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# NSURLDownload Class Reference

[Cocoa](#) > [Networking](#)



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# NSURLDownload Class Reference

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<b>Inherits from</b>	NSObject
<b>Conforms to</b>	NSObject (NSObject)
<b>Framework</b>	/System/Library/Frameworks/Foundation.framework
<b>Availability</b>	Available in Mac OS X v10.2 with Safari 1.0 installed. Available in Mac OS X v10.2.7 and later.
<b>Companion guide</b>	URL Loading System
<b>Declared in</b>	NSURLDownload.h

## Overview

NSURLDownload downloads a request asynchronously and saves the data to a file. The interface for NSURLDownload is sparse, providing methods to initialize a download, set the destination path and cancel loading the request.

NSURLDownload's delegate methods allow an object to receive informational callbacks about the asynchronous load of the URL request. Other delegate methods provide facilities that allow the delegate to customize the process of performing an asynchronous URL load.

Note that these delegate methods will be called on the thread that started the asynchronous load operation for the associated NSURLDownload object.

- A [downloadDidBegin:](#) (page 17) message will be sent to the delegate immediately upon starting the download.
- Zero or more [download:willSendRequest:redirectResponse:](#) (page 17) messages will be sent to the delegate before any further messages are sent if it is determined that the download must redirect to a new location. The delegate can allow the redirect, modify the destination or deny the redirect.
- Zero or more [download:didReceiveAuthenticationChallenge:](#) (page 14) messages will be sent to the delegate if it is necessary to authenticate in order to download the request and NSURLDownload does not already have authenticated credentials.
- Zero or more [download:didCancelAuthenticationChallenge:](#) (page 12) messages will be sent to the delegate if NSURLDownload cancels the authentication challenge due to encountering a protocol implementation error.
- Zero or more [download:didReceiveResponse:](#) (page 15) messages will be sent to the delegate before receiving a [download:didReceiveDataOfLength:](#) (page 15) message. The only case where [download:didReceiveResponse:](#) is not sent to a delegate is when the protocol implementation encounters an error before a response could be created.

- Zero or more [download:didReceiveDataOfLength:](#) (page 15) messages will be sent before [downloadDidFinish:](#) (page 18) or [download:didFailWithError:](#) (page 13) is sent to the delegate.
- Zero or one [download:decideDestinationWithSuggestedFilename:](#) (page 12) will be sent to the delegate when sufficient information has been received to determine the suggested filename for the downloaded file. The delegate will not receive this message if [setDestination:allowOverwrite:](#) (page 11) has already been sent to the NSURLOnload instance.
- A [download:didCreateDestination:](#) (page 13) message will be sent to the delegate when the NSURLOnload instance creates the file on disk.
- If NSURLOnload determines that the downloaded file is in a format that it is able to decode (MacBinary, Binhex or gzip), the delegate will receive a [download:shouldDecodeSourceDataOfMIMEType:](#) (page 16). The delegate should return YES to decode the data, NO otherwise.
- Unless an NSURLOnload instance receives a [cancel](#) (page 8) message, the delegate will receive one and only one [downloadDidFinish:](#) (page 18) or [download:didFailWithError:](#) (page 13) message, but never both. In addition, once either of messages are sent, the delegate will receive no further messages for the given NSURLOnload.

## Tasks

### Creating a Download Instance

- [initWithRequest:delegate:](#) (page 9)  
Returns an initialized URL download for a URL request and begins to download the data for the request.

### Resuming Partial Downloads

- + [canResumeDownloadDecodedWithEncodingMIMEType:](#) (page 8)  
Returns whether a URL download object can resume a download that was decoded with the specified MIME type.
- [initWithResumeData:delegate:path:](#) (page 9)  
Returns an initialized NSURLOnload object that will resume downloading the specified data to the specified file and begins the download.
- [resumeData](#) (page 10)  
Returns the resume data for a download that is not yet complete.
- [setDeletesFileUponFailure:](#) (page 11)  
Specifies whether the receiver deletes the partially downloaded file when a download stops prematurely.
- [deletesFileUponFailure](#) (page 9)  
Returns whether the receiver deletes partially downloaded files when a download stops prematurely.

