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# NSAttributeDescription Class Reference

Data Management



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# NSAttributeDescription Class Reference

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<b>Inherits from</b>	NSPropertyDescription : NSObject
<b>Conforms to</b>	NSCoding (NSPropertyDescription) NSCopying (NSPropertyDescription) NSObject (NSObject)
<b>Framework</b>	/System/Library/Frameworks/CoreData.framework
<b>Availability</b>	Available in Mac OS X v10.4 and later.
<b>Declared in</b>	NSAttributeDescription.h
<b>Companion guides</b>	Core Data Programming Guide Core Data Utility Tutorial
<b>Related sample code</b>	Core Data HTML Store CoreRecipes CustomAtomicStoreSubclass

## Overview

The `NSAttributeDescription` class is used to describe attributes of an entity described by an instance of `NSEntityDescription`.

`NSAttributeDescription` inherits from `NSPropertyDescription`, which provides most of the basic behavior. Instances of `NSAttributeDescription` are used to describe attributes, as distinct from relationships. The class adds the ability to specify the attribute type, and to specify a default value. In a managed object model, you must specify the type of all attributes—you can only use the undefined attribute type (`NSUndefinedAttributeType`) for transient attributes.

## Editing Attribute Descriptions

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Attribute descriptions are editable until they are used by an object graph manager. This allows you to create or modify them dynamically. However, once a description is used (when the managed object model to which it belongs is associated with a persistent store coordinator), it *must not* (indeed cannot) be changed. This is enforced at runtime: any attempt to mutate a model or any of its sub-objects after the model is associated with a persistent store coordinator causes an exception to be thrown. If you need to modify a model that is in use, create a copy, modify the copy, and then discard the objects with the old model.

**Note:** Default values set for attributes are retained by a managed object model, not copied. This means that attribute values do not have to implement the `NSCopying` protocol, however it also means that you should not modify any objects after they have been set as default values.

## Tasks

### Getting and Setting Type Information

- [attributeType](#) (page 7)  
Returns the type of the receiver.
- [setAttributeType:](#) (page 8)  
Sets the type of the receiver.
- [attributeValueClassName](#) (page 7)  
Returns the name of the class used to represent the receiver.
- [setAttributeValueClassName:](#) (page 8)  
Sets the name of the class used to represent the receiver.

### Getting and Setting the Default Value

- [defaultValue](#) (page 7)  
Returns the default value of the receiver.
- [setDefaultValue:](#) (page 9)  
Sets the default value of the receiver.

### Versioning Support

- [versionHash](#) (page 10)  
Returns the version hash for the receiver.

### Value Transformers

- [valueTransformerName](#) (page 10)  
Returns the name of the transformer used to transform the attribute value.
- [setValueTransformerName:](#) (page 9)  
Sets the name of the transformer to use to transform the attribute value.

## Instance Methods

### **attributeType**

Returns the type of the receiver.

- (NSAttributeType)attributeType

#### **Return Value**

The type of the receiver.

#### **Availability**

Available in Mac OS X v10.4 and later.

#### **See Also**

- [attributeValueClassName](#) (page 7)
- [setAttributeType:](#) (page 8)

#### **Related Sample Code**

Core Data HTML Store  
CoreRecipes

#### **Declared In**

NSAttributeDescription.h

### **attributeValueClassName**

Returns the name of the class used to represent the receiver.

- (NSString \*)attributeValueClassName

#### **Return Value**

The name of the class used to represent the receiver, as a string.

#### **Availability**

Available in Mac OS X v10.4 and later.

#### **See Also**

- [attributeType](#) (page 7)
- [setAttributeType:](#) (page 8)

#### **Declared In**

NSAttributeDescription.h

### **defaultValue**

Returns the default value of the receiver.

- (id)defaultValue

**Return Value**

The default value of the receiver.

**Availability**

Available in Mac OS X v10.4 and later.

**See Also**

- [setDefaultValue:](#) (page 9)

**Declared In**

NSAttributeDescription.h

**setAttributeType:**

Sets the type of the receiver.

```
- (void)setAttributeType:(NSAttributeType) type
```

**Parameters**

*type*

An `NSAttributeType` constant that specifies the type for the receiver.

**Special Considerations**

This method raises an exception if the receiver's model has been used by an object graph manager.

**Availability**

Available in Mac OS X v10.4 and later.

**See Also**

- [attributeType](#) (page 7)  
- [attributeValueClassName](#) (page 7)

**Declared In**

NSAttributeDescription.h

**setAttributeValueClassName:**

Sets the name of the class used to represent the receiver.

```
- (void)setAttributeValueClassName:(NSString *) className
```

**Parameters**

*className*

The name of the class used to represent the receiver.

**Discussion**

If you set the value class name, Core Data can check the class of any instance set as the value of an attribute.

**Availability**

Available in Mac OS X v10.5 and later.

**See Also**

- [attributeValueClassName](#) (page 7)

**Declared In**

NSAttributeDescription.h

**setDefaultValue:**

Sets the default value of the receiver.

- (void)setDefaultValue:(id) *value***Parameters***value*

The default value for the receiver.

**Discussion**

Default values are retained by a managed object model, not copied. This means that attribute values do not have to implement the `NSCopying` protocol, however it also means that you should not modify any objects after they have been set as default values.

**Special Considerations**

This method raises an exception if the receiver's model has been used by an object graph manager.

