| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/StandardMBean.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/StandardEmitterMBean.html)   [**NEXT CLASS**](http://docs.google.com/javax/management/StringValueExp.html) | [**FRAMES**](http://docs.google.com/index.html?javax/management/StandardMBean.html)    [**NO FRAMES**](http://docs.google.com/StandardMBean.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |
| SUMMARY: NESTED | FIELD | [CONSTR](#3znysh7) | [METHOD](#2et92p0) | DETAIL: FIELD | [CONSTR](#3dy6vkm) | [METHOD](#lnxbz9) |

## **javax.management**

Class StandardMBean

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

**All Implemented Interfaces:** [DynamicMBean](http://docs.google.com/javax/management/DynamicMBean.html), [MBeanRegistration](http://docs.google.com/javax/management/MBeanRegistration.html) **Direct Known Subclasses:** [StandardEmitterMBean](http://docs.google.com/javax/management/StandardEmitterMBean.html)

public class **StandardMBean**extends [Object](http://docs.google.com/java/lang/Object.html)implements [DynamicMBean](http://docs.google.com/javax/management/DynamicMBean.html), [MBeanRegistration](http://docs.google.com/javax/management/MBeanRegistration.html)

An MBean whose management interface is determined by reflection on a Java interface.

This class brings more flexibility to the notion of Management Interface in the use of Standard MBeans. Straightforward use of the patterns for Standard MBeans described in the JMX Specification means that there is a fixed relationship between the implementation class of an MBean and its management interface (i.e., if the implementation class is Thing, the management interface must be ThingMBean). This class makes it possible to keep the convenience of specifying the management interface with a Java interface, without requiring that there be any naming relationship between the implementation and interface classes.

By making a DynamicMBean out of an MBean, this class makes it possible to select any interface implemented by the MBean as its management interface, provided that it complies with JMX patterns (i.e., attributes defined by getter/setter etc...).

This class also provides hooks that make it possible to supply custom descriptions and names for the [MBeanInfo](http://docs.google.com/javax/management/MBeanInfo.html) returned by the DynamicMBean interface.

Using this class, an MBean can be created with any implementation class name *Impl* and with a management interface defined (as for current Standard MBeans) by any interface *Intf*, in one of two general ways:

* Using the public constructor [StandardMBean(impl,interface)](http://docs.google.com/javax/management/StandardMBean.html#StandardMBean(T,%20java.lang.Class,%20boolean)):  
   MBeanServer mbs;  
   ...  
   Impl impl = new Impl(...);  
   StandardMBean mbean = new StandardMBean(impl, Intf.class, false);  
   mbs.registerMBean(mbean, objectName);
* Subclassing StandardMBean:  
   public class Impl extends StandardMBean implements Intf {  
   public Impl() {  
   super(Intf.class, false);  
   }  
   // implement methods of Intf  
   }  
    
   [...]  
    
   MBeanServer mbs;  
   ....  
   Impl impl = new Impl();  
   mbs.registerMBean(impl, objectName);

In either case, the class *Impl* must implement the interface *Intf*.

Standard MBeans based on the naming relationship between implementation and interface classes are of course still available.

This class may also be used to construct MXBeans. The usage is exactly the same as for Standard MBeans except that in the examples above, the false parameter to the constructor or super(...) invocation is instead true.

**Since:** 1.5

| **Constructor Summary** | |
| --- | --- |
| protected | [**StandardMBean**](http://docs.google.com/javax/management/StandardMBean.html#StandardMBean(java.lang.Class))([Class](http://docs.google.com/java/lang/Class.html)<?> mbeanInterface)            Make a DynamicMBean out of this, using the specified mbeanInterface class. |
| protected | [**StandardMBean**](http://docs.google.com/javax/management/StandardMBean.html#StandardMBean(java.lang.Class,%20boolean))([Class](http://docs.google.com/java/lang/Class.html)<?> mbeanInterface, boolean isMXBean)            Make a DynamicMBean out of this, using the specified mbeanInterface class. |
|  | [**StandardMBean**](http://docs.google.com/javax/management/StandardMBean.html#StandardMBean(T,%20java.lang.Class))(T implementation, [Class](http://docs.google.com/java/lang/Class.html)<T> mbeanInterface)            Make a DynamicMBean out of the object implementation, using the specified mbeanInterface class. |
|  | [**StandardMBean**](http://docs.google.com/javax/management/StandardMBean.html#StandardMBean(T,%20java.lang.Class,%20boolean))(T implementation, [Class](http://docs.google.com/java/lang/Class.html)<T> mbeanInterface, boolean isMXBean)            Make a DynamicMBean out of the object implementation, using the specified mbeanInterface class. |

