
NSMetadataQuery Class Reference

Data Management: File Management





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NSMetadataQuery Class Reference

Inherits from	NSObject
Conforms to	NSObject (NSObject)
Framework	/System/Library/Frameworks/Foundation.framework
Availability	Available in Mac OS X v10.4 and later.
Companion guide	Spotlight Query Programming Guide
Declared in	NSMetadata.h
Related sample code	iSpend PhotoSearch PredicateEditorSample Spotlighter SpotlightFortunes

Overview

The `NSMetadataQuery` class encapsulates the functionality provided by the `MDQuery` opaque type for querying the Spotlight metadata.

`NSMetadataQuery` objects provide metadata query results in several ways:

- As individual attribute values for requested attributes.
- As value lists that contain the distinct values for given attributes in the query results.
- A result array proxy, containing all the query results. This is suitable for use with Cocoa bindings.
- As a hierarchical collection of results, grouping together items with the same values for specified grouping attributes. This is also suitable for use with Cocoa bindings.

Queries have two phases: the initial gathering phase that collects all currently matching results and a second live-update phase.

By default the receiver has no limitation on its search scope. Use `setSearchScopes:` (page 15) to customize.

By default, notification of updated results occurs at 1.0 seconds. Use `setNotificationBatchingInterval:` (page 14) to customize.

You must set a predicate with the `setPredicate:` (page 15) method before starting a query.

Tasks

Creating Metadata Queries

- [init](#) (page 10)
Initializes an allocated `NSMetadataQuery` object.

Configuring Queries

- [searchScopes](#) (page 13)
Returns an array containing the receiver's search scopes.
- [setSearchScopes:](#) (page 15)
Restrict the search scope of the receiver.
- [predicate](#) (page 11)
Returns the predicate the receiver uses to filter query results.
- [setPredicate:](#) (page 15)
Sets the predicate used by the receiver to filter the query results.
- [sortDescriptors](#) (page 16)
Returns an array containing the receiver's sort descriptors.
- [setSortDescriptors:](#) (page 15)
Sets the sort descriptors to be used by the receiver.
- [valueListAttributes](#) (page 18)
Returns an array containing the value list attributes the receiver generates.
- [setValueListAttributes:](#) (page 16)
Sets the value list attributes for the receiver to the specific attribute names.
- [groupingAttributes](#) (page 9)
Returns the receiver's grouping attributes.
- [setGroupingAttributes:](#) (page 14)
Sets the receiver's grouping attributes to specific attribute names.
- [notificationBatchingInterval](#) (page 11)
Returns the interval that the receiver provides notification of updated query results.
- [setNotificationBatchingInterval:](#) (page 14)
Sets the interval between update notifications sent by the receiver.
- [delegate](#) (page 7)
Returns the receiver's delegate.
- [setDelegate:](#) (page 13)
Sets the receiver's delegate

Running Queries

- [isStarted](#) (page 10)
Returns a Boolean value that indicates whether the receiver has started the query.

- [startQuery](#) (page 17)
Attempts to start the query.
- [isGathering](#) (page 10)
Returns a Boolean value that indicates whether the receiver is in the initial gathering phase of the query.
- [isStopped](#) (page 11)
Returns a Boolean value that indicates whether the receiver has stopped the query.
- [stopQuery](#) (page 17)
Stops the receiver's current query from gathering any further results.

Getting Query Results

- [resultCount](#) (page 12)
Returns the number of results returned by the receiver.
- [resultAtIndex:](#) (page 12)
Returns the query result at a specific index.
- [results](#) (page 12)
Returns an array containing the result objects for the receiver.
- [groupedResults](#) (page 8)
Returns an array containing hierarchical groups of query results based on the receiver's grouping attributes.
- [indexOfResult:](#) (page 9)
Returns the index of a query result object in the receiver's results array.
- [valueLists](#) (page 18)
Returns a dictionary containing the value lists generated by the receiver.
- [valueOfAttribute:forResultAtIndex:](#) (page 18)
Returns the value for the attribute name *attrName* at the index in the results specified by *idx*.
- [enableUpdates](#) (page 8)
Enables updates to the query results.
- [disableUpdates](#) (page 8)
Disables updates to the query results.

Instance Methods

delegate

Returns the receiver's delegate.

```
- (id < NSMetadataQueryDelegate >)delegate
```

Return Value

The receiver's delegate, or *nil* if there is none.

Availability

Available in Mac OS X v10.4 and later.

See Also

- [setDelegate:](#) (page 13)

Declared In

NSMetadata.h

disableUpdates

Disables updates to the query results.

- (void)disableUpdates

Discussion

You should invoke this method before iterating over query results that could change due to live updates.

