
NSNumber Class Reference

Data Management: Data Types & Collections





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Apple Inc.
1 Infinite Loop
Cupertino, CA 95014
408-996-1010

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NSNumber Class Reference

Inherits from	NSObject
Conforms to	NSCoding NSCopying NSObject (NSObject)
Framework	/System/Library/Frameworks/Foundation.framework
Availability	Available in Mac OS X v10.0 and later.
Companion guide	Number and Value Programming Topics for Cocoa
Declared in	NSGeometry.h NSRange.h NSNumber.h
Related sample code	LightTable QTAudioContextInsert QTAudioExtractionPanel Quartz Composer WWDC 2005 TextEdit Sketch+Accessibility

Overview

An `NSNumber` object is a simple container for a single C or Objective-C data item. It can hold any of the scalar types such as `int`, `float`, and `char`, as well as pointers, structures, and object IDs. The purpose of this class is to allow items of such data types to be added to collections such as instances of `NSArray` and `NSSet`, which require their elements to be objects. `NSNumber` objects are always immutable.

Adopted Protocols

NSCoding

```
encodeWithCoder:  
initWithCoder:
```

NSCopying

```
- copyWithZone:
```

Tasks

Creating an NSValue

- [initWithBytes:objCType:](#) (page 12)
Initializes and returns an `NSValue` object that contains a given value, which is interpreted as being of a given Objective-C type.
- + [valueWithBytes:objCType:](#) (page 7)
Creates and returns an `NSValue` object that contains a given value, which is interpreted as being of a given Objective-C type.
- + [value:withObjCType:](#) (page 7)
Creates and returns an `NSValue` object that contains a given value which is interpreted as being of a given Objective-C type.
- + [valueWithNonretainedObject:](#) (page 8)
Creates and returns an `NSValue` object that contains a given object.
- + [valueWithPointer:](#) (page 9)
Creates and returns an `NSValue` object that contains a given pointer.
- + [valueWithPoint:](#) (page 9)
Creates and returns an `NSValue` object that contains a given `NSPoint` structure.
- + [valueWithRange:](#) (page 10)
Creates and returns an `NSValue` object that contains a given `NSRange` structure.
- + [valueWithRect:](#) (page 10)
Creates and returns an `NSValue` object that contains a given `NSRect` structure.
- + [valueWithSize:](#) (page 11)
Creates and returns an `NSValue` object that contains a given `NSSize` structure.

Accessing Data

- [getValue:](#) (page 11)
Copies the receiver's value into a given buffer.
- [nonretainedObjectValue](#) (page 13)
Returns the receiver's value as an `id`.
- [objCType](#) (page 13)
Returns a C string containing the Objective-C type of the data contained in the receiver.
- [pointValue](#) (page 14)
Returns an `NSPoint` structure representation of the receiver.
- [pointerValue](#) (page 13)
Returns the receiver's value as a pointer to `void`.
- [rangeValue](#) (page 14)
Returns an `NSRange` structure representation of the receiver.
- [rectValue](#) (page 14)
Returns an `NSRect` structure representation of the receiver.

- [sizeValue](#) (page 15)
Returns an NSSize structure representation of the receiver.

Comparing Objects

- [isEqualToValue:](#) (page 12)
Returns a Boolean value that indicates whether the receiver and another value are equal.

Class Methods

value:withObjCType:

Creates and returns an NSValue object that contains a given value which is interpreted as being of a given Objective-C type.

```
+ (NSValue *)value:(const void *)value withObjCType:(const char *)type
```

Parameters

value

The value for the new NSValue object.

type

The Objective-C type of *value*. *type* should be created with the Objective-C `@encode()` compiler directive; it should not be hard-coded as a C string.

Return Value

A new NSValue object that contains *value*, which is interpreted as being of the Objective-C type *type*.

Discussion

This method has the same effect as [valueWithBytes:objCType:](#) (page 7) and may be deprecated in a future release. You should use [valueWithBytes:objCType:](#) (page 7) instead.

Availability

Available in Mac OS X v10.0 and later.

See Also

+ [valueWithBytes:objCType:](#) (page 7)

Related Sample Code

VideoViewer

Declared In

NSValue.h

valueWithBytes:objCType:

Creates and returns an NSValue object that contains a given value, which is interpreted as being of a given Objective-C type.

```
+ (NSValue *)valueWithBytes:(const void *)value objCType:(const char *)type
```

Parameters*value*

The value for the new NSValue object.