| **Method Summary** | |
| --- | --- |
| protected  void | [**cacheMBeanInfo**](http://docs.google.com/javax/management/StandardMBean.html#cacheMBeanInfo(javax.management.MBeanInfo))([MBeanInfo](http://docs.google.com/javax/management/MBeanInfo.html) info)            Customization hook: cache the MBeanInfo built for this object. |
| [Object](http://docs.google.com/java/lang/Object.html) | [**getAttribute**](http://docs.google.com/javax/management/StandardMBean.html#getAttribute(java.lang.String))([String](http://docs.google.com/java/lang/String.html) attribute)            Obtain the value of a specific attribute of the Dynamic MBean. |
| [AttributeList](http://docs.google.com/javax/management/AttributeList.html) | [**getAttributes**](http://docs.google.com/javax/management/StandardMBean.html#getAttributes(java.lang.String%5B%5D))([String](http://docs.google.com/java/lang/String.html)[] attributes)            Get the values of several attributes of the Dynamic MBean. |
| protected  [MBeanInfo](http://docs.google.com/javax/management/MBeanInfo.html) | [**getCachedMBeanInfo**](http://docs.google.com/javax/management/StandardMBean.html#getCachedMBeanInfo())()            Customization hook: Return the MBeanInfo cached for this object. |
| protected  [String](http://docs.google.com/java/lang/String.html) | [**getClassName**](http://docs.google.com/javax/management/StandardMBean.html#getClassName(javax.management.MBeanInfo))([MBeanInfo](http://docs.google.com/javax/management/MBeanInfo.html) info)            Customization hook: Get the className that will be used in the MBeanInfo returned by this MBean. |
| protected  [MBeanConstructorInfo](http://docs.google.com/javax/management/MBeanConstructorInfo.html)[] | [**getConstructors**](http://docs.google.com/javax/management/StandardMBean.html#getConstructors(javax.management.MBeanConstructorInfo%5B%5D,%20java.lang.Object))([MBeanConstructorInfo](http://docs.google.com/javax/management/MBeanConstructorInfo.html)[] ctors, [Object](http://docs.google.com/java/lang/Object.html) impl)            Customization hook: Get the MBeanConstructorInfo[] that will be used in the MBeanInfo returned by this MBean. |
| protected  [String](http://docs.google.com/java/lang/String.html) | [**getDescription**](http://docs.google.com/javax/management/StandardMBean.html#getDescription(javax.management.MBeanAttributeInfo))([MBeanAttributeInfo](http://docs.google.com/javax/management/MBeanAttributeInfo.html) info)            Customization hook: Get the description that will be used in the MBeanAttributeInfo returned by this MBean. |
| protected  [String](http://docs.google.com/java/lang/String.html) | [**getDescription**](http://docs.google.com/javax/management/StandardMBean.html#getDescription(javax.management.MBeanConstructorInfo))([MBeanConstructorInfo](http://docs.google.com/javax/management/MBeanConstructorInfo.html) info)            Customization hook: Get the description that will be used in the MBeanConstructorInfo returned by this MBean. |
| protected  [String](http://docs.google.com/java/lang/String.html) | [**getDescription**](http://docs.google.com/javax/management/StandardMBean.html#getDescription(javax.management.MBeanConstructorInfo,%20javax.management.MBeanParameterInfo,%20int))([MBeanConstructorInfo](http://docs.google.com/javax/management/MBeanConstructorInfo.html) ctor, [MBeanParameterInfo](http://docs.google.com/javax/management/MBeanParameterInfo.html) param, int sequence)            Customization hook: Get the description that will be used for the sequence MBeanParameterInfo of the MBeanConstructorInfo returned by this MBean. |
| protected  [String](http://docs.google.com/java/lang/String.html) | [**getDescription**](http://docs.google.com/javax/management/StandardMBean.html#getDescription(javax.management.MBeanFeatureInfo))([MBeanFeatureInfo](http://docs.google.com/javax/management/MBeanFeatureInfo.html) info)            Customization hook: Get the description that will be used in the MBeanFeatureInfo returned by this MBean. |
| protected  [String](http://docs.google.com/java/lang/String.html) | [**getDescription**](http://docs.google.com/javax/management/StandardMBean.html#getDescription(javax.management.MBeanInfo))([MBeanInfo](http://docs.google.com/javax/management/MBeanInfo.html) info)            Customization hook: Get the description that will be used in the MBeanInfo returned by this MBean. |
| protected  [String](http://docs.google.com/java/lang/String.html) | [**getDescription**](http://docs.google.com/javax/management/StandardMBean.html#getDescription(javax.management.MBeanOperationInfo))([MBeanOperationInfo](http://docs.google.com/javax/management/MBeanOperationInfo.html) info)            Customization hook: Get the description that will be used in the MBeanOperationInfo returned by this MBean. |
| protected  [String](http://docs.google.com/java/lang/String.html) | [**getDescription**](http://docs.google.com/javax/management/StandardMBean.html#getDescription(javax.management.MBeanOperationInfo,%20javax.management.MBeanParameterInfo,%20int))([MBeanOperationInfo](http://docs.google.com/javax/management/MBeanOperationInfo.html) op, [MBeanParameterInfo](http://docs.google.com/javax/management/MBeanParameterInfo.html) param, int sequence)            Customization hook: Get the description that will be used for the sequence MBeanParameterInfo of the MBeanOperationInfo returned by this MBean. |
| protected  int | [**getImpact**](http://docs.google.com/javax/management/StandardMBean.html#getImpact(javax.management.MBeanOperationInfo))([MBeanOperationInfo](http://docs.google.com/javax/management/MBeanOperationInfo.html) info)            Customization hook: Get the impact flag of the operation that will be used in the MBeanOperationInfo returned by this MBean. |
| [Object](http://docs.google.com/java/lang/Object.html) | [**getImplementation**](http://docs.google.com/javax/management/StandardMBean.html#getImplementation())()            Get the implementation of this Standard MBean (or MXBean). |
| [Class](http://docs.google.com/java/lang/Class.html)<?> | [**getImplementationClass**](http://docs.google.com/javax/management/StandardMBean.html#getImplementationClass())()            Get the class of the implementation of this Standard MBean (or MXBean). |
| [MBeanInfo](http://docs.google.com/javax/management/MBeanInfo.html) | [**getMBeanInfo**](http://docs.google.com/javax/management/StandardMBean.html#getMBeanInfo())()            Get the [MBeanInfo](http://docs.google.com/javax/management/MBeanInfo.html) for this MBean. |
| [Class](http://docs.google.com/java/lang/Class.html)<?> | [**getMBeanInterface**](http://docs.google.com/javax/management/StandardMBean.html#getMBeanInterface())()            Get the Management Interface of this Standard MBean (or MXBean). |
| protected  [String](http://docs.google.com/java/lang/String.html) | [**getParameterName**](http://docs.google.com/javax/management/StandardMBean.html#getParameterName(javax.management.MBeanConstructorInfo,%20javax.management.MBeanParameterInfo,%20int))([MBeanConstructorInfo](http://docs.google.com/javax/management/MBeanConstructorInfo.html) ctor, [MBeanParameterInfo](http://docs.google.com/javax/management/MBeanParameterInfo.html) param, int sequence)            Customization hook: Get the name that will be used for the sequence MBeanParameterInfo of the MBeanConstructorInfo returned by this MBean. |
| protected  [String](http://docs.google.com/java/lang/String.html) | [**getParameterName**](http://docs.google.com/javax/management/StandardMBean.html#getParameterName(javax.management.MBeanOperationInfo,%20javax.management.MBeanParameterInfo,%20int))([MBeanOperationInfo](http://docs.google.com/javax/management/MBeanOperationInfo.html) op, [MBeanParameterInfo](http://docs.google.com/javax/management/MBeanParameterInfo.html) param, int sequence)            Customization hook: Get the name that will be used for the sequence MBeanParameterInfo of the MBeanOperationInfo returned by this MBean. |
| [Object](http://docs.google.com/java/lang/Object.html) | [**invoke**](http://docs.google.com/javax/management/StandardMBean.html#invoke(java.lang.String,%20java.lang.Object%5B%5D,%20java.lang.String%5B%5D))([String](http://docs.google.com/java/lang/String.html) actionName, [Object](http://docs.google.com/java/lang/Object.html)[] params, [String](http://docs.google.com/java/lang/String.html)[] signature)            Allows an action to be invoked on the Dynamic MBean. |
| void | [**postDeregister**](http://docs.google.com/javax/management/StandardMBean.html#postDeregister())()            Allows the MBean to perform any operations needed after having been unregistered in the MBean server. |
| void | [**postRegister**](http://docs.google.com/javax/management/StandardMBean.html#postRegister(java.lang.Boolean))([Boolean](http://docs.google.com/java/lang/Boolean.html) registrationDone)            Allows the MBean to perform any operations needed after having been registered in the MBean server or after the registration has failed. |
| void | [**preDeregister**](http://docs.google.com/javax/management/StandardMBean.html#preDeregister())()            Allows the MBean to perform any operations it needs before being unregistered by the MBean server. |
| [ObjectName](http://docs.google.com/javax/management/ObjectName.html) | [**preRegister**](http://docs.google.com/javax/management/StandardMBean.html#preRegister(javax.management.MBeanServer,%20javax.management.ObjectName))([MBeanServer](http://docs.google.com/javax/management/MBeanServer.html) server, [ObjectName](http://docs.google.com/javax/management/ObjectName.html) name)            Allows the MBean to perform any operations it needs before being registered in the MBean server. |
| void | [**setAttribute**](http://docs.google.com/javax/management/StandardMBean.html#setAttribute(javax.management.Attribute))([Attribute](http://docs.google.com/javax/management/Attribute.html) attribute)            Set the value of a specific attribute of the Dynamic MBean. |
| [AttributeList](http://docs.google.com/javax/management/AttributeList.html) | [**setAttributes**](http://docs.google.com/javax/management/StandardMBean.html#setAttributes(javax.management.AttributeList))([AttributeList](http://docs.google.com/javax/management/AttributeList.html) attributes)            Sets the values of several attributes of the Dynamic MBean. |
| void | [**setImplementation**](http://docs.google.com/javax/management/StandardMBean.html#setImplementation(java.lang.Object))([Object](http://docs.google.com/java/lang/Object.html) implementation)            Replace the implementation object wrapped in this object. |

