNG`, `MBS REALbasic PNG Plugin (PNG)`, Plugin version: 10.3, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

property from class `PNGReaderMBS`, `PNG`, `MBS REALbasic PNG Plugin (PNG)`, Plugin version: 10.3, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

property from class PNGReaderMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: The width of the picture in pixels.

Notes: (Read and Write property)

3.3 class PNGpictureMBS**class PNGpictureMBS**

class, PNG, MBS REALbasic PNG Plugin (PNG), , console safe, Mac OS X: Works, Windows: Does nothing, Linux x86: Works.

Function: A class for a PNG picture.

Notes: Based on LibPNG.

3.3.1 Methods**CombinePictureWithMask as picture**

method from class PNGpictureMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 4.0, console safe in REAL Studio 2010r3 or newer, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

shared method from class PNGpictureMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 4.3, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: The version of the PNG library compiled into the plugin.

Notes: Please ask if you need a newer version.

3.3.2 Properties**height as integer**

property from class PNGpictureMBS, PNG, MBS REALbasic PNG Plugin (PNG), , console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: The height of the picture.

Notes: (Read and Write property)

mask as picture

property from class PNGpictureMBS, PNG, MBS REALbasic PNG Plugin (PNG), , console safe in REAL Studio 2010r3 or newer, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: The mask of the picture.

Notes:

May be nil.

(Read and Write property)

pict as picture

property from class PNGpictureMBS, PNG, MBS REALbasic PNG Plugin (PNG), , console safe in REAL Studio 2010r3 or newer, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

property from class PNGpictureMBS, PNG, MBS REALbasic PNG Plugin (PNG), , console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: The width of the picture.

Notes: (Read and Write property)

3.4 class PNGWriterMBS

class PNGWriterMBS

class, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

method from class PNGWriterMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: Closes the file.

Finish as string

method from class PNGWriterMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: Finishes the PNG file and returns the PNG file content as string.

Notes: Returns "" on any error.

OpenWriteDestination(file as folderitem) as boolean

method from class PNGWriterMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

shared method from class PNGWriterMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: The version of the PNG library compiled into the plugin.

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

method from class PNGWriterMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

method from class PNGWriterMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: Writes the alpha data to the file.

Notes:

You must call SetAlphaData before.

Returns true on success.

SetGamma(gamma as double) as boolean

method from class PNGWriterMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

method from class PNGWriterMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

method from class PNGWriterMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.4, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

method from class PNGWriterMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: Sets the palette data.

Notes: Returns true on success.

SetPaletteData(colors() as color) as boolean

method from class PNGWriterMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: Sets the color palette.

Notes:

The array can have up to 256 colors.

Returns true on success.

SetPalettePicture(pict as picture) as boolean

method from class PNGWriterMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe in REAL Studio 2010r3 or newer, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

method from class PNGWriterMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 10.1, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

method from class PNGWriterMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe in REAL Studio 2010r3 or newer, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: Copies a picture into the internal buffers.

Notes:

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

Mask can be nil.

SetsRGB(intent as integer) as boolean

method from class PNGWriterMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.4, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

method from class PNGWriterMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: Finishes the writing.

Notes:

Returns true on success.

Do not call if you use WriteRows.

WriteInfo as boolean

method from class PNGWriterMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: Writes the PNG file header.

Notes:

Returns true on success.

Do not call if you use WriteRows.

WriteRow(row as memoryblock)

method from class PNGWriterMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

method from class PNGWriterMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: Writes the picture from memory to the file.

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

property from class PNGWriterMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

property from class PNGWriterMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0,
console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: The height of the picture to write.

Notes: (Read and Write property)

Rowbytes as Integer

property from class PNGWriterMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0,
console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: The bytes per row.

Notes: (Read and Write property)

Type as Integer

property from class PNGWriterMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0,
console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

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

property from class PNGWriterMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 9.0, console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: The width of the picture to write.

Notes: (Read and Write property)

3.4.3 Constants

ResolutionDPI = 2

const from class PNGWriterMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 10.1, not console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: One of the resolution unit type constants.

Notes: The unit for points per inch.

ResolutionMeter = 1

const from class PNGWriterMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 10.1, not console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: One of the resolution unit type constants.

Notes: The unit for points per meter.

ResolutionUnknown = 0

const from class PNGWriterMBS, PNG, MBS REALbasic PNG Plugin (PNG), Plugin version: 10.1, not console safe, Mac OS X: Works, Windows: Works, Linux x86: Works.

Function: One of the resolution unit type constants.

Chapter 4

List of all classes

• PNGOptimizerMBS	7
• PNGpictureMBS	28
• PNGReaderMBS	19
• PNGWriterMBS	30

Chapter 5

List of all global methods

- 3.1 PictureToPNGStringMBS(pic as picture, gamma as single) as string 15
- 3.1 PictureToPNGStringMBS(pic as picture, gamma as single, Interlace as Boolean, FilterType as integer) as string 16
- 3.1 PictureToPNGStringMBS(pic as picture, mask as picture, gamma as single) as string 16
- 3.1 PictureToPNGStringMBS(pic as picture, mask as picture, gamma as single, Interlace as Boolean, FilterType as integer) as string 17
- 3.1 PNGStringToPictureMBS(data as string, gamma as single) as picture 18
- 3.1 PNGStringToPNGPictureMBS(data as string, gamma as single) as PNGPictureMBS 18