| | [**Overview**](http://docs.google.com/overview-summary.html) | Package | Class | Use | [**Tree**](http://docs.google.com/overview-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   NEXT | [**FRAMES**](http://docs.google.com/index.html?serialized-form.html)    [**NO FRAMES**](http://docs.google.com/serialized-form.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |

Serialized Form

| **Package** **java.applet** |
| --- |

| **Class** [**java.applet.Applet**](http://docs.google.com/java/applet/Applet.html) **extends** [**Panel**](http://docs.google.com/java/awt/Panel.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5836846270535785031L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html),  
 [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html)

Read an applet from an object input stream.

**Throws:** [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html) - if GraphicsEnvironment.isHeadless() returns true [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)**Since:** 1.4 **See Also:**[GraphicsEnvironment.isHeadless()](http://docs.google.com/java/awt/GraphicsEnvironment.html#isHeadless())

| **Serialized Fields** |
| --- |

### accessibleContext

[AccessibleContext](http://docs.google.com/javax/accessibility/AccessibleContext.html) **accessibleContext**

| **Class** [**java.applet.Applet.AccessibleApplet**](http://docs.google.com/java/applet/Applet.AccessibleApplet.html) **extends** [**Panel.AccessibleAWTPanel**](http://docs.google.com/java/awt/Panel.AccessibleAWTPanel.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8127374778187708896L

| **Package** **java.awt** |
| --- |

| **Class** [**java.awt.AWTError**](http://docs.google.com/java/awt/AWTError.html) **extends** [**Error**](http://docs.google.com/java/lang/Error.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1819846354050686206L

| **Class** [**java.awt.AWTEvent**](http://docs.google.com/java/awt/AWTEvent.html) **extends** [**EventObject**](http://docs.google.com/java/util/EventObject.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1825314779160409405L

| **Serialized Fields** |
| --- |

### bdata

byte[] **bdata**

### id

int **id**

The event's id.

**See Also:**[AWTEvent.getID()](http://docs.google.com/java/awt/AWTEvent.html#getID()), [AWTEvent.AWTEvent(java.lang.Object, int)](http://docs.google.com/java/awt/AWTEvent.html#AWTEvent(java.lang.Object,%20int))

### consumed

boolean **consumed**

Controls whether or not the event is sent back down to the peer once the source has processed it - false means it's sent to the peer; true means it's not. Semantic events always have a 'true' value since they were generated by the peer in response to a low-level event.

**See Also:**[AWTEvent.consume()](http://docs.google.com/java/awt/AWTEvent.html#consume()), [AWTEvent.isConsumed()](http://docs.google.com/java/awt/AWTEvent.html#isConsumed())

| **Class** [**java.awt.AWTException**](http://docs.google.com/java/awt/AWTException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1900414231151323879L

| **Class** [**java.awt.AWTKeyStroke**](http://docs.google.com/java/awt/AWTKeyStroke.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-6430539691155161871L

| **Serialization Methods** |
| --- |

### readResolve

protected [Object](http://docs.google.com/java/lang/Object.html) **readResolve**()  
 throws [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html)

Returns a cached instance of AWTKeyStroke (or a subclass of AWTKeyStroke) which is equal to this instance.

**Throws:** [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html)

| **Serialized Fields** |
| --- |

### keyChar

char **keyChar**

### keyCode

int **keyCode**

### modifiers

int **modifiers**

### onKeyRelease

boolean **onKeyRelease**

| **Class** [**java.awt.AWTPermission**](http://docs.google.com/java/awt/AWTPermission.html) **extends** [**BasicPermission**](http://docs.google.com/java/security/BasicPermission.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8890392402588814465L

| **Class** [**java.awt.BorderLayout**](http://docs.google.com/java/awt/BorderLayout.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8658291919501921765L

| **Serialized Fields** |
| --- |

### hgap

int **hgap**

Constructs a border layout with the horizontal gaps between components. The horizontal gap is specified by hgap.

**See Also:**[BorderLayout.getHgap()](http://docs.google.com/java/awt/BorderLayout.html#getHgap()), [BorderLayout.setHgap(int)](http://docs.google.com/java/awt/BorderLayout.html#setHgap(int))

### vgap

int **vgap**

Constructs a border layout with the vertical gaps between components. The vertical gap is specified by vgap.

**See Also:**[BorderLayout.getVgap()](http://docs.google.com/java/awt/BorderLayout.html#getVgap()), [BorderLayout.setVgap(int)](http://docs.google.com/java/awt/BorderLayout.html#setVgap(int))

### north

[Component](http://docs.google.com/java/awt/Component.html) **north**

Constant to specify components location to be the north portion of the border layout.

**See Also:**[BorderLayout.getChild(String, boolean)](http://docs.google.com/java/awt/BorderLayout.html#getChild(java.lang.String,%20boolean)), [BorderLayout.addLayoutComponent(java.awt.Component, java.lang.Object)](http://docs.google.com/java/awt/BorderLayout.html#addLayoutComponent(java.awt.Component,%20java.lang.Object)), [BorderLayout.getLayoutAlignmentX(java.awt.Container)](http://docs.google.com/java/awt/BorderLayout.html#getLayoutAlignmentX(java.awt.Container)), [BorderLayout.getLayoutAlignmentY(java.awt.Container)](http://docs.google.com/java/awt/BorderLayout.html#getLayoutAlignmentY(java.awt.Container)), [BorderLayout.removeLayoutComponent(java.awt.Component)](http://docs.google.com/java/awt/BorderLayout.html#removeLayoutComponent(java.awt.Component))

### west

[Component](http://docs.google.com/java/awt/Component.html) **west**

Constant to specify components location to be the west portion of the border layout.

**See Also:**[BorderLayout.getChild(String, boolean)](http://docs.google.com/java/awt/BorderLayout.html#getChild(java.lang.String,%20boolean)), [BorderLayout.addLayoutComponent(java.awt.Component, java.lang.Object)](http://docs.google.com/java/awt/BorderLayout.html#addLayoutComponent(java.awt.Component,%20java.lang.Object)), [BorderLayout.getLayoutAlignmentX(java.awt.Container)](http://docs.google.com/java/awt/BorderLayout.html#getLayoutAlignmentX(java.awt.Container)), [BorderLayout.getLayoutAlignmentY(java.awt.Container)](http://docs.google.com/java/awt/BorderLayout.html#getLayoutAlignmentY(java.awt.Container)), [BorderLayout.removeLayoutComponent(java.awt.Component)](http://docs.google.com/java/awt/BorderLayout.html#removeLayoutComponent(java.awt.Component))

### east

[Component](http://docs.google.com/java/awt/Component.html) **east**

Constant to specify components location to be the east portion of the border layout.

**See Also:**[BorderLayout.getChild(String, boolean)](http://docs.google.com/java/awt/BorderLayout.html#getChild(java.lang.String,%20boolean)), [BorderLayout.addLayoutComponent(java.awt.Component, java.lang.Object)](http://docs.google.com/java/awt/BorderLayout.html#addLayoutComponent(java.awt.Component,%20java.lang.Object)), [BorderLayout.getLayoutAlignmentX(java.awt.Container)](http://docs.google.com/java/awt/BorderLayout.html#getLayoutAlignmentX(java.awt.Container)), [BorderLayout.getLayoutAlignmentY(java.awt.Container)](http://docs.google.com/java/awt/BorderLayout.html#getLayoutAlignmentY(java.awt.Container)), [BorderLayout.removeLayoutComponent(java.awt.Component)](http://docs.google.com/java/awt/BorderLayout.html#removeLayoutComponent(java.awt.Component))

### south

[Component](http://docs.google.com/java/awt/Component.html) **south**

Constant to specify components location to be the south portion of the border layout.

**See Also:**[BorderLayout.getChild(String, boolean)](http://docs.google.com/java/awt/BorderLayout.html#getChild(java.lang.String,%20boolean)), [BorderLayout.addLayoutComponent(java.awt.Component, java.lang.Object)](http://docs.google.com/java/awt/BorderLayout.html#addLayoutComponent(java.awt.Component,%20java.lang.Object)), [BorderLayout.getLayoutAlignmentX(java.awt.Container)](http://docs.google.com/java/awt/BorderLayout.html#getLayoutAlignmentX(java.awt.Container)), [BorderLayout.getLayoutAlignmentY(java.awt.Container)](http://docs.google.com/java/awt/BorderLayout.html#getLayoutAlignmentY(java.awt.Container)), [BorderLayout.removeLayoutComponent(java.awt.Component)](http://docs.google.com/java/awt/BorderLayout.html#removeLayoutComponent(java.awt.Component))

### center

[Component](http://docs.google.com/java/awt/Component.html) **center**

Constant to specify components location to be the center portion of the border layout.

**See Also:**[BorderLayout.getChild(String, boolean)](http://docs.google.com/java/awt/BorderLayout.html#getChild(java.lang.String,%20boolean)), [BorderLayout.addLayoutComponent(java.awt.Component, java.lang.Object)](http://docs.google.com/java/awt/BorderLayout.html#addLayoutComponent(java.awt.Component,%20java.lang.Object)), [BorderLayout.getLayoutAlignmentX(java.awt.Container)](http://docs.google.com/java/awt/BorderLayout.html#getLayoutAlignmentX(java.awt.Container)), [BorderLayout.getLayoutAlignmentY(java.awt.Container)](http://docs.google.com/java/awt/BorderLayout.html#getLayoutAlignmentY(java.awt.Container)), [BorderLayout.removeLayoutComponent(java.awt.Component)](http://docs.google.com/java/awt/BorderLayout.html#removeLayoutComponent(java.awt.Component))

### firstLine

[Component](http://docs.google.com/java/awt/Component.html) **firstLine**

A relative positioning constant, that can be used instead of north, south, east, west or center. mixing the two types of constants can lead to unpredicable results. If you use both types, the relative constants will take precedence. For example, if you add components using both the NORTH and BEFORE\_FIRST\_LINE constants in a container whose orientation is LEFT\_TO\_RIGHT, only the BEFORE\_FIRST\_LINE will be layed out. This will be the same for lastLine, firstItem, lastItem.

### lastLine

[Component](http://docs.google.com/java/awt/Component.html) **lastLine**

A relative positioning constant, that can be used instead of north, south, east, west or center. Please read Description for firstLine.

### firstItem

[Component](http://docs.google.com/java/awt/Component.html) **firstItem**

A relative positioning constant, that can be used instead of north, south, east, west or center. Please read Description for firstLine.

### lastItem

[Component](http://docs.google.com/java/awt/Component.html) **lastItem**

A relative positioning constant, that can be used instead of north, south, east, west or center. Please read Description for firstLine.

| **Class** [**java.awt.Button**](http://docs.google.com/java/awt/Button.html) **extends** [**Component**](http://docs.google.com/java/awt/Component.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8774683716313001058L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html),  
 [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html)

Reads the ObjectInputStream and if it isn't null adds a listener to receive action events fired by the button. Unrecognized keys or values will be ignored.

**Throws:** [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html) - if GraphicsEnvironment.isHeadless returns true [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[Button.removeActionListener(ActionListener)](http://docs.google.com/java/awt/Button.html#removeActionListener(java.awt.event.ActionListener)), [Button.addActionListener(ActionListener)](http://docs.google.com/java/awt/Button.html#addActionListener(java.awt.event.ActionListener)), [GraphicsEnvironment.isHeadless()](http://docs.google.com/java/awt/GraphicsEnvironment.html#isHeadless()), [Button.writeObject(ObjectOutputStream)](http://docs.google.com/java/awt/Button.html#writeObject(java.io.ObjectOutputStream))

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Writes default serializable fields to stream. Writes a list of serializable ActionListeners as optional data. The non-serializable ActionListeners are detected and no attempt is made to serialize them.

**Serial Data:** null terminated sequence of 0 or more pairs: the pair consists of a String and an Object; the String indicates the type of object and is one of the following: actionListenerK indicating an ActionListener object **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[AWTEventMulticaster.save(ObjectOutputStream, String, EventListener)](http://docs.google.com/java/awt/AWTEventMulticaster.html#save(java.io.ObjectOutputStream,%20java.lang.String,%20java.util.EventListener)), [Component.actionListenerK](http://docs.google.com/java/awt/Component.html#actionListenerK), [Button.readObject(ObjectInputStream)](http://docs.google.com/java/awt/Button.html#readObject(java.io.ObjectInputStream))

| **Serialized Fields** |
| --- |

### label

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

The button's label. This value may be null.

**See Also:**[Button.getLabel()](http://docs.google.com/java/awt/Button.html#getLabel()), [Button.setLabel(String)](http://docs.google.com/java/awt/Button.html#setLabel(java.lang.String))

### actionCommand

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

The action to be performed once a button has been pressed. This value may be null.

**See Also:**[Button.getActionCommand()](http://docs.google.com/java/awt/Button.html#getActionCommand()), [Button.setActionCommand(String)](http://docs.google.com/java/awt/Button.html#setActionCommand(java.lang.String))

### buttonSerializedDataVersion

int **buttonSerializedDataVersion**

| **Class** [**java.awt.Button.AccessibleAWTButton**](http://docs.google.com/java/awt/Button.AccessibleAWTButton.html) **extends** [**Component.AccessibleAWTComponent**](http://docs.google.com/java/awt/Component.AccessibleAWTComponent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5932203980244017102L

| **Class** [**java.awt.Canvas**](http://docs.google.com/java/awt/Canvas.html) **extends** [**Component**](http://docs.google.com/java/awt/Component.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2284879212465893870L

| **Class** [**java.awt.Canvas.AccessibleAWTCanvas**](http://docs.google.com/java/awt/Canvas.AccessibleAWTCanvas.html) **extends** [**Component.AccessibleAWTComponent**](http://docs.google.com/java/awt/Component.AccessibleAWTComponent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-6325592262103146699L

| **Class** [**java.awt.CardLayout**](http://docs.google.com/java/awt/CardLayout.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4328196481005934313L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html)

Reads serializable fields from stream.

**Throws:** [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Writes serializable fields to stream.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### currentCard

int **currentCard**

### hgap

int **hgap**

### tab

[Hashtable](http://docs.google.com/java/util/Hashtable.html)<[K](http://docs.google.com/java/util/Hashtable.html),[V](http://docs.google.com/java/util/Hashtable.html)> **tab**

deprectated, for forward compatibility only

### vector

[Vector](http://docs.google.com/java/util/Vector.html)<[E](http://docs.google.com/java/util/Vector.html)> **vector**

### vgap

int **vgap**

| **Class** [**java.awt.Checkbox**](http://docs.google.com/java/awt/Checkbox.html) **extends** [**Component**](http://docs.google.com/java/awt/Component.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7270714317450821763L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html),  
 [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html)

Reads the ObjectInputStream and if it isn't null adds a listener to receive item events fired by the Checkbox. Unrecognized keys or values will be ignored.

**Throws:** [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html) - if GraphicsEnvironment.isHeadless returns true [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[Checkbox.removeItemListener(ItemListener)](http://docs.google.com/java/awt/Checkbox.html#removeItemListener(java.awt.event.ItemListener)), [Checkbox.addItemListener(ItemListener)](http://docs.google.com/java/awt/Checkbox.html#addItemListener(java.awt.event.ItemListener)), [GraphicsEnvironment.isHeadless()](http://docs.google.com/java/awt/GraphicsEnvironment.html#isHeadless()), [Checkbox.writeObject(ObjectOutputStream)](http://docs.google.com/java/awt/Checkbox.html#writeObject(java.io.ObjectOutputStream))

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Writes default serializable fields to stream. Writes a list of serializable ItemListeners as optional data. The non-serializable ItemListeners are detected and no attempt is made to serialize them.

**Serial Data:** null terminated sequence of 0 or more pairs; the pair consists of a String and an Object; the String indicates the type of object and is one of the following: itemListenerK indicating an ItemListener object **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[AWTEventMulticaster.save(ObjectOutputStream, String, EventListener)](http://docs.google.com/java/awt/AWTEventMulticaster.html#save(java.io.ObjectOutputStream,%20java.lang.String,%20java.util.EventListener)), [Component.itemListenerK](http://docs.google.com/java/awt/Component.html#itemListenerK), [Checkbox.readObject(ObjectInputStream)](http://docs.google.com/java/awt/Checkbox.html#readObject(java.io.ObjectInputStream))

| **Serialized Fields** |
| --- |

### label

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

The label of the Checkbox. This field can be null.

**See Also:**[Checkbox.getLabel()](http://docs.google.com/java/awt/Checkbox.html#getLabel()), [Checkbox.setLabel(String)](http://docs.google.com/java/awt/Checkbox.html#setLabel(java.lang.String))

### state

boolean **state**

The state of the Checkbox.

**See Also:**[Checkbox.getState()](http://docs.google.com/java/awt/Checkbox.html#getState()), [Checkbox.setState(boolean)](http://docs.google.com/java/awt/Checkbox.html#setState(boolean))

### group

[CheckboxGroup](http://docs.google.com/java/awt/CheckboxGroup.html) **group**

The check box group. This field can be null indicating that the checkbox is not a group checkbox.

**See Also:**[Checkbox.getCheckboxGroup()](http://docs.google.com/java/awt/Checkbox.html#getCheckboxGroup()), [Checkbox.setCheckboxGroup(CheckboxGroup)](http://docs.google.com/java/awt/Checkbox.html#setCheckboxGroup(java.awt.CheckboxGroup))

### checkboxSerializedDataVersion

int **checkboxSerializedDataVersion**

| **Class** [**java.awt.Checkbox.AccessibleAWTCheckbox**](http://docs.google.com/java/awt/Checkbox.AccessibleAWTCheckbox.html) **extends** [**Component.AccessibleAWTComponent**](http://docs.google.com/java/awt/Component.AccessibleAWTComponent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7881579233144754107L

| **Class** [**java.awt.CheckboxGroup**](http://docs.google.com/java/awt/CheckboxGroup.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3729780091441768983L

| **Serialized Fields** |
| --- |

### selectedCheckbox

[Checkbox](http://docs.google.com/java/awt/Checkbox.html) **selectedCheckbox**

The current choice.

**See Also:**[CheckboxGroup.getCurrent()](http://docs.google.com/java/awt/CheckboxGroup.html#getCurrent()), [CheckboxGroup.setCurrent(Checkbox)](http://docs.google.com/java/awt/CheckboxGroup.html#setCurrent(java.awt.Checkbox))

| **Class** [**java.awt.CheckboxMenuItem**](http://docs.google.com/java/awt/CheckboxMenuItem.html) **extends** [**MenuItem**](http://docs.google.com/java/awt/MenuItem.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6190621106981774043L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html)

**Throws:** [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Writes default serializable fields to stream. Writes a list of serializable ItemListeners as optional data. The non-serializable ItemListeners are detected and no attempt is made to serialize them.

**Serial Data:** null terminated sequence of 0 or more pairs; the pair consists of a String and an Object; the String indicates the type of object and is one of the following: itemListenerK indicating an ItemListener object **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[AWTEventMulticaster.save(ObjectOutputStream, String, EventListener)](http://docs.google.com/java/awt/AWTEventMulticaster.html#save(java.io.ObjectOutputStream,%20java.lang.String,%20java.util.EventListener)), [Component.itemListenerK](http://docs.google.com/java/awt/Component.html#itemListenerK), [CheckboxMenuItem.readObject(ObjectInputStream)](http://docs.google.com/java/awt/CheckboxMenuItem.html#readObject(java.io.ObjectInputStream))

| **Serialized Fields** |
| --- |

### state

boolean **state**

The state of a checkbox menu item

**See Also:**[CheckboxMenuItem.getState()](http://docs.google.com/java/awt/CheckboxMenuItem.html#getState()), [CheckboxMenuItem.setState(boolean)](http://docs.google.com/java/awt/CheckboxMenuItem.html#setState(boolean))

### checkboxMenuItemSerializedDataVersion

int **checkboxMenuItemSerializedDataVersion**

| **Class** [**java.awt.CheckboxMenuItem.AccessibleAWTCheckboxMenuItem**](http://docs.google.com/java/awt/CheckboxMenuItem.AccessibleAWTCheckboxMenuItem.html) **extends** [**MenuItem.AccessibleAWTMenuItem**](http://docs.google.com/java/awt/MenuItem.AccessibleAWTMenuItem.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1122642964303476L

| **Class** [**java.awt.Choice**](http://docs.google.com/java/awt/Choice.html) **extends** [**Component**](http://docs.google.com/java/awt/Component.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4075310674757313071L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html),  
 [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html)

Reads the ObjectInputStream and if it isn't null adds a listener to receive item events fired by the Choice item. Unrecognized keys or values will be ignored.

**Throws:** [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html) - if GraphicsEnvironment.isHeadless returns true [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[Choice.removeItemListener(ItemListener)](http://docs.google.com/java/awt/Choice.html#removeItemListener(java.awt.event.ItemListener)), [Choice.addItemListener(ItemListener)](http://docs.google.com/java/awt/Choice.html#addItemListener(java.awt.event.ItemListener)), [GraphicsEnvironment.isHeadless()](http://docs.google.com/java/awt/GraphicsEnvironment.html#isHeadless()), [Choice.writeObject(ObjectOutputStream)](http://docs.google.com/java/awt/Choice.html#writeObject(java.io.ObjectOutputStream))

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Writes default serializable fields to stream. Writes a list of serializable ItemListeners as optional data. The non-serializable ItemListeners are detected and no attempt is made to serialize them.

**Serial Data:** null terminated sequence of 0 or more pairs; the pair consists of a String and an Object; the String indicates the type of object and is one of the following: itemListenerK indicating an ItemListener object **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[AWTEventMulticaster.save(ObjectOutputStream, String, EventListener)](http://docs.google.com/java/awt/AWTEventMulticaster.html#save(java.io.ObjectOutputStream,%20java.lang.String,%20java.util.EventListener)), [Component.itemListenerK](http://docs.google.com/java/awt/Component.html#itemListenerK), [Choice.readObject(ObjectInputStream)](http://docs.google.com/java/awt/Choice.html#readObject(java.io.ObjectInputStream))

| **Serialized Fields** |
| --- |

### pItems

[Vector](http://docs.google.com/java/util/Vector.html)<[E](http://docs.google.com/java/util/Vector.html)> **pItems**

The items for the Choice. This can be a null value.

**See Also:**[Choice.add(String)](http://docs.google.com/java/awt/Choice.html#add(java.lang.String)), [Choice.addItem(String)](http://docs.google.com/java/awt/Choice.html#addItem(java.lang.String)), [Choice.getItem(int)](http://docs.google.com/java/awt/Choice.html#getItem(int)), [Choice.getItemCount()](http://docs.google.com/java/awt/Choice.html#getItemCount()), [Choice.insert(String, int)](http://docs.google.com/java/awt/Choice.html#insert(java.lang.String,%20int)), [Choice.remove(String)](http://docs.google.com/java/awt/Choice.html#remove(java.lang.String))

### selectedIndex

int **selectedIndex**

The index of the current choice for this Choice or -1 if nothing is selected.

**See Also:**[Choice.getSelectedItem()](http://docs.google.com/java/awt/Choice.html#getSelectedItem()), [Choice.select(int)](http://docs.google.com/java/awt/Choice.html#select(int))

### choiceSerializedDataVersion

int **choiceSerializedDataVersion**

| **Class** [**java.awt.Choice.AccessibleAWTChoice**](http://docs.google.com/java/awt/Choice.AccessibleAWTChoice.html) **extends** [**Component.AccessibleAWTComponent**](http://docs.google.com/java/awt/Component.AccessibleAWTComponent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7175603582428509322L

| **Class** [**java.awt.Color**](http://docs.google.com/java/awt/Color.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**118526816881161077L

| **Serialized Fields** |
| --- |

### value

int **value**

The color value.

**See Also:**[Color.getRGB()](http://docs.google.com/java/awt/Color.html#getRGB())

### frgbvalue

float[] **frgbvalue**

The color value in the default sRGB ColorSpace as float components (no alpha). If null after object construction, this must be an sRGB color constructed with 8-bit precision, so compute from the int color value.

**See Also:**[Color.getRGBColorComponents(float[])](http://docs.google.com/java/awt/Color.html#getRGBColorComponents(float%5B%5D)), [Color.getRGBComponents(float[])](http://docs.google.com/java/awt/Color.html#getRGBComponents(float%5B%5D))

### fvalue

float[] **fvalue**

The color value in the native ColorSpace as float components (no alpha). If null after object construction, this must be an sRGB color constructed with 8-bit precision, so compute from the int color value.

**See Also:**[Color.getRGBColorComponents(float[])](http://docs.google.com/java/awt/Color.html#getRGBColorComponents(float%5B%5D)), [Color.getRGBComponents(float[])](http://docs.google.com/java/awt/Color.html#getRGBComponents(float%5B%5D))

### falpha

float **falpha**

The alpha value as a float component. If frgbvalue is null, this is not valid data, so compute from the int color value.

**See Also:**[Color.getRGBComponents(float[])](http://docs.google.com/java/awt/Color.html#getRGBComponents(float%5B%5D)), [Color.getComponents(float[])](http://docs.google.com/java/awt/Color.html#getComponents(float%5B%5D))

### cs

[ColorSpace](http://docs.google.com/java/awt/color/ColorSpace.html) **cs**

The ColorSpace. If null, then it's default is sRGB.

**See Also:**[Color.getColor(java.lang.String)](http://docs.google.com/java/awt/Color.html#getColor(java.lang.String)), [Color.getColorSpace()](http://docs.google.com/java/awt/Color.html#getColorSpace()), [Color.getColorComponents(float[])](http://docs.google.com/java/awt/Color.html#getColorComponents(float%5B%5D))

| **Class** [**java.awt.Component**](http://docs.google.com/java/awt/Component.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7644114512714619750L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html)

Reads the ObjectInputStream and if it isn't null adds a listener to receive a variety of events fired by the component. Unrecognized keys or values will be ignored.

**Throws:** [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[Component.writeObject(ObjectOutputStream)](http://docs.google.com/java/awt/Component.html#writeObject(java.io.ObjectOutputStream))

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Writes default serializable fields to stream. Writes a variety of serializable listeners as optional data. The non-serializable listeners are detected and no attempt is made to serialize them.

**Serial Data:** null terminated sequence of 0 or more pairs; the pair consists of a String and an Object; the String indicates the type of object and is one of the following (as of 1.4): componentListenerK indicating an ComponentListener object; focusListenerK indicating an FocusListener object; keyListenerK indicating an KeyListener object; mouseListenerK indicating an MouseListener object; mouseMotionListenerK indicating an MouseMotionListener object; inputMethodListenerK indicating an InputMethodListener object; hierarchyListenerK indicating an HierarchyListener object; hierarchyBoundsListenerK indicating an HierarchyBoundsListener object; mouseWheelListenerK indicating an MouseWheelListener object, an optional ComponentOrientation (after inputMethodListener, as of 1.2) **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[AWTEventMulticaster.save(java.io.ObjectOutputStream, java.lang.String, java.util.EventListener)](http://docs.google.com/java/awt/AWTEventMulticaster.html#save(java.io.ObjectOutputStream,%20java.lang.String,%20java.util.EventListener)), [Component.componentListenerK](http://docs.google.com/java/awt/Component.html#componentListenerK), [Component.focusListenerK](http://docs.google.com/java/awt/Component.html#focusListenerK), [Component.keyListenerK](http://docs.google.com/java/awt/Component.html#keyListenerK), [Component.mouseListenerK](http://docs.google.com/java/awt/Component.html#mouseListenerK), [Component.mouseMotionListenerK](http://docs.google.com/java/awt/Component.html#mouseMotionListenerK), [Component.inputMethodListenerK](http://docs.google.com/java/awt/Component.html#inputMethodListenerK), [Component.hierarchyListenerK](http://docs.google.com/java/awt/Component.html#hierarchyListenerK), [Component.hierarchyBoundsListenerK](http://docs.google.com/java/awt/Component.html#hierarchyBoundsListenerK), [Component.mouseWheelListenerK](http://docs.google.com/java/awt/Component.html#mouseWheelListenerK), [Component.readObject(ObjectInputStream)](http://docs.google.com/java/awt/Component.html#readObject(java.io.ObjectInputStream))

| **Serialized Fields** |
| --- |

### x

int **x**

The x position of the component in the parent's coordinate system.

**See Also:**[Component.getLocation()](http://docs.google.com/java/awt/Component.html#getLocation())

### y

int **y**

The y position of the component in the parent's coordinate system.

**See Also:**[Component.getLocation()](http://docs.google.com/java/awt/Component.html#getLocation())

### width

int **width**

The width of the component.

**See Also:**[Component.getSize()](http://docs.google.com/java/awt/Component.html#getSize())

### height

int **height**

The height of the component.

**See Also:**[Component.getSize()](http://docs.google.com/java/awt/Component.html#getSize())

### foreground

[Color](http://docs.google.com/java/awt/Color.html) **foreground**

The foreground color for this component. foreground can be null.

**See Also:**[Component.getForeground()](http://docs.google.com/java/awt/Component.html#getForeground()), [Component.setForeground(java.awt.Color)](http://docs.google.com/java/awt/Component.html#setForeground(java.awt.Color))

### background

[Color](http://docs.google.com/java/awt/Color.html) **background**

The background color for this component. background can be null.

**See Also:**[Component.getBackground()](http://docs.google.com/java/awt/Component.html#getBackground()), [Component.setBackground(java.awt.Color)](http://docs.google.com/java/awt/Component.html#setBackground(java.awt.Color))

### font

[Font](http://docs.google.com/java/awt/Font.html) **font**

The font used by this component. The font can be null.

**See Also:**[Component.getFont()](http://docs.google.com/java/awt/Component.html#getFont()), [Component.setFont(java.awt.Font)](http://docs.google.com/java/awt/Component.html#setFont(java.awt.Font))

### peerFont

[Font](http://docs.google.com/java/awt/Font.html) **peerFont**

The font which the peer is currently using. (null if no peer exists.)

### cursor

[Cursor](http://docs.google.com/java/awt/Cursor.html) **cursor**

The cursor displayed when pointer is over this component. This value can be null.

**See Also:**[Component.getCursor()](http://docs.google.com/java/awt/Component.html#getCursor()), [Component.setCursor(java.awt.Cursor)](http://docs.google.com/java/awt/Component.html#setCursor(java.awt.Cursor))

### locale

[Locale](http://docs.google.com/java/util/Locale.html) **locale**

The locale for the component.

**See Also:**[Component.getLocale()](http://docs.google.com/java/awt/Component.html#getLocale()), [Component.setLocale(java.util.Locale)](http://docs.google.com/java/awt/Component.html#setLocale(java.util.Locale))

### ignoreRepaint

boolean **ignoreRepaint**

True when the object should ignore all repaint events.

**Since:** 1.4 **See Also:**[Component.setIgnoreRepaint(boolean)](http://docs.google.com/java/awt/Component.html#setIgnoreRepaint(boolean)), [Component.getIgnoreRepaint()](http://docs.google.com/java/awt/Component.html#getIgnoreRepaint())

### visible

boolean **visible**

True when the object is visible. An object that is not visible is not drawn on the screen.

**See Also:**[Component.isVisible()](http://docs.google.com/java/awt/Component.html#isVisible()), [Component.setVisible(boolean)](http://docs.google.com/java/awt/Component.html#setVisible(boolean))

### enabled

boolean **enabled**

True when the object is enabled. An object that is not enabled does not interact with the user.

**See Also:**[Component.isEnabled()](http://docs.google.com/java/awt/Component.html#isEnabled()), [Component.setEnabled(boolean)](http://docs.google.com/java/awt/Component.html#setEnabled(boolean))

### valid

boolean **valid**

True when the object is valid. An invalid object needs to be layed out. This flag is set to false when the object size is changed.

**See Also:**[Component.isValid()](http://docs.google.com/java/awt/Component.html#isValid()), [Component.validate()](http://docs.google.com/java/awt/Component.html#validate()), [Component.invalidate()](http://docs.google.com/java/awt/Component.html#invalidate())

### dropTarget

[DropTarget](http://docs.google.com/java/awt/dnd/DropTarget.html) **dropTarget**

The DropTarget associated with this component.

**Since:** 1.2 **See Also:**[Component.setDropTarget(java.awt.dnd.DropTarget)](http://docs.google.com/java/awt/Component.html#setDropTarget(java.awt.dnd.DropTarget)), [Component.getDropTarget()](http://docs.google.com/java/awt/Component.html#getDropTarget())

### popups

[Vector](http://docs.google.com/java/util/Vector.html)<[E](http://docs.google.com/java/util/Vector.html)> **popups**

**See Also:**[Component.add(java.awt.PopupMenu)](http://docs.google.com/java/awt/Component.html#add(java.awt.PopupMenu))

### name

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

A component's name. This field can be null.

**See Also:**[Component.getName()](http://docs.google.com/java/awt/Component.html#getName()), [Component.setName(String)](http://docs.google.com/java/awt/Component.html#setName(java.lang.String))

### nameExplicitlySet

boolean **nameExplicitlySet**

A bool to determine whether the name has been set explicitly. nameExplicitlySet will be false if the name has not been set and true if it has.

**See Also:**[Component.getName()](http://docs.google.com/java/awt/Component.html#getName()), [Component.setName(String)](http://docs.google.com/java/awt/Component.html#setName(java.lang.String))

### focusable

boolean **focusable**

Indicates whether this Component can be focused.

**Since:** 1.4 **See Also:**[Component.setFocusable(boolean)](http://docs.google.com/java/awt/Component.html#setFocusable(boolean)), [Component.isFocusable()](http://docs.google.com/java/awt/Component.html#isFocusable())

### isFocusTraversableOverridden

int **isFocusTraversableOverridden**

Tracks whether this Component is relying on default focus travesability.

**Since:** 1.4

### focusTraversalKeys

[Set](http://docs.google.com/java/util/Set.html)<[E](http://docs.google.com/java/util/Set.html)>[] **focusTraversalKeys**

The focus traversal keys. These keys will generate focus traversal behavior for Components for which focus traversal keys are enabled. If a value of null is specified for a traversal key, this Component inherits that traversal key from its parent. If all ancestors of this Component have null specified for that traversal key, then the current KeyboardFocusManager's default traversal key is used.

**Since:** 1.4 **See Also:**[Component.setFocusTraversalKeys(int, java.util.Set)](http://docs.google.com/java/awt/Component.html#setFocusTraversalKeys(int,%20java.util.Set)), [Component.getFocusTraversalKeys(int)](http://docs.google.com/java/awt/Component.html#getFocusTraversalKeys(int))

### focusTraversalKeysEnabled

boolean **focusTraversalKeysEnabled**

Indicates whether focus traversal keys are enabled for this Component. Components for which focus traversal keys are disabled receive key events for focus traversal keys. Components for which focus traversal keys are enabled do not see these events; instead, the events are automatically converted to traversal operations.

**Since:** 1.4 **See Also:**[Component.setFocusTraversalKeysEnabled(boolean)](http://docs.google.com/java/awt/Component.html#setFocusTraversalKeysEnabled(boolean)), [Component.getFocusTraversalKeysEnabled()](http://docs.google.com/java/awt/Component.html#getFocusTraversalKeysEnabled())

### minSize

[Dimension](http://docs.google.com/java/awt/Dimension.html) **minSize**

Minimum size. (This field perhaps should have been transient).

### minSizeSet

boolean **minSizeSet**

Whether or not setMinimumSize has been invoked with a non-null value.

### prefSize

[Dimension](http://docs.google.com/java/awt/Dimension.html) **prefSize**

Preferred size. (This field perhaps should have been transient).

### prefSizeSet

boolean **prefSizeSet**

Whether or not setPreferredSize has been invoked with a non-null value.

### maxSize

[Dimension](http://docs.google.com/java/awt/Dimension.html) **maxSize**

Maximum size

### maxSizeSet

boolean **maxSizeSet**

Whether or not setMaximumSize has been invoked with a non-null value.

### newEventsOnly

boolean **newEventsOnly**

newEventsOnly will be true if the event is one of the event types enabled for the component. It will then allow for normal processing to continue. If it is false the event is passed to the component's parent and up the ancestor tree until the event has been consumed.

**See Also:**[Component.dispatchEvent(java.awt.AWTEvent)](http://docs.google.com/java/awt/Component.html#dispatchEvent(java.awt.AWTEvent))

### eventMask

long **eventMask**

The eventMask is ONLY set by subclasses via enableEvents. The mask should NOT be set when listeners are registered so that we can distinguish the difference between when listeners request events and subclasses request them. One bit is used to indicate whether input methods are enabled; this bit is set by enableInputMethods and is on by default.

**See Also:**[Component.enableInputMethods(boolean)](http://docs.google.com/java/awt/Component.html#enableInputMethods(boolean)), [AWTEvent](http://docs.google.com/java/awt/AWTEvent.html)

### changeSupport

[PropertyChangeSupport](http://docs.google.com/java/beans/PropertyChangeSupport.html) **changeSupport**

If any PropertyChangeListeners have been registered, the changeSupport field describes them.

**Since:** 1.2 **See Also:**[Component.addPropertyChangeListener(java.beans.PropertyChangeListener)](http://docs.google.com/java/awt/Component.html#addPropertyChangeListener(java.beans.PropertyChangeListener)), [Component.removePropertyChangeListener(java.beans.PropertyChangeListener)](http://docs.google.com/java/awt/Component.html#removePropertyChangeListener(java.beans.PropertyChangeListener)), [Component.firePropertyChange(java.lang.String, java.lang.Object, java.lang.Object)](http://docs.google.com/java/awt/Component.html#firePropertyChange(java.lang.String,%20java.lang.Object,%20java.lang.Object))

### isPacked

boolean **isPacked**

### boundsOp

int **boundsOp**

Pseudoparameter for direct Geometry API (setLocation, setBounds setSize to signal setBounds what's changing. Should be used under TreeLock. This is only needed due to the inability to change the cross-calling order of public and deprecated methods.

### componentSerializedDataVersion

int **componentSerializedDataVersion**

Component Serialized Data Version.

### accessibleContext

[AccessibleContext](http://docs.google.com/javax/accessibility/AccessibleContext.html) **accessibleContext**

| **Class** [**java.awt.Component.AccessibleAWTComponent**](http://docs.google.com/java/awt/Component.AccessibleAWTComponent.html) **extends** [**AccessibleContext**](http://docs.google.com/javax/accessibility/AccessibleContext.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**642321655757800191L

| **Serialized Fields** |
| --- |

### accessibleAWTComponentHandler

[ComponentListener](http://docs.google.com/java/awt/event/ComponentListener.html) **accessibleAWTComponentHandler**

### accessibleAWTFocusHandler

[FocusListener](http://docs.google.com/java/awt/event/FocusListener.html) **accessibleAWTFocusHandler**

| **Class** [**java.awt.ComponentOrientation**](http://docs.google.com/java/awt/ComponentOrientation.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4113291392143563828L

| **Serialized Fields** |
| --- |

### orientation

int **orientation**

| **Class** [**java.awt.Container**](http://docs.google.com/java/awt/Container.html) **extends** [**Component**](http://docs.google.com/java/awt/Component.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4613797578919906343L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html)

Deserializes this Container from the specified ObjectInputStream.

* Reads default serializable fields from the stream.
* Reads a list of serializable ContainerListener(s) as optional data. If the list is null, no Listeners are installed.
* Reads this Container's FocusTraversalPolicy, which may be null, as optional data.

**Throws:** [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[Container.addContainerListener(java.awt.event.ContainerListener)](http://docs.google.com/java/awt/Container.html#addContainerListener(java.awt.event.ContainerListener)), [Container.writeObject(ObjectOutputStream)](http://docs.google.com/java/awt/Container.html#writeObject(java.io.ObjectOutputStream))

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serializes this Container to the specified ObjectOutputStream.

* Writes default serializable fields to the stream.
* Writes a list of serializable ContainerListener(s) as optional data. The non-serializable ContainerListner(s) are detected and no attempt is made to serialize them.
* Write this Container's FocusTraversalPolicy if and only if it is Serializable; otherwise, null is written.

**Serial Data:** null terminated sequence of 0 or more pairs; the pair consists of a String and Object; the String indicates the type of object and is one of the following: containerListenerK indicating an ContainerListener object; the Container's FocusTraversalPolicy, or null **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[AWTEventMulticaster.save(java.io.ObjectOutputStream, java.lang.String, java.util.EventListener)](http://docs.google.com/java/awt/AWTEventMulticaster.html#save(java.io.ObjectOutputStream,%20java.lang.String,%20java.util.EventListener)), [Component.containerListenerK](http://docs.google.com/java/awt/Component.html#containerListenerK), [Container.readObject(ObjectInputStream)](http://docs.google.com/java/awt/Container.html#readObject(java.io.ObjectInputStream))

| **Serialized Fields** |
| --- |

### component

Component[] **component**

The components in this container.

### containerSerializedDataVersion

int **containerSerializedDataVersion**

Container Serial Data Version.

### dispatcher

java.awt.LightweightDispatcher **dispatcher**

Event router for lightweight components. If this container is native, this dispatcher takes care of forwarding and retargeting the events to lightweight components contained (if any).

### focusCycleRoot

boolean **focusCycleRoot**

Indicates whether this Component is the root of a focus traversal cycle. Once focus enters a traversal cycle, typically it cannot leave it via focus traversal unless one of the up- or down-cycle keys is pressed. Normal traversal is limited to this Container, and all of this Container's descendants that are not descendants of inferior focus cycle roots.

### focusTraversalPolicyProvider

boolean **focusTraversalPolicyProvider**

Stores the value of focusTraversalPolicyProvider property.

### layoutMgr

[LayoutManager](http://docs.google.com/java/awt/LayoutManager.html) **layoutMgr**

Layout manager for this container.

### maxSize

[Dimension](http://docs.google.com/java/awt/Dimension.html) **maxSize**

Maximum size of this Container.

### ncomponents

int **ncomponents**

The number of components in this container. This value can be null.

| **Class** [**java.awt.Container.AccessibleAWTContainer**](http://docs.google.com/java/awt/Container.AccessibleAWTContainer.html) **extends** [**Component.AccessibleAWTComponent**](http://docs.google.com/java/awt/Component.AccessibleAWTComponent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5081320404842566097L

| **Serialized Fields** |
| --- |

### accessibleContainerHandler

[ContainerListener](http://docs.google.com/java/awt/event/ContainerListener.html) **accessibleContainerHandler**

| **Class** [**java.awt.ContainerOrderFocusTraversalPolicy**](http://docs.google.com/java/awt/ContainerOrderFocusTraversalPolicy.html) **extends** [**FocusTraversalPolicy**](http://docs.google.com/java/awt/FocusTraversalPolicy.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**486933713763926351L

| **Serialized Fields** |
| --- |

### implicitDownCycleTraversal

boolean **implicitDownCycleTraversal**

| **Class** [**java.awt.Cursor**](http://docs.google.com/java/awt/Cursor.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8028237497568985504L

| **Serialized Fields** |
| --- |

### type

int **type**

The chosen cursor type initially set to the DEFAULT\_CURSOR.

**See Also:**[Cursor.getType()](http://docs.google.com/java/awt/Cursor.html#getType())

### name

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

The user-visible name of the cursor.

**See Also:**[Cursor.getName()](http://docs.google.com/java/awt/Cursor.html#getName())

| **Class** [**java.awt.DefaultFocusTraversalPolicy**](http://docs.google.com/java/awt/DefaultFocusTraversalPolicy.html) **extends** [**ContainerOrderFocusTraversalPolicy**](http://docs.google.com/java/awt/ContainerOrderFocusTraversalPolicy.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8876966522510157497L

| **Class** [**java.awt.Dialog**](http://docs.google.com/java/awt/Dialog.html) **extends** [**Window**](http://docs.google.com/java/awt/Window.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5920926903803293709L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html),  
 [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html)

**Throws:** [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html) [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html)

| **Serialized Fields** |
| --- |

### resizable

boolean **resizable**

A dialog's resizable property. Will be true if the Dialog is to be resizable, otherwise it will be false.

**See Also:**[Dialog.setResizable(boolean)](http://docs.google.com/java/awt/Dialog.html#setResizable(boolean))

### undecorated

boolean **undecorated**

This field indicates whether the dialog is undecorated. This property can only be changed while the dialog is not displayable. undecorated will be true if the dialog is undecorated, otherwise it will be false.

**Since:** 1.4 **See Also:**[Dialog.setUndecorated(boolean)](http://docs.google.com/java/awt/Dialog.html#setUndecorated(boolean)), [Dialog.isUndecorated()](http://docs.google.com/java/awt/Dialog.html#isUndecorated()), [Component.isDisplayable()](http://docs.google.com/java/awt/Component.html#isDisplayable())

### modal

boolean **modal**

True if this dialog is modal, false is the dialog is modeless. A modal dialog blocks user input to some application top-level windows. This field is kept only for backwards compatibility. Use the [ModalityType](http://docs.google.com/java/awt/Dialog.ModalityType.html) enum instead.

