Carbon Help Manager Reference

Carbon > User Experience

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Carbon Help Manager Reference

Framework: Carbon/Carbon.h

Declared in MacHelp.h

Overview

The Carbon Help Manager is an API that provides an interface for displaying short onscreen hints in help tags. You can attach identifying text to individual windows, menus, or controls. Help tags replace Balloon Help, introduced with System 7.

This document is relevant for developers creating a user interface for their Carbon application. To use this document, you should be familiar with the basics of programming with the fundamental objects of the Mac OS user interface (windows, menus, controls, and so forth)

Functions by Task

Obtaining a Reference to the Help Menu

`HMGetHelpMenu` (page 11)
Returns a reference to the Help menu.

Attaching Help Tag Content Directly to an Object

`HMSetControlHelpContent` (page 18)
Associates a help tag with a control.

`HMSetWindowHelpContent` (page 21)
Associates a help tag with a window.

`HMSetMenuItemHelpContent` (page 19)
Associates a help tag with a menu item.

`HMGetControlHelpContent` (page 10)
Returns the help tag associated with a control.

`HMGetWindowHelpContent` (page 14)
Returns the help tag associated with a window.

`HMGetMenuItemHelpContent` (page 12)
Returns the help tag associated with a menu item.

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Installing and Retrieving Help Tag Callbacks

`HMInstallControlContentCallback` (page 15)
Installs a help tag callback for a control.

`HMInstallWindowContentCallback` (page 18)
Installs a help tag callback for a window.

`HMInstallMenuItemContentCallback` (page 16)
Installs a help tag callback for a menu's items.

`HMInstallMenuTitleContentCallback` (page 17)
Installs a help tag callback for a menu title.

`HMGetControlContentCallback` (page 10)
Retrieves the help tag callback associated with a control.

`HMGetWindowContentCallback` (page 14)
Retrieves the help tag callback associated with a window.

`HMGetMenuItemContentCallback` (page 12)
Retrieves the help tag callback associated with a menu's items.

`HMGetMenuTitleContentCallback` (page 13)
Retrieves the help tag callback associated with a menu's title.

Displaying and Hiding Help Tags

`HMDisplayTag` (page 9)
Displays a help tag at an application-defined location.

`HMHideTag` (page 15)
Hides the most recently displayed help tag.

Enabling and Disabling Help Tags

`HMAreHelpTagsDisplayed` (page 9)
Determines whether help tags are currently enabled.

`HMSetHelpTagsDisplayed` (page 19)
Enables or disables help tags.

Getting and Setting Help Tag Delay Time

`HMSetTagDelay` (page 20)
Sets the help tag delay time.

`HMGetTagDelay` (page 13)
Returns the current help tag delay time.

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Working With Universal Procedure Pointers to Help Tag Callback Functions

`NewHMControlContentUPP` (page 25)
Creates a new universal procedure pointer (UPP) to a help tag callback for a control.

`NewHMWindowContentUPP` (page 27)
Creates a new universal procedure pointer (UPP) to a help tag callback for a window.

`NewHMMenuItemContentUPP` (page 26)
Creates a new universal procedure pointer (UPP) to a help tag callback for a menu item.

`NewHMMenuTitleContentUPP` (page 27)
Creates a new universal procedure pointer (UPP) to a help tag callback for a menu title.

`DisposeHMControlContentUPP` (page 7)
Disposes of a universal procedure pointer (UPP) to a help tag callback for a control.

`DisposeHMWindowContentUPP` (page 9)
Disposes of a universal procedure pointer (UPP) to a help tag callback for a window.

`DisposeHMMenuItemContentUPP` (page 8)
Disposes of a universal procedure pointer (UPP) to a help tag callback for a menu item.

`DisposeHMMenuTitleContentUPP` (page 8)
Disposes of a universal procedure pointer (UPP) to a help tag callback for a menu title.

`InvokeHMControlContentUPP` (page 21)
Calls your help tag callback for a control.

`InvokeHMWindowContentUPP` (page 24)
Calls your help tag callback for a window.

`InvokeHMMenuItemContentUPP` (page 22)
Calls your help tag callback for a menu item.

`InvokeHMMenuTitleContentUPP` (page 23)
Calls your help tag callback for a menu title.

Functions

DisposeHMControlContentUPP

Disposes of a universal procedure pointer (UPP) to a help tag callback for a control.

```
void DisposeHMControlContentUPP (
   HMControlContentUPP userUPP
);
```

Parameters

userUPP
The UPP to dispose of.

Discussion
To create a UPP to a help tag callback for a control, use `NewHMControlContentUPP` (page 25). For a description of the help tag callback for a control, see `HMControlContentProcPtr` (page 28).

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Availability
Available in CarbonLib 1.0.2 and later.
Available in Mac OS X 10.0 and later.

Declared In
`MacHelp.h`

DisposeHMMenuItemContentUPP

Disposes of a universal procedure pointer (UPP) to a help tag callback for a menu item.

```
void DisposeHMMenuItemContentUPP (
   HMMenuItemContentUPP userUPP
);
```

Parameters

userUPP

The UPP to dispose of.

Discussion
To create a UPP to a help tag callback for a menu item, use `NewHMMenuItemContentUPP` (page 26). For a description of the help tag callback for a menu item, see `HMMenuItemContentProcPtr` (page 29).

Availability
Available in CarbonLib 1.0.2 and later.
Available in Mac OS X 10.0 and later.

Declared In
`MacHelp.h`

DisposeHMMenuTitleContentUPP

Disposes of a universal procedure pointer (UPP) to a help tag callback for a menu title.

```
void DisposeHMMenuTitleContentUPP (
   HMMenuTitleContentUPP userUPP
);
```

Parameters

userUPP

The UPP to dispose of.

Discussion
To create a UPP to a help tag callback for a menu title, use `NewHMMenuTitleContentUPP` (page 27). For a description of the help tag callback for a menu title, see `HMMenuTitleContentProcPtr` (page 30).

Availability
Available in CarbonLib 1.0.2 and later.
Available in Mac OS X 10.0 and later.

Declared In
`MacHelp.h`

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DisposeHMWindowContentUPP

Disposes of a universal procedure pointer (UPP) to a help tag callback for a window.

```
void DisposeHMWindowContentUPP (
   HMWindowContentUPP userUPP
);
```

Parameters

userUPP

The UPP to dispose of.

Discussion

To create a UPP to a help tag callback for a window, use `NewHMWindowContentUPP` (page 27). For a description of the help tag callback for a window, see `HMWindowContentProcPtr` (page 32).

Availability

Available in CarbonLib 1.0.2 and later.

Available in Mac OS X 10.0 and later.

Declared In

`MacHelp.h`

HMAreHelpTagsDisplayed

Determines whether help tags are currently enabled.

```
Boolean HMAreHelpTagsDisplayed (
   void
);
```

Return Value

`true` if help tags are currently enabled; otherwise, `false`.

Availability

Available in CarbonLib 1.0.2 and later.

Available in Mac OS X 10.0 and later.

Not available to 64-bit applications.

Declared In

`MacHelp.h`

HMDisplayTag

Displays a help tag at an application-defined location.

```
OSStatus HMDisplayTag (
   const HMHelpContentRec *inContent
);
```

Parameters

inContent

A pointer to a help tag structure that describes the help tag you want to display.

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Return Value
A result code. See "Result Codes" (page 44).

Discussion
Use the `HMDisplayTag` function to display a help tag at a location not associated with a control, window, or menu.

Availability
Available in CarbonLib 1.5 and later.
Available in Mac OS X 10.0 and later.
Not available to 64-bit applications.

