

# Functions

## Class Functions

### Create a new instance of a class

id	<b>class_createInstance</b> (Class <i>aClass</i> , unsigned int <i>indexedIvarBytes</i> )
id	<b>class_createInstanceFromZone</b> (Class <i>aClass</i> , unsigned int <i>indexedIvarBytes</i> , NXZone <i>*zone</i> )

### Get the class template for an instance variable

Ivar	<b>class_getInstanceVariable</b> (Class <i>aClass</i> , const char <i>*variableName</i> )
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### Get, add, and remove methods

Method	<b>class_getInstanceMethod</b> (Class <i>aClass</i> , SEL <i>aSelector</i> )
Method	<b>class_getClassMethod</b> (Class <i>aClass</i> , SEL <i>aSelector</i> )
void	<b>class_addMethods</b> (Class <i>aClass</i> , struct objc_method_list <i>*methodList</i> )
void	<b>class_removeMethods</b> (Class <i>aClass</i> , struct objc_method_list <i>*methodList</i> )

### Pose as the superclass

Class	<b>class_poseAs</b> (Class <i>theImposter</i> , Class <i>theSuperclass</i> )
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### Set and get the class version

void	<b>class_setVersion</b> (Class <i>aClass</i> , int <i>versionNumber</i> )
int	<b>class_getVersion</b> (Class <i>aClass</i> )

## System Functions

### Manage run-time structures

id	<b>objc_getClass</b> (const char <i>*aClassName</i> )
id	<b>objc_lookUpClass</b> (const char <i>*aClassName</i> )
id	<b>objc_getMetaClass</b> (const char <i>*aClassName</i> )
NXHashTable *	<b>objc_getClasses</b> (void)
void	<b>objc_addClass</b> (Class <i>aClass</i> )
Module *	<b>objc_getModules</b> (void)

### Dynamically load and unload classes

long	<b>objc_loadModules</b> (char <i>*files</i> [], NXStream <i>*stream</i> , void (* <i>callback</i> )(Class, Category), struct mach_header <i>**header</i> , char <i>*debugFilename</i> )
long	<b>objc_unloadModules</b> (NXStream <i>*stream</i> , void (* <i>callback</i> )(Class, Category))

**Send messages at run time**

id	<b>objc_msgSend</b> (id <i>theReceiver</i> , SEL <i>theSelector</i> , ...)
id	<b>objc_msgSendSuper</b> (struct objc_super * <i>superContext</i> , SEL <i>theSelector</i> , ...)
id	<b>objc_msgSendv</b> (id <i>theReceiver</i> , SEL <i>theSelector</i> , unsigned int <i>argSize</i> , marg_list <i>argFrame</i> )

**Make the run-time system thread safe**

void	<b>objc_setMultithreaded</b> (BOOL <i>flag</i> )
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**Object Functions**

**Manage object memory**

id	<b>object_dispose</b> (Object * <i>anObject</i> )
id	<b>object_copy</b> (Object * <i>anObject</i> , unsigned int <i>indexedIvarBytes</i> )
id	<b>object_copyFromZone</b> (Object * <i>anObject</i> , unsigned int <i>indexedIvarBytes</i> , NXZone <i>*zone</i> )
id	<b>object_realloc</b> (Object * <i>anObject</i> , unsigned int <i>numBytes</i> )
id	<b>object_reallocFromZone</b> (Object * <i>anObject</i> , unsigned int <i>numBytes</i> , NXZone <i>*zone</i> )

**Return the class name**

const char *	<b>object_getClassName</b> (id <i>anObject</i> )
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**Set and get instance variables**

Ivar	<b>object_setInstanceVariable</b> (id <i>anObject</i> , const char * <i>variableName</i> , void * <i>value</i> )
Ivar	<b>object_getInstanceVariable</b> (id <i>anObject</i> , const char * <i>variableName</i> , void ** <i>value</i> )

**Return a pointer to an object's extra memory**

void *	<b>object_getIndexedIvars</b> (id <i>anObject</i> )
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**Method Functions and Macros**

**Get information about a method**

unsigned int	<b>method_getNumberOfArguments</b> (Method <i>aMethod</i> )
unsigned int	<b>method_getSizeOfArguments</b> (Method <i>aMethod</i> )
unsigned int	<b>method_getArgumentInfo</b> (Method <i>aMethod</i> , int <i>index</i> , const char ** <i>type</i> , int <i>*offset</i> )

**Examine and alter method argument values**

<i>type-name</i>	<b>marg_getValue</b> (marg_list <i>argFrame</i> , int <i>offset</i> , <i>type-name</i> )
<i>type-name</i> *	<b>marg_getRef</b> (marg_list <i>argFrame</i> , int <i>offset</i> , <i>type-name</i> )
void	<b>marg_setValue</b> (marg_list <i>argFrame</i> , int <i>offset</i> , <i>type-name</i> , <i>type-name value</i> )

# Selector Functions

## Match method names with method selectors

SEL	<code>sel_getUid(const char *<i>aName</i>)</code>
const char *	<code>sel_getName(SEL <i>aSelector</i>)</code>

## Determine whether a selector is valid

BOOL	<code>sel_isMapped(SEL <i>aSelector</i>)</code>
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## Register a method name

SEL	<code>sel_registerName(const char *<i>aName</i>)</code>
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