**See Also:**[Dialog.isModal()](http://docs.google.com/java/awt/Dialog.html#isModal()), [Dialog.setModal(boolean)](http://docs.google.com/java/awt/Dialog.html#setModal(boolean)), [Dialog.getModalityType()](http://docs.google.com/java/awt/Dialog.html#getModalityType()), [Dialog.setModalityType(java.awt.Dialog.ModalityType)](http://docs.google.com/java/awt/Dialog.html#setModalityType(java.awt.Dialog.ModalityType)), [Dialog.ModalityType](http://docs.google.com/java/awt/Dialog.ModalityType.html), [Dialog.ModalityType.MODELESS](http://docs.google.com/java/awt/Dialog.ModalityType.html#MODELESS), [Dialog.DEFAULT\_MODALITY\_TYPE](http://docs.google.com/java/awt/Dialog.html#DEFAULT_MODALITY_TYPE)

### modalityType

[Dialog.ModalityType](http://docs.google.com/java/awt/Dialog.ModalityType.html) **modalityType**

Modality type of this dialog. If the dialog's modality type is not [ModalityType.MODELESS](http://docs.google.com/java/awt/Dialog.ModalityType.html#MODELESS), it blocks all user input to some application top-level windows.

**Since:** 1.6 **See Also:**[Dialog.ModalityType](http://docs.google.com/java/awt/Dialog.ModalityType.html), [Dialog.getModalityType()](http://docs.google.com/java/awt/Dialog.html#getModalityType()), [Dialog.setModalityType(java.awt.Dialog.ModalityType)](http://docs.google.com/java/awt/Dialog.html#setModalityType(java.awt.Dialog.ModalityType))

### title

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

Specifies the title of the Dialog. This field can be null.

**See Also:**[Dialog.getTitle()](http://docs.google.com/java/awt/Dialog.html#getTitle()), [Dialog.setTitle(String)](http://docs.google.com/java/awt/Dialog.html#setTitle(java.lang.String))

| **Class** [**java.awt.Dialog.AccessibleAWTDialog**](http://docs.google.com/java/awt/Dialog.AccessibleAWTDialog.html) **extends** [**Window.AccessibleAWTWindow**](http://docs.google.com/java/awt/Window.AccessibleAWTWindow.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4837230331833941201L

| **Class** [**java.awt.Dimension**](http://docs.google.com/java/awt/Dimension.html) **extends** [**Dimension2D**](http://docs.google.com/java/awt/geom/Dimension2D.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4723952579491349524L

| **Serialized Fields** |
| --- |

### width

int **width**

The width dimension; negative values can be used.

**Since:** 1.0 **See Also:**[Dimension.getSize()](http://docs.google.com/java/awt/Dimension.html#getSize()), [Dimension.setSize(double, double)](http://docs.google.com/java/awt/Dimension.html#setSize(double,%20double))

### height

int **height**

The height dimension; negative values can be used.

**Since:** 1.0 **See Also:**[Dimension.getSize()](http://docs.google.com/java/awt/Dimension.html#getSize()), [Dimension.setSize(double, double)](http://docs.google.com/java/awt/Dimension.html#setSize(double,%20double))

| **Class** [**java.awt.Event**](http://docs.google.com/java/awt/Event.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5488922509400504703L

| **Serialized Fields** |
| --- |

### target

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

The target component. This indicates the component over which the event occurred or with which the event is associated. This object has been replaced by AWTEvent.getSource()

**See Also:**[EventObject.getSource()](http://docs.google.com/java/util/EventObject.html#getSource())

### when

long **when**

The time stamp. Replaced by InputEvent.getWhen().

**See Also:**[InputEvent.getWhen()](http://docs.google.com/java/awt/event/InputEvent.html#getWhen())

### id

int **id**

Indicates which type of event the event is, and which other Event variables are relevant for the event. This has been replaced by AWTEvent.getID()

**See Also:**[AWTEvent.getID()](http://docs.google.com/java/awt/AWTEvent.html#getID())

### x

int **x**

The *x* coordinate of the event. Replaced by MouseEvent.getX()

**See Also:**[MouseEvent.getX()](http://docs.google.com/java/awt/event/MouseEvent.html#getX())

### y

int **y**

The *y* coordinate of the event. Replaced by MouseEvent.getY()

**See Also:**[MouseEvent.getY()](http://docs.google.com/java/awt/event/MouseEvent.html#getY())

### key

int **key**

The key code of the key that was pressed in a keyboard event. This has been replaced by KeyEvent.getKeyCode()

**See Also:**[KeyEvent.getKeyCode()](http://docs.google.com/java/awt/event/KeyEvent.html#getKeyCode())

### modifiers

int **modifiers**

The state of the modifier keys. This is replaced with InputEvent.getModifiers() In java 1.1 MouseEvent and KeyEvent are subclasses of InputEvent.

**See Also:**[InputEvent.getModifiers()](http://docs.google.com/java/awt/event/InputEvent.html#getModifiers())

### clickCount

int **clickCount**

For MOUSE\_DOWN events, this field indicates the number of consecutive clicks. For other events, its value is 0. This field has been replaced by MouseEvent.getClickCount().

**See Also:**[MouseEvent.getClickCount().](http://docs.google.com/java/awt/event/MouseEvent.html#getClickCount())

### arg

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

An arbitrary argument of the event. The value of this field depends on the type of event. arg has been replaced by event specific property.

### evt

[Event](http://docs.google.com/java/awt/Event.html) **evt**

The next event. This field is set when putting events into a linked list. This has been replaced by EventQueue.

**See Also:**[EventQueue](http://docs.google.com/java/awt/EventQueue.html)

### consumed

boolean **consumed**

This field controls whether or not the event is sent back down to the peer once the target has processed it - false means it's sent to the peer, true means it's not.

**See Also:**[Event.isConsumed()](http://docs.google.com/java/awt/Event.html#isConsumed())

| **Class** [**java.awt.FileDialog**](http://docs.google.com/java/awt/FileDialog.html) **extends** [**Dialog**](http://docs.google.com/java/awt/Dialog.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5035145889651310422L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html)

Reads the ObjectInputStream and performs a backwards compatibility check by converting either a dir or a file equal to an empty string to null.

**Throws:** [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### mode

int **mode**

### dir

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

### file

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

### filter

[FilenameFilter](http://docs.google.com/java/io/FilenameFilter.html) **filter**

| **Class** [**java.awt.FlowLayout**](http://docs.google.com/java/awt/FlowLayout.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7262534875583282631L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) stream)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reads this object out of a serialization stream, handling objects written by older versions of the class that didn't contain all of the fields we use now..

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

| **Serialized Fields** |
| --- |

### align

int **align**

align is the property that determines how each row distributes empty space. It can be one of the following values:

LEFT RIGHT CENTER LEADING TRAILING

**See Also:**[FlowLayout.getAlignment()](http://docs.google.com/java/awt/FlowLayout.html#getAlignment()), [FlowLayout.setAlignment(int)](http://docs.google.com/java/awt/FlowLayout.html#setAlignment(int))

### newAlign

int **newAlign**

newAlign is the property that determines how each row distributes empty space for the Java 2 platform, v1.2 and greater. It can be one of the following three values:

LEFT RIGHT CENTER LEADING TRAILING

**Since:** 1.2 **See Also:**[FlowLayout.getAlignment()](http://docs.google.com/java/awt/FlowLayout.html#getAlignment()), [FlowLayout.setAlignment(int)](http://docs.google.com/java/awt/FlowLayout.html#setAlignment(int))

### hgap

int **hgap**

The flow layout manager allows a seperation of components with gaps. The horizontal gap will specify the space between components and between the components and the borders of the Container.

**See Also:**[FlowLayout.getHgap()](http://docs.google.com/java/awt/FlowLayout.html#getHgap()), [FlowLayout.setHgap(int)](http://docs.google.com/java/awt/FlowLayout.html#setHgap(int))

### vgap

int **vgap**

The flow layout manager allows a seperation of components with gaps. The vertical gap will specify the space between rows and between the the rows and the borders of the Container.

**See Also:**[FlowLayout.getHgap()](http://docs.google.com/java/awt/FlowLayout.html#getHgap()), [FlowLayout.setHgap(int)](http://docs.google.com/java/awt/FlowLayout.html#setHgap(int))

### alignOnBaseline

boolean **alignOnBaseline**

If true, components will be aligned on their baseline.

### serialVersionOnStream

int **serialVersionOnStream**

This represent the currentSerialVersion which is bein used. It will be one of two values : 0 versions before Java 2 platform v1.2.. 1 versions after Java 2 platform v1.2..

**Since:** 1.2

| **Class** [**java.awt.Font**](http://docs.google.com/java/awt/Font.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4206021311591459213L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html)

Reads the ObjectInputStream. Unrecognized keys or values will be ignored.

**Throws:** [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[Font.writeObject(java.io.ObjectOutputStream)](http://docs.google.com/java/awt/Font.html#writeObject(java.io.ObjectOutputStream))

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html)

Writes default serializable fields to a stream.

**Throws:** [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[AWTEventMulticaster.save(ObjectOutputStream, String, EventListener)](http://docs.google.com/java/awt/AWTEventMulticaster.html#save(java.io.ObjectOutputStream,%20java.lang.String,%20java.util.EventListener)), [Font.readObject(java.io.ObjectInputStream)](http://docs.google.com/java/awt/Font.html#readObject(java.io.ObjectInputStream))

| **Serialized Fields** |
| --- |

### fRequestedAttributes

[Hashtable](http://docs.google.com/java/util/Hashtable.html)<[K](http://docs.google.com/java/util/Hashtable.html),[V](http://docs.google.com/java/util/Hashtable.html)> **fRequestedAttributes**

This is now only used during serialization. Typically it is null.

**See Also:**[Font.getAttributes()](http://docs.google.com/java/awt/Font.html#getAttributes())

### name

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

The logical name of this Font, as passed to the constructor.

**Since:** JDK1.0 **See Also:**[Font.getName()](http://docs.google.com/java/awt/Font.html#getName())

### style

int **style**

The style of this Font, as passed to the constructor. This style can be PLAIN, BOLD, ITALIC, or BOLD+ITALIC.

**Since:** JDK1.0 **See Also:**[Font.getStyle()](http://docs.google.com/java/awt/Font.html#getStyle())

### size

int **size**

The point size of this Font, rounded to integer.

**Since:** JDK1.0 **See Also:**[Font.getSize()](http://docs.google.com/java/awt/Font.html#getSize())

### pointSize

float **pointSize**

The point size of this Font in float.

**See Also:**[Font.getSize()](http://docs.google.com/java/awt/Font.html#getSize()), [Font.getSize2D()](http://docs.google.com/java/awt/Font.html#getSize2D())

### fontSerializedDataVersion

int **fontSerializedDataVersion**

The Font Serializable Data Form.

| **Class** [**java.awt.FontFormatException**](http://docs.google.com/java/awt/FontFormatException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4481290147811361272L

| **Class** [**java.awt.FontMetrics**](http://docs.google.com/java/awt/FontMetrics.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1681126225205050147L

| **Serialized Fields** |
| --- |

### font

[Font](http://docs.google.com/java/awt/Font.html) **font**

The actual [Font](http://docs.google.com/java/awt/Font.html) from which the font metrics are created. This cannot be null.

**See Also:**[FontMetrics.getFont()](http://docs.google.com/java/awt/FontMetrics.html#getFont())

| **Class** [**java.awt.Frame**](http://docs.google.com/java/awt/Frame.html) **extends** [**Window**](http://docs.google.com/java/awt/Window.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2673458971256075116L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html),  
 [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html)

Reads the ObjectInputStream. Tries to read an icon Image, which is optional data available as of 1.4. If an icon Image is not available, but anything other than an EOF is detected, an OptionalDataException will be thrown. Unrecognized keys or values will be ignored.

**Throws:** [OptionalDataException](http://docs.google.com/java/io/OptionalDataException.html) - if an icon Image is not available, but anything other than an EOF is detected [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html) - if GraphicsEnvironment.isHeadless returns true [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[GraphicsEnvironment.isHeadless()](http://docs.google.com/java/awt/GraphicsEnvironment.html#isHeadless()), [Image](http://docs.google.com/java/awt/Image.html), [Frame.getIconImage()](http://docs.google.com/java/awt/Frame.html#getIconImage()), [Frame.setIconImage(Image)](http://docs.google.com/java/awt/Frame.html#setIconImage(java.awt.Image)), [Frame.writeObject(ObjectOutputStream)](http://docs.google.com/java/awt/Frame.html#writeObject(java.io.ObjectOutputStream))

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Writes default serializable fields to stream. Writes an optional serializable icon Image, which is available as of 1.4.

**Serial Data:** an optional icon Image **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[Image](http://docs.google.com/java/awt/Image.html), [Frame.getIconImage()](http://docs.google.com/java/awt/Frame.html#getIconImage()), [Frame.setIconImage(Image)](http://docs.google.com/java/awt/Frame.html#setIconImage(java.awt.Image)), [Frame.readObject(ObjectInputStream)](http://docs.google.com/java/awt/Frame.html#readObject(java.io.ObjectInputStream))

| **Serialized Fields** |
| --- |

### maximizedBounds

[Rectangle](http://docs.google.com/java/awt/Rectangle.html) **maximizedBounds**

Maximized bounds for this frame.

**Since:** 1.4 **See Also:**[Frame.setMaximizedBounds(Rectangle)](http://docs.google.com/java/awt/Frame.html#setMaximizedBounds(java.awt.Rectangle)), [Frame.getMaximizedBounds()](http://docs.google.com/java/awt/Frame.html#getMaximizedBounds())

### title

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

This is the title of the frame. It can be changed at any time. title can be null and if this is the case the title = "".

**See Also:**[Frame.getTitle()](http://docs.google.com/java/awt/Frame.html#getTitle()), [Frame.setTitle(String)](http://docs.google.com/java/awt/Frame.html#setTitle(java.lang.String))

### menuBar

[MenuBar](http://docs.google.com/java/awt/MenuBar.html) **menuBar**

The frames menubar. If menuBar = null the frame will not have a menubar.

**See Also:**[Frame.getMenuBar()](http://docs.google.com/java/awt/Frame.html#getMenuBar()), [Frame.setMenuBar(MenuBar)](http://docs.google.com/java/awt/Frame.html#setMenuBar(java.awt.MenuBar))

### resizable

boolean **resizable**

This field indicates whether the frame is resizable. This property can be changed at any time. resizable will be true if the frame is resizable, otherwise it will be false.

**See Also:**[Frame.isResizable()](http://docs.google.com/java/awt/Frame.html#isResizable())

### undecorated

boolean **undecorated**

This field indicates whether the frame is undecorated. This property can only be changed while the frame is not displayable. undecorated will be true if the frame is undecorated, otherwise it will be false.

**Since:** 1.4 **See Also:**[Frame.setUndecorated(boolean)](http://docs.google.com/java/awt/Frame.html#setUndecorated(boolean)), [Frame.isUndecorated()](http://docs.google.com/java/awt/Frame.html#isUndecorated()), [Component.isDisplayable()](http://docs.google.com/java/awt/Component.html#isDisplayable())

### mbManagement

boolean **mbManagement**

mbManagement is only used by the Motif implementation.

### state

int **state**

### ownedWindows

[Vector](http://docs.google.com/java/util/Vector.html)<[E](http://docs.google.com/java/util/Vector.html)> **ownedWindows**

### frameSerializedDataVersion

int **frameSerializedDataVersion**

Frame's Serialized Data Version.

| **Class** [**java.awt.Frame.AccessibleAWTFrame**](http://docs.google.com/java/awt/Frame.AccessibleAWTFrame.html) **extends** [**Window.AccessibleAWTWindow**](http://docs.google.com/java/awt/Window.AccessibleAWTWindow.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-6172960752956030250L

| **Class** [**java.awt.GraphicsConfigTemplate**](http://docs.google.com/java/awt/GraphicsConfigTemplate.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8061369279557787079L

| **Class** [**java.awt.GridBagConstraints**](http://docs.google.com/java/awt/GridBagConstraints.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1000070633030801713L

| **Serialized Fields** |
| --- |

### gridx

int **gridx**

Specifies the cell containing the leading edge of the component's display area, where the first cell in a row has gridx=0. The leading edge of a component's display area is its left edge for a horizontal, left-to-right container and its right edge for a horizontal, right-to-left container. The value RELATIVE specifies that the component be placed immediately following the component that was added to the container just before this component was added.

The default value is RELATIVE. gridx should be a non-negative value.

**See Also:**[GridBagConstraints.clone()](http://docs.google.com/java/awt/GridBagConstraints.html#clone()), [GridBagConstraints.gridy](http://docs.google.com/java/awt/GridBagConstraints.html#gridy), [ComponentOrientation](http://docs.google.com/java/awt/ComponentOrientation.html)

### gridy

int **gridy**

Specifies the cell at the top of the component's display area, where the topmost cell has gridy=0. The value RELATIVE specifies that the component be placed just below the component that was added to the container just before this component was added.

The default value is RELATIVE. gridy should be a non-negative value.

**See Also:**[GridBagConstraints.clone()](http://docs.google.com/java/awt/GridBagConstraints.html#clone()), [GridBagConstraints.gridx](http://docs.google.com/java/awt/GridBagConstraints.html#gridx)

### gridwidth

int **gridwidth**

Specifies the number of cells in a row for the component's display area.

Use REMAINDER to specify that the component's display area will be from gridx to the last cell in the row. Use RELATIVE to specify that the component's display area will be from gridx to the next to the last one in its row.

gridwidth should be non-negative and the default value is 1.

**See Also:**[GridBagConstraints.clone()](http://docs.google.com/java/awt/GridBagConstraints.html#clone()), [GridBagConstraints.gridheight](http://docs.google.com/java/awt/GridBagConstraints.html#gridheight)

### gridheight

int **gridheight**

Specifies the number of cells in a column for the component's display area.

Use REMAINDER to specify that the component's display area will be from gridy to the last cell in the column. Use RELATIVE to specify that the component's display area will be from gridy to the next to the last one in its column.

gridheight should be a non-negative value and the default value is 1.

**See Also:**[GridBagConstraints.clone()](http://docs.google.com/java/awt/GridBagConstraints.html#clone()), [GridBagConstraints.gridwidth](http://docs.google.com/java/awt/GridBagConstraints.html#gridwidth)

### weightx

double **weightx**

Specifies how to distribute extra horizontal space.

The grid bag layout manager calculates the weight of a column to be the maximum weightx of all the components in a column. If the resulting layout is smaller horizontally than the area it needs to fill, the extra space is distributed to each column in proportion to its weight. A column that has a weight of zero receives no extra space.

If all the weights are zero, all the extra space appears between the grids of the cell and the left and right edges.

The default value of this field is 0. weightx should be a non-negative value.

**See Also:**[GridBagConstraints.clone()](http://docs.google.com/java/awt/GridBagConstraints.html#clone()), [GridBagConstraints.weighty](http://docs.google.com/java/awt/GridBagConstraints.html#weighty)

### weighty

double **weighty**

Specifies how to distribute extra vertical space.

The grid bag layout manager calculates the weight of a row to be the maximum weighty of all the components in a row. If the resulting layout is smaller vertically than the area it needs to fill, the extra space is distributed to each row in proportion to its weight. A row that has a weight of zero receives no extra space.

If all the weights are zero, all the extra space appears between the grids of the cell and the top and bottom edges.

The default value of this field is 0. weighty should be a non-negative value.

**See Also:**[GridBagConstraints.clone()](http://docs.google.com/java/awt/GridBagConstraints.html#clone()), [GridBagConstraints.weightx](http://docs.google.com/java/awt/GridBagConstraints.html#weightx)

### anchor

int **anchor**

This field is used when the component is smaller than its display area. It determines where, within the display area, to place the component.

There are three kinds of possible values: orientation relative, baseline relative and absolute. Orientation relative values are interpreted relative to the container's component orientation property, baseline relative values are interpreted relative to the baseline and absolute values are not. The absolute values are: CENTER, NORTH, NORTHEAST, EAST, SOUTHEAST, SOUTH, SOUTHWEST, WEST, and NORTHWEST. The orientation relative values are: PAGE\_START, PAGE\_END, LINE\_START, LINE\_END, FIRST\_LINE\_START, FIRST\_LINE\_END, LAST\_LINE\_START and LAST\_LINE\_END. The baseline relvative values are: BASELINE, BASELINE\_LEADING, BASELINE\_TRAILING, ABOVE\_BASELINE, ABOVE\_BASELINE\_LEADING, ABOVE\_BASELINE\_TRAILING, BELOW\_BASELINE, BELOW\_BASELINE\_LEADING, and BELOW\_BASELINE\_TRAILING. The default value is CENTER.

**See Also:**[GridBagConstraints.clone()](http://docs.google.com/java/awt/GridBagConstraints.html#clone()), [ComponentOrientation](http://docs.google.com/java/awt/ComponentOrientation.html)

### fill

int **fill**

This field is used when the component's display area is larger than the component's requested size. It determines whether to resize the component, and if so, how.

The following values are valid for fill:

* NONE: Do not resize the component.
* HORIZONTAL: Make the component wide enough to fill its display area horizontally, but do not change its height.
* VERTICAL: Make the component tall enough to fill its display area vertically, but do not change its width.
* BOTH: Make the component fill its display area entirely.

The default value is NONE.

**See Also:**[GridBagConstraints.clone()](http://docs.google.com/java/awt/GridBagConstraints.html#clone())

### insets

[Insets](http://docs.google.com/java/awt/Insets.html) **insets**

This field specifies the external padding of the component, the minimum amount of space between the component and the edges of its display area.

The default value is new Insets(0, 0, 0, 0).

**See Also:**[GridBagConstraints.clone()](http://docs.google.com/java/awt/GridBagConstraints.html#clone())

### ipadx

int **ipadx**

This field specifies the internal padding of the component, how much space to add to the minimum width of the component. The width of the component is at least its minimum width plus ipadx pixels.

The default value is 0.

**See Also:**[GridBagConstraints.clone()](http://docs.google.com/java/awt/GridBagConstraints.html#clone()), [GridBagConstraints.ipady](http://docs.google.com/java/awt/GridBagConstraints.html#ipady)

### ipady

int **ipady**

This field specifies the internal padding, that is, how much space to add to the minimum height of the component. The height of the component is at least its minimum height plus ipady pixels.

The default value is 0.

**See Also:**[GridBagConstraints.clone()](http://docs.google.com/java/awt/GridBagConstraints.html#clone()), [GridBagConstraints.ipadx](http://docs.google.com/java/awt/GridBagConstraints.html#ipadx)

### tempX

int **tempX**

Temporary place holder for the x coordinate.

### tempY

int **tempY**

Temporary place holder for the y coordinate.

### tempWidth

int **tempWidth**

Temporary place holder for the Width of the component.

### tempHeight

int **tempHeight**

Temporary place holder for the Height of the component.

### minWidth

int **minWidth**

The minimum width of the component. It is used to calculate ipady, where the default will be 0.

**See Also:**[GridBagConstraints.ipady](http://docs.google.com/java/awt/GridBagConstraints.html#ipady)

### minHeight

int **minHeight**

The minimum height of the component. It is used to calculate ipadx, where the default will be 0.

**See Also:**[GridBagConstraints.ipadx](http://docs.google.com/java/awt/GridBagConstraints.html#ipadx)

| **Class** [**java.awt.GridBagLayout**](http://docs.google.com/java/awt/GridBagLayout.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8838754796412211005L

| **Serialized Fields** |
| --- |

### comptable

[Hashtable](http://docs.google.com/java/util/Hashtable.html)<[K](http://docs.google.com/java/util/Hashtable.html),[V](http://docs.google.com/java/util/Hashtable.html)> **comptable**

This hashtable maintains the association between a component and its gridbag constraints. The Keys in comptable are the components and the values are the instances of GridBagConstraints.

**See Also:**[GridBagConstraints](http://docs.google.com/java/awt/GridBagConstraints.html)

### defaultConstraints

[GridBagConstraints](http://docs.google.com/java/awt/GridBagConstraints.html) **defaultConstraints**

This field holds a gridbag constraints instance containing the default values, so if a component does not have gridbag constraints associated with it, then the component will be assigned a copy of the defaultConstraints.

**See Also:**[GridBagLayout.getConstraints(Component)](http://docs.google.com/java/awt/GridBagLayout.html#getConstraints(java.awt.Component)), [GridBagLayout.setConstraints(Component, GridBagConstraints)](http://docs.google.com/java/awt/GridBagLayout.html#setConstraints(java.awt.Component,%20java.awt.GridBagConstraints)), [GridBagLayout.lookupConstraints(Component)](http://docs.google.com/java/awt/GridBagLayout.html#lookupConstraints(java.awt.Component))

### layoutInfo

[GridBagLayoutInfo](http://docs.google.com/java/awt/GridBagLayoutInfo.html) **layoutInfo**

This field holds the layout information for the gridbag. The information in this field is based on the most recent validation of the gridbag. If layoutInfo is null this indicates that there are no components in the gridbag or if there are components, they have not yet been validated.

**See Also:**[GridBagLayout.getLayoutInfo(Container, int)](http://docs.google.com/java/awt/GridBagLayout.html#getLayoutInfo(java.awt.Container,%20int))

### columnWidths

int[] **columnWidths**

This field holds the overrides to the column minimum width. If this field is non-null the values are applied to the gridbag after all of the minimum columns widths have been calculated. If columnWidths has more elements than the number of columns, columns are added to the gridbag to match the number of elements in columnWidth.

**See Also:**[GridBagLayout.getLayoutDimensions()](http://docs.google.com/java/awt/GridBagLayout.html#getLayoutDimensions())

### rowHeights

int[] **rowHeights**

This field holds the overrides to the row minimum heights. If this field is non-null the values are applied to the gridbag after all of the minimum row heights have been calculated. If rowHeights has more elements than the number of rows, rowa are added to the gridbag to match the number of elements in rowHeights.

**See Also:**[GridBagLayout.getLayoutDimensions()](http://docs.google.com/java/awt/GridBagLayout.html#getLayoutDimensions())

### columnWeights

double[] **columnWeights**

This field holds the overrides to the column weights. If this field is non-null the values are applied to the gridbag after all of the columns weights have been calculated. If columnWeights[i] > weight for column i, then column i is assigned the weight in columnWeights[i]. If columnWeights has more elements than the number of columns, the excess elements are ignored - they do not cause more columns to be created.

### rowWeights

double[] **rowWeights**

This field holds the overrides to the row weights. If this field is non-null the values are applied to the gridbag after all of the rows weights have been calculated. If rowWeights[i] > weight for row i, then row i is assigned the weight in rowWeights[i]. If rowWeights has more elements than the number of rows, the excess elements are ignored - they do not cause more rows to be created.

### componentAdjusting

[Component](http://docs.google.com/java/awt/Component.html) **componentAdjusting**

The component being positioned. This is set before calling into adjustForGravity.

| **Class** [**java.awt.GridBagLayoutInfo**](http://docs.google.com/java/awt/GridBagLayoutInfo.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4899416460737170217L

| **Serialized Fields** |
| --- |

### width

int **width**

### height

int **height**

### startx

int **startx**

### starty

int **starty**

### minWidth

int[] **minWidth**

### minHeight

int[] **minHeight**

### weightX

double[] **weightX**

### weightY

double[] **weightY**

### hasBaseline

boolean **hasBaseline**

### baselineType

short[] **baselineType**

### maxAscent

int[] **maxAscent**

### maxDescent

int[] **maxDescent**

| **Class** [**java.awt.GridLayout**](http://docs.google.com/java/awt/GridLayout.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7411804673224730901L

| **Serialized Fields** |
| --- |

### hgap

int **hgap**

This is the horizontal gap (in pixels) which specifies the space between columns. They can be changed at any time. This should be a non-negative integer.

**See Also:**[GridLayout.getHgap()](http://docs.google.com/java/awt/GridLayout.html#getHgap()), [GridLayout.setHgap(int)](http://docs.google.com/java/awt/GridLayout.html#setHgap(int))

### vgap

int **vgap**

This is the vertical gap (in pixels) which specifies the space between rows. They can be changed at any time. This should be a non negative integer.

**See Also:**[GridLayout.getVgap()](http://docs.google.com/java/awt/GridLayout.html#getVgap()), [GridLayout.setVgap(int)](http://docs.google.com/java/awt/GridLayout.html#setVgap(int))

### rows

int **rows**

This is the number of rows specified for the grid. The number of rows can be changed at any time. This should be a non negative integer, where '0' means 'any number' meaning that the number of Rows in that dimension depends on the other dimension.

**See Also:**[GridLayout.getRows()](http://docs.google.com/java/awt/GridLayout.html#getRows()), [GridLayout.setRows(int)](http://docs.google.com/java/awt/GridLayout.html#setRows(int))

### cols

int **cols**

This is the number of columns specified for the grid. The number of columns can be changed at any time. This should be a non negative integer, where '0' means 'any number' meaning that the number of Columns in that dimension depends on the other dimension.

**See Also:**[GridLayout.getColumns()](http://docs.google.com/java/awt/GridLayout.html#getColumns()), [GridLayout.setColumns(int)](http://docs.google.com/java/awt/GridLayout.html#setColumns(int))

| **Class** [**java.awt.HeadlessException**](http://docs.google.com/java/awt/HeadlessException.html) **extends** [**UnsupportedOperationException**](http://docs.google.com/java/lang/UnsupportedOperationException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**167183644944358563L

| **Class** [**java.awt.IllegalComponentStateException**](http://docs.google.com/java/awt/IllegalComponentStateException.html) **extends** [**IllegalStateException**](http://docs.google.com/java/lang/IllegalStateException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1889339587208144238L

| **Class** [**java.awt.Insets**](http://docs.google.com/java/awt/Insets.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2272572637695466749L

| **Serialized Fields** |
| --- |

### top

int **top**

The inset from the top. This value is added to the Top of the rectangle to yield a new location for the Top.

**See Also:**[Insets.clone()](http://docs.google.com/java/awt/Insets.html#clone())

### left

int **left**

The inset from the left. This value is added to the Left of the rectangle to yield a new location for the Left edge.

**See Also:**[Insets.clone()](http://docs.google.com/java/awt/Insets.html#clone())

### bottom

int **bottom**

The inset from the bottom. This value is subtracted from the Bottom of the rectangle to yield a new location for the Bottom.

**See Also:**[Insets.clone()](http://docs.google.com/java/awt/Insets.html#clone())

### right

int **right**

The inset from the right. This value is subtracted from the Right of the rectangle to yield a new location for the Right edge.

**See Also:**[Insets.clone()](http://docs.google.com/java/awt/Insets.html#clone())

| **Class** [**java.awt.Label**](http://docs.google.com/java/awt/Label.html) **extends** [**Component**](http://docs.google.com/java/awt/Component.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3094126758329070636L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html),  
 [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html)

Read a label from an object input stream.

**Throws:** [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html) - if GraphicsEnvironment.isHeadless() returns true [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)**Since:** 1.4 **See Also:**[GraphicsEnvironment.isHeadless()](http://docs.google.com/java/awt/GraphicsEnvironment.html#isHeadless())

| **Serialized Fields** |
| --- |

### text

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

The text of this label. This text can be modified by the program but never by the user.

**See Also:**[Label.getText()](http://docs.google.com/java/awt/Label.html#getText()), [Label.setText(String)](http://docs.google.com/java/awt/Label.html#setText(java.lang.String))

### alignment

int **alignment**

The label's alignment. The default alignment is set to be left justified.

**See Also:**[Label.getAlignment()](http://docs.google.com/java/awt/Label.html#getAlignment()), [Label.setAlignment(int)](http://docs.google.com/java/awt/Label.html#setAlignment(int))

| **Class** [**java.awt.Label.AccessibleAWTLabel**](http://docs.google.com/java/awt/Label.AccessibleAWTLabel.html) **extends** [**Component.AccessibleAWTComponent**](http://docs.google.com/java/awt/Component.AccessibleAWTComponent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3568967560160480438L

| **Class** [**java.awt.List**](http://docs.google.com/java/awt/List.html) **extends** [**Component**](http://docs.google.com/java/awt/Component.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3304312411574666869L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html),  
 [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html)

Reads the ObjectInputStream and if it isn't null adds a listener to receive both item events and action events (as specified by the key stored in the stream) fired by the List. Unrecognized keys or values will be ignored.

**Throws:** [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html) - if GraphicsEnvironment.isHeadless returns true [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[List.removeItemListener(ItemListener)](http://docs.google.com/java/awt/List.html#removeItemListener(java.awt.event.ItemListener)), [List.addItemListener(ItemListener)](http://docs.google.com/java/awt/List.html#addItemListener(java.awt.event.ItemListener)), [GraphicsEnvironment.isHeadless()](http://docs.google.com/java/awt/GraphicsEnvironment.html#isHeadless()), [List.writeObject(ObjectOutputStream)](http://docs.google.com/java/awt/List.html#writeObject(java.io.ObjectOutputStream))

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Writes default serializable fields to stream. Writes a list of serializable ItemListeners and ActionListeners as optional data. The non-serializable listeners are detected and no attempt is made to serialize them.

**Serial Data:** null terminated sequence of 0 or more pairs; the pair consists of a String and an Object; the String indicates the type of object and is one of the following: itemListenerK indicating an ItemListener object; actionListenerK indicating an ActionListener object **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[AWTEventMulticaster.save(ObjectOutputStream, String, EventListener)](http://docs.google.com/java/awt/AWTEventMulticaster.html#save(java.io.ObjectOutputStream,%20java.lang.String,%20java.util.EventListener)), [Component.itemListenerK](http://docs.google.com/java/awt/Component.html#itemListenerK), [Component.actionListenerK](http://docs.google.com/java/awt/Component.html#actionListenerK), [List.readObject(ObjectInputStream)](http://docs.google.com/java/awt/List.html#readObject(java.io.ObjectInputStream))

| **Serialized Fields** |
| --- |

### items

[Vector](http://docs.google.com/java/util/Vector.html)<[E](http://docs.google.com/java/util/Vector.html)> **items**

A vector created to contain items which will become part of the List Component.

**See Also:**[List.addItem(String)](http://docs.google.com/java/awt/List.html#addItem(java.lang.String)), [List.getItem(int)](http://docs.google.com/java/awt/List.html#getItem(int))

### rows

int **rows**

This field will represent the number of visible rows in the List Component. It is specified only once, and that is when the list component is actually created. It will never change.

**See Also:**[List.getRows()](http://docs.google.com/java/awt/List.html#getRows())

### multipleMode

boolean **multipleMode**

multipleMode is a variable that will be set to true if a list component is to be set to multiple selection mode, that is where the user can select more than one item in a list at one time. multipleMode will be set to false if the list component is set to single selection, that is where the user can only select one item on the list at any one time.

**See Also:**[List.isMultipleMode()](http://docs.google.com/java/awt/List.html#isMultipleMode()), [List.setMultipleMode(boolean)](http://docs.google.com/java/awt/List.html#setMultipleMode(boolean))

### selected

int[] **selected**

selected is an array that will contain the indices of items that have been selected.

**See Also:**[List.getSelectedIndexes()](http://docs.google.com/java/awt/List.html#getSelectedIndexes()), [List.getSelectedIndex()](http://docs.google.com/java/awt/List.html#getSelectedIndex())

### visibleIndex

int **visibleIndex**

This variable contains the value that will be used when trying to make a particular list item visible.

**See Also:**[List.makeVisible(int)](http://docs.google.com/java/awt/List.html#makeVisible(int))

### listSerializedDataVersion

int **listSerializedDataVersion**

The List component's Serialized Data Version.

| **Class** [**java.awt.List.AccessibleAWTList**](http://docs.google.com/java/awt/List.AccessibleAWTList.html) **extends** [**Component.AccessibleAWTComponent**](http://docs.google.com/java/awt/Component.AccessibleAWTComponent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7924617370136012829L

| **Class** [**java.awt.List.AccessibleAWTList.AccessibleAWTListChild**](http://docs.google.com/java/awt/List.AccessibleAWTList.AccessibleAWTListChild.html) **extends** [**Component.AccessibleAWTComponent**](http://docs.google.com/java/awt/Component.AccessibleAWTComponent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4412022926028300317L

| **Serialized Fields** |
| --- |

### parent

[List](http://docs.google.com/java/awt/List.html) **parent**

### indexInParent

int **indexInParent**

| **Class** [**java.awt.MediaTracker**](http://docs.google.com/java/awt/MediaTracker.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-483174189758638095L

| **Serialized Fields** |
| --- |

### target

[Component](http://docs.google.com/java/awt/Component.html) **target**

A given Component that will be tracked by a media tracker where the image will eventually be drawn.

**See Also:**[MediaTracker.MediaTracker(Component)](http://docs.google.com/java/awt/MediaTracker.html#MediaTracker(java.awt.Component))

### head

java.awt.MediaEntry **head**

The head of the list of Images that is being tracked by the MediaTracker.

**See Also:**[MediaTracker.addImage(Image, int)](http://docs.google.com/java/awt/MediaTracker.html#addImage(java.awt.Image,%20int)), [MediaTracker.removeImage(Image)](http://docs.google.com/java/awt/MediaTracker.html#removeImage(java.awt.Image))

| **Class** [**java.awt.Menu**](http://docs.google.com/java/awt/Menu.html) **extends** [**MenuItem**](http://docs.google.com/java/awt/MenuItem.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8809584163345499784L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html)

Reads the ObjectInputStream. Unrecognized keys or values will be ignored.

**Throws:** [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html) - if GraphicsEnvironment.isHeadless returns true [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)**See Also:**[GraphicsEnvironment.isHeadless()](http://docs.google.com/java/awt/GraphicsEnvironment.html#isHeadless()), [Menu.writeObject(ObjectOutputStream)](http://docs.google.com/java/awt/Menu.html#writeObject(java.io.ObjectOutputStream))

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Writes default serializable fields to stream.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[AWTEventMulticaster.save(ObjectOutputStream, String, EventListener)](http://docs.google.com/java/awt/AWTEventMulticaster.html#save(java.io.ObjectOutputStream,%20java.lang.String,%20java.util.EventListener)), [Menu.readObject(ObjectInputStream)](http://docs.google.com/java/awt/Menu.html#readObject(java.io.ObjectInputStream))

| **Serialized Fields** |
| --- |

### items

[Vector](http://docs.google.com/java/util/Vector.html)<[E](http://docs.google.com/java/util/Vector.html)> **items**

A vector of the items that will be part of the Menu.

**See Also:**[Menu.countItems()](http://docs.google.com/java/awt/Menu.html#countItems())

### tearOff

boolean **tearOff**

This field indicates whether the menu has the tear of property or not. It will be set to true if the menu has the tear off property and it will be set to false if it does not. A torn off menu can be deleted by a user when it is no longer needed.

**See Also:**[Menu.isTearOff()](http://docs.google.com/java/awt/Menu.html#isTearOff())

### isHelpMenu

boolean **isHelpMenu**

This field will be set to true if the Menu in question is actually a help menu. Otherwise it will be set to false.

### menuSerializedDataVersion

int **menuSerializedDataVersion**

The menu serialized Data Version.

| **Class** [**java.awt.Menu.AccessibleAWTMenu**](http://docs.google.com/java/awt/Menu.AccessibleAWTMenu.html) **extends** [**MenuItem.AccessibleAWTMenuItem**](http://docs.google.com/java/awt/MenuItem.AccessibleAWTMenuItem.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5228160894980069094L

| **Class** [**java.awt.MenuBar**](http://docs.google.com/java/awt/MenuBar.html) **extends** [**MenuComponent**](http://docs.google.com/java/awt/MenuComponent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4930327919388951260L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html),  
 [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html)

Reads the ObjectInputStream. Unrecognized keys or values will be ignored.

**Throws:** [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html) - if GraphicsEnvironment.isHeadless returns true [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[GraphicsEnvironment.isHeadless()](http://docs.google.com/java/awt/GraphicsEnvironment.html#isHeadless()), [MenuBar.writeObject(java.io.ObjectOutputStream)](http://docs.google.com/java/awt/MenuBar.html#writeObject(java.io.ObjectOutputStream))

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html)

Writes default serializable fields to stream.

**Throws:** [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[AWTEventMulticaster.save(ObjectOutputStream, String, EventListener)](http://docs.google.com/java/awt/AWTEventMulticaster.html#save(java.io.ObjectOutputStream,%20java.lang.String,%20java.util.EventListener)), [MenuBar.readObject(java.io.ObjectInputStream)](http://docs.google.com/java/awt/MenuBar.html#readObject(java.io.ObjectInputStream))

| **Serialized Fields** |
| --- |

### menus

[Vector](http://docs.google.com/java/util/Vector.html)<[E](http://docs.google.com/java/util/Vector.html)> **menus**

This field represents a vector of the actual menus that will be part of the MenuBar.

**See Also:**[MenuBar.countMenus()](http://docs.google.com/java/awt/MenuBar.html#countMenus())

### helpMenu

[Menu](http://docs.google.com/java/awt/Menu.html) **helpMenu**

This menu is a special menu dedicated to help. The one thing to note about this menu is that on some platforms it appears at the right edge of the menubar.

**See Also:**[MenuBar.getHelpMenu()](http://docs.google.com/java/awt/MenuBar.html#getHelpMenu()), [MenuBar.setHelpMenu(Menu)](http://docs.google.com/java/awt/MenuBar.html#setHelpMenu(java.awt.Menu))

### menuBarSerializedDataVersion

int **menuBarSerializedDataVersion**

The MenuBar's serialized data version.

| **Class** [**java.awt.MenuBar.AccessibleAWTMenuBar**](http://docs.google.com/java/awt/MenuBar.AccessibleAWTMenuBar.html) **extends** [**MenuComponent.AccessibleAWTMenuComponent**](http://docs.google.com/java/awt/MenuComponent.AccessibleAWTMenuComponent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8577604491830083815L

| **Class** [**java.awt.MenuComponent**](http://docs.google.com/java/awt/MenuComponent.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4536902356223894379L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html),  
 [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html)

Reads the menu component from an object input stream.

**Throws:** [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html) - if GraphicsEnvironment.isHeadless returns true [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[GraphicsEnvironment.isHeadless()](http://docs.google.com/java/awt/GraphicsEnvironment.html#isHeadless())

| **Serialized Fields** |
| --- |

### font

[Font](http://docs.google.com/java/awt/Font.html) **font**

The menu component's font. This value can be null at which point a default will be used. This defaults to null.

**See Also:**[MenuComponent.setFont(Font)](http://docs.google.com/java/awt/MenuComponent.html#setFont(java.awt.Font)), [MenuComponent.getFont()](http://docs.google.com/java/awt/MenuComponent.html#getFont())

### name

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

The menu component's name, which defaults to null.

**See Also:**[MenuComponent.getName()](http://docs.google.com/java/awt/MenuComponent.html#getName()), [MenuComponent.setName(String)](http://docs.google.com/java/awt/MenuComponent.html#setName(java.lang.String))

### nameExplicitlySet

boolean **nameExplicitlySet**

A variable to indicate whether a name is explicitly set. If true the name will be set explicitly. This defaults to false.

**See Also:**[MenuComponent.setName(String)](http://docs.google.com/java/awt/MenuComponent.html#setName(java.lang.String))

### newEventsOnly

boolean **newEventsOnly**

Defaults to false.

**See Also:**[MenuComponent.dispatchEvent(AWTEvent)](http://docs.google.com/java/awt/MenuComponent.html#dispatchEvent(java.awt.AWTEvent))

### accessibleContext

[AccessibleContext](http://docs.google.com/javax/accessibility/AccessibleContext.html) **accessibleContext**

| **Class** [**java.awt.MenuComponent.AccessibleAWTMenuComponent**](http://docs.google.com/java/awt/MenuComponent.AccessibleAWTMenuComponent.html) **extends** [**AccessibleContext**](http://docs.google.com/javax/accessibility/AccessibleContext.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4269533416223798698L

| **Class** [**java.awt.MenuItem**](http://docs.google.com/java/awt/MenuItem.html) **extends** [**MenuComponent**](http://docs.google.com/java/awt/MenuComponent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-21757335363267194L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html),  
 [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html)

Reads the ObjectInputStream and if it isn't null adds a listener to receive action events fired by the Menu Item. Unrecognized keys or values will be ignored.