Declared In
`MacHelp.h`

HMGetControlContentCallback

Retrieves the help tag callback associated with a control.

```
OSStatus HMGetControlContentCallback (
   ControlRef inControl,
   HMControlContentUPP *outContentUPP
);
```

Parameters

inControl
A reference to the control for which to retrieve the help tag callback.

outContentUPP
On return, a universal procedure pointer to the help tag callback.

Return Value
A result code. See "Result Codes" (page 44).

Discussion
To install a help tag callback for a control, use the `HMInstallControlContentCallback` (page 15) function.

Availability
Available in CarbonLib 1.0.2 and later.
Available in Mac OS X 10.0 and later.
Not available to 64-bit applications.

Declared In
`MacHelp.h`

HMGetControlHelpContent

Returns the help tag associated with a control.

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```
OSStatus HMGetControlHelpContent (
   ControlRef inControl,
   HMHelpContentRec *outContent
);
```

Parameters

inControl

A reference to the control for which to retrieve the help tag.

outContent

A pointer to a help tag structure. On return, this structure describes the help tag for the control.

Return Value

A result code. See "Result Codes" (page 44).

Discussion

To attach a help tag to a control, use the `HMSetControlHelpContent` (page 18) function.

Availability

Available in CarbonLib 1.0.2 and later.

Available in Mac OS X 10.0 and later.

Not available to 64-bit applications.

Declared In

`MacHelp.h`

HMGetHelpMenu

Returns a reference to the Help menu.

```
OSStatus HMGetHelpMenu (
   MenuRef *outHelpMenu,
   MenuItemIndex *outFirstCustomItemIndex
);
```

Parameters

outHelpMenu

On return, a pointer to a menu reference to the Help menu.

outFirstCustomItemIndex

On return, a pointer to the menu item index that will be used by the first application-supplied item added to the menu. This parameter may be `NULL`.

Return Value

A result code. See "Result Codes" (page 44).

Discussion

The `HMGetHelpMenu` function returns a reference to the Help menu, to which you can add your own custom menu items.

Availability

Available in CarbonLib 1.1 and later.

Available in Mac OS X 10.0 and later.

Not available to 64-bit applications.

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Declared In
MacHelp.h

HMGetMenuItemContentCallback

Retrieves the help tag callback associated with a menu's items.

```
OSStatus HMGetMenuItemContentCallback (
   MenuRef inMenu,
   HMMenuItemContentUPP *outContentUPP
);
```

Parameters

inMenu

A reference to the menu for which to retrieve the menu item help tag callback.

outContentUPP

On return, a universal procedure pointer to the help tag callback.

Return Value
A result code. See "Result Codes" (page 44).

Discussion
To install a menu item help tag callback, use the `HMInstallMenuItemContentCallback` (page 16) function.

Availability
Available in CarbonLib 1.0.2 and later.
Available in Mac OS X 10.0 and later.
Not available to 64-bit applications.

Declared In
MacHelp.h

HMGetMenuItemHelpContent

Returns the help tag associated with a menu item.

```
OSStatus HMGetMenuItemHelpContent (
   MenuRef inMenu,
   MenuItemIndex inItem,
   HMHelpContentRec *outContent
);
```

Parameters

inMenu

A reference to the menu containing the menu item for which to retrieve the help tag.

inItem

The index of the menu item.

outContent

A pointer to a help tag structure. On return, this structure describes the help tag for the menu item.

Return Value
A result code. See "Result Codes" (page 44).

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Discussion
To attach a help tag to a menu item, use the `HMSetMenuItemHelpContent` (page 19) function.

Availability
Available in CarbonLib 1.0.2 and later.
Available in Mac OS X 10.0 and later.
Not available to 64-bit applications.

Declared In
`MacHelp.h`

HMGetMenuTitleContentCallback

Retrieves the help tag callback associated with a menu's title.

```
OSStatus HMGetMenuTitleContentCallback (
   MenuRef inMenu,
   HMMenuTitleContentUPP *outContentUPP
);
```

Parameters

inMenu
A reference to the menu for which to retrieve the help tag callback.

outContentUPP
On return, a universal procedure pointer to the help tag callback.

Return Value
A result code. See "Result Codes" (page 44).

Discussion
To install a menu title help tag callback, use the `HMInstallMenuTitleContentCallback` (page 17) function.

Availability
Available in CarbonLib 1.0.2 and later.
Available in Mac OS X 10.0 and later.
Not available to 64-bit applications.

Declared In
`MacHelp.h`

HMGetTagDelay

Returns the current help tag delay time.

```
OSStatus HMGetTagDelay (
   Duration *outDelay
);
```

Parameters

outDelay
On return, a pointer to the help tag delay time. A positive value represents the delay time in milliseconds; a negative value represents the delay time in microseconds.

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Return Value
A result code. See "Result Codes" (page 44).

Discussion
The help tag delay time returned by the `HMGetTagDelay` function is the amount of time that the mouse must remain motionless over a control, window, menu title, or menu item before the associated help tag is displayed.

Availability
Available in CarbonLib 1.0.2 and later.
Available in Mac OS X 10.0 and later.
Not available to 64-bit applications.

Declared In
`MacHelp.h`

HMGetWindowContentCallback

Retrieves the help tag callback associated with a window.

```
OSStatus HMGetWindowContentCallback (
   WindowRef inWindow,
   HMWindowContentUPP *outContentUPP
);
```

Parameters

inWindow
A reference to the window for which to retrieve the help tag callback.

outContentUPP
On return, a universal procedure pointer to the help tag callback.

Return Value
A result code. See "Result Codes" (page 44).

Discussion
To install a help tag callback for a window, use the `HMInstallWindowContentCallback` (page 18) function.

Availability
Available in CarbonLib 1.0.2 and later.
Available in Mac OS X 10.0 and later.
Not available to 64-bit applications.

Declared In
`MacHelp.h`

HMGetWindowHelpContent

Returns the help tag associated with a window.

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```
OSStatus HMGetWindowHelpContent (
   WindowRef inWindow,
   HMHelpContentRec *outContent
);
```

Parameters

inWindow

A reference to the window for which to retrieve the help tag.

outContent

A pointer to a help tag structure. On return, this structure describes the help tag for the window.

Return Value
A result code. See "Result Codes" (page 44).

Discussion
To attach a help tag to a window, use the `HMSetWindowHelpContent` (page 21) function.

Availability
Available in CarbonLib 1.0.2 and later.
Available in Mac OS X 10.0 and later.
Not available to 64-bit applications.

Declared In
`MacHelp.h`

HMHideTag

Hides the most recently displayed help tag.

```
OSStatus HMHideTag (
   void
);
```

Return Value
A result code. See "Result Codes" (page 44).

Discussion
The Carbon Help Manager automatically removes help tags from the screen when user input occurs. To hide a tag before the Carbon Help Manager removes it, use the `HMHideTag` function. `HMHideTag` removes the most recently displayed help tag from the screen. If no help tag is currently visible, `HMHideTag` does nothing.

Availability
Available in CarbonLib 1.5 and later.
Available in Mac OS X 10.1 and later.
Not available to 64-bit applications.

Declared In
`MacHelp.h`

HMInstallControlContentCallback

Installs a help tag callback for a control.

