| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/MBeanInfo.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/javax/management/MBeanFeatureInfo.html)   [**NEXT CLASS**](http://docs.google.com/javax/management/MBeanNotificationInfo.html) | [**FRAMES**](http://docs.google.com/index.html?javax/management/MBeanInfo.html)    [**NO FRAMES**](http://docs.google.com/MBeanInfo.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |
| SUMMARY: NESTED | FIELD | [CONSTR](#3znysh7) | [METHOD](#2et92p0) | DETAIL: FIELD | [CONSTR](#3dy6vkm) | [METHOD](#2s8eyo1) |

## **javax.management**

Class MBeanInfo

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

**All Implemented Interfaces:** [Serializable](http://docs.google.com/java/io/Serializable.html), [Cloneable](http://docs.google.com/java/lang/Cloneable.html), [DescriptorRead](http://docs.google.com/javax/management/DescriptorRead.html) **Direct Known Subclasses:** [ModelMBeanInfoSupport](http://docs.google.com/javax/management/modelmbean/ModelMBeanInfoSupport.html), [OpenMBeanInfoSupport](http://docs.google.com/javax/management/openmbean/OpenMBeanInfoSupport.html)

public class **MBeanInfo**extends [Object](http://docs.google.com/java/lang/Object.html)implements [Cloneable](http://docs.google.com/java/lang/Cloneable.html), [Serializable](http://docs.google.com/java/io/Serializable.html), [DescriptorRead](http://docs.google.com/javax/management/DescriptorRead.html)

Describes the management interface exposed by an MBean; that is, the set of attributes and operations which are available for management operations. Instances of this class are immutable. Subclasses may be mutable but this is not recommended.

The contents of the MBeanInfo for a Dynamic MBean are determined by its [getMBeanInfo()](http://docs.google.com/javax/management/DynamicMBean.html#getMBeanInfo()) method. This includes Open MBeans and Model MBeans, which are kinds of Dynamic MBeans.

The contents of the MBeanInfo for a Standard MBean are determined by the MBean server as follows:

* [getClassName()](http://docs.google.com/javax/management/MBeanInfo.html#getClassName()) returns the Java class name of the MBean object;
* [getConstructors()](http://docs.google.com/javax/management/MBeanInfo.html#getConstructors()) returns the list of all public constructors in that object;
* [getAttributes()](http://docs.google.com/javax/management/MBeanInfo.html#getAttributes()) returns the list of all attributes whose existence is deduced from the presence in the MBean interface of a get*Name*, is*Name*, or set*Name* method that conforms to the conventions for Standard MBeans;
* [getOperations()](http://docs.google.com/javax/management/MBeanInfo.html#getOperations()) returns the list of all methods in the MBean interface that do not represent attributes;
* [getNotifications()](http://docs.google.com/javax/management/MBeanInfo.html#getNotifications()) returns an empty array if the MBean does not implement the [NotificationBroadcaster](http://docs.google.com/javax/management/NotificationBroadcaster.html) interface, otherwise the result of calling [NotificationBroadcaster.getNotificationInfo()](http://docs.google.com/javax/management/NotificationBroadcaster.html#getNotificationInfo()) on it;
* [getDescriptor()](http://docs.google.com/javax/management/MBeanInfo.html#getDescriptor()) returns a descriptor containing the contents of any descriptor annotations in the MBean interface.

The description returned by [getDescription()](http://docs.google.com/javax/management/MBeanInfo.html#getDescription()) and the descriptions of the contained attributes and operations are determined by the corresponding Description annotations if any; otherwise their contents are not specified.

The remaining details of the MBeanInfo for a Standard MBean are not specified. This includes the description of any contained constructors, and notifications; the names of parameters to constructors and operations; and the descriptions of constructor parameters.