**Throws:** [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html) - if GraphicsEnvironment.isHeadless returns true [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[MenuItem.removeActionListener(ActionListener)](http://docs.google.com/java/awt/MenuItem.html#removeActionListener(java.awt.event.ActionListener)), [MenuItem.addActionListener(ActionListener)](http://docs.google.com/java/awt/MenuItem.html#addActionListener(java.awt.event.ActionListener)), [MenuItem.writeObject(ObjectOutputStream)](http://docs.google.com/java/awt/MenuItem.html#writeObject(java.io.ObjectOutputStream))

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Writes default serializable fields to stream. Writes a list of serializable ActionListeners as optional data. The non-serializable listeners are detected and no attempt is made to serialize them.

**Serial Data:** null terminated sequence of 0 or more pairs; the pair consists of a String and an Object; the String indicates the type of object and is one of the following: actionListenerK indicating an ActionListener object **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[AWTEventMulticaster.save(ObjectOutputStream, String, EventListener)](http://docs.google.com/java/awt/AWTEventMulticaster.html#save(java.io.ObjectOutputStream,%20java.lang.String,%20java.util.EventListener)), [MenuItem.readObject(ObjectInputStream)](http://docs.google.com/java/awt/MenuItem.html#readObject(java.io.ObjectInputStream))

| **Serialized Fields** |
| --- |

### enabled

boolean **enabled**

A value to indicate whether a menu item is enabled or not. If it is enabled, enabled will be set to true. Else enabled will be set to false.

**See Also:**[MenuItem.isEnabled()](http://docs.google.com/java/awt/MenuItem.html#isEnabled()), [MenuItem.setEnabled(boolean)](http://docs.google.com/java/awt/MenuItem.html#setEnabled(boolean))

### label

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

label is the label of a menu item. It can be any string.

**See Also:**[MenuItem.getLabel()](http://docs.google.com/java/awt/MenuItem.html#getLabel()), [MenuItem.setLabel(String)](http://docs.google.com/java/awt/MenuItem.html#setLabel(java.lang.String))

### actionCommand

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

This field indicates the command tha has been issued by a particular menu item. By default the actionCommand is the label of the menu item, unless it has been set using setActionCommand.

**See Also:**[MenuItem.setActionCommand(String)](http://docs.google.com/java/awt/MenuItem.html#setActionCommand(java.lang.String)), [MenuItem.getActionCommand()](http://docs.google.com/java/awt/MenuItem.html#getActionCommand())

### eventMask

long **eventMask**

The eventMask is ONLY set by subclasses via enableEvents. The mask should NOT be set when listeners are registered so that we can distinguish the difference between when listeners request events and subclasses request them.

### shortcut

[MenuShortcut](http://docs.google.com/java/awt/MenuShortcut.html) **shortcut**

A sequence of key stokes that ia associated with a menu item. Note :in 1.1.2 you must use setActionCommand() on a menu item in order for its shortcut to work.

**See Also:**[MenuItem.getShortcut()](http://docs.google.com/java/awt/MenuItem.html#getShortcut()), [MenuItem.setShortcut(MenuShortcut)](http://docs.google.com/java/awt/MenuItem.html#setShortcut(java.awt.MenuShortcut)), [MenuItem.deleteShortcut()](http://docs.google.com/java/awt/MenuItem.html#deleteShortcut())

### menuItemSerializedDataVersion

int **menuItemSerializedDataVersion**

Menu item serialized data version.

| **Class** [**java.awt.MenuItem.AccessibleAWTMenuItem**](http://docs.google.com/java/awt/MenuItem.AccessibleAWTMenuItem.html) **extends** [**MenuComponent.AccessibleAWTMenuComponent**](http://docs.google.com/java/awt/MenuComponent.AccessibleAWTMenuComponent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-217847831945965825L

| **Class** [**java.awt.MenuShortcut**](http://docs.google.com/java/awt/MenuShortcut.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**143448358473180225L

| **Serialized Fields** |
| --- |

### key

int **key**

The virtual keycode for the menu shortcut. This is the keycode with which the menu shortcut will be created. Note that it is a virtual keycode, not a character, e.g. KeyEvent.VK\_A, not 'a'. Note: in 1.1.x you must use setActionCommand() on a menu item in order for its shortcut to work, otherwise it will fire a null action command.

**Since:** JDK1.1 **See Also:**[MenuShortcut.getKey()](http://docs.google.com/java/awt/MenuShortcut.html#getKey()), [MenuShortcut.usesShiftModifier()](http://docs.google.com/java/awt/MenuShortcut.html#usesShiftModifier()), [KeyEvent](http://docs.google.com/java/awt/event/KeyEvent.html)

### usesShift

boolean **usesShift**

Indicates whether the shft key was pressed. If true, the shift key was pressed. If false, the shift key was not pressed

**Since:** JDK1.1 **See Also:**[MenuShortcut.usesShiftModifier()](http://docs.google.com/java/awt/MenuShortcut.html#usesShiftModifier())

| **Class** [**java.awt.Panel**](http://docs.google.com/java/awt/Panel.html) **extends** [**Container**](http://docs.google.com/java/awt/Container.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2728009084054400034L

| **Class** [**java.awt.Panel.AccessibleAWTPanel**](http://docs.google.com/java/awt/Panel.AccessibleAWTPanel.html) **extends** [**Container.AccessibleAWTContainer**](http://docs.google.com/java/awt/Container.AccessibleAWTContainer.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-6409552226660031050L

| **Class** [**java.awt.Point**](http://docs.google.com/java/awt/Point.html) **extends** [**Point2D**](http://docs.google.com/java/awt/geom/Point2D.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5276940640259749850L

| **Serialized Fields** |
| --- |

### x

int **x**

The X coordinate of this Point. If no X coordinate is set it will default to 0.

**Since:** 1.0 **See Also:**[Point.getLocation()](http://docs.google.com/java/awt/Point.html#getLocation()), [Point.move(int, int)](http://docs.google.com/java/awt/Point.html#move(int,%20int))

### y

int **y**

The Y coordinate of this Point. If no Y coordinate is set it will default to 0.

**Since:** 1.0 **See Also:**[Point.getLocation()](http://docs.google.com/java/awt/Point.html#getLocation()), [Point.move(int, int)](http://docs.google.com/java/awt/Point.html#move(int,%20int))

| **Class** [**java.awt.Polygon**](http://docs.google.com/java/awt/Polygon.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-6460061437900069969L

| **Serialized Fields** |
| --- |

### npoints

int **npoints**

The total number of points. The value of npoints represents the number of valid points in this Polygon and might be less than the number of elements in [xpoints](http://docs.google.com/java/awt/Polygon.html#xpoints) or [ypoints](http://docs.google.com/java/awt/Polygon.html#ypoints). This value can be NULL.

**Since:** 1.0 **See Also:**[Polygon.addPoint(int, int)](http://docs.google.com/java/awt/Polygon.html#addPoint(int,%20int))

### xpoints

int[] **xpoints**

The array of X coordinates. The number of elements in this array might be more than the number of X coordinates in this Polygon. The extra elements allow new points to be added to this Polygon without re-creating this array. The value of [npoints](http://docs.google.com/java/awt/Polygon.html#npoints) is equal to the number of valid points in this Polygon.

**Since:** 1.0 **See Also:**[Polygon.addPoint(int, int)](http://docs.google.com/java/awt/Polygon.html#addPoint(int,%20int))

### ypoints

int[] **ypoints**

The array of Y coordinates. The number of elements in this array might be more than the number of Y coordinates in this Polygon. The extra elements allow new points to be added to this Polygon without re-creating this array. The value of npoints is equal to the number of valid points in this Polygon.

**Since:** 1.0 **See Also:**[Polygon.addPoint(int, int)](http://docs.google.com/java/awt/Polygon.html#addPoint(int,%20int))

### bounds

[Rectangle](http://docs.google.com/java/awt/Rectangle.html) **bounds**

The bounds of this Polygon. This value can be null.

**Since:** 1.0 **See Also:**[Polygon.getBoundingBox()](http://docs.google.com/java/awt/Polygon.html#getBoundingBox()), [Polygon.getBounds()](http://docs.google.com/java/awt/Polygon.html#getBounds())

| **Class** [**java.awt.PopupMenu**](http://docs.google.com/java/awt/PopupMenu.html) **extends** [**Menu**](http://docs.google.com/java/awt/Menu.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4620452533522760060L

| **Class** [**java.awt.PopupMenu.AccessibleAWTPopupMenu**](http://docs.google.com/java/awt/PopupMenu.AccessibleAWTPopupMenu.html) **extends** [**Menu.AccessibleAWTMenu**](http://docs.google.com/java/awt/Menu.AccessibleAWTMenu.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4282044795947239955L

| **Class** [**java.awt.Rectangle**](http://docs.google.com/java/awt/Rectangle.html) **extends** [**Rectangle2D**](http://docs.google.com/java/awt/geom/Rectangle2D.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4345857070255674764L

| **Serialized Fields** |
| --- |

### x

int **x**

The X coordinate of the upper-left corner of the Rectangle.

**Since:** 1.0 **See Also:**[Rectangle.setLocation(int, int)](http://docs.google.com/java/awt/Rectangle.html#setLocation(int,%20int)), [Rectangle.getLocation()](http://docs.google.com/java/awt/Rectangle.html#getLocation())

### y

int **y**

The Y coordinate of the upper-left corner of the Rectangle.

**Since:** 1.0 **See Also:**[Rectangle.setLocation(int, int)](http://docs.google.com/java/awt/Rectangle.html#setLocation(int,%20int)), [Rectangle.getLocation()](http://docs.google.com/java/awt/Rectangle.html#getLocation())

### width

int **width**

The width of the Rectangle.

**Since:** 1.0 **See Also:**[Rectangle.setSize(int, int)](http://docs.google.com/java/awt/Rectangle.html#setSize(int,%20int)), [Rectangle.getSize()](http://docs.google.com/java/awt/Rectangle.html#getSize())

### height

int **height**

The height of the Rectangle.

**Since:** 1.0 **See Also:**[Rectangle.setSize(int, int)](http://docs.google.com/java/awt/Rectangle.html#setSize(int,%20int)), [Rectangle.getSize()](http://docs.google.com/java/awt/Rectangle.html#getSize())

| **Class** [**java.awt.Scrollbar**](http://docs.google.com/java/awt/Scrollbar.html) **extends** [**Component**](http://docs.google.com/java/awt/Component.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8451667562882310543L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html),  
 [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html)

Reads the ObjectInputStream and if it isn't null adds a listener to receive adjustment events fired by the Scrollbar. Unrecognized keys or values will be ignored.

**Throws:** [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html) - if GraphicsEnvironment.isHeadless returns true [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[GraphicsEnvironment.isHeadless()](http://docs.google.com/java/awt/GraphicsEnvironment.html#isHeadless()), [Scrollbar.writeObject(ObjectOutputStream)](http://docs.google.com/java/awt/Scrollbar.html#writeObject(java.io.ObjectOutputStream))

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Writes default serializable fields to stream. Writes a list of serializable AdjustmentListeners as optional data. The non-serializable listeners are detected and no attempt is made to serialize them.

**Serial Data:** null terminated sequence of 0 or more pairs; the pair consists of a String and an Object; the String indicates the type of object and is one of the following: adjustmentListenerK indicating an AdjustmentListener object **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[AWTEventMulticaster.save(ObjectOutputStream, String, EventListener)](http://docs.google.com/java/awt/AWTEventMulticaster.html#save(java.io.ObjectOutputStream,%20java.lang.String,%20java.util.EventListener)), [Component.adjustmentListenerK](http://docs.google.com/java/awt/Component.html#adjustmentListenerK), [Scrollbar.readObject(ObjectInputStream)](http://docs.google.com/java/awt/Scrollbar.html#readObject(java.io.ObjectInputStream))

| **Serialized Fields** |
| --- |

### value

int **value**

The value of the Scrollbar. This property must be greater than or equal to minimum and less than or equal to maximum - visibleAmount

**See Also:**[Scrollbar.getValue()](http://docs.google.com/java/awt/Scrollbar.html#getValue()), [Scrollbar.setValue(int)](http://docs.google.com/java/awt/Scrollbar.html#setValue(int))

### maximum

int **maximum**

The maximum value of the Scrollbar. This value must be greater than the minimum value.

**See Also:**[Scrollbar.getMaximum()](http://docs.google.com/java/awt/Scrollbar.html#getMaximum()), [Scrollbar.setMaximum(int)](http://docs.google.com/java/awt/Scrollbar.html#setMaximum(int))

### minimum

int **minimum**

The minimum value of the Scrollbar. This value must be less than the maximum value.

**See Also:**[Scrollbar.getMinimum()](http://docs.google.com/java/awt/Scrollbar.html#getMinimum()), [Scrollbar.setMinimum(int)](http://docs.google.com/java/awt/Scrollbar.html#setMinimum(int))

### visibleAmount

int **visibleAmount**

The size of the Scrollbar's bubble. When a scroll bar is used to select a range of values, the visibleAmount represents the size of this range. This is visually indicated by the size of the bubble.

**See Also:**[Scrollbar.getVisibleAmount()](http://docs.google.com/java/awt/Scrollbar.html#getVisibleAmount()), [Scrollbar.setVisibleAmount(int)](http://docs.google.com/java/awt/Scrollbar.html#setVisibleAmount(int))

### orientation

int **orientation**

The Scrollbar's orientation--being either horizontal or vertical. This value should be specified when the scrollbar is created.

orientation can be either : VERTICAL or HORIZONTAL only.

**See Also:**[Scrollbar.getOrientation()](http://docs.google.com/java/awt/Scrollbar.html#getOrientation()), [Scrollbar.setOrientation(int)](http://docs.google.com/java/awt/Scrollbar.html#setOrientation(int))

### lineIncrement

int **lineIncrement**

The amount by which the scrollbar value will change when going up or down by a line. This value must be greater than zero.

**See Also:**[Scrollbar.getLineIncrement()](http://docs.google.com/java/awt/Scrollbar.html#getLineIncrement()), [Scrollbar.setLineIncrement(int)](http://docs.google.com/java/awt/Scrollbar.html#setLineIncrement(int))

### pageIncrement

int **pageIncrement**

The amount by which the scrollbar value will change when going up or down by a page. This value must be greater than zero.

**See Also:**[Scrollbar.getPageIncrement()](http://docs.google.com/java/awt/Scrollbar.html#getPageIncrement()), [Scrollbar.setPageIncrement(int)](http://docs.google.com/java/awt/Scrollbar.html#setPageIncrement(int))

### scrollbarSerializedDataVersion

int **scrollbarSerializedDataVersion**

The scroll bar's serialized Data Version.

| **Class** [**java.awt.Scrollbar.AccessibleAWTScrollBar**](http://docs.google.com/java/awt/Scrollbar.AccessibleAWTScrollBar.html) **extends** [**Component.AccessibleAWTComponent**](http://docs.google.com/java/awt/Component.AccessibleAWTComponent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-344337268523697807L

| **Class** [**java.awt.ScrollPane**](http://docs.google.com/java/awt/ScrollPane.html) **extends** [**Container**](http://docs.google.com/java/awt/Container.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7956609840827222915L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html),  
 [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html)

Reads default serializable fields to stream.

**Throws:** [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html) - if GraphicsEnvironment.isHeadless() returns true [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[GraphicsEnvironment.isHeadless()](http://docs.google.com/java/awt/GraphicsEnvironment.html#isHeadless())

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Writes default serializable fields to stream.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### scrollbarDisplayPolicy

int **scrollbarDisplayPolicy**

There are 3 ways in which a scroll bar can be displayed. This integer will represent one of these 3 displays - (SCROLLBARS\_ALWAYS, SCROLLBARS\_AS\_NEEDED, SCROLLBARS\_NEVER)

**See Also:**[ScrollPane.getScrollbarDisplayPolicy()](http://docs.google.com/java/awt/ScrollPane.html#getScrollbarDisplayPolicy())

### vAdjustable

[ScrollPaneAdjustable](http://docs.google.com/java/awt/ScrollPaneAdjustable.html) **vAdjustable**

An adjustable vertical scrollbar. It is important to note that you must *NOT* call 3 Adjustable methods, namely: setMinimum(), setMaximum(), setVisibleAmount().

**See Also:**[ScrollPane.getVAdjustable()](http://docs.google.com/java/awt/ScrollPane.html#getVAdjustable())

### hAdjustable

[ScrollPaneAdjustable](http://docs.google.com/java/awt/ScrollPaneAdjustable.html) **hAdjustable**

An adjustable horizontal scrollbar. It is important to note that you must *NOT* call 3 Adjustable methods, namely: setMinimum(), setMaximum(), setVisibleAmount().

**See Also:**[ScrollPane.getHAdjustable()](http://docs.google.com/java/awt/ScrollPane.html#getHAdjustable())

### wheelScrollingEnabled

boolean **wheelScrollingEnabled**

Indicates whether or not scrolling should take place when a MouseWheelEvent is received.

**Since:** 1.4

| **Class** [**java.awt.ScrollPane.AccessibleAWTScrollPane**](http://docs.google.com/java/awt/ScrollPane.AccessibleAWTScrollPane.html) **extends** [**Container.AccessibleAWTContainer**](http://docs.google.com/java/awt/Container.AccessibleAWTContainer.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6100703663886637L

| **Class** [**java.awt.ScrollPaneAdjustable**](http://docs.google.com/java/awt/ScrollPaneAdjustable.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3359745691033257079L

| **Serialized Fields** |
| --- |

### sp

[ScrollPane](http://docs.google.com/java/awt/ScrollPane.html) **sp**

The ScrollPane this object is a scrollbar of.

### orientation

int **orientation**

Orientation of this scrollbar.

**See Also:**[ScrollPaneAdjustable.getOrientation()](http://docs.google.com/java/awt/ScrollPaneAdjustable.html#getOrientation()), [Adjustable.HORIZONTAL](http://docs.google.com/java/awt/Adjustable.html#HORIZONTAL), [Adjustable.VERTICAL](http://docs.google.com/java/awt/Adjustable.html#VERTICAL)

### value

int **value**

The value of this scrollbar. value should be greater than minimum and less than maximum

**See Also:**[ScrollPaneAdjustable.getValue()](http://docs.google.com/java/awt/ScrollPaneAdjustable.html#getValue()), [ScrollPaneAdjustable.setValue(int)](http://docs.google.com/java/awt/ScrollPaneAdjustable.html#setValue(int))

### minimum

int **minimum**

The minimum value of this scrollbar. This value can only be set by the ScrollPane.

**ATTN:** In current implementation minimum is always 0. This field can only be altered via setSpan method and ScrollPane always calls that method with 0 for the minimum. getMinimum method always returns 0 without checking this field.

**See Also:**[ScrollPaneAdjustable.getMinimum()](http://docs.google.com/java/awt/ScrollPaneAdjustable.html#getMinimum()), [ScrollPaneAdjustable.setSpan(int, int, int)](http://docs.google.com/java/awt/ScrollPaneAdjustable.html#setSpan(int,%20int,%20int))

### maximum

int **maximum**

The maximum value of this scrollbar. This value can only be set by the ScrollPane.

**See Also:**[ScrollPaneAdjustable.getMaximum()](http://docs.google.com/java/awt/ScrollPaneAdjustable.html#getMaximum()), [ScrollPaneAdjustable.setSpan(int, int, int)](http://docs.google.com/java/awt/ScrollPaneAdjustable.html#setSpan(int,%20int,%20int))

### visibleAmount

int **visibleAmount**

The size of the visible portion of this scrollbar. This value can only be set by the ScrollPane.

**See Also:**[ScrollPaneAdjustable.getVisibleAmount()](http://docs.google.com/java/awt/ScrollPaneAdjustable.html#getVisibleAmount()), [ScrollPaneAdjustable.setSpan(int, int, int)](http://docs.google.com/java/awt/ScrollPaneAdjustable.html#setSpan(int,%20int,%20int))

### unitIncrement

int **unitIncrement**

The amount by which the scrollbar value will change when going up or down by a line. This value should be a non negative integer.

**See Also:**[ScrollPaneAdjustable.getUnitIncrement()](http://docs.google.com/java/awt/ScrollPaneAdjustable.html#getUnitIncrement()), [ScrollPaneAdjustable.setUnitIncrement(int)](http://docs.google.com/java/awt/ScrollPaneAdjustable.html#setUnitIncrement(int))

### blockIncrement

int **blockIncrement**

The amount by which the scrollbar value will change when going up or down by a page. This value should be a non negative integer.

**See Also:**[ScrollPaneAdjustable.getBlockIncrement()](http://docs.google.com/java/awt/ScrollPaneAdjustable.html#getBlockIncrement()), [ScrollPaneAdjustable.setBlockIncrement(int)](http://docs.google.com/java/awt/ScrollPaneAdjustable.html#setBlockIncrement(int))

### adjustmentListener

[AdjustmentListener](http://docs.google.com/java/awt/event/AdjustmentListener.html) **adjustmentListener**

| **Class** [**java.awt.SystemColor**](http://docs.google.com/java/awt/SystemColor.html) **extends** [**Color**](http://docs.google.com/java/awt/Color.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4503142729533789064L

| **Class** [**java.awt.TextArea**](http://docs.google.com/java/awt/TextArea.html) **extends** [**TextComponent**](http://docs.google.com/java/awt/TextComponent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3692302836626095722L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html),  
 [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html)

Read the ObjectInputStream.

**Throws:** [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html) - if GraphicsEnvironment.isHeadless() returns true [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[GraphicsEnvironment.isHeadless()](http://docs.google.com/java/awt/GraphicsEnvironment.html#isHeadless())

| **Serialized Fields** |
| --- |

### rows

int **rows**

The number of rows in the TextArea. This parameter will determine the text area's height. Guaranteed to be non-negative.

**See Also:**[TextArea.getRows()](http://docs.google.com/java/awt/TextArea.html#getRows()), [TextArea.setRows(int)](http://docs.google.com/java/awt/TextArea.html#setRows(int))

### columns

int **columns**

The number of columns in the TextArea. A column is an approximate average character width that is platform-dependent. This parameter will determine the text area's width. Guaranteed to be non-negative.

**See Also:**[TextArea.setColumns(int)](http://docs.google.com/java/awt/TextArea.html#setColumns(int)), [TextArea.getColumns()](http://docs.google.com/java/awt/TextArea.html#getColumns())

### scrollbarVisibility

int **scrollbarVisibility**

Determines which scrollbars are created for the text area. It can be one of four values : SCROLLBARS\_BOTH = both scrollbars.

SCROLLBARS\_HORIZONTAL\_ONLY = Horizontal bar only.

SCROLLBARS\_VERTICAL\_ONLY = Vertical bar only.

SCROLLBARS\_NONE = No scrollbars.

**See Also:**[TextArea.getScrollbarVisibility()](http://docs.google.com/java/awt/TextArea.html#getScrollbarVisibility())

### textAreaSerializedDataVersion

int **textAreaSerializedDataVersion**

The textArea Serialized Data Version.

| **Class** [**java.awt.TextArea.AccessibleAWTTextArea**](http://docs.google.com/java/awt/TextArea.AccessibleAWTTextArea.html) **extends** [**TextComponent.AccessibleAWTTextComponent**](http://docs.google.com/java/awt/TextComponent.AccessibleAWTTextComponent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3472827823632144419L

| **Class** [**java.awt.TextComponent**](http://docs.google.com/java/awt/TextComponent.html) **extends** [**Component**](http://docs.google.com/java/awt/Component.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2214773872412987419L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html),  
 [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html)

Read the ObjectInputStream, and if it isn't null, add a listener to receive text events fired by the TextComponent. Unrecognized keys or values will be ignored.

**Throws:** [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html) - if GraphicsEnvironment.isHeadless() returns true [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[TextComponent.removeTextListener(java.awt.event.TextListener)](http://docs.google.com/java/awt/TextComponent.html#removeTextListener(java.awt.event.TextListener)), [TextComponent.addTextListener(java.awt.event.TextListener)](http://docs.google.com/java/awt/TextComponent.html#addTextListener(java.awt.event.TextListener)), [GraphicsEnvironment.isHeadless()](http://docs.google.com/java/awt/GraphicsEnvironment.html#isHeadless())

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Writes default serializable fields to stream. Writes a list of serializable TextListener(s) as optional data. The non-serializable TextListener(s) are detected and no attempt is made to serialize them.

**Serial Data:** Null terminated sequence of zero or more pairs. A pair consists of a String and Object. The String indicates the type of object and is one of the following : textListenerK indicating and TextListener object. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[AWTEventMulticaster.save(ObjectOutputStream, String, EventListener)](http://docs.google.com/java/awt/AWTEventMulticaster.html#save(java.io.ObjectOutputStream,%20java.lang.String,%20java.util.EventListener)), [Component.textListenerK](http://docs.google.com/java/awt/Component.html#textListenerK)

| **Serialized Fields** |
| --- |

### text

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

The value of the text. A null value is the same as "".

**See Also:**[TextComponent.setText(String)](http://docs.google.com/java/awt/TextComponent.html#setText(java.lang.String)), [TextComponent.getText()](http://docs.google.com/java/awt/TextComponent.html#getText())

### editable

boolean **editable**

A boolean indicating whether or not this TextComponent is editable. It will be true if the text component is editable and false if not.

**See Also:**[TextComponent.isEditable()](http://docs.google.com/java/awt/TextComponent.html#isEditable())

### selectionStart

int **selectionStart**

The selection refers to the selected text, and the selectionStart is the start position of the selected text.

**See Also:**[TextComponent.getSelectionStart()](http://docs.google.com/java/awt/TextComponent.html#getSelectionStart()), [TextComponent.setSelectionStart(int)](http://docs.google.com/java/awt/TextComponent.html#setSelectionStart(int))

### selectionEnd

int **selectionEnd**

The selection refers to the selected text, and the selectionEnd is the end position of the selected text.

**See Also:**[TextComponent.getSelectionEnd()](http://docs.google.com/java/awt/TextComponent.html#getSelectionEnd()), [TextComponent.setSelectionEnd(int)](http://docs.google.com/java/awt/TextComponent.html#setSelectionEnd(int))

### backgroundSetByClientCode

boolean **backgroundSetByClientCode**

### textComponentSerializedDataVersion

int **textComponentSerializedDataVersion**

The textComponent SerializedDataVersion.

### checkForEnableIM

boolean **checkForEnableIM**

| **Class** [**java.awt.TextComponent.AccessibleAWTTextComponent**](http://docs.google.com/java/awt/TextComponent.AccessibleAWTTextComponent.html) **extends** [**Component.AccessibleAWTComponent**](http://docs.google.com/java/awt/Component.AccessibleAWTComponent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3631432373506317811L

| **Class** [**java.awt.TextField**](http://docs.google.com/java/awt/TextField.html) **extends** [**TextComponent**](http://docs.google.com/java/awt/TextComponent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2966288784432217853L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html),  
 [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html)

Read the ObjectInputStream and if it isn't null, add a listener to receive action events fired by the TextField. Unrecognized keys or values will be ignored.

**Throws:** [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html) - if GraphicsEnvironment.isHeadless() returns true [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[TextField.removeActionListener(ActionListener)](http://docs.google.com/java/awt/TextField.html#removeActionListener(java.awt.event.ActionListener)), [TextField.addActionListener(ActionListener)](http://docs.google.com/java/awt/TextField.html#addActionListener(java.awt.event.ActionListener)), [GraphicsEnvironment.isHeadless()](http://docs.google.com/java/awt/GraphicsEnvironment.html#isHeadless())

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Writes default serializable fields to stream. Writes a list of serializable ActionListener(s) as optional data. The non-serializable ActionListener(s) are detected and no attempt is made to serialize them.

**Serial Data:** Null terminated sequence of zero or more pairs. A pair consists of a String and Object. The String indicates the type of object and is one of the following : ActionListenerK indicating and ActionListener object. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[AWTEventMulticaster.save(ObjectOutputStream, String, EventListener)](http://docs.google.com/java/awt/AWTEventMulticaster.html#save(java.io.ObjectOutputStream,%20java.lang.String,%20java.util.EventListener)), [Component.actionListenerK](http://docs.google.com/java/awt/Component.html#actionListenerK)

| **Serialized Fields** |
| --- |

### columns

int **columns**

The number of columns in the text field. A column is an approximate average character width that is platform-dependent. Guaranteed to be non-negative.

**See Also:**[TextField.setColumns(int)](http://docs.google.com/java/awt/TextField.html#setColumns(int)), [TextField.getColumns()](http://docs.google.com/java/awt/TextField.html#getColumns())

### echoChar

char **echoChar**

The echo character, which is used when the user wishes to disguise the characters typed into the text field. The disguises are removed if echoChar = 0.

**See Also:**[TextField.getEchoChar()](http://docs.google.com/java/awt/TextField.html#getEchoChar()), [TextField.setEchoChar(char)](http://docs.google.com/java/awt/TextField.html#setEchoChar(char)), [TextField.echoCharIsSet()](http://docs.google.com/java/awt/TextField.html#echoCharIsSet())

### textFieldSerializedDataVersion

int **textFieldSerializedDataVersion**

The textField Serialized Data Version.

| **Class** [**java.awt.TextField.AccessibleAWTTextField**](http://docs.google.com/java/awt/TextField.AccessibleAWTTextField.html) **extends** [**TextComponent.AccessibleAWTTextComponent**](http://docs.google.com/java/awt/TextComponent.AccessibleAWTTextComponent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6219164359235943158L

| **Class** [**java.awt.Window**](http://docs.google.com/java/awt/Window.html) **extends** [**Container**](http://docs.google.com/java/awt/Container.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4497834738069338734L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html),  
 [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html)

Reads the ObjectInputStream and an optional list of listeners to receive various events fired by the component; also reads a list of (possibly null) child windows. Unrecognized keys or values will be ignored.

**Throws:** [HeadlessException](http://docs.google.com/java/awt/HeadlessException.html) - if GraphicsEnvironment.isHeadless returns true [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[GraphicsEnvironment.isHeadless()](http://docs.google.com/java/awt/GraphicsEnvironment.html#isHeadless()), [Window.writeObject(java.io.ObjectOutputStream)](http://docs.google.com/java/awt/Window.html#writeObject(java.io.ObjectOutputStream))

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Writes default serializable fields to stream. Writes a list of serializable WindowListeners and WindowFocusListeners as optional data. Writes a list of child windows as optional data. Writes a list of icon images as optional data

**Serial Data:** null terminated sequence of 0 or more pairs; the pair consists of a String and and Object; the String indicates the type of object and is one of the following: windowListenerK indicating a WindowListener object; windowFocusWindowK indicating a WindowFocusListener object; ownedWindowK indicating a child Window object **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[AWTEventMulticaster.save(java.io.ObjectOutputStream, java.lang.String, java.util.EventListener)](http://docs.google.com/java/awt/AWTEventMulticaster.html#save(java.io.ObjectOutputStream,%20java.lang.String,%20java.util.EventListener)), [Component.windowListenerK](http://docs.google.com/java/awt/Component.html#windowListenerK), [Component.windowFocusListenerK](http://docs.google.com/java/awt/Component.html#windowFocusListenerK), [Component.ownedWindowK](http://docs.google.com/java/awt/Component.html#ownedWindowK), [Window.readObject(ObjectInputStream)](http://docs.google.com/java/awt/Window.html#readObject(java.io.ObjectInputStream))

| **Serialized Fields** |
| --- |

### warningString

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

This represents the warning message that is to be displayed in a non secure window. ie : a window that has a security manager installed for which calling SecurityManager.checkTopLevelWindow() is false. This message can be displayed anywhere in the window.

**See Also:**[Window.getWarningString()](http://docs.google.com/java/awt/Window.html#getWarningString())

### syncLWRequests

boolean **syncLWRequests**

### state

int **state**

An Integer value representing the Window State.

**Since:** 1.2 **See Also:**[Window.show()](http://docs.google.com/java/awt/Window.html#show())

### alwaysOnTop

boolean **alwaysOnTop**

A boolean value representing Window always-on-top state

**Since:** 1.5 **See Also:**[Window.setAlwaysOnTop(boolean)](http://docs.google.com/java/awt/Window.html#setAlwaysOnTop(boolean)), [Window.isAlwaysOnTop()](http://docs.google.com/java/awt/Window.html#isAlwaysOnTop())

### modalExclusionType

[Dialog.ModalExclusionType](http://docs.google.com/java/awt/Dialog.ModalExclusionType.html) **modalExclusionType**

**Since:** 1.6 **See Also:**[Dialog.ModalExclusionType](http://docs.google.com/java/awt/Dialog.ModalExclusionType.html), [Window.getModalExclusionType()](http://docs.google.com/java/awt/Window.html#getModalExclusionType()), [Window.setModalExclusionType(java.awt.Dialog.ModalExclusionType)](http://docs.google.com/java/awt/Window.html#setModalExclusionType(java.awt.Dialog.ModalExclusionType))

### focusMgr

java.awt.FocusManager **focusMgr**

Unused. Maintained for serialization backward-compatibility.

**Since:** 1.2

### focusableWindowState

boolean **focusableWindowState**

Indicates whether this Window can become the focused Window.

**Since:** 1.4 **See Also:**[Window.getFocusableWindowState()](http://docs.google.com/java/awt/Window.html#getFocusableWindowState()), [Window.setFocusableWindowState(boolean)](http://docs.google.com/java/awt/Window.html#setFocusableWindowState(boolean))

### windowSerializedDataVersion

int **windowSerializedDataVersion**

The window serialized data version.

### locationByPlatform

boolean **locationByPlatform**

| **Class** [**java.awt.Window.AccessibleAWTWindow**](http://docs.google.com/java/awt/Window.AccessibleAWTWindow.html) **extends** [**Container.AccessibleAWTContainer**](http://docs.google.com/java/awt/Container.AccessibleAWTContainer.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4215068635060671780L

| **Package** **java.awt.color** |
| --- |

| **Class** [**java.awt.color.CMMException**](http://docs.google.com/java/awt/color/CMMException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.awt.color.ColorSpace**](http://docs.google.com/java/awt/color/ColorSpace.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-409452704308689724L

| **Serialized Fields** |
| --- |

### type

int **type**

### numComponents

int **numComponents**

| **Class** [**java.awt.color.ICC\_ColorSpace**](http://docs.google.com/java/awt/color/ICC_ColorSpace.html) **extends** [**ColorSpace**](http://docs.google.com/java/awt/color/ColorSpace.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3455889114070431483L

| **Serialized Fields** |
| --- |

### thisProfile

[ICC\_Profile](http://docs.google.com/java/awt/color/ICC_Profile.html) **thisProfile**

### minVal

float[] **minVal**

### maxVal

float[] **maxVal**

### diffMinMax

float[] **diffMinMax**

### invDiffMinMax

float[] **invDiffMinMax**

### needScaleInit

boolean **needScaleInit**

| **Class** [**java.awt.color.ICC\_Profile**](http://docs.google.com/java/awt/color/ICC_Profile.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3938515861990936766L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reads default serializable fields from the stream. Reads from the stream a string and an array of bytes as additional data.

**Serial Data:** The String is the name of one of CS\_\* constants defined in the [ColorSpace](http://docs.google.com/java/awt/color/ColorSpace.html) class if the profile object is a profile for a predefined color space (for example "CS\_sRGB"). The string is null otherwise.

The byte[] array is the profile data for the profile. It will usually be null for the predefined profiles.

If the string is recognized as a constant name for predefined color space the object will be resolved into profile obtained with getInstance(int cspace) and the profile data are ignored. Otherwise the object will be resolved into profile obtained with getInstance(byte[] data).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) - thrown by ObjectInputStream. [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) - thrown by ObjectInputStream.**See Also:**[ICC\_Profile.readResolve()](http://docs.google.com/java/awt/color/ICC_Profile.html#readResolve()), [ICC\_Profile.getInstance(int)](http://docs.google.com/java/awt/color/ICC_Profile.html#getInstance(int)), [ICC\_Profile.getInstance(byte[])](http://docs.google.com/java/awt/color/ICC_Profile.html#getInstance(byte%5B%5D))

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Writes default serializable fields to the stream. Writes a string and an array of bytes to the stream as additional data.

**Serial Data:** The String is the name of one of CS\_\* constants defined in the [ColorSpace](http://docs.google.com/java/awt/color/ColorSpace.html) class if the profile object is a profile for a predefined color space (for example "CS\_sRGB"). The string is null otherwise.

The byte[] array is the profile data for the profile. For predefined color spaces null is written instead of the profile data. If in the future versions of Java API new predefined color spaces will be added, future versions of this class may choose to write for new predefined color spaces not only the color space name, but the profile data as well so that older versions could still deserialize the object.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) - thrown by ObjectInputStream.

### readResolve

protected [Object](http://docs.google.com/java/lang/Object.html) **readResolve**()  
 throws [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html)

Resolves instances being deserialized into instances registered with CMM.

**Throws:** [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html) - never thrown, but mandated by the serialization spec.**Since:** 1.3

| **Serialized Fields** |
| --- |

### iccProfileSerializedDataVersion

int **iccProfileSerializedDataVersion**

Version of the format of additional serialized data in the stream. Version 1 corresponds to Java 2 Platform, v1.3.

**Since:** 1.3

| **Class** [**java.awt.color.ICC\_ProfileGray**](http://docs.google.com/java/awt/color/ICC_ProfileGray.html) **extends** [**ICC\_Profile**](http://docs.google.com/java/awt/color/ICC_Profile.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.awt.color.ICC\_ProfileRGB**](http://docs.google.com/java/awt/color/ICC_ProfileRGB.html) **extends** [**ICC\_Profile**](http://docs.google.com/java/awt/color/ICC_Profile.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.awt.color.ProfileDataException**](http://docs.google.com/java/awt/color/ProfileDataException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

| **Package** **java.awt.datatransfer** |
| --- |

| **Class** [**java.awt.datatransfer.DataFlavor**](http://docs.google.com/java/awt/datatransfer/DataFlavor.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8367026044764648243L

| **Serialization Methods** |
| --- |

### readExternal

public void **readExternal**([ObjectInput](http://docs.google.com/java/io/ObjectInput.html) is)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Restores this DataFlavor from a Serialized state.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) - if I/O errors occur [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) - If the class for an object being restored cannot be found.

### writeExternal

public void **writeExternal**([ObjectOutput](http://docs.google.com/java/io/ObjectOutput.html) os)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serializes this DataFlavor.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) - Includes any I/O exceptions that may occur

| **Class** [**java.awt.datatransfer.FlavorEvent**](http://docs.google.com/java/awt/datatransfer/FlavorEvent.html) **extends** [**EventObject**](http://docs.google.com/java/util/EventObject.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.awt.datatransfer.UnsupportedFlavorException**](http://docs.google.com/java/awt/datatransfer/UnsupportedFlavorException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5383814944251665601L

| **Package** **java.awt.dnd** |
| --- |

| **Class** [**java.awt.dnd.DragGestureEvent**](http://docs.google.com/java/awt/dnd/DragGestureEvent.html) **extends** [**EventObject**](http://docs.google.com/java/util/EventObject.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**9080172649166731306L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html)

Deserializes this DragGestureEvent. This method first performs default deserialization for all non-transient fields. An attempt is then made to deserialize this object's List of gesture events as well. This is first attempted by deserializing the field events, because, in releases prior to 1.4, a non-transient field of this name stored the List of gesture events. If this fails, the next object in the stream is used instead. If the resulting List is null, this object's List of gesture events is set to an empty List.

**Throws:** [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)**Since:** 1.4

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serializes this DragGestureEvent. Performs default serialization and then writes out this object's List of gesture events if and only if the List can be serialized. If not, null is written instead. In this case, a DragGestureEvent created from the resulting deserialized stream will contain an empty List of gesture events.

**Serial Data:** The default serializable fields, in alphabetical order, followed by either a List instance, or null. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)**Since:** 1.4

| **Serialized Fields** |
| --- |

### dragSource

[DragSource](http://docs.google.com/java/awt/dnd/DragSource.html) **dragSource**

The DragSource associated with this DragGestureEvent.

### component

[Component](http://docs.google.com/java/awt/Component.html) **component**

The Component associated with this DragGestureEvent.

### origin

[Point](http://docs.google.com/java/awt/Point.html) **origin**

The origin of the drag.

### action

int **action**

The user's preferred action.

| **Class** [**java.awt.dnd.DragGestureRecognizer**](http://docs.google.com/java/awt/dnd/DragGestureRecognizer.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8996673345831063337L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html)

Deserializes this DragGestureRecognizer. This method first performs default deserialization for all non-transient fields. This object's DragGestureListener is then deserialized as well by using the next object in the stream.

**Throws:** [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)**Since:** 1.4

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serializes this DragGestureRecognizer. This method first performs default serialization. Then, this object's DragGestureListener is written out if and only if it can be serialized. If not, null is written instead.

**Serial Data:** The default serializable fields, in alphabetical order, followed by either a DragGestureListener, or null. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)**Since:** 1.4

| **Serialized Fields** |
| --- |

### dragSource

[DragSource](http://docs.google.com/java/awt/dnd/DragSource.html) **dragSource**

The DragSource associated with this DragGestureRecognizer.

### component

[Component](http://docs.google.com/java/awt/Component.html) **component**

The Component associated with this DragGestureRecognizer.

### sourceActions

int **sourceActions**

An int representing the type(s) of action(s) used in this Drag and Drop operation.

### events

[ArrayList](http://docs.google.com/java/util/ArrayList.html)<[E](http://docs.google.com/java/util/ArrayList.html)> **events**

The list of events (in order) that the DragGestureRecognizer "recognized" as a "gesture" that triggers a drag.

| **Class** [**java.awt.dnd.DragSource**](http://docs.google.com/java/awt/dnd/DragSource.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6236096958971414066L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html)

Deserializes this DragSource. This method first performs default deserialization. Next, this object's FlavorMap is deserialized by using the next object in the stream. If the resulting FlavorMap is null, this object's FlavorMap is set to the default FlavorMap for this thread's ClassLoader. Next, this object's listeners are deserialized by reading a null-terminated sequence of 0 or more key/value pairs from the stream:

* If a key object is a String equal to dragSourceListenerK, a DragSourceListener is deserialized using the corresponding value object and added to this DragSource.
* If a key object is a String equal to dragSourceMotionListenerK, a DragSourceMotionListener is deserialized using the corresponding value object and added to this DragSource.
* Otherwise, the key/value pair is skipped.

**Throws:** [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)**Since:** 1.4 **See Also:**[SystemFlavorMap.getDefaultFlavorMap()](http://docs.google.com/java/awt/datatransfer/SystemFlavorMap.html#getDefaultFlavorMap())

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serializes this DragSource. This method first performs default serialization. Next, it writes out this object's FlavorMap if and only if it can be serialized. If not, null is written instead. Next, it writes out Serializable listeners registered with this object. Listeners are written in a null-terminated sequence of 0 or more pairs. The pair consists of a String and an Object; the String indicates the type of the Object and is one of the following:

* dragSourceListenerK indicating a DragSourceListener object;
* dragSourceMotionListenerK indicating a DragSourceMotionListener object.

**Serial Data:** Either a FlavorMap instance, or null, followed by a null-terminated sequence of 0 or more pairs; the pair consists of a String and an Object; the String indicates the type of the Object and is one of the following:

* dragSourceListenerK indicating a DragSourceListener object;
* dragSourceMotionListenerK indicating a DragSourceMotionListener object.

. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)**Since:** 1.4

| **Class** [**java.awt.dnd.DragSourceContext**](http://docs.google.com/java/awt/dnd/DragSourceContext.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-115407898692194719L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html)

Deserializes this DragSourceContext. This method first performs default deserialization for all non-transient fields. This object's Transferable and DragSourceListener are then deserialized as well by using the next two objects in the stream. If the resulting Transferable is null, this object's Transferable is set to a dummy Transferable which supports no DataFlavors.

**Throws:** [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)**Since:** 1.4

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serializes this DragSourceContext. This method first performs default serialization. Next, this object's Transferable is written out if and only if it can be serialized. If not, null is written instead. In this case, a DragSourceContext created from the resulting deserialized stream will contain a dummy Transferable which supports no DataFlavors. Finally, this object's DragSourceListener is written out if and only if it can be serialized. If not, null is written instead.

**Serial Data:** The default serializable fields, in alphabetical order, followed by either a Transferable instance, or null, followed by either a DragSourceListener instance, or null. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)**Since:** 1.4

| **Serialized Fields** |
| --- |

### trigger

[DragGestureEvent](http://docs.google.com/java/awt/dnd/DragGestureEvent.html) **trigger**

The event which triggered the start of the drag.

### cursor

[Cursor](http://docs.google.com/java/awt/Cursor.html) **cursor**

The current drag cursor.

### useCustomCursor

boolean **useCustomCursor**

true if the custom drag cursor is used instead of the default one.

