ScreenSaverView Class Reference

Cocoa > User Experience

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ScreenSaverView Class Reference

Inherits from	NSView : NSResponder : NSObject
Conforms to	NSAnimatablePropertyContainer (NSView) NSCoding (NSResponder) NSObject (NSObject)
Framework	Library/Frameworks/ScreenSaver.framework
Availability	Available in Mac OS X v10.0 and later.
Declared in	ScreenSaverView.h
Related sample code	MungSaver OpenGL Screensaver

Overview

ScreenSaverView is an abstract class that defines the interface for subclassers to interact with the screen saver infrastructure.

Screen savers are subclasses of ScreenSaverView, packaged up in bundles and loaded by the screen saver application. (These bundles have a suffix of `.saver` and are located in the `Library/Screen Savers` directories of the various file system domains. See *File System Overview* for information about domains.) ScreenSaverView defines an interface for animating screen savers, instantiating small preview versions of the screen saver view (for display in the system preferences, for example), and for providing a configuration sheet to set various properties of the screen saver. In addition, subclasses can set the animation interval, the backing store of their window, and how the screen transitions to the animation.

There are two main ways to do drawing in a screen saver. You can either do your drawing in the normal NSView `drawRect:` (page 9) method, or you can do your drawing in ScreenSaverView's `animateOneFrame` (page 7) method. If you do drawing in `drawRect:` (page 9), you should call `setNeedsDisplay:` with an argument of `YES` in `animateOneFrame`.

Tasks

Initializing a ScreenSaverView

`- initWithFrame:` (page 10)
Calls `initWithFrame:isPreview:` (page 10) with an argument of `NO`.

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- `initWithFrame:isPreview:` (page 10)
  Initializes a newly allocated ScreenSaverView with *`frame`* as its frame rectangle, and sets the value returned by `isPreview` (page 10) to *`isPreview`*.

Getting the Preferred Window Behavior

+ `backingStoreType` (page 7)
  Returns the desired backing store for windows in which the screen saver view will be instantiated.
+ `performGammaFade` (page 7)
  Indicates whether the screen saver application should perform a gradual screen fade when it starts and stops the animation.

Setting and Getting the Animation Time Interval

- `animationTimeInterval` (page 8)
  Returns the minimum time between animation frames of the screen saver.
- `setAnimationTimeInterval:` (page 11)
  Sets the time interval between animation frames.

Animating the ScreenSaverView

- `startAnimation` (page 11)
  Activates the periodic timer that animates the screen saver.
- `animateOneFrame` (page 7)
  Advances the screen saver's animation by a single frame.
- `stopAnimation` (page 12)
  Deactivates the timer that advances the animation.
- `isAnimating` (page 10)
  Returns `YES` if the screen saver is currently animating, `NO` otherwise.

Drawing the ScreenSaverView

- `drawRect:` (page 9)
  Draws the screen saver view.
- `isPreview` (page 10)
  Returns `YES` if the screen saver view was created in a smaller size to be used as a preview, `NO` if it was created full-screen for use as a screen saver.

Accessing the Configuration Sheet

- `hasConfigureSheet` (page 9)
  Returns whether the screen saver has an associated configuration sheet.

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`- configureSheet` (page 8)
Returns the window containing all of the controls to be used for configuring the screen saver.

Class Methods

backingStoreType

Returns the desired backing store for windows in which the screen saver view will be instantiated.

```
+ (NSBackingStoreType)backingStoreType
```

Discussion
Subclasses should override this method to return the desired backing store. The default is `NSBackingStoreBuffered`.

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

Declared In
`ScreenSaverView.h`

performGammaFade

Indicates whether the screen saver application should perform a gradual screen fade when it starts and stops the animation.

```
+ (BOOL)performGammaFade
```

Discussion
This class method allows the screen saver view to select how the desktop visibly transitions to the screen saver view. If this method returns `YES`, the screen will gradually darken before the animation begins. If it returns `NO`, the transition will be immediate. The latter behavior is more appropriate if the screen saver animates a screen shot of the desktop, as is the case for optical lens effects. The default is `YES`.

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

Declared In
`ScreenSaverView.h`

Instance Methods

animateOneFrame

Advances the screen saver's animation by a single frame.

```
- (void)animateOneFrame
```


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Discussion
This method is called each time the timer animating the screen saver fires. The time between calls to this method is always at least `animationTimeInterval` (page 8). It is guaranteed that the focus is locked when this method is called, so subclasses may do drawing in this method. The subclass can also let `drawRect:` (page 9) perform the drawing, in which case `animateOneFrame` needs to call `setNeedsDisplay:` with an argument of `YES`. The default implementation does nothing.

