

# PAScrollViewDeluxe

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**Inherits From:** ScrollView: View : Responder : Object

**Declared In:** PAScrollViewDeluxe.h

## Class Description

This object is an enhanced subclass of ScrollView. It adds the following features:

Support for a 'top view', a view at the top of the scroll view that scrolls horizontally with the document but remains static when the document is scrolled vertically. This is useful to add column headers, rulers, etc, to a document. The top view can be added from inside of IB by connecting the

topView outlet.

Support for a 'left view', a view to the left of the scroll view that scrolls vertically with the document, but remains static when the document is scrolled horizontally. This is useful for adding rulers, line numbers, etc, to a document. The left view can be added from inside of IB by connecting the leftView outlet.

Automatic support for rulers. If a topView or leftView has not been set, a call to setShowTopView:YES, setShowLeftView:YES, showRulers: or toggleRulers: will instantiate a member of rulerClass (see setRulerClass:). Depending on which ruler is called, the scrollview will try to call setHorizontal or setVertical on the new rulerClass instance. The default class is Ruler (from Draw). A ruler that supports flipping and smooth zooming is forthcoming.

Support for synchronizing other scroll views. Other ScrollViews can be made to scroll, size and zoom with respect to the docView by using the addSyncViews: methods. This is useful for ruler type views that need to exist outside of the scrollers. One synchronized view of each type can be added in IB by connecting a given ScrollView to the syncViews, horizSyncViews or vertSyncViews outlets. Be sure and connect to a ScrollView and not its content view (this can be tricky for ScrollViews without scrollers). Synchronized ScrollViews should not have scrollers of their own (but they can).

Automatic support for page up/down & left/right buttons. Simply call the method `setPageUpDownButtonsVisible:YES` or `setPageLeftRightButtonsVisible:YES` and these are added automatically. They are removed temporarily if the scroller is too small (less than an inch), if there is nothing to be scrolled or if the scrolling area is less than 2 pages.

Automatic support for zooming. Simply call the method `setShowZoomButton:YES` and a popup list containing zoom values will be added to the horizontal scroller. Zooming is implemented by calling `zoomTo:(float)zoomX :(float)zoomY` on the `docView` (and `topView`, `leftView`, `syncViews`, `horizSyncViews` and `vertSyncViews`). If the `docView` does not respond to this method or returns `NO` from this method, automatic zooming is performed by scaling the `clipView` by the zoom amount. The 'Set...' item in the zoom popup allows for arbitrary scaling. The 'Fit' menu item calculates the zoom value necessary to fit the `docView` entirely in the scrollview. The default zooming behavior tends to fail on documents that contain `NXImages`. Implement `zoomTo::` in your custom view to explicitly scale `NXImages` (returning `NO` if you don't otherwise handle zoom).

Support for adding arbitrary views to the vertical and horizontal scrollers. This is useful for adding little gadgets like a 'goto page' control inside of the horizontal scroller. The page up/down & left/right buttons as well as the zoom button use this facility. Page left/right is assumed to be the first in the `horizScrollerViews` list if it exists. The zoom button is next. Other views should be added at `[horizScrollerViews count]`. Page up/down is assumed to be first in the `vertScrollerViews` list. Scroller views are temporarily removed in reverse order if the scroller is not long enough to

accommodate them.

The PAScrollViewDeluxe palette allows you to create a PAScrollViewDeluxe by command clicking the 'Group in ScrollView' menu item. The code is a complete hack inside of the PAScrollViewDeluxeInspector code (at the bottom) and introduces a bug into IB that you can no longer drag the default TextObject/ScrollView in (it just disappears).

## Instance Variables

```
id topView; // View at top that scrolls horiz with docView
BOOL topViewVisible; // Wheter to show topView
ClipView *topClip; // The ClipView associated with topView

id leftView; // View at left that scrolls vert with docView
BOOL leftViewVisible; // Whether to show leftView
ClipView *leftClip; // The ClipView associated with leftView
```

```
Class rulerClass; // The class to use for default top/left view
NXSize rulerSize; // The size to use for default top/left view

id syncViews; // List of views to be sync'ed with docView
id horizSyncViews; // List of views to be sync'ed horizontally
id vertSyncViews; // List of views to be sync'ed vertically

id horizScrollerViews; // List of views in the horizontal scroller
id vertScrollerViews; // List of views in the vertical scroller

Matrix *pageUpDownButtons; // Matrix with page up/down buttons
BOOL pageUpDownButtonsVisible; // Whether to show page up/down buttons

Matrix *pageLeftRightButtons; // Matrix with page left/right buttons
BOOL pageLeftRightButtonsVisible; // Whether to show page left/rt buttons

Matrix *zoomButton; // Button with zoom popUp.
BOOL zoomButtonVisible; // Whether to show zoom popUp

Panel *zoomPanel; // Panel for arbitrary scale
TextField *zoomText; // Text field in zoomPanel
```

