| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/RelationService.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/relation/RelationNotification.html)   [**NEXT CLASS**](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) | [**FRAMES**](http://docs.google.com/index.html?javax/management/relation/RelationService.html)    [**NO FRAMES**](http://docs.google.com/RelationService.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |
| SUMMARY: NESTED | FIELD | [CONSTR](#3znysh7) | [METHOD](#2et92p0) | DETAIL: FIELD | [CONSTR](#1t3h5sf) | [METHOD](#2s8eyo1) |

## **javax.management.relation**

Class RelationService

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

**All Implemented Interfaces:** [EventListener](http://docs.google.com/java/util/EventListener.html), [MBeanRegistration](http://docs.google.com/javax/management/MBeanRegistration.html), [NotificationBroadcaster](http://docs.google.com/javax/management/NotificationBroadcaster.html), [NotificationEmitter](http://docs.google.com/javax/management/NotificationEmitter.html), [NotificationListener](http://docs.google.com/javax/management/NotificationListener.html), [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html)

public class **RelationService**extends [NotificationBroadcasterSupport](http://docs.google.com/javax/management/NotificationBroadcasterSupport.html)implements [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html), [MBeanRegistration](http://docs.google.com/javax/management/MBeanRegistration.html), [NotificationListener](http://docs.google.com/javax/management/NotificationListener.html)

The Relation Service is in charge of creating and deleting relation types and relations, of handling the consistency and of providing query mechanisms.

It implements the NotificationBroadcaster by extending NotificationBroadcasterSupport to send notifications when a relation is removed from it.

It implements the NotificationListener interface to be able to receive notifications concerning unregistration of MBeans referenced in relation roles and of relation MBeans.

It implements the MBeanRegistration interface to be able to retrieve its ObjectName and MBean Server.

**Since:** 1.5

| **Constructor Summary** | |
| --- | --- |
| [**RelationService**](http://docs.google.com/javax/management/relation/RelationService.html#RelationService(boolean))(boolean immediatePurgeFlag)            Constructor. |