*type*The Objective-C type of *value*. *type* should be created with the Objective-C `@encode()` compiler directive; it should not be hard-coded as a C string.**Return Value**A new NSValue object that contains *value*, which is interpreted as being of the Objective-C type *type*.**Discussion**See *Number and Value Programming Topics for Cocoa* for other considerations in creating an NSValue object and code examples.**Availability**

Available in Mac OS X v10.0 and later.

See Also- [initWithBytes:objCType:](#) (page 12)**Declared In**

NSValue.h

valueWithNonretainedObject:

Creates and returns an NSValue object that contains a given object.

+ (NSValue *)valueWithNonretainedObject:(id)anObject

Parameters*anObject*

The value for the new object.

Return ValueA new NSValue object that contains *anObject*.**Discussion**This method is equivalent to invoking [value:withObjCType:](#) (page 7) in this manner:

```
NSValue *theValue = [NSValue value:&anObject withObjCType:@encode(void *)];
```

This method is useful for preventing an object from being retained when it's added to a collection object (such as an instance of NSArray or NSDictionary).

Availability

Available in Mac OS X v10.0 and later.

See Also- [nonretainedObjectValue](#) (page 13)**Declared In**

NSValue.h

valueWithPoint:

Creates and returns an `NSValue` object that contains a given `NSPoint` structure.

```
+ (NSValue *)valueWithPoint:(NSPoint)aPoint
```

Parameters

aPoint

The value for the new object.

Return Value

A new `NSValue` object that contains the value of *point*.

Availability

Available in Mac OS X v10.0 and later.

See Also

- [pointValue](#) (page 14)

Related Sample Code

Aperture Edit Plugin - Borders & Titles

LightTable

PDF Annotation Editor

Sketch+Accessibility

ZipBrowser

Declared In

`NSGeometry.h`

valueWithPointer:

Creates and returns an `NSValue` object that contains a given pointer.

```
+ (NSValue *)valueWithPointer:(const void *)aPointer
```

Parameters

aPointer

The value for the new object.

Return Value

A new `NSValue` object that contains *aPointer*.

Discussion

This method is equivalent to invoking [value:withObjCType:](#) (page 7) in this manner:

```
NSValue *theValue = [NSValue value:&aPointer withObjCType:@encode(void *)];
```

This method does not copy the contents of *aPointer*, so you must not to deallocate the memory at the pointer destination while the `NSValue` object exists. `NSData` objects may be more suited for arbitrary pointers than `NSValue` objects.

Availability

Available in Mac OS X v10.0 and later.

See Also

- [pointerValue](#) (page 13)

Declared In

NSValue.h

valueWithRange:

Creates and returns an NSValue object that contains a given NSRange structure.

```
+ (NSValue *)valueWithRange:(NSRange)range
```

Parameters

range

The value for the new object.

Return Value

A new NSValue object that contains the value of *range*.

Availability

Available in Mac OS X v10.0 and later.

See Also

- [rangeValue](#) (page 14)

Related Sample Code

SimpleToolbar

Declared In

NSRange.h

valueWithRect:

Creates and returns an NSValue object that contains a given NSRect structure.

```
+ (NSValue *)valueWithRect:(NSRect)rect
```

Parameters

rect

The value for the new object.

Return Value

A new NSValue object that contains the value of *rect*.

Availability

Available in Mac OS X v10.0 and later.

See Also

- [rectValue](#) (page 14)

Related Sample Code

GLUT

IBFragmentView

iSpend
LightTable
Reducer

Declared In
NSGeometry.h

valueWithSize:

Creates and returns an `NSValue` object that contains a given `NSSize` structure.

```
+ (NSValue *)valueWithSize:(NSSize) size
```

Parameters

size

The value for the new object.

Return Value

A new `NSValue` object that contains the value of *size*.

Availability

Available in Mac OS X v10.0 and later.

See Also

- [sizeValue](#) (page 15)

Related Sample Code

Dicey
UIKitMovieShuffler
Quartz Composer WWDC 2005 TextEdit
Sketch+Accessibility
ZipBrowser

Declared In
NSGeometry.h

Instance Methods

getValue:

Copies the receiver's value into a given buffer.

```
- (void)getValue:(void *)buffer
```

Parameters

buffer

A buffer into which to copy the receiver's value. *buffer* must be large enough to hold the value.

