MBS Compression Plugin Documentation

Christian Schmitz

May 2, 2026

0.1 Introduction

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

0.2 Content

Chapter 1

List of Topics

Chapter 2

List of all classes

Chapter 3

List of all modules

Chapter 4

List of all global methods

Chapter 5

Archive

5.1 class ArchiveEntryMBS

5.1.1 class ArchiveEntryMBS

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The class for an archive entry.
Example:

```
Var data as string = "Hello World test file. Hello World again."

Var e as new ArchiveEntryMBS
e.PathName = "Hello World.txt"
e.Size = lenb(data)
e.Permissions = &o0644
e.FileType = e.kFileTypeRegular
```

Blog Entries

- MonkeyBread Software Releases the MBS Xojo Plugins in version 24.5
- MBS Xojo Plugins, version 24.5pr1
- MBS Xojo Plugins, version 20.5pr6
- MBS Xojo Plugins, version 19.2pr7
- New Archive classes for handling zip and tar archives

Xojo Developer Magazine

- 23.2, page 11: News

- 23.1, page 10: News
- 19.4, page 83: Archives in Xojo, How to Use Zip Archives by Stefanie Juchmes
- 19.4, page 81: Archives in Xojo, How to Use Zip Archives by Stefanie Juchmes

5.1.2 Methods

5.1.3 Clear

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Clears entry for later use.

5.1.4 ClearACL

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Clears access control lists.

5.1.5 ClearXAttr

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Clears extended attributes.

5.1.6 Clone as ArchiveEntryMBS

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Creates a copy of the entry.
Notes: Does a deep copy; all of the strings are copied too.

5.1.7 Constructor

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Creates a new archive entry.
See also:

- 5.1.8 Constructor(Archive as ArchiverMBS)

5.1.8 Constructor(Archive as ArchiverMBS)

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Creates a new archive entry for a given archive.
Notes: This will pick the character set from the archive.
See also:

- 5.1.7 Constructor 28

5.1.9 Destructor

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The destructor.

5.1.10 GetFFlags(byref FlagsSet as UInt64, byref FlagsClear as UInt64)

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Queries file flags.

5.1.11 SetFFlags(FlagsSet as UInt64, FlagsClear as UInt64)

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets the file flags.

5.1.12 SetLink(link as string)

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets the link.
Notes: Update only. For a symlink, update the destination. Otherwise, make the entry a hardlink and alter the destination for that.

5.1.13 UnsetATime

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Unsets the last access timestamp.

5.1.14 UnsetBTime

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Unsets the birth timestamp.

5.1.15 UnsetCTime

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Unsets the last modification timestamp.

5.1.16 UnsetGName

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Unsets the group name.

5.1.17 UnsetHardLink

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Unset the hard link field.

5.1.18 UnsetMTime

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Unsets the modification timestamp.

5.1.19 UnsetPathName

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Unsets the pathname field.

5.1.20 UnsetSize

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Unsets the size.

5.1.21 UnsetSymLink

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Unsets the symbolic link field.

5.1.22 UnsetUName

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Unsets the user name field.

5.1.23 Properties

5.1.24 ADateTime as DateTime

Plugin Version: 20.5, Platforms: macOS, Linux, Windows, Targets: All.

Function: The last access timestamp.
Notes: For Xojo 2019r2 or newer.
(Read and Write property)

5.1.25 ATime as Date

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: Desktop, Console & Web.

Function: The last access timestamp.
Notes: (Read and Write property)

5.1.26 ATimeSet as Boolean

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Whether last access timestamp is set.
Notes: (Read only property)

5.1.27 BDateTime as DateTime

Plugin Version: 20.5, Platforms: macOS, Linux, Windows, Targets: All.

Function: The birth timestamp.
Notes: This is the creation time.
For Xojo 2019r2 or newer.
(Read and Write property)

5.1.28 BTime as Date

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: Desktop, Console & Web.

Function: The birth timestamp.
Notes: This is the creation time.
(Read and Write property)

5.1.29 BTimeSet as Boolean

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Whether the birth timestamp field is set.
Notes: (Read only property)

5.1.30 CDateTime as DateTime

Plugin Version: 20.5, Platforms: macOS, Linux, Windows, Targets: All.

Function: The attribute modification timestamp.
Notes: Last time an inode property was changed.
For Xojo 2019r2 or newer.
(Read and Write property)

5.1.31 CTime as Date

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: Desktop, Console & Web.

Function: The attribute modification timestamp.
Notes: Last time an inode property was changed.
(Read and Write property)

5.1.32 CTimeSet as Boolean

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Whether last modification timestamp is set.
Notes: (Read only property)

5.1.33 Dev as Integer

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The device number.
Notes: (Read and Write property)

5.1.34 DevMajor as Integer

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The minor part of the dev field.
Notes: (Read and Write property)

5.1.35 DevMinor as Integer

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The major part of the dev field.
Notes: (Read and Write property)

5.1.36 DevSet as Boolean

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Whether dev is set.
Notes: (Read only property)

5.1.37 FFlags as String

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The file flags.
Notes: (Read and Write property)

5.1.38 FileName as String

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: The file name.
Notes: Taken from PathName property at runtime.
(Read only property)

5.1.39 FileType as Integer

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Queries file type.
Example:

```
Var e as new ArchiveEntryMBS
e.FileType = e.kFileTypeRegular
```

Notes: Check the kFileType* constants.
(Read and Write property)

5.1.40 FileTypeSet as Boolean

Plugin Version: 24.5, Platforms: macOS, Linux, Windows, Targets: All.

Function: Whether the FielType property is set.
Notes: (Read only property)

5.1.41 GID as Int64

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The group ID.
Notes: (Read and Write property)

5.1.42 GIDSet as Boolean

Plugin Version: 24.5, Platforms: macOS, Linux, Windows, Targets: All.

Function: Whether the GID property is set.
Notes: (Read only property)

5.1.43 GName as String

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The group name.
Notes: (Read and Write property)

5.1.44 Handle as Integer

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The internal object reference.
Notes: (Read and Write property)

5.1.45 HardLink as String

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Destination of the hardlink.
Notes: (Read and Write property)

5.1.46 HardLinkSet as Boolean

Plugin Version: 24.5, Platforms: macOS, Linux, Windows, Targets: All.

Function: Whether the hard link property is set.
Notes: (Read only property)

5.1.47 INo as Int64

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The inode number.
Notes: (Read and Write property)

5.1.48 INo64 as Int64

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The inode number.
Notes: (Read and Write property)

5.1.49 INoSet as Boolean

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Whether inode number is set.
Notes: (Read only property)

5.1.50 IsDataEncrypted as Boolean

Plugin Version: 16.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Whether data is encrypted.
Notes: (Read and Write property)

5.1.51 IsMetaDataEncrypted as Boolean

Plugin Version: 16.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Whether metadata is encrypted.
Notes: (Read and Write property)

5.1.52 MacMetadata as MemoryBlock

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The Mac Metadata.
Notes: Storage for Mac OS-specific AppleDouble metadata information. Apple-format tar files store a separate binary blob containing encoded metadata with ACL, extended attributes, etc. This provides a place to store that blob.
(Read and Write property)

5.1.53 MDateTime as DateTime

Plugin Version: 20.5, Platforms: macOS, Linux, Windows, Targets: All.

Function: The modification timestamp.
Notes: For Xojo 2019r2 or newer.
(Read and Write property)

5.1.54 Mode as Integer

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The permissions mode.
Notes: (Read and Write property)

5.1.55 ModeString as String

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The permissions mode as string.
Notes: (Read only property)

5.1.56 MTime as Date

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: Desktop, Console & Web.

Function: The modification timestamp.
Notes: (Read and Write property)

5.1.57 MTimeSet as Boolean

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Whether the modification time stamp field is set.
Notes: (Read only property)

5.1.58 NLink as Integer

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The number of hardlinks.
Notes: (Read and Write property)

5.1.59 PathName as String

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Path in the archive.
Example:

```
Var e as new ArchiveEntryMBS
e.PathName = "Hello World.txt"
```

Notes: Text encoding works partly.
Best to use only ASCII file paths for compatibility.
If the archive is opened/created with UTF-8 support, you may use other characters.
On Windows text encoding conversion may require use of LoadIconvLibrary method to load iconv.dll.

Value is empty, if encoding conversion fails.
(Read and Write property)

5.1.60 Permissions as Integer

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The permissions.
Example:

```
Var e as new ArchiveEntryMBS
e.Permissions = &o0644
```

Notes: (Read and Write property)

5.1.61 PermissionsSet as Boolean

Plugin Version: 24.5, Platforms: macOS, Linux, Windows, Targets: All.

Function: Whether the permission property is set.
Notes: (Read only property)

5.1.62 RDev as Integer

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The device ID (if special file).
Notes: (Read and Write property)

5.1.63 RDevMajor as Integer

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The major part of RDev field.
Notes: (Read and Write property)

5.1.64 RDevMinor as Integer

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The minor part of RDev field.
Notes: (Read and Write property)

5.1.65 RDevSet as Boolean

Plugin Version: 24.5, Platforms: macOS, Linux, Windows, Targets: All.

Function: Whether the RDev property is set.
Notes: (Read only property)

5.1.66 Size as UInt64

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The size of the file.
Notes: (Read and Write property)

5.1.67 SizeSet as Boolean

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Whether size field is set.
Notes: (Read only property)

5.1.68 SourcePath as String

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Path on the disk for use.
Notes: (Read and Write property)

5.1.69 Stat as MemoryBlock

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Get and set stat structure.
Notes: Routines to bulk copy fields to/from a platform-native "struct stat."
Libarchive used to just store a struct stat inside of each archive entry object, but this created issues when trying to manipulate archives on systems different than the ones they were created on.
(Read and Write property)

5.1.70 SymLink as String

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Destination of the symbolic link..
Notes: (Read and Write property)

5.1.71 SymlinkType as Integer

Plugin Version: 20.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: The type of symlink for this entry.
Notes: (Read and Write property)

5.1.72 UID as UInt64

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The user ID.
Notes: (Read and Write property)

5.1.73 UIDSet as Boolean

Plugin Version: 24.5, Platforms: macOS, Linux, Windows, Targets: All.

Function: Whether the UID property is set.
Notes: (Read only property)

5.1.74 UName as String

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The user name.
Notes: (Read and Write property)

5.1.75 XAttrCount as Integer

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Number of extended attributes for this entry.
Notes: (Read only property)

5.1.76 Constants

File Types

Constant	Value	Description
kFileTypeBlock	&o0060000	Block device.
kFileTypeCharacter	&o0020000	Character device.
kFileTypeDirectory	&o0040000	Directory
kFileTypeIFO	&o0010000	Named pipe (fifo)
kFileTypeLink	&o0120000	Symbolic link
kFileTypeMT	&o0170000	MT?
kFileTypeRegular	&o0100000	Regular file.
kFileTypeSOCK	&o0140000	Socket

Symlink Types

Constant	Value	Description
kSymlinkTypeDirectory	2	Symlink is a directory.
kSymlinkTypeFile	1	Symlink is a file.
kSymlinkTypeUndefined	0	Symlink is of unknown type.

5.2 class ArchiveReadDiskMBS

5.2.1 class ArchiveReadDiskMBS

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: The archive subclass class for reading files from disk.
Notes: Subclass of the ArchiveReaderMBS class.
Blog Entries

- MBS Xojo Plugins, version 20.3pr4
- MBS Xojo Plugins, version 18.6pr3

5.2.2 Methods

5.2.3 CanDescend as Boolean

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Whether you can descend into current item.
Notes: True if current item is a folder.

5.2.4 Constructor

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Tbe constructor.

5.2.5 CurrentFileSystem as Integer

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Queries ID for current file system.
Notes: Lasterror is set.

5.2.6 CurrentFileSystemIsRemote as Integer

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Whether current file system is remote.
Notes: Lasterror is set.

5.2.7 CurrentFileSystemIsSynthetic as Integer

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Whether current file system is synthetic.
Notes: Lasterror is set.

5.2.8 Descend

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Request that current entry be visited.
Notes: If you invoke it on every directory, you'll get a physical traversal. This is ignored if the current entry isn't a directory or a link to a directory. So, if you invoke this on every returned path, you'll get a full logical traversal.
Lasterror is set.

5.2.9 Destructor

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: The destructor.
Notes: Lasterror is set.

5.2.10 GroupName(ID as Int64) as String

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Queries group name for given ID.
Notes: May invoke GroupLookup event.
Lasterror is set.

5.2.11 Open(Folder as FolderItem) as Boolean

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Opens a folderitem.
Notes: Returns true on success and false on errors.
Lasterror is set.
See also:

- 5.2.12 Open(Path as String) as Boolean 45

5.2.12 Open(Path as String) as Boolean

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Opens a file path.
Notes: Returns true on success and false on errors.
Lasterror is set.
See also:

- 5.2.11 Open(Folder as FolderItem) as Boolean 44

5.2.13 SetAccessTimeRestored

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Request that the access time of the entry visited by traversal be restored.
Notes: Lasterror is set.

5.2.14 SetStandardLookup

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets standard lookup for mapping user and group IDs to names.
Notes: ”Standard” implementation uses getpwuid_r, getgrgid_r and caches the results for performance.
Lasterror is set.

5.2.15 SetSymlinkHybrid

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Set to follow symlink initially, then not.
Notes: Lasterror is set.

5.2.16 SetSymlinkLogical

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets to follow all symlinks.
Notes: Lasterror is set.

5.2.17 SetSymlinkPhysical

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets to follow no symlinks.
Notes: Lasterror is set.

5.2.18 UserName(ID as Int64) as String

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Queries user name for given ID.
Notes: May invoke UserLookup event.
Lasterror is set.

5.2.19 Properties

5.2.20 BehaviorFlags as Integer

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Select optional behavior.
Notes: See kBehavior constants.
Setting the value sets Lasterror.

By default MBS Plugin sets kBehaviorRestoreAccessTime, kBehaviorRestoreHonorNoDump, kBehaviorRestoreMacCopyFile and kBehaviorRestoreNoTraverseMounts.
(Read and Write property)

5.2.21 Events

5.2.22 GroupLookup(ID as Int64) as String

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: The event to let you lookup manually the name for a group ID.

5.2.23 UserLookup(ID as Int64) as String

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: The event to let you lookup manually the name for a group ID.

5.2.24 Constants

Behavior Flags

Constant	Value	Description
kBehaviorRestoreAccessTime	1	Request that the access time of the entry visited by traversal be restored. This is the same as SetAccessTimeRestored.
kBehaviorRestoreHonorNoDump	2	Default: Do not skip an entry which has nodump flags.
kBehaviorRestoreMacCopyFile	4	Default: Skip a mac resource fork file whose prefix is "._" because of us copyfile.
kBehaviorRestoreNoACL	32	Default: ACLs are read from disk.
kBehaviorRestoreNoFFlags	64	Default: File flags are read from disk.
kBehaviorRestoreNoTraverseMounts	8	Default: Traverse mount points.
kBehaviorRestoreNoXAttr	16	Default: Xattrs are read from disk.

5.3 class ArchiveReaderMBS

5.3.1 class ArchiveReaderMBS

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The class to read archive content.
Example:

```
Var a as new ArchiveReaderMBS
a.SupportFilterAll
a.SupportFormatAll
a.SetOptions "hdrcharset=UTF-8" // for unicode file names

// open file

Var f as FolderItem = SpecialFolder.Desktop.Child("test.zip")

if not a.OpenFile(f) then
Break // path invalid?
end if

Var e as ArchiveEntryMBS = a.NextHeader
while e <>nil

print e.PathName

e = a.NextHeader
wend
```

Notes: Can be used to read zip, tar and other image formats.
Subclass of the ArchiverMBS class.
Blog Entries

- MBS Xojo Plugins, version 25.3pr6
- MBS Xojo Plugins, version 18.6pr3
- New Archive classes for handling zip and tar archives

5.3.2 Methods

5.3.3 AddPassphrase(passphrase as string)

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Adds a password to the archive.

5.3.4 AppendFilter(Filter as Integer)

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Adds a filter to the reader manually.
Notes: This is useful to bypass the bidding process when the format and filters to use is known in advance. Lasterror property is set.

5.3.5 AppendFilterProgram(Program as String)

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Adds a filter program.
Notes: Lasterror property is set.

5.3.6 Close

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Close the file and release most resources.
Notes: Lasterror property is set.

5.3.7 Constructor

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The constructor.
Example:

```
Var a as new ArchiveReaderMBS
a.SupportFilterAll
a.SupportFormatAll
a.SetOptions "hdrcharset=UTF-8" // for unicode file names
```

Notes: To create an archive:
1) Ask Constructor for an archive writer object.
2) Set any global properties. In particular, you should set the compression and format to use.
3) Call one of the open methods to open the file (most people will use OpenFile, which provide convenient canned I/O callbacks for you).

4) For each entry, construct an appropriate ArchiveEntryMBS object, call WriteHeader to write the header, call WriteData methods to write the entry data.
5) call close method to close the output

5.3.8 Destructor

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The destructor.

5.3.9 Extract(Entry as ArchiveEntryMBS, DestArchive as ArchiverMBS)

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Convenience function to recreate the current entry (whose header has just been read) on disk.
Notes: This does quite a bit more than just copy data to disk. It also:

- Creates intermediate directories as required.
- Manages directory permissions: non-writable directories will be initially created with write permission enabled; when the archive is closed, dir permissions are edited to the values specified in the archive.
- Checks hardlinks: hardlinks will not be extracted unless the linked-to file was also extracted within the same session. (TODO)

Lasterror property is set.
See also:

- 5.3.10 Extract(Entry as ArchiveEntryMBS, flags as Integer = &h123F7) 50

5.3.10 Extract(Entry as ArchiveEntryMBS, flags as Integer = &h123F7)

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Convenience function to recreate the current entry (whose header has just been read) on disk.
Notes: This does quite a bit more than just copy data to disk. It also:

- Creates intermediate directories as required.
- Manages directory permissions: non-writable directories will be initially created with write permission enabled; when the archive is closed, dir permissions are edited to the values specified in the archive.

- Checks hardlinks: hardlinks will not be extracted unless the linked-to file was also extracted within the same session. (TODO)

The ”flags” argument selects optional behavior, 'OR' the flags you want.
Lasterror property is set.
See also:

- 5.3.9 Extract(Entry as ArchiveEntryMBS, DestArchive as ArchiverMBS) 50

5.3.11 NextHeader(entry as ArchiveEntryMBS = nil) as ArchiveEntryMBS

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Reads next header.
Notes: If you pass in an existing entry, we can recycle the object.
Returns nil in case of error.
Lasterror property is set.

5.3.12 OpenData(Data as String) as Boolean

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Opens an archive from memory.
Notes: Returns true on success and false on failure.
Lasterror property is set.

5.3.13 OpenFile(File as FolderItem, BlockSize as Integer = 10240) as Boolean

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Opens an archive from a folderitem.
Notes: Returns true on success and false on failure.
Lasterror property is set.
See also:

- 5.3.14 OpenFile(Files() as FolderItem, BlockSize as Integer = 10240) as Boolean 51

5.3.14 OpenFile(Files() as FolderItem, BlockSize as Integer = 10240) as Boolean

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Use this for reading multivolume files by filenames.
Notes: Returns true on success and false on errors.

Lasterror property is set.
See also:

- 5.3.13 OpenFile(File as FolderItem, BlockSize as Integer = 10240) as Boolean 51

5.3.15 OpenPath(Path as String, BlockSize as Integer = 10240) as Boolean

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Opens the file at the given path.
Notes: Lasterror property is set.
See also:

- 5.3.16 OpenPath(Paths() as String, BlockSize as Integer = 10240) as Boolean 52

5.3.16 OpenPath(Paths() as String, BlockSize as Integer = 10240) as Boolean

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Use this for reading multivolume files by filenames.
Notes: Returns true on success and false on errors.
Lasterror property is set.
See also:

- 5.3.15 OpenPath(Path as String, BlockSize as Integer = 10240) as Boolean 52

5.3.17 ReadDataBlockMemory(byref offset as Int64) as MemoryBlock

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Reads next block of data.
Notes: Size is given by archive reader used.
Offset is given so you know where you are in the file currently.
Data returned as new memory block.
Lasterror property is set.