| **Method Summary** | |
| --- | --- |
| void | [**addRelation**](http://docs.google.com/javax/management/relation/RelationService.html#addRelation(javax.management.ObjectName))([ObjectName](http://docs.google.com/javax/management/ObjectName.html) relationObjectName)            Adds an MBean created by the user (and registered by him in the MBean Server) as a relation in the Relation Service. |
| void | [**addRelationType**](http://docs.google.com/javax/management/relation/RelationService.html#addRelationType(javax.management.relation.RelationType))([RelationType](http://docs.google.com/javax/management/relation/RelationType.html) relationTypeObj)            Adds given object as a relation type. |
| [Integer](http://docs.google.com/java/lang/Integer.html) | [**checkRoleReading**](http://docs.google.com/javax/management/relation/RelationService.html#checkRoleReading(java.lang.String,%20java.lang.String))([String](http://docs.google.com/java/lang/String.html) roleName, [String](http://docs.google.com/java/lang/String.html) relationTypeName)            Checks if given Role can be read in a relation of the given type. |
| [Integer](http://docs.google.com/java/lang/Integer.html) | [**checkRoleWriting**](http://docs.google.com/javax/management/relation/RelationService.html#checkRoleWriting(javax.management.relation.Role,%20java.lang.String,%20java.lang.Boolean))([Role](http://docs.google.com/javax/management/relation/Role.html) role, [String](http://docs.google.com/java/lang/String.html) relationTypeName, [Boolean](http://docs.google.com/java/lang/Boolean.html) initFlag)            Checks if given Role can be set in a relation of given type. |
| void | [**createRelation**](http://docs.google.com/javax/management/relation/RelationService.html#createRelation(java.lang.String,%20java.lang.String,%20javax.management.relation.RoleList))([String](http://docs.google.com/java/lang/String.html) relationId, [String](http://docs.google.com/java/lang/String.html) relationTypeName, [RoleList](http://docs.google.com/javax/management/relation/RoleList.html) roleList)            Creates a simple relation (represented by a RelationSupport object) of given relation type, and adds it in the Relation Service. |
| void | [**createRelationType**](http://docs.google.com/javax/management/relation/RelationService.html#createRelationType(java.lang.String,%20javax.management.relation.RoleInfo%5B%5D))([String](http://docs.google.com/java/lang/String.html) relationTypeName, [RoleInfo](http://docs.google.com/javax/management/relation/RoleInfo.html)[] roleInfoArray)            Creates a relation type (a RelationTypeSupport object) with given role infos (provided by the RoleInfo objects), and adds it in the Relation Service. |
| [Map](http://docs.google.com/java/util/Map.html)<[ObjectName](http://docs.google.com/javax/management/ObjectName.html),[List](http://docs.google.com/java/util/List.html)<[String](http://docs.google.com/java/lang/String.html)>> | [**findAssociatedMBeans**](http://docs.google.com/javax/management/relation/RelationService.html#findAssociatedMBeans(javax.management.ObjectName,%20java.lang.String,%20java.lang.String))([ObjectName](http://docs.google.com/javax/management/ObjectName.html) mbeanName, [String](http://docs.google.com/java/lang/String.html) relationTypeName, [String](http://docs.google.com/java/lang/String.html) roleName)            Retrieves the MBeans associated to given one in a relation. |
| [Map](http://docs.google.com/java/util/Map.html)<[String](http://docs.google.com/java/lang/String.html),[List](http://docs.google.com/java/util/List.html)<[String](http://docs.google.com/java/lang/String.html)>> | [**findReferencingRelations**](http://docs.google.com/javax/management/relation/RelationService.html#findReferencingRelations(javax.management.ObjectName,%20java.lang.String,%20java.lang.String))([ObjectName](http://docs.google.com/javax/management/ObjectName.html) mbeanName, [String](http://docs.google.com/java/lang/String.html) relationTypeName, [String](http://docs.google.com/java/lang/String.html) roleName)            Retrieves the relations where a given MBean is referenced. |
| [List](http://docs.google.com/java/util/List.html)<[String](http://docs.google.com/java/lang/String.html)> | [**findRelationsOfType**](http://docs.google.com/javax/management/relation/RelationService.html#findRelationsOfType(java.lang.String))([String](http://docs.google.com/java/lang/String.html) relationTypeName)            Returns the relation ids for relations of the given type. |
| [List](http://docs.google.com/java/util/List.html)<[String](http://docs.google.com/java/lang/String.html)> | [**getAllRelationIds**](http://docs.google.com/javax/management/relation/RelationService.html#getAllRelationIds())()            Returns all the relation ids for all the relations handled by the Relation Service. |
| [List](http://docs.google.com/java/util/List.html)<[String](http://docs.google.com/java/lang/String.html)> | [**getAllRelationTypeNames**](http://docs.google.com/javax/management/relation/RelationService.html#getAllRelationTypeNames())()            Retrieves names of all known relation types. |
| [RoleResult](http://docs.google.com/javax/management/relation/RoleResult.html) | [**getAllRoles**](http://docs.google.com/javax/management/relation/RelationService.html#getAllRoles(java.lang.String))([String](http://docs.google.com/java/lang/String.html) relationId)            Returns all roles present in the relation. |
| [MBeanNotificationInfo](http://docs.google.com/javax/management/MBeanNotificationInfo.html)[] | [**getNotificationInfo**](http://docs.google.com/javax/management/relation/RelationService.html#getNotificationInfo())()            Returns a NotificationInfo object containing the name of the Java class of the notification and the notification types sent. |
| boolean | [**getPurgeFlag**](http://docs.google.com/javax/management/relation/RelationService.html#getPurgeFlag())()            Returns the flag to indicate if when a notification is received for the unregistration of an MBean referenced in a relation, if an immediate "purge" of the relations (look for the relations no longer valid) has to be performed , or if that will be performed only when the purgeRelations method will be explicitly called. |
| [Map](http://docs.google.com/java/util/Map.html)<[ObjectName](http://docs.google.com/javax/management/ObjectName.html),[List](http://docs.google.com/java/util/List.html)<[String](http://docs.google.com/java/lang/String.html)>> | [**getReferencedMBeans**](http://docs.google.com/javax/management/relation/RelationService.html#getReferencedMBeans(java.lang.String))([String](http://docs.google.com/java/lang/String.html) relationId)            Retrieves MBeans referenced in the various roles of the relation. |
| [String](http://docs.google.com/java/lang/String.html) | [**getRelationTypeName**](http://docs.google.com/javax/management/relation/RelationService.html#getRelationTypeName(java.lang.String))([String](http://docs.google.com/java/lang/String.html) relationId)            Returns name of associated relation type for given relation. |
| [List](http://docs.google.com/java/util/List.html)<[ObjectName](http://docs.google.com/javax/management/ObjectName.html)> | [**getRole**](http://docs.google.com/javax/management/relation/RelationService.html#getRole(java.lang.String,%20java.lang.String))([String](http://docs.google.com/java/lang/String.html) relationId, [String](http://docs.google.com/java/lang/String.html) roleName)            Retrieves role value for given role name in given relation. |
| [Integer](http://docs.google.com/java/lang/Integer.html) | [**getRoleCardinality**](http://docs.google.com/javax/management/relation/RelationService.html#getRoleCardinality(java.lang.String,%20java.lang.String))([String](http://docs.google.com/java/lang/String.html) relationId, [String](http://docs.google.com/java/lang/String.html) roleName)            Retrieves the number of MBeans currently referenced in the given role. |
| [RoleInfo](http://docs.google.com/javax/management/relation/RoleInfo.html) | [**getRoleInfo**](http://docs.google.com/javax/management/relation/RelationService.html#getRoleInfo(java.lang.String,%20java.lang.String))([String](http://docs.google.com/java/lang/String.html) relationTypeName, [String](http://docs.google.com/java/lang/String.html) roleInfoName)            Retrieves role info for given role name of a given relation type. |
| [List](http://docs.google.com/java/util/List.html)<[RoleInfo](http://docs.google.com/javax/management/relation/RoleInfo.html)> | [**getRoleInfos**](http://docs.google.com/javax/management/relation/RelationService.html#getRoleInfos(java.lang.String))([String](http://docs.google.com/java/lang/String.html) relationTypeName)            Retrieves list of role infos (RoleInfo objects) of a given relation type. |
| [RoleResult](http://docs.google.com/javax/management/relation/RoleResult.html) | [**getRoles**](http://docs.google.com/javax/management/relation/RelationService.html#getRoles(java.lang.String,%20java.lang.String%5B%5D))([String](http://docs.google.com/java/lang/String.html) relationId, [String](http://docs.google.com/java/lang/String.html)[] roleNameArray)            Retrieves values of roles with given names in given relation. |
| void | [**handleNotification**](http://docs.google.com/javax/management/relation/RelationService.html#handleNotification(javax.management.Notification,%20java.lang.Object))([Notification](http://docs.google.com/javax/management/Notification.html) notif, [Object](http://docs.google.com/java/lang/Object.html) handback)            Invoked when a JMX notification occurs. |
| [Boolean](http://docs.google.com/java/lang/Boolean.html) | [**hasRelation**](http://docs.google.com/javax/management/relation/RelationService.html#hasRelation(java.lang.String))([String](http://docs.google.com/java/lang/String.html) relationId)            Checks if there is a relation identified in Relation Service with given relation id. |
| void | [**isActive**](http://docs.google.com/javax/management/relation/RelationService.html#isActive())()            Checks if the Relation Service is active. |
| [String](http://docs.google.com/java/lang/String.html) | [**isRelation**](http://docs.google.com/javax/management/relation/RelationService.html#isRelation(javax.management.ObjectName))([ObjectName](http://docs.google.com/javax/management/ObjectName.html) objectName)            Returns the relation id associated to the given ObjectName if the MBean has been added as a relation in the Relation Service. |
| [ObjectName](http://docs.google.com/javax/management/ObjectName.html) | [**isRelationMBean**](http://docs.google.com/javax/management/relation/RelationService.html#isRelationMBean(java.lang.String))([String](http://docs.google.com/java/lang/String.html) relationId)            If the relation is represented by an MBean (created by the user and added as a relation in the Relation Service), returns the ObjectName of the MBean. |
| void | [**postDeregister**](http://docs.google.com/javax/management/relation/RelationService.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/relation/RelationService.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/relation/RelationService.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/relation/RelationService.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 | [**purgeRelations**](http://docs.google.com/javax/management/relation/RelationService.html#purgeRelations())()            Purges the relations. |
| void | [**removeRelation**](http://docs.google.com/javax/management/relation/RelationService.html#removeRelation(java.lang.String))([String](http://docs.google.com/java/lang/String.html) relationId)            Removes given relation from the Relation Service. |
| void | [**removeRelationType**](http://docs.google.com/javax/management/relation/RelationService.html#removeRelationType(java.lang.String))([String](http://docs.google.com/java/lang/String.html) relationTypeName)            Removes given relation type from Relation Service. |
| void | [**sendRelationCreationNotification**](http://docs.google.com/javax/management/relation/RelationService.html#sendRelationCreationNotification(java.lang.String))([String](http://docs.google.com/java/lang/String.html) relationId)            Sends a notification (RelationNotification) for a relation creation. |
| void | [**sendRelationRemovalNotification**](http://docs.google.com/javax/management/relation/RelationService.html#sendRelationRemovalNotification(java.lang.String,%20java.util.List))([String](http://docs.google.com/java/lang/String.html) relationId, [List](http://docs.google.com/java/util/List.html)<[ObjectName](http://docs.google.com/javax/management/ObjectName.html)> unregMBeanList)            Sends a notification (RelationNotification) for a relation removal. |
| void | [**sendRoleUpdateNotification**](http://docs.google.com/javax/management/relation/RelationService.html#sendRoleUpdateNotification(java.lang.String,%20javax.management.relation.Role,%20java.util.List))([String](http://docs.google.com/java/lang/String.html) relationId, [Role](http://docs.google.com/javax/management/relation/Role.html) newRole, [List](http://docs.google.com/java/util/List.html)<[ObjectName](http://docs.google.com/javax/management/ObjectName.html)> oldValue)            Sends a notification (RelationNotification) for a role update in the given relation. |
| void | [**setPurgeFlag**](http://docs.google.com/javax/management/relation/RelationService.html#setPurgeFlag(boolean))(boolean purgeFlag)            Sets the flag to indicate if when a notification is received for the unregistration of an MBean referenced in a relation, if an immediate "purge" of the relations (look for the relations no longer valid) has to be performed , or if that will be performed only when the purgeRelations method will be explicitly called. |
| void | [**setRole**](http://docs.google.com/javax/management/relation/RelationService.html#setRole(java.lang.String,%20javax.management.relation.Role))([String](http://docs.google.com/java/lang/String.html) relationId, [Role](http://docs.google.com/javax/management/relation/Role.html) role)            Sets the given role in given relation. |
| [RoleResult](http://docs.google.com/javax/management/relation/RoleResult.html) | [**setRoles**](http://docs.google.com/javax/management/relation/RelationService.html#setRoles(java.lang.String,%20javax.management.relation.RoleList))([String](http://docs.google.com/java/lang/String.html) relationId, [RoleList](http://docs.google.com/javax/management/relation/RoleList.html) roleList)            Sets the given roles in given relation. |
| void | [**updateRoleMap**](http://docs.google.com/javax/management/relation/RelationService.html#updateRoleMap(java.lang.String,%20javax.management.relation.Role,%20java.util.List))([String](http://docs.google.com/java/lang/String.html) relationId, [Role](http://docs.google.com/javax/management/relation/Role.html) newRole, [List](http://docs.google.com/java/util/List.html)<[ObjectName](http://docs.google.com/javax/management/ObjectName.html)> oldValue)            Handles update of the Relation Service role map for the update of given role in given relation. |