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```
OSStatus HMInstallControlContentCallback (
   ControlRef inControl,
   HMControlContentUPP inContentUPP
);
```

Parameters

inControl

A reference to the control for which to install the help tag callback.

inContentUPP

A universal procedure pointer to the help tag callback.

Return Value

A result code. See "Result Codes" (page 44).

Discussion

`HMInstallControlContentCallback` associates your help tag callback with the control specified in the `inControl` parameter. Thereafter, whenever the user hovers the mouse over this control, the Carbon Help Manager calls your callback to determine the content to display in the help tag for the control. For a description of the help tag callback for a control, see `HMControlContentProcPtr` (page 28).

Availability

Available in CarbonLib 1.0.2 and later.

Available in Mac OS X 10.0 and later.

Not available to 64-bit applications.

Declared In

`MacHelp.h`

HMInstallMenuItemContentCallback

Installs a help tag callback for a menu's items.

```
OSStatus HMInstallMenuItemContentCallback (
   MenuRef inMenu,
   HMMenuItemContentUPP inContentUPP
);
```

Parameters

inMenu

A reference to the menu for which to install the help tag callback.

inContentUPP

A universal procedure pointer to the help tag callback.

Return Value

A result code. See "Result Codes" (page 44).

Discussion

`HMInstallMenuItemContentCallback` associates your help tag callback with the menu specified in the `inMenu` parameter. Thereafter, whenever the user hovers the mouse over a menu item in this menu, the Carbon Help Manager calls your callback to determine the content to display in the help tag for the menu item. For a description of the help tag callback for a menu item, see `HMMenuItemContentProcPtr` (page 29).

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Special Considerations

Although the `HMInstallMenuItemContentCallback` function is available in CarbonLib, CarbonLib currently does not support menu item help tags. Any help tag content you supply for a menu item using a help tag callback in CarbonLib is not displayed.

Availability

Available in CarbonLib 1.0.2 and later.

Available in Mac OS X 10.0 and later.

Not available to 64-bit applications.

Declared In

`MacHelp.h`

HMInstallMenuTitleContentCallback

Installs a help tag callback for a menu title.

```
OSStatus HMInstallMenuTitleContentCallback (
   MenuRef inMenu,
   HMMenuTitleContentUPP inContentUPP
);
```

Parameters

inMenu

A reference to the menu for which to install the help tag callback.

inContentUPP

A universal procedure pointer to the help tag callback.

Return Value

A result code. See "Result Codes" (page 44).

Discussion

`HMInstallMenuTitleContentCallback` associates your help tag callback with the menu specified in the `inMenu` parameter. Thereafter, whenever the user hovers the mouse over the title of this menu in the menu bar, the Carbon Help Manager calls your callback to determine the content to display in the help tag for the menu title. For a description of the help tag callback for a menu title, see `HMMenuTitleContentProcPtr` (page 30).

Special Considerations

Although the `HMInstallMenuTitleContentCallback` function is available in CarbonLib, CarbonLib does not support menu title help tags. Any help tag content you supply for a menu title using a help tag callback in CarbonLib is not displayed.

Availability

Available in CarbonLib 1.0.2 and later.

Available in Mac OS X 10.0 and later.

Not available to 64-bit applications.

Declared In

`MacHelp.h`

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HMInstallWindowContentCallback

Installs a help tag callback for a window.

```
OSStatus HMInstallWindowContentCallback (
   WindowRef inWindow,
   HMWindowContentUPP inContentUPP
);
```

Parameters

inWindow

A reference to the window for which to install the help tag callback.

inContentUPP

A universal procedure pointer to the help tag content callback.

Return Value

A result code. See "Result Codes" (page 44).

Discussion

`HMInstallWindowContentCallback` associates your help tag callback with the window specified in the `inWindow` parameter. Thereafter, whenever the user hovers the mouse over this window, the Carbon Help Manager calls this callback to determine the content to display in the help tag for the window. For a description of the help tag callback for a window, see `HMWindowContentProcPtr` (page 32).

Availability

Available in CarbonLib 1.0.2 and later.

Available in Mac OS X 10.0 and later.

Not available to 64-bit applications.

Declared In

`MacHelp.h`

HMSetControlHelpContent

Associates a help tag with a control.

```
OSStatus HMSetControlHelpContent (
   ControlRef inControl,
   const HMHelpContentRec *inContent
);
```

Parameters

inControl

A reference to the control with which you want to associate the help tag.

inContent

A pointer to a help tag structure that describes the help tag for the control.

Return Value

A result code. See "Result Codes" (page 44).

Discussion

Once you attach a help tag to a control using the `HMSetControlHelpContent` function, this help tag is displayed by the Carbon Help Manager whenever the user hovers the mouse over the control while help tags are enabled.

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Use `HMSetControlHelpContent` to supply the content for a help tag when you create a control. To supply the content for a help tag only when the tag is about to be displayed to the user, install a help tag callback for the control with the function `HMInstallControlContentCallback` (page 15).

Availability
Available in CarbonLib 1.0.2 and later.
Available in Mac OS X 10.0 and later.
Not available to 64-bit applications.

Declared In
`MacHelp.h`

HMSetHelpTagsDisplayed

Enables or disables help tags.

```
OSStatus HMSetHelpTagsDisplayed (
   Boolean inDisplayTags
);
```

Parameters

inDisplayTags
Pass `true` to enable help tags; `false` to disable help tags.

Return Value
A result code. See "Result Codes" (page 44).

Discussion
Help tags are enabled by default when an application is launched; your application does not need to call `HMSetHelpTagsDisplayed` to turn on help tag display. Disabling help tags with `HMSetHelpTagsDisplayed` only turns off help tags in your application; help tag display in other applications is unaffected.

Availability
Available in CarbonLib 1.0.2 and later.
Available in Mac OS X 10.0 and later.
Not available to 64-bit applications.

Declared In
`MacHelp.h`

HMSetMenuItemHelpContent

Associates a help tag with a menu item.

```
OSStatus HMSetMenuItemHelpContent (
   MenuRef inMenu,
   MenuItemIndex inItem,
   const HMHelpContentRec *inContent
);
```

Parameters

inMenu
A reference to the menu containing the menu item with which to associate the help tag.

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inItem

The index of the menu item.

inContent

A pointer to a help tag structure that describes the help tag for the menu item.

Return Value

A result code. See "Result Codes" (page 44).

Discussion

Once you attach a help tag to a menu item using the `HMSetMenuItemHelpContent` function, this help tag is displayed by the Carbon Help Manager whenever the user hovers the mouse over the menu item while help tags are enabled.

Use `HMSetMenuItemHelpContent` to supply the content for a help tag when you create a menu. To supply the content for a help tag only when the tag is about to be displayed to the user, install a help tag callback for the menu's items with the function `HMInstallMenuItemContentCallback` (page 16).

Special Considerations

CarbonLib does not support menu item help tags. Any help tag content you supply with the `HMSetMenuItemHelpContent` function in CarbonLib is not displayed.

In versions of Mac OS X version 10.1 and earlier, the Carbon Help Manager does not correctly interpret an empty rectangle in the `absHotRect` field of the help tag structure passed to `HMSetMenuItemHelpContent` when setting the help content for a menu title. Because there is no Menu Manager function for determining the bounds of a menu title, Apple recommends that you install a help tag callback to supply help content for a menu title. See `HMMenuTitleContentProcPtr` (page 30) for a description of the help tag callback for a menu title.

Availability

Available in CarbonLib 1.0.2 and later.

Available in Mac OS X 10.0 and later.

Not available to 64-bit applications.

Declared In

`MacHelp.h`

HMSetTagDelay

Sets the help tag delay time.

```
OSStatus HMSetTagDelay (
   Duration inDelay
);
```

Parameters

inDelay

The help tag delay time. A positive value represents the delay time in milliseconds; a negative value represents the delay time in microseconds.

Return Value

A result code. See "Result Codes" (page 44).

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Discussion
The help tag delay time is the amount of time that the mouse must remain motionless over a control, window, menu title, or menu item before the associated help tag is displayed.

Availability
Available in CarbonLib 1.0.2 and later.
Available in Mac OS X 10.0 and later.
Not available to 64-bit applications.

Declared In
`MacHelp.h`

HMSetWindowHelpContent

Associates a help tag with a window.

