CGShading Reference

Graphics & Imaging > Quartz

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Derived From:	CFType
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Overview

`CGShadingRef` is an opaque type used to define linear (axial) and radial gradient fills whose color transitions are controlled by a function (`CGFunctionRef`) that you provide. Shading means to fill using a smooth transition between colors across an area. To paint with a Quartz shading, you call `CGContextDrawShading`. This function fills the current clipping path using the specified color gradient, calling your parametric function repeatedly as it draws

An alternative to using a CGShading object is to use the `CGGradientRef` opaque type. For applications that run in Mac OS X v10.5 and later, CGGradient objects are much simpler to use. (See *CGGradient Reference*.)

Functions by Task

Creating Shading Objects

`CGShadingCreateAxial` (page 6)
Creates a shading object to use for axial shading.

`CGShadingCreateRadial` (page 7)
Creates a shading object to use for radial shading.

Retaining and Releasing Shading Objects

`CGShadingRetain` (page 8)
Increments the retain count of a shading object.

`CGShadingRelease` (page 8)
Decrements the retain count of a shading object.

Getting the CFType ID

`CGShadingGetTypeID` (page 7)
Returns the Core Foundation type identifier for Quartz shading objects.

Functions

CGShadingCreateAxial

Creates a shading object to use for axial shading.

```
CGShadingRef CGShadingCreateAxial (
   CGColorSpaceRef colorspace,
   CGPoint start,
   CGPoint end,
   CGFunctionRef function,
   bool extendStart,
   bool extendEnd
);
```

Parameters

colorspace
The color space in which color values are expressed. Quartz retains this object; upon return, you may safely release it.

start
The starting point of the axis, in the shading's target coordinate space.

end
The ending point of the axis, in the shading's target coordinate space.

function
A CGFunction object created by the function `CGFunctionCreate`. This object refers to your function for creating an axial shading. Quartz retains this object; upon return, you may safely release it.

extendStart
A Boolean value that specifies whether to extend the shading beyond the starting point of the axis.

extendEnd
A Boolean value that specifies whether to extend the shading beyond the ending point of the axis.

Return Value
A new Quartz axial shading. You are responsible for releasing this object using `CGShadingRelease` (page 8).

Discussion
An axial shading is a color blend that varies along a linear axis between two endpoints and extends indefinitely perpendicular to that axis. When you are ready to draw the shading, call the function `CGContextDrawShading`.

Availability
Available in Mac OS X version 10.2 and later.

Declared In
`CGShading.h`

CGShadingCreateRadial

Creates a shading object to use for radial shading.

```
CGShadingRef CGShadingCreateRadial (
   CGColorSpaceRef colorspace,
   CGPoint start,
   CGFloat startRadius,
   CGPoint end,
   CGFloat endRadius,
   CGFunctionRef function,
   bool extendStart,
   bool extendEnd
);
```

Parameters

colorspace

The color space in which color values are expressed. Quartz retains this object; upon return, you may safely release it.

start

The center of the starting circle, in the shading's target coordinate space.

startRadius

The radius of the starting circle, in the shading's target coordinate space.

end

The center of the ending circle, in the shading's target coordinate space.

endRadius

The radius of the ending circle, in the shading's target coordinate space.

function

A CGFunction object created by the function `CGFunctionCreate`. This object refers to your function for creating a radial shading. Quartz retains this object; upon return, you may safely release it.

extendStart

A Boolean value that specifies whether to extend the shading beyond the starting circle.

extendEnd

A Boolean value that specifies whether to extend the shading beyond the ending circle.

Return Value

A new Quartz radial shading. You are responsible for releasing this object using `CGShadingRelease` (page 8).

Discussion

A radial shading is a color blend that varies between two circles. To draw the shading, call the function `CGContextDrawShading`.

Availability

Available in Mac OS X version 10.2 and later.

Declared In

`CGShading.h`

CGShadingGetTypeID

Returns the Core Foundation type identifier for Quartz shading objects.

```
CFTypeID CGShadingGetTypeID (
   void
);
```

Return Value
The Core Foundation identifier for the opaque type `CGShadingRef` (page 9).

Availability
Available in Mac OS X version 10.2 and later.

Declared In
`CGShading.h`

CGShadingRelease

Decrements the retain count of a shading object.

```
void CGShadingRelease (
   CGShadingRef shading
);
```

Parameters

shading
The shading object to release.

Discussion
This function is equivalent to `CFRelease`, except that it does not cause an error if the *shading* parameter is `NULL`.

Availability
Available in Mac OS X version 10.2 and later.

Declared In
`CGShading.h`

CGShadingRetain

Increments the retain count of a shading object.

```
CGShadingRef CGShadingRetain (
   CGShadingRef shading
);
```

Parameters

shading
The shading object to retain.

Return Value
The same shading object you passed in as the `shading` parameter.

Discussion
This function is equivalent to `CFRetain`, except that it does not cause an error if the `shading` parameter is `NULL`.

Availability
Available in Mac OS X version 10.2 and later.

Declared In
`CGShading.h`

Data Types

CGShadingRef

An opaque type that represents a Quartz shading.

```
typedef struct CGShading *CGShadingRef;
```

Availability
Available in Mac OS X v10.2 and later.

Declared In
`CGShading.h`

Document Revision History

This table describes the changes to *CGShading Reference*.

Date	Notes
2006-12-22	Updated the introduction to provide a contrast with the CGGradient opaque type.
	All instances of the `float` data type were changed to the `CGFloat` data type.
2005-11-09	Added that Quartz retains the CGFunction object passed to a shading function.
2005-04-29	Revised introduction and added a few sentences to two functions.
	See `CGShadingCreateAxial` (page 6) and `CGShadingCreateRadial` (page 7).
2004-02-26	First version of this document. An earlier version of this information appeared in *Quartz 2D Reference*.

Document Revision History

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