| | [**Overview**](http://docs.google.com/overview-summary.html) | **Package** | Class | [**Use**](http://docs.google.com/package-use.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 PACKAGE**](http://docs.google.com/javax/management/loading/package-summary.html)   [**NEXT PACKAGE**](http://docs.google.com/javax/management/monitor/package-summary.html) | [**FRAMES**](http://docs.google.com/index.html?javax/management/modelmbean/package-summary.html)    [**NO FRAMES**](http://docs.google.com/package-summary.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |

## Package javax.management.modelmbean

Provides the definition of the ModelMBean classes.

**See:**

[**Description**](#3znysh7)

| **Interface Summary** | |
| --- | --- |
| [**ModelMBean**](http://docs.google.com/javax/management/modelmbean/ModelMBean.html) | This interface must be implemented by the ModelMBeans. |
| [**ModelMBeanInfo**](http://docs.google.com/javax/management/modelmbean/ModelMBeanInfo.html) | This interface is implemented by the ModelMBeanInfo for every ModelMBean. |
| [**ModelMBeanNotificationBroadcaster**](http://docs.google.com/javax/management/modelmbean/ModelMBeanNotificationBroadcaster.html) | This interface must be implemented by the ModelMBeans. |

| **Class Summary** | |
| --- | --- |
| [**DescriptorSupport**](http://docs.google.com/javax/management/modelmbean/DescriptorSupport.html) | This class represents the metadata set for a ModelMBean element. |
| [**ModelMBeanAttributeInfo**](http://docs.google.com/javax/management/modelmbean/ModelMBeanAttributeInfo.html) | The ModelMBeanAttributeInfo object describes an attribute of the ModelMBean. |
| [**ModelMBeanConstructorInfo**](http://docs.google.com/javax/management/modelmbean/ModelMBeanConstructorInfo.html) | The ModelMBeanConstructorInfo object describes a constructor of the ModelMBean. |
| [**ModelMBeanInfoSupport**](http://docs.google.com/javax/management/modelmbean/ModelMBeanInfoSupport.html) | This class represents the meta data for ModelMBeans. |
| [**ModelMBeanNotificationInfo**](http://docs.google.com/javax/management/modelmbean/ModelMBeanNotificationInfo.html) | The ModelMBeanNotificationInfo object describes a notification emitted by a ModelMBean. |
| [**ModelMBeanOperationInfo**](http://docs.google.com/javax/management/modelmbean/ModelMBeanOperationInfo.html) | The ModelMBeanOperationInfo object describes a management operation of the ModelMBean. |
| [**RequiredModelMBean**](http://docs.google.com/javax/management/modelmbean/RequiredModelMBean.html) | This class is the implementation of a ModelMBean. |

| **Exception Summary** | |
| --- | --- |
| [**InvalidTargetObjectTypeException**](http://docs.google.com/javax/management/modelmbean/InvalidTargetObjectTypeException.html) | Exception thrown when an invalid target object type is specified. |
| [**XMLParseException**](http://docs.google.com/javax/management/modelmbean/XMLParseException.html) | This exception is thrown when an XML formatted string is being parsed into ModelMBean objects or when XML formatted strings are being created from ModelMBean objects. |

## Package javax.management.modelmbean Description

Provides the definition of the ModelMBean classes. A Model MBean is an MBean that acts as a bridge between the management interface and the underlying managed resource. Both the management interface and the managed resource are specified as Java objects. The same Model MBean implementation can be reused many times with different management interfaces and managed resources, and it can provide common functionality such as persistence and caching.

A Model MBean implements the [ModelMBean](http://docs.google.com/javax/management/modelmbean/ModelMBean.html) interface. It is a [DynamicMBean](http://docs.google.com/javax/management/DynamicMBean.html) whose [getMBeanInfo](http://docs.google.com/javax/management/DynamicMBean.html#getMBeanInfo()) method returns an object implementing [ModelMBeanInfo](http://docs.google.com/javax/management/modelmbean/ModelMBeanInfo.html).

Every MBean has an [MBeanInfo](http://docs.google.com/javax/management/MBeanInfo.html) with information about the MBean itself, and its attributes, operations, constructors, and notifications. A Model MBean augments this MBeanInfo with [Descriptor](http://docs.google.com/javax/management/Descriptor.html)s that encode additional information in the form of (key,value) pairs. Usually, Descriptors are instances of [DescriptorSupport](http://docs.google.com/javax/management/modelmbean/DescriptorSupport.html).

The class [RequiredModelMBean](http://docs.google.com/javax/management/modelmbean/RequiredModelMBean.html) provides a standard Model MBean implementation.

The following example shows a Model MBean being used to make the get method of a HashMap available for management through an MBean server. No other methods are available through the MBean server. There is nothing special about HashMap here. Public methods from any public class can be exposed for management in the same way.

import java.lang.reflect.Method;  
import java.util.HashMap;  
import javax.management.\*;  
import javax.management.modelmbean.\*;  
  
// ...  
  
MBeanServer mbs = MBeanServerFactory.createMBeanServer();  
// The MBean Server  
  
HashMap map = new HashMap();  
// The resource that will be managed  
  
// Construct the management interface for the Model MBean  
Method getMethod = HashMap.class.getMethod("get", new Class[] {Object.class});  
ModelMBeanOperationInfo getInfo =  
 new ModelMBeanOperationInfo("Get value for key", getMethod);  
ModelMBeanInfo mmbi =  
 new ModelMBeanInfoSupport(HashMap.class.getName(),  
 "Map of keys and values",  
 null, // no attributes  
 null, // no constructors  
 new ModelMBeanOperationInfo[] {getInfo},  
 null); // no notifications  
  
// Make the Model MBean and link it to the resource  
ModelMBean mmb = new RequiredModelMBean(mmbi);  
mmb.setManagedResource(map, "ObjectReference");  
  
// Register the Model MBean in the MBean Server  
ObjectName mapName = new ObjectName(":type=Map,name=whatever");  
mbs.registerMBean(mmb, mapName);  
  
// Resource can evolve independently of the MBean  
map.put("key", "value");  
  
// Can access the "get" method through the MBean Server  
mbs.invoke(mapName, "get", new Object[] {"key"}, new String[] {Object.class.getName()});  
// returns "value"

## Package Specification

* See the *JMX 1.4 Specification* PDF document available from the  [Java SE 6 Platform documentation on JMX](http://docs.google.com/technotes/guides/jmx/)

**Since:** 1.5

| | [**Overview**](http://docs.google.com/overview-summary.html) | **Package** | Class | [**Use**](http://docs.google.com/package-use.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 PACKAGE**](http://docs.google.com/javax/management/loading/package-summary.html)   [**NEXT PACKAGE**](http://docs.google.com/javax/management/monitor/package-summary.html) | [**FRAMES**](http://docs.google.com/index.html?javax/management/modelmbean/package-summary.html)    [**NO FRAMES**](http://docs.google.com/package-summary.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |

[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.

Copyright 2006 Sun Microsystems, Inc. All rights reserved. Use is subject to [license terms](http://docs.google.com/legal/license.html). Also see the [documentation redistribution policy](http://java.sun.com/docs/redist.html).