```
OSStatus HMSetWindowHelpContent (
   WindowRef inWindow,
   const HMHelpContentRec *inContent
);
```

Parameters

inWindow
A reference to the window with which to associate the help tag.

inContent
A pointer to a help tag structure that describes the help tag for the window.

Return Value
A result code. See "Result Codes" (page 44).

Discussion
Once you attach a help tag to a window using the `HMSetWindowHelpContent` function, this help tag is displayed by the Carbon Help Manager whenever the user hovers the mouse over the window while help tags are enabled.

Use `HMSetWindowHelpContent` to supply the content for a help tag when you create a window. To supply the content for a help tag only when the tag is about to be displayed to the user, install a help tag callback for the window with the function `HMInstallWindowContentCallback` (page 18).

Availability
Available in CarbonLib 1.0.2 and later.
Available in Mac OS X 10.0 and later.
Not available to 64-bit applications.

Declared In
`MacHelp.h`

InvokeHMControlContentUPP

Calls your help tag callback for a control.

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```
OSStatus InvokeHMControlContentUPP (
   ControlRef inControl,
   Point inGlobalMouse,
   HMContentRequest inRequest,
   HMContentProvidedType *outContentProvided,
   HMHelpContentRec *ioHelpContent,
   HMControlContentUPP userUPP
);
```

Parameters

inControl

A reference to the control for which the callback should supply help tag content.

inGlobalMouse

The current mouse position, in global coordinates.

inRequest

A value that specifies the type of the help tag content request. See "Content Request Types" (page 37) for a description of the possible requests.

outContentProvided

On output, a pointer to a value that indicates whether the help tag callback was able to fulfill the request specified in the `inRequest` parameter. See "Content Provided Types" (page 42) for a description of the values returned here.

ioHelpContent

A pointer to a help tag structure that describes the help tag for the control. On input, you must supply a value in the `version` field. On output, if the value of the `outContentProvided` parameter is `kHMContentProvided`, the help tag structure describes the help tag for the control.

userUPP

A universal procedure pointer to the help tag callback to invoke.

Return Value

A result code. See "Result Codes" (page 44).

Discussion

Use this function to invoke your help tag callback for a control, rather than calling your callback directly, to ensure code compatibility across different compiler targets. Typically, you do not need to invoke a help tag callback yourself. If you associate your callback with a control, using the `HMInstallControlContentCallback` (page 15) function, the operating system calls your callback when it is needed. For more information on the help tag callback for a control, see `HMControlContentProcPtr` (page 28).

Availability

Available in CarbonLib 1.0.2 and later.

Available in Mac OS X 10.0 and later.

Declared In

`MacHelp.h`

InvokeHMMenuItemContentUPP

Calls your help tag callback for a menu item.

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```
OSStatus InvokeHMMenuItemContentUPP (
   const MenuTrackingData *inTrackingData,
   HMContentRequest inRequest,
   HMContentProvidedType *outContentProvided,
   HMHelpContentRec *ioHelpContent,
   HMMenuItemContentUPP userUPP
);
```

Parameters

inTrackingData

A pointer to the tracking information for the menu for which the callback should provide a menu-item help tag. The specific menu item for which the callback should provide a help tag is at the index number given in the `itemUnderMouse` field of the tracking data structure.

inRequest

A value that specifies the type of the help tag content request. See "Content Request Types" (page 37) for a description of the possible requests.

outContentProvided

On output, a pointer to a value that indicates whether the help tag callback was able to fulfill the request specified in the `inRequest` parameter. See "Content Provided Types" (page 42) for a description of the values returned here.

ioHelpContent

A pointer to a help tag structure that describes the help tag for the menu item. On input, you must supply a value in the `version` field. On output, if the value of the `outContentProvided` parameter is `kHMContentProvided`, the help tag structure describes the menu-item help tag.

userUPP

A universal procedure pointer to the help tag callback to invoke.

Return Value

A result code. See "Result Codes" (page 44).

Discussion

Use this function to invoke your help tag callback for a menu item, rather than calling your callback directly, to ensure code compatibility across different compiler targets. Typically, you do not need to invoke a help tag callback yourself. If you associate your callback with a menu's items, using the `HMInstallMenuItemContentCallback` (page 16) function, the operating system calls your callback when it is needed. For more information on the help tag callback for a menu item, see `HMMenuItemContentProcPtr` (page 29).

Availability

Available in CarbonLib 1.0.2 and later.

Available in Mac OS X 10.0 and later.

Declared In

`MacHelp.h`

InvokeHMMenuTitleContentUPP

Calls your help tag callback for a menu title.

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```
OSStatus InvokeHMMenuTitleContentUPP (
   MenuRef inMenu,
   HMContentRequest inRequest,
   HMContentProvidedType *outContentProvided,
   HMHelpContentRec *ioHelpContent,
   HMMenuTitleContentUPP userUPP
);
```

Parameters

inMenu

A reference to the menu for which to provide a help tag.

inRequest

A value that specifies the type of the help tag content request. See "Content Request Types" (page 37) for a description of the possible requests.

outContentProvided

On output, a pointer to a value that indicates whether the help tag callback was able to fulfill the request specified in the `inRequest` parameter. See "Content Provided Types" (page 42) for a description of the values returned here

ioHelpContent

A pointer to a help tag structure that describes the help tag for the menu title. On input, you must supply a value in the `version` field. On output, if the value of the `outContentProvided` parameter is `kHMContentProvided`, the help tag structure describes the menu-title help tag.

userUPP

A universal procedure pointer to the help tag callback to invoke.

Return Value

A result code. See "Result Codes" (page 44).

Discussion

Use this function to invoke your help tag callback for a menu title, rather than calling your callback directly, to ensure code compatibility across different compiler targets. Typically, you do not need to invoke a help tag callback yourself. If you associate your callback with a menu, using the `HMInstallMenuTitleContentCallback` (page 17) function, the operating system calls your callback when it is needed. For more information on the help tag callback for a menu title, see `HMMenuTitleContentProcPtr` (page 30).

Availability

Available in CarbonLib 1.0.2 and later.

Available in Mac OS X 10.0 and later.

Declared In

`MacHelp.h`

InvokeHMWindowContentUPP

Calls your help tag callback for a window.

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```
OSStatus InvokeHMWindowContentUPP (
   WindowRef inWindow,
   Point inGlobalMouse,
   HMContentRequest inRequest,
   HMContentProvidedType *outContentProvided,
   HMHelpContentRec *ioHelpContent,
   HMWindowContentUPP userUPP
);
```

Parameters

inWindow

A reference to the window for which the callback should provide a help tag.

inGlobalMouse

The current mouse position, in global coordinates.

inRequest

A value that specifies the type of the help tag content request. See "Content Request Types" (page 37) for a description of the possible requests.

outContentProvided

On output, a pointer to a value that indicates whether the help tag callback was able to fulfill the request specified in the `inRequest` parameter. See "Content Provided Types" (page 42) for a description of the values returned here.

ioHelpContent

A pointer to a help tag structure that describes the help tag for the window. On input, you must supply a value in the `version` field. On output, if the value of the `outContentProvided` parameter is `kHMContentProvided`, the help tag structure describes the help tag for the window.

userUPP

A universal procedure pointer to the help tag callback to invoke.

Return Value

A result code. See "Result Codes" (page 44).

Discussion

Use this function to invoke your help tag callback for a window, rather than calling your callback directly, to ensure code compatibility across different compiler targets. Typically, you do not need to invoke a help tag callback yourself. If you associate your callback with a window, using the `HMInstallWindowContentCallback` (page 18) function, the operating system calls your callback when it is needed. For more information on the help tag callback for a window, see `HMWindowContentProcPtr` (page 32).

Availability

Available in CarbonLib 1.0.2 and later.

Available in Mac OS X 10.0 and later.

Declared In

`MacHelp.h`

NewHMControlContentUPP

Creates a new universal procedure pointer (UPP) to a help tag callback for a control.

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```
HMControlContentUPP NewHMControlContentUPP (
   HMControlContentProcPtr userRoutine
);
```

Parameters

userRoutine

A pointer to your help tag callback. See `HMControlContentProcPtr` data type fir a description.