| **Methods inherited from class javax.management.**[**NotificationBroadcasterSupport**](http://docs.google.com/javax/management/NotificationBroadcasterSupport.html) |
| --- |
| [addNotificationListener](http://docs.google.com/javax/management/NotificationBroadcasterSupport.html#addNotificationListener(javax.management.NotificationListener,%20javax.management.NotificationFilter,%20java.lang.Object)), [handleNotification](http://docs.google.com/javax/management/NotificationBroadcasterSupport.html#handleNotification(javax.management.NotificationListener,%20javax.management.Notification,%20java.lang.Object)), [removeNotificationListener](http://docs.google.com/javax/management/NotificationBroadcasterSupport.html#removeNotificationListener(javax.management.NotificationListener)), [removeNotificationListener](http://docs.google.com/javax/management/NotificationBroadcasterSupport.html#removeNotificationListener(javax.management.NotificationListener,%20javax.management.NotificationFilter,%20java.lang.Object)), [sendNotification](http://docs.google.com/javax/management/NotificationBroadcasterSupport.html#sendNotification(javax.management.Notification)) |

| **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** |
| --- |

### RelationService

public **RelationService**(boolean immediatePurgeFlag)

Constructor.

**Parameters:**immediatePurgeFlag - flag to indicate when a notification is received for the unregistration of an MBean referenced in a relation, if an immediate "purge" of the relations (look for the relations no longer valid) has to be performed , or if that will be performed only when the purgeRelations method will be explicitly called.

true is immediate purge.

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

### isActive

public void **isActive**()  
 throws [RelationServiceNotRegisteredException](http://docs.google.com/javax/management/relation/RelationServiceNotRegisteredException.html)

Checks if the Relation Service is active. Current condition is that the Relation Service must be registered in the MBean Server

**Specified by:**[isActive](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#isActive()) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Throws:** [RelationServiceNotRegisteredException](http://docs.google.com/javax/management/relation/RelationServiceNotRegisteredException.html) - if it is not registered

### 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)

**Description copied from interface:** [**MBeanRegistration**](http://docs.google.com/javax/management/MBeanRegistration.html#preRegister(javax.management.MBeanServer,%20javax.management.ObjectName)) 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.

**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:** [Exception](http://docs.google.com/java/lang/Exception.html) - This exception will be caught by the MBean server and re-thrown as an [MBeanRegistrationException](http://docs.google.com/javax/management/MBeanRegistrationException.html).

### postRegister

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

**Description copied from interface:** [**MBeanRegistration**](http://docs.google.com/javax/management/MBeanRegistration.html#postRegister(java.lang.Boolean)) Allows the MBean to perform any operations needed after having been registered in the MBean server or after the registration has failed.

**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.

### preDeregister

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

**Description copied from interface:** [**MBeanRegistration**](http://docs.google.com/javax/management/MBeanRegistration.html#preDeregister()) Allows the MBean to perform any operations it needs before being unregistered by the MBean server.

**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) - This exception will be caught by the MBean server and re-thrown as an [MBeanRegistrationException](http://docs.google.com/javax/management/MBeanRegistrationException.html).

### postDeregister

public void **postDeregister**()

**Description copied from interface:** [**MBeanRegistration**](http://docs.google.com/javax/management/MBeanRegistration.html#postDeregister()) Allows the MBean to perform any operations needed after having been unregistered in the MBean server.

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

### getPurgeFlag

public boolean **getPurgeFlag**()

Returns the flag to indicate if when a notification is received for the unregistration of an MBean referenced in a relation, if an immediate "purge" of the relations (look for the relations no longer valid) has to be performed , or if that will be performed only when the purgeRelations method will be explicitly called.

true is immediate purge.

**Specified by:**[getPurgeFlag](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#getPurgeFlag()) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Returns:**true if purges are automatic.**See Also:**[setPurgeFlag(boolean)](http://docs.google.com/javax/management/relation/RelationService.html#setPurgeFlag(boolean))

### setPurgeFlag

public void **setPurgeFlag**(boolean purgeFlag)

Sets the flag to indicate if when a notification is received for the unregistration of an MBean referenced in a relation, if an immediate "purge" of the relations (look for the relations no longer valid) has to be performed , or if that will be performed only when the purgeRelations method will be explicitly called.

true is immediate purge.

**Specified by:**[setPurgeFlag](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#setPurgeFlag(boolean)) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Parameters:**purgeFlag - flag**See Also:**[getPurgeFlag()](http://docs.google.com/javax/management/relation/RelationService.html#getPurgeFlag())

### createRelationType

public void **createRelationType**([String](http://docs.google.com/java/lang/String.html) relationTypeName,  
 [RoleInfo](http://docs.google.com/javax/management/relation/RoleInfo.html)[] roleInfoArray)  
 throws [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html),  
 [InvalidRelationTypeException](http://docs.google.com/javax/management/relation/InvalidRelationTypeException.html)

Creates a relation type (a RelationTypeSupport object) with given role infos (provided by the RoleInfo objects), and adds it in the Relation Service.

**Specified by:**[createRelationType](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#createRelationType(java.lang.String,%20javax.management.relation.RoleInfo%5B%5D)) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Parameters:**relationTypeName - name of the relation typeroleInfoArray - array of role infos **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if null parameter [InvalidRelationTypeException](http://docs.google.com/javax/management/relation/InvalidRelationTypeException.html) - If:

- there is already a relation type with that name

- the same name has been used for two different role infos

- no role info provided

- one null role info provided

### addRelationType

public void **addRelationType**([RelationType](http://docs.google.com/javax/management/relation/RelationType.html) relationTypeObj)  
 throws [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html),  
 [InvalidRelationTypeException](http://docs.google.com/javax/management/relation/InvalidRelationTypeException.html)

Adds given object as a relation type. The object is expected to implement the RelationType interface.

**Specified by:**[addRelationType](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#addRelationType(javax.management.relation.RelationType)) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Parameters:**relationTypeObj - relation type object (implementing the RelationType interface) **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if null parameter or if [relationTypeObj.getRelationTypeName()](http://docs.google.com/javax/management/relation/RelationType.html#getRelationTypeName()) returns null. [InvalidRelationTypeException](http://docs.google.com/javax/management/relation/InvalidRelationTypeException.html) - if:

- the same name has been used for two different roles

- no role info provided

- one null role info provided

- there is already a relation type with that name

### getAllRelationTypeNames

public [List](http://docs.google.com/java/util/List.html)<[String](http://docs.google.com/java/lang/String.html)> **getAllRelationTypeNames**()

Retrieves names of all known relation types.

