| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/ManagementFactory.html) | [**Tree**](http://docs.google.com/package-tree.html) | [**Deprecated**](http://docs.google.com/deprecated-list.html) | [**Index**](http://docs.google.com/index-files/index-1.html) | [**Help**](http://docs.google.com/help-doc.html) | | --- | --- | --- | --- | --- | --- | --- | --- | | | ***Java™ Platform***  ***Standard Ed. 6*** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [**PREV CLASS**](http://docs.google.com/java/lang/management/LockInfo.html)   [**NEXT CLASS**](http://docs.google.com/java/lang/management/ManagementPermission.html) | [**FRAMES**](http://docs.google.com/index.html?java/lang/management/ManagementFactory.html)    [**NO FRAMES**](http://docs.google.com/ManagementFactory.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |
| SUMMARY: NESTED | [FIELD](#tyjcwt) | CONSTR | [METHOD](#3dy6vkm) | DETAIL: [FIELD](#4d34og8) | CONSTR | [METHOD](#z337ya) |

## **java.lang.management**

Class ManagementFactory

[java.lang.Object](http://docs.google.com/java/lang/Object.html)  
 **java.lang.management.ManagementFactory**

public class **ManagementFactory**extends [Object](http://docs.google.com/java/lang/Object.html)

The ManagementFactory class is a factory class for getting managed beans for the Java platform. This class consists of static methods each of which returns one or more [platform MXBean(s)](#_3znysh7) representing the management interface of a component of the Java virtual machine.

An application can access a platform MXBean in the following ways:

* *Direct access to an MXBean interface*
  1. Get the MXBean instance through the static factory method and access the MXBean locally of the running virtual machine.
  2. Construct an MXBean proxy instance that forwards the method calls to a given [MBeanServer](http://docs.google.com/javax/management/MBeanServer.html) by calling [newPlatfromMXBeanProxy](http://docs.google.com/java/lang/management/ManagementFactory.html#newPlatformMXBeanProxy(javax.management.MBeanServerConnection,%20java.lang.String,%20java.lang.Class)). A proxy is typically constructed to remotely access an MXBean of another running virtual machine.
* *Indirect access to an MXBean interface via MBeanServer*
  1. Go through the [platform MBeanServer](http://docs.google.com/java/lang/management/ManagementFactory.html#getPlatformMBeanServer()) to access MXBeans locally or a specific MBeanServerConnection to access MXBeans remotely. The attributes and operations of an MXBean use only *JMX open types* which include basic data types, [CompositeData](http://docs.google.com/javax/management/openmbean/CompositeData.html), and [TabularData](http://docs.google.com/javax/management/openmbean/TabularData.html) defined in [OpenType](http://docs.google.com/javax/management/openmbean/OpenType.html). The mapping is specified below.

#### Platform MXBeans

A platform MXBean is a *managed bean* that conforms to the JMX Instrumentation Specification and only uses a set of basic data types described below. See  [the specification of MXBeans](http://docs.google.com/javax/management/MXBean.html#MXBean-spec) for details. A JMX management application and the platform MBeanServer can interoperate without requiring classes for MXBean specific data types. The data types being transmitted between the JMX connector server and the connector client are [open types](http://docs.google.com/javax/management/openmbean/OpenType.html) and this allows interoperation across versions.

The platform MXBean interfaces use only the following data types:

* Primitive types such as int, long, boolean, etc
* Wrapper classes for primitive types such as [Integer](http://docs.google.com/java/lang/Integer.html), [Long](http://docs.google.com/java/lang/Long.html), [Boolean](http://docs.google.com/java/lang/Boolean.html), etc and [String](http://docs.google.com/java/lang/String.html)
* [Enum](http://docs.google.com/java/lang/Enum.html) classes
* Classes that define only getter methods and define a static from method with a [CompositeData](http://docs.google.com/javax/management/openmbean/CompositeData.html) argument to convert from an input CompositeData to an instance of that class
* [List<E>](http://docs.google.com/java/util/List.html) where E is a primitive type, a wrapper class, an enum class, or a class supporting conversion from a CompositeData to its class
* [Map<K,V>](http://docs.google.com/java/util/Map.html) where K and V are a primitive type, a wrapper class, an enum class, or a class supporting conversion from a CompositeData to its class