### sourceActions

int **sourceActions**

A bitwise mask of DnDConstants that represents the set of drop actions supported by the drag source for the drag operation associated with this DragSourceContext.

| **Class** [**java.awt.dnd.DragSourceDragEvent**](http://docs.google.com/java/awt/dnd/DragSourceDragEvent.html) **extends** [**DragSourceEvent**](http://docs.google.com/java/awt/dnd/DragSourceEvent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**481346297933902471L

| **Serialized Fields** |
| --- |

### targetActions

int **targetActions**

The target drop action.

### dropAction

int **dropAction**

The user drop action.

### gestureModifiers

int **gestureModifiers**

The state of the input device modifiers associated with the user gesture.

### invalidModifiers

boolean **invalidModifiers**

Indicates whether the gestureModifiers are invalid.

| **Class** [**java.awt.dnd.DragSourceDropEvent**](http://docs.google.com/java/awt/dnd/DragSourceDropEvent.html) **extends** [**DragSourceEvent**](http://docs.google.com/java/awt/dnd/DragSourceEvent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5571321229470821891L

| **Serialized Fields** |
| --- |

### dropSuccess

boolean **dropSuccess**

true if the drop was successful.

### dropAction

int **dropAction**

The drop action.

| **Class** [**java.awt.dnd.DragSourceEvent**](http://docs.google.com/java/awt/dnd/DragSourceEvent.html) **extends** [**EventObject**](http://docs.google.com/java/util/EventObject.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-763287114604032641L

| **Serialized Fields** |
| --- |

### locationSpecified

boolean **locationSpecified**

The boolean indicating whether the cursor location is specified for this event.

### x

int **x**

The horizontal coordinate for the cursor location at the moment this event occured if the cursor location is specified for this event; otherwise zero.

### y

int **y**

The vertical coordinate for the cursor location at the moment this event occured if the cursor location is specified for this event; otherwise zero.

| **Class** [**java.awt.dnd.DropTarget**](http://docs.google.com/java/awt/dnd/DropTarget.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-6283860791671019047L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html)

Deserializes this DropTarget. This method first performs default deserialization for all non-transient fields. An attempt is then made to deserialize this object's DropTargetListener as well. This is first attempted by deserializing the field dtListener, because, in releases prior to 1.4, a non-transient field of this name stored the DropTargetListener. If this fails, the next object in the stream is used instead.

**Throws:** [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)**Since:** 1.4

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serializes this DropTarget. Performs default serialization, and then writes out this object's DropTargetListener if and only if it can be serialized. If not, null is written instead.

**Serial Data:** The default serializable fields, in alphabetical order, followed by either a DropTargetListener instance, or null. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)**Since:** 1.4

| **Serialized Fields** |
| --- |

### dropTargetContext

[DropTargetContext](http://docs.google.com/java/awt/dnd/DropTargetContext.html) **dropTargetContext**

The DropTargetContext associated with this DropTarget.

### component

[Component](http://docs.google.com/java/awt/Component.html) **component**

The Component associated with this DropTarget.

### actions

int **actions**

Default permissible actions supported by this DropTarget.

**See Also:**[DropTarget.setDefaultActions(int)](http://docs.google.com/java/awt/dnd/DropTarget.html#setDefaultActions(int)), [DropTarget.getDefaultActions()](http://docs.google.com/java/awt/dnd/DropTarget.html#getDefaultActions())

### active

boolean **active**

true if the DropTarget is accepting Drag & Drop operations.

| **Class** [**java.awt.dnd.DropTargetContext**](http://docs.google.com/java/awt/dnd/DropTargetContext.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-634158968993743371L

| **Serialized Fields** |
| --- |

### dropTarget

[DropTarget](http://docs.google.com/java/awt/dnd/DropTarget.html) **dropTarget**

The DropTarget associated with this DropTargetContext.

| **Class** [**java.awt.dnd.DropTargetDragEvent**](http://docs.google.com/java/awt/dnd/DropTargetDragEvent.html) **extends** [**DropTargetEvent**](http://docs.google.com/java/awt/dnd/DropTargetEvent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8422265619058953682L

| **Serialized Fields** |
| --- |

### location

[Point](http://docs.google.com/java/awt/Point.html) **location**

The location of the drag cursor's hotspot in Component coordinates.

### actions

int **actions**

The source drop actions.

### dropAction

int **dropAction**

The user drop action.

| **Class** [**java.awt.dnd.DropTargetDropEvent**](http://docs.google.com/java/awt/dnd/DropTargetDropEvent.html) **extends** [**DropTargetEvent**](http://docs.google.com/java/awt/dnd/DropTargetEvent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1721911170440459322L

| **Serialized Fields** |
| --- |

### location

[Point](http://docs.google.com/java/awt/Point.html) **location**

The location of the drag cursor's hotspot in Component coordinates.

### actions

int **actions**

The source drop actions.

### dropAction

int **dropAction**

The user drop action.

### isLocalTx

boolean **isLocalTx**

true if the source is in the same JVM as the target.

| **Class** [**java.awt.dnd.DropTargetEvent**](http://docs.google.com/java/awt/dnd/DropTargetEvent.html) **extends** [**EventObject**](http://docs.google.com/java/util/EventObject.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2821229066521922993L

| **Serialized Fields** |
| --- |

### context

[DropTargetContext](http://docs.google.com/java/awt/dnd/DropTargetContext.html) **context**

The DropTargetContext associated with this DropTargetEvent.

| **Class** [**java.awt.dnd.InvalidDnDOperationException**](http://docs.google.com/java/awt/dnd/InvalidDnDOperationException.html) **extends** [**IllegalStateException**](http://docs.google.com/java/lang/IllegalStateException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.awt.dnd.MouseDragGestureRecognizer**](http://docs.google.com/java/awt/dnd/MouseDragGestureRecognizer.html) **extends** [**DragGestureRecognizer**](http://docs.google.com/java/awt/dnd/DragGestureRecognizer.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6220099344182281120L

| **Package** **java.awt.event** |
| --- |

| **Class** [**java.awt.event.ActionEvent**](http://docs.google.com/java/awt/event/ActionEvent.html) **extends** [**AWTEvent**](http://docs.google.com/java/awt/AWTEvent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7671078796273832149L

| **Serialized Fields** |
| --- |

### actionCommand

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

The nonlocalized string that gives more details of what actually caused the event. This information is very specific to the component that fired it.

**See Also:**[ActionEvent.getActionCommand()](http://docs.google.com/java/awt/event/ActionEvent.html#getActionCommand())

### when

long **when**

Timestamp of when this event occurred. Because an ActionEvent is a high- level, semantic event, the timestamp is typically the same as an underlying InputEvent.

**See Also:**[ActionEvent.getWhen()](http://docs.google.com/java/awt/event/ActionEvent.html#getWhen())

### modifiers

int **modifiers**

This represents the key modifier that was selected, and is used to determine the state of the selected key. If no modifier has been selected it will default to zero.

**See Also:**[ActionEvent.getModifiers()](http://docs.google.com/java/awt/event/ActionEvent.html#getModifiers())

| **Class** [**java.awt.event.AdjustmentEvent**](http://docs.google.com/java/awt/event/AdjustmentEvent.html) **extends** [**AWTEvent**](http://docs.google.com/java/awt/AWTEvent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5700290645205279921L

| **Serialized Fields** |
| --- |

### adjustable

[Adjustable](http://docs.google.com/java/awt/Adjustable.html) **adjustable**

The adjustable object that fired the event.

**See Also:**[AdjustmentEvent.getAdjustable()](http://docs.google.com/java/awt/event/AdjustmentEvent.html#getAdjustable())

### value

int **value**

value will contain the new value of the adjustable object. This value will always be in a range associated adjustable object.

**See Also:**[AdjustmentEvent.getValue()](http://docs.google.com/java/awt/event/AdjustmentEvent.html#getValue())

### adjustmentType

int **adjustmentType**

The adjustmentType describes how the adjustable object value has changed. This value can be increased/decreased by a block or unit amount where the block is associated with page increments/decrements, and a unit is associated with line increments/decrements.

**See Also:**[AdjustmentEvent.getAdjustmentType()](http://docs.google.com/java/awt/event/AdjustmentEvent.html#getAdjustmentType())

### isAdjusting

boolean **isAdjusting**

The isAdjusting is true if the event is one of the series of multiple adjustment events.

**Since:** 1.4 **See Also:**[AdjustmentEvent.getValueIsAdjusting()](http://docs.google.com/java/awt/event/AdjustmentEvent.html#getValueIsAdjusting())

| **Class** [**java.awt.event.ComponentEvent**](http://docs.google.com/java/awt/event/ComponentEvent.html) **extends** [**AWTEvent**](http://docs.google.com/java/awt/AWTEvent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8101406823902992965L

| **Class** [**java.awt.event.ContainerEvent**](http://docs.google.com/java/awt/event/ContainerEvent.html) **extends** [**ComponentEvent**](http://docs.google.com/java/awt/event/ComponentEvent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4114942250539772041L

| **Serialized Fields** |
| --- |

### child

[Component](http://docs.google.com/java/awt/Component.html) **child**

The non-null component that is being added or removed from the Container.

**See Also:**[ContainerEvent.getChild()](http://docs.google.com/java/awt/event/ContainerEvent.html#getChild())

| **Class** [**java.awt.event.FocusEvent**](http://docs.google.com/java/awt/event/FocusEvent.html) **extends** [**ComponentEvent**](http://docs.google.com/java/awt/event/ComponentEvent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**523753786457416396L

| **Serialized Fields** |
| --- |

### temporary

boolean **temporary**

A focus event can have two different levels, permanent and temporary. It will be set to true if some operation takes away the focus temporarily and intends on getting it back once the event is completed. Otherwise it will be set to false.

**See Also:**[FocusEvent.isTemporary()](http://docs.google.com/java/awt/event/FocusEvent.html#isTemporary())

| **Class** [**java.awt.event.HierarchyEvent**](http://docs.google.com/java/awt/event/HierarchyEvent.html) **extends** [**AWTEvent**](http://docs.google.com/java/awt/AWTEvent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5337576970038043990L

| **Serialized Fields** |
| --- |

### changed

[Component](http://docs.google.com/java/awt/Component.html) **changed**

### changedParent

[Container](http://docs.google.com/java/awt/Container.html) **changedParent**

### changeFlags

long **changeFlags**

| **Class** [**java.awt.event.InputEvent**](http://docs.google.com/java/awt/event/InputEvent.html) **extends** [**ComponentEvent**](http://docs.google.com/java/awt/event/ComponentEvent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2482525981698309786L

| **Serialized Fields** |
| --- |

### when

long **when**

The input event's Time stamp in UTC format. The time stamp indicates when the input event was created.

**See Also:**[InputEvent.getWhen()](http://docs.google.com/java/awt/event/InputEvent.html#getWhen())

### modifiers

int **modifiers**

The state of the modifier mask at the time the input event was fired.

**See Also:**[InputEvent.getModifiers()](http://docs.google.com/java/awt/event/InputEvent.html#getModifiers()), [InputEvent.getModifiersEx()](http://docs.google.com/java/awt/event/InputEvent.html#getModifiersEx()), [KeyEvent](http://docs.google.com/java/awt/event/KeyEvent.html), [MouseEvent](http://docs.google.com/java/awt/event/MouseEvent.html)

| **Class** [**java.awt.event.InputMethodEvent**](http://docs.google.com/java/awt/event/InputMethodEvent.html) **extends** [**AWTEvent**](http://docs.google.com/java/awt/AWTEvent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4727190874778922661L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html)

Initializes the when field if it is not present in the object input stream. In that case, the field will be initialized by invoking [EventQueue.getMostRecentEventTime()](http://docs.google.com/java/awt/EventQueue.html#getMostRecentEventTime()).

**Throws:** [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### when

long **when**

The time stamp that indicates when the event was created.

**Since:** 1.4 **See Also:**[InputMethodEvent.getWhen()](http://docs.google.com/java/awt/event/InputMethodEvent.html#getWhen())

| **Class** [**java.awt.event.InvocationEvent**](http://docs.google.com/java/awt/event/InvocationEvent.html) **extends** [**AWTEvent**](http://docs.google.com/java/awt/AWTEvent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**436056344909459450L

| **Serialized Fields** |
| --- |

### runnable

[Runnable](http://docs.google.com/java/lang/Runnable.html) **runnable**

The Runnable whose run() method will be called.

### notifier

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

The (potentially null) Object whose notifyAll() method will be called immediately after the Runnable.run() method returns.

### catchExceptions

boolean **catchExceptions**

Set to true if dispatch() catches Throwable and stores it in the exception instance variable. If false, Throwables are propagated up to the EventDispatchThread's dispatch loop.

### exception

[Exception](http://docs.google.com/java/lang/Exception.html) **exception**

The (potentially null) Exception thrown during execution of the Runnable.run() method. This variable will also be null if a particular instance does not catch exceptions.

### throwable

[Throwable](http://docs.google.com/java/lang/Throwable.html) **throwable**

The (potentially null) Throwable thrown during execution of the Runnable.run() method. This variable will also be null if a particular instance does not catch exceptions.

### when

long **when**

The timestamp of when this event occurred.

**See Also:**[InvocationEvent.getWhen()](http://docs.google.com/java/awt/event/InvocationEvent.html#getWhen())

| **Class** [**java.awt.event.ItemEvent**](http://docs.google.com/java/awt/event/ItemEvent.html) **extends** [**AWTEvent**](http://docs.google.com/java/awt/AWTEvent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-608708132447206933L

| **Serialized Fields** |
| --- |

### item

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

The item whose selection state has changed.

**See Also:**[ItemEvent.getItem()](http://docs.google.com/java/awt/event/ItemEvent.html#getItem())

### stateChange

int **stateChange**

stateChange indicates whether the item was selected or deselected.

**See Also:**[ItemEvent.getStateChange()](http://docs.google.com/java/awt/event/ItemEvent.html#getStateChange())

| **Class** [**java.awt.event.KeyEvent**](http://docs.google.com/java/awt/event/KeyEvent.html) **extends** [**InputEvent**](http://docs.google.com/java/awt/event/InputEvent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2352130953028126954L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Sets new modifiers by the old ones. The key modifiers override overlaping mouse modifiers.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

| **Serialized Fields** |
| --- |

### isProxyActive

boolean **isProxyActive**

Stores the state of native event dispatching system - true, if when the event was created event proxying mechanism was active - false, if it was inactive Used in Component.dispatchEventImpl to correctly dispatch events when proxy is active

### keyCode

int **keyCode**

The unique value assigned to each of the keys on the keyboard. There is a common set of key codes that can be fired by most keyboards. The symbolic name for a key code should be used rather than the code value itself.

**See Also:**[KeyEvent.getKeyCode()](http://docs.google.com/java/awt/event/KeyEvent.html#getKeyCode()), [KeyEvent.setKeyCode(int)](http://docs.google.com/java/awt/event/KeyEvent.html#setKeyCode(int))

### keyChar

char **keyChar**

keyChar is a valid unicode character that is fired by a key or a key combination on a keyboard.

**See Also:**[KeyEvent.getKeyChar()](http://docs.google.com/java/awt/event/KeyEvent.html#getKeyChar()), [KeyEvent.setKeyChar(char)](http://docs.google.com/java/awt/event/KeyEvent.html#setKeyChar(char))

### keyLocation

int **keyLocation**

The location of the key on the keyboard. Some keys occur more than once on a keyboard, e.g. the left and right shift keys. Additionally, some keys occur on the numeric keypad. This variable is used to distinguish such keys. The only legal values are KEY\_LOCATION\_UNKNOWN, KEY\_LOCATION\_STANDARD, KEY\_LOCATION\_LEFT, KEY\_LOCATION\_RIGHT, and KEY\_LOCATION\_NUMPAD.

**See Also:**[KeyEvent.getKeyLocation()](http://docs.google.com/java/awt/event/KeyEvent.html#getKeyLocation())

| **Class** [**java.awt.event.MouseEvent**](http://docs.google.com/java/awt/event/MouseEvent.html) **extends** [**InputEvent**](http://docs.google.com/java/awt/event/InputEvent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-991214153494842848L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Sets new modifiers by the old ones.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

| **Serialized Fields** |
| --- |

### x

int **x**

The mouse event's x coordinate. The x value is relative to the component that fired the event.

**See Also:**[MouseEvent.getX()](http://docs.google.com/java/awt/event/MouseEvent.html#getX())

### y

int **y**

The mouse event's y coordinate. The y value is relative to the component that fired the event.

**See Also:**[MouseEvent.getY()](http://docs.google.com/java/awt/event/MouseEvent.html#getY())

### xAbs

int **xAbs**

The mouse event's x absolute coordinate. In a virtual device multi-screen environment in which the desktop area could span multiple physical screen devices, this coordinate is relative to the virtual coordinate system. Otherwise, this coordinate is relative to the coordinate system associated with the Component's GraphicsConfiguration.

### yAbs

int **yAbs**

The mouse event's y absolute coordinate. In a virtual device multi-screen environment in which the desktop area could span multiple physical screen devices, this coordinate is relative to the virtual coordinate system. Otherwise, this coordinate is relative to the coordinate system associated with the Component's GraphicsConfiguration.

### clickCount

int **clickCount**

Indicates the number of quick consecutive clicks of a mouse button. clickCount will be valid for only three mouse events :

MOUSE\_CLICKED, MOUSE\_PRESSED and MOUSE\_RELEASED. For the above, the clickCount will be at least 1. For all other events the count will be 0.

**See Also:**[MouseEvent.getClickCount().](http://docs.google.com/java/awt/event/MouseEvent.html#getClickCount())

### button

int **button**

Indicates which, if any, of the mouse buttons has changed state. The only legal values are the following constants: NOBUTTON, BUTTON1, BUTTON2 or BUTTON3.

**See Also:**[MouseEvent.getButton().](http://docs.google.com/java/awt/event/MouseEvent.html#getButton())

### popupTrigger

boolean **popupTrigger**

A property used to indicate whether a Popup Menu should appear with a certain gestures. If popupTrigger = false, no popup menu should appear. If it is true then a popup menu should appear.

**See Also:**[PopupMenu](http://docs.google.com/java/awt/PopupMenu.html), [MouseEvent.isPopupTrigger()](http://docs.google.com/java/awt/event/MouseEvent.html#isPopupTrigger())

| **Class** [**java.awt.event.MouseWheelEvent**](http://docs.google.com/java/awt/event/MouseWheelEvent.html) **extends** [**MouseEvent**](http://docs.google.com/java/awt/event/MouseEvent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6459879390515399677L

| **Serialized Fields** |
| --- |

### scrollType

int **scrollType**

Indicates what sort of scrolling should take place in response to this event, based on platform settings. Legal values are:

* WHEEL\_UNIT\_SCROLL
* WHEEL\_BLOCK\_SCROLL

**See Also:**[MouseWheelEvent.getScrollType()](http://docs.google.com/java/awt/event/MouseWheelEvent.html#getScrollType())

### scrollAmount

int **scrollAmount**

Only valid for scrollType WHEEL\_UNIT\_SCROLL. Indicates number of units that should be scrolled per click of mouse wheel rotation, based on platform settings.

**See Also:**[MouseWheelEvent.getScrollAmount()](http://docs.google.com/java/awt/event/MouseWheelEvent.html#getScrollAmount()), [MouseWheelEvent.getScrollType()](http://docs.google.com/java/awt/event/MouseWheelEvent.html#getScrollType())

### wheelRotation

int **wheelRotation**

Indicates how far the mouse wheel was rotated.

**See Also:**[MouseWheelEvent.getWheelRotation()](http://docs.google.com/java/awt/event/MouseWheelEvent.html#getWheelRotation())

| **Class** [**java.awt.event.PaintEvent**](http://docs.google.com/java/awt/event/PaintEvent.html) **extends** [**ComponentEvent**](http://docs.google.com/java/awt/event/ComponentEvent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1267492026433337593L

| **Serialized Fields** |
| --- |

### updateRect

[Rectangle](http://docs.google.com/java/awt/Rectangle.html) **updateRect**

This is the rectangle that represents the area on the source component that requires a repaint. This rectangle should be non null.

**See Also:**[Rectangle](http://docs.google.com/java/awt/Rectangle.html), [PaintEvent.setUpdateRect(Rectangle)](http://docs.google.com/java/awt/event/PaintEvent.html#setUpdateRect(java.awt.Rectangle)), [PaintEvent.getUpdateRect()](http://docs.google.com/java/awt/event/PaintEvent.html#getUpdateRect())

| **Class** [**java.awt.event.TextEvent**](http://docs.google.com/java/awt/event/TextEvent.html) **extends** [**AWTEvent**](http://docs.google.com/java/awt/AWTEvent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6269902291250941179L

| **Class** [**java.awt.event.WindowEvent**](http://docs.google.com/java/awt/event/WindowEvent.html) **extends** [**ComponentEvent**](http://docs.google.com/java/awt/event/ComponentEvent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1567959133147912127L

| **Serialized Fields** |
| --- |

### oldState

int **oldState**

TBS

### newState

int **newState**

| **Package** **java.awt.font** |
| --- |

| **Class** [**java.awt.font.NumericShaper**](http://docs.google.com/java/awt/font/NumericShaper.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### key

int **key**

index of context for contextual shaping - values range from 0 to 18

### mask

int **mask**

flag indicating whether to shape contextually (high bit) and which digit ranges to shape (bits 0-18)

| **Class** [**java.awt.font.TextAttribute**](http://docs.google.com/java/awt/font/TextAttribute.html) **extends** [**AttributedCharacterIterator.Attribute**](http://docs.google.com/java/text/AttributedCharacterIterator.Attribute.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7744112784117861702L

| **Serialization Methods** |
| --- |

### readResolve

protected [Object](http://docs.google.com/java/lang/Object.html) **readResolve**()  
 throws [InvalidObjectException](http://docs.google.com/java/io/InvalidObjectException.html)

Resolves instances being deserialized to the predefined constants.

**Throws:** [InvalidObjectException](http://docs.google.com/java/io/InvalidObjectException.html)

| **Class** [**java.awt.font.TransformAttribute**](http://docs.google.com/java/awt/font/TransformAttribute.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3356247357827709530L

| **Serialization Methods** |
| --- |

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html)

**Throws:** [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)

### readResolve

private [Object](http://docs.google.com/java/lang/Object.html) **readResolve**()  
 throws [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html)

**Throws:** [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html)

| **Serialized Fields** |
| --- |

### transform

[AffineTransform](http://docs.google.com/java/awt/geom/AffineTransform.html) **transform**

The AffineTransform for this TransformAttribute, or null if AffineTransform is the identity transform.

| **Package** **java.awt.geom** |
| --- |

| **Class** [**java.awt.geom.AffineTransform**](http://docs.google.com/java/awt/geom/AffineTransform.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1330973210523860834L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html)

**Throws:** [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html)

**Throws:** [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### m00

double **m00**

The X coordinate scaling element of the 3x3 affine transformation matrix.

### m10

double **m10**

The Y coordinate shearing element of the 3x3 affine transformation matrix.

### m01

double **m01**

The X coordinate shearing element of the 3x3 affine transformation matrix.

### m11

double **m11**

The Y coordinate scaling element of the 3x3 affine transformation matrix.

### m02

double **m02**

The X coordinate of the translation element of the 3x3 affine transformation matrix.

### m12

double **m12**

The Y coordinate of the translation element of the 3x3 affine transformation matrix.

| **Class** [**java.awt.geom.Arc2D.Double**](http://docs.google.com/java/awt/geom/Arc2D.Double.html) **extends** [**Arc2D**](http://docs.google.com/java/awt/geom/Arc2D.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**728264085846882001L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html)

Reads the default serializable fields from the ObjectInputStream followed by a byte indicating the arc type of this Arc2D instance.

**Serial Data:**

1. The default serializable fields.
2. followed by a byte indicating the arc type [Arc2D.OPEN](http://docs.google.com/java/awt/geom/Arc2D.html#OPEN), [Arc2D.CHORD](http://docs.google.com/java/awt/geom/Arc2D.html#CHORD), or [Arc2D.PIE](http://docs.google.com/java/awt/geom/Arc2D.html#PIE).

**Throws:** [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Writes the default serializable fields to the ObjectOutputStream followed by a byte indicating the arc type of this Arc2D instance.

**Serial Data:**

1. The default serializable fields.
2. followed by a byte indicating the arc type [Arc2D.OPEN](http://docs.google.com/java/awt/geom/Arc2D.html#OPEN), [Arc2D.CHORD](http://docs.google.com/java/awt/geom/Arc2D.html#CHORD), or [Arc2D.PIE](http://docs.google.com/java/awt/geom/Arc2D.html#PIE).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### x

double **x**

The X coordinate of the upper-left corner of the framing rectangle of the arc.

**Since:** 1.2

### y

double **y**

The Y coordinate of the upper-left corner of the framing rectangle of the arc.

**Since:** 1.2

### width

double **width**

The overall width of the full ellipse of which this arc is a partial section (not considering the angular extents).

**Since:** 1.2

### height

double **height**

The overall height of the full ellipse of which this arc is a partial section (not considering the angular extents).

**Since:** 1.2

### start

double **start**

The starting angle of the arc in degrees.

**Since:** 1.2

### extent

double **extent**

The angular extent of the arc in degrees.

**Since:** 1.2

| **Class** [**java.awt.geom.Arc2D.Float**](http://docs.google.com/java/awt/geom/Arc2D.Float.html) **extends** [**Arc2D**](http://docs.google.com/java/awt/geom/Arc2D.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**9130893014586380278L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html)

Reads the default serializable fields from the ObjectInputStream followed by a byte indicating the arc type of this Arc2D instance.

**Serial Data:**

1. The default serializable fields.
2. followed by a byte indicating the arc type [Arc2D.OPEN](http://docs.google.com/java/awt/geom/Arc2D.html#OPEN), [Arc2D.CHORD](http://docs.google.com/java/awt/geom/Arc2D.html#CHORD), or [Arc2D.PIE](http://docs.google.com/java/awt/geom/Arc2D.html#PIE).

**Throws:** [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Writes the default serializable fields to the ObjectOutputStream followed by a byte indicating the arc type of this Arc2D instance.

**Serial Data:**

1. The default serializable fields.
2. followed by a byte indicating the arc type [Arc2D.OPEN](http://docs.google.com/java/awt/geom/Arc2D.html#OPEN), [Arc2D.CHORD](http://docs.google.com/java/awt/geom/Arc2D.html#CHORD), or [Arc2D.PIE](http://docs.google.com/java/awt/geom/Arc2D.html#PIE).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### x

float **x**

The X coordinate of the upper-left corner of the framing rectangle of the arc.

**Since:** 1.2

### y

float **y**

The Y coordinate of the upper-left corner of the framing rectangle of the arc.

**Since:** 1.2

### width

float **width**

The overall width of the full ellipse of which this arc is a partial section (not considering the angular extents).

**Since:** 1.2

### height

float **height**

The overall height of the full ellipse of which this arc is a partial section (not considering the angular extents).

**Since:** 1.2

### start

float **start**

The starting angle of the arc in degrees.

**Since:** 1.2

### extent

float **extent**

The angular extent of the arc in degrees.

**Since:** 1.2

| **Class** [**java.awt.geom.CubicCurve2D.Double**](http://docs.google.com/java/awt/geom/CubicCurve2D.Double.html) **extends** [**CubicCurve2D**](http://docs.google.com/java/awt/geom/CubicCurve2D.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4202960122839707295L

| **Serialized Fields** |
| --- |

### x1

double **x1**

The X coordinate of the start point of the cubic curve segment.

**Since:** 1.2

### y1

double **y1**

The Y coordinate of the start point of the cubic curve segment.

**Since:** 1.2

### ctrlx1

double **ctrlx1**

The X coordinate of the first control point of the cubic curve segment.

**Since:** 1.2

### ctrly1

double **ctrly1**

The Y coordinate of the first control point of the cubic curve segment.

**Since:** 1.2

### ctrlx2

double **ctrlx2**

The X coordinate of the second control point of the cubic curve segment.

**Since:** 1.2

### ctrly2

double **ctrly2**

The Y coordinate of the second control point of the cubic curve segment.

**Since:** 1.2

### x2

double **x2**

The X coordinate of the end point of the cubic curve segment.

**Since:** 1.2

### y2

double **y2**

The Y coordinate of the end point of the cubic curve segment.

**Since:** 1.2

| **Class** [**java.awt.geom.CubicCurve2D.Float**](http://docs.google.com/java/awt/geom/CubicCurve2D.Float.html) **extends** [**CubicCurve2D**](http://docs.google.com/java/awt/geom/CubicCurve2D.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1272015596714244385L

| **Serialized Fields** |
| --- |

### x1

float **x1**

The X coordinate of the start point of the cubic curve segment.

**Since:** 1.2

### y1

float **y1**

The Y coordinate of the start point of the cubic curve segment.

**Since:** 1.2

### ctrlx1

float **ctrlx1**

The X coordinate of the first control point of the cubic curve segment.

**Since:** 1.2

### ctrly1

float **ctrly1**

The Y coordinate of the first control point of the cubic curve segment.

**Since:** 1.2

### ctrlx2

float **ctrlx2**

The X coordinate of the second control point of the cubic curve segment.

**Since:** 1.2

### ctrly2

float **ctrly2**

The Y coordinate of the second control point of the cubic curve segment.

**Since:** 1.2

### x2

float **x2**

The X coordinate of the end point of the cubic curve segment.

**Since:** 1.2

### y2

float **y2**

The Y coordinate of the end point of the cubic curve segment.

**Since:** 1.2

| **Class** [**java.awt.geom.Ellipse2D.Double**](http://docs.google.com/java/awt/geom/Ellipse2D.Double.html) **extends** [**Ellipse2D**](http://docs.google.com/java/awt/geom/Ellipse2D.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5555464816372320683L

| **Serialized Fields** |
| --- |

### x

double **x**

The X coordinate of the upper-left corner of the framing rectangle of this Ellipse2D.

**Since:** 1.2

### y

double **y**

The Y coordinate of the upper-left corner of the framing rectangle of this Ellipse2D.

**Since:** 1.2

### width

double **width**

The overall width of this Ellipse2D.

**Since:** 1.2

### height

double **height**

The overall height of the Ellipse2D.

**Since:** 1.2

| **Class** [**java.awt.geom.Ellipse2D.Float**](http://docs.google.com/java/awt/geom/Ellipse2D.Float.html) **extends** [**Ellipse2D**](http://docs.google.com/java/awt/geom/Ellipse2D.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-6633761252372475977L

| **Serialized Fields** |
| --- |

### x

float **x**

The X coordinate of the upper-left corner of the framing rectangle of this Ellipse2D.

**Since:** 1.2

### y

float **y**

The Y coordinate of the upper-left corner of the framing rectangle of this Ellipse2D.

**Since:** 1.2

### width

float **width**

The overall width of this Ellipse2D.

**Since:** 1.2

### height

float **height**

The overall height of this Ellipse2D.

**Since:** 1.2

| **Class** [**java.awt.geom.GeneralPath**](http://docs.google.com/java/awt/geom/GeneralPath.html) **extends** [**Path2D.Float**](http://docs.google.com/java/awt/geom/Path2D.Float.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8327096662768731142L

| **Class** [**java.awt.geom.IllegalPathStateException**](http://docs.google.com/java/awt/geom/IllegalPathStateException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.awt.geom.Line2D.Double**](http://docs.google.com/java/awt/geom/Line2D.Double.html) **extends** [**Line2D**](http://docs.google.com/java/awt/geom/Line2D.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7979627399746467499L

| **Serialized Fields** |
| --- |

### x1

double **x1**

The X coordinate of the start point of the line segment.

**Since:** 1.2

### y1

double **y1**

The Y coordinate of the start point of the line segment.

**Since:** 1.2

### x2

double **x2**

The X coordinate of the end point of the line segment.

**Since:** 1.2

### y2

double **y2**

The Y coordinate of the end point of the line segment.

**Since:** 1.2

| **Class** [**java.awt.geom.Line2D.Float**](http://docs.google.com/java/awt/geom/Line2D.Float.html) **extends** [**Line2D**](http://docs.google.com/java/awt/geom/Line2D.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6161772511649436349L

| **Serialized Fields** |
| --- |

### x1

float **x1**

The X coordinate of the start point of the line segment.

**Since:** 1.2

### y1

float **y1**

The Y coordinate of the start point of the line segment.

**Since:** 1.2

### x2

float **x2**

The X coordinate of the end point of the line segment.

**Since:** 1.2

### y2

float **y2**

The Y coordinate of the end point of the line segment.

**Since:** 1.2

| **Class** [**java.awt.geom.NoninvertibleTransformException**](http://docs.google.com/java/awt/geom/NoninvertibleTransformException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.awt.geom.Path2D.Double**](http://docs.google.com/java/awt/geom/Path2D.Double.html) **extends** [**Path2D**](http://docs.google.com/java/awt/geom/Path2D.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1826762518450014216L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html)

Reads the default serializable fields from the ObjectInputStream followed by an explicit serialization of the path segments stored in this path.

There are no default serializable fields as of 1.6.

The serial data for this object is described in the writeObject method.

**Throws:** [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)**Since:** 1.6

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Writes the default serializable fields to the ObjectOutputStream followed by an explicit serialization of the path segments stored in this path.

**Serial Data:**

1. The default serializable fields. There are no default serializable fields as of 1.6.
2. followed by a byte indicating the storage type of the original object as a hint (SERIAL\_STORAGE\_DBL\_ARRAY)
3. followed by an integer indicating the number of path segments to follow (NP) or -1 to indicate an unknown number of path segments follows
4. followed by an integer indicating the total number of coordinates to follow (NC) or -1 to indicate an unknown number of coordinates follows (NC should always be even since coordinates always appear in pairs representing an x,y pair)
5. followed by a byte indicating the winding rule ([WIND\_EVEN\_ODD](http://docs.google.com/java/awt/geom/Path2D.html#WIND_EVEN_ODD) or [WIND\_NON\_ZERO](http://docs.google.com/java/awt/geom/Path2D.html#WIND_NON_ZERO))
6. followed by NP (or unlimited if NP < 0) sets of values consisting of a single byte indicating a path segment type followed by one or more pairs of float or double values representing the coordinates of the path segment
7. followed by a byte indicating the end of the path (SERIAL\_PATH\_END).

The following byte value constants are used in the serialized form of Path2D objects:

| Constant Name | Byte Value | Followed by | Description |
| --- | --- | --- | --- |
| SERIAL\_STORAGE\_FLT\_ARRAY | 0x30 |  | A hint that the original Path2D object stored the coordinates in a Java array of floats. |
| SERIAL\_STORAGE\_DBL\_ARRAY | 0x31 |  | A hint that the original Path2D object stored the coordinates in a Java array of doubles. |
| SERIAL\_SEG\_FLT\_MOVETO | 0x40 | 2 floats | A [moveTo](http://docs.google.com/java/awt/geom/Path2D.Double.html#moveTo(double,%20double)) path segment follows. |
| SERIAL\_SEG\_FLT\_LINETO | 0x41 | 2 floats | A [lineTo](http://docs.google.com/java/awt/geom/Path2D.Double.html#lineTo(double,%20double)) path segment follows. |
| SERIAL\_SEG\_FLT\_QUADTO | 0x42 | 4 floats | A [quadTo](http://docs.google.com/java/awt/geom/Path2D.Double.html#quadTo(double,%20double,%20double,%20double)) path segment follows. |
| SERIAL\_SEG\_FLT\_CUBICTO | 0x43 | 6 floats | A [curveTo](http://docs.google.com/java/awt/geom/Path2D.Double.html#curveTo(double,%20double,%20double,%20double,%20double,%20double)) path segment follows. |
| SERIAL\_SEG\_DBL\_MOVETO | 0x50 | 2 doubles | A [moveTo](http://docs.google.com/java/awt/geom/Path2D.Double.html#moveTo(double,%20double)) path segment follows. |
| SERIAL\_SEG\_DBL\_LINETO | 0x51 | 2 doubles | A [lineTo](http://docs.google.com/java/awt/geom/Path2D.Double.html#lineTo(double,%20double)) path segment follows. |
| SERIAL\_SEG\_DBL\_QUADTO | 0x52 | 4 doubles | A [curveTo](http://docs.google.com/java/awt/geom/Path2D.Double.html#curveTo(double,%20double,%20double,%20double,%20double,%20double)) path segment follows. |
| SERIAL\_SEG\_DBL\_CUBICTO | 0x53 | 6 doubles | A [curveTo](http://docs.google.com/java/awt/geom/Path2D.Double.html#curveTo(double,%20double,%20double,%20double,%20double,%20double)) path segment follows. |
| SERIAL\_SEG\_CLOSE | 0x60 |  | A [closePath](http://docs.google.com/java/awt/geom/Path2D.html#closePath()) path segment. |
| SERIAL\_PATH\_END | 0x61 |  | There are no more path segments following. |

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)**Since:** 1.6

| **Class** [**java.awt.geom.Path2D.Float**](http://docs.google.com/java/awt/geom/Path2D.Float.html) **extends** [**Path2D**](http://docs.google.com/java/awt/geom/Path2D.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6990832515060788886L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html)

Reads the default serializable fields from the ObjectInputStream followed by an explicit serialization of the path segments stored in this path.

There are no default serializable fields as of 1.6.

The serial data for this object is described in the writeObject method.

**Throws:** [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)**Since:** 1.6

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Writes the default serializable fields to the ObjectOutputStream followed by an explicit serialization of the path segments stored in this path.

**Serial Data:**

1. The default serializable fields. There are no default serializable fields as of 1.6.
2. followed by a byte indicating the storage type of the original object as a hint (SERIAL\_STORAGE\_FLT\_ARRAY)
3. followed by an integer indicating the number of path segments to follow (NP) or -1 to indicate an unknown number of path segments follows
4. followed by an integer indicating the total number of coordinates to follow (NC) or -1 to indicate an unknown number of coordinates follows (NC should always be even since coordinates always appear in pairs representing an x,y pair)
5. followed by a byte indicating the winding rule ([WIND\_EVEN\_ODD](http://docs.google.com/java/awt/geom/Path2D.html#WIND_EVEN_ODD) or [WIND\_NON\_ZERO](http://docs.google.com/java/awt/geom/Path2D.html#WIND_NON_ZERO))
6. followed by NP (or unlimited if NP < 0) sets of values consisting of a single byte indicating a path segment type followed by one or more pairs of float or double values representing the coordinates of the path segment
7. followed by a byte indicating the end of the path (SERIAL\_PATH\_END).

The following byte value constants are used in the serialized form of Path2D objects:

| Constant Name | Byte Value | Followed by | Description |
| --- | --- | --- | --- |
| SERIAL\_STORAGE\_FLT\_ARRAY | 0x30 |  | A hint that the original Path2D object stored the coordinates in a Java array of floats. |
| SERIAL\_STORAGE\_DBL\_ARRAY | 0x31 |  | A hint that the original Path2D object stored the coordinates in a Java array of doubles. |
| SERIAL\_SEG\_FLT\_MOVETO | 0x40 | 2 floats | A [moveTo](http://docs.google.com/java/awt/geom/Path2D.Float.html#moveTo(double,%20double)) path segment follows. |
| SERIAL\_SEG\_FLT\_LINETO | 0x41 | 2 floats | A [lineTo](http://docs.google.com/java/awt/geom/Path2D.Float.html#lineTo(double,%20double)) path segment follows. |
| SERIAL\_SEG\_FLT\_QUADTO | 0x42 | 4 floats | A [quadTo](http://docs.google.com/java/awt/geom/Path2D.Float.html#quadTo(double,%20double,%20double,%20double)) path segment follows. |
| SERIAL\_SEG\_FLT\_CUBICTO | 0x43 | 6 floats | A [curveTo](http://docs.google.com/java/awt/geom/Path2D.Float.html#curveTo(double,%20double,%20double,%20double,%20double,%20double)) path segment follows. |
| SERIAL\_SEG\_DBL\_MOVETO | 0x50 | 2 doubles | A [moveTo](http://docs.google.com/java/awt/geom/Path2D.Float.html#moveTo(double,%20double)) path segment follows. |
| SERIAL\_SEG\_DBL\_LINETO | 0x51 | 2 doubles | A [lineTo](http://docs.google.com/java/awt/geom/Path2D.Float.html#lineTo(double,%20double)) path segment follows. |
| SERIAL\_SEG\_DBL\_QUADTO | 0x52 | 4 doubles | A [curveTo](http://docs.google.com/java/awt/geom/Path2D.Float.html#curveTo(double,%20double,%20double,%20double,%20double,%20double)) path segment follows. |
| SERIAL\_SEG\_DBL\_CUBICTO | 0x53 | 6 doubles | A [curveTo](http://docs.google.com/java/awt/geom/Path2D.Float.html#curveTo(double,%20double,%20double,%20double,%20double,%20double)) path segment follows. |
| SERIAL\_SEG\_CLOSE | 0x60 |  | A [closePath](http://docs.google.com/java/awt/geom/Path2D.html#closePath()) path segment. |
| SERIAL\_PATH\_END | 0x61 |  | There are no more path segments following. |

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)**Since:** 1.6

| **Class** [**java.awt.geom.Point2D.Double**](http://docs.google.com/java/awt/geom/Point2D.Double.html) **extends** [**Point2D**](http://docs.google.com/java/awt/geom/Point2D.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6150783262733311327L

| **Serialized Fields** |
| --- |

### x

double **x**

The X coordinate of this Point2D.

**Since:** 1.2

### y

double **y**

The Y coordinate of this Point2D.

**Since:** 1.2

| **Class** [**java.awt.geom.Point2D.Float**](http://docs.google.com/java/awt/geom/Point2D.Float.html) **extends** [**Point2D**](http://docs.google.com/java/awt/geom/Point2D.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2870572449815403710L

| **Serialized Fields** |
| --- |

### x

float **x**

The X coordinate of this Point2D.

**Since:** 1.2

### y

float **y**

The Y coordinate of this Point2D.

**Since:** 1.2

| **Class** [**java.awt.geom.QuadCurve2D.Double**](http://docs.google.com/java/awt/geom/QuadCurve2D.Double.html) **extends** [**QuadCurve2D**](http://docs.google.com/java/awt/geom/QuadCurve2D.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4217149928428559721L

| **Serialized Fields** |
| --- |

### x1

double **x1**

The X coordinate of the start point of the quadratic curve segment.

**Since:** 1.2

### y1

double **y1**

The Y coordinate of the start point of the quadratic curve segment.

**Since:** 1.2

### ctrlx

double **ctrlx**

The X coordinate of the control point of the quadratic curve segment.

**Since:** 1.2

### ctrly

double **ctrly**

The Y coordinate of the control point of the quadratic curve segment.

**Since:** 1.2

### x2

double **x2**

The X coordinate of the end point of the quadratic curve segment.

**Since:** 1.2

### y2

double **y2**

The Y coordinate of the end point of the quadratic curve segment.

**Since:** 1.2

| **Class** [**java.awt.geom.QuadCurve2D.Float**](http://docs.google.com/java/awt/geom/QuadCurve2D.Float.html) **extends** [**QuadCurve2D**](http://docs.google.com/java/awt/geom/QuadCurve2D.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8511188402130719609L

| **Serialized Fields** |
| --- |

### x1

float **x1**

The X coordinate of the start point of the quadratic curve segment.

**Since:** 1.2

### y1

float **y1**

The Y coordinate of the start point of the quadratic curve segment.

**Since:** 1.2

### ctrlx

float **ctrlx**

The X coordinate of the control point of the quadratic curve segment.

**Since:** 1.2

### ctrly

float **ctrly**

The Y coordinate of the control point of the quadratic curve segment.

**Since:** 1.2

### x2

float **x2**

The X coordinate of the end point of the quadratic curve segment.

**Since:** 1.2

### y2

float **y2**

The Y coordinate of the end point of the quadratic curve segment.

**Since:** 1.2

| **Class** [**java.awt.geom.Rectangle2D.Double**](http://docs.google.com/java/awt/geom/Rectangle2D.Double.html) **extends** [**Rectangle2D**](http://docs.google.com/java/awt/geom/Rectangle2D.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7771313791441850493L

| **Serialized Fields** |
| --- |

### x

double **x**

The X coordinate of this Rectangle2D.

**Since:** 1.2

### y

double **y**

The Y coordinate of this Rectangle2D.

**Since:** 1.2

### width

double **width**

The width of this Rectangle2D.

**Since:** 1.2

### height

double **height**

The height of this Rectangle2D.

**Since:** 1.2

| **Class** [**java.awt.geom.Rectangle2D.Float**](http://docs.google.com/java/awt/geom/Rectangle2D.Float.html) **extends** [**Rectangle2D**](http://docs.google.com/java/awt/geom/Rectangle2D.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3798716824173675777L

| **Serialized Fields** |
| --- |

### x

float **x**

The X coordinate of this Rectangle2D.