**Specified by:**[getAllRelationTypeNames](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#getAllRelationTypeNames()) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Returns:**ArrayList of relation type names (Strings)

### getRoleInfos

public [List](http://docs.google.com/java/util/List.html)<[RoleInfo](http://docs.google.com/javax/management/relation/RoleInfo.html)> **getRoleInfos**([String](http://docs.google.com/java/lang/String.html) relationTypeName)  
 throws [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html),  
 [RelationTypeNotFoundException](http://docs.google.com/javax/management/relation/RelationTypeNotFoundException.html)

Retrieves list of role infos (RoleInfo objects) of a given relation type.

**Specified by:**[getRoleInfos](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#getRoleInfos(java.lang.String)) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Parameters:**relationTypeName - name of relation type **Returns:**ArrayList of RoleInfo. **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if null parameter [RelationTypeNotFoundException](http://docs.google.com/javax/management/relation/RelationTypeNotFoundException.html) - if there is no relation type with that name.

### getRoleInfo

public [RoleInfo](http://docs.google.com/javax/management/relation/RoleInfo.html) **getRoleInfo**([String](http://docs.google.com/java/lang/String.html) relationTypeName,  
 [String](http://docs.google.com/java/lang/String.html) roleInfoName)  
 throws [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html),  
 [RelationTypeNotFoundException](http://docs.google.com/javax/management/relation/RelationTypeNotFoundException.html),  
 [RoleInfoNotFoundException](http://docs.google.com/javax/management/relation/RoleInfoNotFoundException.html)

Retrieves role info for given role name of a given relation type.

**Specified by:**[getRoleInfo](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#getRoleInfo(java.lang.String,%20java.lang.String)) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Parameters:**relationTypeName - name of relation typeroleInfoName - name of role **Returns:**RoleInfo object. **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if null parameter [RelationTypeNotFoundException](http://docs.google.com/javax/management/relation/RelationTypeNotFoundException.html) - if the relation type is not known in the Relation Service [RoleInfoNotFoundException](http://docs.google.com/javax/management/relation/RoleInfoNotFoundException.html) - if the role is not part of the relation type.

### removeRelationType

public void **removeRelationType**([String](http://docs.google.com/java/lang/String.html) relationTypeName)  
 throws [RelationServiceNotRegisteredException](http://docs.google.com/javax/management/relation/RelationServiceNotRegisteredException.html),  
 [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html),  
 [RelationTypeNotFoundException](http://docs.google.com/javax/management/relation/RelationTypeNotFoundException.html)

Removes given relation type from Relation Service.

The relation objects of that type will be removed from the Relation Service.

**Specified by:**[removeRelationType](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#removeRelationType(java.lang.String)) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Parameters:**relationTypeName - name of the relation type to be removed **Throws:** [RelationServiceNotRegisteredException](http://docs.google.com/javax/management/relation/RelationServiceNotRegisteredException.html) - if the Relation Service is not registered in the MBean Server [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if null parameter [RelationTypeNotFoundException](http://docs.google.com/javax/management/relation/RelationTypeNotFoundException.html) - If there is no relation type with that name

### createRelation

public void **createRelation**([String](http://docs.google.com/java/lang/String.html) relationId,  
 [String](http://docs.google.com/java/lang/String.html) relationTypeName,  
 [RoleList](http://docs.google.com/javax/management/relation/RoleList.html) roleList)  
 throws [RelationServiceNotRegisteredException](http://docs.google.com/javax/management/relation/RelationServiceNotRegisteredException.html),  
 [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html),  
 [RoleNotFoundException](http://docs.google.com/javax/management/relation/RoleNotFoundException.html),  
 [InvalidRelationIdException](http://docs.google.com/javax/management/relation/InvalidRelationIdException.html),  
 [RelationTypeNotFoundException](http://docs.google.com/javax/management/relation/RelationTypeNotFoundException.html),  
 [InvalidRoleValueException](http://docs.google.com/javax/management/relation/InvalidRoleValueException.html)

Creates a simple relation (represented by a RelationSupport object) of given relation type, and adds it in the Relation Service.

Roles are initialized according to the role list provided in parameter. The ones not initialized in this way are set to an empty ArrayList of ObjectNames.

A RelationNotification, with type RELATION\_BASIC\_CREATION, is sent.

**Specified by:**[createRelation](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#createRelation(java.lang.String,%20java.lang.String,%20javax.management.relation.RoleList)) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Parameters:**relationId - relation identifier, to identify uniquely the relation inside the Relation ServicerelationTypeName - name of the relation type (has to be created in the Relation Service)roleList - role list to initialize roles of the relation (can be null). **Throws:** [RelationServiceNotRegisteredException](http://docs.google.com/javax/management/relation/RelationServiceNotRegisteredException.html) - if the Relation Service is not registered in the MBean Server [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if null parameter, except the role list which can be null if no role initialization [RoleNotFoundException](http://docs.google.com/javax/management/relation/RoleNotFoundException.html) - if a value is provided for a role that does not exist in the relation type [InvalidRelationIdException](http://docs.google.com/javax/management/relation/InvalidRelationIdException.html) - if relation id already used [RelationTypeNotFoundException](http://docs.google.com/javax/management/relation/RelationTypeNotFoundException.html) - if relation type not known in Relation Service [InvalidRoleValueException](http://docs.google.com/javax/management/relation/InvalidRoleValueException.html) - if:

- the same role name is used for two different roles

- the number of referenced MBeans in given value is less than expected minimum degree

- the number of referenced MBeans in provided value exceeds expected maximum degree

- one referenced MBean in the value is not an Object of the MBean class expected for that role

- an MBean provided for that role does not exist

### addRelation

public void **addRelation**([ObjectName](http://docs.google.com/javax/management/ObjectName.html) relationObjectName)  
 throws [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html),  
 [RelationServiceNotRegisteredException](http://docs.google.com/javax/management/relation/RelationServiceNotRegisteredException.html),  
 [NoSuchMethodException](http://docs.google.com/java/lang/NoSuchMethodException.html),  
 [InvalidRelationIdException](http://docs.google.com/javax/management/relation/InvalidRelationIdException.html),  
 [InstanceNotFoundException](http://docs.google.com/javax/management/InstanceNotFoundException.html),  
 [InvalidRelationServiceException](http://docs.google.com/javax/management/relation/InvalidRelationServiceException.html),  
 [RelationTypeNotFoundException](http://docs.google.com/javax/management/relation/RelationTypeNotFoundException.html),  
 [RoleNotFoundException](http://docs.google.com/javax/management/relation/RoleNotFoundException.html),  
 [InvalidRoleValueException](http://docs.google.com/javax/management/relation/InvalidRoleValueException.html)

Adds an MBean created by the user (and registered by him in the MBean Server) as a relation in the Relation Service.

To be added as a relation, the MBean must conform to the following:

- implement the Relation interface

- have for RelationService ObjectName the ObjectName of current Relation Service

- have a relation id unique and unused in current Relation Service

- have for relation type a relation type created in the Relation Service

- have roles conforming to the role info provided in the relation type.