A zero-copy version of archive_read_data that also exposes the file offset of each returned block. Note that the client has no way to specify the desired size of the block. The API does guarantee that offsets will be strictly increasing and that returned blocks will not overlap.

5.3.18 ReadDataBlockString(byref offset as Int64) as String

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Reads next block of data.
Notes: Size is given by archive reader used.
Offset is given so you know where you are in the file currently.
Data returned as new string.
Lasterror property is set.

A zero-copy version of archive_read_data that also exposes the file offset of each returned block. Note that the client has no way to specify the desired size of the block. The API does guarantee that offsets will be strictly increasing and that returned blocks will not overlap.

5.3.19 ReadDataMemory(ByteCount as Integer) as MemoryBlock

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Reads data from current file into memoryblock.
Notes: Lasterror property is set.

5.3.20 ReadDataString(ByteCount as Integer) as String

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Reads data from current file into string.
Notes: Lasterror property is set.

5.3.21 Seek(Position as Int64, Mode as Integer = 0) as Int64

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Seek within the body of an entry.
Notes: See kSeekSet, kSeekCur or kSeekEnd constants.
Returns new position.
Lasterror property is set.

5.3.22 SetExtractSkipFile(DeviceID as Int64, FileNo as Int64)

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Record the dev/ino of a file that will not be written.
Notes: This is generally set to the dev/ino of the archive being read.
Lasterror property is set.

5.3.23 SetFilterOption(Module as String, Option as String, Value as String)

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Apply option to the filter only.
Notes: Lasterror property is set.

5.3.24 SetFormat(Format as Integer)

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets the format for the reader manually.
Notes: This is useful to bypass the bidding process when the format and filters to use is known in advance. Lasterror property is set.

5.3.25 SetFormatOption(Module as String, Option as String, Value as String)

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Apply option to the format only.
Notes: Lasterror property is set.

5.3.26 SetOption(Module as String, Option as String, Value as String)

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Apply option to both the format and the filter.
Notes: Lasterror property is set.

5.3.27 SetOptions(Options as String)

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Apply option string to both the format and the filter.
Example:

```
Var a as new ArchiveReaderMBS
a.SupportFilterAll
a.SupportFormatAll
a.SetOptions "hdrcharset=UTF-8" // for unicode file names
```

Notes: Lasterror property is set.
For older non UTF-8 Japanese zip archives, you can try "hdrcharset=cp932" as encoding.
For older non UTF-8 Windows archives, you can use "hdrcharset=cp1252".

5.3.28 Skip

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Skips a file in the archive.

5.3.29 SupportFilterAll

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enables all filters.
Notes: Lasterror property is set.

5.3.30 SupportFilterBZip2

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enables bzip2 filter.
Notes: Lasterror property is set.

5.3.31 SupportFilterCompress

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enables compress filter.
Notes: Lasterror property is set.

5.3.32 SupportFilterGRZip

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enables GRZip filter.
Notes: Lasterror property is set.

5.3.33 SupportFilterGZip

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enable gzip filter.
Notes: Lasterror property is set.

5.3.34 SupportFilterLRZip

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enable LRZip filter.
Notes: Lasterror property is set.

5.3.35 SupportFilterLZip

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enable LZip filter.
Notes: Lasterror property is set.

5.3.36 SupportFilterLzma

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enable LZMA filter.
Notes: Lasterror property is set.

5.3.37 SupportFilterLzop

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enable Lzop filter.
Notes: Lasterror property is set.

5.3.38 SupportFilterNone

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enable none filter.
Notes: Lasterror property is set.

5.3.39 SupportFilterProgram(command as string)

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enable support for given filter program.
Notes: Lasterror property is set.

5.3.40 SupportFilterRpm

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enable RPM filter.
Notes: Lasterror property is set.

5.3.41 SupportFilterUU

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enable UU filter.
Notes: Lasterror property is set.

5.3.42 SupportFilterXz

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enable XZ filter.
Notes: xz is a lossless data compression program and file format which incorporates the LZMA/LZMA2 compression algorithms.

5.3.43 SupportFormat7zip

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enable 7zip format.
Notes: Lasterror property is set.
7zip support in MBS Plugin is very limited.

5.3.44 SupportFormatAll

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enable all formats.
Notes: Lasterror property is set.

5.3.45 SupportFormatAr

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enables At format.
Notes: Lasterror property is set.

5.3.46 SupportFormatByCode(FilterCode as Integer)

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enables format with given code.
Notes: Lasterror property is set.

5.3.47 SupportFormatCab

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enables cab format.
Notes: Lasterror property is set.

5.3.48 SupportFormatCpio

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enables cpio format.
Notes: Lasterror property is set.

5.3.49 SupportFormatEmpty

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enables empty format.
Notes: Lasterror property is set.

5.3.50 SupportFormatGnutar

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enables gnutar format.
Notes: Lasterror property is set.

5.3.51 SupportFormatIso9660

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enables iso 9660 format.
Notes: Lasterror property is set.

5.3.52 SupportFormatLha

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enables lha format.
Notes: Lasterror property is set.

5.3.53 SupportFormatLZ4

Plugin Version: 16.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enables support for LZ4 format.
Notes: Lasterror property is set.

5.3.54 SupportFormatMTree

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enables mtree format.
Notes: Lasterror property is set.

5.3.55 SupportFormatRar

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enables rar format.
Notes: Lasterror property is set.

5.3.56 SupportFormatRar5

Plugin Version: 20.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enables rar v5 format.
Notes: Lasterror property is set.

5.3.57 SupportFormatRaw

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enables raw format.
Notes: Lasterror property is set.

5.3.58 SupportFormatTar

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enables tape archive files format.
Notes: Lasterror property is set.

5.3.59 SupportFormatWArc

Plugin Version: 16.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enables support for WArc format.
Notes: Lasterror property is set.

5.3.60 SupportFormatXar

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enables xar format.
Notes: Lasterror property is set.

5.3.61 SupportFormatZip

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enables zip format.
Notes: Enables both streamable and seekable zip readers.
Lasterror property is set.

5.3.62 SupportFormatZipSeekable

Plugin Version: 16.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Allows only support for seekable zip archives.
Notes: Reads starting from central directory; requires seekable input.
Lasterror property is set.

5.3.63 SupportFormatZipStreamable

Plugin Version: 16.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Enables support only for streamable zip archives.
Notes: Reads Zip archives as stream from beginning to end. Doesn't correctly handle SFX ZIP files or ZIP archives that have been modified in-place.
Lasterror property is set.

5.3.64 Properties

5.3.65 FormatCapabilities as Integer

Plugin Version: 16.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Returns a bitmask of capabilities that are supported by the archive format reader.
Notes: If the reader has no special capabilities, kFormatCapabilitiesNone is returned.
See also kFormatCapabilitiesEncryptMetaData and kFormatCapabilitiesEncryptData.
(Read only property)

5.3.66 HasEncryptedEntries as Integer

Plugin Version: 16.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Returns 1 if the archive contains at least one encrypted entry.
Notes: If the archive format not support encryption at all kEncryptionUnsupported is returned. If for any other reason (e.g. not enough data read so far) we cannot say whether there are encrypted entries, then kEncryptionDontKnow is returned. In general, this function will return values below zero when the reader is uncertain or totally uncapable of encryption support. When this function returns 0 you can be sure that the reader supports encryption detection but no encrypted entries have been found yet.

If the metadata/header of an archive is also encrypted, you cannot rely on the number of encrypted entries. That is why this function does not return the number of encrypted entries but# just shows that there are some.
(Read only property)

5.3.67 HeaderPosition as Int64

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The current header position.
Notes: Retrieve the byte offset in uncompressed data where last-read header started.
(Read only property)

5.3.68 ReadDataBlockSupported as Boolean

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Whether this reader supports block operations.
Notes: Some do and if you call ReadDataBlock on a reader which can't, it will return only errors.
(Read only property)

5.3.69 Events

5.3.70 ExtractProgress(entry as ArchiveEntryMBS)

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Event called regularly while extracting to report progress.
Notes: Check properties of archive on how many bytes have been processed.
Called only by Extract methods.

5.3.71 Constants

Encryption Status constants.

Constant	Value	Description
kEncryptionDontKnow	-1	If the reader for some other reason (e.g. not enough bytes read) cannot say if there are encrypted entries, kEncryptionDontKnow is returned.
kEncryptionUnsupported	-2	In case the archive does not support encryption detection at all kEncryptionUnsupported is returned.

Extract Flags

Constant	Value	Description
kExtractACL	&h20	Default: Do not restore ACLs.
kExtractClearNoChangeFFlags	&h20000	Default: Do not clear no-change flags when unlinking object.
kExtractFileFlags	&h40	Default: Do not restore fflags.
kExtractHFSCompressionForced	&h8000	Default: Do not use HFS+ compression if it was not compressed. This has no effect except on Mac OS v10.6 or later.
kExtractMacMetadata	&h2000	Default: Do not restore Mac extended metadata. This has no effect except on Mac OS.
kExtractNoAutoDir	&h400	Default: Create parent directories as needed.
kExtractNoHFSCompression	&h4000	Default: Use HFS+ compression if it was compressed. This has no effect except on Mac OS v10.6 or later.
kExtractNoOverwrite	8	Default: Replace existing files.
kExtractNoOverwriteNewer	&h800	Default: Overwrite files, even if one on disk is newer.
kExtractOwner	1	Default: Do not try to set owner/group.
kExtractPermission	2	Default: Do obey umask, do not restore SUID/SGID/SVTX bits.
kExtractSecureNoAbsolutePath	&h10000	Default: Do not reject entries with absolute paths
kExtractSecureNoDotDot	&h200	Default: Do not reject entries with '..' as path elements.
kExtractSecureSymLinks	&h100	Default: Do not try to guard against extracts redirected by symlinks. Note: With kExtractUnlink, will remove any intermediate symlink.
kExtractSparse	&h1000	Detect blocks of 0 and write holes instead.
kExtractTime	4	Default: Do not restore mtime/atime.
kExtractUnlink	&h10	Default: Try create first, unlink only if create fails with EEXIST.
kExtractXAttr	&h80	Default: Do not restore xattrs.

Encryption Capabilities

Constant	Value	Description
kFormatCapabilitiesEncryptData	1	Reader can detect encrypted data.
kFormatCapabilitiesEncryptMetaData	2	Reader can detect encryptable metadata (pathname, mtime, etc.).
kFormatCapabilitiesNone	0	Current format supports no encryption.

Seek Modes

Constant	Value	Description
kSeekCur	1	Seek relative to current position.
kSeekEnd	2	Seek relative to end of file.
kSeekSet	0	Seek relative to begin of file.

5.4 class ArchiverMBS

5.4.1 class ArchiverMBS

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The abstract super class for common archiver methods.
Notes: Currently we build this library without lzma and lz4 support. That could be changed if needed.
This is an abstract class. You can't create an instance, but you can get one from various plugin functions.
Blog Entries

- News from the MBS Xojo Plugins Version 20.4
- MBS Xojo Plugins, version 20.4pr9
- MBS Xojo Plugins, version 18.6pr3

5.4.2 Methods

5.4.3 ClearError

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Clears error.

5.4.4 Constructor

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The private constructor.

5.4.5 CopyError(source as ArchiverMBS)

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Copies error state from one archive object to other.

5.4.6 Destructor

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The destructor.

5.4.7 FilterBytes(FilterIndex as Integer) as Int64

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: The current byte count for the filter with given index.
Notes: Pass index of filter, e.g. 0 to FilterCount-1.
Pass -1 to query last filter.

5.4.8 FilterCode(FilterIndex as Integer) as Integer

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Queries ID of filter.
Notes: Pass index of filter, e.g. 0 to FilterCount-1.
Pass -1 to query last filter.

5.4.9 FilterName(FilterIndex as Integer) as String

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Queries name of filter.
Notes: Pass index of filter, e.g. 0 to FilterCount-1.
Pass -1 to query last filter.

5.4.10 LoadIconvLibrary(path as String, byref Error as String) as boolean

Plugin Version: 20.4, Platforms: macOS, Linux, Windows, Targets: All.

Function: Loads the iconv library.
Notes: The Archive classes may use libiconv for text encoding conversion.
If you explicitly need, you can load the library on start of solution.

MBS Plugin may try to load iconv.dll/dylib/so automatically when first iconv function is called.

5.4.11 NewReader as ArchiveReaderMBS

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Creates a new archive reader.

5.4.12 NewWriter as ArchiveWriterMBS

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Creates a new archive writer.

5.4.13 SetCurrentWorkingDirectory(path as folderitem) as boolean

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets current working directory for the application.
Notes: Returns true on success or false on failure.
See also:

- 5.4.14 SetCurrentWorkingDirectory(path as String) as boolean 67

5.4.14 SetCurrentWorkingDirectory(path as String) as boolean

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets current working directory for the application.
Notes: Returns true on success or false on failure.
See also:

- 5.4.13 SetCurrentWorkingDirectory(path as folderitem) as boolean 67

5.4.15 Properties

5.4.16 BZLibVersion as String

Plugin Version: 16.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The bzlib version used in this plugin.
Example:

MsgBox ArchiverMBS.BZLibVersion

Notes: This is empty if we compiled plugin without this library.
(Read only property)

5.4.17 Compression as Integer

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: The ID of the compression algorithm.
Notes: This is an alias for FilterCode(0).
(Read only property)

5.4.18 CompressionName as String

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: The name of the compression algorithm.
Notes: This is an alias for FilterName(0).
(Read only property)

5.4.19 ErrNo as Integer

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Last error's errno value.
Notes: The unix error code.
(Read only property)

5.4.20 ErrorString as String

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: The last error string.
Notes: (Read only property)

5.4.21 FileCount as Integer

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: The file count.
Notes: May not be known before all files have been seen/processed.
(Read only property)

5.4.22 FilterCount as Integer

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: The number of filters currently in use.
Notes: An archive may have several filters, e.g. tar to archive and gzip to compress.
(Read only property)

5.4.23 Format as Integer

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: The ID of the current format.
Notes: (Read only property)

5.4.24 FormatName as String

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: The name of the current format.
Notes: (Read only property)

5.4.25 Handle as Integer

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The internal object reference.
Notes: (Read only property)

5.4.26 Lasterror as Integer

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The last error code.
Notes: See kArchive constants.
(Read only property)

5.4.27 LibVersion as Integer

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The version of the archive C++ library.
Example:

MsgBox str(ArchiverMBS.LibVersion)

Notes: e.g. 3001002 for version 3.1.2.
(Read only property)

5.4.28 LibVersionDetails as String

Plugin Version: 16.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The detailed version string for libArchive.
Example:

MsgBox ArchiverMBS.LibVersionDetails

Notes: Detailed textual name/version of the library and its dependencies.

This has the form:
"libarchive x.y.z zlib/a.b.c liblzma/d.e.f ... etc ..."

the list of libraries described here will vary depending on how libarchive was compiled.
(Read only property)

5.4.29 LibVersionString as String

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The version of the archive C++ library as text.
Example:

MsgBox ArchiverMBS.LibVersionString

Notes: e.g. "libarchive 3.1.2"
(Read only property)

5.4.30 LZ4Version as String

Plugin Version: 16.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The lz4 version used in this plugin.
Example:

MsgBox ArchiverMBS.LZ4Version

Notes: This is empty if we compiled plugin without this library.
(Read only property)

5.4.31 LzmaVersion as String

Plugin Version: 16.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The lzma version used in this plugin.
Example:

MsgBox ArchiverMBS.LzmaVersion

Notes: This is empty if we compiled plugin without this library.
(Read only property)

5.4.32 Open as Boolean

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Whether an archive is currently open.
Notes: (Read only property)

5.4.33 PositionCompressed as Int64

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: The position in the archive compressed.
Notes: This is an alias for FilterBytes(-1).
(Read only property)

5.4.34 PositionUncompressed as Int64

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: The position in the archive uncompressed.
Notes: This is an alias for FilterBytes(0).
(Read only property)

5.4.35 Yield as Boolean

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Whether to yield on extract methods.
Notes: Set true to pass CPU time to other Xojo threads.
(Read and Write property)

5.4.36 ZLibVersion as String

Plugin Version: 16.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The zlib version used in this plugin.
Example:

```
MsgBox ArchiverMBS.ZLibVersion
```

Notes: This is empty if we compiled plugin without this library.
(Read only property)

5.4.37 ZStdVersion as String

Plugin Version: 23.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The zlib version used in this plugin.
Example:

```
MsgBox ArchiverMBS.ZStdVersion
```

Notes: This is empty if we compiled plugin without this library.
(Read only property)

5.4.38 Events

5.4.39 Passphrase(byref password as String) as Boolean

Plugin Version: 16.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The event to query for passphrase.
Notes: Please set password property and return true if you have one.

5.4.40 Constants

Error Codes

Constant	Value	Description
kArchiveEOF	1	Found end of archive.
kArchiveFailed	-25	Current operation cannot complete. But if writeHeader is "fatal," then this archive is dead and useless.
kArchiveFatal	-30	No more operations are possible.
kArchiveOK	0	Operation was successful.
kArchiveRetry	-10	Retry might succeed.
kArchiveWarn	-20	Partial success. For example, if writeHeader "fails", then you can't push data.

Filters

Constant	Value	Description
kFilterBZip2	2	bzip2 filter
kFilterCompress	3	compress filter.
kFilterGRZip	12	GRZip filter.
kFilterGZip	1	gzip filter.
kFilterLRZip	10	LRZip filter.
kFilterLZ4	13	LZ4 Filter.
kFilterLZip	9	LZip filter.
kFilterLZMA	5	LZMA filter.
kFilterLZOP	11	Lzop filter.
kFilterNone	0	No filter.
kFilterProgram	4	Program filter.
kFilterRPM	8	RPM filter.
kFilterUU	7	UU filter.
kFilterXZ	6	XZ filter.

Formats

Constant	Value	Description
kFormat7Zip	&he0000	7Zip
kFormatAr	&h70000	Unix Archive format, base type.
kFormatArBsd	&h70002	Archive, BSD format.
kFormatArGnu	&h70001	Archive, GNU format.
kFormatBaseMask	&hff0000	Mask for Base Type.
kFormatCab	&hc0000	Windows CAB format.
kFormatCpio	&h10000	CPIO base format.
kFormatCpioAfioLarge	&h10006	CPIO format, AFIO large variant.
kFormatCpioBinBe	&h10003	CPIO format, BIN BE variant.
kFormatCpioBinLe	&h10002	CPIO format, BIN LE variant.
kFormatCpioPosix	&h10001	CPIO format, Posix variant.
kFormatCpioSvr4Crc	&h10005	CPIO format, SVR4 CRC variant.
kFormatCpioSvr4Nocrc	&h10004	CPIO format, SVR4 no CRC variant.
kFormatEmpty	&h60000	Empty format.
kFormatIso9660	&h40000	IOS 9660 base type.
kFormatIso9660Rockridge	&h40001	IOS 9660, Rockridge variant.
kFormatLha	&hb0000	LHA format.
kFormatMtree	&h80000	MTree format.
kFormatRar	&hd0000	RAR format.
kFormatRARv5	&h10000	Rar v5 format
kFormatRaw	&h90000	Raw format.
kFormatShar	&h20000	SHAR base format.
kFormatSharBase	&h20001	SHAR base format, base variant.
kFormatSharDump	&h20002	SHAR base format, dump variant.
kFormatTar	&h30000	Tar base format.
kFormatTarGnutar	&h30004	Tar format, GNU variant.
kFormatTarPaxInterchange	&h30002	Tar format, Pax Interchange variant.
kFormatTarPaxRestricted	&h30003	Tar format, Pax Restricted variant.
kFormatTarUstar	&h30001	Tar format, US variant.
kFormatWarc	&hf0000	WArc format.
kFormatXar	&ha0000	Xar format
kFormatZip	&h50000	Zip format.

