NSOpenGLView Class Reference

Cocoa > User Experience

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NSOpenGLView Class Reference

Inherits from	NSView : NSResponder : NSObject
Conforms to	NSAnimatablePropertyContainer (NSView) NSCoding (NSResponder) NSObject (NSObject)
Framework	/System/Library/Frameworks/AppKit.framework
Availability	Available in Mac OS X v10.0 and later.
Companion guide	Cocoa Drawing Guide
Declared in	NSOpenGLView.h
Related sample code	LiveVideoMixer2 LiveVideoMixer3 SurfaceVertexProgram Vertex Optimization Video Hardware Info

Overview

An `NSOpenGLView` object maintains an NSOpenGLPixelFormat and NSOpenGLContext object into which OpenGL calls can be rendered. The view provides methods for accessing and managing the `NSOpenGLPixelFormat` and `NSOpenGLContext` objects, as well as notifications of visible region changes.

An `NSOpenGLView` object cannot have subviews. You can, however, divide a single `NSOpenGLView` into multiple rendering areas using the `glViewport` function.

When creating an `NSOpenGLView` object in Interface Builder, you use the inspector window to specify the pixel format attributes you want for the view. Only those attributes listed in the Interface Builder inspector are set when the view is instantiated.

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Note: In versions of the Xcode Tools that shipped prior to Mac OS X v10.4, the Interface Builder inspector does not list any pixel format attributes for `NSOpenGLView`.

Tasks

Initializing an NSOpenGLView

`- initWithFrame:pixelFormat:` (page 8)
Returns an `NSOpenGLView` object initialized with the specified frame rectangle and pixel format.

Managing the NSOpenGLPixelFormat

`+ defaultPixelFormat` (page 7)
Returns a default NSOpenGLPixelFormat object.

`- pixelFormat` (page 9)
Returns the NSOpenGLPixelFormat object associated with the receiver.

`- setPixelFormat:` (page 11)
Sets the receiver's NSOpenGLPixelFormat object to the specified object.

Managing the NSOpenGLContext

`- prepareOpenGL` (page 9)
Used by subclasses to initialize OpenGL state.

`- clearGLContext` (page 7)
Releases the NSOpenGLContext object associated with the view.

`- openGLContext` (page 8)
Returns the NSOpenGLContext object associated with the receiver.

`- setOpenGLContext:` (page 10)
Sets the NSOpenGLContext object associated with the receiver.

Managing the Visible Region

`- reshape` (page 10)
Called by Cocoa when the view's visible rectangle or bounds change.

`- update` (page 11)
Called by Cocoa when the view's window moves or when the view itself moves or is resized.

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Class Methods

defaultPixelFormat

Returns a default NSOpenGLPixelFormat object.

```
+ (NSOpenGLPixelFormat *)defaultPixelFormat
```

Return Value
A pixel format object with no attributes set.

Discussion
Typically used with the initializer `initWithFrame:pixelFormat:` (page 8), this object has no attributes set.

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

See Also
- `pixelFormat` (page 9)
- `setPixelFormat:` (page 11)

Related Sample Code
LiveVideoMixer2
LiveVideoMixer3
QTQuartzPlayer
Video Hardware Info
WhackedTV

Declared In
`NSOpenGLView.h`

Instance Methods

clearGLContext

Releases the NSOpenGLContext object associated with the view.

```
- (void)clearGLContext
```

Discussion
If necessary, this method calls the `clearDrawable` method of the context object before releasing it.

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

See Also
- `openGLContext` (page 8)
- `setOpenGLContext:` (page 10)

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Declared In
NSOpenGLView.h

initWithFrame:pixelFormat:

Returns an NSOpenGLView object initialized with the specified frame rectangle and pixel format.

```
- (id)initWithFrame:(NSRect)frameRect pixelFormat:(NSOpenGLPixelFormat *)format
```

Parameters

frameRect

The frame rectangle for the view, specified in the coordinate system of its parent view.

format

The pixel format to use when creating the view's NSOpenGLContext object.