**Since:** 1.5 **See Also:**[Serialized Form](http://docs.google.com/serialized-form.html#javax.management.MBeanInfo)

| **Constructor Summary** | |
| --- | --- |
| [**MBeanInfo**](http://docs.google.com/javax/management/MBeanInfo.html#MBeanInfo(java.lang.String,%20java.lang.String,%20javax.management.MBeanAttributeInfo%5B%5D,%20javax.management.MBeanConstructorInfo%5B%5D,%20javax.management.MBeanOperationInfo%5B%5D,%20javax.management.MBeanNotificationInfo%5B%5D))([String](http://docs.google.com/java/lang/String.html) className, [String](http://docs.google.com/java/lang/String.html) description, [MBeanAttributeInfo](http://docs.google.com/javax/management/MBeanAttributeInfo.html)[] attributes, [MBeanConstructorInfo](http://docs.google.com/javax/management/MBeanConstructorInfo.html)[] constructors, [MBeanOperationInfo](http://docs.google.com/javax/management/MBeanOperationInfo.html)[] operations, [MBeanNotificationInfo](http://docs.google.com/javax/management/MBeanNotificationInfo.html)[] notifications)            Constructs an MBeanInfo. |
| [**MBeanInfo**](http://docs.google.com/javax/management/MBeanInfo.html#MBeanInfo(java.lang.String,%20java.lang.String,%20javax.management.MBeanAttributeInfo%5B%5D,%20javax.management.MBeanConstructorInfo%5B%5D,%20javax.management.MBeanOperationInfo%5B%5D,%20javax.management.MBeanNotificationInfo%5B%5D,%20javax.management.Descriptor))([String](http://docs.google.com/java/lang/String.html) className, [String](http://docs.google.com/java/lang/String.html) description, [MBeanAttributeInfo](http://docs.google.com/javax/management/MBeanAttributeInfo.html)[] attributes, [MBeanConstructorInfo](http://docs.google.com/javax/management/MBeanConstructorInfo.html)[] constructors, [MBeanOperationInfo](http://docs.google.com/javax/management/MBeanOperationInfo.html)[] operations, [MBeanNotificationInfo](http://docs.google.com/javax/management/MBeanNotificationInfo.html)[] notifications, [Descriptor](http://docs.google.com/javax/management/Descriptor.html) descriptor)            Constructs an MBeanInfo. |

| **Method Summary** | |
| --- | --- |
| [Object](http://docs.google.com/java/lang/Object.html) | [**clone**](http://docs.google.com/javax/management/MBeanInfo.html#clone())()            Returns a shallow clone of this instance. |
| boolean | [**equals**](http://docs.google.com/javax/management/MBeanInfo.html#equals(java.lang.Object))([Object](http://docs.google.com/java/lang/Object.html) o)            Compare this MBeanInfo to another. |
| [MBeanAttributeInfo](http://docs.google.com/javax/management/MBeanAttributeInfo.html)[] | [**getAttributes**](http://docs.google.com/javax/management/MBeanInfo.html#getAttributes())()            Returns the list of attributes exposed for management. |
| [String](http://docs.google.com/java/lang/String.html) | [**getClassName**](http://docs.google.com/javax/management/MBeanInfo.html#getClassName())()            Returns the name of the Java class of the MBean described by this MBeanInfo. |
| [MBeanConstructorInfo](http://docs.google.com/javax/management/MBeanConstructorInfo.html)[] | [**getConstructors**](http://docs.google.com/javax/management/MBeanInfo.html#getConstructors())()            Returns the list of the public constructors of the MBean. |
| [String](http://docs.google.com/java/lang/String.html) | [**getDescription**](http://docs.google.com/javax/management/MBeanInfo.html#getDescription())()            Returns a human readable description of the MBean. |
| [Descriptor](http://docs.google.com/javax/management/Descriptor.html) | [**getDescriptor**](http://docs.google.com/javax/management/MBeanInfo.html#getDescriptor())()            Get the descriptor of this MBeanInfo. |
| [MBeanNotificationInfo](http://docs.google.com/javax/management/MBeanNotificationInfo.html)[] | [**getNotifications**](http://docs.google.com/javax/management/MBeanInfo.html#getNotifications())()            Returns the list of the notifications emitted by the MBean. |
| [MBeanOperationInfo](http://docs.google.com/javax/management/MBeanOperationInfo.html)[] | [**getOperations**](http://docs.google.com/javax/management/MBeanInfo.html#getOperations())()            Returns the list of operations of the MBean. |
| int | [**hashCode**](http://docs.google.com/javax/management/MBeanInfo.html#hashCode())()            Returns a hash code value for the object. |
| [String](http://docs.google.com/java/lang/String.html) | [**toString**](http://docs.google.com/javax/management/MBeanInfo.html#toString())()            Returns a string representation of the object. |

