
NSNetServiceBrowser Class Reference

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



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NSNetServiceBrowser Class Reference

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|----------------------------|---|
| Inherits from | NSObject |
| Conforms to | NSObject (NSObject) |
| Framework | /System/Library/Frameworks/Foundation.framework |
| Availability | Available in Mac OS X v10.2 and later. |
| Declared in | NSNetServices.h |
| Companion guides | Bonjour Overview NSNetServices and CFNetServices Programming Guide |
| Related sample code | CocoaEcho GridCalendar PictureSharingBrowser |

Overview

The `NSNetServiceBrowser` class defines an interface for finding published services on a network using multicast DNS. An instance of `NSNetServiceBrowser` is known as a **network service browser**.

Services can range from standard services, such as HTTP and FTP, to custom services defined by other applications. You can use a network service browser in your code to obtain the list of accessible domains and then to obtain an `NSNetService` object for each discovered service. Each network service browser performs one search at a time, so if you want to perform multiple simultaneous searches, use multiple network service browsers.

A network service browser performs all searches asynchronously using the current run loop to execute the search in the background. Results from a search are returned through the associated delegate object, which your client application must provide. Searching proceeds in the background until the object receives a [stop](#) (page 11) message.

To use an `NSNetServiceBrowser` object to search for services, allocate it, initialize it, and assign a delegate. (If you wish, you can also use the [scheduleInRunLoop:forMode:](#) (page 8) and [removeFromRunLoop:forMode:](#) (page 8) methods to execute searches on a run loop other than the current one.) Once your object is ready, you begin by gathering the list of accessible domains using either the [searchForRegistrationDomains](#) (page 9) or [searchForBrowsableDomains](#) (page 9) methods. From the list of returned domains, you can pick one and use the [searchForServicesOfType:inDomain:](#) (page 9) method to search for services in that domain.

The `NSNetServiceBrowser` class provides two ways to search for domains. In most cases, your client should use the `searchForRegistrationDomains` (page 9) method to search only for local domains to which the host machine has registration authority. This is the preferred method for accessing domains as it guarantees that the host machine can connect to services in the returned domains. Access to domains outside this list may be more limited.

Tasks

Creating Network Service Browsers

- `init` (page 7)
Initializes an allocated `NSNetServiceBrowser` (page 5) object.

Configuring Network Service Browsers

- `delegate` (page 7)
Returns the receiver's delegate.
- `setDelegate:` (page 10)
Sets the receiver's delegate.

Using Network Service Browsers

- `searchForBrowsableDomains` (page 9)
Initiates a search for domains visible to the host. This method returns immediately.
- `searchForRegistrationDomains` (page 9)
Initiates a search for domains in which the host may register services.
- `netServiceBrowser:didFindDomain:moreComing:` (page 11) *delegate method*
Tells the delegate the sender found a domain.
- `netServiceBrowser:didRemoveDomain:moreComing:` (page 13) *delegate method*
Tells the delegate the a domain has disappeared or has become unavailable.
- `searchForServicesOfType:inDomain:` (page 9)
Starts a search for services of a particular type within a specific domain.
- `netServiceBrowser:didFindService:moreComing:` (page 12) *delegate method*
Tells the delegate the sender found a service.
- `netServiceBrowser:didRemoveService:moreComing:` (page 13) *delegate method*
Tells the delegate a service has disappeared or has become unavailable.
- `netServiceBrowserWillSearch:` (page 14) *delegate method*
Tells the delegate that a search is commencing.
- `netServiceBrowser:didNotSearch:` (page 12) *delegate method*
Tells the delegate that a search was not successful.
- `stop` (page 11)
Halts a currently running search or resolution.

- [netServiceBrowserDidStopSearch:](#) (page 14) *delegate method*
Tells the delegate that a search was stopped.
- [searchForAllDomains](#) (page 15) **Deprecated in Mac OS X v10.4**
Initiates a search for all domains that are visible to the host. (**Deprecated**. This method has been deprecated. Use [searchForBrowsableDomains](#) (page 9) or [searchForRegistrationDomains](#) (page 9) instead.)

Managing Run Loops

- [scheduleInRunLoop:forMode:](#) (page 8)
Adds the receiver to the specified run loop.
- [removeFromRunLoop:forMode:](#) (page 8)
Removes the receiver from the specified run loop.

