
NSError Class Reference

General



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NSError Class Reference

Inherits from	NSObject
Conforms to	NSCoding NSCopying NSObject (NSObject)
Framework	/System/Library/Frameworks/Foundation.framework
Availability	Available in Mac OS X v10.2 with Safari 1.0 installed. Available in Mac OS X v10.2.7 and later. Available in iPhone OS 2.0 and later.
Companion guide	Error Handling Programming Guide For Cocoa
Declared in	NSError.h NSError.h
Related sample code	CoreRecipes CustomAtomicStoreSubclass Quartz Composer WWDC 2005 TextEdit SimpleStickies Sketch-112

Overview

An `NSError` object encapsulates richer and more extensible error information than is possible using only an error code or error string. The core attributes of an `NSError` object are an error domain (represented by a string), a domain-specific error code and a user info dictionary containing application specific information.

Several well-known domains are defined corresponding to Mach, POSIX, and `OSStatus` errors. Foundation error codes are found in the Cocoa error domain and documented in the *Foundation Constants Reference*. In addition, `NSError` allows you to attach an arbitrary user info dictionary to an error object, and provides the means to return a human-readable description for the error.

`NSError` is not an abstract class, and can be used directly. Applications may choose to create subclasses of `NSError` to provide better localized error strings by overriding `localizedDescription` (page 10).

In general, a method should signal an error condition by—for example—returning `NO` or `nil` rather than by the simple presence of an error object. The method can then optionally return an `NSError` object by reference, in order to further describe the error.

Adopted Protocols

NSCoding

`encodeWithCoder:`

`initWithCoder:`

NSCopying

`copyWithZone:`

Tasks

Creating Error Objects

+ [initWithDomain:code:userInfo:](#) (page 7)

Creates and initializes an `NSError` object for a given domain and code with a given `userInfo` dictionary.

- [initWithDomain:code:userInfo:](#) (page 9)

Returns an `NSError` object initialized for a given domain and code with a given `userInfo` dictionary.

Getting Error Properties

- [code](#) (page 8)

Returns the receiver's error code.

- [domain](#) (page 8)

Returns the receiver's error domain.

- [userInfo](#) (page 12)

Returns the receiver's user info dictionary.

Getting a Localized Error Description

- [localizedDescription](#) (page 10)

Returns a string containing the localized description of the error.

- [localizedRecoveryOptions](#) (page 11)

Returns an array containing the localized titles of buttons appropriate for displaying in an alert panel.

- [localizedRecoverySuggestion](#) (page 12)

Returns a string containing the localized recovery suggestion for the error.

- [localizedFailureReason](#) (page 11)

Returns a string containing the localized explanation of the reason for the error.

Getting the Error Recovery Attempter

- [recoveryAttempter](#) (page 12)
Returns an object that conforms to the `NSErrorRecoveryAttempting` informal protocol.

Displaying a Help Anchor

- [helpAnchor](#) (page 9)
A string to display in response to an alert panel help anchor button being pressed.

Class Methods

initWithDomain:code:userInfo:

Creates and initializes an `NSError` object for a given domain and code with a given `userInfo` dictionary.

```
+ (id)initWithDomain:(NSString *)domain code:(NSInteger)code userInfo:(NSDictionary *)dict
```

Parameters

domain

The error domain—this can be one of the predefined `NSError` domains, or an arbitrary string describing a custom domain. *domain* must not be `nil`.

code

The error code for the error.

dict

The `userInfo` dictionary for the error. *userInfo* may be `nil`.

Return Value

An `NSError` object for *domain* with the specified error *code* and the dictionary of arbitrary data *userInfo*.

Availability

Available in Mac OS X v10.2 with Safari 1.0 installed.

Available in Mac OS X v10.2.7 and later.

Available in iPhone OS 2.0 and later.

Related Sample Code

CoreRecipes

CustomAtomicStoreSubclass

FunHouse

Quartz Composer WWDC 2005 TextEdit

ZipBrowser

Declared In

`NSError.h`

Instance Methods

code

Returns the receiver's error code.

- (NSInteger)code

Return Value

The receiver's error code.

Discussion

Note that errors are domain specific.

Availability

Available in Mac OS X v10.2 with Safari 1.0 installed.

Available in Mac OS X v10.2.7 and later.

Available in iPhone OS 2.0 and later.