| **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)) |

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

### StandardMBean

public **StandardMBean**(T implementation,  
 [Class](http://docs.google.com/java/lang/Class.html)<T> mbeanInterface)  
 throws [NotCompliantMBeanException](http://docs.google.com/javax/management/NotCompliantMBeanException.html)

Make a DynamicMBean out of the object implementation, using the specified mbeanInterface class.

**Type Parameters:**T - Allows the compiler to check that implementation does indeed implement the class described by mbeanInterface. The compiler can only check this if mbeanInterface is a class literal such as MyMBean.class.**Parameters:**implementation - The implementation of this MBean.mbeanInterface - The Management Interface exported by this MBean's implementation. If null, then this object will use standard JMX design pattern to determine the management interface associated with the given implementation. **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if the given implementation is null. [NotCompliantMBeanException](http://docs.google.com/javax/management/NotCompliantMBeanException.html) - if the mbeanInterface does not follow JMX design patterns for Management Interfaces, or if the given implementation does not implement the specified interface.

### StandardMBean

protected **StandardMBean**([Class](http://docs.google.com/java/lang/Class.html)<?> mbeanInterface)  
 throws [NotCompliantMBeanException](http://docs.google.com/javax/management/NotCompliantMBeanException.html)

Make a DynamicMBean out of this, using the specified mbeanInterface class.

Call [this(this,mbeanInterface)](http://docs.google.com/javax/management/StandardMBean.html#StandardMBean(T,%20java.lang.Class)). This constructor is reserved to subclasses.

**Parameters:**mbeanInterface - The Management Interface exported by this MBean. **Throws:** [NotCompliantMBeanException](http://docs.google.com/javax/management/NotCompliantMBeanException.html) - if the mbeanInterface does not follow JMX design patterns for Management Interfaces, or if this does not implement the specified interface.