**Specified by:**[addRelation](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#addRelation(javax.management.ObjectName)) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Parameters:**relationObjectName - ObjectName of the relation MBean to be added. **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if null parameter [RelationServiceNotRegisteredException](http://docs.google.com/javax/management/relation/RelationServiceNotRegisteredException.html) - if the Relation Service is not registered in the MBean Server [NoSuchMethodException](http://docs.google.com/java/lang/NoSuchMethodException.html) - If the MBean does not implement the Relation interface [InvalidRelationIdException](http://docs.google.com/javax/management/relation/InvalidRelationIdException.html) - if:

- no relation identifier in MBean

- the relation identifier is already used in the Relation Service

[InstanceNotFoundException](http://docs.google.com/javax/management/InstanceNotFoundException.html) - if the MBean for given ObjectName has not been registered [InvalidRelationServiceException](http://docs.google.com/javax/management/relation/InvalidRelationServiceException.html) - if:

- no Relation Service name in MBean

- the Relation Service name in the MBean is not the one of the current Relation Service

[RelationTypeNotFoundException](http://docs.google.com/javax/management/relation/RelationTypeNotFoundException.html) - if:

- no relation type name in MBean

- the relation type name in MBean does not correspond to a relation type created in the Relation Service

[InvalidRoleValueException](http://docs.google.com/javax/management/relation/InvalidRoleValueException.html) - if:

- the number of referenced MBeans in a role is less than expected minimum degree

- the number of referenced MBeans in a role exceeds expected maximum degree

- one referenced MBean in the value is not an Object of the MBean class expected for that role

- an MBean provided for a role does not exist

[RoleNotFoundException](http://docs.google.com/javax/management/relation/RoleNotFoundException.html) - if a value is provided for a role that does not exist in the relation type

### isRelationMBean

public [ObjectName](http://docs.google.com/javax/management/ObjectName.html) **isRelationMBean**([String](http://docs.google.com/java/lang/String.html) relationId)  
 throws [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html),  
 [RelationNotFoundException](http://docs.google.com/javax/management/relation/RelationNotFoundException.html)

If the relation is represented by an MBean (created by the user and added as a relation in the Relation Service), returns the ObjectName of the MBean.

**Specified by:**[isRelationMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#isRelationMBean(java.lang.String)) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Parameters:**relationId - relation id identifying the relation **Returns:**ObjectName of the corresponding relation MBean, or null if the relation is not an MBean. **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if null parameter [RelationNotFoundException](http://docs.google.com/javax/management/relation/RelationNotFoundException.html) - there is no relation associated to that id

### isRelation

public [String](http://docs.google.com/java/lang/String.html) **isRelation**([ObjectName](http://docs.google.com/javax/management/ObjectName.html) objectName)  
 throws [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html)

Returns the relation id associated to the given ObjectName if the MBean has been added as a relation in the Relation Service.

**Specified by:**[isRelation](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#isRelation(javax.management.ObjectName)) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Parameters:**objectName - ObjectName of supposed relation **Returns:**relation id (String) or null (if the ObjectName is not a relation handled by the Relation Service) **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if null parameter

### hasRelation

public [Boolean](http://docs.google.com/java/lang/Boolean.html) **hasRelation**([String](http://docs.google.com/java/lang/String.html) relationId)  
 throws [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html)

Checks if there is a relation identified in Relation Service with given relation id.

**Specified by:**[hasRelation](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#hasRelation(java.lang.String)) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Parameters:**relationId - relation id identifying the relation **Returns:**boolean: true if there is a relation, false else **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if null parameter

### getAllRelationIds

public [List](http://docs.google.com/java/util/List.html)<[String](http://docs.google.com/java/lang/String.html)> **getAllRelationIds**()

Returns all the relation ids for all the relations handled by the Relation Service.

**Specified by:**[getAllRelationIds](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#getAllRelationIds()) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Returns:**ArrayList of String

### checkRoleReading

public [Integer](http://docs.google.com/java/lang/Integer.html) **checkRoleReading**([String](http://docs.google.com/java/lang/String.html) roleName,  
 [String](http://docs.google.com/java/lang/String.html) relationTypeName)  
 throws [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html),  
 [RelationTypeNotFoundException](http://docs.google.com/javax/management/relation/RelationTypeNotFoundException.html)

Checks if given Role can be read in a relation of the given type.

**Specified by:**[checkRoleReading](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#checkRoleReading(java.lang.String,%20java.lang.String)) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Parameters:**roleName - name of role to be checkedrelationTypeName - name of the relation type **Returns:**an Integer wrapping an integer corresponding to possible problems represented as constants in RoleUnresolved:

- 0 if role can be read

- integer corresponding to RoleStatus.NO\_ROLE\_WITH\_NAME

- integer corresponding to RoleStatus.ROLE\_NOT\_READABLE

**Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if null parameter [RelationTypeNotFoundException](http://docs.google.com/javax/management/relation/RelationTypeNotFoundException.html) - if the relation type is not known in the Relation Service

### checkRoleWriting

public [Integer](http://docs.google.com/java/lang/Integer.html) **checkRoleWriting**([Role](http://docs.google.com/javax/management/relation/Role.html) role,  
 [String](http://docs.google.com/java/lang/String.html) relationTypeName,  
 [Boolean](http://docs.google.com/java/lang/Boolean.html) initFlag)  
 throws [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html),  
 [RelationTypeNotFoundException](http://docs.google.com/javax/management/relation/RelationTypeNotFoundException.html)

Checks if given Role can be set in a relation of given type.

**Specified by:**[checkRoleWriting](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#checkRoleWriting(javax.management.relation.Role,%20java.lang.String,%20java.lang.Boolean)) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Parameters:**role - role to be checkedrelationTypeName - name of relation typeinitFlag - flag to specify that the checking is done for the initialization of a role, write access shall not be verified. **Returns:**an Integer wrapping an integer corresponding to possible problems represented as constants in RoleUnresolved:

- 0 if role can be set

- integer corresponding to RoleStatus.NO\_ROLE\_WITH\_NAME

- integer for RoleStatus.ROLE\_NOT\_WRITABLE

- integer for RoleStatus.LESS\_THAN\_MIN\_ROLE\_DEGREE

- integer for RoleStatus.MORE\_THAN\_MAX\_ROLE\_DEGREE

- integer for RoleStatus.REF\_MBEAN\_OF\_INCORRECT\_CLASS

- integer for RoleStatus.REF\_MBEAN\_NOT\_REGISTERED

**Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if null parameter [RelationTypeNotFoundException](http://docs.google.com/javax/management/relation/RelationTypeNotFoundException.html) - if unknown relation type

### sendRelationCreationNotification

public void **sendRelationCreationNotification**([String](http://docs.google.com/java/lang/String.html) relationId)  
 throws [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html),  
 [RelationNotFoundException](http://docs.google.com/javax/management/relation/RelationNotFoundException.html)

Sends a notification (RelationNotification) for a relation creation. The notification type is:

- RelationNotification.RELATION\_BASIC\_CREATION if the relation is an object internal to the Relation Service

- RelationNotification.RELATION\_MBEAN\_CREATION if the relation is a MBean added as a relation.

The source object is the Relation Service itself.

It is called in Relation Service createRelation() and addRelation() methods.

