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

## **javax.management.modelmbean**

Interface ModelMBeanInfo

**All Known Implementing Classes:** [ModelMBeanInfoSupport](http://docs.google.com/javax/management/modelmbean/ModelMBeanInfoSupport.html)

public interface **ModelMBeanInfo**

This interface is implemented by the ModelMBeanInfo for every ModelMBean. An implementation of this interface must be shipped with every JMX Agent.

Java resources wishing to be manageable instantiate the ModelMBean using the MBeanServer's createMBean method. The resource then sets the ModelMBeanInfo and Descriptors for the ModelMBean instance. The attributes, operations, and notifications exposed via the ModelMBeanInfo for the ModelMBean comprise the management interface and are accessible from MBeans, connectors/adaptors like other MBeans. Through the Descriptors, values and methods in the managed application can be defined and mapped to attributes and operations of the ModelMBean. This mapping can be defined during development in a file or dynamically and programmatically at runtime.

Every ModelMBean which is instantiated in the MBeanServer becomes manageable: its attributes, operations, and notifications become remotely accessible through the connectors/adaptors connected to that MBeanServer. A Java object cannot be registered in the MBeanServer unless it is a JMX compliant MBean. By instantiating a ModelMBean, resources are guaranteed that the MBean is valid. MBeanException and RuntimeOperationsException must be thrown on every public method. This allows for wrapping exceptions from distributed communications (RMI, EJB, etc.)

**Since:** 1.5

| **Method Summary** | |
| --- | --- |
| [Object](http://docs.google.com/java/lang/Object.html) | [**clone**](http://docs.google.com/javax/management/modelmbean/ModelMBeanInfo.html#clone())()            Creates and returns a copy of this object. |
| [ModelMBeanAttributeInfo](http://docs.google.com/javax/management/modelmbean/ModelMBeanAttributeInfo.html) | [**getAttribute**](http://docs.google.com/javax/management/modelmbean/ModelMBeanInfo.html#getAttribute(java.lang.String))([String](http://docs.google.com/java/lang/String.html) inName)            Returns a ModelMBeanAttributeInfo requested by name. |
| [MBeanAttributeInfo](http://docs.google.com/javax/management/MBeanAttributeInfo.html)[] | [**getAttributes**](http://docs.google.com/javax/management/modelmbean/ModelMBeanInfo.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/modelmbean/ModelMBeanInfo.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/modelmbean/ModelMBeanInfo.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/modelmbean/ModelMBeanInfo.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/modelmbean/ModelMBeanInfo.html#getDescriptor(java.lang.String,%20java.lang.String))([String](http://docs.google.com/java/lang/String.html) inDescriptorName, [String](http://docs.google.com/java/lang/String.html) inDescriptorType)            Returns a Descriptor requested by name and descriptorType. |
| [Descriptor](http://docs.google.com/javax/management/Descriptor.html)[] | [**getDescriptors**](http://docs.google.com/javax/management/modelmbean/ModelMBeanInfo.html#getDescriptors(java.lang.String))([String](http://docs.google.com/java/lang/String.html) inDescriptorType)            Returns a Descriptor array consisting of all Descriptors for the ModelMBeanInfo of type inDescriptorType. |
| [Descriptor](http://docs.google.com/javax/management/Descriptor.html) | [**getMBeanDescriptor**](http://docs.google.com/javax/management/modelmbean/ModelMBeanInfo.html#getMBeanDescriptor())()            Returns the ModelMBean's descriptor which contains MBean wide policies. |
| [ModelMBeanNotificationInfo](http://docs.google.com/javax/management/modelmbean/ModelMBeanNotificationInfo.html) | [**getNotification**](http://docs.google.com/javax/management/modelmbean/ModelMBeanInfo.html#getNotification(java.lang.String))([String](http://docs.google.com/java/lang/String.html) inName)            Returns a ModelMBeanNotificationInfo requested by name. |
| [MBeanNotificationInfo](http://docs.google.com/javax/management/MBeanNotificationInfo.html)[] | [**getNotifications**](http://docs.google.com/javax/management/modelmbean/ModelMBeanInfo.html#getNotifications())()            Returns the list of the notifications emitted by the MBean. |
| [ModelMBeanOperationInfo](http://docs.google.com/javax/management/modelmbean/ModelMBeanOperationInfo.html) | [**getOperation**](http://docs.google.com/javax/management/modelmbean/ModelMBeanInfo.html#getOperation(java.lang.String))([String](http://docs.google.com/java/lang/String.html) inName)            Returns a ModelMBeanOperationInfo requested by name. |
| [MBeanOperationInfo](http://docs.google.com/javax/management/MBeanOperationInfo.html)[] | [**getOperations**](http://docs.google.com/javax/management/modelmbean/ModelMBeanInfo.html#getOperations())()            Returns the list of operations of the MBean. |
| void | [**setDescriptor**](http://docs.google.com/javax/management/modelmbean/ModelMBeanInfo.html#setDescriptor(javax.management.Descriptor,%20java.lang.String))([Descriptor](http://docs.google.com/javax/management/Descriptor.html) inDescriptor, [String](http://docs.google.com/java/lang/String.html) inDescriptorType)            Sets descriptors in the info array of type inDescriptorType for the ModelMBean. |
| void | [**setDescriptors**](http://docs.google.com/javax/management/modelmbean/ModelMBeanInfo.html#setDescriptors(javax.management.Descriptor%5B%5D))([Descriptor](http://docs.google.com/javax/management/Descriptor.html)[] inDescriptors)            Adds or replaces descriptors in the ModelMBeanInfo. |
| void | [**setMBeanDescriptor**](http://docs.google.com/javax/management/modelmbean/ModelMBeanInfo.html#setMBeanDescriptor(javax.management.Descriptor))([Descriptor](http://docs.google.com/javax/management/Descriptor.html) inDescriptor)            Sets the ModelMBean's descriptor. |