Instance Methods

delegate

Returns the receiver's delegate.

- (id)delegate

Return Value

Delegate for the receiver.

Availability

Available in Mac OS X v10.2 and later.

See Also

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

Declared In

NSNetServices.h

init

Initializes an allocated [NSNetServiceBrowser](#) (page 5) object.

- (id)init

Return Value

Initialized [NSNetServiceBrowser](#) (page 5) object.

Availability

Available in Mac OS X v10.2 and later.

Declared In

NSNetServices.h

removeFromRunLoop:forMode:

Removes the receiver from the specified run loop.

```
- (void)removeFromRunLoop:(NSRunLoop *)runLoop forMode:(NSString *)runLoopMode
```

Parameters

runLoop

Run loop from which to remove the receiver.

runLoopMode

Run loop mode in which to perform this operation, such as `NSDefaultRunLoopMode`. See the “Constants” section of the `NSRunLoop` class for other run loop mode values.

Discussion

You can use this method in conjunction with [scheduleInRunLoop:forMode:](#) (page 8) to transfer the receiver to a run loop other than the default one. Although it is possible to remove an `NSNetService` object completely from any run loop and then attempt actions on it, you must not do it.

Availability

Available in Mac OS X v10.2 and later.

See Also

- [scheduleInRunLoop:forMode:](#) (page 8)

Declared In

`NSNetServices.h`

scheduleInRunLoop:forMode:

Adds the receiver to the specified run loop.

```
- (void)scheduleInRunLoop:(NSRunLoop *)runLoop forMode:(NSString *)runLoopMode
```

Parameters

runLoop

Run loop from which to remove the receiver.

runLoopMode

Run loop mode in which to perform this operation, such as `NSDefaultRunLoopMode`. See the “Constants” section of the `NSRunLoop` class for other run loop mode values.

Discussion

You can use this method in conjunction with [removeFromRunLoop:forMode:](#) (page 8) to transfer the receiver to a run loop other than the default one. You should not attempt to run the receiver on multiple run loops.

Availability

Available in Mac OS X v10.2 and later.

See Also

- [removeFromRunLoop:forMode:](#) (page 8)

Declared In

`NSNetServices.h`

searchForBrowsableDomains

Initiates a search for domains visible to the host. This method returns immediately.

- (void)searchForBrowsableDomains

Discussion

The delegate receives a [netServiceBrowser:didFindDomain:moreComing:](#) (page 11) message for each domain discovered.

Availability

Available in Mac OS X v10.4 and later.

See Also

- [searchForRegistrationDomains](#) (page 9)

Declared In

NSNetServices.h

searchForRegistrationDomains

Initiates a search for domains in which the host may register services.

- (void)searchForRegistrationDomains

Discussion

This method returns immediately, sending a [netServiceBrowserWillSearch:](#) (page 14) message to the delegate if the network was ready to initiate the search. The delegate receives a subsequent [netServiceBrowser:didFindDomain:moreComing:](#) (page 11) message for each domain discovered.

Most network service browser clients do not have to use this method—it is sufficient to publish a service with the empty string, which registers it in any available registration domains automatically.

Availability

Available in Mac OS X v10.2 and later.

See Also

- [searchForBrowsableDomains](#) (page 9)
- [searchForServicesOfType:inDomain:](#) (page 9)
- [netServiceBrowser:didFindDomain:moreComing:](#) (page 11)
- [netServiceBrowserWillSearch:](#) (page 14)

Declared In

NSNetServices.h

searchForServicesOfType:inDomain:

Starts a search for services of a particular type within a specific domain.

- (void)searchForServicesOfType:(NSString *)serviceType inDomain:(NSString *)domainName

Parameters*serviceType*

Type of the service to search for.

domainName

Domain name in which to perform the search.

Discussion

This method returns immediately, sending a [netServiceBrowserWillSearch:](#) (page 14) message to the delegate if the network was ready to initiate the search. The delegate receives subsequent [netServiceBrowser:didFindService:moreComing:](#) (page 12) messages for each service discovered.