## Method Types

// Query and set the topView

- topView;
- setTopView:view;

// Query and set whether topView is visible

- (BOOL)topViewVisible;
- setTopViewVisible:(BOOL)flag;

// Convenience methods for setting topView visible inside of IB

- showTopView:sender;
- hideTopView:sender;
- toggleTopView:sender;

// Query and set the leftView

- leftView;
- setLeftView:view;

```
// Query and set whether leftView is visible
- (BOOL)leftViewVisible;
- setLeftViewVisible:(BOOL)flag;
```

```
// Convenience methods for setting leftView visible inside of IB
- showLeftView:sender;
- hideLeftView:sender;
- toggleLeftView:sender;
```

```
// Convenience methods for showing/hiding/toggling top/left views as a pair
- showRulers:sender;
- hideRulers:sender;
- toggleRulers:sender;
```

```
// Query and set the default top/left view class
- (Class)rulerClass;
- setRulerClass:(Class)class;
```

```
// Query and set the default top/left view size
- (NXSize)rulerSize;
- setRulerSize:(NXSize)size;
```

```
// Query, add and remove views that are sync'ed horizontally with docView  
- syncViews;
```

```
- addSyncView:view at:(int)at;
```

```
- removeSyncView:view;
```

```
- removeSyncViewAt:(int)at;
```

```
// Query, add and remove views that are sync'ed horizontally with docView  
- horizSyncViews;
```

```
- addHorizSyncView:view at:(int)at;
```

```
- removeHorizSyncView:view;
```

```
- removeHorizSyncViewAt:(int)at;
```

```
// Query, add and remove views that are sync'ed vertically with docView  
- vertSyncViews;
```

```
- addVertSyncView:view at:(int)at;
```

```
- removeVertSyncView:view;
```

```
- removeVertSyncViewAt:(int)at;
```

```
// Query, add and remove views in the horizontal scroller
```

```
- horizScrollerViews;
```

```
- addHorizScrollerView:view at:(int)at;
- removeHorizScrollerView:view;
- removeHorizScrollerViewAt:(int)at;

// Query, add and remove views in the vertical scroller
- vertScrollerViews;
- addVertScrollerView:view at:(int)at;
- removeVertScrollerView:view;
- removeVertScrollerViewAt:(int)at;

// Query and set whether page up/down buttons are visible or needed
- (BOOL)pageUpDownButtonsVisible;
- setPageUpDownButtonsVisible:(BOOL)flag;
- (BOOL)needPageUpDownButtons;

// Query and set whether page left/right buttons are visible or needed
- (BOOL)pageLeftRightButtonsVisible;
- setPageLeftRightButtonsVisible:(BOOL)flag;
- (BOOL)needPageLeftRightButtons;

// Query and set whether zoom buttons are visible
```

```
- (BOOL)zoomButtonVisible;  
- setZoomButtonVisible:(BOOL)flag;  
  
// This method tries to call zoomTo:: on support views. Failing that, it scales  
- (BOOL)zoomTo:(float)zoomX :(float)zoomY;  
  
// Archiving  
- write:(NXTypedStream *)stream;  
- read:(NXTypedStream *)stream;
```

## Class Methods

**leftView, setLeftView:**  
**topView, setTopView:**

topView and leftView return the current top and left views. If none exists, it allocates a view of ruler class, sets it to be the top or left view and returns it.  
setTopView: places the given view inside the scrollview (inside a clip view, topClip) at the top of

the scroll view at its original height but at the width of the docView. It returns the oldTopView.

setLeftView: places the given view inside the scrollview (inside a clip view, leftClip) at the left of the scroll view at its original width but at the height of the docView. It returns the oldLeftView.

**(BOOL)topViewVisible, setTopViewVisible:(BOOL)flag**

**(BOOL)leftViewVisible, setLeftViewVisible:(BOOL)flag**

topViewVisible returns whether or not the topView is visible.

setTopViewVisible: will install the current topView inside a clipView on top of the docView if set to YES and will remove the existing topView if set to NO. Retiles the views, but does not call display. Returns self.

leftViewVisible returns whether or not the leftView is visible.

setLeftViewVisible: will install the current leftView inside a clipView on left of the docView if set to YES and will remove the existing leftView if set to NO. Retiles the views, but does not call display. Returns self.

**showTopView:, hideTopView: toggleTopView:**

**showLeftView:, hideLeftView: toggleLeftView:**

These convenience methods simply wrap around setTopViewVisible: and setLeftViewVisible and

can be set to be called from menus or controls inside of InterfaceBuilder.  
getFrameSize:forContentSize:horizScroller:vertScroller:borderType:

### **showRulers:, hideRuler: toggleRulers:**

These are convenience methods for showing/hiding/toggling top and left views as a pair. They wrap around the setTopViewVisible and setLeftViewVisible. These methods can be set to be called from menus or controls inside of InterfaceBuilder. They all return self.