When an attribute or operation of a platform MXBean is accessed via an MBeanServer, the data types are mapped as follows:

* A primitive type or a wrapper class is mapped to the same type.
* An [Enum](http://docs.google.com/java/lang/Enum.html) is mapped to String whose value is the name of the enum constant.
* A class that defines only getter methods and a static from method with a [CompositeData](http://docs.google.com/javax/management/openmbean/CompositeData.html) argument is mapped to [CompositeData](http://docs.google.com/javax/management/openmbean/CompositeData.html).
* Map<K,V> is mapped to [TabularData](http://docs.google.com/javax/management/openmbean/TabularData.html) whose row type is a [CompositeType](http://docs.google.com/javax/management/openmbean/CompositeType.html) with two items whose names are *"key"* and *"value"* and the item types are the corresponding mapped type of K and V respectively and the *"key"* is the index.
* List<E> is mapped to an array with the mapped type of E as the element type.
* An array of element type E is mapped to an array of the same dimenions with the mapped type of E as the element type.

The [MBeanInfo](http://docs.google.com/javax/management/MBeanInfo.html) for a platform MXBean describes the data types of the attributes and operations as primitive or open types mapped as specified above.

For example, the [MemoryMXBean](http://docs.google.com/java/lang/management/MemoryMXBean.html) interface has the following *getter* and *setter* methods:

public MemoryUsage getHeapMemoryUsage();  
 public boolean isVerbose();  
 public void setVerbose(boolean value);

These attributes in the MBeanInfo of the MemoryMXBean have the following names and types:

| Attribute Name | Type |
| --- | --- |
| HeapMemoryUsage | [CompositeData representing MemoryUsage](http://docs.google.com/java/lang/management/MemoryUsage.html#from(javax.management.openmbean.CompositeData)) |
| Verbose | boolean |

#### MXBean Names

Each platform MXBean for a Java virtual machine has a unique [ObjectName](http://docs.google.com/javax/management/ObjectName.html) for registration in the platform MBeanServer. A Java virtual machine has a single instance of the following management interfaces:

| Management Interface | ObjectName |
| --- | --- |
| [ClassLoadingMXBean](http://docs.google.com/java/lang/management/ClassLoadingMXBean.html) | [java.lang:type=ClassLoading](http://docs.google.com/java/lang/management/ManagementFactory.html#CLASS_LOADING_MXBEAN_NAME) |
| [MemoryMXBean](http://docs.google.com/java/lang/management/MemoryMXBean.html) | [java.lang:type=Memory](http://docs.google.com/java/lang/management/ManagementFactory.html#MEMORY_MXBEAN_NAME) |
| [ThreadMXBean](http://docs.google.com/java/lang/management/ThreadMXBean.html) | [java.lang:type=Threading](http://docs.google.com/java/lang/management/ManagementFactory.html#THREAD_MXBEAN_NAME) |
| [RuntimeMXBean](http://docs.google.com/java/lang/management/RuntimeMXBean.html) | [java.lang:type=Runtime](http://docs.google.com/java/lang/management/ManagementFactory.html#RUNTIME_MXBEAN_NAME) |
| [OperatingSystemMXBean](http://docs.google.com/java/lang/management/OperatingSystemMXBean.html) | [java.lang:type=OperatingSystem](http://docs.google.com/java/lang/management/ManagementFactory.html#OPERATING_SYSTEM_MXBEAN_NAME) |

A Java virtual machine has zero or a single instance of the following management interfaces.

| Management Interface | ObjectName |
| --- | --- |
| [CompilationMXBean](http://docs.google.com/java/lang/management/CompilationMXBean.html) | [java.lang:type=Compilation](http://docs.google.com/java/lang/management/ManagementFactory.html#COMPILATION_MXBEAN_NAME) |

A Java virtual machine may have one or more instances of the following management interfaces.