| **Methods inherited from class java.lang.**[**Object**](http://docs.google.com/java/lang/Object.html) |
| --- |
| [finalize](http://docs.google.com/java/lang/Object.html#finalize()), [getClass](http://docs.google.com/java/lang/Object.html#getClass()), [notify](http://docs.google.com/java/lang/Object.html#notify()), [notifyAll](http://docs.google.com/java/lang/Object.html#notifyAll()), [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)) |

| **Constructor Detail** |
| --- |

### MBeanInfo

public **MBeanInfo**([String](http://docs.google.com/java/lang/String.html) className,  
 [String](http://docs.google.com/java/lang/String.html) description,  
 [MBeanAttributeInfo](http://docs.google.com/javax/management/MBeanAttributeInfo.html)[] attributes,  
 [MBeanConstructorInfo](http://docs.google.com/javax/management/MBeanConstructorInfo.html)[] constructors,  
 [MBeanOperationInfo](http://docs.google.com/javax/management/MBeanOperationInfo.html)[] operations,  
 [MBeanNotificationInfo](http://docs.google.com/javax/management/MBeanNotificationInfo.html)[] notifications)  
 throws [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html)

Constructs an MBeanInfo.

**Parameters:**className - The name of the Java class of the MBean described by this MBeanInfo. This value may be any syntactically legal Java class name. It does not have to be a Java class known to the MBean server or to the MBean's ClassLoader. If it is a Java class known to the MBean's ClassLoader, it is recommended but not required that the class's public methods include those that would appear in a Standard MBean implementing the attributes and operations in this MBeanInfo.description - A human readable description of the MBean (optional).attributes - The list of exposed attributes of the MBean. This may be null with the same effect as a zero-length array.constructors - The list of public constructors of the MBean. This may be null with the same effect as a zero-length array.operations - The list of operations of the MBean. This may be null with the same effect as a zero-length array.notifications - The list of notifications emitted. This may be null with the same effect as a zero-length array. **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html)

### MBeanInfo

public **MBeanInfo**([String](http://docs.google.com/java/lang/String.html) className,  
 [String](http://docs.google.com/java/lang/String.html) description,  
 [MBeanAttributeInfo](http://docs.google.com/javax/management/MBeanAttributeInfo.html)[] attributes,  
 [MBeanConstructorInfo](http://docs.google.com/javax/management/MBeanConstructorInfo.html)[] constructors,  
 [MBeanOperationInfo](http://docs.google.com/javax/management/MBeanOperationInfo.html)[] operations,  
 [MBeanNotificationInfo](http://docs.google.com/javax/management/MBeanNotificationInfo.html)[] notifications,  
 [Descriptor](http://docs.google.com/javax/management/Descriptor.html) descriptor)  
 throws [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html)

Constructs an MBeanInfo.

**Parameters:**className - The name of the Java class of the MBean described by this MBeanInfo. This value may be any syntactically legal Java class name. It does not have to be a Java class known to the MBean server or to the MBean's ClassLoader. If it is a Java class known to the MBean's ClassLoader, it is recommended but not required that the class's public methods include those that would appear in a Standard MBean implementing the attributes and operations in this MBeanInfo.description - A human readable description of the MBean (optional).attributes - The list of exposed attributes of the MBean. This may be null with the same effect as a zero-length array.constructors - The list of public constructors of the MBean. This may be null with the same effect as a zero-length array.operations - The list of operations of the MBean. This may be null with the same effect as a zero-length array.notifications - The list of notifications emitted. This may be null with the same effect as a zero-length array.descriptor - The descriptor for the MBean. This may be null which is equivalent to an empty descriptor. **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html)**Since:** 1.6

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

### clone

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

Returns a shallow clone of this instance. The clone is obtained by simply calling super.clone(), thus calling the default native shallow cloning mechanism implemented by Object.clone(). No deeper cloning of any internal field is made.

