# CABasicAnimation Class Reference

**Graphics & Animation: Animation**

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# CABasicAnimation Class Reference

| | |
|---|---|
| **Inherits from** | CAPropertyAnimation : CAAnimation : NSObject |
| **Conforms to** | NSCoding (CAAnimation)<br>NSCopying (CAAnimation)<br>CAAction (CAAnimation)<br>CAMediaTiming (CAAnimation)<br>NSObject (NSObject) |
| **Framework** | /System/Library/Frameworks/QuartzCore.framework |
| **Availability** | Available in iOS 2.0 and later. |
| **Declared in** | CAAnimation.h |
| **Companion guides** | Core Animation Programming Guide<br>Core Animation Cookbook |

## Overview

`CABasicAnimation` provides basic, single-keyframe animation capabilities for a layer property. You create an instance of `CABasicAnimation` using the inherited `animationWithKeyPath:` method, specifying the key path of the property to be animated in the render tree.

### Setting Interpolation Values

The `fromValue` (page 6), `byValue` (page 6) and `toValue` (page 7) properties define the values being interpolated between. All are optional, and no more than two should be non-`nil`. The object type should match the type of the property being animated.

The interpolation values are used as follows:

- Both `fromValue` (page 6) and `toValue` (page 7) are non-`nil`. Interpolates between `fromValue` (page 6) and `toValue` (page 7).
- `fromValue` (page 6) and `byValue` (page 6) are non-`nil`. Interpolates between `fromValue` (page 6) and (`fromValue` (page 6) + `byValue` (page 6)).
- `byValue` (page 6) and `toValue` (page 7) are non-`nil`. Interpolates between (`toValue` (page 7) - `byValue` (page 6)) and `toValue` (page 7).
- `fromValue` (page 6) is non-`nil`. Interpolates between `fromValue` (page 6) and the current presentation value of the property.


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- `toValue` (page 7) is non-`nil`. Interpolates between the current value of `keyPath` in the target layer's presentation layer and `toValue` (page 7).
- `byValue` (page 6) is non-`nil`. Interpolates between the current value of `keyPath` in the target layer's presentation layer and that value plus `byValue` (page 6).
- All properties are `nil`. Interpolates between the previous value of `keyPath` in the target layer's presentation layer and the current value of `keyPath` in the target layer's presentation layer.

# Tasks

## Interpolation Values

`fromValue` (page 6) *property*
Defines the value the receiver uses to start interpolation.

`toValue` (page 7) *property*
Defines the value the receiver uses to end interpolation.

`byValue` (page 6) *property*
Defines the value the receiver uses to perform relative interpolation.

# Properties

For more about Objective-C properties, see "Properties" in *The Objective-C Programming Language*.

## byValue

Defines the value the receiver uses to perform relative interpolation.

```
@property(retain) id byValue
```

**Discussion**
See "Setting Interpolation Values" (page 5) for details on how `byValue` interacts with the other interpolation values.

**Availability**
Available in iOS 2.0 and later.

**Declared In**
`CAAnimation.h`

## fromValue

Defines the value the receiver uses to start interpolation.


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```
@property(retain) id fromValue
```

**Discussion**
See "Setting Interpolation Values" (page 5) for details on how `fromValue` interacts with the other interpolation values.

**Availability**
Available in iOS 2.0 and later.

**Declared In**
`CAAnimation.h`

## toValue

Defines the value the receiver uses to end interpolation.

```
@property(retain) id toValue
```

**Discussion**
See "Setting Interpolation Values" (page 5) for details on how `toValue` interacts with the other interpolation values.

**Availability**
Available in iOS 2.0 and later.

**Declared In**
`CAAnimation.h`


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# Document Revision History

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

| Date | Notes |
| --- | --- |
| 2007-07-24 | New document that describes the class that provides basic interpolation of a layer property. |



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Document Revision History



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