5.5 class ArchiveWriteDiskMBS

5.5.1 class ArchiveWriteDiskMBS

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: The archive subclass class for writing files to disk.
Notes: To create objects on disk:

1) Ask Constructor for a new ArchiveWriteDiskMBS object.
2) Set any global properties. In particular, you probably want to set the options.
3) For each entry: construct an appropriate ArchiveEntryMBS object, use WriteHeader to create the file/dir/etc on disk, use WriteData to write the entry data
4) Release object to cleanup the writer and release resources

In particular, you can use this in conjunction with ArchiveReaderMBS to pull entries out of an archive and create them on disk.
Subclass of the ArchiveWriterMBS class.
Blog Entries

- MBS Xojo Plugins, version 18.6pr3

5.5.2 Methods

5.5.3 Constructor

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: The constructor.
Notes: Connects GroupLookup and UserLookup events if set.

5.5.4 Destructor

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: The destructor.

5.5.5 GID(GroupName as string, DefaultGID as Int64) as Int64

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Query ID of group.
Notes: Returns default ID if name not found.
This may invoke GroupLookup event.
Lasterror property is set.

5.5.6 SetSkipFile(DeviceID as Int64, FileNo as Int64)

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Record the dev/ino of a file that will not be written.
Notes: This is generally set to the dev/ino of the archive being written.
Lasterror property is set.

5.5.7 SetStandardLookup

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets standard lookup for mapping user and group names to IDs.
Notes: Lasterror property is set.

The lookup functions are given uname/uid (or gname/gid) pairs and return a uid (gid) suitable for this system. These are used for restoring ownership and for setting ACLs. The default functions are naive, they just return the uid/gid. These are small, so reasonable for applications that don't need to preserve ownership; they are probably also appropriate for applications that are doing same-system backup and restore.

The "standard" lookup functions use common system calls to lookup the uname/gname, falling back to the uid/gid if the names can't be found. They cache lookups and are reasonably fast, but can be very large, so they are not used unless you ask for them. In particular, these match the specifications of POSIX "pax" and old POSIX "tar".

5.5.8 UID(UserName as string, DefaultUID as Int64) as Int64

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Query ID of user.
Notes: Returns default ID if name not found.
This may invoke UserLookup event.
Lasterror property is set.

5.5.9 WriteDataBlock(data as MemoryBlock, offset as Int64) as Int64

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Writes data block to file.
Notes: Returns number of bytes written.
Lasterror property is set.
See also:

- 5.5.10 WriteDataBlock(data as Ptr, Size as Int64, offset as Int64) as Int64 77
- 5.5.11 WriteDataBlock(data as string, offset as Int64) as Int64 77

5.5.10 WriteDataBlock(data as Ptr, Size as Int64, offset as Int64) as Int64

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Writes data block to file.
Notes: Returns number of bytes written.
Lasterror property is set.
See also:

- 5.5.9 WriteDataBlock(data as MemoryBlock, offset as Int64) as Int64 77
- 5.5.11 WriteDataBlock(data as string, offset as Int64) as Int64 77

5.5.11 WriteDataBlock(data as string, offset as Int64) as Int64

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Writes data block to file.
Notes: Returns number of bytes written.
Lasterror property is set.
See also:

- 5.5.9 WriteDataBlock(data as MemoryBlock, offset as Int64) as Int64 77
- 5.5.10 WriteDataBlock(data as Ptr, Size as Int64, offset as Int64) as Int64 77

5.5.12 Properties

5.5.13 Options as Integer

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: The options flags set.
Notes: Setting options sets lasterror property.

See ArchiveReaderMBS.kExtract* constants.
(Read and Write property)

5.5.14 Events

5.5.15 GroupLookup(Name as String, GID as Int64) as Int64

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: The event to let you lookup manually the ID for a group name.
Notes: If you can't find the group, you can just pass through the given default ID.

If neither the default (naive) nor the standard (big) functions suit your needs, you can write your own in this event.

5.5.16 UserLookup(Name as String, GID as Int64) as Int64

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: The event to let you lookup manually the ID for a user name.
Notes: If you can't find the user, you can just pass through the given default ID.

If neither the default (naive) nor the standard (big) functions suit your needs, you can write your own in this event.

5.6 class ArchiveWriterMBS

5.6.1 class ArchiveWriterMBS

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The class to write archive content.
Example:

```
Var a as new ArchiveWriterMBS

a.SetFormatZip
a.ZipSetCompressionDeflate

Var f as FolderItem = SpecialFolder.Desktop.Child("test.zip")
if not a.CreateFile(f) then
break // failed

else

Var data as string = "Hello World test file. Hello World again."

Var e as new ArchiveEntryMBS
e.PathName = "Hello World.txt"
e.Size = lenb(data)
e.Permissions = &o0644
e.FileType = e.kFileTypeRegular

a.WriteHeader e
call a.WriteData data

a.FinishEntry

a.Close
end if
```

Notes: Can be used to write zip, tar and other image formats.
Subclass of the ArchiverMBS class.
Blog Entries

- News from the MBS Xojo Plugins Version 25.3
- MBS Xojo Plugins, version 25.3pr5
- MBS Xojo Plugins, version 21.2pr5
- MBS Xojo Plugins, version 18.6pr3
- MBS Xojo / Real Studio Plugins, version 16.4pr2

- New Archive classes for handling zip and tar archives

Xojo Developer Magazine

- 19.4, page 81: Archives in Xojo, How to Use Zip Archives by Stefanie Juchmes

5.6.2 Methods

5.6.3 AddFilter(FilterCode as Integer)

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Adds filter by code number.
Notes: Lasterror property is set.

5.6.4 AddFilterB64encode

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Adds base 64 filter.
Notes: Lasterror property is set.

5.6.5 AddFilterByName(Name as String)

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Adds filter by name.
Notes: Lasterror property is set.

5.6.6 AddFilterBZip2

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Add bzip2 filter.
Notes: Lasterror property is set.

5.6.7 AddFilterCompress

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Add compress filter.
Notes: Lasterror property is set.

5.6.8 AddFilterGRZip

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Add grzip filter.
Notes: Lasterror property is set.

5.6.9 AddFilterGZip

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Add gzip filter.
Notes: Lasterror property is set.

5.6.10 AddFilterLRZip

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Add lrzip filter.
Notes: Lasterror property is set.

5.6.11 AddFilterLZ4

Plugin Version: 16.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Add support for LZ4 compression.
Notes: Lasterror property is set.

5.6.12 AddFilterLZip

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Add lzip filter.
Notes: Lasterror property is set.

5.6.13 AddFilterLZMA

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Add lzma filter.
Notes: Lasterror property is set.

5.6.14 AddFilterLZOp

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Add lzop filter.
Notes: Lasterror property is set.

5.6.15 AddFilterNone

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Add none filter.
Notes: Lasterror property is set.

5.6.16 AddFilterProgram(Command as String)

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Adds a filter calling external application.
Notes: Lasterror property is set.

5.6.17 AddFilterUUEncode

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Add uu filter.
Notes: Lasterror property is set.

5.6.18 AddFilterXZ

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Add xy filter.
Notes: Lasterror property is set.

5.6.19 Close

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Closes the archive.
Notes: Lasterror property is set.

5.6.20 Constructor

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The constructor.

5.6.21 CreateFile(File as FolderItem) as boolean

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Creates a new archive file.
Notes: Returns true on success.

5.6.22 CreateMemoryFile as boolean

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Creates in memory output file.
Notes: Please use later MemoryData, MemoryString, MemoryPointer, or MemorySize later to get data after closing archive.
Lasterror property is set.

5.6.23 Destructor

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The destructor.

5.6.24 Fail

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Marks archive as failed.
Notes: We will not close the archive properly and you can delete file.

5.6.25 FinishEntry

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Finishes an entry.
Notes: Lasterror property is set.

5.6.26 SetFilterOption(Module as String, Option as String, Value as String)

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Apply option to the filter only.
Notes: Lasterror property is set.

5.6.27 SetFormat(FormatCode as Integer)

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets format by code.
Notes: Lasterror property is set.

5.6.28 SetFormat7Zip

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets format to 7zip.
Notes: Lasterror property is set.
7zip support in MBS Plugin is very limited.

5.6.29 SetFormatArBsd

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets format to ar bsd.
Notes: Lasterror property is set.

5.6.30 SetFormatArSvr4

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets format to ar svr4.
Notes: Lasterror property is set.

5.6.31 SetFormatByExtension(FileName as String, defaultExtension as String = "")

Plugin Version: 16.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Set file format by extension of filename.
Notes: e.g. pass "test.zip" for file name and ".zip" for default extension (if filename has none).
Lasterror property is set.

5.6.32 SetFormatByName(Name as String)

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets format by name.
Notes: Lasterror property is set.

5.6.33 SetFormatCpio

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets format to cpio.
Notes: Lasterror property is set.

5.6.34 SetFormatCpioNewc

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets format to cpio newc.
Notes: Lasterror property is set.

5.6.35 SetFormatGnutar

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets format to gnu tape archive files.
Notes: Lasterror property is set.

5.6.36 SetFormatIso9660

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets format to iso 9660.
Notes: Lasterror property is set.

5.6.37 SetFormatMTree

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets format to mtree.
Notes: Lasterror property is set.

5.6.38 SetFormatMTreeClassic

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets format to mtree classic.
Notes: Lasterror property is set.

5.6.39 SetFormatOption(Module as String, Option as String, Value as String)

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Apply option to the format only.
Notes: Lasterror property is set.

5.6.40 SetFormatPax

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets format to pax.
Notes: Lasterror property is set.

5.6.41 SetFormatPaxRestricted

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets format to pax restricted.
Notes: Lasterror property is set.

5.6.42 SetFormatRaw

Plugin Version: 16.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets raw format.
Notes: Lasterror property is set.

5.6.43 SetFormatShar

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets format to shar.
Notes: Lasterror property is set.

5.6.44 SetFormatSharDump

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets format to shar dump.
Notes: Lasterror property is set.

5.6.45 SetFormatUstar

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets format to Unix Standard TAR.
Notes: Lasterror property is set.

5.6.46 SetFormatV7tar

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets format to v7 tape archive files.
Notes: Lasterror property is set.

5.6.47 SetFormatWArc

Plugin Version: 16.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets format to web archive.
Notes: Lasterror property is set.

5.6.48 SetFormatXar

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets format to xar.
Notes: Lasterror property is set.

5.6.49 SetFormatZip

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets format to zip.
Example:

```
Var a as new ArchiveWriterMBS

a.SetFormatZip
a.ZipSetCompressionDeflate

Var f as FolderItem = SpecialFolder.Desktop.Child("test.zip")
if not a.CreateFile(f) then
break // failed

else

Var data as string = "Hello World test file. Hello World again."

Var e as new ArchiveEntryMBS
e.PathName = "Hello World.txt"
e.Size = lenb(data)
```

```
e.Permissions = &o0644
e.FileType = e.kFileTypeRegular

a.WriteHeader e
call a.WriteData data

a.FinishEntry

a.Close
end if
```

Notes: Lasterror property is set.

5.6.50 SetOption(Module as String, Option as String, Value as String)

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Apply option to both the format and the filter.
Notes: Lasterror property is set.

5.6.51 SetOptions(Options as String)

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Apply option string to both the format and the filter.
Example:

```
Var a as new ArchiveWriterMBS
a.SetOptions "hdrcharset=UTF-8" // for unicode file names
```

Notes: Lasterror property is set.

The options to pass to writer.
This is a comma-separated list of options. Option names can be prefixed with module name.

Sample options:
compression=9
zip:encryption=zipcrypt
zip:encryption=aes128
zip:encryption=aes256
zip64
gzip:compression-level=9

hdrcharset=UTF-8

5.6.52 SetPassphrase(Password as String)

Plugin Version: 16.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets the passphrase to use.
Example:

```
Var a as new ArchiveWriterMBS

a.SetFormatZip
a.ZipSetCompressionDeflate

a.SetOptions "zip:encryption=zipcrypt" // enable encryption
a.SetPassphrase "HelloWorld" // set password
```

Notes: Alternatively you can use the Passphrase event.
Lasterror property is set.

5.6.53 SetSkipFile(DeviceID as Int64, FileNo as Int64)

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Record the dev/ino of a file that will not be written.
Notes: This is generally set to the dev/ino of the archive being written.
Lasterror property is set.

5.6.54 WriteData(data as MemoryBlock) as Int64

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Writes data to current file.
Notes: Returns number of bytes written.
Lasterror property is set.
See also:

5.6.55 WriteData(data as Ptr, Size as Int64) as Int64

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Writes data to current file.
Notes: Returns number of bytes written.
Lasterror property is set.
See also:

- 5.6.54 WriteData(data as MemoryBlock) as Int64 90
- 5.6.56 WriteData(data as string) as Int64 91
- 5.6.57 WriteData(SourceArchive as ArchiveReaderMBS) as Int64 91

5.6.56 WriteData(data as string) as Int64

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Writes data to current file.
Notes: Returns number of bytes written.
Lasterror property is set.
See also:

- 5.6.54 WriteData(data as MemoryBlock) as Int64 90
- 5.6.55 WriteData(data as Ptr, Size as Int64) as Int64 91
- 5.6.57 WriteData(SourceArchive as ArchiveReaderMBS) as Int64 91

5.6.57 WriteData(SourceArchive as ArchiveReaderMBS) as Int64

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Writes data to current file.
Notes: Loops over blocks in source archive entry and copies them all to current archive.
Returns number of bytes written.
Lasterror property is set.
See also:

- 5.6.54 WriteData(data as MemoryBlock) as Int64 90
- 5.6.55 WriteData(data as Ptr, Size as Int64) as Int64 91
- 5.6.56 WriteData(data as string) as Int64 91

5.6.58 WriteHeader(Entry as ArchiveEntryMBS)

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Writes an archive item.
Notes: Lasterror property is set.

5.6.59 ZipSetCompressionBZip2

Plugin Version: 25.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets compression for zip to bzip2.
Notes: Lasterror property is set.

5.6.60 ZipSetCompressionDeflate

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets compression for zip to deflate.
Notes: Lasterror property is set.

5.6.61 ZipSetCompressionStore

Plugin Version: 16.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets compression for zip to store.
Notes: Store is no compression.
Lasterror property is set.

5.6.62 ZipSetCompressionZStd

Plugin Version: 25.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets compression for zip to zstd.
Notes: Lasterror property is set.

5.6.63 Properties

5.6.64 MemoryData as MemoryBlock

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Copies data in memory buffer as MemoryBlock.
Notes: (Read only property)

5.6.65 MemoryPointer as Ptr

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Queries pointer for memory block.
Notes: Only valid till more data is added, which may reallocate the buffer to grow it.
(Read only property)

5.6.66 MemorySize as Int64

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: The memory size.
Notes: Current memory used for memory output in bytes.
(Read only property)

5.6.67 MemoryString as String

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Copies data in memory buffer as String.
Notes: (Read only property)

5.6.68 WriteDataBlockSupported as Boolean

Plugin Version: 19.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Whether this writer supports block operations.
Notes: Some do and if you call WriteDataBlock on a writer which can't, it will return only errors.
(Read only property)

Chapter 6

Compression

6.1 Globals

6.1.1 CompressBZip2MBS(buf as string,level as Integer) as string

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: Compresses the data and returns it as string.
Example:

```
Var s as string = "Hello World"
s=CompressBZip2MBS(s,9)
```

Notes: Compression level is going from 0 to 9, where 0 is no compression and 9 is best compression.

6.1.2 DecompressBZip2MBS(buf as string,size as Integer) as string

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: Decompresses the data and returns it as string.
Example:

```
Var s as string = "Hello World"
s=CompressBZip2MBS(s,9)
s=DecompressBZip2MBS(s,10000)

MsgBox s
```

Notes: As DecompressZLibMBS can't know the size of the decompressed data you should give it a hint.

Best is to save the size of the decompressed data on compression. Else you must guess the size which can be 10 times the size of the compressed data.

6.1.3 CompressZLibMBS(Buffer as string, level as Integer = 9) as string

Platforms: macOS, Linux, Windows, Targets: All.

Function: Compresses the data and returns it as string.
Example:

```
Var s as string = "Hello World"
Var l as Integer = lenb(s)

Var c as string = CompressZLibMBS(s,9)
Var d as string = DecompressZLibMBS(c, l)

MsgBox d
```

Notes: Compression level is going from 0 to 9, where 0 is no compression and 9 is best compression.
Error: Optional parameter to receive the error code. (see error codes in ZLibCompressMBS)

For result and temp memory this function needs maximum something like 110% of lenb(buf).

Version 18.5 and newer use level 9 as default.
See also:

- 6.1.4 CompressZLibMBS(Buffer as string, level as Integer, byref error as Integer) as string 96

6.1.4 CompressZLibMBS(Buffer as string, level as Integer, byref error as Integer) as string

Plugin Version: 12.4, Platforms: macOS, Linux, Windows, Targets: All.

Function: Compresses the data and returns it as string.
Notes: Compression level is going from 0 to 9, where 0 is no compression and 9 is best compression.
Error: Optional parameter to receive the error code. (see error codes in ZLibCompressMBS)

For result and temp memory this function needs maximum something like 110% of lenb(buf).
Blog Entries

- MBS Real Studio Plugins, version 12.4pr10

See also:

6.1.5 DecompressZLibMBS(Buffer as string, size as Integer = 0) as string

Platforms: macOS, Linux, Windows, Targets: All.

Function: Decompresses the data and returns it as string.
Example:

```
Var s as string = "Hello World"
s=CompressZLibMBS(s,9)
s=DecompressZLibMBS(s,10000)

MsgBox s
```

Notes: As DecompressZLibMBS can't know the size of the decompressed data you should give it a hint. Best is to save the size of the decompressed data on compression. Else you must guess the size which can be 10 times the size of the compressed data.
Error: Optional parameter to receive the error code. (see error codes in ZLibCompressMBS)

Version 18.5 and newer ignore size and manage it automatically.
See also:

6.1.6 DecompressZLibMBS(Buffer as string, size as Integer, byref error as Integer) as string

Plugin Version: 12.4, Platforms: macOS, Linux, Windows, Targets: All.

Function: Decompresses the data and returns it as string.
Notes: As DecompressZLibMBS can't know the size of the decompressed data you should give it a hint. Best is to save the size of the decompressed data on compression. Else you must guess the size which can be 10 times the size of the compressed data.
Error: Optional parameter to receive the error code. (see error codes in ZLibCompressMBS)

Returned data is a string without known encoding.

Version 18.5 and newer ignore size and manage it automatically.
Blog Entries

- MBS Xojo Plugins, version 18.5pr8
- MBS Xojo Plugins, version 18.5pr7

- MBS Real Studio Plugins, version 12.4pr10

See also:

- 6.1.5 DecompressZLibMBS(Buffer as string, size as Integer = 0) as string 97

6.1.7 CompressLZWMBS(buf as string) as string

Plugin Version: 6.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Compresses string using LZW algorithm.
Example:

```
Var s as string
Var b as BinaryStream
Var f as FolderItem
Var l as Integer

f=SpecialFolder.Desktop.Child("output.tiff")
b=f.OpenAsBinaryFile(false)
s=b.Read(b.Length)
b.Close

l=lenb(s)
s=CompressLZWMBS(s)

f=SpecialFolder.Desktop.Child("output.compressed.tiff")
b=f.CreateBinaryFile("text")
b.Write s
b.Close

s=DecompressLZWMBS(s,l)

f=SpecialFolder.Desktop.Child("output.uncompressed.tiff")
b=f.CreateBinaryFile("text")
b.Write s
b.Close
```

Notes: Please remember that the LZW algorithm can be implemented quite different. This one is byte based, uses 12bit offsets and a 4096 entry table.