**Since:** 1.2

### y

float **y**

The Y coordinate of this Rectangle2D.

**Since:** 1.2

### width

float **width**

The width of this Rectangle2D.

**Since:** 1.2

### height

float **height**

The height of this Rectangle2D.

**Since:** 1.2

| **Class** [**java.awt.geom.RoundRectangle2D.Double**](http://docs.google.com/java/awt/geom/RoundRectangle2D.Double.html) **extends** [**RoundRectangle2D**](http://docs.google.com/java/awt/geom/RoundRectangle2D.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1048939333485206117L

| **Serialized Fields** |
| --- |

### x

double **x**

The X coordinate of this RoundRectangle2D.

**Since:** 1.2

### y

double **y**

The Y coordinate of this RoundRectangle2D.

**Since:** 1.2

### width

double **width**

The width of this RoundRectangle2D.

**Since:** 1.2

### height

double **height**

The height of this RoundRectangle2D.

**Since:** 1.2

### arcwidth

double **arcwidth**

The width of the arc that rounds off the corners.

**Since:** 1.2

### archeight

double **archeight**

The height of the arc that rounds off the corners.

**Since:** 1.2

| **Class** [**java.awt.geom.RoundRectangle2D.Float**](http://docs.google.com/java/awt/geom/RoundRectangle2D.Float.html) **extends** [**RoundRectangle2D**](http://docs.google.com/java/awt/geom/RoundRectangle2D.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3423150618393866922L

| **Serialized Fields** |
| --- |

### x

float **x**

The X coordinate of this RoundRectangle2D.

**Since:** 1.2

### y

float **y**

The Y coordinate of this RoundRectangle2D.

**Since:** 1.2

### width

float **width**

The width of this RoundRectangle2D.

**Since:** 1.2

### height

float **height**

The height of this RoundRectangle2D.

**Since:** 1.2

### arcwidth

float **arcwidth**

The width of the arc that rounds off the corners.

**Since:** 1.2

### archeight

float **archeight**

The height of the arc that rounds off the corners.

**Since:** 1.2

| **Package** **java.awt.image** |
| --- |

| **Class** [**java.awt.image.ImagingOpException**](http://docs.google.com/java/awt/image/ImagingOpException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.awt.image.RasterFormatException**](http://docs.google.com/java/awt/image/RasterFormatException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

| **Package** **java.awt.image.renderable** |
| --- |

| **Class** [**java.awt.image.renderable.ParameterBlock**](http://docs.google.com/java/awt/image/renderable/ParameterBlock.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### sources

[Vector](http://docs.google.com/java/util/Vector.html)<[E](http://docs.google.com/java/util/Vector.html)> **sources**

A Vector of sources, stored as arbitrary Objects.

### parameters

[Vector](http://docs.google.com/java/util/Vector.html)<[E](http://docs.google.com/java/util/Vector.html)> **parameters**

A Vector of non-source parameters, stored as arbitrary Objects.

| **Package** **java.awt.print** |
| --- |

| **Class** [**java.awt.print.PrinterAbortException**](http://docs.google.com/java/awt/print/PrinterAbortException.html) **extends** [**PrinterException**](http://docs.google.com/java/awt/print/PrinterException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.awt.print.PrinterException**](http://docs.google.com/java/awt/print/PrinterException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.awt.print.PrinterIOException**](http://docs.google.com/java/awt/print/PrinterIOException.html) **extends** [**PrinterException**](http://docs.google.com/java/awt/print/PrinterException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5850870712125932846L

| **Serialized Fields** |
| --- |

### mException

[IOException](http://docs.google.com/java/io/IOException.html) **mException**

The IO error that terminated the print job.

| **Package** **java.beans** |
| --- |

| **Class** [**java.beans.IndexedPropertyChangeEvent**](http://docs.google.com/java/beans/IndexedPropertyChangeEvent.html) **extends** [**PropertyChangeEvent**](http://docs.google.com/java/beans/PropertyChangeEvent.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### index

int **index**

| **Class** [**java.beans.IntrospectionException**](http://docs.google.com/java/beans/IntrospectionException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.beans.PropertyChangeEvent**](http://docs.google.com/java/beans/PropertyChangeEvent.html) **extends** [**EventObject**](http://docs.google.com/java/util/EventObject.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### propertyName

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

name of the property that changed. May be null, if not known.

### newValue

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

New value for property. May be null if not known.

### oldValue

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

Previous value for property. May be null if not known.

### propagationId

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

Propagation ID. May be null.

**See Also:**#getPropagationId.

| **Class** [**java.beans.PropertyChangeSupport**](http://docs.google.com/java/beans/PropertyChangeSupport.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6401253773779951803L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html)

**Throws:** [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

**Serial Data:** Null terminated list of PropertyChangeListeners.

At serialization time we skip non-serializable listeners and only serialize the serializable listeners.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### children

[Hashtable](http://docs.google.com/java/util/Hashtable.html)<[K](http://docs.google.com/java/util/Hashtable.html),[V](http://docs.google.com/java/util/Hashtable.html)> **children**

Hashtable for managing listeners for specific properties. Maps property names to PropertyChangeSupport objects.

**Since:** 1.2

### source

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

The object to be provided as the "source" for any generated events.

### propertyChangeSupportSerializedDataVersion

int **propertyChangeSupportSerializedDataVersion**

Internal version number

**Since:**

| **Class** [**java.beans.PropertyVetoException**](http://docs.google.com/java/beans/PropertyVetoException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### evt

[PropertyChangeEvent](http://docs.google.com/java/beans/PropertyChangeEvent.html) **evt**

A PropertyChangeEvent describing the vetoed change.

| **Class** [**java.beans.VetoableChangeSupport**](http://docs.google.com/java/beans/VetoableChangeSupport.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5090210921595982017L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html)

**Throws:** [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

**Serial Data:** Null terminated list of VetoableChangeListeners.

At serialization time we skip non-serializable listeners and only serialize the serializable listeners.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### children

[Hashtable](http://docs.google.com/java/util/Hashtable.html)<[K](http://docs.google.com/java/util/Hashtable.html),[V](http://docs.google.com/java/util/Hashtable.html)> **children**

Hashtable for managing listeners for specific properties. Maps property names to VetoableChangeSupport objects.

**Since:** 1.2

### source

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

The object to be provided as the "source" for any generated events.

### vetoableChangeSupportSerializedDataVersion

int **vetoableChangeSupportSerializedDataVersion**

Internal version number

| **Package** **java.beans.beancontext** |
| --- |

| **Class** [**java.beans.beancontext.BeanContextChildSupport**](http://docs.google.com/java/beans/beancontext/BeanContextChildSupport.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6328947014421475877L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) ois)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Restore a persistent object, must wait for subsequent setBeanContext() to fully restore any resources obtained from the new nesting BeanContext

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) oos)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Write the persistence state of the object.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### beanContextChildPeer

[BeanContextChild](http://docs.google.com/java/beans/beancontext/BeanContextChild.html) **beanContextChildPeer**

The BeanContext in which this BeanContextChild is nested.

### pcSupport

[PropertyChangeSupport](http://docs.google.com/java/beans/PropertyChangeSupport.html) **pcSupport**

The PropertyChangeSupport associated with this BeanContextChildSupport.

### vcSupport

[VetoableChangeSupport](http://docs.google.com/java/beans/VetoableChangeSupport.html) **vcSupport**

The VetoableChangeSupport associated with this BeanContextChildSupport.

| **Class** [**java.beans.beancontext.BeanContextEvent**](http://docs.google.com/java/beans/beancontext/BeanContextEvent.html) **extends** [**EventObject**](http://docs.google.com/java/util/EventObject.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### propagatedFrom

[BeanContext](http://docs.google.com/java/beans/beancontext/BeanContext.html) **propagatedFrom**

The BeanContext from which this event was propagated

| **Class** [**java.beans.beancontext.BeanContextMembershipEvent**](http://docs.google.com/java/beans/beancontext/BeanContextMembershipEvent.html) **extends** [**BeanContextEvent**](http://docs.google.com/java/beans/beancontext/BeanContextEvent.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### children

[Collection](http://docs.google.com/java/util/Collection.html)<[E](http://docs.google.com/java/util/Collection.html)> **children**

The list of children affected by this event notification.

| **Class** [**java.beans.beancontext.BeanContextServiceAvailableEvent**](http://docs.google.com/java/beans/beancontext/BeanContextServiceAvailableEvent.html) **extends** [**BeanContextEvent**](http://docs.google.com/java/beans/beancontext/BeanContextEvent.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### serviceClass

[Class](http://docs.google.com/java/lang/Class.html)<[T](http://docs.google.com/java/lang/Class.html)> **serviceClass**

A Class reference to the newly available service

| **Class** [**java.beans.beancontext.BeanContextServiceRevokedEvent**](http://docs.google.com/java/beans/beancontext/BeanContextServiceRevokedEvent.html) **extends** [**BeanContextEvent**](http://docs.google.com/java/beans/beancontext/BeanContextEvent.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### serviceClass

[Class](http://docs.google.com/java/lang/Class.html)<[T](http://docs.google.com/java/lang/Class.html)> **serviceClass**

A Class reference to the service that is being revoked.

### invalidateRefs

boolean **invalidateRefs**

| **Class** [**java.beans.beancontext.BeanContextServicesSupport**](http://docs.google.com/java/beans/beancontext/BeanContextServicesSupport.html) **extends** [**BeanContextSupport**](http://docs.google.com/java/beans/beancontext/BeanContextSupport.html) **implements Serializable** | |
| --- | --- |

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) ois)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

deserialize the instance

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) oos)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

serialize the instance

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Class** [**java.beans.beancontext.BeanContextServicesSupport.BCSSChild**](http://docs.google.com/java/beans/beancontext/BeanContextServicesSupport.BCSSChild.html) **extends** [**BeanContextSupport.BCSChild**](http://docs.google.com/java/beans/beancontext/BeanContextSupport.BCSChild.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3263851306889194873L

| **Class** [**java.beans.beancontext.BeanContextServicesSupport.BCSSServiceProvider**](http://docs.google.com/java/beans/beancontext/BeanContextServicesSupport.BCSSServiceProvider.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### serviceProvider

[BeanContextServiceProvider](http://docs.google.com/java/beans/beancontext/BeanContextServiceProvider.html) **serviceProvider**

| **Class** [**java.beans.beancontext.BeanContextSupport**](http://docs.google.com/java/beans/beancontext/BeanContextSupport.html) **extends** [**BeanContextChildSupport**](http://docs.google.com/java/beans/beancontext/BeanContextChildSupport.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4879613978649577204L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) ois)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

deserialize contents ... if this instance has a distinct peer the children are \*not\* serialized here, the peer's readObject() must call readChildren() after deserializing this instance.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) oos)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Serialize the BeanContextSupport, if this instance has a distinct peer (that is this object is acting as a delegate for another) then the children of this instance are not serialized here due to a 'chicken and egg' problem that occurs on deserialization of the children at the same time as this instance. Therefore in situations where there is a distinct peer to this instance it should always call writeObject() followed by writeChildren() and readObject() followed by readChildren().

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

| **Serialized Fields** |
| --- |

### serializable

int **serializable**

### locale

[Locale](http://docs.google.com/java/util/Locale.html) **locale**

The current locale of this BeanContext.

### okToUseGui

boolean **okToUseGui**

A boolean indicating if this instance may now render a GUI.

### designTime

boolean **designTime**

A boolean indicating whether or not this object is currently in design time mode.

| **Class** [**java.beans.beancontext.BeanContextSupport.BCSChild**](http://docs.google.com/java/beans/beancontext/BeanContextSupport.BCSChild.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5815286101609939109L

| **Serialized Fields** |
| --- |

### child

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

### proxyPeer

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

| **Package** **java.io** |
| --- |

| **Class** [**java.io.CharConversionException**](http://docs.google.com/java/io/CharConversionException.html) **extends** [**IOException**](http://docs.google.com/java/io/IOException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.io.EOFException**](http://docs.google.com/java/io/EOFException.html) **extends** [**IOException**](http://docs.google.com/java/io/IOException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.io.File**](http://docs.google.com/java/io/File.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**301077366599181567L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

readObject is called to restore this filename. The original separator character is read. If it is different than the separator character on this system, then the old separator is replaced by the local separator.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

WriteObject is called to save this filename. The separator character is saved also so it can be replaced in case the path is reconstituted on a different host type.

**Serial Data:** Default fields followed by separator character. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### path

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

This abstract pathname's normalized pathname string. A normalized pathname string uses the default name-separator character and does not contain any duplicate or redundant separators.

| **Class** [**java.io.FileNotFoundException**](http://docs.google.com/java/io/FileNotFoundException.html) **extends** [**IOException**](http://docs.google.com/java/io/IOException.html) **implements Serializable** | |
| --- | --- |

| **Class java.io.FilePermissionCollection extends** [**PermissionCollection**](http://docs.google.com/java/security/PermissionCollection.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2202956749081564585L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

**Serial Data:** "permissions" field (a Vector containing the FilePermissions). **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### permissions

[Vector](http://docs.google.com/java/util/Vector.html)<[E](http://docs.google.com/java/util/Vector.html)> **permissions**

A list of FilePermission objects.

| **Class** [**java.io.InterruptedIOException**](http://docs.google.com/java/io/InterruptedIOException.html) **extends** [**IOException**](http://docs.google.com/java/io/IOException.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### bytesTransferred

int **bytesTransferred**

Reports how many bytes had been transferred as part of the I/O operation before it was interrupted.

| **Class** [**java.io.InvalidClassException**](http://docs.google.com/java/io/InvalidClassException.html) **extends** [**ObjectStreamException**](http://docs.google.com/java/io/ObjectStreamException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4333316296251054416L

| **Serialized Fields** |
| --- |

### classname

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

Name of the invalid class.

Name of the invalid class.

| **Class** [**java.io.InvalidObjectException**](http://docs.google.com/java/io/InvalidObjectException.html) **extends** [**ObjectStreamException**](http://docs.google.com/java/io/ObjectStreamException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3233174318281839583L

| **Class** [**java.io.IOError**](http://docs.google.com/java/io/IOError.html) **extends** [**Error**](http://docs.google.com/java/lang/Error.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**67100927991680413L

| **Class** [**java.io.IOException**](http://docs.google.com/java/io/IOException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7818375828146090155L

| **Class** [**java.io.NotActiveException**](http://docs.google.com/java/io/NotActiveException.html) **extends** [**ObjectStreamException**](http://docs.google.com/java/io/ObjectStreamException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3893467273049808895L

| **Class** [**java.io.NotSerializableException**](http://docs.google.com/java/io/NotSerializableException.html) **extends** [**ObjectStreamException**](http://docs.google.com/java/io/ObjectStreamException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2906642554793891381L

| **Class** [**java.io.ObjectStreamClass**](http://docs.google.com/java/io/ObjectStreamClass.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-6120832682080437368L

| **Serialized Fields** |
| --- |

| **Class** [**java.io.ObjectStreamException**](http://docs.google.com/java/io/ObjectStreamException.html) **extends** [**IOException**](http://docs.google.com/java/io/IOException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7260898174833392607L

| **Class** [**java.io.OptionalDataException**](http://docs.google.com/java/io/OptionalDataException.html) **extends** [**ObjectStreamException**](http://docs.google.com/java/io/ObjectStreamException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8011121865681257820L

| **Serialized Fields** |
| --- |

### length

int **length**

The number of bytes of primitive data available to be read in the current buffer.

### eof

boolean **eof**

True if there is no more data in the buffered part of the stream.

| **Class** [**java.io.SerializablePermission**](http://docs.google.com/java/io/SerializablePermission.html) **extends** [**BasicPermission**](http://docs.google.com/java/security/BasicPermission.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8537212141160296410L

| **Serialized Fields** |
| --- |

### actions

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

| **Class** [**java.io.StreamCorruptedException**](http://docs.google.com/java/io/StreamCorruptedException.html) **extends** [**ObjectStreamException**](http://docs.google.com/java/io/ObjectStreamException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8983558202217591746L

| **Class** [**java.io.SyncFailedException**](http://docs.google.com/java/io/SyncFailedException.html) **extends** [**IOException**](http://docs.google.com/java/io/IOException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.io.UnsupportedEncodingException**](http://docs.google.com/java/io/UnsupportedEncodingException.html) **extends** [**IOException**](http://docs.google.com/java/io/IOException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.io.UTFDataFormatException**](http://docs.google.com/java/io/UTFDataFormatException.html) **extends** [**IOException**](http://docs.google.com/java/io/IOException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.io.WriteAbortedException**](http://docs.google.com/java/io/WriteAbortedException.html) **extends** [**ObjectStreamException**](http://docs.google.com/java/io/ObjectStreamException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3326426625597282442L

| **Serialized Fields** |
| --- |

### detail

[Exception](http://docs.google.com/java/lang/Exception.html) **detail**

Exception that was caught while writing the ObjectStream.

This field predates the general-purpose exception chaining facility. The [Throwable.getCause()](http://docs.google.com/java/lang/Throwable.html#getCause()) method is now the preferred means of obtaining this information.

| **Package** **java.lang** |
| --- |

| **Class** [**java.lang.AbstractMethodError**](http://docs.google.com/java/lang/AbstractMethodError.html) **extends** [**IncompatibleClassChangeError**](http://docs.google.com/java/lang/IncompatibleClassChangeError.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.ArithmeticException**](http://docs.google.com/java/lang/ArithmeticException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.ArrayIndexOutOfBoundsException**](http://docs.google.com/java/lang/ArrayIndexOutOfBoundsException.html) **extends** [**IndexOutOfBoundsException**](http://docs.google.com/java/lang/IndexOutOfBoundsException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.ArrayStoreException**](http://docs.google.com/java/lang/ArrayStoreException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.AssertionError**](http://docs.google.com/java/lang/AssertionError.html) **extends** [**Error**](http://docs.google.com/java/lang/Error.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.Boolean**](http://docs.google.com/java/lang/Boolean.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3665804199014368530L

| **Serialized Fields** |
| --- |

### value

boolean **value**

The value of the Boolean.

| **Class** [**java.lang.Byte**](http://docs.google.com/java/lang/Byte.html) **extends** [**Number**](http://docs.google.com/java/lang/Number.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7183698231559129828L

| **Serialized Fields** |
| --- |

### value

byte **value**

The value of the Byte.

| **Class** [**java.lang.Character**](http://docs.google.com/java/lang/Character.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3786198910865385080L

| **Serialized Fields** |
| --- |

### value

char **value**

The value of the Character.

| **Class** [**java.lang.Class**](http://docs.google.com/java/lang/Class.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3206093459760846163L

| **Serialization Overview** |
| --- |

Class Class is special cased within the Serialization Stream Protocol. A Class instance is written initially into an ObjectOutputStream in the following format:

TC\_CLASS ClassDescriptor  
 A ClassDescriptor is a special cased serialization of   
 a java.io.ObjectStreamClass instance.

A new handle is generated for the initial time the class descriptor is written into the stream. Future references to the class descriptor are written as references to the initial class descriptor instance.

**See Also:**[ObjectStreamClass](http://docs.google.com/java/io/ObjectStreamClass.html)

| **Serialized Fields** |
| --- |

| **Class** [**java.lang.ClassCastException**](http://docs.google.com/java/lang/ClassCastException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.ClassCircularityError**](http://docs.google.com/java/lang/ClassCircularityError.html) **extends** [**LinkageError**](http://docs.google.com/java/lang/LinkageError.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.ClassFormatError**](http://docs.google.com/java/lang/ClassFormatError.html) **extends** [**LinkageError**](http://docs.google.com/java/lang/LinkageError.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.ClassNotFoundException**](http://docs.google.com/java/lang/ClassNotFoundException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**9176873029745254542L

| **Serialized Fields** |
| --- |

### ex

[Throwable](http://docs.google.com/java/lang/Throwable.html) **ex**

This field holds the exception ex if the ClassNotFoundException(String s, Throwable ex) constructor was used to instantiate the object

**Since:** 1.2

| **Class** [**java.lang.CloneNotSupportedException**](http://docs.google.com/java/lang/CloneNotSupportedException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.Double**](http://docs.google.com/java/lang/Double.html) **extends** [**Number**](http://docs.google.com/java/lang/Number.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-9172774392245257468L

| **Serialized Fields** |
| --- |

### value

double **value**

The value of the Double.

| **Class** [**java.lang.Enum**](http://docs.google.com/java/lang/Enum.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### name

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

The name of this enum constant, as declared in the enum declaration. Most programmers should use the [Enum.toString()](http://docs.google.com/java/lang/Enum.html#toString()) method rather than accessing this field.

### ordinal

int **ordinal**

The ordinal of this enumeration constant (its position in the enum declaration, where the initial constant is assigned an ordinal of zero). Most programmers will have no use for this field. It is designed for use by sophisticated enum-based data structures, such as [EnumSet](http://docs.google.com/java/util/EnumSet.html) and [EnumMap](http://docs.google.com/java/util/EnumMap.html).

| **Class** [**java.lang.EnumConstantNotPresentException**](http://docs.google.com/java/lang/EnumConstantNotPresentException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### enumType

[Class](http://docs.google.com/java/lang/Class.html)<[T](http://docs.google.com/java/lang/Class.html)> **enumType**

The type of the missing enum constant.

### constantName

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

The name of the missing enum constant.

| **Class** [**java.lang.Error**](http://docs.google.com/java/lang/Error.html) **extends** [**Throwable**](http://docs.google.com/java/lang/Throwable.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4980196508277280342L

| **Class** [**java.lang.Exception**](http://docs.google.com/java/lang/Exception.html) **extends** [**Throwable**](http://docs.google.com/java/lang/Throwable.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3387516993124229948L

| **Class** [**java.lang.ExceptionInInitializerError**](http://docs.google.com/java/lang/ExceptionInInitializerError.html) **extends** [**LinkageError**](http://docs.google.com/java/lang/LinkageError.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1521711792217232256L

| **Serialized Fields** |
| --- |

### exception

[Throwable](http://docs.google.com/java/lang/Throwable.html) **exception**

This field holds the exception if the ExceptionInInitializerError(Throwable thrown) constructor was used to instantiate the object

| **Class** [**java.lang.Float**](http://docs.google.com/java/lang/Float.html) **extends** [**Number**](http://docs.google.com/java/lang/Number.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2671257302660747028L

| **Serialized Fields** |
| --- |

### value

float **value**

The value of the Float.

| **Class** [**java.lang.IllegalAccessError**](http://docs.google.com/java/lang/IllegalAccessError.html) **extends** [**IncompatibleClassChangeError**](http://docs.google.com/java/lang/IncompatibleClassChangeError.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.IllegalAccessException**](http://docs.google.com/java/lang/IllegalAccessException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.IllegalArgumentException**](http://docs.google.com/java/lang/IllegalArgumentException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5365630128856068164L

| **Class** [**java.lang.IllegalMonitorStateException**](http://docs.google.com/java/lang/IllegalMonitorStateException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.IllegalStateException**](http://docs.google.com/java/lang/IllegalStateException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1848914673093119416L

| **Class** [**java.lang.IllegalThreadStateException**](http://docs.google.com/java/lang/IllegalThreadStateException.html) **extends** [**IllegalArgumentException**](http://docs.google.com/java/lang/IllegalArgumentException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.IncompatibleClassChangeError**](http://docs.google.com/java/lang/IncompatibleClassChangeError.html) **extends** [**LinkageError**](http://docs.google.com/java/lang/LinkageError.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.IndexOutOfBoundsException**](http://docs.google.com/java/lang/IndexOutOfBoundsException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.InstantiationError**](http://docs.google.com/java/lang/InstantiationError.html) **extends** [**IncompatibleClassChangeError**](http://docs.google.com/java/lang/IncompatibleClassChangeError.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.InstantiationException**](http://docs.google.com/java/lang/InstantiationException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.Integer**](http://docs.google.com/java/lang/Integer.html) **extends** [**Number**](http://docs.google.com/java/lang/Number.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1360826667806852920L

| **Serialized Fields** |
| --- |

### value

int **value**

The value of the Integer.

| **Class** [**java.lang.InternalError**](http://docs.google.com/java/lang/InternalError.html) **extends** [**VirtualMachineError**](http://docs.google.com/java/lang/VirtualMachineError.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.InterruptedException**](http://docs.google.com/java/lang/InterruptedException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.LinkageError**](http://docs.google.com/java/lang/LinkageError.html) **extends** [**Error**](http://docs.google.com/java/lang/Error.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.Long**](http://docs.google.com/java/lang/Long.html) **extends** [**Number**](http://docs.google.com/java/lang/Number.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4290774380558885855L

| **Serialized Fields** |
| --- |

### value

long **value**

The value of the Long.

| **Class** [**java.lang.NegativeArraySizeException**](http://docs.google.com/java/lang/NegativeArraySizeException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.NoClassDefFoundError**](http://docs.google.com/java/lang/NoClassDefFoundError.html) **extends** [**LinkageError**](http://docs.google.com/java/lang/LinkageError.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.NoSuchFieldError**](http://docs.google.com/java/lang/NoSuchFieldError.html) **extends** [**IncompatibleClassChangeError**](http://docs.google.com/java/lang/IncompatibleClassChangeError.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.NoSuchFieldException**](http://docs.google.com/java/lang/NoSuchFieldException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.NoSuchMethodError**](http://docs.google.com/java/lang/NoSuchMethodError.html) **extends** [**IncompatibleClassChangeError**](http://docs.google.com/java/lang/IncompatibleClassChangeError.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.NoSuchMethodException**](http://docs.google.com/java/lang/NoSuchMethodException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.NullPointerException**](http://docs.google.com/java/lang/NullPointerException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.Number**](http://docs.google.com/java/lang/Number.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8742448824652078965L

| **Class** [**java.lang.NumberFormatException**](http://docs.google.com/java/lang/NumberFormatException.html) **extends** [**IllegalArgumentException**](http://docs.google.com/java/lang/IllegalArgumentException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2848938806368998894L

| **Class** [**java.lang.OutOfMemoryError**](http://docs.google.com/java/lang/OutOfMemoryError.html) **extends** [**VirtualMachineError**](http://docs.google.com/java/lang/VirtualMachineError.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7034897190745766939L

| **Class** [**java.lang.RuntimePermission**](http://docs.google.com/java/lang/RuntimePermission.html) **extends** [**BasicPermission**](http://docs.google.com/java/security/BasicPermission.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7399184964622342223L

| **Class** [**java.lang.SecurityException**](http://docs.google.com/java/lang/SecurityException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6878364983674394167L

| **Class** [**java.lang.Short**](http://docs.google.com/java/lang/Short.html) **extends** [**Number**](http://docs.google.com/java/lang/Number.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7515723908773894738L

| **Serialized Fields** |
| --- |

### value

short **value**

The value of the Short.

| **Class** [**java.lang.StackOverflowError**](http://docs.google.com/java/lang/StackOverflowError.html) **extends** [**VirtualMachineError**](http://docs.google.com/java/lang/VirtualMachineError.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.StackTraceElement**](http://docs.google.com/java/lang/StackTraceElement.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6992337162326171013L

| **Serialized Fields** |
| --- |

### declaringClass

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

### methodName

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

### fileName

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

### lineNumber

int **lineNumber**

| **Class** [**java.lang.String**](http://docs.google.com/java/lang/String.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-6849794470754667710L

| **Serialization Overview** |
| --- |

Class String is special cased within the Serialization Stream Protocol. A String instance is written initially into an ObjectOutputStream in the following format:

TC\_STRING (utf String)

The String is written by method DataOutput.writeUTF. A new handle is generated to refer to all future references to the string instance within the stream.

| **Serialized Fields** |
| --- |

| **Class** [**java.lang.StringBuffer**](http://docs.google.com/java/lang/StringBuffer.html) **extends java.lang.AbstractStringBuilder implements Serializable** | |
| --- | --- |

**serialVersionUID:**3388685877147921107L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

readObject is called to restore the state of the StringBuffer from a stream.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

readObject is called to restore the state of the StringBuffer from a stream.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialization Overview** |
| --- |

Serializable fields for StringBuffer.

| **Serialized Fields** |
| --- |

### count

int **count**

The number of characters in this StringBuffer.

### shared

boolean **shared**

A flag indicating whether the backing array is shared. The value is ignored upon deserialization.

### value

char[] **value**

The backing character array of this StringBuffer.

| **Class** [**java.lang.StringBuilder**](http://docs.google.com/java/lang/StringBuilder.html) **extends java.lang.AbstractStringBuilder implements Serializable** | |
| --- | --- |

**serialVersionUID:**4383685877147921099L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

readObject is called to restore the state of the StringBuffer from a stream.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Save the state of the StringBuilder instance to a stream (that is, serialize it).

**Serial Data:** the number of characters currently stored in the string builder (int), followed by the characters in the string builder (char[]). The length of the char array may be greater than the number of characters currently stored in the string builder, in which case extra characters are ignored. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Class** [**java.lang.StringIndexOutOfBoundsException**](http://docs.google.com/java/lang/StringIndexOutOfBoundsException.html) **extends** [**IndexOutOfBoundsException**](http://docs.google.com/java/lang/IndexOutOfBoundsException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.ThreadDeath**](http://docs.google.com/java/lang/ThreadDeath.html) **extends** [**Error**](http://docs.google.com/java/lang/Error.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.Throwable**](http://docs.google.com/java/lang/Throwable.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3042686055658047285L

| **Serialization Methods** |
| --- |

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### detailMessage

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

Specific details about the Throwable. For example, for FileNotFoundException, this contains the name of the file that could not be found.

### cause

[Throwable](http://docs.google.com/java/lang/Throwable.html) **cause**

The throwable that caused this throwable to get thrown, or null if this throwable was not caused by another throwable, or if the causative throwable is unknown. If this field is equal to this throwable itself, it indicates that the cause of this throwable has not yet been initialized.

**Since:** 1.4

### stackTrace

[StackTraceElement](http://docs.google.com/java/lang/StackTraceElement.html)[] **stackTrace**

The stack trace, as returned by [Throwable.getStackTrace()](http://docs.google.com/java/lang/Throwable.html#getStackTrace()).

**Since:** 1.4

| **Class** [**java.lang.TypeNotPresentException**](http://docs.google.com/java/lang/TypeNotPresentException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### typeName

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

| **Class** [**java.lang.UnknownError**](http://docs.google.com/java/lang/UnknownError.html) **extends** [**VirtualMachineError**](http://docs.google.com/java/lang/VirtualMachineError.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.UnsatisfiedLinkError**](http://docs.google.com/java/lang/UnsatisfiedLinkError.html) **extends** [**LinkageError**](http://docs.google.com/java/lang/LinkageError.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.UnsupportedClassVersionError**](http://docs.google.com/java/lang/UnsupportedClassVersionError.html) **extends** [**ClassFormatError**](http://docs.google.com/java/lang/ClassFormatError.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.UnsupportedOperationException**](http://docs.google.com/java/lang/UnsupportedOperationException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1242599979055084673L

| **Class** [**java.lang.VerifyError**](http://docs.google.com/java/lang/VerifyError.html) **extends** [**LinkageError**](http://docs.google.com/java/lang/LinkageError.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.VirtualMachineError**](http://docs.google.com/java/lang/VirtualMachineError.html) **extends** [**Error**](http://docs.google.com/java/lang/Error.html) **implements Serializable** | |
| --- | --- |

| **Package** **java.lang.annotation** |
| --- |

| **Class** [**java.lang.annotation.AnnotationFormatError**](http://docs.google.com/java/lang/annotation/AnnotationFormatError.html) **extends** [**Error**](http://docs.google.com/java/lang/Error.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.annotation.AnnotationTypeMismatchException**](http://docs.google.com/java/lang/annotation/AnnotationTypeMismatchException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### element

[Method](http://docs.google.com/java/lang/reflect/Method.html) **element**

The Method object for the annotation element.

### foundType

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

The (erroneous) type of data found in the annotation. This string may, but is not required to, contain the value as well. The exact format of the string is unspecified.

| **Class** [**java.lang.annotation.IncompleteAnnotationException**](http://docs.google.com/java/lang/annotation/IncompleteAnnotationException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### annotationType

[Class](http://docs.google.com/java/lang/Class.html)<[T](http://docs.google.com/java/lang/Class.html)> **annotationType**

### elementName

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

| **Package** **java.lang.instrument** |
| --- |

| **Class** [**java.lang.instrument.IllegalClassFormatException**](http://docs.google.com/java/lang/instrument/IllegalClassFormatException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.instrument.UnmodifiableClassException**](http://docs.google.com/java/lang/instrument/UnmodifiableClassException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Package** **java.lang.management** |
| --- |

| **Class** [**java.lang.management.ManagementPermission**](http://docs.google.com/java/lang/management/ManagementPermission.html) **extends** [**BasicPermission**](http://docs.google.com/java/security/BasicPermission.html) **implements Serializable** | |
| --- | --- |

| **Package** **java.lang.reflect** |
| --- |

| **Class** [**java.lang.reflect.GenericSignatureFormatError**](http://docs.google.com/java/lang/reflect/GenericSignatureFormatError.html) **extends** [**ClassFormatError**](http://docs.google.com/java/lang/ClassFormatError.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.reflect.InvocationTargetException**](http://docs.google.com/java/lang/reflect/InvocationTargetException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4085088731926701167L

| **Serialized Fields** |
| --- |

### target

[Throwable](http://docs.google.com/java/lang/Throwable.html) **target**

This field holds the target if the InvocationTargetException(Throwable target) constructor was used to instantiate the object

| **Class** [**java.lang.reflect.MalformedParameterizedTypeException**](http://docs.google.com/java/lang/reflect/MalformedParameterizedTypeException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.lang.reflect.Proxy**](http://docs.google.com/java/lang/reflect/Proxy.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2222568056686623797L

| **Serialized Fields** |
| --- |

### h

[InvocationHandler](http://docs.google.com/java/lang/reflect/InvocationHandler.html) **h**

the invocation handler for this proxy instance.

| **Class** [**java.lang.reflect.ReflectPermission**](http://docs.google.com/java/lang/reflect/ReflectPermission.html) **extends** [**BasicPermission**](http://docs.google.com/java/security/BasicPermission.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7412737110241507485L

| **Class** [**java.lang.reflect.UndeclaredThrowableException**](http://docs.google.com/java/lang/reflect/UndeclaredThrowableException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**330127114055056639L

| **Serialized Fields** |
| --- |

### undeclaredThrowable

[Throwable](http://docs.google.com/java/lang/Throwable.html) **undeclaredThrowable**

the undeclared checked exception that was thrown

| **Package** **java.math** |
| --- |

| **Class** [**java.math.BigDecimal**](http://docs.google.com/java/math/BigDecimal.html) **extends** [**Number**](http://docs.google.com/java/lang/Number.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6108874887143696463L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reconstitute the BigDecimal instance from a stream (that is, deserialize it).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serialize this BigDecimal to the stream in question

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### intVal

[BigInteger](http://docs.google.com/java/math/BigInteger.html) **intVal**

The unscaled value of this BigDecimal, as returned by [BigDecimal.unscaledValue()](http://docs.google.com/java/math/BigDecimal.html#unscaledValue()).

**See Also:**[BigDecimal.unscaledValue()](http://docs.google.com/java/math/BigDecimal.html#unscaledValue())

### scale

int **scale**

The scale of this BigDecimal, as returned by [BigDecimal.scale](http://docs.google.com/java/math/BigDecimal.html#scale).

**See Also:**[BigDecimal.scale](http://docs.google.com/java/math/BigDecimal.html#scale)

| **Class** [**java.math.BigInteger**](http://docs.google.com/java/math/BigInteger.html) **extends** [**Number**](http://docs.google.com/java/lang/Number.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8287574255936472291L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reconstitute the BigInteger instance from a stream (that is, deserialize it). The magnitude is read in as an array of bytes for historical reasons, but it is converted to an array of ints and the byte array is discarded.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Save the BigInteger instance to a stream. The magnitude of a BigInteger is serialized as a byte array for historical reasons.

**Serial Data:** two necessary fields are written as well as obsolete fields for compatibility with older versions. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialization Overview** |
| --- |

Serializable fields for BigInteger.

| **Serialized Fields** |
| --- |

### bitCount

int **bitCount**

number of bits in this BigInteger

### bitLength

int **bitLength**

the number of bits in the minimal two's-complement representation of this BigInteger

### lowestSetBit

int **lowestSetBit**

lowest set bit in the twos complement representation

### magnitude

int[] **magnitude**

magnitude array of this BigInteger.

### signum

int **signum**

signum of this BigInteger.

| **Class** [**java.math.MathContext**](http://docs.google.com/java/math/MathContext.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5579720004786848255L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reconstitute the MathContext instance from a stream (that is, deserialize it).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

| **Serialized Fields** |
| --- |

### precision

int **precision**

The number of digits to be used for an operation. A value of 0 indicates that unlimited precision (as many digits as are required) will be used. Note that leading zeros (in the coefficient of a number) are never significant.

precision will always be non-negative.

### roundingMode

[RoundingMode](http://docs.google.com/java/math/RoundingMode.html) **roundingMode**

The rounding algorithm to be used for an operation.

**See Also:**[RoundingMode](http://docs.google.com/java/math/RoundingMode.html)

| **Package** **java.net** |
| --- |

| **Class** [**java.net.BindException**](http://docs.google.com/java/net/BindException.html) **extends** [**SocketException**](http://docs.google.com/java/net/SocketException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.net.ConnectException**](http://docs.google.com/java/net/ConnectException.html) **extends** [**SocketException**](http://docs.google.com/java/net/SocketException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.net.HttpRetryException**](http://docs.google.com/java/net/HttpRetryException.html) **extends** [**IOException**](http://docs.google.com/java/io/IOException.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### responseCode

int **responseCode**

### location

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

| **Class** [**java.net.Inet4Address**](http://docs.google.com/java/net/Inet4Address.html) **extends** [**InetAddress**](http://docs.google.com/java/net/InetAddress.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3286316764910316507L

| **Serialization Methods** |
| --- |

### writeReplace

private [Object](http://docs.google.com/java/lang/Object.html) **writeReplace**()  
 throws [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html)

Replaces the object to be serialized with an InetAddress object.

**Throws:** [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html) - if a new object replacing this object could not be created

| **Class** [**java.net.Inet6Address**](http://docs.google.com/java/net/Inet6Address.html) **extends** [**InetAddress**](http://docs.google.com/java/net/InetAddress.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6880410070516793377L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

restore the state of this object from stream including the scope information, only if the scoped interface name is valid on this system

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

default behavior is overridden in order to write the scope\_ifname field as a String, rather than a NetworkInterface which is not serializable

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### ipaddress

byte[] **ipaddress**

Holds a 128-bit (16 bytes) IPv6 address.

### scope\_id

int **scope\_id**

scope\_id. The scope specified when the object is created. If the object is created with an interface name, then the scope\_id is not determined until the time it is needed.

### scope\_id\_set

boolean **scope\_id\_set**

This will be set to true when the scope\_id field contains a valid integer scope\_id.

### scope\_ifname\_set

boolean **scope\_ifname\_set**

set if the object is constructed with a scoped interface instead of a numeric scope id.

### ifname

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

Following field is only used during (de)/serialization

| **Class** [**java.net.InetAddress**](http://docs.google.com/java/net/InetAddress.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3286316764910316507L

| **Serialization Methods** |
| --- |

### readResolve

private [Object](http://docs.google.com/java/lang/Object.html) **readResolve**()  
 throws [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html)

Replaces the de-serialized object with an Inet4Address object.

**Throws:** [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html) - if a new object replacing this object could not be created

| **Serialized Fields** |
| --- |

### hostName

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

### address

int **address**

Holds a 32-bit IPv4 address.

### family

int **family**

Specifies the address family type, for instance, '1' for IPv4 addresses, and '2' for IPv6 addresses.

| **Class** [**java.net.InetSocketAddress**](http://docs.google.com/java/net/InetSocketAddress.html) **extends** [**SocketAddress**](http://docs.google.com/java/net/SocketAddress.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5076001401234631237L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

| **Serialized Fields** |
| --- |

### hostname

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

### addr

[InetAddress](http://docs.google.com/java/net/InetAddress.html) **addr**

### port

int **port**

| **Class** [**java.net.MalformedURLException**](http://docs.google.com/java/net/MalformedURLException.html) **extends** [**IOException**](http://docs.google.com/java/io/IOException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.net.NetPermission**](http://docs.google.com/java/net/NetPermission.html) **extends** [**BasicPermission**](http://docs.google.com/java/security/BasicPermission.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8343910153355041693L

| **Class** [**java.net.NoRouteToHostException**](http://docs.google.com/java/net/NoRouteToHostException.html) **extends** [**SocketException**](http://docs.google.com/java/net/SocketException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.net.PortUnreachableException**](http://docs.google.com/java/net/PortUnreachableException.html) **extends** [**SocketException**](http://docs.google.com/java/net/SocketException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.net.ProtocolException**](http://docs.google.com/java/net/ProtocolException.html) **extends** [**IOException**](http://docs.google.com/java/io/IOException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.net.SocketAddress**](http://docs.google.com/java/net/SocketAddress.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.net.SocketException**](http://docs.google.com/java/net/SocketException.html) **extends** [**IOException**](http://docs.google.com/java/io/IOException.html) **implements Serializable** | |
| --- | --- |

| **Class java.net.SocketPermissionCollection extends** [**PermissionCollection**](http://docs.google.com/java/security/PermissionCollection.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2787186408602843674L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

**Serial Data:** "permissions" field (a Vector containing the SocketPermissions). **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### permissions

[Vector](http://docs.google.com/java/util/Vector.html)<[E](http://docs.google.com/java/util/Vector.html)> **permissions**

A list of the SocketPermissions for this set.

| **Class** [**java.net.SocketTimeoutException**](http://docs.google.com/java/net/SocketTimeoutException.html) **extends** [**InterruptedIOException**](http://docs.google.com/java/io/InterruptedIOException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.net.UnknownHostException**](http://docs.google.com/java/net/UnknownHostException.html) **extends** [**IOException**](http://docs.google.com/java/io/IOException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.net.UnknownServiceException**](http://docs.google.com/java/net/UnknownServiceException.html) **extends** [**IOException**](http://docs.google.com/java/io/IOException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.net.URI**](http://docs.google.com/java/net/URI.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-6052424284110960213L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) is)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html)

Reconstitutes a URI from the given serial stream.

The [ObjectInputStream.defaultReadObject()](http://docs.google.com/java/io/ObjectInputStream.html#defaultReadObject()) method is invoked to read the value of the string field. The result is then parsed in the usual way.

**Throws:** [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) os)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Saves the content of this URI to the given serial stream.

The only serializable field of a URI instance is its string field. That field is given a value, if it does not have one already, and then the [ObjectOutputStream.defaultWriteObject()](http://docs.google.com/java/io/ObjectOutputStream.html#defaultWriteObject()) method of the given object-output stream is invoked.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### string

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

The string form of this URI.

| **Class** [**java.net.URISyntaxException**](http://docs.google.com/java/net/URISyntaxException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### input

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

### index

int **index**

| **Class** [**java.net.URL**](http://docs.google.com/java/net/URL.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7627629688361524110L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

readObject is called to restore the state of the URL from the stream. It reads the components of the URL and finds the local stream handler.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

WriteObject is called to save the state of the URL to an ObjectOutputStream. The handler is not saved since it is specific to this system.

**Serial Data:** the default write object value. When read back in, the reader must ensure that calling getURLStreamHandler with the protocol variable returns a valid URLStreamHandler and throw an IOException if it does not. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### protocol

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

The protocol to use (ftp, http, nntp, ... etc.) .

### host

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

The host name to connect to.

### port

int **port**

The protocol port to connect to.

### file

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

The specified file name on that host. file is defined as path[?query]

### authority

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

The authority part of this URL.