**Specified by:**[sendRelationCreationNotification](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#sendRelationCreationNotification(java.lang.String)) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Parameters:**relationId - relation identifier of the updated relation **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if null parameter [RelationNotFoundException](http://docs.google.com/javax/management/relation/RelationNotFoundException.html) - if there is no relation for given relation id

### sendRoleUpdateNotification

public void **sendRoleUpdateNotification**([String](http://docs.google.com/java/lang/String.html) relationId,  
 [Role](http://docs.google.com/javax/management/relation/Role.html) newRole,  
 [List](http://docs.google.com/java/util/List.html)<[ObjectName](http://docs.google.com/javax/management/ObjectName.html)> oldValue)  
 throws [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html),  
 [RelationNotFoundException](http://docs.google.com/javax/management/relation/RelationNotFoundException.html)

Sends a notification (RelationNotification) for a role update in the given relation. The notification type is:

- RelationNotification.RELATION\_BASIC\_UPDATE if the relation is an object internal to the Relation Service

- RelationNotification.RELATION\_MBEAN\_UPDATE if the relation is a MBean added as a relation.

The source object is the Relation Service itself.

It is called in relation MBean setRole() (for given role) and setRoles() (for each role) methods (implementation provided in RelationSupport class).

It is also called in Relation Service setRole() (for given role) and setRoles() (for each role) methods.

**Specified by:**[sendRoleUpdateNotification](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#sendRoleUpdateNotification(java.lang.String,%20javax.management.relation.Role,%20java.util.List)) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Parameters:**relationId - relation identifier of the updated relationnewRole - new role (name and new value)oldValue - old role value (List of ObjectName objects) **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if null parameter [RelationNotFoundException](http://docs.google.com/javax/management/relation/RelationNotFoundException.html) - if there is no relation for given relation id

### sendRelationRemovalNotification

public void **sendRelationRemovalNotification**([String](http://docs.google.com/java/lang/String.html) relationId,  
 [List](http://docs.google.com/java/util/List.html)<[ObjectName](http://docs.google.com/javax/management/ObjectName.html)> unregMBeanList)  
 throws [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html),  
 [RelationNotFoundException](http://docs.google.com/javax/management/relation/RelationNotFoundException.html)

Sends a notification (RelationNotification) for a relation removal. The notification type is:

- RelationNotification.RELATION\_BASIC\_REMOVAL if the relation is an object internal to the Relation Service

- RelationNotification.RELATION\_MBEAN\_REMOVAL if the relation is a MBean added as a relation.

The source object is the Relation Service itself.

It is called in Relation Service removeRelation() method.

**Specified by:**[sendRelationRemovalNotification](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#sendRelationRemovalNotification(java.lang.String,%20java.util.List)) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Parameters:**relationId - relation identifier of the updated relationunregMBeanList - List of ObjectNames of MBeans expected to be unregistered due to relation removal (can be null) **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if null parameter [RelationNotFoundException](http://docs.google.com/javax/management/relation/RelationNotFoundException.html) - if there is no relation for given relation id

### updateRoleMap

public void **updateRoleMap**([String](http://docs.google.com/java/lang/String.html) relationId,  
 [Role](http://docs.google.com/javax/management/relation/Role.html) newRole,  
 [List](http://docs.google.com/java/util/List.html)<[ObjectName](http://docs.google.com/javax/management/ObjectName.html)> oldValue)  
 throws [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html),  
 [RelationServiceNotRegisteredException](http://docs.google.com/javax/management/relation/RelationServiceNotRegisteredException.html),  
 [RelationNotFoundException](http://docs.google.com/javax/management/relation/RelationNotFoundException.html)

Handles update of the Relation Service role map for the update of given role in given relation.

It is called in relation MBean setRole() (for given role) and setRoles() (for each role) methods (implementation provided in RelationSupport class).

It is also called in Relation Service setRole() (for given role) and setRoles() (for each role) methods.

To allow the Relation Service to maintain the consistency (in case of MBean unregistration) and to be able to perform queries, this method must be called when a role is updated.

**Specified by:**[updateRoleMap](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#updateRoleMap(java.lang.String,%20javax.management.relation.Role,%20java.util.List)) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Parameters:**relationId - relation identifier of the updated relationnewRole - new role (name and new value)oldValue - old role value (List of ObjectName objects) **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if null parameter [RelationServiceNotRegisteredException](http://docs.google.com/javax/management/relation/RelationServiceNotRegisteredException.html) - if the Relation Service is not registered in the MBean Server [RelationNotFoundException](http://docs.google.com/javax/management/relation/RelationNotFoundException.html) - if no relation for given id.

### removeRelation

public void **removeRelation**([String](http://docs.google.com/java/lang/String.html) relationId)  
 throws [RelationServiceNotRegisteredException](http://docs.google.com/javax/management/relation/RelationServiceNotRegisteredException.html),  
 [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html),  
 [RelationNotFoundException](http://docs.google.com/javax/management/relation/RelationNotFoundException.html)

Removes given relation from the Relation Service.

A RelationNotification notification is sent, its type being:

- RelationNotification.RELATION\_BASIC\_REMOVAL if the relation was only internal to the Relation Service

- RelationNotification.RELATION\_MBEAN\_REMOVAL if the relation is registered as an MBean.

For MBeans referenced in such relation, nothing will be done,

**Specified by:**[removeRelation](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#removeRelation(java.lang.String)) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Parameters:**relationId - relation id of the relation to be removed **Throws:** [RelationServiceNotRegisteredException](http://docs.google.com/javax/management/relation/RelationServiceNotRegisteredException.html) - if the Relation Service is not registered in the MBean Server [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if null parameter [RelationNotFoundException](http://docs.google.com/javax/management/relation/RelationNotFoundException.html) - if no relation corresponding to given relation id

### purgeRelations

public void **purgeRelations**()  
 throws [RelationServiceNotRegisteredException](http://docs.google.com/javax/management/relation/RelationServiceNotRegisteredException.html)

Purges the relations.

Depending on the purgeFlag value, this method is either called automatically when a notification is received for the unregistration of an MBean referenced in a relation (if the flag is set to true), or not (if the flag is set to false).

In that case it is up to the user to call it to maintain the consistency of the relations. To be kept in mind that if an MBean is unregistered and the purge not done immediately, if the ObjectName is reused and assigned to another MBean referenced in a relation, calling manually this purgeRelations() method will cause trouble, as will consider the ObjectName as corresponding to the unregistered MBean, not seeing the new one.

The behavior depends on the cardinality of the role where the unregistered MBean is referenced:

- if removing one MBean reference in the role makes its number of references less than the minimum degree, the relation has to be removed.

- if the remaining number of references after removing the MBean reference is still in the cardinality range, keep the relation and update it calling its handleMBeanUnregistration() callback.

**Specified by:**[purgeRelations](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#purgeRelations()) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Throws:** [RelationServiceNotRegisteredException](http://docs.google.com/javax/management/relation/RelationServiceNotRegisteredException.html) - if the Relation Service is not registered in the MBean Server.

### findReferencingRelations

public [Map](http://docs.google.com/java/util/Map.html)<[String](http://docs.google.com/java/lang/String.html),[List](http://docs.google.com/java/util/List.html)<[String](http://docs.google.com/java/lang/String.html)>> **findReferencingRelations**([ObjectName](http://docs.google.com/javax/management/ObjectName.html) mbeanName,  
 [String](http://docs.google.com/java/lang/String.html) relationTypeName,  
 [String](http://docs.google.com/java/lang/String.html) roleName)  
 throws [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html)

Retrieves the relations where a given MBean is referenced.

This corresponds to the CIM "References" and "ReferenceNames" operations.