### StandardMBean

public **StandardMBean**(T implementation,  
 [Class](http://docs.google.com/java/lang/Class.html)<T> mbeanInterface,  
 boolean isMXBean)

Make a DynamicMBean out of the object implementation, using the specified mbeanInterface class. This constructor can be used to make either Standard MBeans or MXBeans. Unlike the constructor [StandardMBean(Object, Class)](http://docs.google.com/javax/management/StandardMBean.html#StandardMBean(T,%20java.lang.Class)), it does not throw NotCompliantMBeanException.

**Type Parameters:**T - Allows the compiler to check that implementation does indeed implement the class described by mbeanInterface. The compiler can only check this if mbeanInterface is a class literal such as MyMBean.class.**Parameters:**implementation - The implementation of this MBean.mbeanInterface - The Management Interface exported by this MBean's implementation. If null, then this object will use standard JMX design pattern to determine the management interface associated with the given implementation.isMXBean - If true, the mbeanInterface parameter names an MXBean interface and the resultant MBean is an MXBean. **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if the given implementation is null, or if the mbeanInterface does not follow JMX design patterns for Management Interfaces, or if the given implementation does not implement the specified interface.**Since:** 1.6

### StandardMBean

protected **StandardMBean**([Class](http://docs.google.com/java/lang/Class.html)<?> mbeanInterface,  
 boolean isMXBean)

Make a DynamicMBean out of this, using the specified mbeanInterface class. This constructor can be used to make either Standard MBeans or MXBeans. Unlike the constructor [StandardMBean(Object, Class)](http://docs.google.com/javax/management/StandardMBean.html#StandardMBean(T,%20java.lang.Class)), it does not throw NotCompliantMBeanException.

Call [this(this, mbeanInterface, isMXBean)](http://docs.google.com/javax/management/StandardMBean.html#StandardMBean(T,%20java.lang.Class,%20boolean)). This constructor is reserved to subclasses.

**Parameters:**mbeanInterface - The Management Interface exported by this MBean.isMXBean - If true, the mbeanInterface parameter names an MXBean interface and the resultant MBean is an MXBean. **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if the mbeanInterface does not follow JMX design patterns for Management Interfaces, or if this does not implement the specified interface.**Since:** 1.6

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

### setImplementation

public void **setImplementation**([Object](http://docs.google.com/java/lang/Object.html) implementation)  
 throws [NotCompliantMBeanException](http://docs.google.com/javax/management/NotCompliantMBeanException.html)

Replace the implementation object wrapped in this object.

**Parameters:**implementation - The new implementation of this Standard MBean (or MXBean). The implementation object must implement the Standard MBean (or MXBean) interface that was supplied when this StandardMBean was constructed. **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if the given implementation is null. [NotCompliantMBeanException](http://docs.google.com/javax/management/NotCompliantMBeanException.html) - if the given implementation does not implement the Standard MBean (or MXBean) interface that was supplied at construction.**See Also:**[getImplementation()](http://docs.google.com/javax/management/StandardMBean.html#getImplementation())

### getImplementation

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

Get the implementation of this Standard MBean (or MXBean).

**Returns:**The implementation of this Standard MBean (or MXBean).**See Also:**[setImplementation(java.lang.Object)](http://docs.google.com/javax/management/StandardMBean.html#setImplementation(java.lang.Object))

### getMBeanInterface

public final [Class](http://docs.google.com/java/lang/Class.html)<?> **getMBeanInterface**()

Get the Management Interface of this Standard MBean (or MXBean).

**Returns:**The management interface of this Standard MBean (or MXBean).

### getImplementationClass

public [Class](http://docs.google.com/java/lang/Class.html)<?> **getImplementationClass**()

Get the class of the implementation of this Standard MBean (or MXBean).

**Returns:**The class of the implementation of this Standard MBean (or MXBean).

### getAttribute

public [Object](http://docs.google.com/java/lang/Object.html) **getAttribute**([String](http://docs.google.com/java/lang/String.html) attribute)  
 throws [AttributeNotFoundException](http://docs.google.com/javax/management/AttributeNotFoundException.html),  
 [MBeanException](http://docs.google.com/javax/management/MBeanException.html),  
 [ReflectionException](http://docs.google.com/javax/management/ReflectionException.html)

**Description copied from interface:** [**DynamicMBean**](http://docs.google.com/javax/management/DynamicMBean.html#getAttribute(java.lang.String)) Obtain the value of a specific attribute of the Dynamic MBean.

**Specified by:**[getAttribute](http://docs.google.com/javax/management/DynamicMBean.html#getAttribute(java.lang.String)) in interface [DynamicMBean](http://docs.google.com/javax/management/DynamicMBean.html) **Parameters:**attribute - The name of the attribute to be retrieved **Returns:**The value of the attribute retrieved. **Throws:** [AttributeNotFoundException](http://docs.google.com/javax/management/AttributeNotFoundException.html) [MBeanException](http://docs.google.com/javax/management/MBeanException.html) - Wraps a java.lang.Exception thrown by the MBean's getter. [ReflectionException](http://docs.google.com/javax/management/ReflectionException.html) - Wraps a java.lang.Exception thrown while trying to invoke the getter.**See Also:**[DynamicMBean.setAttribute(javax.management.Attribute)](http://docs.google.com/javax/management/DynamicMBean.html#setAttribute(javax.management.Attribute))

### setAttribute

public void **setAttribute**([Attribute](http://docs.google.com/javax/management/Attribute.html) attribute)  
 throws [AttributeNotFoundException](http://docs.google.com/javax/management/AttributeNotFoundException.html),  
 [InvalidAttributeValueException](http://docs.google.com/javax/management/InvalidAttributeValueException.html),  
 [MBeanException](http://docs.google.com/javax/management/MBeanException.html),  
 [ReflectionException](http://docs.google.com/javax/management/ReflectionException.html)

**Description copied from interface:** [**DynamicMBean**](http://docs.google.com/javax/management/DynamicMBean.html#setAttribute(javax.management.Attribute)) Set the value of a specific attribute of the Dynamic MBean.