### ref

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

# reference.

### hashCode

int **hashCode**

| **Package** **java.nio** |
| --- |

| **Class** [**java.nio.BufferOverflowException**](http://docs.google.com/java/nio/BufferOverflowException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.nio.BufferUnderflowException**](http://docs.google.com/java/nio/BufferUnderflowException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.nio.InvalidMarkException**](http://docs.google.com/java/nio/InvalidMarkException.html) **extends** [**IllegalStateException**](http://docs.google.com/java/lang/IllegalStateException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.nio.ReadOnlyBufferException**](http://docs.google.com/java/nio/ReadOnlyBufferException.html) **extends** [**UnsupportedOperationException**](http://docs.google.com/java/lang/UnsupportedOperationException.html) **implements Serializable** | |
| --- | --- |

| **Package** **java.nio.channels** |
| --- |

| **Class** [**java.nio.channels.AlreadyConnectedException**](http://docs.google.com/java/nio/channels/AlreadyConnectedException.html) **extends** [**IllegalStateException**](http://docs.google.com/java/lang/IllegalStateException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.nio.channels.AsynchronousCloseException**](http://docs.google.com/java/nio/channels/AsynchronousCloseException.html) **extends** [**ClosedChannelException**](http://docs.google.com/java/nio/channels/ClosedChannelException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.nio.channels.CancelledKeyException**](http://docs.google.com/java/nio/channels/CancelledKeyException.html) **extends** [**IllegalStateException**](http://docs.google.com/java/lang/IllegalStateException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.nio.channels.ClosedByInterruptException**](http://docs.google.com/java/nio/channels/ClosedByInterruptException.html) **extends** [**AsynchronousCloseException**](http://docs.google.com/java/nio/channels/AsynchronousCloseException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.nio.channels.ClosedChannelException**](http://docs.google.com/java/nio/channels/ClosedChannelException.html) **extends** [**IOException**](http://docs.google.com/java/io/IOException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.nio.channels.ClosedSelectorException**](http://docs.google.com/java/nio/channels/ClosedSelectorException.html) **extends** [**IllegalStateException**](http://docs.google.com/java/lang/IllegalStateException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.nio.channels.ConnectionPendingException**](http://docs.google.com/java/nio/channels/ConnectionPendingException.html) **extends** [**IllegalStateException**](http://docs.google.com/java/lang/IllegalStateException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.nio.channels.FileLockInterruptionException**](http://docs.google.com/java/nio/channels/FileLockInterruptionException.html) **extends** [**IOException**](http://docs.google.com/java/io/IOException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.nio.channels.IllegalBlockingModeException**](http://docs.google.com/java/nio/channels/IllegalBlockingModeException.html) **extends** [**IllegalStateException**](http://docs.google.com/java/lang/IllegalStateException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.nio.channels.IllegalSelectorException**](http://docs.google.com/java/nio/channels/IllegalSelectorException.html) **extends** [**IllegalArgumentException**](http://docs.google.com/java/lang/IllegalArgumentException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.nio.channels.NoConnectionPendingException**](http://docs.google.com/java/nio/channels/NoConnectionPendingException.html) **extends** [**IllegalStateException**](http://docs.google.com/java/lang/IllegalStateException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.nio.channels.NonReadableChannelException**](http://docs.google.com/java/nio/channels/NonReadableChannelException.html) **extends** [**IllegalStateException**](http://docs.google.com/java/lang/IllegalStateException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.nio.channels.NonWritableChannelException**](http://docs.google.com/java/nio/channels/NonWritableChannelException.html) **extends** [**IllegalStateException**](http://docs.google.com/java/lang/IllegalStateException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.nio.channels.NotYetBoundException**](http://docs.google.com/java/nio/channels/NotYetBoundException.html) **extends** [**IllegalStateException**](http://docs.google.com/java/lang/IllegalStateException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.nio.channels.NotYetConnectedException**](http://docs.google.com/java/nio/channels/NotYetConnectedException.html) **extends** [**IllegalStateException**](http://docs.google.com/java/lang/IllegalStateException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.nio.channels.OverlappingFileLockException**](http://docs.google.com/java/nio/channels/OverlappingFileLockException.html) **extends** [**IllegalStateException**](http://docs.google.com/java/lang/IllegalStateException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.nio.channels.UnresolvedAddressException**](http://docs.google.com/java/nio/channels/UnresolvedAddressException.html) **extends** [**IllegalArgumentException**](http://docs.google.com/java/lang/IllegalArgumentException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.nio.channels.UnsupportedAddressTypeException**](http://docs.google.com/java/nio/channels/UnsupportedAddressTypeException.html) **extends** [**IllegalArgumentException**](http://docs.google.com/java/lang/IllegalArgumentException.html) **implements Serializable** | |
| --- | --- |

| **Package** **java.nio.charset** |
| --- |

| **Class** [**java.nio.charset.CharacterCodingException**](http://docs.google.com/java/nio/charset/CharacterCodingException.html) **extends** [**IOException**](http://docs.google.com/java/io/IOException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.nio.charset.CoderMalfunctionError**](http://docs.google.com/java/nio/charset/CoderMalfunctionError.html) **extends** [**Error**](http://docs.google.com/java/lang/Error.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.nio.charset.IllegalCharsetNameException**](http://docs.google.com/java/nio/charset/IllegalCharsetNameException.html) **extends** [**IllegalArgumentException**](http://docs.google.com/java/lang/IllegalArgumentException.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### charsetName

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

| **Class** [**java.nio.charset.MalformedInputException**](http://docs.google.com/java/nio/charset/MalformedInputException.html) **extends** [**CharacterCodingException**](http://docs.google.com/java/nio/charset/CharacterCodingException.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### inputLength

int **inputLength**

| **Class** [**java.nio.charset.UnmappableCharacterException**](http://docs.google.com/java/nio/charset/UnmappableCharacterException.html) **extends** [**CharacterCodingException**](http://docs.google.com/java/nio/charset/CharacterCodingException.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### inputLength

int **inputLength**

| **Class** [**java.nio.charset.UnsupportedCharsetException**](http://docs.google.com/java/nio/charset/UnsupportedCharsetException.html) **extends** [**IllegalArgumentException**](http://docs.google.com/java/lang/IllegalArgumentException.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### charsetName

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

| **Package** **java.rmi** |
| --- |

| **Class** [**java.rmi.AccessException**](http://docs.google.com/java/rmi/AccessException.html) **extends** [**RemoteException**](http://docs.google.com/java/rmi/RemoteException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6314925228044966088L

| **Class** [**java.rmi.AlreadyBoundException**](http://docs.google.com/java/rmi/AlreadyBoundException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**9218657361741657110L

| **Class** [**java.rmi.ConnectException**](http://docs.google.com/java/rmi/ConnectException.html) **extends** [**RemoteException**](http://docs.google.com/java/rmi/RemoteException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4863550261346652506L

| **Class** [**java.rmi.ConnectIOException**](http://docs.google.com/java/rmi/ConnectIOException.html) **extends** [**RemoteException**](http://docs.google.com/java/rmi/RemoteException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8087809532704668744L

| **Class** [**java.rmi.MarshalException**](http://docs.google.com/java/rmi/MarshalException.html) **extends** [**RemoteException**](http://docs.google.com/java/rmi/RemoteException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6223554758134037936L

| **Class** [**java.rmi.MarshalledObject**](http://docs.google.com/java/rmi/MarshalledObject.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8988374069173025854L

| **Serialized Fields** |
| --- |

### objBytes

byte[] **objBytes**

Bytes of serialized representation. If objBytes is null then the object marshalled was a null reference.

### locBytes

byte[] **locBytes**

Bytes of location annotations, which are ignored by equals. If locBytes is null, there were no non-null annotations during marshalling.

### hash

int **hash**

Stored hash code of contained object. **See Also:**[MarshalledObject.hashCode()](http://docs.google.com/java/rmi/MarshalledObject.html#hashCode())

| **Class** [**java.rmi.NoSuchObjectException**](http://docs.google.com/java/rmi/NoSuchObjectException.html) **extends** [**RemoteException**](http://docs.google.com/java/rmi/RemoteException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6619395951570472985L

| **Class** [**java.rmi.NotBoundException**](http://docs.google.com/java/rmi/NotBoundException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1857741824849069317L

| **Class** [**java.rmi.RemoteException**](http://docs.google.com/java/rmi/RemoteException.html) **extends** [**IOException**](http://docs.google.com/java/io/IOException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5148567311918794206L

| **Serialized Fields** |
| --- |

### detail

[Throwable](http://docs.google.com/java/lang/Throwable.html) **detail**

The cause of the remote exception.

This field predates the general-purpose exception chaining facility. The [Throwable.getCause()](http://docs.google.com/java/lang/Throwable.html#getCause()) method is now the preferred means of obtaining this information.

| **Class** [**java.rmi.RMISecurityException**](http://docs.google.com/java/rmi/RMISecurityException.html) **extends** [**SecurityException**](http://docs.google.com/java/lang/SecurityException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8433406075740433514L

| **Class** [**java.rmi.ServerError**](http://docs.google.com/java/rmi/ServerError.html) **extends** [**RemoteException**](http://docs.google.com/java/rmi/RemoteException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8455284893909696482L

| **Class** [**java.rmi.ServerException**](http://docs.google.com/java/rmi/ServerException.html) **extends** [**RemoteException**](http://docs.google.com/java/rmi/RemoteException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4775845313121906682L

| **Class** [**java.rmi.ServerRuntimeException**](http://docs.google.com/java/rmi/ServerRuntimeException.html) **extends** [**RemoteException**](http://docs.google.com/java/rmi/RemoteException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7054464920481467219L

| **Class** [**java.rmi.StubNotFoundException**](http://docs.google.com/java/rmi/StubNotFoundException.html) **extends** [**RemoteException**](http://docs.google.com/java/rmi/RemoteException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7088199405468872373L

| **Class** [**java.rmi.UnexpectedException**](http://docs.google.com/java/rmi/UnexpectedException.html) **extends** [**RemoteException**](http://docs.google.com/java/rmi/RemoteException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1800467484195073863L

| **Class** [**java.rmi.UnknownHostException**](http://docs.google.com/java/rmi/UnknownHostException.html) **extends** [**RemoteException**](http://docs.google.com/java/rmi/RemoteException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8152710247442114228L

| **Class** [**java.rmi.UnmarshalException**](http://docs.google.com/java/rmi/UnmarshalException.html) **extends** [**RemoteException**](http://docs.google.com/java/rmi/RemoteException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**594380845140740218L

| **Package** **java.rmi.activation** |
| --- |

| **Class** [**java.rmi.activation.ActivateFailedException**](http://docs.google.com/java/rmi/activation/ActivateFailedException.html) **extends** [**RemoteException**](http://docs.google.com/java/rmi/RemoteException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4863550261346652506L

| **Class** [**java.rmi.activation.ActivationDesc**](http://docs.google.com/java/rmi/activation/ActivationDesc.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7455834104417690957L

| **Serialized Fields** |
| --- |

### groupID

[ActivationGroupID](http://docs.google.com/java/rmi/activation/ActivationGroupID.html) **groupID**

the group's identifier

### className

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

the object's class name

### location

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

the object's code location

### data

[MarshalledObject](http://docs.google.com/java/rmi/MarshalledObject.html)<[T](http://docs.google.com/java/rmi/MarshalledObject.html)> **data**

the object's initialization data

### restart

boolean **restart**

indicates whether the object should be restarted

| **Class** [**java.rmi.activation.ActivationException**](http://docs.google.com/java/rmi/activation/ActivationException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4320118837291406071L

| **Serialized Fields** |
| --- |

### detail

[Throwable](http://docs.google.com/java/lang/Throwable.html) **detail**

The cause of the activation exception.

This field predates the general-purpose exception chaining facility. The [Throwable.getCause()](http://docs.google.com/java/lang/Throwable.html#getCause()) method is now the preferred means of obtaining this information.

| **Class** [**java.rmi.activation.ActivationGroup**](http://docs.google.com/java/rmi/activation/ActivationGroup.html) **extends** [**UnicastRemoteObject**](http://docs.google.com/java/rmi/server/UnicastRemoteObject.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7696947875314805420L

| **Serialized Fields** |
| --- |

### groupID

[ActivationGroupID](http://docs.google.com/java/rmi/activation/ActivationGroupID.html) **groupID**

the group's identifier

### monitor

[ActivationMonitor](http://docs.google.com/java/rmi/activation/ActivationMonitor.html) **monitor**

the group's monitor

### incarnation

long **incarnation**

the group's incarnation number

| **Class** [**java.rmi.activation.ActivationGroup\_Stub**](http://docs.google.com/java/rmi/activation/ActivationGroup_Stub.html) **extends** [**RemoteStub**](http://docs.google.com/java/rmi/server/RemoteStub.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.rmi.activation.ActivationGroupDesc**](http://docs.google.com/java/rmi/activation/ActivationGroupDesc.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4936225423168276595L

| **Serialized Fields** |
| --- |

### className

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

The group's fully package qualified class name.

### location

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

The location from where to load the group's class.

### data

[MarshalledObject](http://docs.google.com/java/rmi/MarshalledObject.html)<[T](http://docs.google.com/java/rmi/MarshalledObject.html)> **data**

The group's initialization data.

### env

[ActivationGroupDesc.CommandEnvironment](http://docs.google.com/java/rmi/activation/ActivationGroupDesc.CommandEnvironment.html) **env**

The controlling options for executing the VM in another process.

### props

[Properties](http://docs.google.com/java/util/Properties.html) **props**

A properties map which will override those set by default in the subprocess environment.

| **Class** [**java.rmi.activation.ActivationGroupDesc.CommandEnvironment**](http://docs.google.com/java/rmi/activation/ActivationGroupDesc.CommandEnvironment.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6165754737887770191L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

readObject for custom serialization.

This method reads this object's serialized form for this class as follows:

This method first invokes defaultReadObject on the specified object input stream, and if options is null, then options is set to a zero-length array of String.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

| **Serialized Fields** |
| --- |

### command

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

### options

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

| **Class** [**java.rmi.activation.ActivationGroupID**](http://docs.google.com/java/rmi/activation/ActivationGroupID.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1648432278909740833L

| **Serialized Fields** |
| --- |

### system

[ActivationSystem](http://docs.google.com/java/rmi/activation/ActivationSystem.html) **system**

The group's activation system.

### uid

[UID](http://docs.google.com/java/rmi/server/UID.html) **uid**

The group's unique id.

| **Class** [**java.rmi.activation.ActivationID**](http://docs.google.com/java/rmi/activation/ActivationID.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4608673054848209235L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

readObject for custom serialization.

This method reads this object's serialized form for this class as follows:

The readObject method is invoked on in to read this object's unique identifier (a [UID](http://docs.google.com/java/rmi/server/UID.html) instance).

Next, the readUTF method is invoked on in to read the external ref type name of the RemoteRef instance for this object's activator. Next, the RemoteRef instance is created of an implementation-specific class corresponding to the external ref type name (returned by readUTF), and the readExternal method is invoked on that RemoteRef instance to read the external form corresponding to the external ref type name.

Note: If the external ref type name is "UnicastRef", "UnicastServerRef", "UnicastRef2", "UnicastServerRef2", or "ActivatableRef", a corresponding implementation-specific class must be found, and its readExternal method must read the serial data for that external ref type name as specified to be written in the **serialData** documentation for this class. If the external ref type name is any other string (of non-zero length), a ClassNotFoundException will be thrown, unless the implementation provides an implementation-specific class corresponding to that external ref type name, in which case the RemoteRef will be an instance of that implementation-specific class.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

writeObject for custom serialization.

This method writes this object's serialized form for this class as follows:

The writeObject method is invoked on out passing this object's unique identifier (a [UID](http://docs.google.com/java/rmi/server/UID.html) instance) as the argument.

Next, the [getRefClass](http://docs.google.com/java/rmi/server/RemoteRef.html#getRefClass(java.io.ObjectOutput)) method is invoked on the activator's RemoteRef instance to obtain its external ref type name. Next, the writeUTF method is invoked on out with the value returned by getRefClass, and then the writeExternal method is invoked on the RemoteRef instance passing out as the argument.

**Serial Data:** The serialized data for this class comprises a java.rmi.server.UID (written with ObjectOutput.writeObject) followed by the external ref type name of the activator's RemoteRef instance (a string written with ObjectOutput.writeUTF), followed by the external form of the RemoteRef instance as written by its writeExternal method.

The external ref type name of the RemoteRef instance is determined using the definitions of external ref type names specified in the [RemoteObject](http://docs.google.com/java/rmi/server/RemoteObject.html) writeObject method **serialData** specification. Similarly, the data written by the writeExternal method and read by the readExternal method of RemoteRef implementation classes corresponding to each of the defined external ref type names is specified in the [RemoteObject](http://docs.google.com/java/rmi/server/RemoteObject.html) writeObject method **serialData** specification.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

| **Class** [**java.rmi.activation.UnknownGroupException**](http://docs.google.com/java/rmi/activation/UnknownGroupException.html) **extends** [**ActivationException**](http://docs.google.com/java/rmi/activation/ActivationException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7056094974750002460L

| **Class** [**java.rmi.activation.UnknownObjectException**](http://docs.google.com/java/rmi/activation/UnknownObjectException.html) **extends** [**ActivationException**](http://docs.google.com/java/rmi/activation/ActivationException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3425547551622251430L

| **Package** **java.rmi.dgc** |
| --- |

| **Class** [**java.rmi.dgc.Lease**](http://docs.google.com/java/rmi/dgc/Lease.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5713411624328831948L

| **Serialized Fields** |
| --- |

### vmid

[VMID](http://docs.google.com/java/rmi/dgc/VMID.html) **vmid**

Virtual Machine ID with which this Lease is associated. **See Also:**[Lease.getVMID()](http://docs.google.com/java/rmi/dgc/Lease.html#getVMID())

### value

long **value**

Duration of this lease. **See Also:**[Lease.getValue()](http://docs.google.com/java/rmi/dgc/Lease.html#getValue())

| **Class** [**java.rmi.dgc.VMID**](http://docs.google.com/java/rmi/dgc/VMID.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-538642295484486218L

| **Serialized Fields** |
| --- |

### addr

byte[] **addr**

array of bytes uniquely identifying host created on

### uid

[UID](http://docs.google.com/java/rmi/server/UID.html) **uid**

unique identifier with respect to host created on

| **Package** **java.rmi.server** |
| --- |

| **Class** [**java.rmi.server.ExportException**](http://docs.google.com/java/rmi/server/ExportException.html) **extends** [**RemoteException**](http://docs.google.com/java/rmi/RemoteException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-9155485338494060170L

| **Class** [**java.rmi.server.ObjID**](http://docs.google.com/java/rmi/server/ObjID.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-6386392263968365220L

| **Serialized Fields** |
| --- |

### objNum

long **objNum**

object number **See Also:**[ObjID.hashCode()](http://docs.google.com/java/rmi/server/ObjID.html#hashCode())

### space

[UID](http://docs.google.com/java/rmi/server/UID.html) **space**

address space identifier (unique to host over time)

| **Class** [**java.rmi.server.RemoteObject**](http://docs.google.com/java/rmi/server/RemoteObject.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3215090123894869218L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

readObject for custom serialization.

This method reads this object's serialized form for this class as follows:

The readUTF method is invoked on in to read the external ref type name for the RemoteRef instance to be filled in to this object's ref field. If the string returned by readUTF has length zero, the readObject method is invoked on in, and than the value returned by readObject is cast to RemoteRef and this object's ref field is set to that value. Otherwise, this object's ref field is set to a RemoteRef instance that is created of an implementation-specific class corresponding to the external ref type name returned by readUTF, and then the readExternal method is invoked on this object's ref field.

If the external ref type name is "UnicastRef", "UnicastServerRef", "UnicastRef2", "UnicastServerRef2", or "ActivatableRef", a corresponding implementation-specific class must be found, and its readExternal method must read the serial data for that external ref type name as specified to be written in the **serialData** documentation for this class. If the external ref type name is any other string (of non-zero length), a ClassNotFoundException will be thrown, unless the implementation provides an implementation-specific class corresponding to that external ref type name, in which case this object's ref field will be set to an instance of that implementation-specific class.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

writeObject for custom serialization.

This method writes this object's serialized form for this class as follows:

The [getRefClass](http://docs.google.com/java/rmi/server/RemoteRef.html#getRefClass(java.io.ObjectOutput)) method is invoked on this object's ref field to obtain its external ref type name. If the value returned by getRefClass was a non-null string of length greater than zero, the writeUTF method is invoked on out with the value returned by getRefClass, and then the writeExternal method is invoked on this object's ref field passing out as the argument; otherwise, the writeUTF method is invoked on out with a zero-length string (""), and then the writeObject method is invoked on out passing this object's ref field as the argument.

**Serial Data:** The serialized data for this class comprises a string (written with ObjectOutput.writeUTF) that is either the external ref type name of the contained RemoteRef instance (the ref field) or a zero-length string, followed by either the external form of the ref field as written by its writeExternal method if the string was of non-zero length, or the serialized form of the ref field as written by passing it to the serialization stream's writeObject if the string was of zero length.

If this object is an instance of [RemoteStub](http://docs.google.com/java/rmi/server/RemoteStub.html) or [RemoteObjectInvocationHandler](http://docs.google.com/java/rmi/server/RemoteObjectInvocationHandler.html) that was returned from any of the UnicastRemoteObject.exportObject methods and custom socket factories are not used, the external ref type name is "UnicastRef". If this object is an instance of RemoteStub or RemoteObjectInvocationHandler that was returned from any of the UnicastRemoteObject.exportObject methods and custom socket factories are used, the external ref type name is "UnicastRef2". If this object is an instance of RemoteStub or RemoteObjectInvocationHandler that was returned from any of the java.rmi.activation.Activatable.exportObject methods, the external ref type name is "ActivatableRef". If this object is an instance of RemoteStub or RemoteObjectInvocationHandler that was returned from the RemoteObject.toStub method (and the argument passed to toStub was not itself a RemoteStub), the external ref type name is a function of how the remote object passed to toStub was exported, as described above. If this object is an instance of RemoteStub or RemoteObjectInvocationHandler that was originally created via deserialization, the external ref type name is the same as that which was read when this object was deserialized.

If this object is an instance of java.rmi.server.UnicastRemoteObject that does not use custom socket factories, the external ref type name is "UnicastServerRef". If this object is an instance of UnicastRemoteObject that does use custom socket factories, the external ref type name is "UnicastServerRef2".

Following is the data that must be written by the writeExternal method and read by the readExternal method of RemoteRef implementation classes that correspond to the each of the defined external ref type names:

For "UnicastRef":

* the hostname of the referenced remote object, written by [DataOutput.writeUTF(String)](http://docs.google.com/java/io/DataOutput.html#writeUTF(java.lang.String))
* the port of the referenced remote object, written by [DataOutput.writeInt(int)](http://docs.google.com/java/io/DataOutput.html#writeInt(int))
* the data written as a result of calling {link java.rmi.server.ObjID#write(java.io.ObjectOutput)} on the ObjID instance contained in the reference
* the boolean value false, written by [DataOutput.writeBoolean(boolean)](http://docs.google.com/java/io/DataOutput.html#writeBoolean(boolean))

For "UnicastRef2" with a null client socket factory:

* the byte value 0x00 (indicating null client socket factory), written by [DataOutput.writeByte(int)](http://docs.google.com/java/io/DataOutput.html#writeByte(int))
* the hostname of the referenced remote object, written by [DataOutput.writeUTF(String)](http://docs.google.com/java/io/DataOutput.html#writeUTF(java.lang.String))
* the port of the referenced remote object, written by [DataOutput.writeInt(int)](http://docs.google.com/java/io/DataOutput.html#writeInt(int))
* the data written as a result of calling {link java.rmi.server.ObjID#write(java.io.ObjectOutput)} on the ObjID instance contained in the reference
* the boolean value false, written by [DataOutput.writeBoolean(boolean)](http://docs.google.com/java/io/DataOutput.html#writeBoolean(boolean))

For "UnicastRef2" with a non-null client socket factory:

* the byte value 0x01 (indicating non-null client socket factory), written by [DataOutput.writeByte(int)](http://docs.google.com/java/io/DataOutput.html#writeByte(int))
* the hostname of the referenced remote object, written by [DataOutput.writeUTF(String)](http://docs.google.com/java/io/DataOutput.html#writeUTF(java.lang.String))
* the port of the referenced remote object, written by [DataOutput.writeInt(int)](http://docs.google.com/java/io/DataOutput.html#writeInt(int))
* a client socket factory (object of type java.rmi.server.RMIClientSocketFactory), written by passing it to an invocation of writeObject on the stream instance
* the data written as a result of calling {link java.rmi.server.ObjID#write(java.io.ObjectOutput)} on the ObjID instance contained in the reference
* the boolean value false, written by [DataOutput.writeBoolean(boolean)](http://docs.google.com/java/io/DataOutput.html#writeBoolean(boolean))

For "ActivatableRef" with a null nested remote reference:

* an instance of java.rmi.activation.ActivationID, written by passing it to an invocation of writeObject on the stream instance
* a zero-length string (""), written by [DataOutput.writeUTF(String)](http://docs.google.com/java/io/DataOutput.html#writeUTF(java.lang.String))

For "ActivatableRef" with a non-null nested remote reference:

* an instance of java.rmi.activation.ActivationID, written by passing it to an invocation of writeObject on the stream instance
* the external ref type name of the nested remote reference, which must be "UnicastRef2", written by [DataOutput.writeUTF(String)](http://docs.google.com/java/io/DataOutput.html#writeUTF(java.lang.String))
* the external form of the nested remote reference, written by invoking its writeExternal method with the stream instance (see the description of the external form for "UnicastRef2" above)

For "UnicastServerRef" and "UnicastServerRef2", no data is written by the writeExternal method or read by the readExternal method.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

| **Class** [**java.rmi.server.RemoteObjectInvocationHandler**](http://docs.google.com/java/rmi/server/RemoteObjectInvocationHandler.html) **extends** [**RemoteObject**](http://docs.google.com/java/rmi/server/RemoteObject.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2L

| **Serialization Methods** |
| --- |

### readObjectNoData

private void **readObjectNoData**()  
 throws [InvalidObjectException](http://docs.google.com/java/io/InvalidObjectException.html)

**Throws:** [InvalidObjectException](http://docs.google.com/java/io/InvalidObjectException.html) - unconditionally

| **Class** [**java.rmi.server.RemoteServer**](http://docs.google.com/java/rmi/server/RemoteServer.html) **extends** [**RemoteObject**](http://docs.google.com/java/rmi/server/RemoteObject.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4100238210092549637L

| **Class** [**java.rmi.server.RemoteStub**](http://docs.google.com/java/rmi/server/RemoteStub.html) **extends** [**RemoteObject**](http://docs.google.com/java/rmi/server/RemoteObject.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1585587260594494182L

| **Class** [**java.rmi.server.ServerCloneException**](http://docs.google.com/java/rmi/server/ServerCloneException.html) **extends** [**CloneNotSupportedException**](http://docs.google.com/java/lang/CloneNotSupportedException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6617456357664815945L

| **Serialized Fields** |
| --- |

### detail

[Exception](http://docs.google.com/java/lang/Exception.html) **detail**

The cause of the exception.

This field predates the general-purpose exception chaining facility. The [Throwable.getCause()](http://docs.google.com/java/lang/Throwable.html#getCause()) method is now the preferred means of obtaining this information.

| **Class** [**java.rmi.server.ServerNotActiveException**](http://docs.google.com/java/rmi/server/ServerNotActiveException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4687940720827538231L

| **Class** [**java.rmi.server.SkeletonMismatchException**](http://docs.google.com/java/rmi/server/SkeletonMismatchException.html) **extends** [**RemoteException**](http://docs.google.com/java/rmi/RemoteException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7780460454818859281L

| **Class** [**java.rmi.server.SkeletonNotFoundException**](http://docs.google.com/java/rmi/server/SkeletonNotFoundException.html) **extends** [**RemoteException**](http://docs.google.com/java/rmi/RemoteException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7860299673822761231L

| **Class** [**java.rmi.server.SocketSecurityException**](http://docs.google.com/java/rmi/server/SocketSecurityException.html) **extends** [**ExportException**](http://docs.google.com/java/rmi/server/ExportException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7622072999407781979L

| **Class** [**java.rmi.server.UID**](http://docs.google.com/java/rmi/server/UID.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1086053664494604050L

| **Serialized Fields** |
| --- |

### unique

int **unique**

number that uniquely identifies the VM that this UID was generated in with respect to its host and at the given time

### time

long **time**

a time (as returned by [System.currentTimeMillis()](http://docs.google.com/java/lang/System.html#currentTimeMillis())) at which the VM that this UID was generated in was alive

### count

short **count**

16-bit number to distinguish UID instances created in the same VM with the same time value

| **Class** [**java.rmi.server.UnicastRemoteObject**](http://docs.google.com/java/rmi/server/UnicastRemoteObject.html) **extends** [**RemoteServer**](http://docs.google.com/java/rmi/server/RemoteServer.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4974527148936298033L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Re-export the remote object when it is deserialized.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

| **Serialized Fields** |
| --- |

### port

int **port**

port number on which to export object

### csf

[RMIClientSocketFactory](http://docs.google.com/java/rmi/server/RMIClientSocketFactory.html) **csf**

client-side socket factory (if any)

### ssf

[RMIServerSocketFactory](http://docs.google.com/java/rmi/server/RMIServerSocketFactory.html) **ssf**

server-side socket factory (if any) to use when exporting object

| **Package** **java.security** |
| --- |

| **Class** [**java.security.AccessControlException**](http://docs.google.com/java/security/AccessControlException.html) **extends** [**SecurityException**](http://docs.google.com/java/lang/SecurityException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5138225684096988535L

| **Serialized Fields** |
| --- |

### perm

[Permission](http://docs.google.com/java/security/Permission.html) **perm**

| **Class java.security.AllPermissionCollection extends** [**PermissionCollection**](http://docs.google.com/java/security/PermissionCollection.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4023755556366636806L

| **Serialized Fields** |
| --- |

### all\_allowed

boolean **all\_allowed**

| **Class** [**java.security.AuthProvider**](http://docs.google.com/java/security/AuthProvider.html) **extends** [**Provider**](http://docs.google.com/java/security/Provider.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.security.BasicPermission**](http://docs.google.com/java/security/BasicPermission.html) **extends** [**Permission**](http://docs.google.com/java/security/Permission.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6279438298436773498L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

readObject is called to restore the state of the BasicPermission from a stream.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

| **Class java.security.BasicPermissionCollection extends** [**PermissionCollection**](http://docs.google.com/java/security/PermissionCollection.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**739301742472979399L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

readObject is called to restore the state of the BasicPermissionCollection from a stream.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

**Serial Data:** Default fields. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### all\_allowed

boolean **all\_allowed**

This is set to true if this BasicPermissionCollection contains a BasicPermission with '\*' as its permission name.

### permClass

[Class](http://docs.google.com/java/lang/Class.html)<[T](http://docs.google.com/java/lang/Class.html)> **permClass**

The class to which all BasicPermissions in this BasicPermissionCollection belongs.

### permissions

[Hashtable](http://docs.google.com/java/util/Hashtable.html)<[K](http://docs.google.com/java/util/Hashtable.html),[V](http://docs.google.com/java/util/Hashtable.html)> **permissions**

The BasicPermissions in this BasicPermissionCollection. All BasicPermissions in the collection must belong to the same class. The Hashtable is indexed by the BasicPermission name; the value of the Hashtable entry is the permission.

| **Class** [**java.security.CodeSigner**](http://docs.google.com/java/security/CodeSigner.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6819288105193937581L

| **Serialized Fields** |
| --- |

### signerCertPath

[CertPath](http://docs.google.com/java/security/cert/CertPath.html) **signerCertPath**

The signer's certificate path.

### timestamp

[Timestamp](http://docs.google.com/java/security/Timestamp.html) **timestamp**

| **Class** [**java.security.CodeSource**](http://docs.google.com/java/security/CodeSource.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4977541819976013951L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) ois)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Restores this object from a stream (i.e., deserializes it).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) oos)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Writes this object out to a stream (i.e., serializes it).

**Serial Data:** An initial URL is followed by an int indicating the number of certificates to follow (a value of "zero" denotes that there are no certificates associated with this object). Each certificate is written out starting with a String denoting the certificate type, followed by an int specifying the length of the certificate encoding, followed by the certificate encoding itself which is written out as an array of bytes. Finally, if any code signers are present then the array of code signers is serialized and written out too. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### location

[URL](http://docs.google.com/java/net/URL.html) **location**

The code location.

| **Class** [**java.security.DigestException**](http://docs.google.com/java/security/DigestException.html) **extends** [**GeneralSecurityException**](http://docs.google.com/java/security/GeneralSecurityException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5821450303093652515L

| **Class** [**java.security.GeneralSecurityException**](http://docs.google.com/java/security/GeneralSecurityException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**894798122053539237L

| **Class** [**java.security.GuardedObject**](http://docs.google.com/java/security/GuardedObject.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5240450096227834308L

| **Serialization Methods** |
| --- |

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) oos)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Writes this object out to a stream (i.e., serializes it). We check the guard if there is one.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### object

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

### guard

[Guard](http://docs.google.com/java/security/Guard.html) **guard**

| **Class** [**java.security.Identity**](http://docs.google.com/java/security/Identity.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3609922007826600659L

| **Serialized Fields** |
| --- |

### name

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

**Deprecated.** The name for this identity.

### publicKey

[PublicKey](http://docs.google.com/java/security/PublicKey.html) **publicKey**

**Deprecated.** The public key for this identity.

### info

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

**Deprecated.** Generic, descriptive information about the identity.

### scope

[IdentityScope](http://docs.google.com/java/security/IdentityScope.html) **scope**

**Deprecated.** The scope of the identity.

### certificates

[Vector](http://docs.google.com/java/util/Vector.html)<[E](http://docs.google.com/java/util/Vector.html)> **certificates**

**Deprecated.** The certificates for this identity.

| **Class** [**java.security.IdentityScope**](http://docs.google.com/java/security/IdentityScope.html) **extends** [**Identity**](http://docs.google.com/java/security/Identity.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2337346281189773310L

| **Class** [**java.security.InvalidAlgorithmParameterException**](http://docs.google.com/java/security/InvalidAlgorithmParameterException.html) **extends** [**GeneralSecurityException**](http://docs.google.com/java/security/GeneralSecurityException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2864672297499471472L

| **Class** [**java.security.InvalidKeyException**](http://docs.google.com/java/security/InvalidKeyException.html) **extends** [**KeyException**](http://docs.google.com/java/security/KeyException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5698479920593359816L

| **Class** [**java.security.InvalidParameterException**](http://docs.google.com/java/security/InvalidParameterException.html) **extends** [**IllegalArgumentException**](http://docs.google.com/java/lang/IllegalArgumentException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-857968536935667808L

| **Class** [**java.security.KeyException**](http://docs.google.com/java/security/KeyException.html) **extends** [**GeneralSecurityException**](http://docs.google.com/java/security/GeneralSecurityException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7483676942812432108L

| **Class** [**java.security.KeyManagementException**](http://docs.google.com/java/security/KeyManagementException.html) **extends** [**KeyException**](http://docs.google.com/java/security/KeyException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**947674216157062695L

| **Class** [**java.security.KeyPair**](http://docs.google.com/java/security/KeyPair.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7565189502268009837L

| **Serialized Fields** |
| --- |

### privateKey

[PrivateKey](http://docs.google.com/java/security/PrivateKey.html) **privateKey**

### publicKey

[PublicKey](http://docs.google.com/java/security/PublicKey.html) **publicKey**

| **Class** [**java.security.KeyRep**](http://docs.google.com/java/security/KeyRep.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4757683898830641853L

| **Serialization Methods** |
| --- |

### readResolve

protected [Object](http://docs.google.com/java/lang/Object.html) **readResolve**()  
 throws [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html)

Resolve the Key object.

This method supports three Type/format combinations:

* Type.SECRET/"RAW" - returns a SecretKeySpec object constructed using encoded key bytes and algorithm
* Type.PUBLIC/"X.509" - gets a KeyFactory instance for the key algorithm, constructs an X509EncodedKeySpec with the encoded key bytes, and generates a public key from the spec
* Type.PRIVATE/"PKCS#8" - gets a KeyFactory instance for the key algorithm, constructs a PKCS8EncodedKeySpec with the encoded key bytes, and generates a private key from the spec

**Throws:** [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html) - if the Type/format combination is unrecognized, if the algorithm, key format, or encoded key bytes are unrecognized/invalid, of if the resolution of the key fails for any reason

| **Serialized Fields** |
| --- |

### type

[KeyRep.Type](http://docs.google.com/java/security/KeyRep.Type.html) **type**

Either one of Type.SECRET, Type.PUBLIC, or Type.PRIVATE

### algorithm

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

The Key algorithm

### format

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

The Key encoding format

### encoded

byte[] **encoded**

The encoded Key bytes

| **Class** [**java.security.KeyStoreException**](http://docs.google.com/java/security/KeyStoreException.html) **extends** [**GeneralSecurityException**](http://docs.google.com/java/security/GeneralSecurityException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1119353179322377262L

| **Class** [**java.security.NoSuchAlgorithmException**](http://docs.google.com/java/security/NoSuchAlgorithmException.html) **extends** [**GeneralSecurityException**](http://docs.google.com/java/security/GeneralSecurityException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7443947487218346562L

| **Class** [**java.security.NoSuchProviderException**](http://docs.google.com/java/security/NoSuchProviderException.html) **extends** [**GeneralSecurityException**](http://docs.google.com/java/security/GeneralSecurityException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8488111756688534474L

| **Class** [**java.security.Permission**](http://docs.google.com/java/security/Permission.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5636570222231596674L

| **Serialized Fields** |
| --- |

### name

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

| **Class** [**java.security.PermissionCollection**](http://docs.google.com/java/security/PermissionCollection.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-6727011328946861783L

| **Serialized Fields** |
| --- |

### readOnly

boolean **readOnly**

| **Class java.security.PermissionsHash extends** [**PermissionCollection**](http://docs.google.com/java/security/PermissionCollection.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8491988220802933440L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

**Serial Data:** Default fields. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### perms

[Hashtable](http://docs.google.com/java/util/Hashtable.html)<[K](http://docs.google.com/java/util/Hashtable.html),[V](http://docs.google.com/java/util/Hashtable.html)> **perms**

A table of the Permissions (both key and value are same).

| **Class** [**java.security.PrivilegedActionException**](http://docs.google.com/java/security/PrivilegedActionException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4724086851538908602L

| **Serialized Fields** |
| --- |

### exception

[Exception](http://docs.google.com/java/lang/Exception.html) **exception**

| **Class** [**java.security.Provider**](http://docs.google.com/java/security/Provider.html) **extends** [**Properties**](http://docs.google.com/java/util/Properties.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4298000515446427739L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

| **Serialized Fields** |
| --- |

### name

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

The provider name.

### info

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

A description of the provider and its services.

### version

double **version**

The provider version number.

| **Class** [**java.security.ProviderException**](http://docs.google.com/java/security/ProviderException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5256023526693665674L

| **Class** [**java.security.SecureRandom**](http://docs.google.com/java/security/SecureRandom.html) **extends** [**Random**](http://docs.google.com/java/util/Random.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4940670005562187L

| **Serialized Fields** |
| --- |

### provider

[Provider](http://docs.google.com/java/security/Provider.html) **provider**

The provider.

**Since:** 1.2

### secureRandomSpi

[SecureRandomSpi](http://docs.google.com/java/security/SecureRandomSpi.html) **secureRandomSpi**

The provider implementation.

**Since:** 1.2

### algorithm

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

### state

byte[] **state**

### digest

[MessageDigest](http://docs.google.com/java/security/MessageDigest.html) **digest**

### randomBytes

byte[] **randomBytes**

We know that the MessageDigest class does not implement java.io.Serializable. However, since this field is no longer used, it will always be NULL and won't affect the serialization of the SecureRandom class itself.

### randomBytesUsed

int **randomBytesUsed**

### counter

long **counter**

| **Class** [**java.security.SecureRandomSpi**](http://docs.google.com/java/security/SecureRandomSpi.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2991854161009191830L

| **Class** [**java.security.SecurityPermission**](http://docs.google.com/java/security/SecurityPermission.html) **extends** [**BasicPermission**](http://docs.google.com/java/security/BasicPermission.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5236109936224050470L

| **Class** [**java.security.SignatureException**](http://docs.google.com/java/security/SignatureException.html) **extends** [**GeneralSecurityException**](http://docs.google.com/java/security/GeneralSecurityException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7509989324975124438L

| **Class** [**java.security.SignedObject**](http://docs.google.com/java/security/SignedObject.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**720502720485447167L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

readObject is called to restore the state of the SignedObject from a stream.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

| **Serialized Fields** |
| --- |

### content

byte[] **content**

### signature

byte[] **signature**

### thealgorithm

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

| **Class** [**java.security.Signer**](http://docs.google.com/java/security/Signer.html) **extends** [**Identity**](http://docs.google.com/java/security/Identity.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1763464102261361480L

| **Serialized Fields** |
| --- |

### privateKey

[PrivateKey](http://docs.google.com/java/security/PrivateKey.html) **privateKey**

**Deprecated.** The signer's private key.

| **Class** [**java.security.Timestamp**](http://docs.google.com/java/security/Timestamp.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5502683707821851294L

| **Serialized Fields** |
| --- |

### timestamp

[Date](http://docs.google.com/java/util/Date.html) **timestamp**

The timestamp's date and time

### signerCertPath

[CertPath](http://docs.google.com/java/security/cert/CertPath.html) **signerCertPath**

The TSA's certificate path.

| **Class** [**java.security.UnrecoverableEntryException**](http://docs.google.com/java/security/UnrecoverableEntryException.html) **extends** [**GeneralSecurityException**](http://docs.google.com/java/security/GeneralSecurityException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4527142945246286535L

| **Class** [**java.security.UnrecoverableKeyException**](http://docs.google.com/java/security/UnrecoverableKeyException.html) **extends** [**UnrecoverableEntryException**](http://docs.google.com/java/security/UnrecoverableEntryException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7275063078190151277L

| **Class** [**java.security.UnresolvedPermission**](http://docs.google.com/java/security/UnresolvedPermission.html) **extends** [**Permission**](http://docs.google.com/java/security/Permission.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4821973115467008846L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) ois)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Restores this object from a stream (i.e., deserializes it).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) oos)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Writes this object out to a stream (i.e., serializes it).

**Serial Data:** An initial String denoting the type is followed by a String denoting the name is followed by a String denoting the actions is followed by an int indicating the number of certificates to follow (a value of "zero" denotes that there are no certificates associated with this object). Each certificate is written out starting with a String denoting the certificate type, followed by an int specifying the length of the certificate encoding, followed by the certificate encoding itself which is written out as an array of bytes. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### type

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

The class name of the Permission class that will be created when this unresolved permission is resolved.

### name

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

The permission name.

### actions

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

The actions of the permission.

| **Class java.security.UnresolvedPermissionCollection extends** [**PermissionCollection**](http://docs.google.com/java/security/PermissionCollection.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7176153071733132400L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

**Serial Data:** Default field. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### permissions

[Hashtable](http://docs.google.com/java/util/Hashtable.html)<[K](http://docs.google.com/java/util/Hashtable.html),[V](http://docs.google.com/java/util/Hashtable.html)> **permissions**

A table of the UnresolvedPermissions keyed on type, value is Vector of permissions

| **Package** **java.security.acl** |
| --- |

| **Class** [**java.security.acl.AclNotFoundException**](http://docs.google.com/java/security/acl/AclNotFoundException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5684295034092681791L

| **Class** [**java.security.acl.LastOwnerException**](http://docs.google.com/java/security/acl/LastOwnerException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5141997548211140359L

| **Class** [**java.security.acl.NotOwnerException**](http://docs.google.com/java/security/acl/NotOwnerException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5555597911163362399L

| **Package** **java.security.cert** |
| --- |

| **Class** [**java.security.cert.Certificate**](http://docs.google.com/java/security/cert/Certificate.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3585440601605666277L

| **Serialization Methods** |
| --- |

### writeReplace

protected [Object](http://docs.google.com/java/lang/Object.html) **writeReplace**()  
 throws [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html)

Replace the Certificate to be serialized.

**Throws:** [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html) - if a new object representing this Certificate could not be created**Since:** 1.3

| **Serialized Fields** |
| --- |

### type

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

| **Class** [**java.security.cert.Certificate.CertificateRep**](http://docs.google.com/java/security/cert/Certificate.CertificateRep.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8563758940495660020L

| **Serialization Methods** |
| --- |

### readResolve

protected [Object](http://docs.google.com/java/lang/Object.html) **readResolve**()  
 throws [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html)

Resolve the Certificate Object.

**Throws:** [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html) - if the Certificate could not be resolved

| **Serialized Fields** |
| --- |

### type

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

### data

byte[] **data**

| **Class** [**java.security.cert.CertificateEncodingException**](http://docs.google.com/java/security/cert/CertificateEncodingException.html) **extends** [**CertificateException**](http://docs.google.com/java/security/cert/CertificateException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6219492851589449162L

| **Class** [**java.security.cert.CertificateException**](http://docs.google.com/java/security/cert/CertificateException.html) **extends** [**GeneralSecurityException**](http://docs.google.com/java/security/GeneralSecurityException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3192535253797119798L

| **Class** [**java.security.cert.CertificateExpiredException**](http://docs.google.com/java/security/cert/CertificateExpiredException.html) **extends** [**CertificateException**](http://docs.google.com/java/security/cert/CertificateException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**9071001339691533771L

| **Class** [**java.security.cert.CertificateNotYetValidException**](http://docs.google.com/java/security/cert/CertificateNotYetValidException.html) **extends** [**CertificateException**](http://docs.google.com/java/security/cert/CertificateException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4355919900041064702L

| **Class** [**java.security.cert.CertificateParsingException**](http://docs.google.com/java/security/cert/CertificateParsingException.html) **extends** [**CertificateException**](http://docs.google.com/java/security/cert/CertificateException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7989222416793322029L

| **Class** [**java.security.cert.CertPath**](http://docs.google.com/java/security/cert/CertPath.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6068470306649138683L

| **Serialization Methods** |
| --- |

### writeReplace

protected [Object](http://docs.google.com/java/lang/Object.html) **writeReplace**()  
 throws [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html)

Replaces the CertPath to be serialized with a CertPathRep object.