Returns "" on low memory or Stack Overlow or Output buffer overlow.
(buffer and stack size may be increased on request for future plugin versions)
Blog Entries

- MBS Real Studio Plugins, version 11.3pr2

6.1.8 DecompressLZWMBS(buf as string, size as Integer) as string

Plugin Version: 6.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Decompresses string using LZW algorithm.
Notes: Please remember that the LZW algorithm can be implemented quite different. This one is byte based, uses 12bit offsets and a 4096 entry table.

Returns "" on low memory or Stack Overlow or Output buffer overlow.
(buffer and stack size may be increased on request for future plugin versions)

Size of the uncompressed length is only a guess for how big the output buffer needs to be. Actual string returned will often be smaller.

6.2 class BZip2CompressMBS

6.2.1 class BZip2CompressMBS

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: A class for bzip2 compression.
Notes: See also BZip2DecompressMBS class.
Blog Entries

- News from the MBS Xojo Plugins Version 24.3
- MonkeyBread Software Releases the MBS Xojo Plugins in version 24.3
- MBS Xojo Plugins, version 24.3pr2
- MBS Xojo Plugins, version 24.3pr1

6.2.2 Methods

6.2.3 Close

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: The destructor.
Notes: There is no need to call this method except you want to free all resources of this object now without waiting for Xojo to do it for you.

6.2.4 Constructor(BufferPtr as Ptr, BufferSize as Integer)

Plugin Version: 24.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The constructor taking an existing buffer.
Notes: For advanced users who use declares to preallocate the output buffer.
Stores Ptr in OutputPtr property for later access.
See also:

- 6.2.5 Constructor(BufferSize as Integer=20000) 100

6.2.5 Constructor(BufferSize as Integer=20000)

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: The constructor.
Notes: The buffer size you specify is the output buffer size.
If this size is small, you need to flush with ProcessZip.
See also:

- 6.2.4 Constructor(BufferPtr as Ptr, BufferSize as Integer) 100

6.2.6 EndZip

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: Finalizes the current compression stream.
Notes: You may check the Output property after this.
Error is set.

6.2.7 GetOutput as string

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: Returns the content of the output buffer.
Notes: The buffer is cleared after this function returns.

6.2.8 InitZip(level as Integer)

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: Initializes the stream.
Notes: Level is from 0 to 9.

Error is set.

6.2.9 InputAvail as Integer

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: Returns the number of bytes available in the input buffer.

6.2.10 OutputSize as Integer

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: The size of bytes available in the output buffer.

6.2.11 ProcessZip(Flush as boolean=false)

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: Does zip compression.
Notes: Reduces the size of the input buffer and writes new data to the output buffer.
If the input buffer is not empty after this call, you need to call it again, but empty the output buffer before.
Error is set.

If flush is true, the data is flushed to output. Using flush=true all the the time will slow down compression, so use it only on the end to clear the output buffers.

6.2.12 SetInput(data as Memoryblock) as boolean

Plugin Version: 13.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Fills the input buffer.
Notes: Returns true if successfull.
Returns false if size is <= 0.

The data is read directly from the Memoryblock and the plugin keeps a reference until destructor runs or you set a new input data.
See also:

- 6.2.13 SetInput(data as ptr, Size as Integer) as boolean 102
- 6.2.14 SetInput(data as string) as boolean 102

6.2.13 SetInput(data as ptr, Size as Integer) as boolean

Plugin Version: 24.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Fills the input buffer.
Notes: Returns true if successfull.
Returns false if Size is <= 0.

The data is read directly from the Ptr and you need to keep reference to the memory and prevent it from being released too early.
See also:

- 6.2.12 SetInput(data as Memoryblock) as boolean 101
- 6.2.14 SetInput(data as string) as boolean 102

6.2.14 SetInput(data as string) as boolean

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: Fills the input buffer.
Notes: Returns true if successfull.
Returns false if length is <= 0.

The data is read directly from the String and the plugin keeps a reference until destructor runs or you set a new input data.
See also:

- 6.2.12 SetInput(data as Memoryblock) as boolean 101
- 6.2.13 SetInput(data as ptr, Size as Integer) as boolean 102

6.2.15 Properties

6.2.16 Error as Integer

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: The last error code.
Notes: (Read and Write property)

6.2.17 OutputBufferSize as Integer

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: The output buffer size used in the constructor.
Notes: (Read only property)

6.2.18 OutputPtr as Ptr

Plugin Version: 24.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The pointer to the internal output buffer.
Notes: For advanced users to directly use the buffer for declares.
See OutputUsedSize property to see how many bytes are filled.
(Read only property)

6.2.19 OutputUsedSize as Integer

Plugin Version: 24.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The number of bytes used in output buffer currently.
Notes: (Read only property)

6.2.20 TotalInput as UInt64

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: The number of bytes processed so far.
Notes: (Read and Write property)

6.2.21 TotalOutput as UInt64

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: The number of bytes processed so far.
Notes: (Read and Write property)

6.2.22 Version as String

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: The version string of the used zlib library.
Notes: (Read only property)

6.2.23 Constants

Errors

Constant	Value	Description
kCONFIG_ERROR	-9	Indicates that the library has been improperly compiled on your platform – a major configuration error. Specifically, it means that sizeof(char), sizeof(short) and sizeof(int) are not 1, 2 and 4 respectively, as they should be. Note that the library should still work properly on 64-bit platforms which follow the LP64 programming model – that is, where sizeof(long) and sizeof(void*) are 8. Under LP64, sizeof(int) is still 4, so libbzip2, which doesn't use the long type, is OK. This should never happen with the plugin.
kDATA_ERROR	-4	Returned when a data integrity error is detected during decompression. Most importantly, this means when stored and computed CRCs for the data do not match. This value is also returned upon detection of any other anomaly in the compressed data.
kDATA_ERROR_MAGIC	-5	As a special case of kDATA_ERROR, it is sometimes useful to know when the compressed stream does not start with the correct magic bytes ('B' 'Z' 'h').
kFINISH_OK	3	In Compress, the requested flush/finish/nothing-special action was completed successfully.
kFLUSH_OK	2	In Compress, the requested flush/finish/nothing-special action was completed successfully.
kIO_ERROR	-6	Returned by Read and Write when there is an error reading or writing in the compressed file, and by ReadOpen and WriteOpen for attempts to use a file for which the error indicator (viz, ferror(f)) is set. On receipt of kIO_ERROR, the caller should consult errno and/or perror to acquire operating-system specific information about the problem.
kMEM_ERROR	-3	Returned when a request to allocate memory failed. Note that the quantity of memory needed to decompress a stream cannot be determined until the stream's header has been read. So Decompress and Read may return kMEM_ERROR even though some of the compressed data has been read. The same is not true for compression; once CompressInit or WriteOpen have successfully completed, kMEM_ERROR cannot occur.
kOK	0	The requested action was completed successfully.
kOUTBUFF_FULL	-8	Returned by BuffToBuffCompress and BuffToBuffDecompress to indicate that the output data will not fit into the output buffer provided.
kPARAM_ERROR	-2	Returned when a parameter to a function call is out of range or otherwise manifestly incorrect. As with kSEQUENCE_ERROR, this denotes a bug in the client code. The distinction between kPARAM_ERROR and kSEQUENCE_ERROR is a bit hazy, but still worth making.
kRUN_OK	1	In Compress, the requested flush/finish/nothing-special action was completed successfully.
kSEQUENCE_ERROR	-1	When using the library, it is important to call the functions in the correct sequence and with data structures (buffers etc) in the correct states. libbzip2 checks as much as it can to ensure this is happening, and returns kSEQUENCE_ERROR if not. Code which complies precisely with the function semantics, as detailed below, should never receive this value; such an event denotes buggy code which you should investigate.
kSTREAM_END	4	Compression of data was completed, or the logical stream end was detected during decompression.
kUNEXPECTED_EOF	-7	Returned by Read when the compressed file finishes before the logical end of stream is detected.

Commands

Constant	Value	Description
kFINISH	2	
kFLUSH	1	
kRUN	0	

6.3 class BZip2DecompressMBS

6.3.1 class BZip2DecompressMBS

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: A class for bzip2 decompression.
Notes: See also BZip2CompressMBS class.
Blog Entries

- News from the MBS Xojo Plugins Version 24.3
- MonkeyBread Software Releases the MBS Xojo Plugins in version 24.3
- MBS Xojo Plugins, version 24.3pr2
- MBS Xojo Plugins, version 24.3pr1

6.3.2 Methods

6.3.3 Close

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: The destructor.
Notes: There is no need to call this method except you want to free all resources of this object now without waiting for Xojo to do it for you.

6.3.4 Constructor(BufferPtr as Ptr, BufferSize as Integer)

Plugin Version: 24.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The constructor taking an existing buffer.
Notes: For advanced users who use declares to preallocate the output buffer.
Stores Ptr in OutputPtr property for later access.
See also:

- 6.3.5 Constructor(BufferSize as Integer=20000) 107

6.3.5 Constructor(BufferSize as Integer=20000)

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: The constructor.
Notes: The buffer size you specify is the output buffer size.

If this size is small, you need to flush with ProcessZip.
See also:

- 6.3.4 Constructor(BufferPtr as Ptr, BufferSize as Integer) 107

6.3.6 EndZip

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: Finalizes the current decompression stream.
Notes: You may check the Output property after this.
Error is set.

6.3.7 GetOutput as string

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: Returns the content of the output buffer.
Notes: The buffer is cleared after this function returns.

6.3.8 InitZip

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: Initializes the stream.
Notes: Error is set.

6.3.9 InputAvail as Integer

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: Returns the number of bytes available in the input buffer.

6.3.10 OutputSize as Integer

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: The size of bytes available in the output buffer.

6.3.11 ProcessZip

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: Does zip decompression.
Notes: Reduces the size of the input buffer and writes new data to the output buffer.
If the input buffer is not "" after this call, you need to call it again, but empty the output buffer before.
Error is set.

6.3.12 SetInput(data as Memoryblock) as boolean

Plugin Version: 13.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Fills the input buffer.
Notes: Returns true if successfull.
Returns false if size is <= 0.

The data is read directly from the Memoryblock and the plugin keeps a reference until destructor runs or you set a new input data.
See also:

- 6.3.13 SetInput(data as ptr, Size as Integer) as boolean 109
- 6.3.14 SetInput(data as string) as boolean 109

6.3.13 SetInput(data as ptr, Size as Integer) as boolean

Plugin Version: 24.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Fills the input buffer.
Notes: Returns true if successfull.
Returns false if Size is <= 0.

The data is read directly from the Ptr and you need to keep reference to the memory and prevent it from being released too early.
See also:

- 6.3.12 SetInput(data as Memoryblock) as boolean 109
- 6.3.14 SetInput(data as string) as boolean 109

6.3.14 SetInput(data as string) as boolean

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: Fills the input buffer.
Notes: Returns true if successfull.
Returns false if length is <= 0.

The data is read directly from the String and the plugin keeps a reference until destructor runs or you set a new input data.
See also:

- 6.3.12 SetInput(data as Memoryblock) as boolean 109
- 6.3.13 SetInput(data as ptr, Size as Integer) as boolean 109

6.3.15 Properties

6.3.16 Error as Integer

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: The last error code.
Notes: (Read and Write property)

6.3.17 OutputBufferSize as Integer

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: The output buffer size used in the constructor.
Notes: (Read only property)

6.3.18 OutputPtr as Ptr

Plugin Version: 24.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The pointer to the internal output buffer.
Notes: For advanced users to directly use the buffer for declares.
See OutputUsedSize property to see how many bytes are filled.
(Read only property)

6.3.19 OutputUsedSize as Integer

Plugin Version: 24.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The number of bytes used in output buffer currently.
Notes: (Read only property)

6.3.20 TotalInput as UInt64

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: The number of bytes processed so far.
Notes: (Read and Write property)

6.3.21 TotalOutput as UInt64

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: The number of bytes processed so far.
Notes: (Read and Write property)

6.3.22 Version as String

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: The version string of the used zlib library.
Notes: (Read only property)

6.3.23 Constants

Errors

Constant	Value	Description
kCONFIG_ERROR	-9	Indicates that the library has been improperly compiled on your platform – a major configuration error. Specifically, it means that sizeof(char), sizeof(short) and sizeof(int) are not 1, 2 and 4 respectively, as they should be. Note that the library should still work properly on 64-bit platforms which follow the LP64 programming model – that is, where sizeof(long) and sizeof(void*) are 8. Under LP64, sizeof(int) is still 4, so libbzip2, which doesn't use the long type, is OK. This should never happen with the plugin.
kDATA_ERROR	-4	Returned when a data integrity error is detected during decompression. Most importantly, this means when stored and computed CRCs for the data do not match. This value is also returned upon detection of any other anomaly in the compressed data.
kDATA_ERROR_MAGIC	-5	As a special case of kDATA_ERROR, it is sometimes useful to know when the compressed stream does not start with the correct magic bytes ('B' 'Z' 'h').
kFINISH_OK	3	In Compress, the requested flush/finish/nothing-special action was completed successfully.
kFLUSH_OK	2	In Compress, the requested flush/finish/nothing-special action was completed successfully.
kIO_ERROR	-6	Returned by Read and Write when there is an error reading or writing in the compressed file, and by ReadOpen and WriteOpen for attempts to use a file for which the error indicator (viz, ferror(f)) is set. On receipt of kIO_ERROR, the caller should consult errno and/or perror to acquire operating-system specific information about the problem.
kMEM_ERROR	-3	Returned when a request to allocate memory failed. Note that the quantity of memory needed to decompress a stream cannot be determined until the stream's header has been read. So Decompress and Read may return kMEM_ERROR even though some of the compressed data has been read. The same is not true for compression; once CompressInit or WriteOpen have successfully completed, kMEM_ERROR cannot occur.
kOK	0	The requested action was completed successfully.
kOUTBUFF_FULL	-8	Returned by BuffToBuffCompress and BuffToBuffDecompress to indicate that the output data will not fit into the output buffer provided.
kPARAM_ERROR	-2	Returned when a parameter to a function call is out of range or otherwise manifestly incorrect. As with kSEQUENCE_ERROR, this denotes a bug in the client code. The distinction between kPARAM_ERROR and kSEQUENCE_ERROR is a bit hazy, but still worth making.
kRUN_OK	1	In Compress, the requested flush/finish/nothing-special action was completed successfully.
kSEQUENCE_ERROR	-1	When using the library, it is important to call the functions in the correct sequence and with data structures (buffers etc) in the correct states. libbzip2 checks as much as it can to ensure this is happening, and returns kSEQUENCE_ERROR if not. Code which complies precisely with the function semantics, as detailed below, should never receive this value; such an event denotes buggy code which you should investigate.
kSTREAM_END	4	Compression of data was completed, or the logical stream end was detected during decompression.
kUNEXPECTED_EOF	-7	Returned by Read when the compressed file finishes before the logical end of stream is detected.

Commands

Constant	Value	Description
kFINISH	2	
kFLUSH	1	
kRUN	0	

6.4 class BZip2FileMBS

6.4.1 class BZip2FileMBS

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: A class to read and write bzip2 byte streams.
Notes: A .bz2 file is just the content of the original file compressed. No header.

6.4.2 Methods

6.4.3 Close

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: The destructor.
Notes: There is no need to call this method except you want to free all resources of this object now without waiting for Xojo to do it for you.

Lasterror and LasterrorMessage are set.

6.4.4 Flush

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: Flushes all pending output into the compressed file.
Notes: Lasterror and LasterrorMessage are set.

6.4.5 Open(file as folderitem, mode as string) as boolean

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: Opens a .bz2 file for reading or writing, using the given file path.
Notes: Returns false on failure.
Mode can be ”r” for reading and ”w” for writing. Or other values fopen accepts.

Lasterror and LasterrorMessage are set.

6.4.6 OpenString(data as string) as boolean

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: Opens a bzip compressed file from the given string.
Notes: Returns true on success and false on failure.

Lasterror and LasterrorMessage are set.

6.4.7 Read(ByteCount as Int64) as string

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: Reads data form a compresses file.
Notes: Lasterror and LasterrorMessage are set.

6.4.8 ReadByte as integer

Plugin Version: 18.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Reads a single byte.
Notes: Lasterror and LasterrorMessage are set.

6.4.9 ReadData(ByteCount as Int64) as Memoryblock

Plugin Version: 18.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Reads data into memoryblock.
Notes: Lasterror and LasterrorMessage are set.

6.4.10 Write(data as Memoryblock)

Plugin Version: 18.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Writes data to the file and compresses it.
Notes: Lasterror and LasterrorMessage are set.
See also:

- 6.4.11 Write(data as string)

6.4.11 Write(data as string)

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: Writes data to the file and compresses it.
Notes: Lasterror and LasterrorMessage are set.
See also:

- 6.4.10 Write(data as Memoryblock) 115

6.4.12 WriteByte(data as integer)

Plugin Version: 18.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Writes a single byte.
Notes: Lasterror and LasterrorMessage are set.

6.4.13 Properties

6.4.14 ErrorCode as Integer

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Deprecated: This item is deprecated and should no longer be used. You can use Lasterror instead. **Function:** The last error code.
Notes: (Read and Write property)

6.4.15 ErrorMessage as String

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Deprecated: This item is deprecated and should no longer be used. You can use LasterrorMessage instead.
Function: The last error message.
Notes: (Read and Write property)

6.4.16 Handle as Integer

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: The current bzip file handle.
Notes: (Read and Write property)

6.4.17 Lasterror as Integer

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: The last error value.
Notes: (Read and Write property)

6.4.18 LasterrorMessage as String

Plugin Version: 18.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The last error message.
Notes: (Read and Write property)

6.4.19 Version as String

Plugin Version: 9.7, Platforms: macOS, Linux, Windows, Targets: All.

Function: Returns a string indicating the library version.
Notes: (Read only property)

6.5 class GZipFileMBS

6.5.1 class GZipFileMBS

Plugin Version: 4.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: A class to read and write gzip byte streams.
Notes: A .gz file is just the content of the original file compressed. No header.

See also ArchiveReaderMBS and ArchiveWriterMBS classes for more features and compression formats.
Blog Entries

- MBS Xojo Plugins 18.3
- MBS Xojo Plugins, version 18.3pr1
- MBS Xojo Plugins, version 17.5pr8
- MBS Xojo / Real Studio Plugins, version 15.2pr1
- MBS Real Studio Plugins, version 13.0fc1
- MBS Real Studio Plugins, version 13.0pr8
- MBS Real Studio Plugins, version 13.0pr1
- MBS Real Studio Plugins, version 12.0pr4
- MBS Plugins 11.1 Release notes
- MBS REALbasic plug-in 9.6

Xojo Developer Magazine

- 16.5, page 9: News

6.5.2 Methods

6.5.3 Adler32(start as UInt32, data as string) as UInt32

Plugin Version: 4.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Calculates a 32bit Adler Checksum about a given string.
Notes: Set start to 0 for the first call.
Later you can pass the result as the new start value to add data to your checksum.

This function is part of the zlib library and given as a free utility function to this class.

6.5.4 Close

Plugin Version: 4.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The destructor.
Notes: There is no need to call this method except you want to free all resources of this object now without waiting for Xojo to do it for you.

6.5.5 CloseForString as string

Plugin Version: 11.1, Platforms: macOS, Linux, Windows, Targets: All.