Availability

Available in Mac OS X v10.0 and later.

Related Sample Code

AudioDataOutputToAudioUnit
 CIVideoDemoGL
 QTCoreVideo101
 QTQuartzPlayer
 VideoViewer

Declared In

NSValue.h

initWithBytes:objCType:

Initializes and returns an `NSValue` object that contains a given value, which is interpreted as being of a given Objective-C type.

```
- (id)initWithBytes:(const void *)value objCType:(const char *)type
```

Parameters

value

The value for the new `NSValue` object.

type

The Objective-C type of *value*. *type* should be created with the Objective-C `@encode()` compiler directive; it should not be hard-coded as a C string.

Return Value

An initialized `NSValue` object that contains *value*, which is interpreted as being of the Objective-C type *type*. The returned object might be different than the original receiver.

Discussion

See *Number and Value Programming Topics for Cocoa* for other considerations in creating an `NSValue` object.

This is the designated initializer for the `NSValue` class.

Availability

Available in Mac OS X v10.0 and later.

Declared In

NSValue.h

isEqualToValue:

Returns a Boolean value that indicates whether the receiver and another value are equal.

```
- (BOOL)isEqualToValue:(NSValue *)value
```

Parameters

aValue

The value with which to compare the receiver.

Return Value

YES if the receiver and *aValue* are equal, otherwise NO. For `NSValue` objects, the class, type, and contents are compared to determine equality.

Availability

Available in Mac OS X v10.0 and later.

Declared In

NSValue.h

nonretainedObjectValue

Returns the receiver's value as an `id`.

- (id)nonretainedObjectValue

Return Value

The receiver's value as an `id`. If the receiver was not created to hold a pointer-sized data item, the result is undefined.

Availability

Available in Mac OS X v10.0 and later.

See Also

- [getValue:](#) (page 11)

Declared In

NSValue.h

objCType

Returns a C string containing the Objective-C type of the data contained in the receiver.

- (const char *)objCType

Return Value

A C string containing the Objective-C type of the data contained in the receiver, as encoded by the `@encode()` compiler directive.

Availability

Available in Mac OS X v10.0 and later.

Declared In

NSValue.h

pointerValue

Returns the receiver's value as a pointer to `void`.

- (void *)pointerValue

Return Value

The receiver's value as a pointer to `void`. If the receiver was not created to hold a pointer-sized data item, the result is undefined.

Availability

Available in Mac OS X v10.0 and later.

See Also

- [getValue:](#) (page 11)

Declared In

NSValue.h

pointValue

Returns an `NSPoint` structure representation of the receiver.

- (`NSPoint`)pointValue

Return Value

An `NSPoint` structure representation of the receiver.

Availability

Available in Mac OS X v10.0 and later.

See Also

- [rectValue](#) (page 14)

- [sizeValue](#) (page 15)

Declared In

NSGeometry.h

rangeValue

Returns an `NSRange` structure representation of the receiver.

- (`NSRange`)rangeValue

Return Value

An `NSRange` structure representation of the receiver.

Availability

Available in Mac OS X v10.0 and later.

See Also

+ [valueWithRange:](#) (page 10)

Related Sample Code

SimpleToolbar

Declared In

NSRange.h

rectValue

Returns an `NSRect` structure representation of the receiver.

- (NSRect)rectValue

Return Value

An `NSRect` structure representation of the receiver.

Availability

Available in Mac OS X v10.0 and later.

See Also

- [pointValue](#) (page 14)

- [sizeValue](#) (page 15)

Related Sample Code

GLUT

IBFragmentView

Sketch+Accessibility

Declared In

`NSGeometry.h`

sizeValue

Returns an `NSSize` structure representation of the receiver.

- (NSSize)sizeValue

Return Value

An `NSSize` structure representation of the receiver.

Availability

Available in Mac OS X v10.0 and later.

See Also

- [pointValue](#) (page 14)

- [rectValue](#) (page 14)

Related Sample Code

QTAudioExtractionPanel

QTKitAdvancedDocument

QTKitFrameStepper

QTKitPlayer

QTKitTimeCode

Declared In

`NSGeometry.h`

Document Revision History

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

Date	Notes
2007-10-31	Corrected typographical errors.
2006-05-23	First publication of this content as a separate document.

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