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

### getDescriptors

[Descriptor](http://docs.google.com/javax/management/Descriptor.html)[] **getDescriptors**([String](http://docs.google.com/java/lang/String.html) inDescriptorType)  
 throws [MBeanException](http://docs.google.com/javax/management/MBeanException.html),  
 [RuntimeOperationsException](http://docs.google.com/javax/management/RuntimeOperationsException.html)

Returns a Descriptor array consisting of all Descriptors for the ModelMBeanInfo of type inDescriptorType.

**Parameters:**inDescriptorType - value of descriptorType field that must be set for the descriptor to be returned. Must be "mbean", "attribute", "operation", "constructor" or "notification". If it is null or empty then all types will be returned. **Returns:**Descriptor array containing all descriptors for the ModelMBean if type inDescriptorType. **Throws:** [MBeanException](http://docs.google.com/javax/management/MBeanException.html) - Wraps a distributed communication Exception. [RuntimeOperationsException](http://docs.google.com/javax/management/RuntimeOperationsException.html) - Wraps an IllegalArgumentException when the descriptorType in parameter is not one of: "mbean", "attribute", "operation", "constructor", "notification", empty or null.**See Also:**[setDescriptors(javax.management.Descriptor[])](http://docs.google.com/javax/management/modelmbean/ModelMBeanInfo.html#setDescriptors(javax.management.Descriptor%5B%5D))

### setDescriptors

void **setDescriptors**([Descriptor](http://docs.google.com/javax/management/Descriptor.html)[] inDescriptors)  
 throws [MBeanException](http://docs.google.com/javax/management/MBeanException.html),  
 [RuntimeOperationsException](http://docs.google.com/javax/management/RuntimeOperationsException.html)

Adds or replaces descriptors in the ModelMBeanInfo.

**Parameters:**inDescriptors - The descriptors to be set in the ModelMBeanInfo. Null elements of the list will be ignored. All descriptors must have name and descriptorType fields. **Throws:** [RuntimeOperationsException](http://docs.google.com/javax/management/RuntimeOperationsException.html) - Wraps an IllegalArgumentException for a null or invalid descriptor. [MBeanException](http://docs.google.com/javax/management/MBeanException.html) - Wraps a distributed communication Exception.**See Also:**[getDescriptors(java.lang.String)](http://docs.google.com/javax/management/modelmbean/ModelMBeanInfo.html#getDescriptors(java.lang.String))

### getDescriptor

[Descriptor](http://docs.google.com/javax/management/Descriptor.html) **getDescriptor**([String](http://docs.google.com/java/lang/String.html) inDescriptorName,  
 [String](http://docs.google.com/java/lang/String.html) inDescriptorType)  
 throws [MBeanException](http://docs.google.com/javax/management/MBeanException.html),  
 [RuntimeOperationsException](http://docs.google.com/javax/management/RuntimeOperationsException.html)

Returns a Descriptor requested by name and descriptorType.