The *serviceType* argument must contain both the service type and transport layer information. To ensure that the mDNS responder searches for services, rather than hosts, make sure to prefix both the service name and transport layer name with an underscore character (“_”). For example, to search for an HTTP service on TCP, you would use the type string “_http._tcp.”. Note that the period character at the end is required.

The *domainName* argument can be an explicit domain name, the generic local domain @“local.” (note trailing period, which indicates an absolute name), or the empty string (“”), which indicates the default registration domains. Usually, you pass in an empty string. Note that it is acceptable to use an empty string for the *domainName* argument when publishing or browsing a service, but do not rely on this for resolution.

Availability

Available in Mac OS X v10.2 and later.

See Also

- [netServiceBrowser:didFindService:moreComing:](#) (page 12)
- [netServiceBrowserWillSearch:](#) (page 14)

Declared In

NSNetServices.h

setDelegate:

Sets the receiver’s delegate.

- (void)setDelegate:(id)delegate

Parameters*delegate*

Object to serve as the receiver’s delegate. Must not be nil.

Discussion

The delegate is not retained. The receiver calls the methods of your delegate to receive information about discovered domains and services.

Availability

Available in Mac OS X v10.2 and later.

See Also

- [delegate](#) (page 7)

Declared In

NSNetServices.h

stop

Halts a currently running search or resolution.

- (void)stop

Discussion

This method sends a [netServiceBrowserDidStopSearch:](#) (page 14) message to the delegate and causes the browser to discard any pending search results.

Availability

Available in Mac OS X v10.2 and later.

See Also

- [netServiceBrowserDidStopSearch:](#) (page 14)

Declared In

NSNetServices.h

Delegate Methods

netServiceBrowser:didFindDomain:moreComing:

Tells the delegate the sender found a domain.

```
- (void)netServiceBrowser:(NSNetServiceBrowser *)netServiceBrowser
    didFindDomain:(NSString *)domainName moreComing:(BOOL)moreDomainsComing
```

Parameters

netServiceBrowser

Sender of this delegate message.

domainName

Name of the domain found by *netServiceBrowser*.

moreDomainsComing

YES when *netServiceBrowser* is waiting for additional domains. NO when there are no additional domains.

Discussion

The delegate uses this message to compile a list of available domains. It should wait until *moreDomainsComing* is NO to do a bulk update of user interface elements.

Availability

Available in Mac OS X v10.2 and later.

See Also

- [searchForBrowsableDomains](#) (page 9)
- [searchForRegistrationDomains](#) (page 9)

Declared In

NSNetServices.h

netServiceBrowser:didFindService:moreComing:

Tells the delegate the sender found a service.

```
- (void)netServiceBrowser:(NSNetServiceBrowser *)netServiceBrowser
    didFindService:(NSNetService *)netService moreComing:(BOOL)moreServicesComing
```

Parameters

netServiceBrowser

Sender of this delegate message.

netService

Network service found by *netServiceBrowser*. The delegate can use this object to connect to and use the service.

moreServicesComing

YES when *netServiceBrowser* is waiting for additional services. NO when there are no additional services.

Discussion

The delegate uses this message to compile a list of available services. It should wait until *moreServicesComing* is NO to do a bulk update of user interface elements.

Special Considerations

If the delegate chooses to resolve *netService*, it should retain *netService* and set itself as that service's delegate. The delegate should, therefore, release that service when it receives the `netServiceDidResolveAddress:` or `netService:didNotResolve:` delegate messages of the `NSNetService` class.

Availability

Available in Mac OS X v10.2 and later.

See Also

- [searchForServicesOfType:inDomain:](#) (page 9)

Declared In

NSNetServices.h

netServiceBrowser:didNotSearch:

Tells the delegate that a search was not successful.

```
- (void)netServiceBrowser:(NSNetServiceBrowser *)netServiceBrowser
    didNotSearch:(NSDictionary *)errorInfo
```

Parameters

netServiceBrowser

Sender of this delegate message.

errorInfo

Dictionary with the reasons the search was unsuccessful. Use the dictionary keys `NSNetServicesErrorCode` and `NSNetServicesErrorDomain` to retrieve the error information from the dictionary.

Availability

Available in Mac OS X v10.2 and later.