**Throws:** [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html) - if a CertPathRep object representing this certification path could not be created

| **Serialized Fields** |
| --- |

### type

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

| **Class** [**java.security.cert.CertPath.CertPathRep**](http://docs.google.com/java/security/cert/CertPath.CertPathRep.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3015633072427920915L

| **Serialization Methods** |
| --- |

### readResolve

protected [Object](http://docs.google.com/java/lang/Object.html) **readResolve**()  
 throws [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html)

Returns a CertPath constructed from the type and data.

**Throws:** [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html) - if a CertPath could not be constructed

| **Serialized Fields** |
| --- |

### type

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

The Certificate type

### data

byte[] **data**

The encoded form of the cert path

| **Class** [**java.security.cert.CertPathBuilderException**](http://docs.google.com/java/security/cert/CertPathBuilderException.html) **extends** [**GeneralSecurityException**](http://docs.google.com/java/security/GeneralSecurityException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5316471420178794402L

| **Class** [**java.security.cert.CertPathValidatorException**](http://docs.google.com/java/security/cert/CertPathValidatorException.html) **extends** [**GeneralSecurityException**](http://docs.google.com/java/security/GeneralSecurityException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3083180014971893139L

| **Serialized Fields** |
| --- |

### index

int **index**

the index of the certificate in the certification path that caused the exception to be thrown

### certPath

[CertPath](http://docs.google.com/java/security/cert/CertPath.html) **certPath**

the CertPath that was being validated when the exception was thrown

| **Class** [**java.security.cert.CertStoreException**](http://docs.google.com/java/security/cert/CertStoreException.html) **extends** [**GeneralSecurityException**](http://docs.google.com/java/security/GeneralSecurityException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2395296107471573245L

| **Class** [**java.security.cert.CRLException**](http://docs.google.com/java/security/cert/CRLException.html) **extends** [**GeneralSecurityException**](http://docs.google.com/java/security/GeneralSecurityException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-6694728944094197147L

| **Class** [**java.security.cert.X509Certificate**](http://docs.google.com/java/security/cert/X509Certificate.html) **extends** [**Certificate**](http://docs.google.com/java/security/cert/Certificate.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2491127588187038216L

| **Package** **java.security.interfaces** |
| --- |

| **Package** **java.security.spec** |
| --- |

| **Class** [**java.security.spec.InvalidKeySpecException**](http://docs.google.com/java/security/spec/InvalidKeySpecException.html) **extends** [**GeneralSecurityException**](http://docs.google.com/java/security/GeneralSecurityException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3546139293998810778L

| **Class** [**java.security.spec.InvalidParameterSpecException**](http://docs.google.com/java/security/spec/InvalidParameterSpecException.html) **extends** [**GeneralSecurityException**](http://docs.google.com/java/security/GeneralSecurityException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-970468769593399342L

| **Package** **java.sql** |
| --- |

| **Class** [**java.sql.BatchUpdateException**](http://docs.google.com/java/sql/BatchUpdateException.html) **extends** [**SQLException**](http://docs.google.com/java/sql/SQLException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5977529877145521757L

| **Serialized Fields** |
| --- |

### updateCounts

int[] **updateCounts**

The array that describes the outcome of a batch execution.

**Since:** 1.2

| **Class** [**java.sql.DataTruncation**](http://docs.google.com/java/sql/DataTruncation.html) **extends** [**SQLWarning**](http://docs.google.com/java/sql/SQLWarning.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6464298989504059473L

| **Serialized Fields** |
| --- |

### index

int **index**

### parameter

boolean **parameter**

### read

boolean **read**

### dataSize

int **dataSize**

### transferSize

int **transferSize**

| **Class** [**java.sql.Date**](http://docs.google.com/java/sql/Date.html) **extends** [**Date**](http://docs.google.com/java/util/Date.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1511598038487230103L

| **Class** [**java.sql.SQLClientInfoException**](http://docs.google.com/java/sql/SQLClientInfoException.html) **extends** [**SQLException**](http://docs.google.com/java/sql/SQLException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4319604256824655880L

| **Serialized Fields** |
| --- |

### failedProperties

[Map](http://docs.google.com/java/util/Map.html)<[K](http://docs.google.com/java/util/Map.html),[V](http://docs.google.com/java/util/Map.html)> **failedProperties**

| **Class** [**java.sql.SQLDataException**](http://docs.google.com/java/sql/SQLDataException.html) **extends** [**SQLNonTransientException**](http://docs.google.com/java/sql/SQLNonTransientException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-6889123282670549800L

| **Class** [**java.sql.SQLException**](http://docs.google.com/java/sql/SQLException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2135244094396331484L

| **Serialized Fields** |
| --- |

### SQLState

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

### vendorCode

int **vendorCode**

### next

[SQLException](http://docs.google.com/java/sql/SQLException.html) **next**

| **Class** [**java.sql.SQLFeatureNotSupportedException**](http://docs.google.com/java/sql/SQLFeatureNotSupportedException.html) **extends** [**SQLNonTransientException**](http://docs.google.com/java/sql/SQLNonTransientException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1026510870282316051L

| **Class** [**java.sql.SQLIntegrityConstraintViolationException**](http://docs.google.com/java/sql/SQLIntegrityConstraintViolationException.html) **extends** [**SQLNonTransientException**](http://docs.google.com/java/sql/SQLNonTransientException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8033405298774849169L

| **Class** [**java.sql.SQLInvalidAuthorizationSpecException**](http://docs.google.com/java/sql/SQLInvalidAuthorizationSpecException.html) **extends** [**SQLNonTransientException**](http://docs.google.com/java/sql/SQLNonTransientException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-64105250450891498L

| **Class** [**java.sql.SQLNonTransientConnectionException**](http://docs.google.com/java/sql/SQLNonTransientConnectionException.html) **extends** [**SQLNonTransientException**](http://docs.google.com/java/sql/SQLNonTransientException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5852318857474782892L

| **Class** [**java.sql.SQLNonTransientException**](http://docs.google.com/java/sql/SQLNonTransientException.html) **extends** [**SQLException**](http://docs.google.com/java/sql/SQLException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-9104382843534716547L

| **Class** [**java.sql.SQLPermission**](http://docs.google.com/java/sql/SQLPermission.html) **extends** [**BasicPermission**](http://docs.google.com/java/security/BasicPermission.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1439323187199563495L

| **Class** [**java.sql.SQLRecoverableException**](http://docs.google.com/java/sql/SQLRecoverableException.html) **extends** [**SQLException**](http://docs.google.com/java/sql/SQLException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4144386502923131579L

| **Class** [**java.sql.SQLSyntaxErrorException**](http://docs.google.com/java/sql/SQLSyntaxErrorException.html) **extends** [**SQLNonTransientException**](http://docs.google.com/java/sql/SQLNonTransientException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1843832610477496053L

| **Class** [**java.sql.SQLTimeoutException**](http://docs.google.com/java/sql/SQLTimeoutException.html) **extends** [**SQLTransientException**](http://docs.google.com/java/sql/SQLTransientException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4487171280562520262L

| **Class** [**java.sql.SQLTransactionRollbackException**](http://docs.google.com/java/sql/SQLTransactionRollbackException.html) **extends** [**SQLTransientException**](http://docs.google.com/java/sql/SQLTransientException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5246680841170837229L

| **Class** [**java.sql.SQLTransientConnectionException**](http://docs.google.com/java/sql/SQLTransientConnectionException.html) **extends** [**SQLTransientException**](http://docs.google.com/java/sql/SQLTransientException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2520155553543391200L

| **Class** [**java.sql.SQLTransientException**](http://docs.google.com/java/sql/SQLTransientException.html) **extends** [**SQLException**](http://docs.google.com/java/sql/SQLException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-9042733978262274539L

| **Class** [**java.sql.SQLWarning**](http://docs.google.com/java/sql/SQLWarning.html) **extends** [**SQLException**](http://docs.google.com/java/sql/SQLException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3917336774604784856L

| **Class** [**java.sql.Time**](http://docs.google.com/java/sql/Time.html) **extends** [**Date**](http://docs.google.com/java/util/Date.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8397324403548013681L

| **Class** [**java.sql.Timestamp**](http://docs.google.com/java/sql/Timestamp.html) **extends** [**Date**](http://docs.google.com/java/util/Date.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2745179027874758501L

| **Serialized Fields** |
| --- |

### nanos

int **nanos**

| **Package** **java.text** |
| --- |

| **Class** [**java.text.AttributedCharacterIterator.Attribute**](http://docs.google.com/java/text/AttributedCharacterIterator.Attribute.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-9142742483513960612L

| **Serialization Methods** |
| --- |

### readResolve

protected [Object](http://docs.google.com/java/lang/Object.html) **readResolve**()  
 throws [InvalidObjectException](http://docs.google.com/java/io/InvalidObjectException.html)

Resolves instances being deserialized to the predefined constants.

**Throws:** [InvalidObjectException](http://docs.google.com/java/io/InvalidObjectException.html)

| **Serialized Fields** |
| --- |

### name

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

The name of this Attribute. The name is used primarily by readResolve to look up the corresponding predefined instance when deserializing an instance.

| **Class** [**java.text.ChoiceFormat**](http://docs.google.com/java/text/ChoiceFormat.html) **extends** [**NumberFormat**](http://docs.google.com/java/text/NumberFormat.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1795184449645032964L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

After reading an object from the input stream, do a simple verification to maintain class invariants.

**Throws:** [InvalidObjectException](http://docs.google.com/java/io/InvalidObjectException.html) - if the objects read from the stream is invalid. [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

| **Serialized Fields** |
| --- |

### choiceLimits

double[] **choiceLimits**

A list of lower bounds for the choices. The formatter will return choiceFormats[i] if the number being formatted is greater than or equal to choiceLimits[i] and less than choiceLimits[i+1].

### choiceFormats

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

A list of choice strings. The formatter will return choiceFormats[i] if the number being formatted is greater than or equal to choiceLimits[i] and less than choiceLimits[i+1].

| **Class** [**java.text.DateFormat**](http://docs.google.com/java/text/DateFormat.html) **extends** [**Format**](http://docs.google.com/java/text/Format.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7218322306649953788L

| **Serialized Fields** |
| --- |

### calendar

[Calendar](http://docs.google.com/java/util/Calendar.html) **calendar**

The calendar that DateFormat uses to produce the time field values needed to implement date and time formatting. Subclasses should initialize this to a calendar appropriate for the locale associated with this DateFormat.

### numberFormat

[NumberFormat](http://docs.google.com/java/text/NumberFormat.html) **numberFormat**

The number formatter that DateFormat uses to format numbers in dates and times. Subclasses should initialize this to a number format appropriate for the locale associated with this DateFormat.

| **Class** [**java.text.DateFormat.Field**](http://docs.google.com/java/text/DateFormat.Field.html) **extends** [**Format.Field**](http://docs.google.com/java/text/Format.Field.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7441350119349544720L

| **Serialization Methods** |
| --- |

### readResolve

protected [Object](http://docs.google.com/java/lang/Object.html) **readResolve**()  
 throws [InvalidObjectException](http://docs.google.com/java/io/InvalidObjectException.html)

Resolves instances being deserialized to the predefined constants.

**Throws:** [InvalidObjectException](http://docs.google.com/java/io/InvalidObjectException.html) - if the constant could not be resolved.

| **Serialized Fields** |
| --- |

### calendarField

int **calendarField**

Calendar field.

| **Class** [**java.text.DateFormatSymbols**](http://docs.google.com/java/text/DateFormatSymbols.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5987973545549424702L

| **Serialization Methods** |
| --- |

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) stream)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Write out the default serializable data, after ensuring the zoneStrings field is initialized in order to make sure the backward compatibility.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)**Since:** 1.6

| **Serialized Fields** |
| --- |

### eras

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

Era strings. For example: "AD" and "BC". An array of 2 strings, indexed by Calendar.BC and Calendar.AD.

### months

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

Month strings. For example: "January", "February", etc. An array of 13 strings (some calendars have 13 months), indexed by Calendar.JANUARY, Calendar.FEBRUARY, etc.

### shortMonths

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

Short month strings. For example: "Jan", "Feb", etc. An array of 13 strings (some calendars have 13 months), indexed by Calendar.JANUARY, Calendar.FEBRUARY, etc.

### weekdays

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

Weekday strings. For example: "Sunday", "Monday", etc. An array of 8 strings, indexed by Calendar.SUNDAY, Calendar.MONDAY, etc. The element weekdays[0] is ignored.

### shortWeekdays

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

Short weekday strings. For example: "Sun", "Mon", etc. An array of 8 strings, indexed by Calendar.SUNDAY, Calendar.MONDAY, etc. The element shortWeekdays[0] is ignored.

### ampms

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

AM and PM strings. For example: "AM" and "PM". An array of 2 strings, indexed by Calendar.AM and Calendar.PM.

### zoneStrings

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

Localized names of time zones in this locale. This is a two-dimensional array of strings of size *n* by *m*, where *m* is at least 5. Each of the *n* rows is an entry containing the localized names for a single TimeZone. Each such row contains (with i ranging from 0..*n*-1):

* zoneStrings[i][0] - time zone ID
* zoneStrings[i][1] - long name of zone in standard time
* zoneStrings[i][2] - short name of zone in standard time
* zoneStrings[i][3] - long name of zone in daylight saving time
* zoneStrings[i][4] - short name of zone in daylight saving time

The zone ID is *not* localized; it's one of the valid IDs of the [TimeZone](http://docs.google.com/java/util/TimeZone.html) class that are not [custom IDs](http://docs.google.com/java/java/util/TimeZone.html#CustomID). All other entries are localized names.

**See Also:**[TimeZone](http://docs.google.com/java/util/TimeZone.html)

### localPatternChars

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

Localized date-time pattern characters. For example, a locale may wish to use 'u' rather than 'y' to represent years in its date format pattern strings. This string must be exactly 18 characters long, with the index of the characters described by DateFormat.ERA\_FIELD, DateFormat.YEAR\_FIELD, etc. Thus, if the string were "Xz...", then localized patterns would use 'X' for era and 'z' for year.

### locale

[Locale](http://docs.google.com/java/util/Locale.html) **locale**

The locale which is used for initializing this DateFormatSymbols object.

**Since:** 1.6

| **Class** [**java.text.DecimalFormat**](http://docs.google.com/java/text/DecimalFormat.html) **extends** [**NumberFormat**](http://docs.google.com/java/text/NumberFormat.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**864413376551465018L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) stream)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reads the default serializable fields from the stream and performs validations and adjustments for older serialized versions. The validations and adjustments are:

1. Verify that the superclass's digit count fields correctly reflect the limits imposed on formatting numbers other than BigInteger and BigDecimal objects. These limits are stored in the superclass for serialization compatibility with older versions, while the limits for BigInteger and BigDecimal objects are kept in this class. If, in the superclass, the minimum or maximum integer digit count is larger than DOUBLE\_INTEGER\_DIGITS or if the minimum or maximum fraction digit count is larger than DOUBLE\_FRACTION\_DIGITS, then the stream data is invalid and this method throws an InvalidObjectException.
2. If serialVersionOnStream is less than 4, initialize roundingMode to [RoundingMode.HALF\_EVEN](http://docs.google.com/java/math/RoundingMode.html#HALF_EVEN). This field is new with version 4.
3. If serialVersionOnStream is less than 3, then call the setters for the minimum and maximum integer and fraction digits with the values of the corresponding superclass getters to initialize the fields in this class. The fields in this class are new with version 3.
4. If serialVersionOnStream is less than 1, indicating that the stream was written by JDK 1.1, initialize useExponentialNotation to false, since it was not present in JDK 1.1.
5. Set serialVersionOnStream to the maximum allowed value so that default serialization will work properly if this object is streamed out again.

Stream versions older than 2 will not have the affix pattern variables posPrefixPattern etc. As a result, they will be initialized to null, which means the affix strings will be taken as literal values. This is exactly what we want, since that corresponds to the pre-version-2 behavior.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

| **Serialized Fields** |
| --- |

### positivePrefix

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

The symbol used as a prefix when formatting positive numbers, e.g. "+".

**See Also:**[DecimalFormat.getPositivePrefix()](http://docs.google.com/java/text/DecimalFormat.html#getPositivePrefix())

### positiveSuffix

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

The symbol used as a suffix when formatting positive numbers. This is often an empty string.

**See Also:**[DecimalFormat.getPositiveSuffix()](http://docs.google.com/java/text/DecimalFormat.html#getPositiveSuffix())

### negativePrefix

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

The symbol used as a prefix when formatting negative numbers, e.g. "-".

**See Also:**[DecimalFormat.getNegativePrefix()](http://docs.google.com/java/text/DecimalFormat.html#getNegativePrefix())

### negativeSuffix

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

The symbol used as a suffix when formatting negative numbers. This is often an empty string.

**See Also:**[DecimalFormat.getNegativeSuffix()](http://docs.google.com/java/text/DecimalFormat.html#getNegativeSuffix())

### posPrefixPattern

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

The prefix pattern for non-negative numbers. This variable corresponds to positivePrefix.

This pattern is expanded by the method expandAffix() to positivePrefix to update the latter to reflect changes in symbols. If this variable is null then positivePrefix is taken as a literal value that does not change when symbols changes. This variable is always null for DecimalFormat objects older than stream version 2 restored from stream.

**Since:** 1.3

### posSuffixPattern

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

The suffix pattern for non-negative numbers. This variable corresponds to positiveSuffix. This variable is analogous to posPrefixPattern; see that variable for further documentation.

**Since:** 1.3

### negPrefixPattern

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

The prefix pattern for negative numbers. This variable corresponds to negativePrefix. This variable is analogous to posPrefixPattern; see that variable for further documentation.

**Since:** 1.3

### negSuffixPattern

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

The suffix pattern for negative numbers. This variable corresponds to negativeSuffix. This variable is analogous to posPrefixPattern; see that variable for further documentation.

**Since:** 1.3

### multiplier

int **multiplier**

The multiplier for use in percent, per mille, etc.

**See Also:**[DecimalFormat.getMultiplier()](http://docs.google.com/java/text/DecimalFormat.html#getMultiplier())

### groupingSize

byte **groupingSize**

The number of digits between grouping separators in the integer portion of a number. Must be greater than 0 if NumberFormat.groupingUsed is true.

**See Also:**[DecimalFormat.getGroupingSize()](http://docs.google.com/java/text/DecimalFormat.html#getGroupingSize()), [NumberFormat.isGroupingUsed()](http://docs.google.com/java/text/NumberFormat.html#isGroupingUsed())

### decimalSeparatorAlwaysShown

boolean **decimalSeparatorAlwaysShown**

If true, forces the decimal separator to always appear in a formatted number, even if the fractional part of the number is zero.

**See Also:**[DecimalFormat.isDecimalSeparatorAlwaysShown()](http://docs.google.com/java/text/DecimalFormat.html#isDecimalSeparatorAlwaysShown())

### parseBigDecimal

boolean **parseBigDecimal**

If true, parse returns BigDecimal wherever possible.

**Since:** 1.5 **See Also:**[DecimalFormat.isParseBigDecimal()](http://docs.google.com/java/text/DecimalFormat.html#isParseBigDecimal())

### symbols

[DecimalFormatSymbols](http://docs.google.com/java/text/DecimalFormatSymbols.html) **symbols**

The DecimalFormatSymbols object used by this format. It contains the symbols used to format numbers, e.g. the grouping separator, decimal separator, and so on.

**See Also:**[DecimalFormat.setDecimalFormatSymbols(java.text.DecimalFormatSymbols)](http://docs.google.com/java/text/DecimalFormat.html#setDecimalFormatSymbols(java.text.DecimalFormatSymbols)), [DecimalFormatSymbols](http://docs.google.com/java/text/DecimalFormatSymbols.html)

### useExponentialNotation

boolean **useExponentialNotation**

True to force the use of exponential (i.e. scientific) notation when formatting numbers.

**Since:** 1.2

### minExponentDigits

byte **minExponentDigits**

The minimum number of digits used to display the exponent when a number is formatted in exponential notation. This field is ignored if useExponentialNotation is not true.

**Since:** 1.2

### maximumIntegerDigits

int **maximumIntegerDigits**

The maximum number of digits allowed in the integer portion of a BigInteger or BigDecimal number. maximumIntegerDigits must be greater than or equal to minimumIntegerDigits.

**Since:** 1.5 **See Also:**[DecimalFormat.getMaximumIntegerDigits()](http://docs.google.com/java/text/DecimalFormat.html#getMaximumIntegerDigits())

### minimumIntegerDigits

int **minimumIntegerDigits**

The minimum number of digits allowed in the integer portion of a BigInteger or BigDecimal number. minimumIntegerDigits must be less than or equal to maximumIntegerDigits.

**Since:** 1.5 **See Also:**[DecimalFormat.getMinimumIntegerDigits()](http://docs.google.com/java/text/DecimalFormat.html#getMinimumIntegerDigits())

### maximumFractionDigits

int **maximumFractionDigits**

The maximum number of digits allowed in the fractional portion of a BigInteger or BigDecimal number. maximumFractionDigits must be greater than or equal to minimumFractionDigits.

**Since:** 1.5 **See Also:**[DecimalFormat.getMaximumFractionDigits()](http://docs.google.com/java/text/DecimalFormat.html#getMaximumFractionDigits())

### minimumFractionDigits

int **minimumFractionDigits**

The minimum number of digits allowed in the fractional portion of a BigInteger or BigDecimal number. minimumFractionDigits must be less than or equal to maximumFractionDigits.

**Since:** 1.5 **See Also:**[DecimalFormat.getMinimumFractionDigits()](http://docs.google.com/java/text/DecimalFormat.html#getMinimumFractionDigits())

### roundingMode

[RoundingMode](http://docs.google.com/java/math/RoundingMode.html) **roundingMode**

The [RoundingMode](http://docs.google.com/java/math/RoundingMode.html) used in this DecimalFormat.

**Since:** 1.6

### serialVersionOnStream

int **serialVersionOnStream**

The internal serial version which says which version was written. Possible values are:

* **0** (default): versions before the Java 2 platform v1.2
* **1**: version for 1.2, which includes the two new fields useExponentialNotation and minExponentDigits.
* **2**: version for 1.3 and later, which adds four new fields: posPrefixPattern, posSuffixPattern, negPrefixPattern, and negSuffixPattern.
* **3**: version for 1.5 and later, which adds five new fields: maximumIntegerDigits, minimumIntegerDigits, maximumFractionDigits, minimumFractionDigits, and parseBigDecimal.
* **4**: version for 1.6 and later, which adds one new field: roundingMode.

**Since:** 1.2

| **Class** [**java.text.DecimalFormatSymbols**](http://docs.google.com/java/text/DecimalFormatSymbols.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5772796243397350300L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) stream)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reads the default serializable fields, provides default values for objects in older serial versions, and initializes non-serializable fields. If serialVersionOnStream is less than 1, initializes monetarySeparator to be the same as decimalSeparator and exponential to be 'E'. If serialVersionOnStream is less than 2, initializes localeto the root locale, and initializes If serialVersionOnStream is less than 3, it initializes exponentialSeparator using exponential. Sets serialVersionOnStream back to the maximum allowed value so that default serialization will work properly if this object is streamed out again. Initializes the currency from the intlCurrencySymbol field.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)**Since:** JDK 1.1.6

| **Serialized Fields** |
| --- |

### zeroDigit

char **zeroDigit**

Character used for zero.

**See Also:**[DecimalFormatSymbols.getZeroDigit()](http://docs.google.com/java/text/DecimalFormatSymbols.html#getZeroDigit())

### groupingSeparator

char **groupingSeparator**

Character used for thousands separator.

**See Also:**[DecimalFormatSymbols.getGroupingSeparator()](http://docs.google.com/java/text/DecimalFormatSymbols.html#getGroupingSeparator())

### decimalSeparator

char **decimalSeparator**

Character used for decimal sign.

**See Also:**[DecimalFormatSymbols.getDecimalSeparator()](http://docs.google.com/java/text/DecimalFormatSymbols.html#getDecimalSeparator())

### perMill

char **perMill**

Character used for per mille sign.

**See Also:**[DecimalFormatSymbols.getPerMill()](http://docs.google.com/java/text/DecimalFormatSymbols.html#getPerMill())

### percent

char **percent**

Character used for percent sign.

**See Also:**[DecimalFormatSymbols.getPercent()](http://docs.google.com/java/text/DecimalFormatSymbols.html#getPercent())

### digit

char **digit**

Character used for a digit in a pattern.

**See Also:**[DecimalFormatSymbols.getDigit()](http://docs.google.com/java/text/DecimalFormatSymbols.html#getDigit())

### patternSeparator

char **patternSeparator**

Character used to separate positive and negative subpatterns in a pattern.

**See Also:**[DecimalFormatSymbols.getPatternSeparator()](http://docs.google.com/java/text/DecimalFormatSymbols.html#getPatternSeparator())

### infinity

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

String used to represent infinity.

**See Also:**[DecimalFormatSymbols.getInfinity()](http://docs.google.com/java/text/DecimalFormatSymbols.html#getInfinity())

### NaN

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

String used to represent "not a number".

**See Also:**[DecimalFormatSymbols.getNaN()](http://docs.google.com/java/text/DecimalFormatSymbols.html#getNaN())

### minusSign

char **minusSign**

Character used to represent minus sign.

**See Also:**[DecimalFormatSymbols.getMinusSign()](http://docs.google.com/java/text/DecimalFormatSymbols.html#getMinusSign())

### currencySymbol

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

String denoting the local currency, e.g. "$".

**See Also:**[DecimalFormatSymbols.getCurrencySymbol()](http://docs.google.com/java/text/DecimalFormatSymbols.html#getCurrencySymbol())

### intlCurrencySymbol

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

ISO 4217 currency code denoting the local currency, e.g. "USD".

**See Also:**[DecimalFormatSymbols.getInternationalCurrencySymbol()](http://docs.google.com/java/text/DecimalFormatSymbols.html#getInternationalCurrencySymbol())

### monetarySeparator

char **monetarySeparator**

The decimal separator used when formatting currency values.

**Since:** JDK 1.1.6 **See Also:**[DecimalFormatSymbols.getMonetaryDecimalSeparator()](http://docs.google.com/java/text/DecimalFormatSymbols.html#getMonetaryDecimalSeparator())

### exponential

char **exponential**

The character used to distinguish the exponent in a number formatted in exponential notation, e.g. 'E' for a number such as "1.23E45".

Note that the public API provides no way to set this field, even though it is supported by the implementation and the stream format. The intent is that this will be added to the API in the future.

**Since:** JDK 1.1.6

### exponentialSeparator

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

The string used to separate the mantissa from the exponent. Examples: "x10^" for 1.23x10^4, "E" for 1.23E4.

If both exponential and exponentialSeparator exist, this exponentialSeparator has the precedence.

**Since:** 1.6

### locale

[Locale](http://docs.google.com/java/util/Locale.html) **locale**

The locale of these currency format symbols.

**Since:** 1.4

### serialVersionOnStream

int **serialVersionOnStream**

Describes the version of DecimalFormatSymbols present on the stream. Possible values are:

* **0** (or uninitialized): versions prior to JDK 1.1.6.
* **1**: Versions written by JDK 1.1.6 or later, which include two new fields: monetarySeparator and exponential.
* **2**: Versions written by J2SE 1.4 or later, which include a new locale field.
* **3**: Versions written by J2SE 1.6 or later, which include a new exponentialSeparator field.

When streaming out a DecimalFormatSymbols, the most recent format (corresponding to the highest allowable serialVersionOnStream) is always written.

**Since:** JDK 1.1.6

| **Class** [**java.text.Format**](http://docs.google.com/java/text/Format.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-299282585814624189L

| **Class** [**java.text.Format.Field**](http://docs.google.com/java/text/Format.Field.html) **extends** [**AttributedCharacterIterator.Attribute**](http://docs.google.com/java/text/AttributedCharacterIterator.Attribute.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**276966692217360283L

| **Class** [**java.text.MessageFormat**](http://docs.google.com/java/text/MessageFormat.html) **extends** [**Format**](http://docs.google.com/java/text/Format.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6479157306784022952L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

After reading an object from the input stream, do a simple verification to maintain class invariants.

**Throws:** [InvalidObjectException](http://docs.google.com/java/io/InvalidObjectException.html) - if the objects read from the stream is invalid. [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

| **Serialized Fields** |
| --- |

### locale

[Locale](http://docs.google.com/java/util/Locale.html) **locale**

The locale to use for formatting numbers and dates.

### pattern

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

The string that the formatted values are to be plugged into. In other words, this is the pattern supplied on construction with all of the {} expressions taken out.

### formats

[Format](http://docs.google.com/java/text/Format.html)[] **formats**

An array of formatters, which are used to format the arguments.

### offsets

int[] **offsets**

The positions where the results of formatting each argument are to be inserted into the pattern.

### argumentNumbers

int[] **argumentNumbers**

The argument numbers corresponding to each formatter. (The formatters are stored in the order they occur in the pattern, not in the order in which the arguments are specified.)

### maxOffset

int **maxOffset**

One less than the number of entries in offsets. Can also be thought of as the index of the highest-numbered element in offsets that is being used. All of these arrays should have the same number of elements being used as offsets does, and so this variable suffices to tell us how many entries are in all of them.

| **Class** [**java.text.MessageFormat.Field**](http://docs.google.com/java/text/MessageFormat.Field.html) **extends** [**Format.Field**](http://docs.google.com/java/text/Format.Field.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7899943957617360810L

| **Serialization Methods** |
| --- |

### readResolve

protected [Object](http://docs.google.com/java/lang/Object.html) **readResolve**()  
 throws [InvalidObjectException](http://docs.google.com/java/io/InvalidObjectException.html)

Resolves instances being deserialized to the predefined constants.

**Throws:** [InvalidObjectException](http://docs.google.com/java/io/InvalidObjectException.html) - if the constant could not be resolved.

| **Class** [**java.text.NumberFormat**](http://docs.google.com/java/text/NumberFormat.html) **extends** [**Format**](http://docs.google.com/java/text/Format.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2308460125733713944L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) stream)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

First, read in the default serializable data. Then, if serialVersionOnStream is less than 1, indicating that the stream was written by JDK 1.1, set the int fields such as maximumIntegerDigits to be equal to the byte fields such as maxIntegerDigits, since the int fields were not present in JDK 1.1. Finally, set serialVersionOnStream back to the maximum allowed value so that default serialization will work properly if this object is streamed out again.

If minimumIntegerDigits is greater than maximumIntegerDigits or minimumFractionDigits is greater than maximumFractionDigits, then the stream data is invalid and this method throws an InvalidObjectException. In addition, if any of these values is negative, then this method throws an InvalidObjectException.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)**Since:** 1.2

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) stream)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Write out the default serializable data, after first setting the byte fields such as maxIntegerDigits to be equal to the int fields such as maximumIntegerDigits (or to Byte.MAX\_VALUE, whichever is smaller), for compatibility with the JDK 1.1 version of the stream format.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)**Since:** 1.2

| **Serialized Fields** |
| --- |

### groupingUsed

boolean **groupingUsed**

True if the grouping (i.e. thousands) separator is used when formatting and parsing numbers.

**See Also:**[NumberFormat.isGroupingUsed()](http://docs.google.com/java/text/NumberFormat.html#isGroupingUsed())

### maxIntegerDigits

byte **maxIntegerDigits**

The maximum number of digits allowed in the integer portion of a number. maxIntegerDigits must be greater than or equal to minIntegerDigits.

**Note:** This field exists only for serialization compatibility with JDK 1.1. In Java platform 2 v1.2 and higher, the new int field maximumIntegerDigits is used instead. When writing to a stream, maxIntegerDigits is set to maximumIntegerDigits or Byte.MAX\_VALUE, whichever is smaller. When reading from a stream, this field is used only if serialVersionOnStream is less than 1.

**See Also:**[NumberFormat.getMaximumIntegerDigits()](http://docs.google.com/java/text/NumberFormat.html#getMaximumIntegerDigits())

### minIntegerDigits

byte **minIntegerDigits**

The minimum number of digits allowed in the integer portion of a number. minimumIntegerDigits must be less than or equal to maximumIntegerDigits.

**Note:** This field exists only for serialization compatibility with JDK 1.1. In Java platform 2 v1.2 and higher, the new int field minimumIntegerDigits is used instead. When writing to a stream, minIntegerDigits is set to minimumIntegerDigits or Byte.MAX\_VALUE, whichever is smaller. When reading from a stream, this field is used only if serialVersionOnStream is less than 1.

**See Also:**[NumberFormat.getMinimumIntegerDigits()](http://docs.google.com/java/text/NumberFormat.html#getMinimumIntegerDigits())

### maxFractionDigits

byte **maxFractionDigits**

The maximum number of digits allowed in the fractional portion of a number. maximumFractionDigits must be greater than or equal to minimumFractionDigits.

**Note:** This field exists only for serialization compatibility with JDK 1.1. In Java platform 2 v1.2 and higher, the new int field maximumFractionDigits is used instead. When writing to a stream, maxFractionDigits is set to maximumFractionDigits or Byte.MAX\_VALUE, whichever is smaller. When reading from a stream, this field is used only if serialVersionOnStream is less than 1.

**See Also:**[NumberFormat.getMaximumFractionDigits()](http://docs.google.com/java/text/NumberFormat.html#getMaximumFractionDigits())

### minFractionDigits

byte **minFractionDigits**

The minimum number of digits allowed in the fractional portion of a number. minimumFractionDigits must be less than or equal to maximumFractionDigits.

**Note:** This field exists only for serialization compatibility with JDK 1.1. In Java platform 2 v1.2 and higher, the new int field minimumFractionDigits is used instead. When writing to a stream, minFractionDigits is set to minimumFractionDigits or Byte.MAX\_VALUE, whichever is smaller. When reading from a stream, this field is used only if serialVersionOnStream is less than 1.

**See Also:**[NumberFormat.getMinimumFractionDigits()](http://docs.google.com/java/text/NumberFormat.html#getMinimumFractionDigits())

### parseIntegerOnly

boolean **parseIntegerOnly**

True if this format will parse numbers as integers only.

**See Also:**[NumberFormat.isParseIntegerOnly()](http://docs.google.com/java/text/NumberFormat.html#isParseIntegerOnly())

### maximumIntegerDigits

int **maximumIntegerDigits**

The maximum number of digits allowed in the integer portion of a number. maximumIntegerDigits must be greater than or equal to minimumIntegerDigits.

**Since:** 1.2 **See Also:**[NumberFormat.getMaximumIntegerDigits()](http://docs.google.com/java/text/NumberFormat.html#getMaximumIntegerDigits())

### minimumIntegerDigits

int **minimumIntegerDigits**

The minimum number of digits allowed in the integer portion of a number. minimumIntegerDigits must be less than or equal to maximumIntegerDigits.

**Since:** 1.2 **See Also:**[NumberFormat.getMinimumIntegerDigits()](http://docs.google.com/java/text/NumberFormat.html#getMinimumIntegerDigits())

### maximumFractionDigits

int **maximumFractionDigits**

The maximum number of digits allowed in the fractional portion of a number. maximumFractionDigits must be greater than or equal to minimumFractionDigits.

**Since:** 1.2 **See Also:**[NumberFormat.getMaximumFractionDigits()](http://docs.google.com/java/text/NumberFormat.html#getMaximumFractionDigits())

### minimumFractionDigits

int **minimumFractionDigits**

The minimum number of digits allowed in the fractional portion of a number. minimumFractionDigits must be less than or equal to maximumFractionDigits.

**Since:** 1.2 **See Also:**[NumberFormat.getMinimumFractionDigits()](http://docs.google.com/java/text/NumberFormat.html#getMinimumFractionDigits())

### serialVersionOnStream

int **serialVersionOnStream**

Describes the version of NumberFormat present on the stream. Possible values are:

* **0** (or uninitialized): the JDK 1.1 version of the stream format. In this version, the int fields such as maximumIntegerDigits were not present, and the byte fields such as maxIntegerDigits are used instead.
* **1**: the 1.2 version of the stream format. The values of the byte fields such as maxIntegerDigits are ignored, and the int fields such as maximumIntegerDigits are used instead.

When streaming out a NumberFormat, the most recent format (corresponding to the highest allowable serialVersionOnStream) is always written.

**Since:** 1.2

| **Class** [**java.text.NumberFormat.Field**](http://docs.google.com/java/text/NumberFormat.Field.html) **extends** [**Format.Field**](http://docs.google.com/java/text/Format.Field.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7494728892700160890L

| **Serialization Methods** |
| --- |

### readResolve

protected [Object](http://docs.google.com/java/lang/Object.html) **readResolve**()  
 throws [InvalidObjectException](http://docs.google.com/java/io/InvalidObjectException.html)

Resolves instances being deserialized to the predefined constants.

**Throws:** [InvalidObjectException](http://docs.google.com/java/io/InvalidObjectException.html) - if the constant could not be resolved.

| **Class** [**java.text.ParseException**](http://docs.google.com/java/text/ParseException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### errorOffset

int **errorOffset**

The zero-based character offset into the string being parsed at which the error was found during parsing.

| **Class** [**java.text.SimpleDateFormat**](http://docs.google.com/java/text/SimpleDateFormat.html) **extends** [**DateFormat**](http://docs.google.com/java/text/DateFormat.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4774881970558875024L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) stream)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

After reading an object from the input stream, the format pattern in the object is verified.

**Throws:** [InvalidObjectException](http://docs.google.com/java/io/InvalidObjectException.html) - if the pattern is invalid [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

| **Serialized Fields** |
| --- |

### serialVersionOnStream

int **serialVersionOnStream**

The version of the serialized data on the stream. Possible values:

* **0** or not present on stream: JDK 1.1.3. This version has no defaultCenturyStart on stream.
* **1** JDK 1.1.4 or later. This version adds defaultCenturyStart.

When streaming out this class, the most recent format and the highest allowable serialVersionOnStream is written.

**Since:** JDK1.1.4

### pattern

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

The pattern string of this formatter. This is always a non-localized pattern. May not be null. See class documentation for details.

### formatData

[DateFormatSymbols](http://docs.google.com/java/text/DateFormatSymbols.html) **formatData**

The symbols used by this formatter for week names, month names, etc. May not be null.

**See Also:**[DateFormatSymbols](http://docs.google.com/java/text/DateFormatSymbols.html)

### defaultCenturyStart

[Date](http://docs.google.com/java/util/Date.html) **defaultCenturyStart**

We map dates with two-digit years into the century starting at defaultCenturyStart, which may be any date. May not be null.

**Since:** JDK1.1.4

### locale

[Locale](http://docs.google.com/java/util/Locale.html) **locale**

The Locale used to instantiate this SimpleDateFormat. The value may be null if this object has been created by an older SimpleDateFormat and deserialized.

**Since:** 1.6

| **Package** **java.util** |
| --- |

| **Class** [**java.util.AbstractMap.SimpleEntry**](http://docs.google.com/java/util/AbstractMap.SimpleEntry.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8499721149061103585L

| **Serialized Fields** |
| --- |

### key

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

### value

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

| **Class** [**java.util.AbstractMap.SimpleImmutableEntry**](http://docs.google.com/java/util/AbstractMap.SimpleImmutableEntry.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7138329143949025153L

| **Serialized Fields** |
| --- |

### key

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

### value

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

| **Class** [**java.util.ArrayDeque**](http://docs.google.com/java/util/ArrayDeque.html) **extends** [**AbstractCollection**](http://docs.google.com/java/util/AbstractCollection.html)**<**[**E**](http://docs.google.com/java/util/ArrayDeque.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**2340985798034038923L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Deserialize this deque.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serialize this deque.

**Serial Data:** The current size (int) of the deque, followed by all of its elements (each an object reference) in first-to-last order. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Class** [**java.util.ArrayList**](http://docs.google.com/java/util/ArrayList.html) **extends** [**AbstractList**](http://docs.google.com/java/util/AbstractList.html)**<**[**E**](http://docs.google.com/java/util/ArrayList.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**8683452581122892189L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reconstitute the ArrayList instance from a stream (that is, deserialize it).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Save the state of the ArrayList instance to a stream (that is, serialize it).

**Serial Data:** The length of the array backing the ArrayList instance is emitted (int), followed by all of its elements (each an Object) in the proper order. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### size

int **size**

The size of the ArrayList (the number of elements it contains).

| **Class java.util.Arrays.ArrayList extends** [**AbstractList**](http://docs.google.com/java/util/AbstractList.html)**<E> implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2764017481108945198L

| **Serialized Fields** |
| --- |

### a

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

| **Class** [**java.util.BitSet**](http://docs.google.com/java/util/BitSet.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7997698588986878753L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reconstitute the BitSet instance from a stream (i.e., deserialize it).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Save the state of the BitSet instance to a stream (i.e., serialize it).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### bits

long[] **bits**

The bits in this BitSet. The ith bit is stored in bits[i/64] at bit position i % 64 (where bit position 0 refers to the least significant bit and 63 refers to the most significant bit).

| **Class** [**java.util.Calendar**](http://docs.google.com/java/util/Calendar.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1807547505821590642L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) stream)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reconstitutes this object from a stream (i.e., deserialize it).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) stream)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Save the state of this object to a stream (i.e., serialize it). Ideally, Calendar would only write out its state data and the current time, and not write any field data out, such as fields[], isTimeSet, areFieldsSet, and isSet[]. nextStamp also should not be part of the persistent state. Unfortunately, this didn't happen before JDK 1.1 shipped. To be compatible with JDK 1.1, we will always have to write out the field values and state flags. However, nextStamp can be removed from the serialization stream; this will probably happen in the near future.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### fields

int[] **fields**

The calendar field values for the currently set time for this calendar. This is an array of FIELD\_COUNT integers, with index values ERA through DST\_OFFSET.

### isSet

boolean[] **isSet**

The flags which tell if a specified calendar field for the calendar is set. A new object has no fields set. After the first call to a method which generates the fields, they all remain set after that. This is an array of FIELD\_COUNT booleans, with index values ERA through DST\_OFFSET.

### time

long **time**

The currently set time for this calendar, expressed in milliseconds after January 1, 1970, 0:00:00 GMT.

**See Also:**[Calendar.isTimeSet](http://docs.google.com/java/util/Calendar.html#isTimeSet)

### isTimeSet

boolean **isTimeSet**

True if then the value of time is valid. The time is made invalid by a change to an item of field[].

**See Also:**[Calendar.time](http://docs.google.com/java/util/Calendar.html#time)

### areFieldsSet

boolean **areFieldsSet**

True if fields[] are in sync with the currently set time. If false, then the next attempt to get the value of a field will force a recomputation of all fields from the current value of time.

### lenient

boolean **lenient**

True if this calendar allows out-of-range field values during computation of time from fields[].

**See Also:**[Calendar.setLenient(boolean)](http://docs.google.com/java/util/Calendar.html#setLenient(boolean)), [Calendar.isLenient()](http://docs.google.com/java/util/Calendar.html#isLenient())

### zone

[TimeZone](http://docs.google.com/java/util/TimeZone.html) **zone**

The TimeZone used by this calendar. Calendar uses the time zone data to translate between locale and GMT time.

### firstDayOfWeek

int **firstDayOfWeek**

The first day of the week, with possible values SUNDAY, MONDAY, etc. This is a locale-dependent value.

### minimalDaysInFirstWeek

int **minimalDaysInFirstWeek**

The number of days required for the first week in a month or year, with possible values from 1 to 7. This is a locale-dependent value.

### nextStamp

int **nextStamp**

The next available value for stamp[], an internal array. This actually should not be written out to the stream, and will probably be removed from the stream in the near future. In the meantime, a value of MINIMUM\_USER\_STAMP should be used.

### serialVersionOnStream

int **serialVersionOnStream**

The version of the serialized data on the stream. Possible values: **0** or not present on stream JDK 1.1.5 or earlier. **1** JDK 1.1.6 or later. Writes a correct 'time' value as well as compatible values for other fields. This is a transitional format. When streaming out this class, the most recent format and the highest allowable serialVersionOnStream is written.