**Parameters:**inDescriptorName - The name of the descriptor.inDescriptorType - The type of the descriptor being requested. If this is null or empty then all types are searched. Valid types are 'mbean', 'attribute', 'constructor' 'operation', and 'notification'. This value will be equal to the 'descriptorType' field in the descriptor that is returned. **Returns:**Descriptor containing the descriptor for the ModelMBean with the same name and descriptorType. If no descriptor is found, null is returned. **Throws:** [MBeanException](http://docs.google.com/javax/management/MBeanException.html) - Wraps a distributed communication Exception. [RuntimeOperationsException](http://docs.google.com/javax/management/RuntimeOperationsException.html) - Wraps an IllegalArgumentException for a null descriptor name or null or invalid type. The type must be "mbean","attribute", "constructor", "operation", or "notification".**See Also:**[setDescriptor(javax.management.Descriptor, java.lang.String)](http://docs.google.com/javax/management/modelmbean/ModelMBeanInfo.html#setDescriptor(javax.management.Descriptor,%20java.lang.String))

### setDescriptor

void **setDescriptor**([Descriptor](http://docs.google.com/javax/management/Descriptor.html) inDescriptor,  
 [String](http://docs.google.com/java/lang/String.html) inDescriptorType)  
 throws [MBeanException](http://docs.google.com/javax/management/MBeanException.html),  
 [RuntimeOperationsException](http://docs.google.com/javax/management/RuntimeOperationsException.html)

Sets descriptors in the info array of type inDescriptorType for the ModelMBean. The setDescriptor method of the corresponding ModelMBean\*Info will be called to set the specified descriptor.

**Parameters:**inDescriptor - The descriptor to be set in the ModelMBean. It must NOT be null. All descriptors must have name and descriptorType fields.inDescriptorType - The type of the descriptor being set. If this is null then the descriptorType field in the descriptor is used. If specified this value must be set in the descriptorType field in the descriptor. Must be "mbean","attribute", "constructor", "operation", or "notification". **Throws:** [RuntimeOperationsException](http://docs.google.com/javax/management/RuntimeOperationsException.html) - Wraps an IllegalArgumentException for illegal or null arguments or if the name field of the descriptor is not found in the corresponding MBeanAttributeInfo or MBeanConstructorInfo or MBeanNotificationInfo or MBeanOperationInfo. [MBeanException](http://docs.google.com/javax/management/MBeanException.html) - Wraps a distributed communication Exception.**See Also:**[getDescriptor(java.lang.String, java.lang.String)](http://docs.google.com/javax/management/modelmbean/ModelMBeanInfo.html#getDescriptor(java.lang.String,%20java.lang.String))

### getMBeanDescriptor

[Descriptor](http://docs.google.com/javax/management/Descriptor.html) **getMBeanDescriptor**()  
 throws [MBeanException](http://docs.google.com/javax/management/MBeanException.html),  
 [RuntimeOperationsException](http://docs.google.com/javax/management/RuntimeOperationsException.html)

Returns the ModelMBean's descriptor which contains MBean wide policies. This descriptor contains metadata about the MBean and default policies for persistence and caching.

The fields in the descriptor are defined, but not limited to, the following:

name : MBean name   
 descriptorType : must be "mbean"   
 displayName : name of attribute to be used in displays   
 persistPolicy : OnUpdate|OnTimer|NoMoreOftenThan|OnUnregister|Always|Never   
 persistLocation : The fully qualified directory name where the MBean should be persisted (if appropriate)  
 persistFile : File name into which the MBean should be persisted  
 persistPeriod : seconds - frequency of persist cycle for OnTime and NoMoreOftenThan PersistPolicy   
 currencyTimeLimit : how long value is valid, <0 never, =0 always, >0 seconds   
 log : where t: log all notifications f: log no notifications  
 logfile : fully qualified filename to log events to  
 visibility : 1-4 where 1: always visible 4: rarely visible  
 export : name to be used to export/expose this MBean so that it is findable by  
 other JMX Agents.   
 presentationString : xml formatted string to allow presentation of data to be associated with the MBean.

The default descriptor is: name=mbeanName,descriptorType=mbean, displayName=this.getClassName(), persistPolicy=never,log=F,export=F,visibility=1 If the descriptor does not contain all these fields, they will be added with these default values.

**Note:** because of inconsistencies in previous versions of this specification, it is recommended not to use negative or zero values for currencyTimeLimit. To indicate that a cached value is never valid, omit the currencyTimeLimit field. To indicate that it is always valid, use a very large number for this field.

**Returns:**the MBean descriptor. **Throws:** [MBeanException](http://docs.google.com/javax/management/MBeanException.html) - Wraps a distributed communication Exception. [RuntimeOperationsException](http://docs.google.com/javax/management/RuntimeOperationsException.html) - a [RuntimeException](http://docs.google.com/java/lang/RuntimeException.html) occurred while getting the descriptor.**See Also:**[setMBeanDescriptor(javax.management.Descriptor)](http://docs.google.com/javax/management/modelmbean/ModelMBeanInfo.html#setMBeanDescriptor(javax.management.Descriptor))

### setMBeanDescriptor

void **setMBeanDescriptor**([Descriptor](http://docs.google.com/javax/management/Descriptor.html) inDescriptor)  
 throws [MBeanException](http://docs.google.com/javax/management/MBeanException.html),  
 [RuntimeOperationsException](http://docs.google.com/javax/management/RuntimeOperationsException.html)

Sets the ModelMBean's descriptor. This descriptor contains default, MBean wide metadata about the MBean and default policies for persistence and caching. This operation does a complete replacement of the descriptor, no merging is done. If the descriptor to set to is null then the default descriptor will be created. The default descriptor is: name=mbeanName,descriptorType=mbean, displayName=this.getClassName(), persistPolicy=never,log=F,export=F,visibility=1 If the descriptor does not contain all these fields, they will be added with these default values. See [getMBeanDescriptor](http://docs.google.com/javax/management/modelmbean/ModelMBeanInfo.html#getMBeanDescriptor()) method javadoc for description of valid field names.