**Specified by:**[findReferencingRelations](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#findReferencingRelations(javax.management.ObjectName,%20java.lang.String,%20java.lang.String)) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Parameters:**mbeanName - ObjectName of MBeanrelationTypeName - can be null; if specified, only the relations of that type will be considered in the search. Else all relation types are considered.roleName - can be null; if specified, only the relations where the MBean is referenced in that role will be returned. Else all roles are considered. **Returns:**an HashMap, where the keys are the relation ids of the relations where the MBean is referenced, and the value is, for each key, an ArrayList of role names (as an MBean can be referenced in several roles in the same relation). **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if null parameter

### findAssociatedMBeans

public [Map](http://docs.google.com/java/util/Map.html)<[ObjectName](http://docs.google.com/javax/management/ObjectName.html),[List](http://docs.google.com/java/util/List.html)<[String](http://docs.google.com/java/lang/String.html)>> **findAssociatedMBeans**([ObjectName](http://docs.google.com/javax/management/ObjectName.html) mbeanName,  
 [String](http://docs.google.com/java/lang/String.html) relationTypeName,  
 [String](http://docs.google.com/java/lang/String.html) roleName)  
 throws [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html)

Retrieves the MBeans associated to given one in a relation.

This corresponds to CIM Associators and AssociatorNames operations.

**Specified by:**[findAssociatedMBeans](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#findAssociatedMBeans(javax.management.ObjectName,%20java.lang.String,%20java.lang.String)) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Parameters:**mbeanName - ObjectName of MBeanrelationTypeName - can be null; if specified, only the relations of that type will be considered in the search. Else all relation types are considered.roleName - can be null; if specified, only the relations where the MBean is referenced in that role will be considered. Else all roles are considered. **Returns:**an HashMap, where the keys are the ObjectNames of the MBeans associated to given MBean, and the value is, for each key, an ArrayList of the relation ids of the relations where the key MBean is associated to given one (as they can be associated in several different relations). **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if null parameter

### findRelationsOfType

public [List](http://docs.google.com/java/util/List.html)<[String](http://docs.google.com/java/lang/String.html)> **findRelationsOfType**([String](http://docs.google.com/java/lang/String.html) relationTypeName)  
 throws [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html),  
 [RelationTypeNotFoundException](http://docs.google.com/javax/management/relation/RelationTypeNotFoundException.html)

Returns the relation ids for relations of the given type.

**Specified by:**[findRelationsOfType](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#findRelationsOfType(java.lang.String)) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Parameters:**relationTypeName - relation type name **Returns:**an ArrayList of relation ids. **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if null parameter [RelationTypeNotFoundException](http://docs.google.com/javax/management/relation/RelationTypeNotFoundException.html) - if there is no relation type with that name.

### getRole

public [List](http://docs.google.com/java/util/List.html)<[ObjectName](http://docs.google.com/javax/management/ObjectName.html)> **getRole**([String](http://docs.google.com/java/lang/String.html) relationId,  
 [String](http://docs.google.com/java/lang/String.html) roleName)  
 throws [RelationServiceNotRegisteredException](http://docs.google.com/javax/management/relation/RelationServiceNotRegisteredException.html),  
 [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html),  
 [RelationNotFoundException](http://docs.google.com/javax/management/relation/RelationNotFoundException.html),  
 [RoleNotFoundException](http://docs.google.com/javax/management/relation/RoleNotFoundException.html)

Retrieves role value for given role name in given relation.

**Specified by:**[getRole](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#getRole(java.lang.String,%20java.lang.String)) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Parameters:**relationId - relation idroleName - name of role **Returns:**the ArrayList of ObjectName objects being the role value **Throws:** [RelationServiceNotRegisteredException](http://docs.google.com/javax/management/relation/RelationServiceNotRegisteredException.html) - if the Relation Service is not registered [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if null parameter [RelationNotFoundException](http://docs.google.com/javax/management/relation/RelationNotFoundException.html) - if no relation with given id [RoleNotFoundException](http://docs.google.com/javax/management/relation/RoleNotFoundException.html) - if:

- there is no role with given name

or

- the role is not readable.

**See Also:**[setRole(java.lang.String, javax.management.relation.Role)](http://docs.google.com/javax/management/relation/RelationService.html#setRole(java.lang.String,%20javax.management.relation.Role))

### getRoles

public [RoleResult](http://docs.google.com/javax/management/relation/RoleResult.html) **getRoles**([String](http://docs.google.com/java/lang/String.html) relationId,  
 [String](http://docs.google.com/java/lang/String.html)[] roleNameArray)  
 throws [RelationServiceNotRegisteredException](http://docs.google.com/javax/management/relation/RelationServiceNotRegisteredException.html),  
 [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html),  
 [RelationNotFoundException](http://docs.google.com/javax/management/relation/RelationNotFoundException.html)

Retrieves values of roles with given names in given relation.

**Specified by:**[getRoles](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#getRoles(java.lang.String,%20java.lang.String%5B%5D)) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Parameters:**relationId - relation idroleNameArray - array of names of roles to be retrieved **Returns:**a RoleResult object, including a RoleList (for roles successfully retrieved) and a RoleUnresolvedList (for roles not retrieved). **Throws:** [RelationServiceNotRegisteredException](http://docs.google.com/javax/management/relation/RelationServiceNotRegisteredException.html) - if the Relation Service is not registered in the MBean Server [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if null parameter [RelationNotFoundException](http://docs.google.com/javax/management/relation/RelationNotFoundException.html) - if no relation with given id**See Also:**[setRoles(java.lang.String, javax.management.relation.RoleList)](http://docs.google.com/javax/management/relation/RelationService.html#setRoles(java.lang.String,%20javax.management.relation.RoleList))

### getAllRoles

public [RoleResult](http://docs.google.com/javax/management/relation/RoleResult.html) **getAllRoles**([String](http://docs.google.com/java/lang/String.html) relationId)  
 throws [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html),  
 [RelationNotFoundException](http://docs.google.com/javax/management/relation/RelationNotFoundException.html),  
 [RelationServiceNotRegisteredException](http://docs.google.com/javax/management/relation/RelationServiceNotRegisteredException.html)

Returns all roles present in the relation.

**Specified by:**[getAllRoles](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#getAllRoles(java.lang.String)) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Parameters:**relationId - relation id **Returns:**a RoleResult object, including a RoleList (for roles successfully retrieved) and a RoleUnresolvedList (for roles not readable). **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if null parameter [RelationNotFoundException](http://docs.google.com/javax/management/relation/RelationNotFoundException.html) - if no relation for given id [RelationServiceNotRegisteredException](http://docs.google.com/javax/management/relation/RelationServiceNotRegisteredException.html) - if the Relation Service is not registered in the MBean Server

### getRoleCardinality

public [Integer](http://docs.google.com/java/lang/Integer.html) **getRoleCardinality**([String](http://docs.google.com/java/lang/String.html) relationId,  
 [String](http://docs.google.com/java/lang/String.html) roleName)  
 throws [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html),  
 [RelationNotFoundException](http://docs.google.com/javax/management/relation/RelationNotFoundException.html),  
 [RoleNotFoundException](http://docs.google.com/javax/management/relation/RoleNotFoundException.html)

Retrieves the number of MBeans currently referenced in the given role.