See Also

- [localizedDescription](#) (page 10)
- [domain](#) (page 8)
- [userInfo](#) (page 12)

Related Sample Code

Core Data HTML Store

Departments and Employees

ExtractMovieAudioToAIFF

QTExtractAndConvertToAIFF

QTExtractAndConvertToMovieFile

Declared In

NSError.h

domain

Returns the receiver's error domain.

- (NSString *)domain

Return Value

A string containing the receiver's error domain.

Availability

Available in Mac OS X v10.2 with Safari 1.0 installed.

Available in Mac OS X v10.2.7 and later.

Available in iPhone OS 2.0 and later.

See Also

- [code](#) (page 8)

- [localizedDescription](#) (page 10)
- [userInfo](#) (page 12)

Related Sample Code

Departments and Employees

Declared In

NSError.h

helpAnchor

A string to display in response to an alert panel help anchor button being pressed.

```
- (NSString *)helpAnchor
```

Return Value

An NSString that the alert panel will include a help anchor button with that value.

Discussion

If this method returns a non-`nil` value for an error being presented by `alertWithError:`, the alert panel will include a help anchor button that can display this string.

The best way to get a value to return for this method is to specify it as the value of [NSHelpAnchorErrorKey](#) (page 15) in the NSError object's `userInfo` dictionary; or the method can be overridden.

Availability

Available in Mac OS X v10.6 and later.

Declared In

NSError.h

initWithDomain:code:userInfo:

Returns an NSError object initialized for a given domain and code with a given `userInfo` dictionary.

```
- (id)initWithDomain:(NSString *)domain code:(NSInteger)code userInfo:(NSDictionary *)dict
```

Parameters*domain*

The error domain—this can be one of the predefined NSError domains, or an arbitrary string describing a custom domain. *domain* must not be `nil`.

code

The error code for the error.

dict

The `userInfo` dictionary for the error. *userInfo* may be `nil`.

Return Value

An NSError object initialized for *domain* with the specified error *code* and the dictionary of arbitrary data *userInfo*.

Discussion

This is the designated initializer for NSError.

Availability

Available in Mac OS X v10.2 with Safari 1.0 installed.

Available in Mac OS X v10.2.7 and later.

Available in iPhone OS 2.0 and later.

See Also

+ [initWithDomain:code:userInfo:](#) (page 7)

Related Sample Code

BindingsJoystick

CocoaEcho

CocoaHTTPServer

CocoaSOAP

Declared In

NSError.h

localizedDescription

Returns a string containing the localized description of the error.

```
- (NSString *)localizedDescription
```

Return Value

A string containing the localized description of the error.

By default this method returns the object in the user info dictionary for the key `NSLocalizedStringKey`. If the user info dictionary doesn't contain a value for `NSLocalizedStringKey`, a default string is constructed from the domain and code.

Discussion

This method can be overridden by subclasses to present customized error strings.

Availability

Available in Mac OS X v10.2 with Safari 1.0 installed.

Available in Mac OS X v10.2.7 and later.

Available in iPhone OS 2.0 and later.

See Also

- [code](#) (page 8)

- [domain](#) (page 8)

- [userInfo](#) (page 12)

Related Sample Code

CoreRecipes

Departments and Employees

NewsReader

XMLBrowser

Declared In

NSError.h

localizedFailureReason

Returns a string containing the localized explanation of the reason for the error.

- (NSString *)localizedFailureReason

Return Value

A string containing the localized explanation of the reason for the error. By default this method returns the object in the user info dictionary for the key `NSLocalizedStringFailureReasonErrorKey`.

Discussion

This method can be overridden by subclasses to present customized error strings.

Availability

Available in Mac OS X v10.4 and later.

See Also

- [code](#) (page 8)
- [domain](#) (page 8)
- [userInfo](#) (page 12)

Related Sample Code

Quartz Composer WWDC 2005 TextEdit

Declared In

NSError.h

localizedRecoveryOptions

Returns an array containing the localized titles of buttons appropriate for displaying in an alert panel.

- (NSArray *)localizedRecoveryOptions

Return Value

An array containing the localized titles of buttons appropriate for displaying in an alert panel. By default this method returns the object in the user info dictionary for the key `NSLocalizedStringRecoveryOptionsErrorKey`. If the user info dictionary doesn't contain a value for `NSLocalizedStringRecoveryOptionsErrorKey`, `nil` is returned.