**Specified by:**[setAttribute](http://docs.google.com/javax/management/DynamicMBean.html#setAttribute(javax.management.Attribute)) in interface [DynamicMBean](http://docs.google.com/javax/management/DynamicMBean.html) **Parameters:**attribute - The identification of the attribute to be set and the value it is to be set to. **Throws:** [AttributeNotFoundException](http://docs.google.com/javax/management/AttributeNotFoundException.html) [InvalidAttributeValueException](http://docs.google.com/javax/management/InvalidAttributeValueException.html) [MBeanException](http://docs.google.com/javax/management/MBeanException.html) - Wraps a java.lang.Exception thrown by the MBean's setter. [ReflectionException](http://docs.google.com/javax/management/ReflectionException.html) - Wraps a java.lang.Exception thrown while trying to invoke the MBean's setter.**See Also:**[DynamicMBean.getAttribute(java.lang.String)](http://docs.google.com/javax/management/DynamicMBean.html#getAttribute(java.lang.String))

### getAttributes

public [AttributeList](http://docs.google.com/javax/management/AttributeList.html) **getAttributes**([String](http://docs.google.com/java/lang/String.html)[] attributes)

**Description copied from interface:** [**DynamicMBean**](http://docs.google.com/javax/management/DynamicMBean.html#getAttributes(java.lang.String%5B%5D)) Get the values of several attributes of the Dynamic MBean.

**Specified by:**[getAttributes](http://docs.google.com/javax/management/DynamicMBean.html#getAttributes(java.lang.String%5B%5D)) in interface [DynamicMBean](http://docs.google.com/javax/management/DynamicMBean.html) **Parameters:**attributes - A list of the attributes to be retrieved. **Returns:**The list of attributes retrieved.**See Also:**[DynamicMBean.setAttributes(javax.management.AttributeList)](http://docs.google.com/javax/management/DynamicMBean.html#setAttributes(javax.management.AttributeList))

### setAttributes

public [AttributeList](http://docs.google.com/javax/management/AttributeList.html) **setAttributes**([AttributeList](http://docs.google.com/javax/management/AttributeList.html) attributes)

**Description copied from interface:** [**DynamicMBean**](http://docs.google.com/javax/management/DynamicMBean.html#setAttributes(javax.management.AttributeList)) Sets the values of several attributes of the Dynamic MBean.

**Specified by:**[setAttributes](http://docs.google.com/javax/management/DynamicMBean.html#setAttributes(javax.management.AttributeList)) in interface [DynamicMBean](http://docs.google.com/javax/management/DynamicMBean.html) **Parameters:**attributes - A list of attributes: The identification of the attributes to be set and the values they are to be set to. **Returns:**The list of attributes that were set, with their new values.**See Also:**[DynamicMBean.getAttributes(java.lang.String[])](http://docs.google.com/javax/management/DynamicMBean.html#getAttributes(java.lang.String%5B%5D))

### invoke

public [Object](http://docs.google.com/java/lang/Object.html) **invoke**([String](http://docs.google.com/java/lang/String.html) actionName,  
 [Object](http://docs.google.com/java/lang/Object.html)[] params,  
 [String](http://docs.google.com/java/lang/String.html)[] signature)  
 throws [MBeanException](http://docs.google.com/javax/management/MBeanException.html),  
 [ReflectionException](http://docs.google.com/javax/management/ReflectionException.html)

**Description copied from interface:** [**DynamicMBean**](http://docs.google.com/javax/management/DynamicMBean.html#invoke(java.lang.String,%20java.lang.Object%5B%5D,%20java.lang.String%5B%5D)) Allows an action to be invoked on the Dynamic MBean.

**Specified by:**[invoke](http://docs.google.com/javax/management/DynamicMBean.html#invoke(java.lang.String,%20java.lang.Object%5B%5D,%20java.lang.String%5B%5D)) in interface [DynamicMBean](http://docs.google.com/javax/management/DynamicMBean.html) **Parameters:**actionName - The name of the action to be invoked.params - An array containing the parameters to be set when the action is invoked.signature - An array containing the signature of the action. The class objects will be loaded through the same class loader as the one used for loading the MBean on which the action is invoked. **Returns:**The object returned by the action, which represents the result of invoking the action on the MBean specified. **Throws:** [MBeanException](http://docs.google.com/javax/management/MBeanException.html) - Wraps a java.lang.Exception thrown by the MBean's invoked method. [ReflectionException](http://docs.google.com/javax/management/ReflectionException.html) - Wraps a java.lang.Exception thrown while trying to invoke the method

### getMBeanInfo

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

Get the [MBeanInfo](http://docs.google.com/javax/management/MBeanInfo.html) for this MBean.

This method implements [DynamicMBean.getMBeanInfo()](http://docs.google.com/javax/management/DynamicMBean.html#getMBeanInfo()).

This method first calls [getCachedMBeanInfo()](http://docs.google.com/javax/management/StandardMBean.html#getCachedMBeanInfo()) in order to retrieve the cached MBeanInfo for this MBean, if any. If the MBeanInfo returned by [getCachedMBeanInfo()](http://docs.google.com/javax/management/StandardMBean.html#getCachedMBeanInfo()) is not null, then it is returned.