Function: Closes the file and returns the string.
Example:

```
Function GZIPStringWriteMBS(data as string) As string
Var g as new GZipFileMBS

if g.CreateForString then
g.Write data

Return g.CloseForString
end if
End Function
```

Notes: Only for use with CreateForString function.
Returns empty string on any error.

6.5.6 CRC32(start as UInt32, data as string) as UInt32

Plugin Version: 4.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Calculates a 32bit Checksum about a given string.
Notes: Set start to 0 for the first call.
Later you can pass the result as the new start value to add data to your checksum.

This function is part of the zlib library and given as a free utility function to this class.

6.5.7 CreateForString as boolean

Plugin Version: 11.1, Platforms: macOS, Linux, Windows, Targets: All.

Function: Creates a new gzip file in memory.
Example:

```
Function GZIPStringWriteMBS(data as string) As string
Var g as new GZipFileMBS

if g.CreateForString then
g.Write data

Return g.CloseForString
end if
End Function
```

Notes: Use with the CloseForString method to compress data in memory.
Returns false on any error and true on success.

6.5.8 Flush(flush as Integer)

Plugin Version: 4.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Flushes all pending output into the compressed file.
Notes: The parameter flush is as in the zlib deflate() function.
Lasterror is set.
Flush should be called only when strictly necessary because it can degrade compression.

6.5.9 Open(file as folderitem, mode as string) as boolean

Plugin Version: 4.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Opens a gzip (.gz) file for reading or writing.
Notes: The mode parameter is as in fopen ("rb" read binary or "wb" for write binary) but can also include a compression level ("wb9") or a strategy: 'f' for filtered data as in "wb6f", 'h' for Huffman only compression as in "wb1h".

Open can be used to read a file which is not in gzip format; in this case Read will directly read from the file without decompression.

Open returns NULL if the file could not be opened or if there was insufficient memory to allocate the (de)compression state; errno can be checked to distinguish the two cases (if errno is zero, the zlib error is Z_MEM_ERROR).

Returns false on any error and true on success.

6.5.10 OpenString(data as string) as boolean

Plugin Version: 9.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: Opens a gzip (.gz) file for reading from a file.
Example:

```
Function GZipStringReadMBS(compressedData as string) As string
Var g as new GZipFileMBS

const BlockSize=1000000

if g.OpenString(compressedData) then

Var parts(-1) as string

while not g.eof
Var s as string=g.Read(BlockSize)
parts.Append s
wend

Return Join(parts,"")
end if
End Function
```

Notes: Same as Open, but reading from the given string.

6.5.11 Read(ByteCount as Int64) as string

Plugin Version: 4.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Reads the given number of bytes into a string.
Notes: Returns "" on any error.
May return less bytes than requested.
Lasterror is set.

6.5.12 ReadByte as Integer

Plugin Version: 4.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Reads one byte from the file.

6.5.13 ReadData(ByteCount as Int64) as Memoryblock

Plugin Version: 15.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Reads the given number of bytes into a memoryblock.
Notes: Returns nil on any error.
May return less bytes than requested.
Lasterror is set.

6.5.14 Rewind

Plugin Version: 4.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Moves the file position for reading files to the file start.
Notes: Equal to: position=0

6.5.15 SetParameter(level as Integer, strategy as Integer)

Plugin Version: 4.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Dynamically update the compression level or strategy.
Notes: Lasterror is set.

Possible values:

FILTERED	1
HUFFMAN_ONLY	2
DEFAULT_STRATEGY	0

6.5.16 Write(data as Memoryblock)

Plugin Version: 15.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Writes a Memoryblock to a file.
Notes: Lasterror is set.
See also:

- 6.5.17 Write(data as string)

6.5.17 Write(data as string)

Plugin Version: 4.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Writes a string to a file.
Notes: Note that encoding can make trouble as the raw bytes from the string are written.
Lasterror is set.
See also:

- 6.5.16 Write(data as Memoryblock) 122

6.5.18 WriteByte(data as Integer)

Plugin Version: 4.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Writes one byte to the file.

6.5.19 Properties

6.5.20 Direct as Boolean

Plugin Version: 17.5, Platforms: macOS, Linux, Windows, Targets: All.

Function: Returns true if file is being copied directly while reading, or false if file is a gzip stream being decompressed.
Notes: If the input file is empty, Direct will return true, since the input does not contain a gzip stream.
(Read only property)

6.5.21 EOF as Boolean

Plugin Version: 4.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Returns true if reading is on the end of the file.
Notes: Returns true on any error.
(Read only property)

6.5.22 ErrorCode as Integer

Plugin Version: 4.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Returns the last zlib error number.
Notes: If an error occurred in the file system and not in the compression library, errnum is set to Z_ERRNO

and the application may consult errno to get the exact error code. (errno is currently not available in Xojo)

Error codes:

Z_OK	0
Z_STREAM_END	1
Z_NEED_DICT	2
Z_ERRNO	-1
Z_STREAM_ERROR	-2
Z_DATA_ERROR	-3
Z_MEM_ERROR	-4
Z_BUF_ERROR	-5
Z_VERSION_ERROR	-6

(Read only property)

6.5.23 ErrorMessage as String

Plugin Version: 4.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Returns the error message for the last error which occurred on the given compressed file.
Notes: (Read only property)

6.5.24 Handle as Integer

Plugin Version: 4.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The current zlib file handle.
Notes: (Read and Write property)

6.5.25 Lasterror as Integer

Plugin Version: 4.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The last error code reported.
Notes: 0 for success.
-1 for failure.
(Read and Write property)

6.5.26 Position as Integer

Plugin Version: 4.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The current file position.
Notes: Not all positions are available.
e.g. on writing you can not move back.
Moving forward will add bytes with value 0 to the file.
Lasterror is set.
(Read and Write property)

6.5.27 Version as String

Plugin Version: 4.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: The version string of the used zlib library.
Notes: (Read only property)

6.6 module LZ4MBS

6.6.1 module LZ4MBS

Plugin Version: 19.4, Platforms: macOS, Linux, Windows, Targets: All.

Function: The module for LZ4 compression.
Example:

```
Var m As String = "Lorem ipsum dolor sit amet, consectetur adipiscing elit. Lorem ipsum dolor site amat."

// make sure encoding is set
m = ConvertEncoding(m, encodings.UTF8)

// compress
Var c As String = LZ4MBS.Compress(m)

// decompress
Var d As String = LZ4MBS.Decompress(c)

// set encoding after decompressing
d = DefineEncoding(d, encodings.UTF8)

// and check
If d = m Then
MsgBox "Text match"
Else
MsgBox "Text doesn't match"
End If
```

Blog Entries

- MBS Xojo Plugins, version 21.1pr7
- MBS Xojo Plugins, version 19.5pr1
- MonkeyBread Software Releases the MBS Xojo Plugins in version 19.4
- MBS Xojo Plugins, version 19.4pr6
- LZ4 Extremely fast compression for Xojo

Videos

- XDC 2020 MBS Plugins Presentation

6.6.2 Methods

6.6.3 Compress(InputData as MemoryBlock) as MemoryBlock

Plugin Version: 19.4, Platforms: macOS, Linux, Windows, Targets: All.

Function: Compresses a MemoryBlock.
Example:

```
// some 10 million zeros will compress well
Var m As New MemoryBlock(100000000)

// compress
Var c As MemoryBlock = LZ4MBS.Compress(m)

// decompress
Var d As MemoryBlock = LZ4MBS.Decompress(c)

// and check
If d.Size = m.size Then
MsgBox "Sizes match"
Else
MsgBox "Sizes don't match"
End If
```

Notes: Raises exception on failure (OutOfMemoryException or UnsupportedOperationException) and returns string on success.
See also:

- 6.6.4 Compress(InputData as Ptr, Size as Integer) as MemoryBlock 127
- 6.6.5 Compress(InputData as string) as string 128

6.6.4 Compress(InputData as Ptr, Size as Integer) as MemoryBlock

Plugin Version: 19.5, Platforms: macOS, Linux, Windows, Targets: All.

Function: Compresses data in ptr.
Notes: Same as memoryblock version, but with ptr parameter, so you can pass ptr with size.
Works also for passing memoryblocks and a custom size.
See also:

- 6.6.3 Compress(InputData as MemoryBlock) as MemoryBlock 127
- 6.6.5 Compress(InputData as string) as string 128

6.6.5 Compress(InputData as string) as string

Plugin Version: 19.4, Platforms: macOS, Linux, Windows, Targets: All.

Function: Compresses a string.
Example:

```
Var m As String = "Lorem ipsum dolor sit amet, consectetur adipiscing elit. Lorem ipsum dolor site amat."

// make sure encoding is set
m = ConvertEncoding(m, encodings.UTF8)

// compress
Var c As String = LZ4MBS.Compress(m)

// decompress
Var d As String = LZ4MBS.Decompress(c)

// set encoding after decompressing
d = DefineEncoding(d, encodings.UTF8)

// and check
If d = m Then
MsgBox "Text match"
Else
MsgBox "Text doesn't match"
End If
```

Notes: Raises exception on failure (OutOfMemoryException or UnsupportedOperationException) and returns string on success.
See also:

- 6.6.3 Compress(InputData as MemoryBlock) as MemoryBlock 127
- 6.6.4 Compress(InputData as Ptr, Size as Integer) as MemoryBlock 127

6.6.6 CompressFast(InputData as MemoryBlock, Acceleration as Integer = 1) as MemoryBlock

Plugin Version: 19.5, Platforms: macOS, Linux, Windows, Targets: All.

Function: Compresses a memoryblock.
Notes: Raises exception on failure (OutOfMemoryException or UnsupportedOperationException) and returns string on success.

Same as Compress(), but allows selection of "acceleration" factor.
The larger the acceleration value, the faster the algorithm, but also the lesser the compression.

It's a trade-off. It can be fine tuned, with each successive value providing roughly +
textasciitilde 3% to speed.
An acceleration value of "1" is the same as regular Compress()
Values <= 0 will be replaced by AccelerationDefault (currently = 1).
See also:

6.6.7 CompressFast(InputData as Ptr, Size as Integer, Acceleration as Integer = 1) as MemoryBlock

Plugin Version: 19.5, Platforms: macOS, Linux, Windows, Targets: All.

Function: Compresses data in ptr.
Notes: Same as memoryblock version, but with ptr parameter, so you can pass ptr with size.
Works also for passing memoryblocks and a custom size.
See also:

6.6.8 CompressFast(InputData as string, Acceleration as Integer = 1) as string

Plugin Version: 19.5, Platforms: macOS, Linux, Windows, Targets: All.

Function: Compresses a string.
Notes: Raises exception on failure (OutOfMemoryException or UnsupportedOperationException) and returns string on success.

Same as Compress(), but allows selection of "acceleration" factor.
The larger the acceleration value, the faster the algorithm, but also the lesser the compression.
It's a trade-off. It can be fine tuned, with each successive value providing roughly +
textasciitilde 3% to speed.
An acceleration value of "1" is the same as regular Compress()
Values <= 0 will be replaced by AccelerationDefault (currently = 1).
See also:

6.6.9 CompressHC(InputData as MemoryBlock, compressionLevel as Integer = 9) as MemoryBlock

Plugin Version: 19.5, Platforms: macOS, Linux, Windows, Targets: All.

Function: Compresses a memoryblock with high compression.
Example:

```
// lets make some data to compress
Var p As Picture = LogoMBS(500)
Var m As MemoryBlock = p.GetData(Picture.FormatBMP)

// compress
Var c1 As MemoryBlock = LZ4MBS.Compress(m)
Var c2 As MemoryBlock = LZ4MBS.CompressHC(m, LZ4MBS.CompressionLevelMin)
Var c3 As MemoryBlock = LZ4MBS.CompressHC(m, LZ4MBS.CompressionLevelDefault)
Var c4 As MemoryBlock = LZ4MBS.CompressHC(m, LZ4MBS.CompressionLevelOptMin)
Var c5 As MemoryBlock = LZ4MBS.CompressHC(m, LZ4MBS.CompressionLevelMax)


MsgBox _
Str(c1.Size)+" normal"+EndOfLine+_
Str(c2.size)+" min"+EndOfLine+_
Str(c3.size)+" default"+EndOfLine+_
Str(c4.size)+" opt min"+EndOfLine+_
Str(c5.size)+" max"
```

Notes: Raises exception on failure (OutOfMemoryException or UnsupportedOperationException) and returns string on success.

Compression level, with # being any value from 1 to 12. Higher values trade compression speed for compression ratio. Values above 12 are considered the same as 12. Recommended values are 1 for fast compression (default), and 9 for high compression. Speed/compression trade-off will vary depending on data to compress\. Decompression speed remains fast at all settings.
See also:

- 6.6.10 CompressHC(InputData as Ptr, Size as Integer, compressionLevel as Integer = 9) as MemoryBlock 130
- 6.6.11 CompressHC(InputData as string, compressionLevel as Integer = 9) as string 131

6.6.10 CompressHC(InputData as Ptr, Size as Integer, compressionLevel as Integer = 9) as MemoryBlock

Plugin Version: 19.5, Platforms: macOS, Linux, Windows, Targets: All.

Function: Compresses data in ptr.

Notes: Same as memoryblock version, but with ptr parameter, so you can pass ptr with size.
Works also for passing memoryblocks and a custom size.
See also:

- 6.6.9 CompressHC(InputData as MemoryBlock, compressionLevel as Integer = 9) as MemoryBlock 130
- 6.6.11 CompressHC(InputData as string, compressionLevel as Integer = 9) as string 131

6.6.11 CompressHC(InputData as string, compressionLevel as Integer = 9) as string

Plugin Version: 19.5, Platforms: macOS, Linux, Windows, Targets: All.

Function: Compresses a string with high compression.
Notes: Raises exception on failure (OutOfMemoryException or UnsupportedOperationException) and returns string on success.

Compression level, with # being any value from 1 to 12. Higher values trade compression speed for compression ratio. Values above 12 are considered the same as 12. Recommended values are 1 for fast compression (default), and 9 for high compression. Speed/compression trade-off will vary depending on data to compress\. Decompression speed remains fast at all settings.
See also:

- 6.6.9 CompressHC(InputData as MemoryBlock, compressionLevel as Integer = 9) as MemoryBlock 130
- 6.6.10 CompressHC(InputData as Ptr, Size as Integer, compressionLevel as Integer = 9) as MemoryBlock 130

6.6.12 Decompress(CompressedData as MemoryBlock, UncompressedSize as Integer = 0) as MemoryBlock

Plugin Version: 19.4, Platforms: macOS, Linux, Windows, Targets: All.

Function: Decompresses a MemoryBlock.
Example:

```
// some 10 million zeros will compress well
Var m As New MemoryBlock(100000000)

// compress
Var c As MemoryBlock = LZ4MBS.Compress(m)

// decompress
Var d As MemoryBlock = LZ4MBS.Decompress(c)
```

```
// and check
If d.Size = m.size Then
MsgBox "Sizes match"
Else
MsgBox "Sizes don't match"
End If
```

Notes: Raises exception on failure (OutOfMemoryException or UnsupportedOperationException) and returns memoryblock on success.

If UncompressedSize is zero, we try to determinate it.
If you know the size of decompressed data, please pass it to make function more efficient.
See also:

- 6.6.13 Decompress(CompressedData as Ptr, Size as Integer, UncompressedSize as Integer = 0) as MemoryBlock 132
- 6.6.14 Decompress(CompressedData as string, UncompressedSize as Integer = 0) as string 132

6.6.13 Decompress(CompressedData as Ptr, Size as Integer, UncompressedSize as Integer = 0) as MemoryBlock

Plugin Version: 19.5, Platforms: macOS, Linux, Windows, Targets: All.

Function: Decompresses data in ptr.
Notes: Same as memoryblock version, but with ptr parameter, so you can pass ptr with size.
Works also for passing memoryblocks and a custom size.

If UncompressedSize is zero, we try to determinate it.
If you know the size of decompressed data, please pass it to make function more efficient.
See also:

- 6.6.12 Decompress(CompressedData as MemoryBlock, UncompressedSize as Integer = 0) as MemoryBlock 131
- 6.6.14 Decompress(CompressedData as string, UncompressedSize as Integer = 0) as string 132

6.6.14 Decompress(CompressedData as string, UncompressedSize as Integer = 0) as string

Plugin Version: 19.4, Platforms: macOS, Linux, Windows, Targets: All.

Function: Decompresses a String.
Example:

```
Var m As String = "Lorem ipsum dolor sit amet, consectetur adipiscing elit. Lorem ipsum dolor site amat."

// make sure encoding is set
m = ConvertEncoding(m, encodings.UTF8)

// compress
Var c As String = LZ4MBS.Compress(m)

// decompress
Var d As String = LZ4MBS.Decompress(c)

// set encoding after decompressing
d = DefineEncoding(d, encodings.UTF8)

// and check
If d = m Then
MsgBox "Text match"
Else
MsgBox "Text doesn't match"
End If
```

Notes: Raises exception on failure (OutOfMemoryException or UnsupportedOperationException) and returns memoryblock on success.

If UncompressedSize is zero, we try to determinate it.
If you know the size of decompressed data, please pass it to make function more efficient.
See also:

- 6.6.12 Decompress(CompressedData as MemoryBlock, UncompressedSize as Integer = 0) as MemoryBlock 131
- 6.6.13 Decompress(CompressedData as Ptr, Size as Integer, UncompressedSize as Integer = 0) as MemoryBlock 132

6.6.15 LibVersion as string

Plugin Version: 19.4, Platforms: macOS, Linux, Windows, Targets: All.

Function: Queries version of the LZ4 library.

6.6.16 Constants

Constants

Constant	Value	Description
AccelerationDefault	1	The default acceleration level.
MaxInputSize	&h7E000000	Maximum input size LZ4 can handle.

Compression Levels

Constant	Value	Description
CompressionLevelDefault	9	Default compression level.
CompressionLevelMax	12	Maximum compression.
CompressionLevelMin	3	Minimum compression.
CompressionLevelOptMin	10	

6.7 module PackbitsMBS

6.7.1 module PackbitsMBS

Plugin Version: 15.1, Platforms: macOS, Linux, Windows, Targets: All.

Function: A module with functions for packbits compression/decompression.
Example:

```
Var test As String = "Hellllllo Wooooorld"

Var compressed As String = PackbitsMBS.Compress(test)
Var uncompressed As String = PackbitsMBS.Decompress(compressed)

Print uncompressed
Var Match As Boolean = test.Compare(uncompressed, ComparisonOptions.Binary) = 0

Print "Match: "+match.ToString
Break
```

Notes: see wikipedia:
http://en.wikipedia.org/wiki/PackBits
Blog Entries

- MBS Xojo Plugins, version 23.5pr2
- MBS Xojo / Real Studio Plugins, version 15.1pr7

6.7.2 Methods

6.7.3 Compress(data as MemoryBlock) as MemoryBlock

Plugin Version: 15.1, Platforms: macOS, Linux, Windows, Targets: All.

Function: Compresses data in a memoryblock.
Notes: Can raise out of memory exception if running low on memory.
See also:

6.7.4 Compress(data as string) as string

Plugin Version: 15.1, Platforms: macOS, Linux, Windows, Targets: All.

Function: Ccompresses data in a string.
Notes: Can raise out of memory exception if running low on memory.
Returned data is a string without known encoding. If you plan to store it in a file, use binarystream class, not textoutputstream. If you plan to store it in a database, please use BLOB field. For storing in a text field, you may need to use Base64 encoding.
See also:

- 6.7.3 Compress(data as MemoryBlock) as MemoryBlock 135
- 6.7.5 Compress(InputFile as FolderItem, OutputFile as FolderItem) as boolean 136

6.7.5 Compress(InputFile as FolderItem, OutputFile as FolderItem) as boolean

Plugin Version: 15.1, Platforms: macOS, Linux, Windows, Targets: All.