See Also

- [netServiceBrowserWillSearch:](#) (page 14)

Declared In

NSNetServices.h

netServiceBrowser:didRemoveDomain:moreComing:

Tells the delegate the a domain has disappeared or has become unavailable.

```
- (void)netServiceBrowser:(NSNetServiceBrowser *)netServiceBrowser
  didRemoveDomain:(NSString *)domainName moreComing:(BOOL)moreDomainsComing
```

Parameters

netServiceBrowser

Sender of this delegate message.

domainName

Name of the domain that became unavailable.

moreDomainsComing

YES when *netServiceBrowser* is waiting for additional domains. NO when there are no additional domains.

Discussion

The delegate uses this message to compile a list of unavailable domains. It should wait until *moreDomainsComing* is NO to do a bulk update of user interface elements.

Availability

Available in Mac OS X v10.2 and later.

Declared In

NSNetServices.h

netServiceBrowser:didRemoveService:moreComing:

Tells the delegate a service has disappeared or has become unavailable.

```
- (void)netServiceBrowser:(NSNetServiceBrowser *)netServiceBrowser
  didRemoveService:(NSNetService *)netService moreComing:(BOOL)moreServicesComing
```

Parameters

netServiceBrowser

Sender of this delegate message.

netService

Network service that has become unavailable.

moreServicesComing

YES when *netServiceBrowser* is waiting for additional services. NO when there are no additional services.

Discussion

The delegate uses this message to compile a list of unavailable services. It should wait until *moreServicesComing* is NO to do a bulk update of user interface elements.

Availability

Available in Mac OS X v10.2 and later.

Declared In

NSNetServices.h

netServiceBrowserDidStopSearch:

Tells the delegate that a search was stopped.

```
- (void)netServiceBrowserDidStopSearch:(NSNetServiceBrowser *)netServiceBrowser
```

Parameters

netServiceBrowser

Sender of this delegate message.

Discussion

When *netServiceBrowser* receives a [stop](#) (page 11) message from its client, *netServiceBrowser* sends a `netServiceBrowserDidStopSearch:` message to its delegate. The delegate then performs any necessary cleanup.

Availability

Available in Mac OS X v10.2 and later.

See Also

- [stop](#) (page 11)

Declared In

NSNetServices.h

netServiceBrowserWillSearch:

Tells the delegate that a search is commencing.

```
- (void)netServiceBrowserWillSearch:(NSNetServiceBrowser *)netServiceBrowser
```

Parameters

netServiceBrowser

Sender of this delegate message.

Discussion

This message is sent to the delegate only if the underlying network layer is ready to begin a search. The delegate can use this notification to prepare its data structures to receive data.

Availability

Available in Mac OS X v10.2 and later.

See Also

- [netServiceBrowser:didNotSearch:](#) (page 12)

Declared In

NSNetServices.h

Deprecated NSNetServiceBrowser Methods

A method identified as deprecated has been superseded and may become unsupported in the future.

Deprecated in Mac OS X v10.4

searchForAllDomains

Initiates a search for all domains that are visible to the host. (Deprecated in Mac OS X v10.4. This method has been deprecated. Use [searchForBrowsableDomains](#) (page 9) or [searchForRegistrationDomains](#) (page 9) instead.)

- (void)searchForAllDomains

Discussion

This method returns immediately, sending a [netServiceBrowserWillSearch:](#) (page 14) message to the delegate if the network was ready to initiate the search. The delegate receives a subsequent [netServiceBrowser:didFindDomain:moreComing:](#) (page 11) message for each domain discovered.

This method may find domains in which the localhost does not have registration authority.

Availability

Deprecated in Mac OS X v10.4.

See Also

- [searchForRegistrationDomains](#) (page 9)
- [netServiceBrowser:didFindDomain:moreComing:](#) (page 11)

Declared In

NSNetServices.h

Document Revision History

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

| Date | Notes |
|------------|---|
| 2009-04-08 | Miscellaneous edits. |
| 2007-04-02 | Made editorial improvements. |
| 2006-11-07 | Added memory-management details to the <code>netServiceBrowser:didFindService:moreComing: delegate</code> method. |
| 2006-05-23 | Added "NSNetServices and CFNetServices Programming Guide" as a companion document. |
| | First publication of this content as a separate document. |

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