| Management Interface | ObjectName |
| --- | --- |
| [GarbageCollectorMXBean](http://docs.google.com/java/lang/management/GarbageCollectorMXBean.html) | [java.lang:type=GarbageCollector](http://docs.google.com/java/lang/management/ManagementFactory.html#GARBAGE_COLLECTOR_MXBEAN_DOMAIN_TYPE),name=*collector's name* |
| [MemoryManagerMXBean](http://docs.google.com/java/lang/management/MemoryManagerMXBean.html) | [java.lang:type=MemoryManager](http://docs.google.com/java/lang/management/ManagementFactory.html#MEMORY_MANAGER_MXBEAN_DOMAIN_TYPE),name=*manager's name* |
| [MemoryPoolMXBean](http://docs.google.com/java/lang/management/MemoryPoolMXBean.html) | [java.lang:type=MemoryPool](http://docs.google.com/java/lang/management/ManagementFactory.html#MEMORY_POOL_MXBEAN_DOMAIN_TYPE),name=*pool's name* |

**Since:** 1.5 **See Also:** [JMX Specification.](http://docs.google.com/javax/management/package-summary.html),  [Ways to Access Management Metrics](http://docs.google.com/package-summary.html#examples), [LoggingMXBean](http://docs.google.com/java/util/logging/LoggingMXBean.html), [MXBean](http://docs.google.com/javax/management/MXBean.html)

| **Field Summary** | |
| --- | --- |
| static [String](http://docs.google.com/java/lang/String.html) | [**CLASS\_LOADING\_MXBEAN\_NAME**](http://docs.google.com/java/lang/management/ManagementFactory.html#CLASS_LOADING_MXBEAN_NAME)            String representation of the ObjectName for the [ClassLoadingMXBean](http://docs.google.com/java/lang/management/ClassLoadingMXBean.html). |
| static [String](http://docs.google.com/java/lang/String.html) | [**COMPILATION\_MXBEAN\_NAME**](http://docs.google.com/java/lang/management/ManagementFactory.html#COMPILATION_MXBEAN_NAME)            String representation of the ObjectName for the [CompilationMXBean](http://docs.google.com/java/lang/management/CompilationMXBean.html). |
| static [String](http://docs.google.com/java/lang/String.html) | [**GARBAGE\_COLLECTOR\_MXBEAN\_DOMAIN\_TYPE**](http://docs.google.com/java/lang/management/ManagementFactory.html#GARBAGE_COLLECTOR_MXBEAN_DOMAIN_TYPE)            The domain name and the type key property in the ObjectName for a [GarbageCollectorMXBean](http://docs.google.com/java/lang/management/GarbageCollectorMXBean.html). |
| static [String](http://docs.google.com/java/lang/String.html) | [**MEMORY\_MANAGER\_MXBEAN\_DOMAIN\_TYPE**](http://docs.google.com/java/lang/management/ManagementFactory.html#MEMORY_MANAGER_MXBEAN_DOMAIN_TYPE)            The domain name and the type key property in the ObjectName for a [MemoryManagerMXBean](http://docs.google.com/java/lang/management/MemoryManagerMXBean.html). |
| static [String](http://docs.google.com/java/lang/String.html) | [**MEMORY\_MXBEAN\_NAME**](http://docs.google.com/java/lang/management/ManagementFactory.html#MEMORY_MXBEAN_NAME)            String representation of the ObjectName for the [MemoryMXBean](http://docs.google.com/java/lang/management/MemoryMXBean.html). |
| static [String](http://docs.google.com/java/lang/String.html) | [**MEMORY\_POOL\_MXBEAN\_DOMAIN\_TYPE**](http://docs.google.com/java/lang/management/ManagementFactory.html#MEMORY_POOL_MXBEAN_DOMAIN_TYPE)            The domain name and the type key property in the ObjectName for a [MemoryPoolMXBean](http://docs.google.com/java/lang/management/MemoryPoolMXBean.html). |
| static [String](http://docs.google.com/java/lang/String.html) | [**OPERATING\_SYSTEM\_MXBEAN\_NAME**](http://docs.google.com/java/lang/management/ManagementFactory.html#OPERATING_SYSTEM_MXBEAN_NAME)            String representation of the ObjectName for the [OperatingSystemMXBean](http://docs.google.com/java/lang/management/OperatingSystemMXBean.html). |
| static [String](http://docs.google.com/java/lang/String.html) | [**RUNTIME\_MXBEAN\_NAME**](http://docs.google.com/java/lang/management/ManagementFactory.html#RUNTIME_MXBEAN_NAME)            String representation of the ObjectName for the [RuntimeMXBean](http://docs.google.com/java/lang/management/RuntimeMXBean.html). |
| static [String](http://docs.google.com/java/lang/String.html) | [**THREAD\_MXBEAN\_NAME**](http://docs.google.com/java/lang/management/ManagementFactory.html#THREAD_MXBEAN_NAME)            String representation of the ObjectName for the [ThreadMXBean](http://docs.google.com/java/lang/management/ThreadMXBean.html). |