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

See Also
`- drawRect:` (page 9)

Related Sample Code
MungSaver
OpenGL Screensaver

Declared In
`ScreenSaverView.h`

animationTimeInterval

Returns the minimum time between animation frames of the screen saver.

```
- (NSTimeInterval)animationTimeInterval
```

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

See Also
`- setAnimationTimeInterval:` (page 11)

Declared In
`ScreenSaverView.h`

configureSheet

Returns the window containing all of the controls to be used for configuring the screen saver.

```
- (NSWindow *)configureSheet
```

Discussion
This window will be run as a sheet, so it must include buttons that allow the user to end the modal session in which the sheet runs. When the user dismisses the sheet, the controller in charge of the sheet must end the document modal session by calling NSApplication's `endSheet:` with the sheet's window as the argument.

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

See Also
`- hasConfigureSheet` (page 9)

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Related Sample Code
MungSaver
OpenGL Screensaver

Declared In
`ScreenSaverView.h`

drawRect:

Draws the screen saver view.

```
- (void)drawRect:(NSRect)rect
```

Discussion
ScreenSaverView implements `drawRect:` to draw a black background. Subclasses can do their drawing here or in `animateOneFrame` (page 7).

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

See Also
- `animateOneFrame` (page 7)
- `startAnimation` (page 11)
- `stopAnimation` (page 12)

Declared In
`ScreenSaverView.h`

hasConfigureSheet

Returns whether the screen saver has an associated configuration sheet.

```
- (BOOL)hasConfigureSheet
```

Discussion
Subclasses that provide configure sheets as part of their bundle should override this method to return `YES`.

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

See Also
- `configureSheet` (page 8)

Related Sample Code
MungSaver
OpenGL Screensaver

Declared In
`ScreenSaverView.h`

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initWithFrame:

Calls `initWithFrame:isPreview:` (page 10) with an argument of `NO`.

```
- (id)initWithFrame:(NSRect)frame
```

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

Declared In
`ScreenSaverView.h`

initWithFrame:isPreview:

Initializes a newly allocated ScreenSaverView with *frame* as its frame rectangle, and sets the value returned by `isPreview` (page 10) to *isPreview*.

```
- (id)initWithFrame:(NSRect)frame isPreview:(BOOL)isPreview
```

Discussion
The screen saver application will install the new view object into the view hierarchy of an NSWindow before the animation begins. This method is the designated initializer for the ScreenSaverView class. Returns `self`.

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

See Also
- `initWithFrame:` (page 10)

Declared In
`ScreenSaverView.h`

isAnimating

Returns `YES` if the screen saver is currently animating, `NO` otherwise.

```
- (BOOL)isAnimating
```

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

See Also
- `startAnimation` (page 11)
- `stopAnimation` (page 12)

Declared In
`ScreenSaverView.h`

isPreview

Returns `YES` if the screen saver view was created in a smaller size to be used as a preview, `NO` if it was created full-screen for use as a screen saver.

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```
- (BOOL)isPreview
```

Discussion
Subclasses can use the return value of `isPreview` to determine if they should change their drawing parameters to something more suitable for display in a smaller frame.

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

Declared In
`ScreenSaverView.h`

setAnimationTimeInterval:

Sets the time interval between animation frames.

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

Discussion
Subclasses with particular requirements for time between animation frames should call this method to set the animation rate to a reasonable value.

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

See Also
`- animationTimeInterval` (page 8)

Declared In
`ScreenSaverView.h`

startAnimation

Activates the periodic timer that animates the screen saver.

```
- (void)startAnimation
```

Discussion
This method is called when the screen saver view should begin animating. Subclasses can implement this method to set up initial state or allocate expensive resources that should be loaded lazily. Subclasses must call the inherited implementation.

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

See Also
`- stopAnimation` (page 12)

Related Sample Code
MungSaver

OpenGL Screensaver

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Declared In
`ScreenSaverView.h`

stopAnimation

Deactivates the timer that advances the animation.

```
- (void)stopAnimation
```

Discussion
This method is called when the screen saver view should stop animating. Subclasses can implement this method to unload expensive resources or reset state to original parameters. Subclasses must call the inherited implementation.

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

See Also
`- startAnimation` (page 11)

Related Sample Code
MungSaver
OpenGL Screensaver

Declared In
`ScreenSaverView.h`

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Document Revision History

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

Date	Notes
2006-05-23	First publication of this content as a separate document.

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