**Availability**

Available in Mac OS X v10.4 and later.

**See Also**- [defaultValue](#) (page 7)**Declared In**

NSAttributeDescription.h

**setValueTransformerName:**

Sets the name of the transformer to use to transform the attribute value.

- (void)setValueTransformerName:(NSString \*) *string***Parameters***string*

The name of the transformer to use to transform the attribute value. The transformer must output an `NSData` object from `transformedValue:` and must allow reverse transformations.

**Discussion**

The receiver must be an attribute of type `NSTransformedAttributeType`.

If this value is not set, or is set to `nil`, Core Data will default to using a transformer which uses `NSCoding` to archive and unarchive the attribute value.

**Availability**

Available in Mac OS X v10.5 and later.

**See Also**- [valueTransformerName](#) (page 10)

**Declared In**

NSAttributeDescription.h

**valueTransformerName**

Returns the name of the transformer used to transform the attribute value.

- (NSString \*)valueTransformerName

**Return Value**

The name of the transformer used to transform the attribute value.

**Discussion**

The receiver must be an attribute of type `NSTransformedAttributeType`.

**Availability**

Available in Mac OS X v10.5 and later.

**See Also**

- [setValueTransformerName:](#) (page 9)

**Related Sample Code**

CustomAtomicStoreSubclass

**Declared In**

NSAttributeDescription.h

**versionHash**

Returns the version hash for the receiver.

- (NSData \*)versionHash

**Return Value**

The version hash for the receiver.

**Discussion**

The version hash is used to uniquely identify an attribute based on its configuration. This value includes the `versionHash` information from `NSPropertyDescription` and the attribute type.

**Availability**

Available in Mac OS X v10.5 and later.

**See Also**

- `versionHash(NSPropertyDescription)`

**Declared In**

NSAttributeDescription.h

## Constants

### NSAttributeType

Defines the possible types of `NSAttributeType` properties. These explicitly distinguish between bit sizes to ensure data store independence.

```
typedef enum {
    NSUndefinedAttributeType = 0,
    NSInteger16AttributeType = 100,
    NSInteger32AttributeType = 200,
    NSInteger64AttributeType = 300,
    NSDecimalAttributeType = 400,
    NSDoubleAttributeType = 500,
    NSFloatAttributeType = 600,
    NSStringAttributeType = 700,
    NSBooleanAttributeType = 800,
    NSDateAttributeType = 900,
    NSBinaryDataAttributeType = 1000,
    NSTransformableAttributeType = 1800,
    NSObjectIDAttributeType = 2000
} NSAttributeType;
```

### Constants

`NSUndefinedAttributeType`

Specifies an undefined attribute type.

`NSUndefinedAttributeType` is valid for *transient* properties—Core Data will still track the property as an `id` value and register undo/redo actions, and so on. `NSUndefinedAttributeType` is illegal for non-transient properties.

Available in Mac OS X v10.4 and later.

Declared in `NSAttributeDescription.h`.

`NSInteger16AttributeType`

Specifies a 16-bit signed integer attribute.

Available in Mac OS X v10.4 and later.

Declared in `NSAttributeDescription.h`.

`NSInteger32AttributeType`

Specifies a 32-bit signed integer attribute.

Available in Mac OS X v10.4 and later.

Declared in `NSAttributeDescription.h`.

`NSInteger64AttributeType`

Specifies a 64-bit signed integer attribute.

Available in Mac OS X v10.4 and later.

Declared in `NSAttributeDescription.h`.

`NSDecimalAttributeType`

Specifies an `NSDecimalNumber` attribute.

Available in Mac OS X v10.4 and later.

Declared in `NSAttributeDescription.h`.

NSDoubleAttributeType

Specifies a double attribute.

Available in Mac OS X v10.4 and later.

Declared in NSAttributeDescription.h.

NSFloatAttributeType

Specifies a float attribute.

Available in Mac OS X v10.4 and later.

Declared in NSAttributeDescription.h.

NSStringAttributeType

Specifies an NSString attribute.

Available in Mac OS X v10.4 and later.

Declared in NSAttributeDescription.h.

NSBooleanAttributeType

Specifies a Boolean attribute.

Available in Mac OS X v10.4 and later.

Declared in NSAttributeDescription.h.

NSDateAttributeType

Specifies an NSDate attribute.

Times are specified in GMT.

Available in Mac OS X v10.4 and later.

Declared in NSAttributeDescription.h.

NSDataAttributeType

Specifies an NSData attribute.

Available in Mac OS X v10.4 and later.

Declared in NSAttributeDescription.h.

NSTransformableAttributeType

Specifies an attribute that uses a value transformer.

Available in Mac OS X v10.5 and later.

Declared in NSAttributeDescription.h.

NSObjectIDAttributeType

Specifies the object ID attribute.

Available in Mac OS X v10.6 and later.

Declared in NSAttributeDescription.h.

**Availability**

Available in Mac OS X v10.4 and later.

**Declared In**

NSAttributeDescription.h

# Document Revision History

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

Date	Notes
2009-05-01	Corrected typographical errors.
2009-02-03	Updated for iPhone OS 3.0.
2008-06-02	Updated for Mac OS X v10.6.
2007-10-31	Updated for Mac OS X v10.5. Corrected definition of <code>NSTransformableAttributeType</code> .
2006-10-26	Updated for Mac OS X v10.5.
2006-05-23	First publication of this content as a separate document.

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