| **Method Summary** | |
| --- | --- |
| static [ClassLoadingMXBean](http://docs.google.com/java/lang/management/ClassLoadingMXBean.html) | [**getClassLoadingMXBean**](http://docs.google.com/java/lang/management/ManagementFactory.html#getClassLoadingMXBean())()            Returns the managed bean for the class loading system of the Java virtual machine. |
| static [CompilationMXBean](http://docs.google.com/java/lang/management/CompilationMXBean.html) | [**getCompilationMXBean**](http://docs.google.com/java/lang/management/ManagementFactory.html#getCompilationMXBean())()            Returns the managed bean for the compilation system of the Java virtual machine. |
| static [List](http://docs.google.com/java/util/List.html)<[GarbageCollectorMXBean](http://docs.google.com/java/lang/management/GarbageCollectorMXBean.html)> | [**getGarbageCollectorMXBeans**](http://docs.google.com/java/lang/management/ManagementFactory.html#getGarbageCollectorMXBeans())()            Returns a list of [GarbageCollectorMXBean](http://docs.google.com/java/lang/management/GarbageCollectorMXBean.html) objects in the Java virtual machine. |
| static [List](http://docs.google.com/java/util/List.html)<[MemoryManagerMXBean](http://docs.google.com/java/lang/management/MemoryManagerMXBean.html)> | [**getMemoryManagerMXBeans**](http://docs.google.com/java/lang/management/ManagementFactory.html#getMemoryManagerMXBeans())()            Returns a list of [MemoryManagerMXBean](http://docs.google.com/java/lang/management/MemoryManagerMXBean.html) objects in the Java virtual machine. |
| static [MemoryMXBean](http://docs.google.com/java/lang/management/MemoryMXBean.html) | [**getMemoryMXBean**](http://docs.google.com/java/lang/management/ManagementFactory.html#getMemoryMXBean())()            Returns the managed bean for the memory system of the Java virtual machine. |
| static [List](http://docs.google.com/java/util/List.html)<[MemoryPoolMXBean](http://docs.google.com/java/lang/management/MemoryPoolMXBean.html)> | [**getMemoryPoolMXBeans**](http://docs.google.com/java/lang/management/ManagementFactory.html#getMemoryPoolMXBeans())()            Returns a list of [MemoryPoolMXBean](http://docs.google.com/java/lang/management/MemoryPoolMXBean.html) objects in the Java virtual machine. |
| static [OperatingSystemMXBean](http://docs.google.com/java/lang/management/OperatingSystemMXBean.html) | [**getOperatingSystemMXBean**](http://docs.google.com/java/lang/management/ManagementFactory.html#getOperatingSystemMXBean())()            Returns the managed bean for the operating system on which the Java virtual machine is running. |
| static [MBeanServer](http://docs.google.com/javax/management/MBeanServer.html) | [**getPlatformMBeanServer**](http://docs.google.com/java/lang/management/ManagementFactory.html#getPlatformMBeanServer())()            Returns the platform [MBeanServer](http://docs.google.com/javax/management/MBeanServer.html). |
| static [RuntimeMXBean](http://docs.google.com/java/lang/management/RuntimeMXBean.html) | [**getRuntimeMXBean**](http://docs.google.com/java/lang/management/ManagementFactory.html#getRuntimeMXBean())()            Returns the managed bean for the runtime system of the Java virtual machine. |
| static [ThreadMXBean](http://docs.google.com/java/lang/management/ThreadMXBean.html) | [**getThreadMXBean**](http://docs.google.com/java/lang/management/ManagementFactory.html#getThreadMXBean())()            Returns the managed bean for the thread system of the Java virtual machine. |
| static   | <T> T | | --- | | [**newPlatformMXBeanProxy**](http://docs.google.com/java/lang/management/ManagementFactory.html#newPlatformMXBeanProxy(javax.management.MBeanServerConnection,%20java.lang.String,%20java.lang.Class))([MBeanServerConnection](http://docs.google.com/javax/management/MBeanServerConnection.html) connection, [String](http://docs.google.com/java/lang/String.html) mxbeanName, [Class](http://docs.google.com/java/lang/Class.html)<T> mxbeanInterface)            Returns a proxy for a platform MXBean interface of a given [MXBean name](#_2et92p0) that forwards its method calls through the given MBeanServerConnection. |