### **rulerClass, setRulerClass:(Class)class**

If the PAScrollView deluxe is asked to show top or left views when none has been set, it attempts to allocate an instance of 'rulerClass' (assumed to be a view). If the instance responds to setHorizontal or setVertical, this will be called.

### **rulerSize, setRulerSize:(NXSize)size**

When PAScrollViewDeluxe allocates a default top/left view, it sets the top one to be of height rulerSize.height and the left one to be of width rulerSize.width. If a topView or leftView are added programatically, the rulerSize.height and rulerSize.width are set respectively.

**syncView, addSyncView:at:, removeSyncView:, removeSyncViewAt:  
horizSyncViews, addHorizSyncView:at:, removeHorizSyncView: & ViewAt:  
vertSyncViews, addVertSyncView:at:, removeVertSyncView: & ViewAt:**

syncViews are ScrollViews that are to be scrolled, sized and (optionally) zoomed with respect to the docViews position, size and zoom. horizSyncViews are only affected in the horizontal direction, while vertSyncViews are only affected in the vertical direction. Group a view inside of a ScrollView, disable its horizontal and vertical scrollers, and use one of the addMethods. In IB you can actually set one of each type view by setting the syncViews, horizSyncViews or vertSyncViews outlet to a ScrollView. It will be added to the list when the outlets are set.

The syncViews, horizSyncViews and vertSyncViews methods return the list of the views that are currently being synchronized in the respective direction (can be NULL if there are none).

addSyncView:at:, addHorizSyncView:at: and addVertSyncView:at: add scrollviews to be synchronized in the respective direction at the given location in the list (use `[[myPASV syncViews] count]` to add to end). Returns self.

removeSyncView:, removeHorizSyncView:, removeVertSyncView: remove the given view from its respective list by calling removeSyncAt: with the view's index.

removeSyncViewAt:, removeHorizSyncViewAt: and removeVertSyncViewAt: remove ScrollViews from the respective list of synchronized ScrollViews. Returns self.

**horizScrollerViews, addHorizScrollerView:at:, removeHorizScrollerView:**

## **vertScrollerViews, addVertScrollerView:at:, removeVertScrollerView:**

ScrollerViews are views embedded inside of the vertical or horizontal scrollers. They are frequently simple controls like a "Goto Page:" control. In fact the page up/down & left/right buttons as well as the zoomButton are horizScrollerViews (assumed to be at 0 and 1 respectively if they exist). When added these views are sized to fit into the scroller (ie, horizontal scroller views are constrained to the horizontal scroller's height).

The horizScrollerViews and vertScrollerViews methods return the list of the views that are currently in the respective scroller (can be NULL if there are none).

addHorizScrollerView:at: and addVertScrollerView:at: add a view to their respective list at the given location (use [[myPASV vertSyncViews] count] to add to end). They return self.

removeHorizScrollerView: and removeVertScrollerView: removes the given view from the respective scroller list. Returns self.

removeHorizScrollerViewAt: and removeVertScrollerViewAt: removes the view at the given location from the respective scroller list. Returns self.

**(BOOL)pageUpDownButtonsVisible, setPageUpDownButtonsVisible:(BOOL)flag,  
(BOOL)needUpDownButtons  
(BOOL)pageLeftRightButtonsVisible, setPageLeftRightButtonsVisible:(BOOL)flag  
(BOOL)needPageLeftRightButtons**

These methods query and set whether the respective button set is visible.

The `setButtonsVisible` method calls the respective `add` or `remove` `scrollerView` method with the 'at' value equal to zero.

The `needPageButtons` methods return whether the page buttons are actually needed (ie, if the `docView` is smaller than the `contentView` or the scrollable area is less than 2 pages, the buttons are not needed).

### **zoomButtonVisible, setZoomButtonVisible:**

These methods query and set whether the zoom button is visible.

`setZoomButtonVisible`: either adds the `zoomButton` to the `vert` scroller via `addHorizScrollerView`: or removes via `removeHorizScrollerView`. Returns self.

### **zoomTo:(float)zoomX :(float)zoomY**

This method tries to call `zoomTo::` on the `docView` and all of the accessory views (`topView`, `leftView`, `syncViews`, `horizSyncViews`, `vertSyncViews`) with the given scale (1 is full size). If the views implement `zoomTo::` and actually do the zoom, they should return YES. If they just implement `zoomTo::` to get notification of a zoom or to scale dependent pieces (like `NXImages`), they should return NO. If `zoomTo::` is not implemented or returns NO, automatic scaling takes place (on the `ClipView`).

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