## Canceling a Download

- [cancel](#) (page 8)  
Cancels the receiver's download and deletes the downloaded file.

## Getting Download Properties

- [request](#) (page 10)  
Returns the request that initiated the receiver's download.

## Setting the Destination Path

- [setDestination:allowOverwrite:](#) (page 11)  
Sets the destination path of the downloaded file.

## Download progress

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- [download:didCancelAuthenticationChallenge:](#) (page 12) *delegate method*  
Sent if an authentication challenge is canceled due to the protocol implementation encountering an error.
- [download:didCreateDestination:](#) (page 13) *delegate method*  
Sent when the destination file is created.
- [download:didFailWithError:](#) (page 13) *delegate method*  
Sent if the download fails or if an I/O error occurs when the file is written to disk.
- [download:didReceiveAuthenticationChallenge:](#) (page 14) *delegate method*  
Sent when the URL download must authenticate a challenge in order to download the request.
- [download:didReceiveDataOfLength:](#) (page 15) *delegate method*  
Sent as a download object receives data incrementally.
- [download:didReceiveResponse:](#) (page 15) *delegate method*  
Sent when a download object has received sufficient load data to construct the `NSURLResponse` object for the download.
- [download:shouldDecodeSourceDataOfMIMEType:](#) (page 16) *delegate method*  
Sent when a download object determines that the downloaded file is encoded to inquire whether the file should be automatically decoded.
- [download:willSendRequest:redirectResponse:](#) (page 17) *delegate method*  
Sent when the download object determines that it must change URLs in order to continue loading a request.
- [downloadDidBegin:](#) (page 17) *delegate method*  
Sent immediately after a download object begins a download.

- `downloadDidFinish:` (page 18) *delegate method*  
Sent when a download object has completed downloading successfully and has written its results to disk.
- `download:willResumeWithResponse:fromByte:` (page 16) *delegate method*  
Sent when a download object has received a response from the server after attempting to resume a download.

## Class Methods

### **canResumeDownloadDecodedWithEncodingMIMEType:**

Returns whether a URL download object can resume a download that was decoded with the specified MIME type.

```
+ (BOOL)canResumeDownloadDecodedWithEncodingMIMEType:(NSString *)MIMEType
```

#### **Parameters**

*MIMEType*

The MIME type the caller wants to know about.

#### **Return Value**

YES if the URL download object can resume a download that was decoded with the specified MIME type, NO otherwise.

#### **Discussion**

NSURLOnload cannot resume a download that was partially decoded in the gzip format.

#### **Availability**

Available in Mac OS X v10.4 and later.

#### **Declared In**

NSURLOnload.h

## Instance Methods

### **cancel**

Cancels the receiver's download and deletes the downloaded file.

```
- (void)cancel
```

#### **Availability**

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

Available in Mac OS X v10.2.7 and later.

#### **Declared In**

NSURLOnload.h



## deletesFileUponFailure

Returns whether the receiver deletes partially downloaded files when a download stops prematurely.

- (BOOL)deletesFileUponFailure

### Return Value

YES if partially downloaded files should be deleted when a download stops prematurely, NO otherwise. The default is YES.

### Availability

Available in Mac OS X v10.4 and later.

### See Also

- [setDeletesFileUponFailure:](#) (page 11)

### Declared In

NSURLOnload.h

## initWithRequest:delegate:

Returns an initialized URL download for a URL request and begins to download the data for the request.

- (id)initWithRequest:(NSURLRequest \*)request delegate:(id)delegate

### Parameters

*request*

The URL request to download. The *request* object is deep-copied as part of the initialization process. Changes made to *request* after this method returns do not affect the request that is used for the loading process.

*delegate*

The delegate for the download. This object will receive delegate messages as the download progresses. Delegate messages will be sent on the thread which calls this method. For the download to work correctly the calling thread's run loop must be operating in the default run loop mode.

### Return Value

An initialized NSURLOnload object for *request*.

### Availability

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

Available in Mac OS X v10.2.7 and later.

### Declared In

NSURLOnload.h

## initWithResumeData:delegate:path:

Returns an initialized NSURLOnload object that will resume downloading the specified data to the specified file and begins the download.