Availability

Available in Mac OS X v10.4 and later.

See Also

- [enableUpdates](#) (page 8)

Declared In

NSMetadata.h

enableUpdates

Enables updates to the query results.

- (void)enableUpdates

Discussion

You should invoke this method after you're done iterating over the query results.

Availability

Available in Mac OS X v10.4 and later.

See Also

- [disableUpdates](#) (page 8)

Declared In

NSMetadata.h

groupedResults

Returns an array containing hierarchical groups of query results based on the receiver's grouping attributes.

- (NSArray *)groupedResults

Return Value

Array containing hierarchical groups of query results.

Availability

Available in Mac OS X v10.4 and later.

See Also

- [groupingAttributes](#) (page 9)
- [setGroupingAttributes:](#) (page 14)

Declared In

NSMetadata.h

groupingAttributes

Returns the receiver's grouping attributes.

- (NSArray *)groupingAttributes

Return Value

Array containing grouping attributes.

Availability

Available in Mac OS X v10.4 and later.

See Also

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

Declared In

NSMetadata.h

indexOfResult:

Returns the index of a query result object in the receiver's results array.

- (NSUInteger)indexOfResult:(id)result

Parameters

result

Query result object being inquired about.

Return Value

Index of *result* in the query result array.

Availability

Available in Mac OS X v10.4 and later.

See Also

- [resultAtIndex:](#) (page 12)

Declared In

NSMetadata.h

init

Initializes an allocated `NSMetadataQuery` object.

- (id)init

Return Value

An initialized `NSMetadataQuery` object.

Availability

Available in Mac OS X v10.4 and later.

Declared In

`NSMetadata.h`

isGathering

Returns a Boolean value that indicates whether the receiver is in the initial gathering phase of the query.

- (BOOL)isGathering

Return Value

YES when the query is in the initial gathering phase; NO otherwise.

Availability

Available in Mac OS X v10.4 and later.

See Also

- [isStarted](#) (page 10)
- [isStopped](#) (page 11)
- [startQuery](#) (page 17)

Declared In

`NSMetadata.h`

isStarted

Returns a Boolean value that indicates whether the receiver has started the query.

- (BOOL)isStarted

Return Value

YES when the receiver has executed the `startQuery` method; NO otherwise.

Availability

Available in Mac OS X v10.4 and later.

See Also

- [isGathering](#) (page 10)
- [isStopped](#) (page 11)
- [startQuery](#) (page 17)

Declared In

NSMetadata.h

isStopped

Returns a Boolean value that indicates whether the receiver has stopped the query.

- (BOOL)isStopped

Return Value

YES when the receiver has stopped the query, NO otherwise.

Availability

Available in Mac OS X v10.4 and later.

See Also

- [isGathering](#) (page 10)

- [isStarted](#) (page 10)

- [stopQuery](#) (page 17)

Declared In

NSMetadata.h

notificationBatchingInterval

Returns the interval that the receiver provides notification of updated query results.

- (NSTimeInterval)notificationBatchingInterval

Return Value

The interval at which notification of updated results occurs.

Availability

Available in Mac OS X v10.4 and later.

See Also

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

Declared In

NSMetadata.h

predicate

Returns the predicate the receiver uses to filter query results.

- (NSPredicate *)predicate

Return Value

The predicate used to filter query results.

Availability

Available in Mac OS X v10.4 and later.

See Also

- [setPredicate:](#) (page 15)

Declared In

NSMetadata.h

resultAtIndex:

Returns the query result at a specific index.

```
- (id)resultAtIndex:(NSUInteger) index
```

Parameters

index

Index of the desired result in the query result array.

Return Value

Query result at the position specified by *index*.

Discussion

For performance reasons, you should use this method when retrieving a specific result, rather than the array returned by [results](#) (page 12).

Availability

Available in Mac OS X v10.4 and later.

See Also

- [indexOfResult:](#) (page 9)

Declared In

NSMetadata.h

resultCount

Returns the number of results returned by the receiver.

```
- (NSUInteger)resultCount
```

Return Value

The number of objects the query produced.

Discussion

For performance reasons, you should use this method, rather than invoking `count` on [results](#) (page 12).

Availability

Available in Mac OS X v10.4 and later.

Declared In

NSMetadata.h

results

Returns an array containing the result objects for the receiver.

- (NSArray *)results

Return Value

Proxy array containing query result objects.

Discussion

The results array is a proxy object that is primarily intended for use with Cocoa bindings. While it is possible to copy the proxy array and receive a “snapshot” of the complete current query results, it is generally not recommended due to performance and memory issues. To access individual result array elements you should instead use the [resultCount](#) (page 12) and [resultAtIndex:](#) (page 12) methods.

