NSDraggingDestination Protocol Reference

Cocoa > Interapplication Communication

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NSDraggingDestination Protocol Reference

(informal protocol)

Framework	/System/Library/Frameworks/AppKit.framework
Companion guide	Drag and Drop Programming Topics for Cocoa
Declared in	NSDragging.h

Overview

The `NSDraggingDestination` informal protocol declares methods that the destination object (or recipient) of a dragged image must implement. The destination automatically receives `NSDraggingDestination` messages for pasteboard data types it has registered for as an image enters, moves around inside, and then exits or is released within the destination's boundaries.

Tasks

Managing a Dragging Session Before an Image Is Released

- `draggingEntered:` (page 7)
  Invoked when the dragged image enters destination bounds or frame; delegate returns dragging operation to perform.
- `wantsPeriodicDraggingUpdates` (page 10)
  Asks the destination object whether it wants to receive periodic `draggingUpdated:` (page 8) messages.
- `draggingUpdated:` (page 8)
  Invoked periodically as the image is held within the destination area, allowing modification of the dragging operation or mouse-pointer position.
- `draggingEnded:` (page 6)
  Implement this method to be notified when a drag operation ends in some other destination.
- `draggingExited:` (page 7)
  Invoked when the dragged image exits the destination's bounds rectangle (in the case of a view object) or its frame rectangle (in the case of a window object).

Managing a Dragging Session After an Image Is Released

- `prepareForDragOperation:` (page 9)
  Invoked when the image is released, allowing the receiver to agree to or refuse drag operation.

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- `performDragOperation:` (page 9)
  Invoked after the released image has been removed from the screen, signaling the receiver to import the pasteboard data.
- `concludeDragOperation:` (page 6)
  Invoked when the dragging operation is complete, signaling the receiver to perform any necessary clean-up.

Instance Methods

concludeDragOperation:

Invoked when the dragging operation is complete, signaling the receiver to perform any necessary clean-up.

```
- (void)concludeDragOperation:(id < NSDraggingInfo >)sender
```

Parameters

sender
  The object sending the message; use it to get details about the dragging operation.

Discussion
For this method to be invoked, the previous `performDragOperation:` (page 9) must have returned `YES`. The destination implements this method to perform any tidying up that it needs to do, such as updating its visual representation now that it has incorporated the dragged data. This message is the last message sent from *sender* to the destination during a dragging session.

Availability
Available in Mac OS X v10.0 and later.

Declared In
`NSDragging.h`

draggingEnded:

Implement this method to be notified when a drag operation ends in some other destination.

```
- (void)draggingEnded:(id < NSDraggingInfo >)sender
```

Parameters

sender
  The object sending the message; use it to get details about the dragging operation.

Discussion
This method might be used by a destination doing auto-expansion in order to collapse any auto-expands. This method has not yet been implemented.

Availability
Available in Mac OS X v10.0 and later.

Declared In
`NSDragging.h`

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draggingEntered:

Invoked when the dragged image enters destination bounds or frame; delegate returns dragging operation to perform.

```
- (NSDragOperation)draggingEntered:(id < NSDraggingInfo >)sender
```

Parameters

sender

The object sending the message; use it to get details about the dragging operation.

Return Value

One (and only one) of the dragging operation constants described in "Constants" in the `NSDraggingInfo` reference. The default return value (if this method is not implemented by the destination) is the value returned by the previous `draggingEntered:` (page 7) message.

Discussion

Invoked when a dragged image enters the destination but only if the destination has registered for the pasteboard data type involved in the drag operation. Specifically, this method is invoked when the mouse pointer enters the destination's bounds rectangle (if it is a view object) or its frame rectangle (if it is a window object).

This method must return a value that indicates which dragging operation the destination will perform when the image is released. In deciding which dragging operation to return, the method should evaluate the overlap between both the dragging operations allowed by the source (obtained from *sender* with the `draggingSourceOperationMask` method) and the dragging operations and pasteboard data types the destination itself supports.

If none of the operations is appropriate, this method should return `NSDragOperationNone` (this is the default response if the method is not implemented by the destination). A destination will still receive `draggingUpdated:` (page 8) and `draggingExited:` (page 7) even if `NSDragOperationNone` is returned by this method.

Availability

Available in Mac OS X v10.0 and later.