Return Value

On return, a UPP to the help tag callback. See `HMControlContentUPP` data type for a description.

Discussion

Pass the UPP returned by `NewHMControlContentUPP` to the `HMInstallControlContentCallback` (page 15) function to install your help tag callback with a control. When you are finished with the help tag callback—for example, when you dispose of the control—you should dispose of the UPP with the `DisposeHMControlContentUPP` (page 7) function.

Availability

Available in CarbonLib 1.0.2 and later.

Available in Mac OS X 10.0 and later.

Declared In

`MacHelp.h`

NewHMMenuItemContentUPP

Creates a new universal procedure pointer (UPP) to a help tag callback for a menu item.

```
HMMenuItemContentUPP NewHMMenuItemContentUPP (
   HMMenuItemContentProcPtr userRoutine
);
```

Parameters

userRoutine

A pointer to your help tag callback.

Return Value

On return, a UPP to the help tag callback. See the `HMMenuItemContentUPP` data type for a description.

Discussion

Pass the UPP returned by `NewHMMenuItemContentUPP` to the `HMInstallMenuItemContentCallback` (page 16) function to install your help tag callback with a menu's items. When you are finished with the help tag callback—for example, when you dispose of the menu—you should dispose of the UPP with the `DisposeHMMenuItemContentUPP` (page 8) function.

Availability

Available in CarbonLib 1.0.2 and later.

Available in Mac OS X 10.0 and later.

Declared In

`MacHelp.h`

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NewHMMenuTitleContentUPP

Creates a new universal procedure pointer (UPP) to a help tag callback for a menu title.

```
HMMenuTitleContentUPP NewHMMenuTitleContentUPP (
   HMMenuTitleContentProcPtr userRoutine
);
```

Parameters

userRoutine

A pointer to your help tag callback.

Return Value

On return, a UPP to the help tag callback. See the `HMMenuTitleContentUPP` data type for a description

Discussion

Pass the UPP returned by `NewHMMenuTitleContentUPP` to the `HMInstallMenuTitleContentCallback` (page 17) function to install your help tag callback with a menu's title. When you are finished with the help tag callback—for example, when you dispose of the menu—you should dispose of the UPP with the `DisposeHMMenuTitleContentUPP` (page 8) function.

Availability

Available in CarbonLib 1.0.2 and later.

Available in Mac OS X 10.0 and later.

Declared In

`MacHelp.h`

NewHMWindowContentUPP

Creates a new universal procedure pointer (UPP) to a help tag callback for a window.

```
HMWindowContentUPP NewHMWindowContentUPP (
   HMWindowContentProcPtr userRoutine
);
```

Parameters

userRoutine

A pointer to your help tag callback.

Return Value

On return, a UPP to the help tag callback function. See the `HMWindowContentUPP` data type for a description.

Discussion

Pass the UPP returned by `NewHMWindowContentUPP` to the `HMInstallWindowContentCallback` (page 18) function to install your help tag callback with a window. When you are finished with the help tag callback—for example, when you dispose of the window—you should dispose of the UPP with the `DisposeHMWindowContentUPP` (page 9) function.

Availability

Available in CarbonLib 1.0.2 and later.

Available in Mac OS X 10.0 and later.

Declared In

`MacHelp.h`

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Callbacks

HMControlContentProcPtr

Defines a pointer to the help tag callback for a control. Your help tag callback provides help tag content for a control.

```
typedef OSStatus(* HMControlContentProcPtr)
(
    ControlRef inControl,
    Point inGlobalMouse,
    HMContentRequest inRequest,
    HMContentProvidedType *outContentProvided,
    HMHelpContentPtr ioHelpContent
);
```

If you name your function `MyHMControlContentCallback`, you would declare it like this:

```
OSStatus MyHMControlContentCallback (
    ControlRef inControl,
    Point inGlobalMouse,
    HMContentRequest inRequest,
    HMContentProvidedType *outContentProvided,
    HMHelpContentPtr ioHelpContent
);
```

Parameters

inControl

A reference to the control for which your callback should supply help tag content.

inGlobalMouse

The current mouse position, in global coordinates.

inRequest

A value that specifies the type of the help tag content request. See "Content Request Types" (page 37) for a description of the possible requests.

outContentProvided

On output, a pointer to a value that indicates whether your help tag callback was able to fulfill the request specified in the `inRequest` parameter. Your callback should return one of the constants described in "Content Provided Types" (page 42).

ioHelpContent

A pointer to a help tag structure that describes the help tag for the control. On input, the Carbon Help Manager supplies a value in the `version` field. If the value of the `inRequest` parameter is `kHMSupplyContent`, your callback must fill in the remaining fields of the structure or specify that it was unable to fulfill the help tag content request.

Return Value

A result code. See "Result Codes" (page 44).

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Discussion
When the user hovers the mouse over a control for which you've registered a help tag callback, the Carbon Help Manager calls your callback with a `kHMSupplyContent` request in the `inRequest` parameter. To supply a help tag, your callback should fill in the fields of the help tag structure pointed to in the `ioHelpContent` parameter.

When the help tag for the control is no longer needed, the Carbon Help Manager calls your callback with a `kHMDisposeContent` request. When you receive this request, you should free any memory allocated for the help tag content and perform any other cleanup necessary before the Carbon Help Manager removes the help tag from the screen.

If your help tag callback handles the content request, your callback should return the constant `kHMContentProvided` in the `outContentProvided` parameter. Otherwise, your callback should indicate that it was unable to handle the help tag content request by returning the constant `kHMContentNotProvided` in the `outContentProvided` parameter.

To register a help tag callback with a control, pass a universal procedure pointer (UPP) to your callback function to the `HMInstallControlContentCallback` (page 15) function. You can create a UPP to your callback function with the `NewHMControlContentUPP` (page 25) function.

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

Declared In
`MacHelp.h`

HMMenuItemContentProcPtr

Defines a pointer to the help tag callback for a menu item. Your help tag callback provides help tag content for a menu item.

```
typedef OSStatus(* HMMenuItemContentProcPtr)
(
    const MenuTrackingData *inTrackingData,
    HMContentRequest inRequest,
    HMContentProvidedType *outContentProvided,
    HMHelpContentPtr ioHelpContent
);
```

If you name your function `MyHMMenuItemContentCallback`, you would declare it like this:

```
OSStatus MyHMMenuItemContentCallback (
    const MenuTrackingData *inTrackingData,
    HMContentRequest inRequest,
    HMContentProvidedType *outContentProvided,
    HMHelpContentPtr ioHelpContent
);
```

Parameters

`inTrackingData`

A pointer to the tracking information for the menu for which your callback should provide a menu-item help tag. The specific menu item for which your callback should provide a help tag is at the index number given in the `itemUnderMouse` field of the tracking data structure.