Otherwise, this method builds a default MBeanInfo for this MBean, using the Management Interface specified for this MBean.

While building the MBeanInfo, this method calls the customization hooks that make it possible for subclasses to supply their custom descriptions, parameter names, etc...

Finally, it calls [cacheMBeanInfo()](http://docs.google.com/javax/management/StandardMBean.html#cacheMBeanInfo(javax.management.MBeanInfo)) in order to cache the new MBeanInfo.

**Specified by:**[getMBeanInfo](http://docs.google.com/javax/management/DynamicMBean.html#getMBeanInfo()) in interface [DynamicMBean](http://docs.google.com/javax/management/DynamicMBean.html) **Returns:**The cached MBeanInfo for that MBean, if not null, or a newly built MBeanInfo if none was cached.

### getClassName

protected [String](http://docs.google.com/java/lang/String.html) **getClassName**([MBeanInfo](http://docs.google.com/javax/management/MBeanInfo.html) info)

Customization hook: Get the className that will be used in the MBeanInfo returned by this MBean.

Subclasses may redefine this method in order to supply their custom class name. The default implementation returns [info.getClassName()](http://docs.google.com/javax/management/MBeanInfo.html#getClassName()).

**Parameters:**info - The default MBeanInfo derived by reflection. **Returns:**the class name for the new MBeanInfo.

### getDescription

protected [String](http://docs.google.com/java/lang/String.html) **getDescription**([MBeanInfo](http://docs.google.com/javax/management/MBeanInfo.html) info)

Customization hook: Get the description that will be used in the MBeanInfo returned by this MBean.

Subclasses may redefine this method in order to supply their custom MBean description. The default implementation returns [info.getDescription()](http://docs.google.com/javax/management/MBeanInfo.html#getDescription()).

**Parameters:**info - The default MBeanInfo derived by reflection. **Returns:**the description for the new MBeanInfo.

### getDescription

protected [String](http://docs.google.com/java/lang/String.html) **getDescription**([MBeanFeatureInfo](http://docs.google.com/javax/management/MBeanFeatureInfo.html) info)

Customization hook: Get the description that will be used in the MBeanFeatureInfo returned by this MBean.

Subclasses may redefine this method in order to supply their custom description. The default implementation returns [info.getDescription()](http://docs.google.com/javax/management/MBeanFeatureInfo.html#getDescription()).

This method is called by [getDescription(MBeanAttributeInfo)](http://docs.google.com/javax/management/StandardMBean.html#getDescription(javax.management.MBeanAttributeInfo)), [getDescription(MBeanOperationInfo)](http://docs.google.com/javax/management/StandardMBean.html#getDescription(javax.management.MBeanOperationInfo)), [getDescription(MBeanConstructorInfo)](http://docs.google.com/javax/management/StandardMBean.html#getDescription(javax.management.MBeanConstructorInfo)).

**Parameters:**info - The default MBeanFeatureInfo derived by reflection. **Returns:**the description for the given MBeanFeatureInfo.

### getDescription

protected [String](http://docs.google.com/java/lang/String.html) **getDescription**([MBeanAttributeInfo](http://docs.google.com/javax/management/MBeanAttributeInfo.html) info)

Customization hook: Get the description that will be used in the MBeanAttributeInfo returned by this MBean.

Subclasses may redefine this method in order to supply their custom description. The default implementation returns [getDescription((MBeanFeatureInfo) info)](http://docs.google.com/javax/management/StandardMBean.html#getDescription(javax.management.MBeanFeatureInfo)).

**Parameters:**info - The default MBeanAttributeInfo derived by reflection. **Returns:**the description for the given MBeanAttributeInfo.

### getDescription

protected [String](http://docs.google.com/java/lang/String.html) **getDescription**([MBeanConstructorInfo](http://docs.google.com/javax/management/MBeanConstructorInfo.html) info)

Customization hook: Get the description that will be used in the MBeanConstructorInfo returned by this MBean.

Subclasses may redefine this method in order to supply their custom description. The default implementation returns [getDescription((MBeanFeatureInfo) info)](http://docs.google.com/javax/management/StandardMBean.html#getDescription(javax.management.MBeanFeatureInfo)).

**Parameters:**info - The default MBeanConstructorInfo derived by reflection. **Returns:**the description for the given MBeanConstructorInfo.

### getDescription

protected [String](http://docs.google.com/java/lang/String.html) **getDescription**([MBeanConstructorInfo](http://docs.google.com/javax/management/MBeanConstructorInfo.html) ctor,  
 [MBeanParameterInfo](http://docs.google.com/javax/management/MBeanParameterInfo.html) param,  
 int sequence)

Customization hook: Get the description that will be used for the sequence MBeanParameterInfo of the MBeanConstructorInfo returned by this MBean.

Subclasses may redefine this method in order to supply their custom description. The default implementation returns [param.getDescription()](http://docs.google.com/javax/management/MBeanFeatureInfo.html#getDescription()).

**Parameters:**ctor - The default MBeanConstructorInfo derived by reflection.param - The default MBeanParameterInfo derived by reflection.sequence - The sequence number of the parameter considered ("0" for the first parameter, "1" for the second parameter, etc...). **Returns:**the description for the given MBeanParameterInfo.

### getParameterName

protected [String](http://docs.google.com/java/lang/String.html) **getParameterName**([MBeanConstructorInfo](http://docs.google.com/javax/management/MBeanConstructorInfo.html) ctor,  
 [MBeanParameterInfo](http://docs.google.com/javax/management/MBeanParameterInfo.html) param,  
 int sequence)

Customization hook: Get the name that will be used for the sequence MBeanParameterInfo of the MBeanConstructorInfo returned by this MBean.