Availability

Available in Mac OS X v10.4 and later.

See Also

- [groupedResults](#) (page 8)

Declared In

NSMetadata.h

searchScopes

Returns an array containing the receiver’s search scopes.

- (NSArray *)searchScopes

Return Value

An array containing the receiver’s search scopes.

Discussion

The array can contain `NSString` or `NSURL` objects that represent file system directories or the search scopes specified in “[Constants](#)” (page 19). An empty array indicates that there is no limitation on where the receiver searches.

Availability

Available in Mac OS X v10.4 and later.

See Also

- [setSearchScopes:](#) (page 15)

Declared In

NSMetadata.h

setDelegate:

Sets the receiver’s delegate

- (void)setDelegate:(id < NSMetadataQueryDelegate >)delegate

Parameters

delegate

An object to serve as the receiver’s delegate. The delegate must implement the `NSMetadataQueryDelegate` Protocol protocol. Pass `nil` to remove the current delegate.

Availability

Available in Mac OS X v10.4 and later.

See Also

- [delegate](#) (page 7)

Related Sample Code

PhotoSearch

Declared In

NSMetadata.h

setGroupingAttributes:

Sets the receiver's grouping attributes to specific attribute names.

```
- (void)setGroupingAttributes:(NSArray *)attributes
```

Parameters

attributes

Array containing attribute names.

Discussion

Invoking this method on a receiver while it's running a query, stops the query and discards current results, and immediately starts a new query.

Availability

Available in Mac OS X v10.4 and later.

See Also

- [groupingAttributes](#) (page 9)

Declared In

NSMetadata.h

setNotificationBatchingInterval:

Sets the interval between update notifications sent by the receiver.

```
- (void)setNotificationBatchingInterval:(NSTimeInterval)timeInterval
```

Parameters

Term

The Interval at which notification of updated results is to occur.

Availability

Available in Mac OS X v10.4 and later.

See Also

- [notificationBatchingInterval](#) (page 11)

Declared In

NSMetadata.h

setPredicate:

Sets the predicate used by the receiver to filter the query results.

```
- (void)setPredicate:(NSPredicate *)predicate
```

Parameters

predicate

A predicate to be used to filter query results.

Discussion

Invoking this method on a receiver running a query causes the existing query to stop, all current results are discarded, and a new query is started immediately.

Availability

Available in Mac OS X v10.4 and later.

See Also

- [predicate](#) (page 11)

Related Sample Code

iSpend

PhotoSearch

Declared In

NSMetadata.h

setSearchScopes:

Restrict the search scope of the receiver.

```
- (void)setSearchScopes:(NSArray *)scopes
```

Parameters

scopes

Array of `NSString` or `NSURL` objects that specify file system directories. You can also include the predefined search scopes specified in “[Constants](#)” (page 19). An empty array removes search scope limitations.

Availability

Available in Mac OS X v10.4 and later.

See Also

- [searchScopes](#) (page 13)

Declared In

NSMetadata.h

setSortDescriptors:

Sets the sort descriptors to be used by the receiver.

```
- (void)setSortDescriptors:(NSArray *)descriptors
```

Parameters*descriptors*

Array of sort descriptors.

Discussion

Invoking this method on the receiver running a query causes the existing query to stop, all current results are discarded, and a new query is started immediately.

Availability

Available in Mac OS X v10.4 and later.

See Also- [sortDescriptors](#) (page 16)**Related Sample Code**

PhotoSearch

Declared In

NSMetadata.h

setValueListAttributes:

Sets the value list attributes for the receiver to the specific attribute names.

```
- (void)setValueListAttributes:(NSArray *)attributes
```

Parameters*attributes*

Array of value list attributes.

Discussion

The query collects the values of these attributes into unique lists that can be used to summarize the results of the query. If *attributes* is *nil*, the query generates no value lists. Note that value list collection increases CPU usage and significantly increases the memory usage of an `NSMetadataQuery` object.

Invoking this method on the receiver while it's running a query, stops the query and discards current results, and immediately starts a new query.

Availability

Available in Mac OS X v10.4 and later.

See Also- [valueListAttributes](#) (page 18)**Declared In**

NSMetadata.h

sortDescriptors

Returns an array containing the receiver's sort descriptors.

```
- (NSArray *)sortDescriptors
```

Return Value

An array containing sort descriptors.

Availability

Available in Mac OS X v10.4 and later.

See Also

- [setSortDescriptors:](#) (page 15)

Declared In

NSMetadata.h

startQuery

Attempts to start the query.

- (BOOL)startQuery

Return Value

YES when successful; NO otherwise.

Discussion

A query can't be started if the receiver is already running a query or no predicate has been specified.

Availability

Available in Mac OS X v10.4 and later.