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inRequest

A value that specifies the type of the help tag content request. See "Content Request Types" (page 37) for a description of the possible requests.

outContentProvided

On output, a pointer to a value that indicates whether your help tag callback was able to fulfill the request specified in the `inRequest` parameter. Your callback should return one of the constants described in "Content Provided Types" (page 42).

ioHelpContent

A pointer to a help tag structure that describes the help tag for the menu item. On input, the Carbon Help Manager supplies a value in the `version` field. If the value of the `inRequest` parameter is `kHMSupplyContent`, your callback must fill in the remaining fields of the structure or specify that it was unable to fulfill the help tag content request.

Return Value
A result code. See "Result Codes" (page 44).

Discussion
When the user hovers the mouse over a menu item in a menu for which you've registered a help tag callback, the Carbon Help Manager calls your callback with a `kHMSupplyContent` request in the `inRequest` parameter. To supply a help tag, your callback should fill in the remaining fields of the help tag structure pointed to in the `ioHelpContent` parameter.

When the help tag for the menu item is no longer needed, the Carbon Help Manager calls your callback with a `kHMDisposeContent` request. When you receive this request, you should free any memory allocated for the help tag content and perform any other cleanup necessary before the Carbon Help Manager removes the help tag from the screen.

If your help tag callback handles the request for help tag content, your callback should return the constant `kHMContentProvided` in the `outContentProvided` parameter. Otherwise, your callback should indicate that it was unable to handle the help tag content request by returning the constant `kHMContentNotProvided` in the `outContentProvided` parameter.

To register a menu-item help tag callback with a menu, pass a universal procedure pointer (UPP) to your callback function to the `HMInstallMenuItemContentCallback` (page 16) function. You can create a UPP to your callback function with the `NewHMMenuItemContentUPP` (page 26) function.

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

Declared In
`MacHelp.h`

HMMenuTitleContentProcPtr

Defines a pointer to the help tag callback for a menu title. Your help tag callback provides help tag content for a menu's title.

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```
typedef OSStatus(* HMMenuTitleContentProcPtr)
(
    MenuRef inMenu,
    HMContentRequest inRequest,
    HMContentProvidedType *outContentProvided,
    HMHelpContentPtr ioHelpContent
);
```

If you name your function `MyHMMenuTitleContentCallback`, you would declare it like this:

```
OSStatus MyHMMenuTitleContentCallback (
    MenuRef inMenu,
    HMContentRequest inRequest,
    HMContentProvidedType *outContentProvided,
    HMHelpContentPtr ioHelpContent
);
```

Parameters

inMenu

A reference to the menu for which to provide help tag content.

inRequest

A value that specifies the type of the help tag content request. See "Content Request Types" (page 37) for a description of the possible requests.

outContentProvided

On output, a pointer to a value that indicates whether your help tag callback was able to fulfill the request specified in the `inRequest` parameter. Your callback should return one of the constants described in "Content Provided Types" (page 42).

ioHelpContent

A pointer to a help tag structure that describes the help tag for the menu title. On input, the Carbon Help Manager supplies a value in the `version` field. If the value of the `inRequest` parameter is `kHMSupplyContent`, your callback must fill in the remaining fields of the structure or specify that it was unable to fulfill the help tag content request.

Return Value

A result code. See "Result Codes" (page 44).

Discussion

When the user hovers the mouse over the title of a menu for which you've registered a help tag callback, the Carbon Help Manager calls your callback with a `kHMSupplyContent` request in the `inRequest` parameter. To supply a help tag, your callback should fill in the remaining fields of the help tag structure pointed to in the `ioHelpContent` parameter.

When the help tag for the menu title is no longer needed, the Carbon Help Manager calls your callback with a `kHMDisposeContent` request. When you receive this request, you should free any memory allocated for the help tag content and perform any other cleanup necessary before the Carbon Help Manager removes the help tag from the screen.

If your help tag callback handles the request for help tag content, your callback should return the constant `kHMContentProvided` in the `outContentProvided` parameter. Otherwise, your callback should indicate that it was unable to handle the help tag content request by returning the constant `kHMContentNotProvided` in the `outContentProvided` parameter.

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To register a menu title help tag callback with a menu, pass a universal procedure pointer (UPP) to your callback function to the `HMInstallMenuTitleContentCallback` (page 17) function. You can create a UPP to your callback function with the `NewHMMenuTitleContentUPP` (page 27) function.

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

Declared In
`MacHelp.h`

HMWindowContentProcPtr

Defines a pointer to the help tag callback for a window. Your help tag callback provides help tag content for a window.

```
typedef OSStatus(* HMWindowContentProcPtr)
(
    WindowRef inWindow,
    Point inGlobalMouse,
    HMContentRequest inRequest,
    HMContentProvidedType *outContentProvided,
    HMHelpContentPtr ioHelpContent
);
```

If you name your function `MyHMWindowContentCallback`, you would declare it like this:

```
OSStatus MyHMWindowContentCallback (
    WindowRef inWindow,
    Point inGlobalMouse,
    HMContentRequest inRequest,
    HMContentProvidedType *outContentProvided,
    HMHelpContentPtr ioHelpContent
);
```

Parameters

inWindow
A reference to the window for which your callback should provide help tag content.

inGlobalMouse
The current mouse position, in global coordinates.

inRequest
A value that specifies the type of the help tag content request. See "Content Request Types" (page 37) for a description of the possible requests.

outContentProvided
On output, a pointer to a value that indicates whether your help tag callback was able to fulfill the request specified in the `inRequest` parameter. Your callback should return one of the constants described in "Content Provided Types" (page 42).

ioHelpContent
A pointer to a help tag structure that describes the help tag for the window. On input, the Carbon Help Manager supplies a value in the `version` field. If the value of the `inRequest` parameter is `kHMSupplyContent`, your callback must fill in the remaining fields of the structure or specify that it was unable to fulfill the help tag content request.

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Return Value
A result code. See "Result Codes" (page 44).

Discussion
When the user hovers the mouse over a window for which you've registered a help tag callback, the Carbon Help Manager calls your callback with a `kHMSupplyContent` request in the `inRequest` parameter. To supply a help tag, your callback should fill in the fields of the help tag structure pointed to in the `ioHelpContent` parameter.

When the help tag for the window is no longer needed, the Carbon Help Manager calls your callback with a `kHMDisposeContent` request. When you receive this request, you should free any memory allocated for the help tag content and perform any other cleanup necessary before the Carbon Help Manager removes the help tag from the screen.

If your help tag callback handles the request for help tag content, your callback should return the constant `kHMContentProvided` in the `outContentProvided` parameter. Otherwise, your callback should indicate that it was unable to handle the help tag content request by returning the constant `kHMContentNotProvided` in the `outContentProvided` parameter.

To register a help tag callback with a window, pass a universal procedure pointer (UPP) to your callback function to the `HMInstallWindowContentCallback` (page 18) function. You can create a UPP to your callback function with the `NewHMWindowContentUPP` (page 27) function.

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

Declared In
`MacHelp.h`

Data Types

HMHelpContentRec

Describes a help tag.

