
NSProxy Class Reference

Interapplication Communication



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Apple Inc.
1 Infinite Loop
Cupertino, CA 95014
408-996-1010

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NSProxy Class Reference

Inherits from	none (NSProxy is a root class)
Conforms to	NSObject
Framework	/System/Library/Frameworks/Foundation.framework
Availability	Available in Mac OS X v10.0 and later.
Companion guide	Distributed Objects Programming Topics
Declared in	NSProxy.h
Related sample code	ForwardInvocation

Overview

`NSProxy` is an abstract superclass defining an API for objects that act as stand-ins for other objects or for objects that don't exist yet. Typically, a message to a proxy is forwarded to the real object or causes the proxy to load (or transform itself into) the real object. Subclasses of `NSProxy` can be used to implement transparent distributed messaging (for example, `NSDistantObject`) or for lazy instantiation of objects that are expensive to create.

`NSProxy` implements the basic methods required of a root class, including those defined in the `NSObject` protocol. However, as an abstract class it doesn't provide an initialization method, and it raises an exception upon receiving any message it doesn't respond to. A concrete subclass must therefore provide an initialization or creation method and override the [forwardInvocation:](#) (page 10) and [methodSignatureForSelector:](#) (page 10) methods to handle messages that it doesn't implement itself. A subclass's implementation of [forwardInvocation:](#) (page 10) should do whatever is needed to process the invocation, such as forwarding the invocation over the network or loading the real object and passing it the invocation. [methodSignatureForSelector:](#) (page 10) is required to provide argument type information for a given message; a subclass's implementation should be able to determine the argument types for the messages it needs to forward and should construct an `NSMethodSignature` object accordingly. See the `NSDistantObject`, `NSInvocation`, and `NSMethodSignature` class specifications for more information.

Adopted Protocols

NSObject
- autorelease

- class
- conformsToProtocol:
- description
- hash
- isEqual:
- isKindOfClass:
- isMemberOfClass:
- isProxy
- performSelector:
- performSelector:withObject:
- performSelector:withObject:withObject:
- release
- respondsToSelector:
- retain
- retainCount
- self
- superclass
- zone

Tasks

Creating Instances

- + [alloc](#) (page 7)
Returns a new instance of the receiving class
- + [allocWithZone:](#) (page 7)
Returns a new instance of the receiving class

Deallocating Instances

- [dealloc](#) (page 8)
Deallocates the memory occupied by the receiver.

Finalizing an Object

- [finalize](#) (page 9)
The garbage collector invokes this method on the receiver before disposing of the memory it uses.

Handling Unimplemented Methods

- [forwardInvocation:](#) (page 10)
Passes a given invocation to the real object the proxy represents.

- [methodSignatureForSelector:](#) (page 10)

Raises `NSInvalidArgumentException`. Override this method in your concrete subclass to return a proper `NSMethodSignature` object for the given selector and the class your proxy objects stand in for.

Introspecting a Proxy Class

+ [respondsToSelector:](#) (page 8)

Returns a Boolean value that indicates whether the receiving class responds to a given selector.

Describing a Proxy Class or Object

+ [class](#) (page 8)

Returns `self` (the class object).

- [description](#) (page 9)

Returns an `NSString` object containing the real class name and the `id` of the receiver as a hexadecimal number.

Class Methods

alloc

Returns a new instance of the receiving class

```
+ (id)alloc
```

Availability

Available in Mac OS X v10.0 and later.

Related Sample Code

ForwardInvocation

Declared In

NSProxy.h

allocWithZone:

Returns a new instance of the receiving class

```
+ (id)allocWithZone:(NSZone *)zone
```

Return Value

A new instance of the receiving class, as described in the `NSObject` class specification under the `allocWithZone:` class method.

Availability

Available in Mac OS X v10.0 and later.

Declared In

NSProxy.h

classReturns `self` (the class object).`+(Class)class`**Return Value**`self`. Because this is a class method, it returns the class object**Availability**

Available in Mac OS X v10.0 and later.

See Also`class(NSObject)``class(NSObject protocol)`**Declared In**

NSProxy.h

respondsToSelector:

Returns a Boolean value that indicates whether the receiving class responds to a given selector.

`+(BOOL)respondToSelector:(SEL)aSelector`**Parameters***aSelector*

A selector.

Return ValueYES if the receiving class responds to *aSelector* messages, otherwise NO.**Availability**

Available in Mac OS X v10.0 and later.

Declared In

NSProxy.h

Instance Methods

dealloc

Deallocates the memory occupied by the receiver.

`-(void)dealloc`

Discussion

This method behaves as described in the `NSObject` class specification under the `dealloc` instance method.

Availability

Available in Mac OS X v10.0 and later.

See Also

- [finalize](#) (page 9)

Related Sample Code

ForwardInvocation

Declared In

NSProxy.h

description

Returns an `NSString` object containing the real class name and the `id` of the receiver as a hexadecimal number.

```
- (NSString *)description
```

Return Value

An `NSString` object containing the real class name and the `id` of the receiver as a hexadecimal number.

Availability

Available in Mac OS X v10.0 and later.

Declared In

NSProxy.h

finalize

The garbage collector invokes this method on the receiver before disposing of the memory it uses.

```
- (void)finalize
```

Discussion

This method behaves as described in the `NSObject` class specification under the `finalize` instance method. Note that a `finalize` method must be thread-safe.

Availability

Available in Mac OS X v10.5 and later.

See Also

- [dealloc](#) (page 8)

Declared In

NSProxy.h

forwardInvocation:

Passes a given invocation to the real object the proxy represents.

```
- (void)forwardInvocation:(NSInvocation *)anInvocation
```

Parameters

anInvocation

The invocation to forward.

Discussion

NSProxy's implementation merely raises `NSInvalidArgumentException`. Override this method in your subclass to handle *anInvocation* appropriately, at the very least by setting its return value.

For example, if your proxy merely forwards messages to an instance variable named *realObject*, it can implement `forwardInvocation:` like this:

```
- (void)forwardInvocation:(NSInvocation *)anInvocation
{
    [anInvocation setTarget:realObject];
    [anInvocation invoke];
    return;
}
```

Availability

Available in Mac OS X v10.0 and later.

Declared In

NSProxy.h

methodSignatureForSelector:

Raises `NSInvalidArgumentException`. Override this method in your concrete subclass to return a proper `NSMethodSignature` object for the given selector and the class your proxy objects stand in for.

```
- (NSMethodSignature *)methodSignatureForSelector:(SEL)aSelector
```

Parameters

aSelector

The selector for which to return a method signature.

Return Value

Not applicable. The implementation provided by `NSProxy` raises an exception.

Discussion

Be sure to avoid an infinite loop when necessary by checking that *aSelector* isn't the selector for this method itself and by not sending any message that might invoke this method.

For example, if your proxy merely forwards messages to an instance variable named *realObject*, it can implement `methodSignatureForSelector:` like this:

```
- (NSMethodSignature *)methodSignatureForSelector:(SEL)aSelector
{
    return [realObject methodSignatureForSelector:aSelector];
}
```

Availability

Available in Mac OS X v10.0 and later.

See Also

methodSignatureForSelector: (NSObject)

Declared In

NSProxy.h

Document Revision History

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

Date	Notes
2007-04-06	Included API introduced in Mac OS X v10.5.
2006-05-23	First publication of this content as a separate document.

REVISION HISTORY

Document Revision History

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