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# NSMutableArray Class Reference

Data Management: Data Types & Collections





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## **Document Revision History 15**

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# NSArray Class Reference

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<b>Inherits from</b>	NSObject
<b>Conforms to</b>	NSCoding NSCopying NSFastEnumeration NSObject (NSObject)
<b>Framework</b>	/System/Library/Frameworks/Foundation.framework
<b>Declared in</b>	NSArray.h
<b>Companion guides</b>	Collections Programming Topics Garbage Collection Programming Guide
<b>Availability</b>	Available in Mac OS X v10.5 and later.

## Overview

`NSArray` is a mutable collection modeled after `NSMutableArray` but it can also hold `NULL` values, which can be inserted or extracted (and which contribute to the object's count). Moreover, unlike traditional arrays, you can set the count of the array directly. In a garbage collected environment, if you specify a zeroing weak memory configuration, if an element is collected it is replaced by a `NULL` value.

The copying and archiving protocols are applicable only when a pointer array is configured for object uses.

The fast enumeration protocol (that is, use a pointer array in the `for...in` language construct—see Fast Enumeration in *The Objective-C Programming Language*) will yield `NULL` values that are present in the array. It is defined for all types of pointers although the language syntax doesn't directly support this.

## Tasks

### Creating and Initializing a New Pointer Array

- `initWithOptions:` (page 9)  
Initializes the receiver to use the given options.
- `initWithPointerFunctions:` (page 10)  
Initializes the receiver to use the given functions.

- + [pointerArrayWithOptions:](#) (page 6)  
Returns a new pointer array initialized to use the given options.
- + [pointerArrayWithPointerFunctions:](#) (page 7)  
A new pointer array initialized to use the given functions.
- + [pointerArrayWithStrongObjects](#) (page 7)  
Returns a new pointer array that maintains strong references to its elements.
- + [pointerArrayWithWeakObjects](#) (page 8)  
Returns a new pointer array that maintains weak references to its elements.

## Managing the Collection

- [count](#) (page 9)  
Returns the number of elements in the receiver.
- [setCount:](#) (page 12)  
Sets the count for the receiver.
- [allObjects](#) (page 9)  
Returns an array containing all the objects in the receiver.
- [pointerAtIndex:](#) (page 11)  
Returns the pointer at a given index.
- [addPointer:](#) (page 8)  
Adds a given pointer to the receiver.
- [removePointerAtIndex:](#) (page 12)  
Removes the pointer at a given index.
- [insertPointer:atIndex:](#) (page 10)  
Inserts a pointer at a given index.
- [replacePointerAtIndex:withPointer:](#) (page 12)  
Replaces the pointer at a given index.
- [compact](#) (page 9)  
Removes NULL values from the receiver.

## Getting the Pointer Functions

- [pointerFunctions](#) (page 11)  
Returns a new `NSPointerFunctions` object reflecting the functions in use by the receiver.

## Class Methods

### **pointerArrayWithOptions:**

Returns a new pointer array initialized to use the given options.

```
+ (id)pointerArrayWithOptions:(NSPointerFunctionsOptions)options
```

**Parameters***options*

The pointer functions options for the new instance.

**Return Value**

A new pointer array initialized to use the given options.

**Availability**

Available in Mac OS X v10.5 and later.

**See Also**[+ pointerArrayWithPointerFunctions:](#) (page 7)[+ pointerArrayWithStrongObjects](#) (page 7)[+ pointerArrayWithWeakObjects](#) (page 8)**Declared In**

NSPointerArray.h

**pointerArrayWithPointerFunctions:**

A new pointer array initialized to use the given functions.

`+ (id)pointerArrayWithPointerFunctions:(NSPointerFunctions *)functions`**Parameters***functions*

The pointer functions for the new instance.

**Return Value**

A new pointer array initialized to use the given pointer functions.

**Availability**

Available in Mac OS X v10.5 and later.

**See Also**[+ pointerArrayWithOptions:](#) (page 6)[+ pointerArrayWithStrongObjects](#) (page 7)[+ pointerArrayWithWeakObjects](#) (page 8)**Declared In**

NSPointerArray.h

**pointerArrayWithStrongObjects**

Returns a new pointer array that maintains strong references to its elements.

`+ (id)pointerArrayWithStrongObjects`**Return Value**

A new pointer array that maintains strong references to its elements.

**Availability**

Available in Mac OS X v10.5 and later.

**See Also**

- + [pointerArrayWithWeakObjects](#) (page 8)
- + [pointerArrayWithOptions:](#) (page 6)
- + [pointerArrayWithPointerFunctions:](#) (page 7)

**Declared In**

NSPointerArray.h

**pointerArrayWithWeakObjects**

Returns a new pointer array that maintains weak references to its elements.

+ (id)pointerArrayWithWeakObjects

**Return Value**

A new pointer array that maintains weak references to its elements.

**Availability**

Available in Mac OS X v10.5 and later.

**See Also**

- + [pointerArrayWithStrongObjects](#) (page 7)
- + [pointerArrayWithOptions:](#) (page 6)
- + [pointerArrayWithPointerFunctions:](#) (page 7)

**Declared In**

NSPointerArray.h

## Instance Methods

**addPointer:**

Adds a given pointer to the receiver.