```
struct HMHelpContentRec {
    SInt32 version;
    Rect absHotRect;
    HMTagDisplaySide tagSide;
    HMHelpContent content[2];
};
typedef struct HMHelpContentRec HMHelpContentRec;
```

Fields
`version`
The structure version.

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`absHotRect`

The hot rectangle for the help tag, expressed in global coordinates. The hot rectangle defines the area on the screen over which the user must hover the mouse to trigger the Carbon Help Manager to display the help tag.

You may pass an empty rectangle—a rectangle with coordinates (0,0,0,0)—in this field. The Carbon Help Manager automatically substitutes the current location of the control, window, or menu item for the empty rectangle when the help tag is displayed.

`tagSide`

A value that specifies which side of the hot rectangle the help tag is displayed. For a description of the constants used here, see "Help Tag Display Locations" (page 39).

`content`

An array of two help tag content structures describing the help message for the tag. The first structure describes the content displayed by default in the help tag (the minimum content). The second structure describes additional content that is displayed in the help tag if the user holds down the Command key while the help tag is displayed (the maximum, or expanded, content).

Special Considerations

On Mac OS X version 10.1.x and earlier, you cannot supply an empty hot rectangle from a help tag callback. You can, however, supply an empty hot rectangle to the `HMSetControlHelpContent`, `HMSetWindowHelpContent`, and `HMSetMenuItemHelpContent` functions.

When you supply an empty hot rectangle for a control help tag, the Carbon Help Manager uses the function `LocalToGlobal` to convert the control's bounds from window-local coordinates into global coordinates. `LocalToGlobal` only returns true global coordinates if the port origin is (0,0). If your application sets the port origin to a non-zero value, it should do so only temporarily; your application should never leave the port origin set to a non-zero value across calls to the event system that may attempt to display a help tag. Setting the port origin to a non-zero value typically prevents help tags from being displayed.

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

Declared In
`MacHelp.h`

HMHelpContentPtr

A pointer to a help tag structure.

```
typedef HMHelpContentRec* HMHelpContentPtr;
```

Discussion
See `HMHelpContentRec` (page 33) for more information.

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

Declared In
`MacHelp.h`

HMHelpContent

Contains a help tag message.

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```
struct HMHelpContent {
    HMContentType contentType;
    union {
        CFStringRef tagCFString;
        Str255 tagString;
        HMStringResType tagStringRes;
        TEHandle tagTEHandle;
        SInt16 tagTextRes;
          SInt16 tagStrRes;
    } u;
};
```

Fields

`contentType`

A value that indicates the format of the help content contained in the structure. The help tag content formats that are allowed are described by the constants "Help Tag Content Types" (page 38).

`tagCFString`

If the value of the `contentType` field is `kHMCFStringContent`, a CFString specifying the help tag message. If the value of the `contentType` field is `kHMCFStringLocalizedContent`, a CFString containing the name of the localized help tag message in the `Localizable.strings` file.

`tagString`

If the value of the `contentType` field is `kHMPascalStrContent`, a Pascal string specifying the help tag message.

`tagStringRes`

If the value of the `contentType` field is `kHMStringResContent`, a 'STR#' resource ID and an index number specifying the help tag message.

`tagTEHandle`

If the value of the `contentType` field is `kHMTEHandleContent`, a TextEdit handle specifying the help tag message. This type of help tag content is only supported in CarbonLib and in Mac OS X version 10.2 and later.

`tagTextRes`

If the value of the `contentType` field is `kHMTextResContent`, the resource ID of a 'TEXT' resource and a 'styl' resource describing the help tag message. This type of help tag content is only supported in CarbonLib and in Mac OS X version 10.2 and later.

`tagStrRes`

If the value of the `contentType` field is `kHMStrResContent`, a 'STR ' resource ID, specifying the help tag message.

Discussion

The `HMHelpContent` structure is used in the `content` field of the `HMHelpContentRec` (page 33) structure to hold the help content associated with a help tag. The `HMHelpContent` structure describes a single help message.

HMControlContentUPP

Defines a universal procedure pointer to the help tag callback for a control.

```
typedef struct OpaqueHMControlContentProcPtr* HMControlContentUPP;
```

Discussion

For more information, see the description of the `HMControlContentProcPtr` (page 28) callback function.

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

Declared In
`MacHelp.h`

HMWindowContentUPP

Defines a universal procedure pointer to the help tag callback for a window.

```
typedef struct OpaqueHMWindowContentProcPtr* HMWindowContentUPP;
```

Discussion
For more information, see the description of the `HMWindowContentProcPtr` (page 32) callback function.

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

Declared In
`MacHelp.h`

HMMenuItemContentUPP

Defines a universal procedure pointer to the help tag callback for a menu item.

```
typedef struct OpaqueHMMenuItemContentProcPtr* HMMenuItemContentUPP;
```

Discussion
For more information, see the description of the `HMMenuItemContentProcPtr` (page 29) callback function.

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

Declared In
`MacHelp.h`

HMMenuTitleContentUPP

Defines a universal procedure pointer to the help tag callback for a menu title.

```
typedef struct OpaqueHMMenuTitleContentProcPtr* HMMenuTitleContentUPP;
```

Discussion
For more information, see the description of the `HMMenuTitleContentProcPtr` (page 30) callback function.

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

Declared In
`MacHelp.h`

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Constants

Help Manager Version

Represents the current version of the `HMHelpContentRec` structure.

```
enum {
    kMacHelpVersion = 3
};
```

Constants

`kMacHelpVersion`

The current structure version.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

Discussion

When the Carbon Help Manager calls your help tag callback, it supplies the `kMacHelpVersion` constant in the `version` field of the `HMHelpContentRec` (page 33) structure it passes to your callback.

Content Request Types

Identify the type of request made to a help tag callback.

```
typedef SInt16 HMContentRequest;
enum {
    kHMSupplyContent =                0,
    kHMDisposeContent =                1
};
```

Constants

`kHMSupplyContent`

The help tag callback should supply help content.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

`kHMDisposeContent`

The help tag callback should dispose of help content.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

Discussion

These constants are passed to your help tag callback in the `inRequest` parameter to indicate the nature of the help tag content request. In particular, the Carbon Help Manager passes `kHMSupplyContent` when the user pauses with the mouse above a user interface object for which a help tag callback is registered. When the user moves the mouse away from the object, the Carbon Help Manager passes `kHMDisposeContent` to your callback.

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Help Tag Content Types

Identify the type of content contained in a help tag.

```
typedef UInt32 HMContentType;
enum {
    kHMNoContent = 'none',
    kHMCFStringContent = 'cfst',
    kHMCFStringLocalizedContent = ‘cfsl’,
    kHMPascalStrContent = 'pstr',
    kHMStringResContent = 'str#',
    kHMTEHandleContent = 'txth',
    kHMTextResContent = 'text',
    kHMStrResContent = 'str '
};
```

Constants

`kHMNoContent`

The help tag contains no content.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

`kHMCFStringContent`

The help tag content is a CFString object.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

`kHMCFStringLocalizedContent`

The help tag content is a localized string contained in the `Localizeable.strings` file. The `content` field of the help tag structure contains a CFString key which the Carbon Help Manager uses to retrieve the help tag string from the `Localizable.strings` file in the appropriate language folder.

Available in Mac OS X v10.2 and later.

Declared in `MacHelp.h`.

`kHMPascalStrContent`

The help tag content is a Pascal string.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

`kHMStringResContent`

The help tag content is a text string, stored in the list of strings in a resource of type '`STR#`'.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

`kHMTEHandleContent`

The help tag content is contained in a TextEdit record, referred to by a TextEdit handle. This type of help tag content is only supported in CarbonLib and in Mac OS X version 10.2 and later.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

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`kHMTextResContent`
The help tag content is styled text, described by the combination of a text resource ('`TEXT`') and a style resource ('`styl`'). This type of help tag content is only supported in CarbonLib and in Mac OS X version 10.2 and later.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

`kHMStrResContent`
The help tag content is a text string stored in a resource of type '`STR `'.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

Discussion
These constants are used in the `contentType` field of the `HMHelpContent` (page 34) structure to identify the format of the help content contained in that structure.