See Also

- [stopQuery](#) (page 17)

- [isStarted](#) (page 10)

Related Sample Code

iSpend

PhotoSearch

Declared In

NSMetadata.h

stopQuery

Stops the receiver's current query from gathering any further results.

- (void)stopQuery

Discussion

The receiver first completes gathering any unprocessed results. If a query is stopped before the gathering phase finishes, it will not post an `NSMetadataQueryDidStartGatheringNotification` notification.

You would call this function to stop a query that is generating too many results to be useful but still want to access the available results. If the receiver is sent a `startQuery` message after performing this method, the existing results are discarded.

Availability

Available in Mac OS X v10.4 and later.

See Also

- [startQuery](#) (page 17)
- [isStopped](#) (page 11)

Declared In

NSMetadata.h

valueListAttributes

Returns an array containing the value list attributes the receiver generates.

- (NSArray *)valueListAttributes

Return Value

Array containing value list attributes.

Availability

Available in Mac OS X v10.4 and later.

See Also

- [setValueListAttributes:](#) (page 16)

Declared In

NSMetadata.h

valueLists

Returns a dictionary containing the value lists generated by the receiver.

- (NSDictionary *)valueLists

Return Value

Dictionary of NSMetadataQueryAttributeValueTuple objects.

Availability

Available in Mac OS X v10.4 and later.

Declared In

NSMetadata.h

valueOfAttribute:forResultAtIndex:

Returns the value for the attribute name *attrName* at the index in the results specified by *idx*.

- (id)valueOfAttribute:(NSString *)attributeName forResultAtIndex:(NSUInteger)index

Parameters*attributeName*

The attribute of the result object at *index* being inquired about. The attribute must be specified in [setValueListAttributes:](#) (page 16), as a sorting key in a specified sort descriptor, or as one of the grouping attributes specified set for the query.

index

Index of the desired return object in the query results array.

Return Value

Value for *attributeName* in the result object at *index* in the query result array.

Availability

Available in Mac OS X v10.4 and later.

Declared In

NSMetadata.h

Constants

Metadata Query Search Scopes

Constants for the predefined search scopes used by [setSearchScopes:](#) (page 15).

```
NSString * const NSMetadataQueryUserHomeScope;
NSString * const NSMetadataQueryLocalComputerScope;
NSString * const NSMetadataQueryNetworkScope;
```

Constants

NSMetadataQueryUserHomeScope

Search the user's home directory.

Available in Mac OS X v10.4 and later.

Declared in NSMetadata.h.

NSMetadataQueryLocalComputerScope

Search all local mounted volumes, including the user home directory. The user's home directory is searched even if it is a remote volume.

Available in Mac OS X v10.4 and later.

Declared in NSMetadata.h.

NSMetadataQueryNetworkScope

Search all user-mounted remote volumes.

Available in Mac OS X v10.4 and later.

Declared in NSMetadata.h.

Content Relevance

In addition to the requested metadata attributes, a query result also includes content relevance, accessed with the following key.

```
NSString * const NSMetadataQueryResultContentRelevanceAttribute;
```

Constants

`NSMetadataQueryResultContentRelevanceAttribute`

Key used to retrieve an `NSNumber` object with a floating point value between 0.0 and 1.0 inclusive. The relevance value indicates the relevance of the content of a result object. The relevance is computed based on the value of the result itself, not on its relevance to the other results returned by the query. If the value is not computed, it is treated as an attribute on the item that does not exist.

Available in Mac OS X v10.4 and later.

Declared in `NSMetadata.h`.

Notifications

NSMetadataQueryDidFinishGatheringNotification

Posted when the receiver has finished with the initial result-gathering phase of the query.

Availability

Available in Mac OS X v10.4 and later.

Declared In

`NSMetadata.h`

NSMetadataQueryDidStartGatheringNotification

Posted when the receiver begins with the initial result-gathering phase of the query.

Availability

Available in Mac OS X v10.4 and later.

Declared In

`NSMetadata.h`

NSMetadataQueryDidUpdateNotification

Posted when the receiver's results have changed during the live-update phase of the query.

Availability

Available in Mac OS X v10.4 and later.

Declared In

`NSMetadata.h`

NSMetadataQueryGatheringProgressNotification

Posted as the receiver's is collecting results during the initial result-gathering phase of the query.

Availability

Available in Mac OS X v10.4 and later.

Declared In

NSMetadata.h

Document Revision History

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

Date	Notes
2009-04-18	Updated for Mac OS X v10.6. Delegate methods moved to NSMetadataQuery Protocol Reference.
2007-04-02	Made editorial improvements
2006-05-23	Added cross-reference to companion document.
	First publication of this content as a separate document.

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