Subclasses may redefine this method in order to supply their custom parameter name. The default implementation returns [param.getName()](http://docs.google.com/javax/management/MBeanFeatureInfo.html#getName()).

**Parameters:**ctor - The default MBeanConstructorInfo derived by reflection.param - The default MBeanParameterInfo derived by reflection.sequence - The sequence number of the parameter considered ("0" for the first parameter, "1" for the second parameter, etc...). **Returns:**the name for the given MBeanParameterInfo.

### getDescription

protected [String](http://docs.google.com/java/lang/String.html) **getDescription**([MBeanOperationInfo](http://docs.google.com/javax/management/MBeanOperationInfo.html) info)

Customization hook: Get the description that will be used in the MBeanOperationInfo returned by this MBean.

Subclasses may redefine this method in order to supply their custom description. The default implementation returns [getDescription((MBeanFeatureInfo) info)](http://docs.google.com/javax/management/StandardMBean.html#getDescription(javax.management.MBeanFeatureInfo)).

**Parameters:**info - The default MBeanOperationInfo derived by reflection. **Returns:**the description for the given MBeanOperationInfo.

### getImpact

protected int **getImpact**([MBeanOperationInfo](http://docs.google.com/javax/management/MBeanOperationInfo.html) info)

Customization hook: Get the impact flag of the operation that will be used in the MBeanOperationInfo returned by this MBean.

Subclasses may redefine this method in order to supply their custom impact flag. The default implementation returns [info.getImpact()](http://docs.google.com/javax/management/MBeanOperationInfo.html#getImpact()).

**Parameters:**info - The default MBeanOperationInfo derived by reflection. **Returns:**the impact flag for the given MBeanOperationInfo.

### getParameterName

protected [String](http://docs.google.com/java/lang/String.html) **getParameterName**([MBeanOperationInfo](http://docs.google.com/javax/management/MBeanOperationInfo.html) op,  
 [MBeanParameterInfo](http://docs.google.com/javax/management/MBeanParameterInfo.html) param,  
 int sequence)

Customization hook: Get the name that will be used for the sequence MBeanParameterInfo of the MBeanOperationInfo returned by this MBean.

Subclasses may redefine this method in order to supply their custom parameter name. The default implementation returns [param.getName()](http://docs.google.com/javax/management/MBeanFeatureInfo.html#getName()).

**Parameters:**op - The default MBeanOperationInfo derived by reflection.param - The default MBeanParameterInfo derived by reflection.sequence - The sequence number of the parameter considered ("0" for the first parameter, "1" for the second parameter, etc...). **Returns:**the name to use for the given MBeanParameterInfo.

### getDescription

protected [String](http://docs.google.com/java/lang/String.html) **getDescription**([MBeanOperationInfo](http://docs.google.com/javax/management/MBeanOperationInfo.html) op,  
 [MBeanParameterInfo](http://docs.google.com/javax/management/MBeanParameterInfo.html) param,  
 int sequence)

Customization hook: Get the description that will be used for the sequence MBeanParameterInfo of the MBeanOperationInfo returned by this MBean.

Subclasses may redefine this method in order to supply their custom description. The default implementation returns [param.getDescription()](http://docs.google.com/javax/management/MBeanFeatureInfo.html#getDescription()).

**Parameters:**op - The default MBeanOperationInfo derived by reflection.param - The default MBeanParameterInfo derived by reflection.sequence - The sequence number of the parameter considered ("0" for the first parameter, "1" for the second parameter, etc...). **Returns:**the description for the given MBeanParameterInfo.

### getConstructors

protected [MBeanConstructorInfo](http://docs.google.com/javax/management/MBeanConstructorInfo.html)[] **getConstructors**([MBeanConstructorInfo](http://docs.google.com/javax/management/MBeanConstructorInfo.html)[] ctors,  
 [Object](http://docs.google.com/java/lang/Object.html) impl)

Customization hook: Get the MBeanConstructorInfo[] that will be used in the MBeanInfo returned by this MBean.

By default, this method returns null if the wrapped implementation is not this. Indeed, if the wrapped implementation is not this object itself, it will not be possible to recreate a wrapped implementation by calling the implementation constructors through MBeanServer.createMBean(...).

Otherwise, if the wrapped implementation is this, ctors is returned.

Subclasses may redefine this method in order to modify this behavior, if needed.

**Parameters:**ctors - The default MBeanConstructorInfo[] derived by reflection.impl - The wrapped implementation. If null is passed, the wrapped implementation is ignored and ctors is returned. **Returns:**the MBeanConstructorInfo[] for the new MBeanInfo.

### getCachedMBeanInfo

protected [MBeanInfo](http://docs.google.com/javax/management/MBeanInfo.html) **getCachedMBeanInfo**()

Customization hook: Return the MBeanInfo cached for this object.

Subclasses may redefine this method in order to implement their own caching policy. The default implementation stores one [MBeanInfo](http://docs.google.com/javax/management/MBeanInfo.html) object per instance.

**Returns:**The cached MBeanInfo, or null if no MBeanInfo is cached.**See Also:**[cacheMBeanInfo(MBeanInfo)](http://docs.google.com/javax/management/StandardMBean.html#cacheMBeanInfo(javax.management.MBeanInfo))

### cacheMBeanInfo

protected void **cacheMBeanInfo**([MBeanInfo](http://docs.google.com/javax/management/MBeanInfo.html) info)

Customization hook: cache the MBeanInfo built for this object.