| **Methods inherited from class java.lang.**[**Object**](http://docs.google.com/java/lang/Object.html) |
| --- |
| [clone](http://docs.google.com/java/lang/Object.html#clone()), [equals](http://docs.google.com/java/lang/Object.html#equals(java.lang.Object)), [finalize](http://docs.google.com/java/lang/Object.html#finalize()), [getClass](http://docs.google.com/java/lang/Object.html#getClass()), [hashCode](http://docs.google.com/java/lang/Object.html#hashCode()), [notify](http://docs.google.com/java/lang/Object.html#notify()), [notifyAll](http://docs.google.com/java/lang/Object.html#notifyAll()), [toString](http://docs.google.com/java/lang/Object.html#toString()), [wait](http://docs.google.com/java/lang/Object.html#wait()), [wait](http://docs.google.com/java/lang/Object.html#wait(long)), [wait](http://docs.google.com/java/lang/Object.html#wait(long,%20int)) |

| **Field Detail** |
| --- |

### CLASS\_LOADING\_MXBEAN\_NAME

public static final [String](http://docs.google.com/java/lang/String.html) **CLASS\_LOADING\_MXBEAN\_NAME**

String representation of the ObjectName for the [ClassLoadingMXBean](http://docs.google.com/java/lang/management/ClassLoadingMXBean.html).

**See Also:**[Constant Field Values](http://docs.google.com/constant-values.html#java.lang.management.ManagementFactory.CLASS_LOADING_MXBEAN_NAME)

### COMPILATION\_MXBEAN\_NAME

public static final [String](http://docs.google.com/java/lang/String.html) **COMPILATION\_MXBEAN\_NAME**

String representation of the ObjectName for the [CompilationMXBean](http://docs.google.com/java/lang/management/CompilationMXBean.html).

**See Also:**[Constant Field Values](http://docs.google.com/constant-values.html#java.lang.management.ManagementFactory.COMPILATION_MXBEAN_NAME)

### MEMORY\_MXBEAN\_NAME

public static final [String](http://docs.google.com/java/lang/String.html) **MEMORY\_MXBEAN\_NAME**

String representation of the ObjectName for the [MemoryMXBean](http://docs.google.com/java/lang/management/MemoryMXBean.html).

**See Also:**[Constant Field Values](http://docs.google.com/constant-values.html#java.lang.management.ManagementFactory.MEMORY_MXBEAN_NAME)

### OPERATING\_SYSTEM\_MXBEAN\_NAME

public static final [String](http://docs.google.com/java/lang/String.html) **OPERATING\_SYSTEM\_MXBEAN\_NAME**

String representation of the ObjectName for the [OperatingSystemMXBean](http://docs.google.com/java/lang/management/OperatingSystemMXBean.html).

**See Also:**[Constant Field Values](http://docs.google.com/constant-values.html#java.lang.management.ManagementFactory.OPERATING_SYSTEM_MXBEAN_NAME)

### RUNTIME\_MXBEAN\_NAME

public static final [String](http://docs.google.com/java/lang/String.html) **RUNTIME\_MXBEAN\_NAME**

String representation of the ObjectName for the [RuntimeMXBean](http://docs.google.com/java/lang/management/RuntimeMXBean.html).

**See Also:**[Constant Field Values](http://docs.google.com/constant-values.html#java.lang.management.ManagementFactory.RUNTIME_MXBEAN_NAME)

### THREAD\_MXBEAN\_NAME

public static final [String](http://docs.google.com/java/lang/String.html) **THREAD\_MXBEAN\_NAME**

String representation of the ObjectName for the [ThreadMXBean](http://docs.google.com/java/lang/management/ThreadMXBean.html).