See Also

- `draggingUpdated:` (page 8)
- `draggingExited:` (page 7)
- `prepareForDragOperation:` (page 9)

Declared In

`NSDragging.h`

draggingExited:

Invoked when the dragged image exits the destination's bounds rectangle (in the case of a view object) or its frame rectangle (in the case of a window object).

```
- (void)draggingExited:(id < NSDraggingInfo >)sender
```

Parameters

sender

The object sending the message; use it to get details about the dragging operation.

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Availability
Available in Mac OS X v10.0 and later.

Declared In
NSDragging.h

draggingUpdated:

Invoked periodically as the image is held within the destination area, allowing modification of the dragging operation or mouse-pointer position.

```
- (NSDragOperation)draggingUpdated:(id < NSDraggingInfo >)sender
```

Parameters

sender

The object sending the message; use it to get details about the dragging operation.

Return Value
One (and only one) of the dragging operation constants described in "Constants" in the NSDraggingInfo reference. The default return value (if this method is not implemented by the destination) is the value returned by the previous draggingEntered: (page 7) message.

Discussion
For this to be invoked, the destination must have registered for the pasteboard data type involved in the drag operation. The messages continue until the image is either released or dragged out of the window or view.

This method provides the destination with an opportunity to modify the dragging operation depending on the position of the mouse pointer inside of the destination view or window object. For example, you may have several graphics or areas of text contained within the same view and wish to tailor the dragging operation, or to ignore the drag event completely, depending upon which object is underneath the mouse pointer at the time when the user releases the dragged image and the performDragOperation: (page 9) method is invoked.

You typically examine the contents of the pasteboard in the draggingEntered: (page 7) method, where this examination is performed only once, rather than in the draggingUpdated: (page 8) method, which is invoked multiple times.

Only one destination at a time receives a sequence of draggingUpdated: (page 8) messages. If the mouse pointer is within the bounds of two overlapping views that are both valid destinations, the uppermost view receives these messages until the image is either released or dragged out.

Availability
Available in Mac OS X v10.0 and later.

See Also
- draggingExited: (page 7)
- prepareForDragOperation: (page 9)

Declared In
NSDragging.h

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performDragOperation:

Invoked after the released image has been removed from the screen, signaling the receiver to import the pasteboard data.

```
- (BOOL)performDragOperation:(id < NSDraggingInfo >)sender
```

Parameters

sender

The object sending the message; use it to get details about the dragging operation.

Return Value

If the destination accepts the data, it returns `YES`; otherwise it returns `NO`. The default is to return `NO`.

Discussion

For this method to be invoked, the previous `prepareForDragOperation:` (page 9) message must have returned `YES`. The destination should implement this method to do the real work of importing the pasteboard data represented by the image.

Availability

Available in Mac OS X v10.0 and later.

See Also

`- concludeDragOperation:` (page 6)

Declared In

`NSDragging.h`

prepareForDragOperation:

Invoked when the image is released, allowing the receiver to agree to or refuse drag operation.

```
- (BOOL)prepareForDragOperation:(id < NSDraggingInfo >)sender
```

Parameters

sender

The object sending the message; use it to get details about the dragging operation.

Return Value

`YES` if the receiver agrees to perform the drag operation and `NO` if not.

Discussion

This method is invoked only if the most recent `draggingEntered:` (page 7) or `draggingUpdated:` (page 8) message returned an acceptable drag-operation value.

Availability

Available in Mac OS X v10.0 and later.

See Also

`- performDragOperation:` (page 9)

Declared In

`NSDragging.h`

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wantsPeriodicDraggingUpdates

Asks the destination object whether it wants to receive periodic `draggingUpdated:` (page 8) messages.

```
- (BOOL)wantsPeriodicDraggingUpdates
```

Return Value
`YES` if the destination wants to receive periodic `draggingUpdated:` (page 8) messages, `NO` otherwise.

Discussion
If the destination returns `NO`, these messages are sent only when the mouse moves or a modifier flag changes. Otherwise the destination gets the default behavior, where it receives periodic dragging-updated messages even if nothing changes.

Availability
Available in Mac OS X v10.4 and later.

Declared In
`NSDragging.h`

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Document Revision History

This table describes the changes to *NSDraggingDestination Protocol Reference*.

Date	Notes
2007-03-01	Revised task headings.
2006-05-23	First publication of this content as a separate document.

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