Since this class is immutable, the clone method is chiefly of interest to subclasses.

**Overrides:**[clone](http://docs.google.com/java/lang/Object.html#clone()) in class [Object](http://docs.google.com/java/lang/Object.html) **Returns:**a clone of this instance.**See Also:**[Cloneable](http://docs.google.com/java/lang/Cloneable.html)

### getClassName

public [String](http://docs.google.com/java/lang/String.html) **getClassName**()

Returns the name of the Java class of the MBean described by this MBeanInfo.

**Returns:**the class name.

### getDescription

public [String](http://docs.google.com/java/lang/String.html) **getDescription**()

Returns a human readable description of the MBean.

**Returns:**the description.

### getAttributes

public [MBeanAttributeInfo](http://docs.google.com/javax/management/MBeanAttributeInfo.html)[] **getAttributes**()

Returns the list of attributes exposed for management. Each attribute is described by an MBeanAttributeInfo object. The returned array is a shallow copy of the internal array, which means that it is a copy of the internal array of references to the MBeanAttributeInfo objects but that each referenced MBeanAttributeInfo object is not copied.

**Returns:**An array of MBeanAttributeInfo objects.

### getOperations

public [MBeanOperationInfo](http://docs.google.com/javax/management/MBeanOperationInfo.html)[] **getOperations**()

Returns the list of operations of the MBean. Each operation is described by an MBeanOperationInfo object. The returned array is a shallow copy of the internal array, which means that it is a copy of the internal array of references to the MBeanOperationInfo objects but that each referenced MBeanOperationInfo object is not copied.

**Returns:**An array of MBeanOperationInfo objects.

### getConstructors

public [MBeanConstructorInfo](http://docs.google.com/javax/management/MBeanConstructorInfo.html)[] **getConstructors**()

Returns the list of the public constructors of the MBean. Each constructor is described by an MBeanConstructorInfo object.

The returned array is a shallow copy of the internal array, which means that it is a copy of the internal array of references to the MBeanConstructorInfo objects but that each referenced MBeanConstructorInfo object is not copied.

The returned list is not necessarily exhaustive. That is, the MBean may have a public constructor that is not in the list. In this case, the MBean server can construct another instance of this MBean's class using that constructor, even though it is not listed here.

**Returns:**An array of MBeanConstructorInfo objects.

### getNotifications

public [MBeanNotificationInfo](http://docs.google.com/javax/management/MBeanNotificationInfo.html)[] **getNotifications**()

Returns the list of the notifications emitted by the MBean. Each notification is described by an MBeanNotificationInfo object. The returned array is a shallow copy of the internal array, which means that it is a copy of the internal array of references to the MBeanNotificationInfo objects but that each referenced MBeanNotificationInfo object is not copied.

**Returns:**An array of MBeanNotificationInfo objects.

### getDescriptor

public [Descriptor](http://docs.google.com/javax/management/Descriptor.html) **getDescriptor**()

Get the descriptor of this MBeanInfo. Changing the returned value will have no affect on the original descriptor.

**Specified by:**[getDescriptor](http://docs.google.com/javax/management/DescriptorRead.html#getDescriptor()) in interface [DescriptorRead](http://docs.google.com/javax/management/DescriptorRead.html) **Returns:**a descriptor that is either immutable or a copy of the original.**Since:** 1.6

### toString

public [String](http://docs.google.com/java/lang/String.html) **toString**()

**Description copied from class:** [**Object**](http://docs.google.com/java/lang/Object.html#toString()) Returns a string representation of the object. In general, the toString method returns a string that "textually represents" this object. The result should be a concise but informative representation that is easy for a person to read. It is recommended that all subclasses override this method.