**See Also:**[Constant Field Values](http://docs.google.com/constant-values.html#java.lang.management.ManagementFactory.THREAD_MXBEAN_NAME)

### GARBAGE\_COLLECTOR\_MXBEAN\_DOMAIN\_TYPE

public static final [String](http://docs.google.com/java/lang/String.html) **GARBAGE\_COLLECTOR\_MXBEAN\_DOMAIN\_TYPE**

The domain name and the type key property in the ObjectName for a [GarbageCollectorMXBean](http://docs.google.com/java/lang/management/GarbageCollectorMXBean.html). The unique ObjectName for a GarbageCollectorMXBean can be formed by appending this string with ",name=*collector's name*".

**See Also:**[Constant Field Values](http://docs.google.com/constant-values.html#java.lang.management.ManagementFactory.GARBAGE_COLLECTOR_MXBEAN_DOMAIN_TYPE)

### MEMORY\_MANAGER\_MXBEAN\_DOMAIN\_TYPE

public static final [String](http://docs.google.com/java/lang/String.html) **MEMORY\_MANAGER\_MXBEAN\_DOMAIN\_TYPE**

The domain name and the type key property in the ObjectName for a [MemoryManagerMXBean](http://docs.google.com/java/lang/management/MemoryManagerMXBean.html). The unique ObjectName for a MemoryManagerMXBean can be formed by appending this string with ",name=*manager's name*".

**See Also:**[Constant Field Values](http://docs.google.com/constant-values.html#java.lang.management.ManagementFactory.MEMORY_MANAGER_MXBEAN_DOMAIN_TYPE)

### MEMORY\_POOL\_MXBEAN\_DOMAIN\_TYPE

public static final [String](http://docs.google.com/java/lang/String.html) **MEMORY\_POOL\_MXBEAN\_DOMAIN\_TYPE**

The domain name and the type key property in the ObjectName for a [MemoryPoolMXBean](http://docs.google.com/java/lang/management/MemoryPoolMXBean.html). The unique ObjectName for a MemoryPoolMXBean can be formed by appending this string with ,name=*pool's name*.

**See Also:**[Constant Field Values](http://docs.google.com/constant-values.html#java.lang.management.ManagementFactory.MEMORY_POOL_MXBEAN_DOMAIN_TYPE)

| **Method Detail** |
| --- |

### getClassLoadingMXBean

public static [ClassLoadingMXBean](http://docs.google.com/java/lang/management/ClassLoadingMXBean.html) **getClassLoadingMXBean**()

Returns the managed bean for the class loading system of the Java virtual machine.

**Returns:**a [ClassLoadingMXBean](http://docs.google.com/java/lang/management/ClassLoadingMXBean.html) object for the Java virtual machine.

### getMemoryMXBean

public static [MemoryMXBean](http://docs.google.com/java/lang/management/MemoryMXBean.html) **getMemoryMXBean**()

Returns the managed bean for the memory system of the Java virtual machine.

**Returns:**a [MemoryMXBean](http://docs.google.com/java/lang/management/MemoryMXBean.html) object for the Java virtual machine.

### getThreadMXBean

public static [ThreadMXBean](http://docs.google.com/java/lang/management/ThreadMXBean.html) **getThreadMXBean**()

Returns the managed bean for the thread system of the Java virtual machine.

**Returns:**a [ThreadMXBean](http://docs.google.com/java/lang/management/ThreadMXBean.html) object for the Java virtual machine.

### getRuntimeMXBean

public static [RuntimeMXBean](http://docs.google.com/java/lang/management/RuntimeMXBean.html) **getRuntimeMXBean**()

Returns the managed bean for the runtime system of the Java virtual machine.

**Returns:**a [RuntimeMXBean](http://docs.google.com/java/lang/management/RuntimeMXBean.html) object for the Java virtual machine.

### getCompilationMXBean

public static [CompilationMXBean](http://docs.google.com/java/lang/management/CompilationMXBean.html) **getCompilationMXBean**()

Returns the managed bean for the compilation system of the Java virtual machine. This method returns null if the Java virtual machine has no compilation system.

**Returns:**a [CompilationMXBean](http://docs.google.com/java/lang/management/CompilationMXBean.html) object for the Java virtual machine or null if the Java virtual machine has no compilation system.

### getOperatingSystemMXBean

public static [OperatingSystemMXBean](http://docs.google.com/java/lang/management/OperatingSystemMXBean.html) **getOperatingSystemMXBean**()

Returns the managed bean for the operating system on which the Java virtual machine is running.

**Returns:**an [OperatingSystemMXBean](http://docs.google.com/java/lang/management/OperatingSystemMXBean.html) object for the Java virtual machine.