Discussion

The first string is the title of the right-most and default button, the second the one to the left of that, and so on. The recovery options should be appropriate for the recovery suggestion returned by [localizedRecoverySuggestion](#) (page 12). If the user info dictionary doesn't contain a value for `NSLocalizedStringRecoveryOptionsErrorKey`, only an OK button is displayed.

This method can be overridden by subclasses to present customized recovery suggestion strings.

Availability

Available in Mac OS X v10.4 and later.

Declared In

NSError.h

localizedRecoverySuggestion

Returns a string containing the localized recovery suggestion for the error.

- (NSString *)localizedRecoverySuggestion

Return Value

A string containing the localized recovery suggestion for the error. By default this method returns the object in the user info dictionary for the key `NSLocalizedRecoverySuggestionErrorKey`. If the user info dictionary doesn't contain a value for `NSLocalizedRecoverySuggestionErrorKey`, `nil` is returned.

Discussion

The returned string is suitable for displaying as the secondary message in an alert panel.

This method can be overridden by subclasses to present customized recovery suggestion strings.

Availability

Available in Mac OS X v10.4 and later.

Declared In

NSError.h

recoveryAttempter

Returns an object that conforms to the `NSErrorRecoveryAttempting` informal protocol.

- (id)recoveryAttempter

Return Value

An object that conforms to the `NSErrorRecoveryAttempting` informal protocol. By default this method returns the object for the user info dictionary for the key `NSRecoveryAttempterErrorKey`. If the user info dictionary doesn't contain a value for `NSRecoveryAttempterErrorKey`, `nil` is returned.

Discussion

The recovery attempter must be an object that can correctly interpret an index into the array returned by [localizedRecoveryOptions](#) (page 11).

Availability

Available in Mac OS X v10.4 and later.

See Also

- [localizedRecoveryOptions](#) (page 11)

Declared In

NSError.h

userInfo

Returns the receiver's user info dictionary.

- (NSDictionary *)userInfo

Return Value

The receiver's user info dictionary, or `nil` if the user info dictionary has not been set.

Availability

Available in Mac OS X v10.2 with Safari 1.0 installed.

Available in Mac OS X v10.2.7 and later.

Available in iPhone OS 2.0 and later.

See Also

- [code](#) (page 8)
- [domain](#) (page 8)
- [localizedDescription](#) (page 10)

Related Sample Code

CoreRecipes

Departments and Employees

Quartz Composer WWDC 2005 TextEdit

Declared In

NSError.h

Constants

User info dictionary keys

These keys may exist in the user info dictionary.

```
NSString * const NSLocalizedDescriptionKey;
NSString * const NSErrorFailingURLStringKey;
NSString * const NSFilePathErrorKey;
NSString * const NSStringEncodingErrorKey;
NSString * const NSUnderlyingErrorKey;
NSString * const NSErrorURLKey;
NSString * const NSLocalizedFailureReasonErrorKey;
NSString * const NSLocalizedRecoverySuggestionErrorKey;
NSString * const NSLocalizedRecoveryOptionsErrorKey;
NSString * const NSRecoveryAttempterErrorKey;
NSString * const NSHelpAnchorErrorKey;
NSString * const NSErrorURLFailingURLErrorKey;
NSString * const NSErrorURLFailingURLStringErrorKey;
NSString * const NSErrorURLFailingURLPeerTrustErrorKey;
```

Constants

NSLocalizedDescriptionKey

The corresponding value is a localized string representation of the error that, if present, will be returned by [localizedDescription](#) (page 10).

Available in Mac OS X v10.2 and later.

Declared in NSError.h.

`NSErrorFailingURLStringKey`

The corresponding value is the URL that caused the error. This key is only present in the `NSErrorDomain`. (**Deprecated.** This constant is deprecated in Mac OS X 10.6, and is superseded by `NSErrorFailingURLStringErrorKey` (page 15).)

This constant is deprecated in Mac OS X 10.6, and is superseded by `NSErrorFailingURLStringErrorKey` (page 15). Both constants refer to the same value for backward-compatibility, but the new symbol name has a better prefix.

Available in Mac OS X v10.2 with Safari 1.0 installed.

Available in Mac OS X v10.2.7 and later.

Available in iPhone OS 2.0 and later.

Deprecated in Mac OS X v10.6.

Declared in `NSError.h`.

`NSErrorFilePathErrorKey`

Contains the file path of the error.

The corresponding value is an `NSString` object.

Available in Mac OS X v10.4 and later.