Help Tag Display Locations

Specify which side of the hot rectangle to display the help tag.

```
typedef SInt16 HMTagDisplaySide;
enum {
    kHMDefaultSide = 0,
    kHMOutsideTopScriptAligned = 1,
    kHMOutsideLeftCenterAligned = 2,
    kHMOutsideBottomScriptAligned = 3,
    kHMOutsideRightCenterAligned = 4,
    kHMOutsideTopLeftAligned = 5,
    kHMOutsideTopRightAligned = 6,
    kHMOutsideLeftTopAligned = 7,
    kHMOutsideLeftBottomAligned = 8,
    kHMOutsideBottomLeftAligned = 9,
    kHMOutsideBottomRightAligned = 10,
    kHMOutsideRightTopAligned = 11,
    kHMOutsideRightBottomAligned = 12,
    kHMOutsideTopCenterAligned = 13,
    kHMOutsideBottomCenterAligned = 14,
    kHMInsideRightCenterAligned = 15,
    kHMInsideLeftCenterAligned = 16,
    kHMInsideBottomCenterAligned = 17,
    kHMInsideTopCenterAligned = 18,
    kHMInsideTopLeftCorner = 19,
    kHMInsideTopRightCorner = 20,
    kHMInsideBottomLeftCorner = 21,
    kHMInsideBottomRightCorner = 22,
    kHMAbsoluteCenterAligned = 23
};
```

Constants
`kHMDefaultSide`
Display the help tag at the default system location. The system default is below the hot rectangle, horizontally centered.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

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`kHMOutsideTopScriptAligned`
Display the help tag above the hot rectangle, aligned with the right or left side, depending upon the direction of the system script.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

`kHMOutsideLeftCenterAligned`
Display the help tag to the left of the hot rectangle, centered vertically.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

`kHMOutsideBottomScriptAligned`
Display the help tag below the hot rectangle, aligned with the right or left side, depending upon the direction of the system script.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

`kHMOutsideRightCenterAligned`
Display the help tag to the right of the hot rectangle, centered vertically.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

`kHMOutsideTopLeftAligned`
Display the help tag above the hot rectangle, with their left edges aligned.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

`kHMOutsideTopRightAligned`
Display the help tag above the hot rectangle, with their right edges aligned.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

`kHMOutsideLeftTopAligned`
Display the help tag to the left of the hot rectangle, with their top edges aligned.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

`kHMOutsideLeftBottomAligned`
Display the help tag to the left of the hot rectangle, with their bottom edges aligned.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

`kHMOutsideBottomLeftAligned`
Display the help tag below the hot rectangle, with their left edges aligned.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

`kHMOutsideBottomRightAligned`
Display the help tag below the hot rectangle, with their right edges aligned.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

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`kHMOutsideRightTopAligned`
Display the help tag to the right of the hot rectangle, with their top edges aligned.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

`kHMOutsideRightBottomAligned`
Display the help tag to the right of the hot rectangle, with their bottom edges aligned.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

`kHMOutsideTopCenterAligned`
Display the help tag above the hot rectangle, centered horizontally.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

`kHMOutsideBottomCenterAligned`
Display the help tag below the hot rectangle, centered horizontally.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

`kHMInsideRightCenterAligned`
Display the help tag inside the hot rectangle, with their right edges aligned and centered vertically.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

`kHMInsideLeftCenterAligned`
Display the help tag inside the hot rectangle, with their left edges aligned and centered vertically.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

`kHMInsideBottomCenterAligned`
Display the help tag inside the hot rectangle, with their bottom edges aligned and centered horizontally.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

`kHMInsideTopCenterAligned`
Display the help tag inside the hot rectangle, with their top edges aligned and centered horizontally.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

`kHMInsideTopLeftCorner`
Display the help tag inside the hot rectangle, with their top and left edges aligned.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

`kHMInsideTopRightCorner`
Display the help tag inside the hot rectangle, with their top and right edges aligned.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

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`kHMInsideBottomLeftCorner`
Display the help tag inside the hot rectangle, with their bottom and left edges aligned.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

`kHMInsideBottomRightCorner`
Display the help tag inside the hot rectangle, with their bottom and right edges aligned.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

`kHMAbsoluteCenterAligned`
Display the help tag centered vertically and horizontally within the hot rectangle.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

Discussion
The locations described by these constants are relative to the help tag's hot rectangle, which defines, in global coordinates, the area on the screen with which the help tag is associated. These constants are used in the `tagSide` field of the `HMHelpContentRec` (page 33) structure.

Content Provided Types

Indicate whether or not help tag content has been supplied.

```
typedef SInt16 HMContentProvidedType;
enum {
    kHMContentProvided = 0,
    kHMContentNotProvided = 1,
    kHMContentNotProvidedDontPropagate = 2
};
```

Constants
`kHMContentProvided`
Help tag content has been provided.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

`kHMContentNotProvided`
Help tag content was not provided. When your callback returns this constant, the Carbon Help Manager calls up to the next help tag callback in the hierarchy. If that callback also fails to provide help content, the Carbon Help Manager continues to propagate the request for help tag content until the request is fulfilled, the top of the hierarchy is reached, or a help tag callback tells the Carbon Help Manager to stop propagating the request.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

`kHMContentNotProvidedDontPropagate`
Help tag content was not provided. When your callback returns this constant, the Carbon Help Manager assumes that there is no help content for the control, window, menu title, or menu item and does not propagate the request.

Available in Mac OS X v10.0 and later.

Declared in `MacHelp.h`.

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Discussion
Your help tag callback function should return one of these constants in its `outContentProvided` parameter.

Help Tag Content Indexes

Identify an index into the array of help tag content structures in a help tag.

```
enum {
    kHMMinimumContentIndex = 0,
    kHMMaximumContentIndex = 1
};
```

Constants

`kHMMinimumContentIndex`
The index of the help tag's minimum (or default) content.
Available in Mac OS X v10.0 and later.
Declared in `MacHelp.h`.

`kHMMaximumContentIndex`
The index of the help tag's maximum (or expanded) content.
Available in Mac OS X v10.0 and later.
Declared in `MacHelp.h`.

Discussion
These constants are used to access the minimum or maximum content of a help tag, in the `content` field of the `HMHelpContentRec` (page 33) structure.

Obsolete Help Tag Display Locations

Indicate the side of the hot rectangle on which the help tag should be displayed.

```
enum {
    kHMTopSide = 1,
    kHMLeftSide = 2,
    kHMBottomSide = 3,
    kHMRightSide = 4,
    kHMTopLeftCorner = 5,
    kHMTopRightCorner = 6,
    kHMLeftTopCorner = 7,
    kHMLeftBottomCorner = 8,
    kHMBottomLeftCorner = 9,
    kHMBottomRightCorner = 10,
    kHMRightTopCorner = 11,
    kHMRightBottomCorner = 12
};
```

Discussion
These constants have been replaced by the constants described in "Help Tag Display Locations"; you should use those constants instead.

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Result Codes

The most common result codes returned by the Carbon Help Manager are listed in the table below.

Result Code	Value	Description
`errHMIllegalContentForMinimumState`	-10980	Minimum content for a help tag is unrecognized. Available in Mac OS X v10.0 and later.
`errHMIllegalContentForMaximumState`	-10981	Maximum content for a help tag is unrecognized. Available in Mac OS X v10.0 and later.

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Document Revision History

This table describes the changes to *Carbon Help Manager Reference*.

Date	Notes
2004-03-01	Corrected availability information for `HMDisplayTag` (page 9) and `HMHideTag` (page 15).
2003-01-01	Updated formatting.
2002-06-01	Updated for Mac OS X version 10.2

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