The toString method for class Object returns a string consisting of the name of the class of which the object is an instance, the at-sign character `@', and the unsigned hexadecimal representation of the hash code of the object. In other words, this method returns a string equal to the value of:

getClass().getName() + '@' + Integer.toHexString(hashCode())

**Overrides:**[toString](http://docs.google.com/java/lang/Object.html#toString()) in class [Object](http://docs.google.com/java/lang/Object.html) **Returns:**a string representation of the object.

### equals

public boolean **equals**([Object](http://docs.google.com/java/lang/Object.html) o)

Compare this MBeanInfo to another. Two MBeanInfo objects are equal if and only if they return equal values for [getClassName()](http://docs.google.com/javax/management/MBeanInfo.html#getClassName()), for [getDescription()](http://docs.google.com/javax/management/MBeanInfo.html#getDescription()), and for [getDescriptor()](http://docs.google.com/javax/management/MBeanInfo.html#getDescriptor()), and the arrays returned by the two objects for [getAttributes()](http://docs.google.com/javax/management/MBeanInfo.html#getAttributes()), [getOperations()](http://docs.google.com/javax/management/MBeanInfo.html#getOperations()), [getConstructors()](http://docs.google.com/javax/management/MBeanInfo.html#getConstructors()), and [getNotifications()](http://docs.google.com/javax/management/MBeanInfo.html#getNotifications()) are pairwise equal. Here "equal" means [Object.equals(Object)](http://docs.google.com/java/lang/Object.html#equals(java.lang.Object)), not identity.

If two MBeanInfo objects return the same values in one of their arrays but in a different order then they are not equal.

**Overrides:**[equals](http://docs.google.com/java/lang/Object.html#equals(java.lang.Object)) in class [Object](http://docs.google.com/java/lang/Object.html) **Parameters:**o - the object to compare to. **Returns:**true if and only if o is an MBeanInfo that is equal to this one according to the rules above.**See Also:**[Object.hashCode()](http://docs.google.com/java/lang/Object.html#hashCode()), [Hashtable](http://docs.google.com/java/util/Hashtable.html)

### hashCode

public int **hashCode**()

**Description copied from class:** [**Object**](http://docs.google.com/java/lang/Object.html#hashCode()) Returns a hash code value for the object. This method is supported for the benefit of hashtables such as those provided by java.util.Hashtable.

The general contract of hashCode is:

* Whenever it is invoked on the same object more than once during an execution of a Java application, the hashCode method must consistently return the same integer, provided no information used in equals comparisons on the object is modified. This integer need not remain consistent from one execution of an application to another execution of the same application.
* If two objects are equal according to the equals(Object) method, then calling the hashCode method on each of the two objects must produce the same integer result.
* It is *not* required that if two objects are unequal according to the [Object.equals(java.lang.Object)](http://docs.google.com/java/lang/Object.html#equals(java.lang.Object)) method, then calling the hashCode method on each of the two objects must produce distinct integer results. However, the programmer should be aware that producing distinct integer results for unequal objects may improve the performance of hashtables.

As much as is reasonably practical, the hashCode method defined by class Object does return distinct integers for distinct objects. (This is typically implemented by converting the internal address of the object into an integer, but this implementation technique is not required by the JavaTM programming language.)

**Overrides:**[hashCode](http://docs.google.com/java/lang/Object.html#hashCode()) in class [Object](http://docs.google.com/java/lang/Object.html) **Returns:**a hash code value for this object.**See Also:**[Object.equals(java.lang.Object)](http://docs.google.com/java/lang/Object.html#equals(java.lang.Object)), [Hashtable](http://docs.google.com/java/util/Hashtable.html)

| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/MBeanInfo.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/javax/management/MBeanFeatureInfo.html)   [**NEXT CLASS**](http://docs.google.com/javax/management/MBeanNotificationInfo.html) | [**FRAMES**](http://docs.google.com/index.html?javax/management/MBeanInfo.html)    [**NO FRAMES**](http://docs.google.com/MBeanInfo.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |
| SUMMARY: NESTED | FIELD | [CONSTR](#3znysh7) | [METHOD](#2et92p0) | DETAIL: FIELD | [CONSTR](#3dy6vkm) | [METHOD](#2s8eyo1) |

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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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