- (id)initWithResumeData:(NSData \*)resumeData delegate:(id)delegate path:(NSString \*)path

**Parameters***resumeData*

Specifies the data to resume downloading.

*delegate*

The delegate for the download. This object will receive delegate messages as the download progresses. Delegate messages will be sent on the thread which calls this method. For the download to work correctly the calling thread's run loop must be operating in the default run loop mode.

*path*

The location for the downloaded data.

**Return Value**

An initialized NSURLOnload object.

**Availability**

Available in Mac OS X v10.4 and later.

**See Also**[resumeData](#) (page 10)**Declared In**

NSURLOnload.h

**request**

Returns the request that initiated the receiver's download.

- (NSURLRequest \*)request

**Return Value**

The URL request that initiated the receiver's download.

**Availability**

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

Available in Mac OS X v10.2.7 and later.

**Declared In**

NSURLOnload.h

**resumeData**

Returns the resume data for a download that is not yet complete.

- (NSData \*)resumeData

**Return Value**

The resume data for a download that is not yet complete. This data represents the necessary state information that an NSURLOnload object needs to resume a download. The resume data can later be used when initializing a download with [initWithResumeData:delegate:path:](#) (page 9). Returns nil if the download is not able to be resumed.

**Discussion**

Resume data will only be returned if the protocol of the download as well as the server support resuming. In order to later resume a download you must call [setDeletesFileUponFailure:](#) (page 11) passing NO so the partially downloaded data is not deleted when the initial connection is lost or canceled.

**Availability**

Available in Mac OS X v10.4 and later.

**Declared In**

NSURLOnload.h

**setDeletesFileUponFailure:**

Specifies whether the receiver deletes the partially downloaded file when a download stops prematurely.

```
- (void)setDeletesFileUponFailure:(BOOL)deletesFileUponFailure
```

**Parameters**

*deletesFileUponFailure*

YES if partially downloaded files should be deleted when a download stops prematurely, NO otherwise. The default is YES.

**Discussion**

To allow the download to be resumed in case the download ends prematurely you should call this method as soon as possible after starting the download.

**Availability**

Available in Mac OS X v10.4 and later.

**See Also**

- [deletesFileUponFailure](#) (page 9)

**Declared In**

NSURLOnload.h

**setDestination:allowOverwrite:**

Sets the destination path of the downloaded file.

```
- (void)setDestination:(NSString *)path allowOverwrite:(BOOL)allowOverwrite
```

**Parameters**

*path*

The path for the downloaded file.

*allowOverwrite*

YES if an existing file at *path* can be replaced, NO otherwise.

**Discussion**

If *allowOverwrite* is NO and a file already exists at *path*, a unique filename will be created for the downloaded file by appending a number to the filename. The delegate can implement [download:didCreateDestination:](#) (page 13) to determine the filename used when the file is written to disk.

**Special Considerations**

An `NSURLOnload` instance ignores multiple calls to this method.

**Availability**

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

Available in Mac OS X v10.2.7 and later.

**See Also**

- [download:decideDestinationWithSuggestedFilename:](#) (page 12)
- [download:didCreateDestination:](#) (page 13)

**Declared In**

`NSURLOnload.h`

## Delegate Methods

### **download:decideDestinationWithSuggestedFilename:**

The delegate receives this message when `download` has determined a suggested filename for the downloaded file.

```
- (void)download:(NSURLOnload *)download
    decideDestinationWithSuggestedFilename:(NSString *)filename
```

**Parameters**

*download*

The URL download object sending the message.

*filename*

The suggested filename for the download.

**Discussion**

The suggested filename is either derived from the last path component of the URL and the MIME type or, if the download was encoded, from the encoding. If the delegate wishes to modify the path, it should send [setDestination:allowOverwrite:](#) (page 11) to `download`.

**Special Considerations**

The delegate will not receive this message if `setDestination:allowOverwrite:` has already been called for the download.

**Availability**

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

Available in Mac OS X v10.2.7 and later.