Function: Compresses data in a file.
Notes: Returns true on success.
See also:

- 6.7.3 Compress(data as MemoryBlock) as MemoryBlock 135
- 6.7.4 Compress(data as string) as string 135

6.7.6 Decompress(data as MemoryBlock) as MemoryBlock

Plugin Version: 15.1, Platforms: macOS, Linux, Windows, Targets: All.

Function: Decompresses data in a memoryblock.
Notes: Can raise out of memory exception if running low on memory.
See also:

- 6.7.7 Decompress(data as string) as string 136
- 6.7.8 Decompress(InputFile as FolderItem, OutputFile as FolderItem) as boolean 137

6.7.7 Decompress(data as string) as string

Plugin Version: 15.1, Platforms: macOS, Linux, Windows, Targets: All.

Function: Decompresses data in a string.
Notes: Can raise out of memory exception if running low on memory.
Returned data is a string without known encoding.
See also:

- 6.7.6 Decompress(data as MemoryBlock) as MemoryBlock 136
- 6.7.8 Decompress(InputFile as FolderItem, OutputFile as FolderItem) as boolean 137

6.7.8 Decompress(InputFile as FolderItem, OutputFile as FolderItem) as boolean

Plugin Version: 15.1, Platforms: macOS, Linux, Windows, Targets: All.

Function: Decompresses data in a file.
Notes: Returns true on success.
See also:

- 6.7.6 Decompress(data as MemoryBlock) as MemoryBlock 136
- 6.7.7 Decompress(data as string) as string 136

6.8 class UnZipFileInfoMBS

6.8.1 class UnZipFileInfoMBS

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: This class keeps the metadata for a zip file.
Blog Entries

- MBS Real Studio Plugins, version 11.3pr1

6.8.2 Properties

6.8.3 CompressedSize as UInt64

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: The compressed file size.
Notes: (Read and Write property)

6.8.4 CompressionMethod as UInt32

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: The compression method.
Notes: (Read and Write property)

6.8.5 CRC as UInt32

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: The 32bit file checksum.
Notes: (Read and Write property)

6.8.6 Date as Date

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: Desktop, Console & Web.

Function: The date as a Xojo date object.
Notes: (Read and Write property)

6.8.7 Day as Integer

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: The file time.
Notes: day of the month - [1,31]
(Read and Write property)

6.8.8 DiskNumStart as UInt32

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: Disk number start.
Notes: (Read and Write property)

6.8.9 DosDate as UInt32

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: Last mod file date in DOS format.
Notes: (Read and Write property)

6.8.10 ExternalFileAttributes as UInt32

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: External file attributes.
Notes: (Read and Write property)

6.8.11 Flag as UInt32

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: general purpose bit flag.
Notes: A 16 bit value.

The flag is a bit field with various values.
Last bit of the flag is encryption state: value is 1 (odd) for encrypted and 0 (even) for unencrypted value.
The bit values 2 and 4 define compression level between 0 to 9.

Flag Value	Encryption	Compression Level
0	no	6
1	yes	6
2	no	9
3	yes	9
4	no	2
5	yes	2
6	no	1
7	yes	1

(Read and Write property)

6.8.12 Hour as Integer

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: The file time.
Notes: hours since midnight - [0,23]
(Read and Write property)

6.8.13 InternalFileAttributes as UInt32

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: Internal file attributes.
Notes: (Read and Write property)

6.8.14 Minute as Integer

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: The file time.
Notes: minutes after the hour - [0,59]
(Read and Write property)

6.8.15 Month as Integer

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: The file time.
Notes: months since January - [0,11]
(Read and Write property)

6.8.16 Second as Integer

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: The file time.
Notes: seconds after the minute - [0,59]
(Read and Write property)

6.8.17 SizeFileComment as UInt32

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: file comment length.
Notes: (Read and Write property)

6.8.18 SizeFileExtra as UInt32

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: extra field length.
Notes: (Read and Write property)

6.8.19 SizeFilename as UInt32

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: filename length.
Notes: (Read and Write property)

6.8.20 UncompressedSize as UInt64

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: The uncompressed file size.
Notes: (Read and Write property)

6.8.21 Version as UInt32

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: The version used to make the archive.
Notes: (Read and Write property)

6.8.22 VersionNeeded as UInt32

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: The version needed to extract.
Notes: (Read and Write property)

6.8.23 Year as Integer

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: The file time.
Notes: years - [1980..2044]
(Read and Write property)

6.9 class UnZipFilePositionMBS

6.9.1 class UnZipFilePositionMBS

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: This class contains information about a file in the zipfile.

6.9.2 Properties

6.9.3 NumberOfFile as UInt64

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: The index of the file.
Notes: (Read and Write property)

6.9.4 PositionInZipDirectory as UInt64

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: Offset in zip file directory.
Notes: (Read and Write property)

6.10 class UnZipMBS

6.10.1 class UnZipMBS

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: A class to decompress a zip archive.
Example:

```
// open zip archive
Var f as FolderItem=SpecialFolder.Desktop.Child("test.zip")
Var z as new UnZipMBS(f)

// let's start
z.GoToFirstFile
do

// get details on this file:
Var info as UnZipFileInfoMBS = z.FileInfo
Var name as string = z.FileName

if left(name,8) <>"__MACOSX" then // ignore Mac special files for metadata
z.OpenCurrentFile
if z.Lasterror=0 then

// create output file (if you want to support folders, this needs to be changed. See other examples)
Var outfile as folderitem = GetFolderItem(Name)
Var b as BinaryStream = BinaryStream.Create(outfile, true)
Var s as string

// now read 100 KB chunks and write them to new file
do
s=z.ReadCurrentFile(100000)
b.Write s
loop until lenb(s)=0


// cleanup
b.Close
z.CloseCurrentFile

end if
end if

// move to next file until we reach the end
z.GoToNextFile
loop until z.Lasterror<>0
```

Notes: This is a simple class which uses zlib and has some limitations:

- only deflate as compression method
- only one date per file is preserved
- no resource forks on Mac OS
- no text encoding handling
- no Apple or Microsoft extensions for special file flags or permissions.

See also ArchiveReaderMBS and ArchiveWriterMBS classes for more features and compression formats.
Blog Entries

- MBS Xojo Plugins, version 25.2pr1
- MBS Xojo Plugins, version 20.6pr1
- MBS Xojo plug-ins in version 16.0
- MBS Xojo / Real Studio Plugins, version 16.0pr7
- MBS Plugins 11.1 Release notes
- MBS Real Studio Plugins, version 11.1pr11
- MBS Real Studio Plugins, version 11.1pr10
- MBS REALbasic Plugins, version 11.0pr13
- MBS REALbasic Plugins, version 10.5pr2
- MonkeyBread Software Releases the MBS REALbasic plug-ins 8.6

Xojo Developer Magazine

- 9.5, page 11: News
- 9.1, page 25: Optimizing Client-Server Communications, Using ZIP-archives and AES encryption to improve security and performance by Mattias Sandstr√m
- 9.1, page 23: Optimizing Client-Server Communications, Using ZIP-archives and AES encryption to improve security and performance by Mattias Sandstr√m

6.10.2 Methods

6.10.3 Close

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: Close a ZipFile.
Notes: Use CloseCurrentFile to close any open file before using Close.
Lasterror is UnZipOK on success.

6.10.4 CloseCurrentFile

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: Close the file in the zip archive opened with OpenCurrentFile.
Notes: Lasterror is set to UnzipCRCError if all the file was read but the CRC was not correct.

6.10.5 Comment as string

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: Get the global comment string of the ZipFile.

6.10.6 CommentSize as UInt32

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: Size of the global comment of the zipfile.

6.10.7 CompareFileNames(filename1 as string, filename2 as string, CaseSensitive as Integer) as Integer

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: Compare two filename (fileName1,fileName2).
Notes: If iCaseSenisivity = 1, comparision is case sensitivity (like strcmp)
If iCaseSenisivity = 2, comparision is not case sensitivity (like strcmpi or strcasecmp)
If iCaseSenisivity = 0, case sensitivity is defaut of your operating system (like 1 on Unix, 2 on Windows)

6.10.8 Constructor(data as memoryblock)

Plugin Version: 10.5, Platforms: macOS, Linux, Windows, Targets: All.

Function: Open a Zip file from data in the memoryblock.
Notes: The Handle property is zero on failure and not zero on success.
The memory block must have a known size.
See also:

- 6.10.9 Constructor(data as string) 147
- 6.10.10 Constructor(file as folderitem) 147
- 6.10.11 Constructor(file as folderitem, Offset as Integer) 148

6.10.9 Constructor(data as string)

Plugin Version: 10.5, Platforms: macOS, Linux, Windows, Targets: All.

Function: Open a Zip file from data in the string.
Notes: The Handle property is zero on failure and not zero on success.
See also:

- 6.10.8 Constructor(data as memoryblock) 147
- 6.10.10 Constructor(file as folderitem) 147
- 6.10.11 Constructor(file as folderitem, Offset as Integer) 148

6.10.10 Constructor(file as folderitem)

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: Open a Zip file from a file.
Notes: The Handle property is zero on failure and not zero on success.

If you run this class in a thread, please make sure your thread has a big stack (1 MB or more). Else it will crash.
See also:

- 6.10.8 Constructor(data as memoryblock) 147
- 6.10.9 Constructor(data as string) 147
- 6.10.11 Constructor(file as folderitem, Offset as Integer) 148

6.10.11 Constructor(file as folderitem, Offset as Integer)

Plugin Version: 11.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Open a Zip file from a file starting at the offset.
Notes: The Handle property is zero on failure and not zero on success.
See also:

- 6.10.8 Constructor(data as memoryblock) 147
- 6.10.9 Constructor(data as string) 147
- 6.10.10 Constructor(file as folderitem) 147

6.10.12 Count as UInt64

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: Total number of entries in the zip archive.
Notes: This value is stored in the zip archive as 16 bit integer, so maximum value is 65535. The plugin can extract more files than that number.

6.10.13 EOF as Integer

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: Returns 1 if you are on the end of a file.
Notes: This is not to test whether you are on the end of the zip archive.

6.10.14 ExtractFiles(DestFolder as FolderItem, ExtractWithoutPath as boolean = false, Overwrite as Boolean = false, Password as String = "", byref ErrorMessage as String) as boolean

Plugin Version: 16.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Simple function to extract all files from archive into folder.
Example:

```
Var f as FolderItem = SpecialFolder.Desktop.Child("test.zip")

Var folder as FolderItem = SpecialFolder.Desktop.Child("test")
folder.CreateAsFolder

Var u as new UnZipMBS(f)
Var error as string
```

```
if u.ExtractFiles(folder, error) then
MsgBox "OK"
else
MsgBox "Error: "+error
end if
```

Notes: DestFolder: Destination folder.
ExtractWithoutPath: If true, all files are put in one folder.
Overwrite: Whether to allow overwriting files.
Password: The password to decrypt files.
ErrorMessage: An english error message.

Returns true on success or false on failure.
This function does not restore file permissions or other metadata.
And it may not work with non ASCII characters.

If you need more control over files being extracted, stored or error checking, please use example projects coming with plugin.

6.10.15 FileInfo as UnZipFileInfoMBS

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: Queries file information for the current file.
Notes: Returns nil on any error.

6.10.16 FileName as string

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: The filename of the current open file.
Notes: This name has no text encoding defined, as the plugin has no idea what text encoding was used. You may need to define the text encoding as being ASCII, Windows, MacRoman or whatever, when you work with this file name.
This name may include path components for folders.

6.10.17 GetLocalExtrafield as string

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: Read extra field from the current file (opened by unzOpenCurrentFile)

Notes: This is the local-header version of the extra field (sometimes, there is more info in the local-header version than in the central-header)

6.10.18 GoToFirstFile

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: Set the current file of the zipfile to the first file.
Notes: Lasterror is UnzipOk on success.

6.10.19 GoToNextFile

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: Set the current file of the zipfile to the next file.
Notes: Lasterror is UnzipOk if there is no problem and UnzipEndOfListError if the actual file was the latest.

6.10.20 LocateFile(filename as string, CaseSensitive as Integer)

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: Try locate the file filename in the zipfile.
Example:

```
// open zip archive
Var f as FolderItem=SpecialFolder.Desktop.Child("test.zip")
Var z as new UnZipMBS(f)

// let's search the file
z.LocateFile "test.rtf",2

if z.Lasterror = z.UnzipOk then
Var info as UnZipFileInfoMBS = z.FileInfo
MsgBox "OK: "+str(info.UncompressedSize)+" bytes"
else
MsgBox "Failed."
end if
```

Notes: For the CaseSensitivity signification, see CompareFileNames. Text encoding must match the text encoding of the files.

Lasterror is UnzipOk if the file is found. It becomes the current file, UnzipEndOfListError if the file is not

found.

6.10.21 OpenCurrentFile

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: Open for reading data the current file in the zipfile.
See also:

- 6.10.22 OpenCurrentFile(byref method as Integer, byref level as Integer, raw as boolean) 151
- 6.10.23 OpenCurrentFile(byref method as Integer, byref level as Integer, raw as boolean, password as string) 151
- 6.10.24 OpenCurrentFile(password as string) 152

6.10.22 OpenCurrentFile(byref method as Integer, byref level as Integer, raw as boolean)

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: Same than OpenCurrentFile, but opens file for reading raw data (not uncompressed).
Notes: if raw=true the file data is returned uncompressed. If raw is false, it is decompressed for you.
Method will receive the method of compression.
level will receive the level of compression.
See also:

- 6.10.21 OpenCurrentFile 151
- 6.10.23 OpenCurrentFile(byref method as Integer, byref level as Integer, raw as boolean, password as string) 151
- 6.10.24 OpenCurrentFile(password as string) 152

6.10.23 OpenCurrentFile(byref method as Integer, byref level as Integer, raw as boolean, password as string)

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: Same than OpenCurrentFile, but opens file for reading raw data (not uncompressed) and with a password.
Notes: if raw=true the file data is returned uncompressed. If raw is false, it is decompressed for you.
Method will receive the method of compression.
level will receive the level of compression.
See also:

6.10.24 OpenCurrentFile(password as string)

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: Open for reading data the current file in the zipfile.
Notes: password is a crypting password.
See also:

6.10.25 Position as UInt64

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: Returns the current position in uncompressed data.

6.10.26 Position2 as UInt64

Plugin Version: 11.1, Platforms: macOS, Linux, Windows, Targets: All.

Function: Returns the current position in compressed data.
Notes: This property is useful to show progressbar with progress over reading the original zip file.

6.10.27 ReadCurrentFile(size as Integer) as string

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: Read bytes from the current file (opened by OpenCurrentFile).
Notes: Returns "" on any error or on file end.

6.10.28 Properties

6.10.29 Handle as Integer

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: The internal handle for the unzip object.
Notes: (Read and Write property)

6.10.30 Lasterror as Integer

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: The last error code.
Notes: (Read and Write property)

6.10.31 FilePosition as UnZipFilePositionMBS

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: The current file position.
Notes: You can read or set the current file you edit.
(Read and Write computed property)

6.10.32 Offset as UInt64

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: Get or set the current index of the file in the zip directory.
Notes: If you set this value, you basicly move to another file.
(Read and Write computed property)

6.10.33 Constants

Constants

Constant	Value	Description
CompressionBestCompression	9	One of the compression level constants.
CompressionBestSpeed	1	One of the compression level constants.
CompressionDefault	-1	One of the compression level constants.
CompressionNo	0	One of the compression level constants.
MethodDeflated	8	One of the compression methods.
MethodNone	0	One of the compression methods.
StrategyDefault	0	One of the strategy constants.
StrategyFiltered	1	One of the strategy constants.
StrategyFixed	4	One of the strategy constants.
StrategyHuffmanOnly	2	One of the strategy constants.
StrategyRLE	3	One of the strategy constants.
UnzipBadUnZipFile	-103	One of the error constants.
UnzipCRCError	-105	One of the error constants.
UnzipEndOfListError	-100	One of the error constants.
UnzipInternalError	-104	One of the error constants.
UnzipOk	0	One of the error constants.
UnzipParameterError	-102	One of the error constants.

6.11 class ZipFileInfoMBS

6.11.1 class ZipFileInfoMBS

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: This class keeps the metadata for a zip file.
Blog Entries

- MBS Real Studio Plugins, version 11.3pr1

6.11.2 Methods

6.11.3 SetDate(d as date)

Plugin Version: 10.0, Platforms: macOS, Linux, Windows, Targets: Desktop, Console & Web.

Function: Sets the date with a Xojo date object.
Notes: A convenience function to make your life easier.

6.11.4 SetDateTime(d as dateTime)

Plugin Version: 20.5, Platforms: macOS, Linux, Windows, Targets: All.

Function: Sets the date with a Xojo dateTime object.
Notes: A convenience function to make your life easier.

6.11.5 Properties

6.11.6 Day as Integer

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: The file time.
Notes: day of the month - [1,31]
(Read and Write property)

6.11.7 DosDate as UInt32

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: The date in the 32bit DOS format.
Notes: If dos_date = 0, the plugin will calculate it from the day, month, year, hour, minute and second properties.
(Read and Write property)

6.11.8 ExternalFileAttributes as UInt32

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: external file attributes.
Notes: A 32 bit value.
(Read and Write property)

6.11.9 Hour as Integer

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: The file time.
Notes: hours since midnight - [0,23]
(Read and Write property)

6.11.10 InternalFileAttributes as UInt32

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: Internal file attributes.
Notes: A 16 bit value.
(Read and Write property)

6.11.11 Minute as Integer

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: The file time.
Notes: minutes after the hour - [0,59]
(Read and Write property)

6.11.12 Month as Integer

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: The file time.
Notes: months since January - [0,11]
(Read and Write property)

6.11.13 Second as Integer

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: The file time.
Notes: seconds after the minute - [0,59]
(Read and Write property)

6.11.14 Year as Integer

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: The file time.
Notes: years - [1980..2044]
(Read and Write property)

6.12 class ZipMBS

6.12.1 class ZipMBS

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: The class for writing to a zip file.
Notes: This is a simple class which uses zlib and has some limitations:

- only deflate as compression method
- only one date per file is preserved
- no resource forks on Mac OS
- no encoding handling
- no Apple or Microsoft extensions for special file flags or permissions.

But it works nice to provide a zip file to clients. For example a download of JPEG files in an archive with one download from Web Edition.

Be aware that you can't compress Mac applications with this class, as the we don't preserve permissions, so the decompressed file has not the right flags set to make it executable.

See also ArchiveReaderMBS and ArchiveWriterMBS classes for more features and compression formats.
Blog Entries

- MBS Xojo plug-ins in version 16.0
- MBS Xojo / Real Studio Plugins, version 16.0pr7
- MBS Plugins 11.1 Release notes
- MBS Real Studio Plugins, version 11.1pr10
- MonkeyBread Software Releases the MBS REALbasic plug-ins 8.6

Xojo Developer Magazine

- 9.5, page 11: News

6.12.2 Methods

6.12.3 Close(GlobalComment as string="")

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: Close the zipfile.

6.12.4 CloseFile

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: Close the current file in the zipfile.