**Parameters:**inDescriptor - the descriptor to set. **Throws:** [MBeanException](http://docs.google.com/javax/management/MBeanException.html) - Wraps a distributed communication Exception. [RuntimeOperationsException](http://docs.google.com/javax/management/RuntimeOperationsException.html) - Wraps an IllegalArgumentException for invalid descriptor.**See Also:**[getMBeanDescriptor()](http://docs.google.com/javax/management/modelmbean/ModelMBeanInfo.html#getMBeanDescriptor())

### getAttribute

[ModelMBeanAttributeInfo](http://docs.google.com/javax/management/modelmbean/ModelMBeanAttributeInfo.html) **getAttribute**([String](http://docs.google.com/java/lang/String.html) inName)  
 throws [MBeanException](http://docs.google.com/javax/management/MBeanException.html),  
 [RuntimeOperationsException](http://docs.google.com/javax/management/RuntimeOperationsException.html)

Returns a ModelMBeanAttributeInfo requested by name.

**Parameters:**inName - The name of the ModelMBeanAttributeInfo to get. If no ModelMBeanAttributeInfo exists for this name null is returned. **Returns:**the attribute info for the named attribute, or null if there is none. **Throws:** [MBeanException](http://docs.google.com/javax/management/MBeanException.html) - Wraps a distributed communication Exception. [RuntimeOperationsException](http://docs.google.com/javax/management/RuntimeOperationsException.html) - Wraps an IllegalArgumentException for a null attribute name.

### getOperation

[ModelMBeanOperationInfo](http://docs.google.com/javax/management/modelmbean/ModelMBeanOperationInfo.html) **getOperation**([String](http://docs.google.com/java/lang/String.html) inName)  
 throws [MBeanException](http://docs.google.com/javax/management/MBeanException.html),  
 [RuntimeOperationsException](http://docs.google.com/javax/management/RuntimeOperationsException.html)

Returns a ModelMBeanOperationInfo requested by name.

**Parameters:**inName - The name of the ModelMBeanOperationInfo to get. If no ModelMBeanOperationInfo exists for this name null is returned. **Returns:**the operation info for the named operation, or null if there is none. **Throws:** [MBeanException](http://docs.google.com/javax/management/MBeanException.html) - Wraps a distributed communication Exception. [RuntimeOperationsException](http://docs.google.com/javax/management/RuntimeOperationsException.html) - Wraps an IllegalArgumentException for a null operation name.

### getNotification

[ModelMBeanNotificationInfo](http://docs.google.com/javax/management/modelmbean/ModelMBeanNotificationInfo.html) **getNotification**([String](http://docs.google.com/java/lang/String.html) inName)  
 throws [MBeanException](http://docs.google.com/javax/management/MBeanException.html),  
 [RuntimeOperationsException](http://docs.google.com/javax/management/RuntimeOperationsException.html)

Returns a ModelMBeanNotificationInfo requested by name.

**Parameters:**inName - The name of the ModelMBeanNotificationInfo to get. If no ModelMBeanNotificationInfo exists for this name null is returned. **Returns:**the info for the named notification, or null if there is none. **Throws:** [MBeanException](http://docs.google.com/javax/management/MBeanException.html) - Wraps a distributed communication Exception. [RuntimeOperationsException](http://docs.google.com/javax/management/RuntimeOperationsException.html) - Wraps an IllegalArgumentException for a null notification name.

### clone

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

Creates and returns a copy of this object.

### getAttributes

[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.

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

### getClassName

[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 Java class name.

### getConstructors

[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.

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

### getDescription

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

Returns a human readable description of the MBean.

**Returns:**the description.

### getNotifications

[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.

In addition to any notification specified by the application, a ModelMBean may always send also two additional notifications:

* One with descriptor name "GENERIC" and displayName "jmx.modelmbean.generic"
* Second is a standard attribute change notification with descriptor name "ATTRIBUTE\_CHANGE" and displayName "jmx.attribute.change"

Thus any implementation of ModelMBeanInfo should always add those two notifications in addition to those specified by the application.

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

### getOperations

[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.

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

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

[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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