**Declared In**

`NSURLOnload.h`

### **download:didCancelAuthenticationChallenge:**

Sent if an authentication challenge is canceled due to the protocol implementation encountering an error.

```
- (void)download:(NSURLOnload *)download
  didCancelAuthenticationChallenge:(NSURLOnloadAuthenticationChallenge *)challenge
```

**Parameters***download*

The URL download object sending the message.

*challenge*

The authentication challenge that caused the download object to cancel the download.

**Discussion**

If the delegate receives this message the download will fail and the delegate will receive a [download:didFailWithError:](#) (page 13) message.

**Availability**

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

Available in Mac OS X v10.2.7 and later.

**Declared In**

NSURLOnload.h

**download:didCreateDestination:**

Sent when the destination file is created.

```
- (void)download:(NSURLOnload *)download didCreateDestination:(NSString *)path
```

**Parameters***download*

The URL download object sending the message.

*path*

The path to the destination file.

**Availability**

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

Available in Mac OS X v10.2.7 and later.

**Declared In**

NSURLOnload.h

**download:didFailWithError:**

Sent if the download fails or if an I/O error occurs when the file is written to disk.

```
- (void)download:(NSURLOnload *)download didFailWithError:(NSError *)error
```

**Parameters***download*

The URL download object sending the message.

*error*

The error that caused the failure of the download.

**Discussion**

Any partially downloaded file will be deleted.

**Special Considerations**

Once the delegate receives this message, it will receive no further messages for *download*.

**Availability**

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

Available in Mac OS X v10.2.7 and later.

**Declared In**

NSURLOnload.h

**download:didReceiveAuthenticationChallenge:**

Sent when the URL download must authenticate a challenge in order to download the request.

```
- (void)download:(NSURLOnload *)download
  didReceiveAuthenticationChallenge:(NSURLAuthenticationChallenge *)challenge
```

**Parameters**

*download*

The URL download object sending the message.

*challenge*

The URL authentication challenge that must be authenticated in order to download the request.

**Discussion**

This method gives the delegate the opportunity to determine the course of action taken for the challenge: provide credentials, continue without providing credentials or cancel the authentication challenge and the download.

The delegate can determine the number of previous authentication challenges by sending the message `previousFailureCount` to *challenge*.

If the previous failure count is 0 and the value returned by `proposedCredential` is `nil`, the delegate can create a new `NSURLOnloadCredential` object, providing a user name and password, and send a `useCredential:forAuthenticationChallenge:` message to `[challenge sender]`, passing the credential and *challenge* as parameters. If `proposedCredential` is not `nil`, the value is a credential from the URL or the shared credential storage that can be provided to the user as feedback.

The delegate may decide to abandon further attempts at authentication at any time by sending `[challenge sender] a continueWithoutCredentialForAuthenticationChallenge:` or a `cancelAuthenticationChallenge:` message. The specific action will be implementation dependent.

If the delegate implements this method, the download will suspend until `[challenge sender]` is sent one of the following messages: `useCredential:forAuthenticationChallenge:`, `continueWithoutCredentialForAuthenticationChallenge:` or `cancelAuthenticationChallenge:`.

If the delegate does not implement this method the default implementation is used. If a valid credential for the request is provided as part of the URL, or is available from the `NSURLOnloadCredentialStorage` the `[challenge sender]` is sent a `useCredential:forAuthenticationChallenge:` with the credential. If the challenge has no credential or the credentials fail to authorize access, then `continueWithoutCredentialForAuthenticationChallenge:` is sent to `[challenge sender]` instead.

### Availability

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

Available in Mac OS X v10.2.7 and later.

### Declared In

NSURLDownload.h

## download:didReceiveDataOfLength:

Sent as a download object receives data incrementally.

```
- (void)download:(NSURLDownload *)download didReceiveDataOfLength:(NSUInteger)length
```

### Parameters

*download*

The URL download object sending the message.

*length*

The amount of data received in this increment of the download, measured in bytes.

### Availability

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

Available in Mac OS X v10.2.7 and later.

### Declared In

NSURLDownload.h

## download:didReceiveResponse:

Sent when a download object has received sufficient load data to construct the NSURLResponse object for the download.

```
- (void)download:(NSURLDownload *)download didReceiveResponse:(NSURLResponse *)response
```

### Parameters

*download*

The URL download object sending the message.