6.12.5 CloseFileRaw(UncompressedSize as Integer, CRC32 as Integer)

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: Close the current file in the zipfile.
Notes: For files opened with parameter raw=true in CreateFile
UncompressedSize and crc32 are value for the uncompressed size,

6.12.6 CompressFiles(ZipFile as FolderItem, SourceFolder as FolderItem, files() as string, Overwrite as Integer = 0, Password as string = "", CompressionLevel as Integer = 9, byref ErrorMessage as string) as Integer

Plugin Version: 16.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Simple implementation of a batch file compression method.
Example:

```
Var f as FolderItem = SpecialFolder.Desktop.Child("test.zip")
Var folder as FolderItem = SpecialFolder.Pictures // some folder with images
Var files() As string

Var c as Integer = folder.count
for i as Integer = 1 to c
Var file as FolderItem = folder.TrueItem(i)

if file.Directory then
// we go here for this example only one level deep

Var subfolder as FolderItem = file
Var cc as Integer = subfolder.count
for ii as Integer = 1 to cc
Var subfile as FolderItem = subfolder.TrueItem(ii)
if subfile.name.Right(4) = ".jpg" then
// here we pass a relative path
files.Append subfolder.name+"/"+subfile.name
```

```
end if
next

else

if file.name.Right(4) = ".jpg" then
// just padd a file name for files directly in source folder
files.Append file.name
end if
end if
next

Var ErrorMessage as string
Var e as Integer = ZipMBS.CompressFiles(f, folder, files, errorMessage)

MsgBox "Error: "+str(e)
```

Notes: ZipFile: The destination zip file.
SourceFolder: The source folder for the files.
files: relative file paths to source folder.
Overwrite: pass 1 to overwrite zip archive, 2 to append or 0 to not overwrite.
Password: the password for encryption.
CompressionLevel: The compression level to use from 0 (no compression) to 9 (maximum).
ErrorMessage: An english error message.

Returns 0 on success or error code on failure.

This is a simple function to compress a couple of files.
It does not preserve file permissions on Mac/Linux or other metadata.
And it may not work with non ASCII characters.

If you need more control over files being added, compression or error checking, please use example projects coming with plugin.

6.12.7 Constructor(file as folderitem, append as Integer = 0)

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: Create a zipfile.
Notes: If the file exist and append is AppendStatusCreateAfter, the zip will be created at the end of the file.
(useful if the file contain a self extractor code)
If the file exist and append is AppendStatusAddInZip, we will add files in existing zip (be sure you don't add file that doesn't exist)

If the zipfile cannot be opened, the handle value will be zero.

AppendStatusCreateAfter seems not to be working currently.

If you run this class in a thread, please make sure your thread has a big stack (1 MB or more). Else it will crash.

6.12.8 CreateFile(Filename as string, FileInfo as ZipFileInfoMBS, ExtraLocal as string = "", ExtraGlobal as string = "", Comment as String = "", CompressionMethod as Integer = 8, Level as Integer = 9, Zip64 as boolean = false)

Plugin Version: 11.1, Platforms: macOS, Linux, Windows, Targets: All.

Function: Open a file in the ZIP for writing.
Notes: filename: the filename in zip. This can include path information with slash as delimiter. e.g. "foldername/file.txt"
FileInfo: the file date.
ExtraLocal: contains the extrafield data the the local header.
ExtraGlobal: contains the extrafield data the the local header.
Comment: comment contain the comment string
CompressionMethod: contain the compression method (see Method* constants)
Level: contain the level of compression (a value from -1 to 9. see Compression* constants)
Zip64: If you want to have the zip file support more than 2 GB of data, set this to true to create a 64 bit file.
See also:

6.12.9 CreateFile(Filename as string, FileInfo as ZipFileInfoMBS, ExtraLocal as string, ExtraGlobal as string, Comment as String, CompressionMethod as Integer, Level as Integer, Zip64 as boolean, Raw as boolean)

Plugin Version: 11.1, Platforms: macOS, Linux, Windows, Targets: All.

Function: Open a file in the ZIP for writing with the possibility to write raw files.
Notes: filename: the filename in zip. This can include path information with slash as delimiter. e.g. "foldername/file.txt"
FileInfo: the file date.
ExtraLocal: contains the extrafield data the the local header.
ExtraGlobal: contains the extrafield data the the local header.
Comment: comment contain the comment string
CompressionMethod: contain the compression method (see Method* constants)
Level: contain the level of compression (a value from -1 to 9. see Compression* constants)
Zip64: If you want to have the zip file support more than 2 GB of data, set this to true to create a 64 bit file.
Raw: If true you read the file raw (the data will not be compressed).
See also:

- 6.12.8 CreateFile(Filename as string, FileInfo as ZipFileInfoMBS, ExtraLocal as string = "", ExtraGlobal as string = "", Comment as String = "", CompressionMethod as Integer = 8, Level as Integer = 9, Zip64 as boolean = false) 161
- 6.12.10 CreateFile(Filename as string, FileInfo as ZipFileInfoMBS, ExtraLocal as string, ExtraGlobal as string, Comment as String, CompressionMethod as Integer, Level as Integer, Zip64 as boolean, Raw as boolean, WindowBits as Integer, MemLevel as Integer, Strategy as Integer, Password as string, crcForCtypting as UInt32) 162
- 6.12.11 CreateFile(Filename as string, FileInfo as ZipFileInfoMBS, ExtraLocal as string, ExtraGlobal as string, Comment as String, CompressionMethod as Integer, Level as Integer, Zip64 as boolean, Raw as boolean, WindowBits as Integer, MemLevel as Integer, Strategy as Integer, Password as string, crcForCtypting as UInt32, versionMadeBy as UInt32, flagBase as UInt32) 164

6.12.10 CreateFile(Filename as string, FileInfo as ZipFileInfoMBS, ExtraLocal as string, ExtraGlobal as string, Comment as String, CompressionMethod as Integer, Level as Integer, Zip64 as boolean, Raw as boolean, WindowBits as Integer, MemLevel as Integer, Strategy as Integer, Password as string, crcForCtypting as UInt32)

Plugin Version: 11.1, Platforms: macOS, Linux, Windows, Targets: All.

Function: Open a file in the ZIP for writing with the possibility to write raw files, chnage the compression and add a password.
Notes: filename: the filename in zip. This can include path information with slash as delimiter. e.g. "foldername/file.txt"
FileInfo: the file date.

ExtraLocal: contains the extrafield data the the local header.
ExtraGlobal: contains the extrafield data the the local header.
Comment: comment contain the comment string
CompressionMethod: contain the compression method (see Method* constants)
Level: contain the level of compression (a value from -1 to 9. see Compression* constants)
Zip64: If you want to have the zip file support more than 2 GB of data, set this to true to create a 64 bit file.
Raw: If true you read the file raw (the data will not be compressed).
windowBits: Parameters for zlib compression. (for example -15)
memLevel: Parameters for zlib compression. (for example 8 or 9)
Strategy: Parameters for zlib compression. (See Strategy* constants)
Password: The password to use.
crcForCtypting: the CRC value of the input file.

The windowBits parameter is the base two logarithm of the window size (the size of the history buffer). It should be in the range 8..15 for this version of the library. Larger values of this parameter result in better compression at the expense of memory usage. The default value is 15.

windowBits can also be -8..-15 for raw deflate. In this case, -windowBits determines the window size.

The memLevel parameter specifies how much memory should be allocated for the internal compression state. memLevel=1 uses minimum memory but is slow and reduces compression ratio; memLevel=9 uses maximum memory for optimal speed. The default value is 8. See zconf.h for total memory usage as a function of windowBits and memLevel.

The strategy parameter is used to tune the compression algorithm. Use the value StrategyDefault for normal data, StrategyFiltered for data produced by a filter (or predictor), StrategyHuffmanOnly to force Huffman encoding only (no string match), or StrategyRLE to limit match distances to one (run-length encoding). Filtered data consists mostly of small values with a somewhat random distribution. In this case, the compression algorithm is tuned to compress them better. The effect of StrategyFiltered is to force more Huffman coding and less string matching; it is somewhat intermediate between StrategyDefault and StrategyHuffmanOnly. StrategyRLE is designed to be almost as fast as StrategyHuffmanOnly, but give better compression for PNG image data. The strategy parameter only affects the compression ratio but not the correctness of the compressed output even if it is not set appropriately. StrategyFixed prevents the use of dynamic Huffman codes, allowing for a simpler decoder for special applications.
See also:

- 6.12.8 CreateFile(Filename as string, FileInfo as ZipFileInfoMBS, ExtraLocal as string = "", ExtraGlobal as string = "", Comment as String = "", CompressionMethod as Integer = 8, Level as Integer = 9, Zip64 as boolean = false) 161
- 6.12.9 CreateFile(Filename as string, FileInfo as ZipFileInfoMBS, ExtraLocal as string, ExtraGlobal as string, Comment as String, CompressionMethod as Integer, Level as Integer, Zip64 as boolean, Raw as boolean) 162
- 6.12.11 CreateFile(Filename as string, FileInfo as ZipFileInfoMBS, ExtraLocal as string, ExtraGlobal as string, Comment as String, CompressionMethod as Integer, Level as Integer, Zip64 as boolean, Raw

6.12.11 CreateFile(Filename as string, FileInfo as ZipFileInfoMBS, ExtraLocal as string, ExtraGlobal as string, Comment as String, CompressionMethod as Integer, Level as Integer, Zip64 as boolean, Raw as boolean, WindowBits as Integer, MemLevel as Integer, Strategy as Integer, Password as string, crcForCtypting as UInt32, versionMadeBy as UInt32, flagBase as UInt32)

Plugin Version: 11.1, Platforms: macOS, Linux, Windows, Targets: All.

Function: Open a file in the ZIP for writing with the possibility to write raw files, chnage the compression and add a password.
Notes: filename: the filename in zip. This can include path information with slash as delimiter. e.g. "foldername/file.txt"
FileInfo: the file date.
ExtraLocal: contains the extrafield data the the local header.
ExtraGlobal: contains the extrafield data the the local header.
Comment: comment contain the comment string
CompressionMethod: contain the compression method (see Method* constants)
Level: contain the level of compression (a value from -1 to 9. see Compression* constants)
Zip64: If you want to have the zip file support more than 2 GB of data, set this to true to create a 64 bit file.
Raw: If true you read the file raw (the data will not be compressed).
windowBits: Parameters for zlib compression. (for example -15)
memLevel: Parameters for zlib compression. (for example 8 or 9)
Strategy: Parameters for zlib compression. (See Strategy* constants)
Password: The password to use.
crcForCtypting: the CRC value of the input file.
versionMadeBy: value for Version made by field
flagBase: value for flag field (compression level info will be added)

The windowBits parameter is the base two logarithm of the window size (the size of the history buffer). It should be in the range 8..15 for this version of the library. Larger values of this parameter result in better compression at the expense of memory usage. The default value is 15.

windowBits can also be -8..-15 for raw deflate. In this case, -windowBits determines the window size.

The memLevel parameter specifies how much memory should be allocated for the internal compression state. memLevel=1 uses minimum memory but is slow and reduces compression ratio; memLevel=9 uses maximum memory for optimal speed. The default value is 8. See zconf.h for total memory usage as a function of windowBits and memLevel.

The strategy parameter is used to tune the compression algorithm. Use the value StrategyDefault for normal data, StrategyFiltered for data produced by a filter (or predictor), StrategyHuffmanOnly to force Huffman encoding only (no string match), or StrategyRLE to limit match distances to one (run-length encoding). Filtered data consists mostly of small values with a somewhat random distribution. In this case, the compression algorithm is tuned to compress them better. The effect of StrategyFiltered is to force more Huffman coding and less string matching; it is somewhat intermediate between StrategyDefault and StrategyHuffmanOnly. StrategyRLE is designed to be almost as fast as StrategyHuffmanOnly, but give better compression for PNG image data. The strategy parameter only affects the compression ratio but not the correctness of the compressed output even if it is not set appropriately. StrategyFixed prevents the use of dynamic Huffman codes, allowing for a simpler decoder for special applications.
See also:

- 6.12.8 CreateFile(Filename as string, FileInfo as ZipFileInfoMBS, ExtraLocal as string = "", ExtraGlobal as string = "", Comment as String = "", CompressionMethod as Integer = 8, Level as Integer = 9, Zip64 as boolean = false) 161

- 6.12.9 CreateFile(Filename as string, FileInfo as ZipFileInfoMBS, ExtraLocal as string, ExtraGlobal as string, Comment as String, CompressionMethod as Integer, Level as Integer, Zip64 as boolean, Raw as boolean) 162

- 6.12.10 CreateFile(Filename as string, FileInfo as ZipFileInfoMBS, ExtraLocal as string, ExtraGlobal as string, Comment as String, CompressionMethod as Integer, Level as Integer, Zip64 as boolean, Raw as boolean, WindowBits as Integer, MemLevel as Integer, Strategy as Integer, Password as string, crcForCtypting as UInt32) 162

6.12.12 Write(data as string)

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: Write data in the zipfile.
Notes: A file in the zip archive must have been created.

6.12.13 Properties

6.12.14 Handle as Integer

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: The internal handle for the open zip archive.
Notes: If 0 the constructor failed to create the file.
(Read and Write property)

6.12.15 Lasterror as Integer

Plugin Version: 8.6, Platforms: macOS, Linux, Windows, Targets: All.

Function: The last error code.
Notes: (Read and Write property)

6.12.16 Constants

Constants

Constant	Value	Description
AppendStatusAddInZip	2	One of the values for the constructor.
AppendStatusCreate	0	One of the values for the constructor.
AppendStatusCreateAfter	1	One of the values for the constructor.
CompressionBestCompression	9	One of the compression level constants.
CompressionBestSpeed	1	One of the compression level constants.
CompressionDefault	-1	One of the compression level constants.
CompressionNo	0	One of the compression level constants.
MethodDeflated	8	One of the compression method constants.
MethodNone	0	One of the compression method constants. Use this value for no compression.
StrategyDefault	0	One of the strategy modes.
StrategyFiltered	1	One of the strategy modes.
StrategyFixed	4	One of the strategy modes.
StrategyHuffmanOnly	2	One of the strategy modes.
StrategyRLE	3	One of the strategy modes.
ZipBadZipFile	-103	One of the error constants.
ZipInternalError	-104	One of the error constants.
ZipOk	0	One of the error constants.
ZipParameterError	-102	One of the error constants.

6.13 class ZLibCompressMBS

6.13.1 class ZLibCompressMBS

Plugin Version: 3.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: A class for zlib compression.
Notes: See also ArchiveReaderMBS and ArchiveWriterMBS classes for more features and compression formats.

See ZLibDecompressMBS class to decompress what this class compressed.
Blog Entries

- MBS Xojo Plugins, version 26.2pr4
- News from the MBS Xojo Plugins Version 24.3
- MonkeyBread Software Releases the MBS Xojo Plugins in version 24.3
- MBS Xojo Plugins, version 24.3pr1
- MBS Xojo / Real Studio Plugins, version 14.4pr3
- MBS REALbasic plug-ins version 9.4

6.13.2 Methods

6.13.3 Adler32(start as UInt32, data as string) as UInt32

Plugin Version: 4.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Calculates a 32bit Adler Checksum about a given string.
Notes: Set start to 0 for the first call.
Later you can pass the result as the new start value to add data to your checksum.

This function is part of the zlib library and given as a free utility function to this class.

6.13.4 close

Plugin Version: 3.4, Platforms: macOS, Linux, Windows, Targets: All.

Function: The destructor.
Notes: There is no need to call this method except you want to free all resources of this object now without waiting for Xojo to do it for you.

6.13.5 Constructor(BufferPtr as Ptr, BufferSize as Integer)

Plugin Version: 24.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The constructor taking an existing buffer.
Notes: For advanced users who use declares to preallocate the output buffer.
Stores Ptr in OutputPtr property for later access.
See also:

- 6.13.6 Constructor(BufferSize as Integer=20000) 168

6.13.6 Constructor(BufferSize as Integer=20000)

Plugin Version: 9.4, Platforms: macOS, Linux, Windows, Targets: All.

Function: The constructor.
Example:

```
// we do a one off compression
Var data as string = "Hello World Hello World"
Var z As new ZLibcompressMBS

z.InitZip(9)
call z.SetInput(data)
z.ProcessZip
z.EndZip

Var CompressedData as string = z.GetOutput

// and one off decompression
Var d As New ZLibDecompressMBS
d.InitZip
call d.SetInput(CompressedData)
d.ProcessZip
d.EndZip

Var UncompressedData as string = d.GetOutput

If UncompressedData = data Then
MessageBox "match"
Else
MessageBox "no match"
end if
```

Notes: The buffer size you specify is the output buffer size.
If this size is small, you need to flush with ProcessZip.
See also:

6.13.7 CRC32(start as UInt32, data as string) as UInt32

Plugin Version: 4.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Calculates a 32bit Checksum about a given string.
Notes: Set start to 0 for the first call.
Later you can pass the result as the new start value to add data to your checksum.

This function is part of the zlib library and given as a free utility function to this class.

6.13.8 EndZip

Plugin Version: 3.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Finalizes the current compression stream.
Notes: You may check the Output buffer after this.
Error is set.

6.13.9 GetOutput as string

Plugin Version: 3.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Returns the contents of the output buffer.
Notes: The buffer is cleared after this function returns.

6.13.10 InitZip(level as Integer)

Plugin Version: 3.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Initializes the stream.
Notes: Level is from 0 to 9.
Error is set.
See also:

6.13.11 InitZip(level as integer, Raw as Boolean)

Plugin Version: 26.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Initializes the stream.
Example:

```
// we do a one off compression
Var data as string = "Hello World Hello World"
Var z As new ZLibcompressMBS

const raw = true

z.InitZip(9, raw)
call z.SetInput(data)
z.ProcessZip
z.EndZip

Var CompressedData as string = z.GetOutput

// and one off decompression
Var d As New ZLibDecompressMBS
d.InitZip(raw)
call d.SetInput(CompressedData)
d.ProcessZip
d.EndZip

Var UncompressedData as string = d.GetOutput

If UncompressedData = data Then
MessageBox "match"
Else
MessageBox "no match"
end if
```

Notes: Level is from 0 to 9.
Error is set.
Raw: Wether to provide raw compression, without header.
See also:

- 6.13.10 InitZip(level as Integer) 169

6.13.12 InputAvail as Integer

Plugin Version: 3.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Returns the number of bytes available in the input buffer.

6.13.13 OutputSize as Integer

Plugin Version: 3.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The size of bytes available in the output buffer.

6.13.14 ProcessFinish

Plugin Version: 14.4, Platforms: macOS, Linux, Windows, Targets: All.

Function: Same as process, but for finishing.
Notes: If error is zero after this function, please call it again.
Error is 1 if stream is at end, so you can call EndZip to finish.

6.13.15 ProcessZip(Flush as boolean=false)

Plugin Version: 3.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Does zip compression.
Notes: Reduces the size of the input buffer and writes new data to the output buffer.
If the input buffer is not empty after this call, you need to call it again, but empty the output buffer before.
Error is set.

If flush is true, the data is flushed to output. Using flush=true all the the time will slow down compression, so use it only on the end to clear the output buffers.

6.13.16 SetInput(data as MemoryBlock) as boolean

Plugin Version: 13.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Fills the input buffer.
Notes: Returns true if successfull.
Returns false if size is <= 0.

The data is read directly from the Memoryblock and the plugin keeps a reference until destructor runs or you set a new input data.
See also:

- 6.13.17 SetInput(data as ptr, Size as Integer) as boolean 172
- 6.13.18 SetInput(data as string) as boolean 172

6.13.17 SetInput(data as ptr, Size as Integer) as boolean

Plugin Version: 24.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Fills the input buffer.
Notes: Returns true if successfull.
Returns false if Size is <= 0.

The data is read directly from the Ptr and you need to keep reference to the memory and prevent it from being released too early.
See also:

- 6.13.16 SetInput(data as MemoryBlock) as boolean 171
- 6.13.18 SetInput(data as string) as boolean 172

6.13.18 SetInput(data as string) as boolean

Plugin Version: 3.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Fills the input buffer.
Notes: Returns true if successfull.
Returns false if length is <= 0.