Declared in `NSError.h`.

`NSErrorStringEncodingErrorKey`

The corresponding value is an `NSNumber` object containing the `NSStringEncoding` value.

Available in Mac OS X v10.4 and later.

Declared in `NSError.h`.

`NSErrorUnderlyingErrorKey`

The corresponding value is an error that was encountered in an underlying implementation and caused the error that the receiver represents to occur.

Available in Mac OS X v10.3 and later.

Declared in `NSError.h`.

`NSErrorURLKey`

The corresponding value is an `NSURL` object.

Available in Mac OS X v10.4 and later.

Declared in `NSError.h`.

`NSErrorLocalizedFailureReasonErrorKey`

The corresponding value is a localized string representation containing the reason for the failure that, if present, will be returned by `localizedFailureReason` (page 11).

This string provides a more detailed explanation of the error than the description.

Available in Mac OS X v10.4 and later.

Declared in `NSError.h`.

`NSErrorLocalizedRecoverySuggestionErrorKey`

The corresponding value is a string containing the localized recovery suggestion for the error.

This string is suitable for displaying as the secondary message in an alert panel.

Available in Mac OS X v10.4 and later.

Declared in `NSError.h`.

`NSLocalizedRecoveryOptionsErrorKey`

The corresponding value is an array containing the localized titles of buttons appropriate for displaying in an alert panel.

The first string is the title of the right-most and default button, the second the one to the left, and so on. The recovery options should be appropriate for the recovery suggestion returned by [localizedRecoverySuggestion](#) (page 12).

Available in Mac OS X v10.4 and later.

Declared in `NSError.h`.

`NSRecoveryAttempterErrorKey`

The corresponding value is an object that conforms to the `NSErrorRecoveryAttempting` informal protocol.

The recovery attempter must be an object that can correctly interpret an index into the array returned by [recoveryAttempter](#) (page 12).

Available in Mac OS X v10.4 and later.

Declared in `NSError.h`.

`NSHelpAnchorErrorKey`

The corresponding value is an `NSString` containing the localized help corresponding to the help button. See [helpAnchor](#) (page 9) for more information.

Available in Mac OS X v10.6 and later.

Declared in `NSError.h`.

`NSURLErrorFailingURLErrorKey`

The corresponding value is an `NSURL` containing the URL which caused a load to fail. This key is only present in the `NSURLErrorDomain`.

Available in Mac OS X v10.6 and later.

Declared in `NSURLError.h`.

`NSURLErrorFailingURLStringErrorKey`

The corresponding value is an `NSString` object for the URL which caused a load to fail. This key is only present in the `NSURLErrorDomain`.

This constant supersedes `NSErrorFailingURLStringKey` (page 14), which was deprecated in Mac OS X 10.6. Both constants refer to the same value for backward-compatibility, but this symbol name has a better prefix.

Available in Mac OS X v10.6 and later.

Declared in `NSURLError.h`.

`NSURLErrorFailingURLPeerTrustErrorKey`

The corresponding value is the `SecTrustRef` object representing the state of a failed SSL handshake. This key is only present in the `NSURLErrorDomain`.

Available in Mac OS X v10.6 and later.

Declared in `NSURLError.h`.

Error Domains

The following error domains are predefined.

```
const NSString *NSPOSIXErrorDomain;
const NSString *NSOSStatusErrorDomain;
const NSString *NSMachErrorDomain;
```

Constants

NSPOSIXErrorDomain

POSIX/BSD errors

Available in Mac OS X v10.2 and later.

Declared in NSError.h.

NSOSStatusErrorDomain

Mac OS 9/Carbon errors

Available in Mac OS X v10.2 and later.

Declared in NSError.h.

NSMachErrorDomain

Mach errors

Available in Mac OS X v10.2 and later.

Declared in NSError.h.

Discussion

Additionally, the following error domain is defined by Core Foundation:

CFStreamErrorDomain	Defines constants for values returned in the domain field of the CFStreamError structure.
---------------------	---

Declared In

NSError.h

Document Revision History

This table describes the changes to *NSError Class Reference*.

Date	Notes
2009-09-01	Added deprecation information and new errors.
2009-08-09	Updated for Mac OS X v10.6. Added helpAnchor method and new constant.
2009-05-06	Added a link to the Foundation error constants.
2006-05-23	First publication of this content as a separate document.
	First publication of this content as a separate document.

REVISION HISTORY

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