*response*

The URL response object received as part of the download. *response* is immutable and will not be modified after this method is called.

### Discussion

In some rare cases, multiple responses may be received for a single download. In this case, the client should assume that each new response resets the download progress to 0 and should check the new response for the expected content length.

### Availability

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

Available in Mac OS X v10.2.7 and later.

### Declared In

NSURLDownload.h

**download:shouldDecodeSourceDataOfMIMEType:**

Sent when a download object determines that the downloaded file is encoded to inquire whether the file should be automatically decoded.

```
- (BOOL)download:(NSURLOnload *)download shouldDecodeSourceDataOfMIMEType:(NSString *)encodingType
```

**Parameters**

*download*

The URL download object sending the message.

*encodingType*

The type of encoding used by the downloaded file. The supported encoding formats are MacBinary ("application/macbinary"), Binhex ("application/mac-binhex40") and gzip ("application/gzip").

**Return Value**

YES to decode the file, NO otherwise.

**Special Considerations**

The delegate may receive this message more than once if the file has been encoded multiple times. This method is not called if the downloaded file is not encoded.

**Availability**

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

Available in Mac OS X v10.2.7 and later.

**Declared In**

NSURLOnload.h

**download:willResumeWithResponse:fromByte:**

Sent when a download object has received a response from the server after attempting to resume a download.

```
- (void)download:(NSURLOnload *)download willResumeWithResponse:(NSURLResponse *)response fromByte:(long long)startingByte
```

**Parameters**

*download*

The URL download object sending the message.

*response*

The URL response received from the server in response to an attempt to resume a download.

*startingByte*

The location of the start of the resumed data, in bytes.

**Availability**

Available in Mac OS X v10.4 and later.

**Declared In**

NSURLOnload.h



## download:willSendRequest:redirectResponse:

Sent when the download object determines that it must change URLs in order to continue loading a request.

```
- (NSURLRequest *)download:(NSURLDownload *)download willSendRequest:(NSURLRequest *)request redirectResponse:(NSURLResponse *)redirectResponse
```

### Parameters

*download*

The URL download object sending the message.

*request*

The proposed redirected request. The delegate should inspect the redirected request to verify that it meets its needs, and create a copy with new attributes to return to the connection if necessary.

*redirectResponse*

The URL response that caused the redirect. May be *nil* in cases where this method is not being sent as a result of involving the delegate in redirect processing.

### Return Value

The actual URL request to use in light of the redirection response. The delegate may copy and modify *request* as necessary to change its attributes, return *request* unmodified, or return *nil*.

### Discussion

If the delegate wishes to cancel the redirect, it should call the *download* object's [cancel](#) (page 8) method. Alternatively, the delegate method can return *nil* to cancel the redirect, and the download will continue to process. This has special relevance in the case where *redirectResponse* is not *nil*. In this case, any data that is loaded for the download will be sent to the delegate, and the delegate will receive a [downloadDidFinish:](#) (page 18) or [download:didFailWithError:](#) (page 13) message, as appropriate.

### Special Considerations

The delegate can receive this message as a result of transforming a request's URL to its canonical form, or for protocol-specific reasons, such as an HTTP redirect. The delegate implementation should be prepared to receive this message multiple times.

### Availability

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

Available in Mac OS X v10.2.7 and later.

### Declared In

NSURLOnload.h

## downloadDidBegin:

Sent immediately after a download object begins a download.

```
- (void)downloadDidBegin:(NSURLDownload *)download
```

### Parameters

*download*

The URL download object sending the message.

### Availability

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

Available in Mac OS X v10.2.7 and later.

**Declared In**

NSURLDownload.h

**downloadDidFinish:**

Sent when a download object has completed downloading successfully and has written its results to disk.

- (void)downloadDidFinish:(NSURLDownload \*)*download*

**Parameters**

*download*

The URL download object sending the message.

**Discussion**

The delegate will receive no further messages for *download*.

**Availability**

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

Available in Mac OS X v10.2.7 and later.

**Declared In**

NSURLDownload.h

# Document Revision History

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

Date	Notes
2006-05-23	First publication of this content as a separate document.

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