Return Value
An initialized NSOpenGLView object, or nil if the object could not be initialized.

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

See Also
+ defaultPixelFormat (page 7)

Related Sample Code
VBL

Declared In
NSOpenGLView.h

openGLContext

Returns the NSOpenGLContext object associated with the receiver.

```
- (NSOpenGLContext *)openGLContext
```

Return Value
The OpenGL context object of the receiver.

Discussion
If the receiver has no associated context object, a new NSOpenGLContext object is created and returned. The new object is initialized with the receiver's pixel format information.

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

See Also
- clearGLContext (page 7)
- setOpenGLContext: (page 10)
- pixelFormat (page 9)

Related Sample Code
CIVideoDemoGL

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LiveVideoMixer2
QTCoreImage101

Declared In
NSOpenGLView.h

pixelFormat

Returns the NSOpenGLPixelFormat object associated with the receiver.

```
- (NSOpenGLPixelFormat *)pixelFormat
```

Return Value
The receiver's pixel format object.

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

See Also
+ defaultPixelFormat (page 7)
- initWithFrame:pixelFormat: (page 8)
- setPixelFormat: (page 11)

Related Sample Code
Draw Pixels
NSOpenGL Fullscreen
QTCoreImage101
TexturePerformanceDemo
TextureRange

Declared In
NSOpenGLView.h

prepareOpenGL

Used by subclasses to initialize OpenGL state.

```
- (void)prepareOpenGL
```

Discussion
This method is called only once after the OpenGL context is made the current context. Subclasses that implement this method can use it to configure the Open GL state in preparation for drawing.

Availability
Available in Mac OS X v10.3 and later.

Related Sample Code
CIVideoDemoGL
QTCoreImage101
QTCoreVideo103
QTCoreVideo202

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WhackedTV

Declared In
NSOpenGLView.h

reshape

Called by Cocoa when the view's visible rectangle or bounds change.

```
- (void)reshape
```

Discussion
Cocoa typically calls this method during scrolling and resize operations but may call it in other situations when the view's rectangles change. The default implementation does nothing. You can override this method if you need to adjust the viewport and display frustum.

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

Related Sample Code
CIVideoDemoGL
NSOpenGL Fullscreen
OpenGL Screensaver
QTCoreImage101
Vertex Optimization

Declared In
NSOpenGLView.h

setOpenGLContext:

Sets the NSOpenGLContext object associated with the receiver.

```
- (void)setOpenGLContext:(NSOpenGLContext *)context
```

Parameters
context
The OpenGL context object to associate with the receiver.

Discussion
This method releases the current OpenGL context, if one already exists. You must also call the `setView:` method of the context object to synchronize the context with the view.

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

See Also
- `clearGLContext` (page 7)
- `openGLContext` (page 8)

Related Sample Code
LiveVideoMixer2

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Declared In
NSOpenGLView.h

setPixelFormat:

Sets the receiver's NSOpenGLPixelFormat object to the specified object.

```
- (void)setPixelFormat:(NSOpenGLPixelFormat *)pixelFormat
```

Parameters

pixelFormat
The new pixel format object for the receiver.

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

See Also
+ defaultPixelFormat (page 7)
- pixelFormat (page 9)

Declared In
NSOpenGLView.h

update

Called by Cocoa when the view's window moves or when the view itself moves or is resized.

```
- (void)update
```

Discussion
The default implementation simply calls the update method of NSOpenGLContext. You can override this method to perform additional update operations on the context or if you need to add locks for multithreaded access to multiple contexts.

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

Related Sample Code
CIVideoDemoGL
LiveVideoMixer2
QTCoreImage101
Vertex Optimization
VertexPerformanceDemo

Declared In
NSOpenGLView.h

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Document Revision History

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

Date	Notes
2007-01-26	Updated for Mac OS X v10.5.
2006-05-23	First publication of this content as a separate document.

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