**Specified by:**[getRoleCardinality](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#getRoleCardinality(java.lang.String,%20java.lang.String)) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Parameters:**relationId - relation idroleName - name of role **Returns:**the number of currently referenced MBeans in that role **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if null parameter [RelationNotFoundException](http://docs.google.com/javax/management/relation/RelationNotFoundException.html) - if no relation with given id [RoleNotFoundException](http://docs.google.com/javax/management/relation/RoleNotFoundException.html) - if there is no role with given name

### setRole

public void **setRole**([String](http://docs.google.com/java/lang/String.html) relationId,  
 [Role](http://docs.google.com/javax/management/relation/Role.html) role)  
 throws [RelationServiceNotRegisteredException](http://docs.google.com/javax/management/relation/RelationServiceNotRegisteredException.html),  
 [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html),  
 [RelationNotFoundException](http://docs.google.com/javax/management/relation/RelationNotFoundException.html),  
 [RoleNotFoundException](http://docs.google.com/javax/management/relation/RoleNotFoundException.html),  
 [InvalidRoleValueException](http://docs.google.com/javax/management/relation/InvalidRoleValueException.html)

Sets the given role in given relation.

Will check the role according to its corresponding role definition provided in relation's relation type

The Relation Service will keep track of the change to keep the consistency of relations by handling referenced MBean unregistrations.

**Specified by:**[setRole](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#setRole(java.lang.String,%20javax.management.relation.Role)) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Parameters:**relationId - relation idrole - role to be set (name and new value) **Throws:** [RelationServiceNotRegisteredException](http://docs.google.com/javax/management/relation/RelationServiceNotRegisteredException.html) - if the Relation Service is not registered in the MBean Server [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if null parameter [RelationNotFoundException](http://docs.google.com/javax/management/relation/RelationNotFoundException.html) - if no relation with given id [RoleNotFoundException](http://docs.google.com/javax/management/relation/RoleNotFoundException.html) - if the role does not exist or is not writable [InvalidRoleValueException](http://docs.google.com/javax/management/relation/InvalidRoleValueException.html) - if value provided for role is not valid:

- the number of referenced MBeans in given value is less than expected minimum degree

or

- the number of referenced MBeans in provided value exceeds expected maximum degree

or

- one referenced MBean in the value is not an Object of the MBean class expected for that role

or

- an MBean provided for that role does not exist

**See Also:**[getRole(java.lang.String, java.lang.String)](http://docs.google.com/javax/management/relation/RelationService.html#getRole(java.lang.String,%20java.lang.String))

### setRoles

public [RoleResult](http://docs.google.com/javax/management/relation/RoleResult.html) **setRoles**([String](http://docs.google.com/java/lang/String.html) relationId,  
 [RoleList](http://docs.google.com/javax/management/relation/RoleList.html) roleList)  
 throws [RelationServiceNotRegisteredException](http://docs.google.com/javax/management/relation/RelationServiceNotRegisteredException.html),  
 [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html),  
 [RelationNotFoundException](http://docs.google.com/javax/management/relation/RelationNotFoundException.html)

Sets the given roles in given relation.

Will check the role according to its corresponding role definition provided in relation's relation type

The Relation Service keeps track of the changes to keep the consistency of relations by handling referenced MBean unregistrations.

**Specified by:**[setRoles](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#setRoles(java.lang.String,%20javax.management.relation.RoleList)) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Parameters:**relationId - relation idroleList - list of roles to be set **Returns:**a RoleResult object, including a RoleList (for roles successfully set) and a RoleUnresolvedList (for roles not set). **Throws:** [RelationServiceNotRegisteredException](http://docs.google.com/javax/management/relation/RelationServiceNotRegisteredException.html) - if the Relation Service is not registered in the MBean Server [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if null parameter [RelationNotFoundException](http://docs.google.com/javax/management/relation/RelationNotFoundException.html) - if no relation with given id**See Also:**[getRoles(java.lang.String, java.lang.String[])](http://docs.google.com/javax/management/relation/RelationService.html#getRoles(java.lang.String,%20java.lang.String%5B%5D))

### getReferencedMBeans

public [Map](http://docs.google.com/java/util/Map.html)<[ObjectName](http://docs.google.com/javax/management/ObjectName.html),[List](http://docs.google.com/java/util/List.html)<[String](http://docs.google.com/java/lang/String.html)>> **getReferencedMBeans**([String](http://docs.google.com/java/lang/String.html) relationId)  
 throws [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html),  
 [RelationNotFoundException](http://docs.google.com/javax/management/relation/RelationNotFoundException.html)

Retrieves MBeans referenced in the various roles of the relation.

**Specified by:**[getReferencedMBeans](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#getReferencedMBeans(java.lang.String)) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Parameters:**relationId - relation id **Returns:**a HashMap mapping:

ObjectName -> ArrayList of String (role names)

**Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if null parameter [RelationNotFoundException](http://docs.google.com/javax/management/relation/RelationNotFoundException.html) - if no relation for given relation id

### getRelationTypeName

public [String](http://docs.google.com/java/lang/String.html) **getRelationTypeName**([String](http://docs.google.com/java/lang/String.html) relationId)  
 throws [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html),  
 [RelationNotFoundException](http://docs.google.com/javax/management/relation/RelationNotFoundException.html)

Returns name of associated relation type for given relation.

**Specified by:**[getRelationTypeName](http://docs.google.com/javax/management/relation/RelationServiceMBean.html#getRelationTypeName(java.lang.String)) in interface [RelationServiceMBean](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) **Parameters:**relationId - relation id **Returns:**the name of the associated relation type. **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if null parameter [RelationNotFoundException](http://docs.google.com/javax/management/relation/RelationNotFoundException.html) - if no relation for given relation id

### handleNotification

public void **handleNotification**([Notification](http://docs.google.com/javax/management/Notification.html) notif,  
 [Object](http://docs.google.com/java/lang/Object.html) handback)

Invoked when a JMX notification occurs. Currently handles notifications for unregistration of MBeans, either referenced in a relation role or being a relation itself.

**Specified by:**[handleNotification](http://docs.google.com/javax/management/NotificationListener.html#handleNotification(javax.management.Notification,%20java.lang.Object)) in interface [NotificationListener](http://docs.google.com/javax/management/NotificationListener.html) **Parameters:**notif - The notification.handback - An opaque object which helps the listener to associate information regarding the MBean emitter (can be null).

### getNotificationInfo

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

Returns a NotificationInfo object containing the name of the Java class of the notification and the notification types sent.

**Specified by:**[getNotificationInfo](http://docs.google.com/javax/management/NotificationBroadcaster.html#getNotificationInfo()) in interface [NotificationBroadcaster](http://docs.google.com/javax/management/NotificationBroadcaster.html)**Overrides:**[getNotificationInfo](http://docs.google.com/javax/management/NotificationBroadcasterSupport.html#getNotificationInfo()) in class [NotificationBroadcasterSupport](http://docs.google.com/javax/management/NotificationBroadcasterSupport.html) **Returns:**the array of possible notifications.

| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/RelationService.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/relation/RelationNotification.html)   [**NEXT CLASS**](http://docs.google.com/javax/management/relation/RelationServiceMBean.html) | [**FRAMES**](http://docs.google.com/index.html?javax/management/relation/RelationService.html)    [**NO FRAMES**](http://docs.google.com/RelationService.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |
| SUMMARY: NESTED | FIELD | [CONSTR](#3znysh7) | [METHOD](#2et92p0) | DETAIL: FIELD | [CONSTR](#1t3h5sf) | [METHOD](#2s8eyo1) |

[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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