- (void)addPointer:(void \*)*pointer***Parameters***pointer*

The pointer to add. This value may be NULL.

**Discussion***pointer* is added at index [count](#) (page 9).**Availability**

Available in Mac OS X v10.5 and later.

**Declared In**

NSPointerArray.h



## allObjects

Returns an array containing all the objects in the receiver.

- (NSArray \*)allObjects

### Return Value

An array containing all the objects in the receiver.

### Availability

Available in Mac OS X v10.5 and later.

### See Also

- [count](#) (page 9)

### Declared In

NSPointerArray.h

## compact

Removes NULL values from the receiver.

- (void)compact

### Availability

Available in Mac OS X v10.5 and later.

### Declared In

NSPointerArray.h

## count

Returns the number of elements in the receiver.

- (NSUInteger)count

### Return Value

The number of elements in the receiver.

### Availability

Available in Mac OS X v10.5 and later.

### See Also

- [setCount:](#) (page 12)

### Declared In

NSPointerArray.h

## initWithOptions:

Initializes the receiver to use the given options.

- (id)initWithOptions:(NSPointerFunctionsOptions)options

**Parameters***options*

The pointer functions options for the new instance.

**Return Value**

The receiver, initialized to use the given options.

**Availability**

Available in Mac OS X v10.5 and later.

**See Also**

- [initWithPointerFunctions:](#) (page 10)
- + [pointerArrayWithOptions:](#) (page 6)
- + [pointerArrayWithPointerFunctions:](#) (page 7)

**Declared In**

NSPointerArray.h

**initWithPointerFunctions:**

Initializes the receiver to use the given functions.

- (id)initWithPointerFunctions:(NSPointerFunctions \*)*functions***Parameters***functions*

The pointer functions for the new instance.

**Return Value**

The receiver, initialized to use the given functions.

**Availability**

Available in Mac OS X v10.5 and later.

**See Also**

- [initWithOptions:](#) (page 9)
- + [pointerArrayWithPointerFunctions:](#) (page 7)
- + [pointerArrayWithOptions:](#) (page 6)

**Declared In**

NSPointerArray.h

**insertPointer:atIndex:**

Inserts a pointer at a given index.

- (void)insertPointer:(void \*)*item* atIndex:(NSUInteger)*index***Parameters***item*

The pointer to add.

*index*

The index of an element in the receiver. This value must be less than the [count](#) (page 9) of the receiver.

#### Discussion

Elements at and above *index*, including NULL values, slide higher.

#### Availability

Available in Mac OS X v10.5 and later.

#### Declared In

NSPointerArray.h

## pointerAtIndex:

Returns the pointer at a given index.

```
- (void *)pointerAtIndex:(NSUInteger) index
```

#### Parameters

*index*

The index of an element in the receiver. This value must be less than the [count](#) (page 9) of the receiver.

#### Return Value

The pointer at *index*.

#### Discussion

The returned value may be NULL.

#### Availability

Available in Mac OS X v10.5 and later.

#### Declared In

NSPointerArray.h

## pointerFunctions

Returns a new NSPointerFunctions object reflecting the functions in use by the receiver.

```
- (NSPointerFunctions *)pointerFunctions
```

#### Return Value

A new NSPointerFunctions object reflecting the functions in use by the receiver.

#### Discussion

The returned object is a new NSPointerFunctions object that you can modify and/or use directly to create other pointer collections.

#### Availability

Available in Mac OS X v10.5 and later.

#### Declared In

NSPointerArray.h

**removePointerAtIndex:**

Removes the pointer at a given index.

- (void)removePointerAtIndex:(NSUInteger) *index*

**Parameters**

*index*

The index of an element in the receiver. This value must be less than the [count](#) (page 9) of the receiver.

**Discussion**

Elements above *index*, including NULL values, slide lower.

**Availability**

Available in Mac OS X v10.5 and later.

**Declared In**

NSPointerArray.h

**replacePointerAtIndex:withPointer:**

Replaces the pointer at a given index.

- (void)replacePointerAtIndex:(NSUInteger) *index* withPointer:(void \*) *item*

**Parameters**

*index*

The index of an element in the receiver. This value must be less than the [count](#) (page 9) of the receiver.

*item*

The item with which to replace the element at *index*. This value may be NULL.

**Availability**

Available in Mac OS X v10.5 and later.

**Declared In**

NSPointerArray.h

**setCount:**

Sets the count for the receiver.

- (void)setCount:(NSUInteger) *count*

**Parameters**

*count*

The count for the receiver.

**Availability**

Available in Mac OS X v10.5 and later.

**See Also**

- [count](#) (page 9)

**Discussion**

If *count* is greater than the [count](#) (page 9) of the receiver, NULL values are added; if *count* is less than the [count](#) (page 9) of the receiver, then elements at indexes *count* and greater are removed from the receiver.

**Declared In**

NSPointerArray.h



# Document Revision History

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

Date	Notes
2009-03-04	Clarified behavior in fast enumeration.
2007-01-06	New document that describes the mutable collection that can hold NULL values.

## REVISION HISTORY

### Document Revision History