

## Framework

# Apple Archive

Perform multithreaded lossless compression of directories, files, and data.

iOS 14.0+ | iPadOS 14.0+ | Mac Catalyst 14.0+ | macOS 11.0+ | tvOS 14.0+ | visionOS 1.0+ | watchOS 7.0+

## Overview

Apple Archive provides fast compression that includes file attributes, such as, ownership, permissions, flags, times, extended attributes, and error correction. Apple Archive offers these features:

- Multithreaded processing that uses all cores, is energy efficient, and yields faster results
- An ability to transport files and their attributes and use Apple File System (APFS) features when they're available, for example, filesystem compression, full clones, and sparse files
- Flexible encoding formats, so you can use archives, for example, for error correction, digests, manifests, and external data storage
- API support for in-memory archive processing, streaming access, random access, and back-to-back archive and extraction

## Topics

### Apple Archive essentials



#### Compressing single files

Compress a single file and store the result on the file system.



#### Decompressing single files

Recreate a single file from a compressed file.

### Compressing file system directories

Compress the contents of an entire directory and store the result on the file system.

### Decompressing and extracting an archived directory

Recreate an entire file system directory from an archive file.

### Compressing and saving a string to the file system

Compress the contents of a Unicode string and store the result on the file system.

### Decompressing and Parsing an Archived String

Recreate a string from an archive file.

## Apple Encrypted Archive essentials

### Encrypting and Decrypting a String

Encrypt the contents of a string and save the result to the file system, then decrypt and recreate the string from the archive file using Apple Encrypted Archive.

### Encrypting and Decrypting a Single File

Encrypt a single file and save the result to the file system, then decrypt and recreate the original file from the archive file using Apple Encrypted Archive.

### Encrypting and Decrypting Directories

Compress and encrypt the contents of an entire directory or decompress and decrypt an archived directory using Apple Encrypted Archive.

### `class` ArchiveEncryptionContext

An object that encapsulates all parameters, keys, and data necessary to open an encrypted archive for both encryption and decryption streams.

## Apple Archive headers

### `class` ArchiveHeader

An AppleArchive entry header.

## Apple Archive streams

### `protocol` ArchiveStreamProtocol

A set of methods that defines the interface for using an archive stream that reads from and writes to data blobs.

`class` `ArchiveStream`

An archive stream that reads from and writes to data blobs

`protocol` `ArchiveByteStreamProtocol`

A set of methods that defines the interface for using an archive stream that reads from and writes to buffers.

`class` `ArchiveByteStream`

An archive stream that reads from and writes to buffers.

## Apple Archive errors

`enum` `ArchiveError`

Error codes for `AppleArchive`.

## Constants

`var` `APPLE_ARCHIVE_API_VERSION`: `Int32`

The version of the framework at compile time.

## Reference

 [Apple Archive structures](#)

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## See Also

## Related Documentation

 [About Apple File System](#)

Use high-level APIs to get the most out of Apple File System.