### getMemoryPoolMXBeans

public static [List](http://docs.google.com/java/util/List.html)<[MemoryPoolMXBean](http://docs.google.com/java/lang/management/MemoryPoolMXBean.html)> **getMemoryPoolMXBeans**()

Returns a list of [MemoryPoolMXBean](http://docs.google.com/java/lang/management/MemoryPoolMXBean.html) objects in the Java virtual machine. The Java virtual machine can have one or more memory pools. It may add or remove memory pools during execution.

**Returns:**a list of MemoryPoolMXBean objects.

### getMemoryManagerMXBeans

public static [List](http://docs.google.com/java/util/List.html)<[MemoryManagerMXBean](http://docs.google.com/java/lang/management/MemoryManagerMXBean.html)> **getMemoryManagerMXBeans**()

Returns a list of [MemoryManagerMXBean](http://docs.google.com/java/lang/management/MemoryManagerMXBean.html) objects in the Java virtual machine. The Java virtual machine can have one or more memory managers. It may add or remove memory managers during execution.

**Returns:**a list of MemoryManagerMXBean objects.

### getGarbageCollectorMXBeans

public static [List](http://docs.google.com/java/util/List.html)<[GarbageCollectorMXBean](http://docs.google.com/java/lang/management/GarbageCollectorMXBean.html)> **getGarbageCollectorMXBeans**()

Returns a list of [GarbageCollectorMXBean](http://docs.google.com/java/lang/management/GarbageCollectorMXBean.html) objects in the Java virtual machine. The Java virtual machine may have one or more GarbageCollectorMXBean objects. It may add or remove GarbageCollectorMXBean during execution.

**Returns:**a list of GarbageCollectorMXBean objects.

### getPlatformMBeanServer

public static [MBeanServer](http://docs.google.com/javax/management/MBeanServer.html) **getPlatformMBeanServer**()

Returns the platform [MBeanServer](http://docs.google.com/javax/management/MBeanServer.html). On the first call to this method, it first creates the platform MBeanServer by calling the [MBeanServerFactory.createMBeanServer](http://docs.google.com/javax/management/MBeanServerFactory.html#createMBeanServer()) method and registers the platform MXBeans in this platform MBeanServer using the [MXBean names](#_2et92p0) defined in the class description. This method, in subsequent calls, will simply return the initially created platform MBeanServer.

MXBeans that get created and destroyed dynamically, for example, memory [pools](http://docs.google.com/java/lang/management/MemoryPoolMXBean.html) and [managers](http://docs.google.com/java/lang/management/MemoryManagerMXBean.html), will automatically be registered and deregistered into the platform MBeanServer.

If the system property javax.management.builder.initial is set, the platform MBeanServer creation will be done by the specified [MBeanServerBuilder](http://docs.google.com/javax/management/MBeanServerBuilder.html).

It is recommended that this platform MBeanServer also be used to register other application managed beans besides the platform MXBeans. This will allow all MBeans to be published through the same MBeanServer and hence allow for easier network publishing and discovery. Name conflicts with the platform MXBeans should be avoided.

**Returns:**the platform MBeanServer; the platform MXBeans are registered into the platform MBeanServer at the first time this method is called. **Throws:** [SecurityException](http://docs.google.com/java/lang/SecurityException.html) - if there is a security manager and the caller does not have the permission required by [MBeanServerFactory.createMBeanServer()](http://docs.google.com/javax/management/MBeanServerFactory.html#createMBeanServer()).**See Also:**[MBeanServerFactory](http://docs.google.com/javax/management/MBeanServerFactory.html), [MBeanServerFactory.createMBeanServer()](http://docs.google.com/javax/management/MBeanServerFactory.html#createMBeanServer())

### newPlatformMXBeanProxy

public static <T> T **newPlatformMXBeanProxy**([MBeanServerConnection](http://docs.google.com/javax/management/MBeanServerConnection.html) connection,  
 [String](http://docs.google.com/java/lang/String.html) mxbeanName,  
 [Class](http://docs.google.com/java/lang/Class.html)<T> mxbeanInterface)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Returns a proxy for a platform MXBean interface of a given [MXBean name](#_2et92p0) that forwards its method calls through the given MBeanServerConnection.