The data is read directly from the String and the plugin keeps a reference until destructor runs or you set a new input data.#
See also:

- 6.13.16 SetInput(data as MemoryBlock) as boolean 171
- 6.13.17 SetInput(data as ptr, Size as Integer) as boolean 172

6.13.19 Properties

6.13.20 CRC as UInt32

Plugin Version: 3.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The Adler32 CRC value of the uncompressed data.
Notes: (Read only property)

6.13.21 Error as Integer

Plugin Version: 3.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The last error code.
Notes: Values:

Z_OK	0	(no error)
Z_STREAM_END	1	(Should be handles by the plugin inside)
Z_NEED_DICT	2	
Z_ERRNO	-1	
Z_STREAM_ERROR	-2	
Z_DATA_ERROR	-3	
Z_MEM_ERROR	-4	
Z_BUF_ERROR	-5	
Z_VERSION_ERROR	-6	

(Read and Write property)

6.13.22 ErrorMessage as String

Plugin Version: 3.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The error message for the last error.
Notes: (Read only property)

6.13.23 OutputBufferSize as Integer

Plugin Version: 9.4, Platforms: macOS, Linux, Windows, Targets: All.

Function: The output buffer size used in the constructor.
Notes: (Read only property)

6.13.24 OutputPtr as Ptr

Plugin Version: 24.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The pointer to the internal output buffer.
Notes: For advanced users to directly use the buffer for declares.
See OutputUsedSize property to see how many bytes are filled.
(Read only property)

6.13.25 OutputUsedSize as Integer

Plugin Version: 24.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The number of bytes used in output buffer currently.
Notes: (Read only property)

6.13.26 TotalInput as Integer

Plugin Version: 3.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The number of bytes processed so far.
Notes: (Read and Write property)

6.13.27 TotalOutput as Integer

Plugin Version: 3.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The number of bytes processed so far.
Notes: (Read and Write property)

6.13.28 Version as String

Plugin Version: 3.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The version string of the used zlib library.
Example:

```
Var z As New ZLibCompressMBS
MessageBox z.Version
```

Notes: (Read only property)

6.13.29 Constants

Data Types

Constant	Value	Description
kASCII	1	ASCII
kBINARY	0	Binary
kTEXT	1	Text
kUNKNOWN	2	Unknown

Compression Levels

Constant	Value	Description
kBEST_COMPRESSION	9	
kBEST_SPEED	1	
kDEFAULT_COMPRESSION	-1	
kNO_COMPRESSION	0	

Flush modes

Constant	Value	Description
kBLOCK	5	
kFINISH	4	
kFULL_FLUSH	3	
kNO_FLUSH	0	
kPARTIAL_FLUSH	1	
kSYNC_FLUSH	2	

Errors

Constant	Value	Description
kBUF_ERROR	-5	Negative values are errors, positive values are used for special but normal events.
kDATA_ERROR	-3	Negative values are errors, positive values are used for special but normal events.
kERRNO	-1	Negative values are errors, positive values are used for special but normal events.
kMEM_ERROR	-4	Negative values are errors, positive values are used for special but normal events.
kNEED_DICT	2	Negative values are errors, positive values are used for special but normal events.
kOK	0	Negative values are errors, positive values are used for special but normal events.
kSTREAM_END	1	Negative values are errors, positive values are used for special but normal events.
kSTREAM_ERROR	-2	Negative values are errors, positive values are used for special but normal events.
kVERSION_ERROR	-6	Negative values are errors, positive values are used for special but normal events.

Compression Strategies

Constant	Value	Description
kDEFAULT_STRATEGY	0	
kFILTERED	1	
kFIXED	4	
kHUFFMAN_ONLY	2	
kRLE	3	

Compression Methods

Constant	Value	Description
kDEFLATED	8	The deflate compression method (the only one supported in this version)

6.14 class ZLibDecompressMBS

6.14.1 class ZLibDecompressMBS

Plugin Version: 3.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: A class for zlib decompression.
Example:

```
// we do a one off compression
Var data as string = "Hello World Hello World"
Var z As new ZLibcompressMBS

z.InitZip(9)
call z.SetInput(data)
z.ProcessZip
z.EndZip

Var CompressedData as string = z.GetOutput

// and one off decompression
Var d As New ZLibDecompressMBS
d.InitZip
call d.SetInput(CompressedData)
d.ProcessZip
d.EndZip

Var UncompressedData as string = d.GetOutput

If UncompressedData = data Then
MessageBox "match"
Else
MessageBox "no match"
end if
```

Notes: See also ArchiveReaderMBS and ArchiveWriterMBS classes for more features and compression formats.

See ZLibCompressMBS class to compress first.
Blog Entries

- MBS Xojo Plugins, version 26.2pr4
- News from the MBS Xojo Plugins Version 24.3
- MonkeyBread Software Releases the MBS Xojo Plugins in version 24.3
- MBS Xojo Plugins, version 24.3pr2

- MBS Xojo Plugins, version 24.3pr1
- MBS REALbasic plug-ins version 9.4

6.14.2 Methods

6.14.3 Adler32(start as UInt32, data as string) as UInt32

Plugin Version: 4.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Calculates a 32bit Adler Checksum about a given string.
Notes: Set start to 0 for the first call.
Later you can pass the result as the new start value to add data to your checksum.

This function is part of the zlib library and given as a free utility function to this class.

6.14.4 close

Plugin Version: 3.4, Platforms: macOS, Linux, Windows, Targets: All.

Function: The destructor.

6.14.5 Constructor(BufferPtr as Ptr, BufferSize as Integer)

Plugin Version: 24.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The constructor taking an existing buffer.
Notes: For advanced users who use declares to preallocate the output buffer.
Stores Ptr in OutputPtr property for later access.
See also:

- 6.14.6 Constructor(BufferSize as Integer=20000) 178

6.14.6 Constructor(BufferSize as Integer=20000)

Plugin Version: 9.4, Platforms: macOS, Linux, Windows, Targets: All.

Function: The constructor.
Notes: The buffer size you specify is the output buffer size.
If this size is small, you need to flush with ProcessZip.
See also:

- 6.14.5 Constructor(BufferPtr as Ptr, BufferSize as Integer) 178

6.14.7 CRC32(start as UInt32, data as string) as UInt32

Plugin Version: 4.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Calculates a 32bit Checksum about a given string.
Notes: Set start to 0 for the first call.
Later you can pass the result as the new start value to add data to your checksum.

This function is part of the zlib library and given as a free utility function to this class.

6.14.8 EndZip

Plugin Version: 3.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Finalizes the current decompression stream.
Notes: You may check the Output property after this.
Error is set.

6.14.9 GetOutput as string

Plugin Version: 3.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Returns the content of the output buffer.
Notes: The buffer is cleared after this function returns.

6.14.10 InitZip

Plugin Version: 3.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Initializes the stream.
Notes: Error is set.
See also:

- 6.14.11 InitZip(Raw as Boolean) 179

6.14.11 InitZip(Raw as Boolean)

Plugin Version: 26.2, Platforms: macOS, Linux, Windows, Targets: All.

Function: Initializes the stream.
Example:

```
// we do a one off compression
Var data as string = "Hello World Hello World"
Var z As new ZLibcompressMBS

const raw = true

z.InitZip(9, raw)
call z.SetInput(data)
z.ProcessZip
z.EndZip

Var CompressedData as string = z.GetOutput

// and one off decompression
Var d As New ZLibDecompressMBS
d.InitZip(raw)
call d.SetInput(CompressedData)
d.ProcessZip
d.EndZip

Var UncompressedData as string = d.GetOutput

If UncompressedData = data Then
MessageBox "match"
Else
MessageBox "no match"
end if
```

Notes: Error is set.
Raw: Wether to provide raw compression, without header.
See also:

- 6.14.10 InitZip 179

6.14.12 InputAvail as Integer

Plugin Version: 3.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The number of bytes available in the input buffer.

6.14.13 OutputSize as Integer

Plugin Version: 3.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The number of bytes available in the output buffer.

6.14.14 ProcessZip(Flush as boolean=false)

Plugin Version: 3.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Does zip decompression.
Notes: Reduces the size of the input buffer and writes new data to the output buffer.
If the input buffer is not "" after this call, you need to call it again, but empty the output buffer before.
Error is set.

If flush is true, the data is flushed to output. Using flush=true all the the time will slow down compression, so use it only on the end to clear the output buffers.

6.14.15 SetInput(data as Memoryblock) as boolean

Plugin Version: 13.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: Fills the input buffer.
Notes: Returns true if successfull.
Returns false if size is <= 0.

The data is read directly from the Memoryblock and the plugin keeps a reference until destructor runs or you set a new input data.
See also:

- 6.14.16 SetInput(data as ptr, Size as Integer) as boolean 181
- 6.14.17 SetInput(data as string) as boolean 182

6.14.16 SetInput(data as ptr, Size as Integer) as boolean

Plugin Version: 24.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Fills the input buffer.
Notes: Returns true if successfull.
Returns false if Size is <= 0.

The data is read directly from the Ptr and you need to keep reference to the memory and prevent it from being released too early.
See also:

- 6.14.15 SetInput(data as Memoryblock) as boolean 181

6.14.17 SetInput(data as string) as boolean

Plugin Version: 3.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: Fills the input buffer.
Notes: Returns true if successfull.
Returns false if length is <= 0.

The data is read directly from the String and the plugin keeps a reference until destructor runs or you set a new input data.
See also:

- 6.14.15 SetInput(data as Memoryblock) as boolean 181
- 6.14.16 SetInput(data as ptr, Size as Integer) as boolean 181

6.14.18 Properties

6.14.19 CRC as UInt32

Plugin Version: 13.0, Platforms: macOS, Linux, Windows, Targets: All.

Function: The CRC checksum.
Notes: (Read only property)

6.14.20 Error as Integer

Plugin Version: 3.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The last error code.
Notes: Values:

(Read and Write property)

6.14.21 ErrorMessage as String

Plugin Version: 3.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The error message for the last error.
Notes: (Read only property)

Z_OK	0	(no error)
Z_STREAM_END	1	(Should be handles by the plugin inside)
Z_NEED_DICT	2	
Z_ERRNO	-1	
Z_STREAM_ERROR	-2	
Z_DATA_ERROR	-3	
Z_MEM_ERROR	-4	
Z_BUF_ERROR	-5	
Z_VERSION_ERROR	-6	

6.14.22 OutputBufferSize as Integer

Plugin Version: 9.4, Platforms: macOS, Linux, Windows, Targets: All.

Function: The output buffer size used in the constructor.
Notes: (Read only property)

6.14.23 OutputPtr as Ptr

Plugin Version: 24.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The pointer to the internal output buffer.
Notes: For advanced users to directly use the buffer for declares.
See OutputUsedSize property to see how many bytes are filled.
(Read only property)

6.14.24 OutputUsedSize as Integer

Plugin Version: 24.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The number of bytes used in output buffer currently.
Notes: (Read only property)

6.14.25 TotalInput as Integer

Plugin Version: 3.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The number of bytes processed so far.
Notes: (Read and Write property)

6.14.26 TotalOutput as Integer

Plugin Version: 3.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The number of bytes processed so far.
Notes: (Read and Write property)

6.14.27 Version as String

Plugin Version: 3.3, Platforms: macOS, Linux, Windows, Targets: All.

Function: The version string of the used zlib library.
Example:

```
Var z As New ZLibDecompressMBS
MessageBox z.Version
```

Notes: (Read only property)

6.14.28 Constants

Data Types

Constant	Value	Description
kASCII	1	ASCII
kBINARY	0	Binary
kTEXT	1	Text
kUNKNOWN	2	Unknown

Compression Levels

Constant	Value	Description
kBEST_COMPRESSION	9	
kBEST_SPEED	1	
kDEFAULT_COMPRESSION	-1	
kNO_COMPRESSION	0	

Flush modes

Constant	Value	Description
kBLOCK	5	
kFINISH	4	
kFULL_FLUSH	3	
kNO_FLUSH	0	
kPARTIAL_FLUSH	1	
kSYNC_FLUSH	2	

Errors

Constant	Value	Description
kBUF_ERROR	-5	Negative values are errors, positive values are used for special but normal events.
kDATA_ERROR	-3	Negative values are errors, positive values are used for special but normal events.
kERRNO	-1	Negative values are errors, positive values are used for special but normal events.
kMEM_ERROR	-4	Negative values are errors, positive values are used for special but normal events.
kNEED_DICT	2	Negative values are errors, positive values are used for special but normal events.
kOK	0	Negative values are errors, positive values are used for special but normal events.
kSTREAM_END	1	Negative values are errors, positive values are used for special but normal events.
kSTREAM_ERROR	-2	Negative values are errors, positive values are used for special but normal events.
kVERSION_ERROR	-6	Negative values are errors, positive values are used for special but normal events.

Compression Strategies

Constant	Value	Description
kDEFAULT_STRATEGY	0	
kFILTERED	1	
kFIXED	4	
kHUFFMAN_ONLY	2	
kRLE	3	

Compression Methods

Constant	Value	Description
kDEFLATED	8	The deflate compression method (the only one supported in this version)

6.15 class ZStdMBS

6.15.1 class ZStdMBS

Plugin Version: 22.2, Platforms: macOS, Linux, Windows, iOS, Targets: All.

Function: The class for ZStandard compression scheme.
Example:

```
Var InputText As String = "Hello World. Hello World. Hello World. Hello World. Just a test! Hello World. Testing üòù"

Var Compressed As String = ZStdMBS.Compress(InputText)
Var OutputText As String = ZStdMBS.Decompress(Compressed).DefineEncoding(encodings.UTF8)

Break
```

Blog Entries

- News from the MBS Xojo Plugins Version 22.2
- MonkeyBread Software Releases the MBS Xojo Plugins in version 22.2
- MBS Xojo Plugins, version 22.2pr6

Xojo Developer Magazine

- 21.1, page 28: News from MBS Xojo Plugins, What's up with MonkeyBread Software by Stefanie Juchmes

6.15.2 Methods

6.15.3 Compress(Data as MemoryBlock, CompressionLevel as Integer = 1) as MemoryBlock

Plugin Version: 22.2, Platforms: macOS, Linux, Windows, iOS, Targets: All.

Function: Compresses the given MemoryBlock.
Example:

```
Var InputText As String = "Hello World. Hello World. Hello World. Hello World. Just a test! Hello World. Testing üòù"
Var InputData As MemoryBlock = InputText

Var Compressed As MemoryBlock = ZStdMBS.Compress(InputData)
Var OutputData As MemoryBlock = ZStdMBS.Decompress(Compressed)
```

```
Var OutputText As String = DefineEncoding(OutputData, encodings.UTF8)

Break
```

Notes: CompressionLevel range from 1 to 22 where 22 is best with most memory usage.

Raises exception (UnsupportedOperationException or OutOfMemoryException) in case it fails. Please read message property for details.
See also:

- 6.15.4 Compress(Data as String, CompressionLevel as Integer = 1) as String 187

6.15.4 Compress(Data as String, CompressionLevel as Integer = 1) as String

Plugin Version: 22.2, Platforms: macOS, Linux, Windows, iOS, Targets: All.

Function: Compresses the given string.
Example:

```
Var InputText As String = "Hello World. Hello World. Hello World. Hello World. Just a test! Hello World. Testing üöù"

Var Compressed As String = ZStdMBS.Compress(InputText)
Var OutputData As String = ZStdMBS.Decompress(Compressed).DefineEncoding(encodings.UTF8)

Break
```

Notes: CompressionLevel range from 1 to 22 where 22 is best with most memory usage.

Raises exception (UnsupportedOperationException or OutOfMemoryException) in case it fails. Please read message property for details.
See also:

- 6.15.3 Compress(Data as MemoryBlock, CompressionLevel as Integer = 1) as MemoryBlock 186

6.15.5 Decompress(Data as MemoryBlock) as MemoryBlock

Plugin Version: 22.2, Platforms: macOS, Linux, Windows, iOS, Targets: All.

Function: Decompresses MemoryBlock.
Example:

```
Var InputText As String = "Hello World. Hello World. Hello World. Hello World. Just a test! Hello World. Testing üöù"
Var InputData As MemoryBlock = InputText
```

```
Var Compressed As MemoryBlock = ZStdMBS.Compress(InputData)
Var OutputData As MemoryBlock = ZStdMBS.Decompress(Compressed)

Var OutputText As String = DefineEncoding(OutputData, encodings.UTF8)

Break
```

Notes: Raises exception (UnsupportedOperationException or OutOfMemoryException) in case it fails. Please read message property for details.
See also:

- 6.15.6 Decompress(Data as String) as String 188

6.15.6 Decompress(Data as String) as String

Plugin Version: 22.2, Platforms: macOS, Linux, Windows, iOS, Targets: All.

Function: Decompresses string.
Example:

```
Var InputText As String = "Hello World. Hello World. Hello World. Hello World. Just a test! Hello World. Testing üòù"

Var Compressed As String = ZStdMBS.Compress(InputText)
Var OutputData As String = ZStdMBS.Decompress(Compressed).DefineEncoding(encodings.UTF8)

Break
```

Notes: Raises exception (UnsupportedOperationException or OutOfMemoryException) in case it fails. Please read message property for details.
See also:

- 6.15.5 Decompress(Data as MemoryBlock) as MemoryBlock 187

Chapter 7

Encryption and Hash

7.1 Globals

7.1.1 Adler32MemoryMBS(adler as UInt32, Buffer as memoryblock, offset as Integer, length as Integer) as UInt32

Plugin Version: 5.4, Platforms: macOS, Linux, Windows, Targets: All.

Function: The adler32 hash function from the zlib library.
Notes: Offset and length must be correct for your memoryblock or you will crash your application!

Update a running Adler-32 checksum with the bytes and return the updated checksum. If buf is nil, this function returns the required initial value for the checksum.
An Adler-32 checksum is almost as reliable as a CRC32 but can be computed much faster.

7.1.2 Adler32StringMBS(adler as UInt32, Buffer as string) as UInt32

Plugin Version: 5.4, Platforms: macOS, Linux, Windows, Targets: All.

Function: The adler32 hash function from the zlib library.
Example:

```
Var b as binarystream // some stream
Var adler as Integer
Var data as string
Var originalAdler as Integer = 12345

adler=Adler32MemoryMBS(0,nil,0,0)
```

```
data=b.read(10000)
while data<>""
adler=Adler32StringMBS(adler, data)
data=b.read(10000)
wend

if adler <>originalAdler then msgbox "Error in checksum!"
```

Notes: Update a running Adler-32 checksum with the bytes and return the updated checksum. If buf is nil, this function returns the required initial value for the checksum.
An Adler-32 checksum is almost as reliable as a CRC32 but can be computed much faster.

7.1.3 CRC32MemoryMBS(crc as UInt32, Buffer as memoryblock, offset as Integer, length as Integer) as UInt32

Plugin Version: 5.4, Platforms: macOS, Linux, Windows, Targets: All.

Function: The crc32 hash function from the zlib library.
Notes: Offset and length must be correct for your memoryblock or you will crash your application!

Update a running crc with the bytes and return the updated crc. If buf is nil, this function returns the required initial value for the crc. Pre- and post-conditioning (one's complement) is performed within this function so it shouldn't be done by the application.

7.1.4 CRC32StringMBS(crc as UInt32, Buffer as string) as UInt32

Plugin Version: 5.4, Platforms: macOS, Linux, Windows, Targets: All.

Function: The crc32 hash function from the zlib library.
Example:

```
Var originalCrc as Integer// original CRC
Var crc as Integer // new crc
Var data as string
Var b as binarystream

crc=0

data=b.read(10000)
while data<>""
crc=CRC32StringMBS(crc, data)
data=b.read(10000)
wend
```

```
if crc <>originalCrc then msgbox "Error in checksum!"
```

Notes: Update a running crc with the bytes and return the updated crc. If buf is nil, this function returns the required initial value for the crc. Pre- and post-conditioning (one's complement) is performed within this function so it shouldn't be done by the application.