Subclasses may redefine this method in order to implement their own caching policy. The default implementation stores info in this instance. A subclass can define other policies, such as not saving info (so it is reconstructed every time [getMBeanInfo()](http://docs.google.com/javax/management/StandardMBean.html#getMBeanInfo()) is called) or sharing a unique [MBeanInfo](http://docs.google.com/javax/management/MBeanInfo.html) object when several StandardMBean instances have equal [MBeanInfo](http://docs.google.com/javax/management/MBeanInfo.html) values.

**Parameters:**info - the new MBeanInfo to cache. Any previously cached value is discarded. This parameter may be null, in which case there is no new cached value.

### preRegister

public [ObjectName](http://docs.google.com/javax/management/ObjectName.html) **preRegister**([MBeanServer](http://docs.google.com/javax/management/MBeanServer.html) server,  
 [ObjectName](http://docs.google.com/javax/management/ObjectName.html) name)  
 throws [Exception](http://docs.google.com/java/lang/Exception.html)

Allows the MBean to perform any operations it needs before being registered in the MBean server. If the name of the MBean is not specified, the MBean can provide a name for its registration. If any exception is raised, the MBean will not be registered in the MBean server.

The default implementation of this method returns the name parameter. It does nothing else for Standard MBeans. For MXBeans, it records the MBeanServer and ObjectName parameters so they can be used to translate inter-MXBean references.

It is good practice for a subclass that overrides this method to call the overridden method via super.preRegister(...). This is necessary if this object is an MXBean that is referenced by attributes or operations in other MXBeans.

**Specified by:**[preRegister](http://docs.google.com/javax/management/MBeanRegistration.html#preRegister(javax.management.MBeanServer,%20javax.management.ObjectName)) in interface [MBeanRegistration](http://docs.google.com/javax/management/MBeanRegistration.html) **Parameters:**server - The MBean server in which the MBean will be registered.name - The object name of the MBean. This name is null if the name parameter to one of the createMBean or registerMBean methods in the [MBeanServer](http://docs.google.com/javax/management/MBeanServer.html) interface is null. In that case, this method must return a non-null ObjectName for the new MBean. **Returns:**The name under which the MBean is to be registered. This value must not be null. If the name parameter is not null, it will usually but not necessarily be the returned value. **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if this is an MXBean and name is null. [InstanceAlreadyExistsException](http://docs.google.com/javax/management/InstanceAlreadyExistsException.html) - if this is an MXBean and it has already been registered under another name (in this MBean Server or another). [Exception](http://docs.google.com/java/lang/Exception.html) - no other checked exceptions are thrown by this method but Exception is declared so that subclasses can override the method and throw their own exceptions.**Since:** 1.6

### postRegister

public void **postRegister**([Boolean](http://docs.google.com/java/lang/Boolean.html) registrationDone)

Allows the MBean to perform any operations needed after having been registered in the MBean server or after the registration has failed.

The default implementation of this method does nothing for Standard MBeans. For MXBeans, it undoes any work done by [preRegister](http://docs.google.com/javax/management/StandardMBean.html#preRegister(javax.management.MBeanServer,%20javax.management.ObjectName)) if registration fails.

It is good practice for a subclass that overrides this method to call the overridden method via super.postRegister(...). This is necessary if this object is an MXBean that is referenced by attributes or operations in other MXBeans.

**Specified by:**[postRegister](http://docs.google.com/javax/management/MBeanRegistration.html#postRegister(java.lang.Boolean)) in interface [MBeanRegistration](http://docs.google.com/javax/management/MBeanRegistration.html) **Parameters:**registrationDone - Indicates whether or not the MBean has been successfully registered in the MBean server. The value false means that the registration phase has failed.**Since:** 1.6

### preDeregister

public void **preDeregister**()  
 throws [Exception](http://docs.google.com/java/lang/Exception.html)

Allows the MBean to perform any operations it needs before being unregistered by the MBean server.

The default implementation of this method does nothing.

It is good practice for a subclass that overrides this method to call the overridden method via super.preDeegister(...).

**Specified by:**[preDeregister](http://docs.google.com/javax/management/MBeanRegistration.html#preDeregister()) in interface [MBeanRegistration](http://docs.google.com/javax/management/MBeanRegistration.html) **Throws:** [Exception](http://docs.google.com/java/lang/Exception.html) - no checked exceptions are throw by this method but Exception is declared so that subclasses can override this method and throw their own exceptions.**Since:** 1.6

### postDeregister

public void **postDeregister**()

Allows the MBean to perform any operations needed after having been unregistered in the MBean server.

The default implementation of this method does nothing for Standard MBeans. For MXBeans, it removes any information that was recorded by the [preRegister](http://docs.google.com/javax/management/StandardMBean.html#preRegister(javax.management.MBeanServer,%20javax.management.ObjectName)) method.

It is good practice for a subclass that overrides this method to call the overridden method via super.postRegister(...). This is necessary if this object is an MXBean that is referenced by attributes or operations in other MXBeans.

**Specified by:**[postDeregister](http://docs.google.com/javax/management/MBeanRegistration.html#postDeregister()) in interface [MBeanRegistration](http://docs.google.com/javax/management/MBeanRegistration.html) **Since:** 1.6

| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/StandardMBean.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/StandardEmitterMBean.html)   [**NEXT CLASS**](http://docs.google.com/javax/management/StringValueExp.html) | [**FRAMES**](http://docs.google.com/index.html?javax/management/StandardMBean.html)    [**NO FRAMES**](http://docs.google.com/StandardMBean.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |
| SUMMARY: NESTED | FIELD | [CONSTR](#3znysh7) | [METHOD](#2et92p0) | DETAIL: FIELD | [CONSTR](#3dy6vkm) | [METHOD](#lnxbz9) |

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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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