This method is equivalent to:

[Proxy.newProxyInstance](http://docs.google.com/java/lang/reflect/Proxy.html#newProxyInstance(java.lang.ClassLoader,%20java.lang.Class%5B%5D,%20java.lang.reflect.InvocationHandler))(mxbeanInterface.getClassLoader(), new Class[] { mxbeanInterface }, handler)where handler is an [InvocationHandler](http://docs.google.com/java/lang/reflect/InvocationHandler.html) to which method invocations to the MXBean interface are dispatched. This handler converts an input parameter from an MXBean data type to its mapped open type before forwarding to the MBeanServer and converts a return value from an MXBean method call through the MBeanServer from an open type to the corresponding return type declared in the MXBean interface.

If the MXBean is a notification emitter (i.e., it implements [NotificationEmitter](http://docs.google.com/javax/management/NotificationEmitter.html)), both the mxbeanInterface and NotificationEmitter will be implemented by this proxy.

**Notes:**

1. Using an MXBean proxy is a convenience remote access to a platform MXBean of a running virtual machine. All method calls to the MXBean proxy are forwarded to an MBeanServerConnection where [IOException](http://docs.google.com/java/io/IOException.html) may be thrown when the communication problem occurs with the connector server. An application remotely accesses the platform MXBeans using proxy should prepare to catch IOException as if accessing with the MBeanServerConnector interface.
2. When a client application is designed to remotely access MXBeans for a running virtual machine whose version is different than the version on which the application is running, it should prepare to catch [InvalidObjectException](http://docs.google.com/java/io/InvalidObjectException.html) which is thrown when an MXBean proxy receives a name of an enum constant which is missing in the enum class loaded in the client application.
3. [MBeanServerInvocationHandler](http://docs.google.com/javax/management/MBeanServerInvocationHandler.html) or its [newProxyInstance](http://docs.google.com/javax/management/MBeanServerInvocationHandler.html#newProxyInstance(javax.management.MBeanServerConnection,%20javax.management.ObjectName,%20java.lang.Class,%20boolean)) method cannot be used to create a proxy for a platform MXBean. The proxy object created by MBeanServerInvocationHandler does not handle the properties of the platform MXBeans described in the [class specification](#_3znysh7).

**Parameters:**connection - the MBeanServerConnection to forward to.mxbeanName - the name of a platform MXBean within connection to forward to. mxbeanName must be in the format of [ObjectName](http://docs.google.com/javax/management/ObjectName.html).mxbeanInterface - the MXBean interface to be implemented by the proxy. **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if

* mxbeanName is not with a valid [ObjectName](http://docs.google.com/javax/management/ObjectName.html) format, or
* the named MXBean in the connection is not a MXBean provided by the platform, or
* the named MXBean is not registered in the MBeanServerConnection, or
* the named MXBean is not an instance of the given mxbeanInterface

[IOException](http://docs.google.com/java/io/IOException.html) - if a communication problem occurred when accessing the MBeanServerConnection.

| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/ManagementFactory.html) | [**Tree**](http://docs.google.com/package-tree.html) | [**Deprecated**](http://docs.google.com/deprecated-list.html) | [**Index**](http://docs.google.com/index-files/index-1.html) | [**Help**](http://docs.google.com/help-doc.html) | | --- | --- | --- | --- | --- | --- | --- | --- | | | ***Java™ Platform***  ***Standard Ed. 6*** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [**PREV CLASS**](http://docs.google.com/java/lang/management/LockInfo.html)   [**NEXT CLASS**](http://docs.google.com/java/lang/management/ManagementPermission.html) | [**FRAMES**](http://docs.google.com/index.html?java/lang/management/ManagementFactory.html)    [**NO FRAMES**](http://docs.google.com/ManagementFactory.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |
| SUMMARY: NESTED | [FIELD](#tyjcwt) | CONSTR | [METHOD](#3dy6vkm) | DETAIL: [FIELD](#4d34og8) | CONSTR | [METHOD](#z337ya) |

[Submit a bug or feature](http://bugs.sun.com/services/bugreport/index.jsp)

For further API reference and developer documentation, see [Java SE Developer Documentation](http://docs.google.com/webnotes/devdocs-vs-specs.html). That documentation contains more detailed, developer-targeted descriptions, with conceptual overviews, definitions of terms, workarounds, and working code examples.

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