**Since:** JDK1.1.6

| **Class java.util.Collections.CheckedCollection extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1578914078182001775L

| **Serialized Fields** |
| --- |

### c

[Collection](http://docs.google.com/java/util/Collection.html)<[E](http://docs.google.com/java/util/Collection.html)> **c**

### type

[Class](http://docs.google.com/java/lang/Class.html)<[T](http://docs.google.com/java/lang/Class.html)> **type**

### zeroLengthElementArray

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

| **Class java.util.Collections.CheckedList extends java.util.Collections.CheckedCollection<E> implements Serializable** | |
| --- | --- |

**serialVersionUID:**65247728283967356L

| **Serialized Fields** |
| --- |

### list

[List](http://docs.google.com/java/util/List.html)<[E](http://docs.google.com/java/util/List.html)> **list**

| **Class java.util.Collections.CheckedMap extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5742860141034234728L

| **Serialized Fields** |
| --- |

### m

[Map](http://docs.google.com/java/util/Map.html)<[K](http://docs.google.com/java/util/Map.html),[V](http://docs.google.com/java/util/Map.html)> **m**

### keyType

[Class](http://docs.google.com/java/lang/Class.html)<[T](http://docs.google.com/java/lang/Class.html)> **keyType**

### valueType

[Class](http://docs.google.com/java/lang/Class.html)<[T](http://docs.google.com/java/lang/Class.html)> **valueType**

### zeroLengthKeyArray

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

### zeroLengthValueArray

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

| **Class java.util.Collections.CheckedRandomAccessList extends java.util.Collections.CheckedList<E> implements Serializable** | |
| --- | --- |

**serialVersionUID:**1638200125423088369L

| **Class java.util.Collections.CheckedSet extends java.util.Collections.CheckedCollection<E> implements Serializable** | |
| --- | --- |

**serialVersionUID:**4694047833775013803L

| **Class java.util.Collections.CheckedSortedMap extends java.util.Collections.CheckedMap<K,V> implements Serializable** | |
| --- | --- |

**serialVersionUID:**1599671320688067438L

| **Serialized Fields** |
| --- |

### sm

[SortedMap](http://docs.google.com/java/util/SortedMap.html)<[K](http://docs.google.com/java/util/SortedMap.html),[V](http://docs.google.com/java/util/SortedMap.html)> **sm**

| **Class java.util.Collections.CheckedSortedSet extends java.util.Collections.CheckedSet<E> implements Serializable** | |
| --- | --- |

**serialVersionUID:**1599911165492914959L

| **Serialized Fields** |
| --- |

### ss

[SortedSet](http://docs.google.com/java/util/SortedSet.html)<[E](http://docs.google.com/java/util/SortedSet.html)> **ss**

| **Class java.util.Collections.CopiesList extends** [**AbstractList**](http://docs.google.com/java/util/AbstractList.html)**<E> implements Serializable** | |
| --- | --- |

**serialVersionUID:**2739099268398711800L

| **Serialized Fields** |
| --- |

### n

int **n**

### element

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

| **Class java.util.Collections.EmptyList extends** [**AbstractList**](http://docs.google.com/java/util/AbstractList.html)**<**[**Object**](http://docs.google.com/java/lang/Object.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**8842843931221139166L

| **Serialization Methods** |
| --- |

### readResolve

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

| **Class java.util.Collections.EmptySet extends** [**AbstractSet**](http://docs.google.com/java/util/AbstractSet.html)**<**[**Object**](http://docs.google.com/java/lang/Object.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**1582296315990362920L

| **Serialization Methods** |
| --- |

### readResolve

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

| **Class java.util.Collections.ReverseComparator extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7207038068494060240L

| **Serialization Methods** |
| --- |

### readResolve

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

| **Class java.util.Collections.ReverseComparator2 extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4374092139857L

| **Serialized Fields** |
| --- |

### cmp

[Comparator](http://docs.google.com/java/util/Comparator.html)<[T](http://docs.google.com/java/util/Comparator.html)> **cmp**

The comparator specified in the static factory. This will never be null, as the static factory returns a ReverseComparator instance if its argument is null.

| **Class java.util.Collections.SingletonSet extends** [**AbstractSet**](http://docs.google.com/java/util/AbstractSet.html)**<E> implements Serializable** | |
| --- | --- |

**serialVersionUID:**3193687207550431679L

| **Serialized Fields** |
| --- |

### element

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

| **Class java.util.Collections.SynchronizedCollection extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3053995032091335093L

| **Serialization Methods** |
| --- |

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### c

[Collection](http://docs.google.com/java/util/Collection.html)<[E](http://docs.google.com/java/util/Collection.html)> **c**

### mutex

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

| **Class java.util.Collections.SynchronizedList extends java.util.Collections.SynchronizedCollection<E> implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7754090372962971524L

| **Serialization Methods** |
| --- |

### readResolve

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

SynchronizedRandomAccessList instances are serialized as SynchronizedList instances to allow them to be deserialized in pre-1.4 JREs (which do not have SynchronizedRandomAccessList). This method inverts the transformation. As a beneficial side-effect, it also grafts the RandomAccess marker onto SynchronizedList instances that were serialized in pre-1.4 JREs. Note: Unfortunately, SynchronizedRandomAccessList instances serialized in 1.4.1 and deserialized in 1.4 will become SynchronizedList instances, as this method was missing in 1.4.

| **Serialized Fields** |
| --- |

### list

[List](http://docs.google.com/java/util/List.html)<[E](http://docs.google.com/java/util/List.html)> **list**

| **Class java.util.Collections.SynchronizedMap extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1978198479659022715L

| **Serialization Methods** |
| --- |

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### m

[Map](http://docs.google.com/java/util/Map.html)<[K](http://docs.google.com/java/util/Map.html),[V](http://docs.google.com/java/util/Map.html)> **m**

### mutex

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

| **Class java.util.Collections.SynchronizedRandomAccessList extends java.util.Collections.SynchronizedList<E> implements Serializable** | |
| --- | --- |

**serialVersionUID:**1530674583602358482L

| **Serialization Methods** |
| --- |

### writeReplace

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

Allows instances to be deserialized in pre-1.4 JREs (which do not have SynchronizedRandomAccessList). SynchronizedList has a readResolve method that inverts this transformation upon deserialization.

| **Class java.util.Collections.SynchronizedSet extends java.util.Collections.SynchronizedCollection<E> implements Serializable** | |
| --- | --- |

**serialVersionUID:**487447009682186044L

| **Class java.util.Collections.SynchronizedSortedMap extends java.util.Collections.SynchronizedMap<K,V> implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8798146769416483793L

| **Serialized Fields** |
| --- |

### sm

[SortedMap](http://docs.google.com/java/util/SortedMap.html)<[K](http://docs.google.com/java/util/SortedMap.html),[V](http://docs.google.com/java/util/SortedMap.html)> **sm**

| **Class java.util.Collections.SynchronizedSortedSet extends java.util.Collections.SynchronizedSet<E> implements Serializable** | |
| --- | --- |

**serialVersionUID:**8695801310862127406L

| **Serialized Fields** |
| --- |

### ss

[SortedSet](http://docs.google.com/java/util/SortedSet.html)<[E](http://docs.google.com/java/util/SortedSet.html)> **ss**

| **Class java.util.Collections.UnmodifiableCollection extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1820017752578914078L

| **Serialized Fields** |
| --- |

### c

[Collection](http://docs.google.com/java/util/Collection.html)<[E](http://docs.google.com/java/util/Collection.html)> **c**

| **Class java.util.Collections.UnmodifiableList extends java.util.Collections.UnmodifiableCollection<E> implements Serializable** | |
| --- | --- |

**serialVersionUID:**-283967356065247728L

| **Serialization Methods** |
| --- |

### readResolve

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

UnmodifiableRandomAccessList instances are serialized as UnmodifiableList instances to allow them to be deserialized in pre-1.4 JREs (which do not have UnmodifiableRandomAccessList). This method inverts the transformation. As a beneficial side-effect, it also grafts the RandomAccess marker onto UnmodifiableList instances that were serialized in pre-1.4 JREs. Note: Unfortunately, UnmodifiableRandomAccessList instances serialized in 1.4.1 and deserialized in 1.4 will become UnmodifiableList instances, as this method was missing in 1.4.

| **Serialized Fields** |
| --- |

### list

[List](http://docs.google.com/java/util/List.html)<[E](http://docs.google.com/java/util/List.html)> **list**

| **Class java.util.Collections.UnmodifiableMap extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1034234728574286014L

| **Serialized Fields** |
| --- |

### m

[Map](http://docs.google.com/java/util/Map.html)<[K](http://docs.google.com/java/util/Map.html),[V](http://docs.google.com/java/util/Map.html)> **m**

| **Class java.util.Collections.UnmodifiableMap.UnmodifiableEntrySet extends java.util.Collections.UnmodifiableSet<**[**Map.Entry**](http://docs.google.com/java/util/Map.Entry.html)**<K,V>> implements Serializable** | |
| --- | --- |

**serialVersionUID:**7854390611657943733L

| **Class java.util.Collections.UnmodifiableRandomAccessList extends java.util.Collections.UnmodifiableList<E> implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2542308836966382001L

| **Serialization Methods** |
| --- |

### writeReplace

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

Allows instances to be deserialized in pre-1.4 JREs (which do not have UnmodifiableRandomAccessList). UnmodifiableList has a readResolve method that inverts this transformation upon deserialization.

| **Class java.util.Collections.UnmodifiableSet extends java.util.Collections.UnmodifiableCollection<E> implements Serializable** | |
| --- | --- |

**serialVersionUID:**-9215047833775013803L

| **Class java.util.Collections.UnmodifiableSortedMap extends java.util.Collections.UnmodifiableMap<K,V> implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8806743815996713206L

| **Serialized Fields** |
| --- |

### sm

[SortedMap](http://docs.google.com/java/util/SortedMap.html)<[K](http://docs.google.com/java/util/SortedMap.html),[V](http://docs.google.com/java/util/SortedMap.html)> **sm**

| **Class java.util.Collections.UnmodifiableSortedSet extends java.util.Collections.UnmodifiableSet<E> implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4929149591599911165L

| **Serialized Fields** |
| --- |

### ss

[SortedSet](http://docs.google.com/java/util/SortedSet.html)<[E](http://docs.google.com/java/util/SortedSet.html)> **ss**

| **Class** [**java.util.ConcurrentModificationException**](http://docs.google.com/java/util/ConcurrentModificationException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.util.Currency**](http://docs.google.com/java/util/Currency.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-158308464356906721L

| **Serialization Methods** |
| --- |

### readResolve

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

Resolves instances being deserialized to a single instance per currency.

| **Serialized Fields** |
| --- |

### currencyCode

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

ISO 4217 currency code for this currency.

| **Class** [**java.util.Date**](http://docs.google.com/java/util/Date.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7523967970034938905L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reconstitute this object from a stream (i.e., deserialize it).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Save the state of this object to a stream (i.e., serialize it).

**Serial Data:** The value returned by getTime() is emitted (long). This represents the offset from January 1, 1970, 00:00:00 GMT in milliseconds. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Class** [**java.util.DuplicateFormatFlagsException**](http://docs.google.com/java/util/DuplicateFormatFlagsException.html) **extends** [**IllegalFormatException**](http://docs.google.com/java/util/IllegalFormatException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**18890531L

| **Serialized Fields** |
| --- |

### flags

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

| **Class** [**java.util.EmptyStackException**](http://docs.google.com/java/util/EmptyStackException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.util.EnumMap**](http://docs.google.com/java/util/EnumMap.html) **extends** [**AbstractMap**](http://docs.google.com/java/util/AbstractMap.html)**<**[**K**](http://docs.google.com/java/util/EnumMap.html) **extends** [**Enum**](http://docs.google.com/java/lang/Enum.html)**<**[**K**](http://docs.google.com/java/util/EnumMap.html)**>,**[**V**](http://docs.google.com/java/util/EnumMap.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**458661240069192865L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reconstitute the EnumMap instance from a stream (i.e., deserialize it).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Save the state of the EnumMap instance to a stream (i.e., serialize it).

**Serial Data:** The *size* of the enum map (the number of key-value mappings) is emitted (int), followed by the key (Object) and value (Object) for each key-value mapping represented by the enum map. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### keyType

[Class](http://docs.google.com/java/lang/Class.html)<[T](http://docs.google.com/java/lang/Class.html)> **keyType**

The Class object for the enum type of all the keys of this map.

| **Class java.util.EnumSet.SerializationProxy extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**362491234563181265L

| **Serialization Methods** |
| --- |

### readResolve

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

| **Serialized Fields** |
| --- |

### elementType

[Class](http://docs.google.com/java/lang/Class.html)<[T](http://docs.google.com/java/lang/Class.html)> **elementType**

The element type of this enum set.

### elements

[Enum](http://docs.google.com/java/lang/Enum.html)<[E](http://docs.google.com/java/lang/Enum.html) extends [Enum](http://docs.google.com/java/lang/Enum.html)<[E](http://docs.google.com/java/lang/Enum.html)>>[] **elements**

The elements contained in this enum set.

| **Class** [**java.util.EventObject**](http://docs.google.com/java/util/EventObject.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5516075349620653480L

| **Class** [**java.util.FormatFlagsConversionMismatchException**](http://docs.google.com/java/util/FormatFlagsConversionMismatchException.html) **extends** [**IllegalFormatException**](http://docs.google.com/java/util/IllegalFormatException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**19120414L

| **Serialized Fields** |
| --- |

### f

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

### c

char **c**

| **Class** [**java.util.FormatterClosedException**](http://docs.google.com/java/util/FormatterClosedException.html) **extends** [**IllegalStateException**](http://docs.google.com/java/lang/IllegalStateException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**18111216L

| **Class** [**java.util.GregorianCalendar**](http://docs.google.com/java/util/GregorianCalendar.html) **extends** [**Calendar**](http://docs.google.com/java/util/Calendar.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8125100834729963327L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) stream)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Updates internal state.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

| **Serialized Fields** |
| --- |

### gregorianCutover

long **gregorianCutover**

The point at which the Gregorian calendar rules are used, measured in milliseconds from the standard epoch. Default is October 15, 1582 (Gregorian) 00:00:00 UTC or -12219292800000L. For this value, October 4, 1582 (Julian) is followed by October 15, 1582 (Gregorian). This corresponds to Julian day number 2299161.

| **Class** [**java.util.HashMap**](http://docs.google.com/java/util/HashMap.html) **extends** [**AbstractMap**](http://docs.google.com/java/util/AbstractMap.html)**<**[**K**](http://docs.google.com/java/util/HashMap.html)**,**[**V**](http://docs.google.com/java/util/HashMap.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**362498820763181265L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reconstitute the HashMap instance from a stream (i.e., deserialize it).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Save the state of the HashMap instance to a stream (i.e., serialize it).

**Serial Data:** The *capacity* of the HashMap (the length of the bucket array) is emitted (int), followed by the *size* (an int, the number of key-value mappings), followed by the key (Object) and value (Object) for each key-value mapping. The key-value mappings are emitted in no particular order. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### threshold

int **threshold**

The next size value at which to resize (capacity \* load factor).

### loadFactor

float **loadFactor**

The load factor for the hash table.

| **Class** [**java.util.HashSet**](http://docs.google.com/java/util/HashSet.html) **extends** [**AbstractSet**](http://docs.google.com/java/util/AbstractSet.html)**<**[**E**](http://docs.google.com/java/util/HashSet.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5024744406713321676L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reconstitute the HashSet instance from a stream (that is, deserialize it).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Save the state of this HashSet instance to a stream (that is, serialize it).

**Serial Data:** The capacity of the backing HashMap instance (int), and its load factor (float) are emitted, followed by the size of the set (the number of elements it contains) (int), followed by all of its elements (each an Object) in no particular order. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Class** [**java.util.Hashtable**](http://docs.google.com/java/util/Hashtable.html) **extends** [**Dictionary**](http://docs.google.com/java/util/Dictionary.html)**<**[**K**](http://docs.google.com/java/util/Hashtable.html)**,**[**V**](http://docs.google.com/java/util/Hashtable.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**1421746759512286392L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reconstitute the Hashtable from a stream (i.e., deserialize it).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Save the state of the Hashtable to a stream (i.e., serialize it).

**Serial Data:** The *capacity* of the Hashtable (the length of the bucket array) is emitted (int), followed by the *size* of the Hashtable (the number of key-value mappings), followed by the key (Object) and value (Object) for each key-value mapping represented by the Hashtable The key-value mappings are emitted in no particular order. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### threshold

int **threshold**

The table is rehashed when its size exceeds this threshold. (The value of this field is (int)(capacity \* loadFactor).)

### loadFactor

float **loadFactor**

The load factor for the hashtable.

| **Class** [**java.util.IdentityHashMap**](http://docs.google.com/java/util/IdentityHashMap.html) **extends** [**AbstractMap**](http://docs.google.com/java/util/AbstractMap.html)**<**[**K**](http://docs.google.com/java/util/IdentityHashMap.html)**,**[**V**](http://docs.google.com/java/util/IdentityHashMap.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**8188218128353913216L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reconstitute the IdentityHashMap instance from a stream (i.e., deserialize it).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Save the state of the IdentityHashMap instance to a stream (i.e., serialize it).

**Serial Data:** The *size* of the HashMap (the number of key-value mappings) (int), followed by the key (Object) and value (Object) for each key-value mapping represented by the IdentityHashMap. The key-value mappings are emitted in no particular order. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### size

int **size**

The number of key-value mappings contained in this identity hash map.

| **Class** [**java.util.IllegalFormatCodePointException**](http://docs.google.com/java/util/IllegalFormatCodePointException.html) **extends** [**IllegalFormatException**](http://docs.google.com/java/util/IllegalFormatException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**19080630L

| **Serialized Fields** |
| --- |

### c

int **c**

| **Class** [**java.util.IllegalFormatConversionException**](http://docs.google.com/java/util/IllegalFormatConversionException.html) **extends** [**IllegalFormatException**](http://docs.google.com/java/util/IllegalFormatException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**17000126L

| **Serialized Fields** |
| --- |

### c

char **c**

### arg

[Class](http://docs.google.com/java/lang/Class.html)<[T](http://docs.google.com/java/lang/Class.html)> **arg**

| **Class** [**java.util.IllegalFormatException**](http://docs.google.com/java/util/IllegalFormatException.html) **extends** [**IllegalArgumentException**](http://docs.google.com/java/lang/IllegalArgumentException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**18830826L

| **Class** [**java.util.IllegalFormatFlagsException**](http://docs.google.com/java/util/IllegalFormatFlagsException.html) **extends** [**IllegalFormatException**](http://docs.google.com/java/util/IllegalFormatException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**790824L

| **Serialized Fields** |
| --- |

### flags

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

| **Class** [**java.util.IllegalFormatPrecisionException**](http://docs.google.com/java/util/IllegalFormatPrecisionException.html) **extends** [**IllegalFormatException**](http://docs.google.com/java/util/IllegalFormatException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**18711008L

| **Serialized Fields** |
| --- |

### p

int **p**

| **Class** [**java.util.IllegalFormatWidthException**](http://docs.google.com/java/util/IllegalFormatWidthException.html) **extends** [**IllegalFormatException**](http://docs.google.com/java/util/IllegalFormatException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**16660902L

| **Serialized Fields** |
| --- |

### w

int **w**

| **Class** [**java.util.InputMismatchException**](http://docs.google.com/java/util/InputMismatchException.html) **extends** [**NoSuchElementException**](http://docs.google.com/java/util/NoSuchElementException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.util.LinkedHashMap**](http://docs.google.com/java/util/LinkedHashMap.html) **extends** [**HashMap**](http://docs.google.com/java/util/HashMap.html)**<**[**K**](http://docs.google.com/java/util/LinkedHashMap.html)**,**[**V**](http://docs.google.com/java/util/LinkedHashMap.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**3801124242820219131L

| **Serialized Fields** |
| --- |

### accessOrder

boolean **accessOrder**

The iteration ordering method for this linked hash map: true for access-order, false for insertion-order.

| **Class** [**java.util.LinkedHashSet**](http://docs.google.com/java/util/LinkedHashSet.html) **extends** [**HashSet**](http://docs.google.com/java/util/HashSet.html)**<**[**E**](http://docs.google.com/java/util/LinkedHashSet.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2851667679971038690L

| **Class** [**java.util.LinkedList**](http://docs.google.com/java/util/LinkedList.html) **extends** [**AbstractSequentialList**](http://docs.google.com/java/util/AbstractSequentialList.html)**<**[**E**](http://docs.google.com/java/util/LinkedList.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**876323262645176354L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reconstitute this LinkedList instance from a stream (that is deserialize it).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Save the state of this LinkedList instance to a stream (that is, serialize it).

**Serial Data:** The size of the list (the number of elements it contains) is emitted (int), followed by all of its elements (each an Object) in the proper order. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Class** [**java.util.Locale**](http://docs.google.com/java/util/Locale.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**9149081749638150636L

| **Serialization Methods** |
| --- |

### readResolve

private [Object](http://docs.google.com/java/lang/Object.html) **readResolve**()  
 throws [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html)

Replace the deserialized Locale object with a newly created object. Newer language codes are replaced with older ISO codes. The country and variant codes are replaced with internalized String copies.

**Throws:** [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html)

| **Serialized Fields** |
| --- |

### language

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

**See Also:**[Locale.getLanguage()](http://docs.google.com/java/util/Locale.html#getLanguage())

### country

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

**See Also:**[Locale.getCountry()](http://docs.google.com/java/util/Locale.html#getCountry())

### variant

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

**See Also:**[Locale.getVariant()](http://docs.google.com/java/util/Locale.html#getVariant())

### hashcode

int **hashcode**

Placeholder for the object's hash code. Always -1.

| **Class** [**java.util.MissingFormatArgumentException**](http://docs.google.com/java/util/MissingFormatArgumentException.html) **extends** [**IllegalFormatException**](http://docs.google.com/java/util/IllegalFormatException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**19190115L

| **Serialized Fields** |
| --- |

### s

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

| **Class** [**java.util.MissingFormatWidthException**](http://docs.google.com/java/util/MissingFormatWidthException.html) **extends** [**IllegalFormatException**](http://docs.google.com/java/util/IllegalFormatException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**15560123L

| **Serialized Fields** |
| --- |

### s

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

| **Class** [**java.util.MissingResourceException**](http://docs.google.com/java/util/MissingResourceException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4876345176062000401L

| **Serialized Fields** |
| --- |

### className

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

The class name of the resource bundle requested by the user.

### key

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

The name of the specific resource requested by the user.

| **Class** [**java.util.NoSuchElementException**](http://docs.google.com/java/util/NoSuchElementException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.util.PriorityQueue**](http://docs.google.com/java/util/PriorityQueue.html) **extends** [**AbstractQueue**](http://docs.google.com/java/util/AbstractQueue.html)**<**[**E**](http://docs.google.com/java/util/PriorityQueue.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7720805057305804111L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reconstitutes the PriorityQueue instance from a stream (that is, deserializes it).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Saves the state of the instance to a stream (that is, serializes it).

**Serial Data:** The length of the array backing the instance is emitted (int), followed by all of its elements (each an Object) in the proper order. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### size

int **size**

The number of elements in the priority queue.

### comparator

[Comparator](http://docs.google.com/java/util/Comparator.html)<[T](http://docs.google.com/java/util/Comparator.html)> **comparator**

The comparator, or null if priority queue uses elements' natural ordering.

| **Class** [**java.util.Properties**](http://docs.google.com/java/util/Properties.html) **extends** [**Hashtable**](http://docs.google.com/java/util/Hashtable.html)**<**[**Object**](http://docs.google.com/java/lang/Object.html)**,**[**Object**](http://docs.google.com/java/lang/Object.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**4112578634029874840L

| **Serialized Fields** |
| --- |

### defaults

[Properties](http://docs.google.com/java/util/Properties.html) **defaults**

A property list that contains default values for any keys not found in this property list.

| **Class java.util.PropertyPermissionCollection extends** [**PermissionCollection**](http://docs.google.com/java/security/PermissionCollection.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7015263904581634791L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

**Serial Data:** Default fields. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### all\_allowed

boolean **all\_allowed**

boolean saying if "\*" is in the collection.

### permissions

[Hashtable](http://docs.google.com/java/util/Hashtable.html)<[K](http://docs.google.com/java/util/Hashtable.html),[V](http://docs.google.com/java/util/Hashtable.html)> **permissions**

A table of the PropertyPermissions.

| **Class** [**java.util.Random**](http://docs.google.com/java/util/Random.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3905348978240129619L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reconstitute the Random instance from a stream (that is, deserialize it).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Save the Random instance to a stream.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialization Overview** |
| --- |

Serializable fields for Random.

| **Serialized Fields** |
| --- |

### haveNextNextGaussian

boolean **haveNextNextGaussian**

nextNextGaussian is valid

### nextNextGaussian

double; **nextNextGaussian**

next Gaussian to be returned

### seed

long; **seed**

seed for random computations

| **Class** [**java.util.ServiceConfigurationError**](http://docs.google.com/java/util/ServiceConfigurationError.html) **extends** [**Error**](http://docs.google.com/java/lang/Error.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**74132770414881L

| **Class** [**java.util.SimpleTimeZone**](http://docs.google.com/java/util/SimpleTimeZone.html) **extends** [**TimeZone**](http://docs.google.com/java/util/TimeZone.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-403250971215465050L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) stream)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reconstitute this object from a stream (i.e., deserialize it). We handle both JDK 1.1 binary formats and full formats with a packed byte array.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) stream)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Save the state of this object to a stream (i.e., serialize it).

**Serial Data:** We write out two formats, a JDK 1.1 compatible format, using DOW\_IN\_MONTH\_MODE rules, in the required section, followed by the full rules, in packed format, in the optional section. The optional section will be ignored by JDK 1.1 code upon stream in.

Contents of the optional section: The length of a byte array is emitted (int); this is 4 as of this release. The byte array of the given length is emitted. The contents of the byte array are the true values of the fields startDay, startDayOfWeek, endDay, and endDayOfWeek. The values of these fields in the required section are approximate values suited to the rule mode DOW\_IN\_MONTH\_MODE, which is the only mode recognized by JDK 1.1.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### startMonth

int **startMonth**

The month in which daylight saving time starts. This value must be between Calendar.JANUARY and Calendar.DECEMBER inclusive. This value must not equal endMonth.

If useDaylight is false, this value is ignored.

### startDay

int **startDay**

This field has two possible interpretations: startMode == DOW\_IN\_MONTH startDay indicates the day of the month of startMonth on which daylight saving time starts, from 1 to 28, 30, or 31, depending on the startMonth. startMode != DOW\_IN\_MONTH startDay indicates which startDayOfWeek in th month startMonth daylight saving time starts on. For example, a value of +1 and a startDayOfWeek of Calendar.SUNDAY indicates the first Sunday of startMonth. Likewise, +2 would indicate the second Sunday, and -1 the last Sunday. A value of 0 is illegal.

If useDaylight is false, this value is ignored.

### startDayOfWeek

int **startDayOfWeek**

The day of the week on which daylight saving time starts. This value must be between Calendar.SUNDAY and Calendar.SATURDAY inclusive.

If useDaylight is false or startMode == DAY\_OF\_MONTH, this value is ignored.

### startTime

int **startTime**

The time in milliseconds after midnight at which daylight saving time starts. This value is expressed as wall time, standard time, or UTC time, depending on the setting of startTimeMode.

If useDaylight is false, this value is ignored.

### startTimeMode

int **startTimeMode**

The format of startTime, either WALL\_TIME, STANDARD\_TIME, or UTC\_TIME.

**Since:** 1.3

### endMonth

int **endMonth**

The month in which daylight saving time ends. This value must be between Calendar.JANUARY and Calendar.UNDECIMBER. This value must not equal startMonth.

If useDaylight is false, this value is ignored.

### endDay

int **endDay**

This field has two possible interpretations: endMode == DOW\_IN\_MONTH endDay indicates the day of the month of endMonth on which daylight saving time ends, from 1 to 28, 30, or 31, depending on the endMonth. endMode != DOW\_IN\_MONTH endDay indicates which endDayOfWeek in th month endMonth daylight saving time ends on. For example, a value of +1 and a endDayOfWeek of Calendar.SUNDAY indicates the first Sunday of endMonth. Likewise, +2 would indicate the second Sunday, and -1 the last Sunday. A value of 0 is illegal.

If useDaylight is false, this value is ignored.

### endDayOfWeek

int **endDayOfWeek**

The day of the week on which daylight saving time ends. This value must be between Calendar.SUNDAY and Calendar.SATURDAY inclusive.

If useDaylight is false or endMode == DAY\_OF\_MONTH, this value is ignored.

### endTime

int **endTime**

The time in milliseconds after midnight at which daylight saving time ends. This value is expressed as wall time, standard time, or UTC time, depending on the setting of endTimeMode.

If useDaylight is false, this value is ignored.

### endTimeMode

int **endTimeMode**

The format of endTime, either WALL\_TIME, STANDARD\_TIME, or UTC\_TIME.

**Since:** 1.3

### startYear

int **startYear**

The year in which daylight saving time is first observed. This is an [AD](http://docs.google.com/java/util/GregorianCalendar.html#AD) value. If this value is less than 1 then daylight saving time is observed for all AD years.

If useDaylight is false, this value is ignored.

### rawOffset

int **rawOffset**

The offset in milliseconds between this zone and GMT. Negative offsets are to the west of Greenwich. To obtain local *standard* time, add the offset to GMT time. To obtain local wall time it may also be necessary to add dstSavings.

### useDaylight

boolean **useDaylight**

A boolean value which is true if and only if this zone uses daylight saving time. If this value is false, several other fields are ignored.

### monthLength

byte[] **monthLength**

This field was serialized in JDK 1.1, so we have to keep it that way to maintain serialization compatibility. However, there's no need to recreate the array each time we create a new time zone.

An array of bytes containing the values {31, 28, 31, 30, 31, 30, 31, 31, 30, 31, 30, 31}. This is ignored as of the Java 2 platform v1.2, however, it must be streamed out for compatibility with JDK 1.1.

### startMode

int **startMode**

Variables specifying the mode of the start rule. Takes the following values: DOM\_MODE Exact day of week; e.g., March 1. DOW\_IN\_MONTH\_MODE Day of week in month; e.g., last Sunday in March. DOW\_GE\_DOM\_MODE Day of week after day of month; e.g., Sunday on or after March 15. DOW\_LE\_DOM\_MODE Day of week before day of month; e.g., Sunday on or before March 15. The setting of this field affects the interpretation of the startDay field.

If useDaylight is false, this value is ignored.

**Since:** 1.1.4

### endMode

int **endMode**

Variables specifying the mode of the end rule. Takes the following values: DOM\_MODE Exact day of week; e.g., March 1. DOW\_IN\_MONTH\_MODE Day of week in month; e.g., last Sunday in March. DOW\_GE\_DOM\_MODE Day of week after day of month; e.g., Sunday on or after March 15. DOW\_LE\_DOM\_MODE Day of week before day of month; e.g., Sunday on or before March 15. The setting of this field affects the interpretation of the endDay field.

If useDaylight is false, this value is ignored.

**Since:** 1.1.4

### dstSavings

int **dstSavings**

A positive value indicating the amount of time saved during DST in milliseconds. Typically one hour (3600000); sometimes 30 minutes (1800000).

If useDaylight is false, this value is ignored.

**Since:** 1.1.4

### serialVersionOnStream

int **serialVersionOnStream**

The version of the serialized data on the stream. Possible values: **0** or not present on stream JDK 1.1.3 or earlier. **1** JDK 1.1.4 or later. Includes three new fields: startMode, endMode, and dstSavings. **2** JDK 1.3 or later. Includes two new fields: startTimeMode and endTimeMode. When streaming out this class, the most recent format and the highest allowable serialVersionOnStream is written.

**Since:** 1.1.4

| **Class** [**java.util.Stack**](http://docs.google.com/java/util/Stack.html) **extends** [**Vector**](http://docs.google.com/java/util/Vector.html)**<**[**E**](http://docs.google.com/java/util/Stack.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**1224463164541339165L

| **Class** [**java.util.TimeZone**](http://docs.google.com/java/util/TimeZone.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3581463369166924961L

| **Serialized Fields** |
| --- |

### ID

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

The string identifier of this TimeZone. This is a programmatic identifier used internally to look up TimeZone objects from the system table and also to map them to their localized display names. ID values are unique in the system table but may not be for dynamically created zones.

| **Class** [**java.util.TooManyListenersException**](http://docs.google.com/java/util/TooManyListenersException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.util.TreeMap**](http://docs.google.com/java/util/TreeMap.html) **extends** [**AbstractMap**](http://docs.google.com/java/util/AbstractMap.html)**<**[**K**](http://docs.google.com/java/util/TreeMap.html)**,**[**V**](http://docs.google.com/java/util/TreeMap.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**919286545866124006L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reconstitute the TreeMap instance from a stream (i.e., deserialize it).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Save the state of the TreeMap instance to a stream (i.e., serialize it).

**Serial Data:** The *size* of the TreeMap (the number of key-value mappings) is emitted (int), followed by the key (Object) and value (Object) for each key-value mapping represented by the TreeMap. The key-value mappings are emitted in key-order (as determined by the TreeMap's Comparator, or by the keys' natural ordering if the TreeMap has no Comparator). **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### comparator

[Comparator](http://docs.google.com/java/util/Comparator.html)<[T](http://docs.google.com/java/util/Comparator.html)> **comparator**

The comparator used to maintain order in this tree map, or null if it uses the natural ordering of its keys.

| **Class java.util.TreeMap.AscendingSubMap extends java.util.TreeMap.NavigableSubMap<K,V> implements Serializable** | |
| --- | --- |

**serialVersionUID:**912986545866124060L

| **Class java.util.TreeMap.DescendingSubMap extends java.util.TreeMap.NavigableSubMap<K,V> implements Serializable** | |
| --- | --- |

**serialVersionUID:**912986545866120460L

| **Serialized Fields** |
| --- |

### reverseComparator

[Comparator](http://docs.google.com/java/util/Comparator.html)<[T](http://docs.google.com/java/util/Comparator.html)> **reverseComparator**

| **Class java.util.TreeMap.NavigableSubMap extends** [**AbstractMap**](http://docs.google.com/java/util/AbstractMap.html)**<K,V> implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### m

[TreeMap](http://docs.google.com/java/util/TreeMap.html)<[K](http://docs.google.com/java/util/TreeMap.html),[V](http://docs.google.com/java/util/TreeMap.html)> **m**

The backing map.

### lo

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

Endpoints are represented as triples (fromStart, lo, loInclusive) and (toEnd, hi, hiInclusive). If fromStart is true, then the low (absolute) bound is the start of the backing map, and the other values are ignored. Otherwise, if loInclusive is true, lo is the inclusive bound, else lo is the exclusive bound. Similarly for the upper bound.

### hi

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

Endpoints are represented as triples (fromStart, lo, loInclusive) and (toEnd, hi, hiInclusive). If fromStart is true, then the low (absolute) bound is the start of the backing map, and the other values are ignored. Otherwise, if loInclusive is true, lo is the inclusive bound, else lo is the exclusive bound. Similarly for the upper bound.

### fromStart

boolean **fromStart**

### toEnd

boolean **toEnd**

### loInclusive

boolean **loInclusive**

### hiInclusive

boolean **hiInclusive**

| **Class java.util.TreeMap.SubMap extends** [**AbstractMap**](http://docs.google.com/java/util/AbstractMap.html)**<**[**K**](http://docs.google.com/java/util/TreeMap.html)**,**[**V**](http://docs.google.com/java/util/TreeMap.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**-6520786458950516097L

| **Serialization Methods** |
| --- |

### readResolve

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

| **Serialized Fields** |
| --- |

### fromStart

boolean **fromStart**

### toEnd

boolean **toEnd**

### fromKey

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

### toKey

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

| **Class** [**java.util.TreeSet**](http://docs.google.com/java/util/TreeSet.html) **extends** [**AbstractSet**](http://docs.google.com/java/util/AbstractSet.html)**<**[**E**](http://docs.google.com/java/util/TreeSet.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2479143000061671589L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reconstitute the TreeSet instance from a stream (that is, deserialize it).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Save the state of the TreeSet instance to a stream (that is, serialize it).

**Serial Data:** Emits the comparator used to order this set, or null if it obeys its elements' natural ordering (Object), followed by the size of the set (the number of elements it contains) (int), followed by all of its elements (each an Object) in order (as determined by the set's Comparator, or by the elements' natural ordering if the set has no Comparator). **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Class** [**java.util.UnknownFormatConversionException**](http://docs.google.com/java/util/UnknownFormatConversionException.html) **extends** [**IllegalFormatException**](http://docs.google.com/java/util/IllegalFormatException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**19060418L

| **Serialized Fields** |
| --- |

### s

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

| **Class** [**java.util.UnknownFormatFlagsException**](http://docs.google.com/java/util/UnknownFormatFlagsException.html) **extends** [**IllegalFormatException**](http://docs.google.com/java/util/IllegalFormatException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**19370506L

| **Serialized Fields** |
| --- |

### flags

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

| **Class** [**java.util.UUID**](http://docs.google.com/java/util/UUID.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4856846361193249489L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reconstitute the UUID instance from a stream (that is, deserialize it). This is necessary to set the transient fields to their correct uninitialized value so they will be recomputed on demand.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

| **Serialized Fields** |
| --- |

### mostSigBits

long **mostSigBits**

### leastSigBits

long **leastSigBits**

| **Class** [**java.util.Vector**](http://docs.google.com/java/util/Vector.html) **extends** [**AbstractList**](http://docs.google.com/java/util/AbstractList.html)**<**[**E**](http://docs.google.com/java/util/Vector.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2767605614048989439L

| **Serialization Methods** |
| --- |

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Save the state of the Vector instance to a stream (that is, serialize it). This method is present merely for synchronization. It just calls the default writeObject method.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### elementData

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

The array buffer into which the components of the vector are stored. The capacity of the vector is the length of this array buffer, and is at least large enough to contain all the vector's elements.

Any array elements following the last element in the Vector are null.

### elementCount

int **elementCount**

The number of valid components in this Vector object. Components elementData[0] through elementData[elementCount-1] are the actual items.

### capacityIncrement

int **capacityIncrement**

The amount by which the capacity of the vector is automatically incremented when its size becomes greater than its capacity. If the capacity increment is less than or equal to zero, the capacity of the vector is doubled each time it needs to grow.

| **Package** **java.util.concurrent** |
| --- |

| **Class** [**java.util.concurrent.ArrayBlockingQueue**](http://docs.google.com/java/util/concurrent/ArrayBlockingQueue.html) **extends** [**AbstractQueue**](http://docs.google.com/java/util/AbstractQueue.html)**<**[**E**](http://docs.google.com/java/util/concurrent/ArrayBlockingQueue.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**-817911632652898426L

| **Serialized Fields** |
| --- |

### items

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

The queued items

### takeIndex

int **takeIndex**

items index for next take, poll or remove

### putIndex

int **putIndex**

items index for next put, offer, or add.

### count

int **count**

Number of items in the queue

### lock

[ReentrantLock](http://docs.google.com/java/util/concurrent/locks/ReentrantLock.html) **lock**

Main lock guarding all access

### notEmpty

[Condition](http://docs.google.com/java/util/concurrent/locks/Condition.html) **notEmpty**

Condition for waiting takes

### notFull

[Condition](http://docs.google.com/java/util/concurrent/locks/Condition.html) **notFull**

Condition for waiting puts

| **Class** [**java.util.concurrent.BrokenBarrierException**](http://docs.google.com/java/util/concurrent/BrokenBarrierException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7117394618823254244L

| **Class** [**java.util.concurrent.CancellationException**](http://docs.google.com/java/util/concurrent/CancellationException.html) **extends** [**IllegalStateException**](http://docs.google.com/java/lang/IllegalStateException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-9202173006928992231L

| **Class** [**java.util.concurrent.ConcurrentHashMap**](http://docs.google.com/java/util/concurrent/ConcurrentHashMap.html) **extends** [**AbstractMap**](http://docs.google.com/java/util/AbstractMap.html)**<**[**K**](http://docs.google.com/java/util/concurrent/ConcurrentHashMap.html)**,**[**V**](http://docs.google.com/java/util/concurrent/ConcurrentHashMap.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**7249069246763182397L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reconstitute the ConcurrentHashMap instance from a stream (i.e., deserialize it).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Save the state of the ConcurrentHashMap instance to a stream (i.e., serialize it).

**Serial Data:** the key (Object) and value (Object) for each key-value mapping, followed by a null pair. The key-value mappings are emitted in no particular order. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### segmentMask

int **segmentMask**

Mask value for indexing into segments. The upper bits of a key's hash code are used to choose the segment.

### segmentShift

int **segmentShift**

Shift value for indexing within segments.

### segments

java.util.concurrent.ConcurrentHashMap.Segment<K,V>[] **segments**

The segments, each of which is a specialized hash table

| **Class** [**java.util.concurrent.ConcurrentLinkedQueue**](http://docs.google.com/java/util/concurrent/ConcurrentLinkedQueue.html) **extends** [**AbstractQueue**](http://docs.google.com/java/util/AbstractQueue.html)**<**[**E**](http://docs.google.com/java/util/concurrent/ConcurrentLinkedQueue.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**196745693267521676L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reconstitute the Queue instance from a stream (that is, deserialize it).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Save the state to a stream (that is, serialize it).

**Serial Data:** All of the elements (each an E) in the proper order, followed by a null **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Class** [**java.util.concurrent.ConcurrentSkipListMap**](http://docs.google.com/java/util/concurrent/ConcurrentSkipListMap.html) **extends** [**AbstractMap**](http://docs.google.com/java/util/AbstractMap.html)**<**[**K**](http://docs.google.com/java/util/concurrent/ConcurrentSkipListMap.html)**,**[**V**](http://docs.google.com/java/util/concurrent/ConcurrentSkipListMap.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8627078645895051609L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reconstitute the map from a stream.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Save the state of this map to a stream.

**Serial Data:** The key (Object) and value (Object) for each key-value mapping represented by the map, followed by null. The key-value mappings are emitted in key-order (as determined by the Comparator, or by the keys' natural ordering if no Comparator). **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### comparator

[Comparator](http://docs.google.com/java/util/Comparator.html)<[T](http://docs.google.com/java/util/Comparator.html)> **comparator**

The comparator used to maintain order in this map, or null if using natural ordering.

| **Class java.util.concurrent.ConcurrentSkipListMap.SubMap extends** [**AbstractMap**](http://docs.google.com/java/util/AbstractMap.html)**<K,V> implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7647078645895051609L

| **Serialized Fields** |
| --- |

### m

[ConcurrentSkipListMap](http://docs.google.com/java/util/concurrent/ConcurrentSkipListMap.html)<[K](http://docs.google.com/java/util/concurrent/ConcurrentSkipListMap.html),[V](http://docs.google.com/java/util/concurrent/ConcurrentSkipListMap.html)> **m**

Underlying map

### lo

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

lower bound key, or null if from start

### hi

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

upper bound key, or null if to end

### loInclusive

boolean **loInclusive**

inclusion flag for lo

### hiInclusive

boolean **hiInclusive**

inclusion flag for hi

### isDescending

boolean **isDescending**

direction

| **Class** [**java.util.concurrent.ConcurrentSkipListSet**](http://docs.google.com/java/util/concurrent/ConcurrentSkipListSet.html) **extends** [**AbstractSet**](http://docs.google.com/java/util/AbstractSet.html)**<**[**E**](http://docs.google.com/java/util/concurrent/ConcurrentSkipListSet.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2479143111061671589L

| **Serialized Fields** |
| --- |

### m

[ConcurrentNavigableMap](http://docs.google.com/java/util/concurrent/ConcurrentNavigableMap.html)<[K](http://docs.google.com/java/util/concurrent/ConcurrentNavigableMap.html),[V](http://docs.google.com/java/util/concurrent/ConcurrentNavigableMap.html)> **m**

The underlying map. Uses Boolean.TRUE as value for each element. This field is declared final for the sake of thread safety, which entails some ugliness in clone()

| **Class** [**java.util.concurrent.CopyOnWriteArrayList**](http://docs.google.com/java/util/concurrent/CopyOnWriteArrayList.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8673264195747942595L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reconstitute the list from a stream (i.e., deserialize it).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Save the state of the list to a stream (i.e., serialize it).

**Serial Data:** The length of the array backing the list is emitted (int), followed by all of its elements (each an Object) in the proper order. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Class** [**java.util.concurrent.CopyOnWriteArraySet**](http://docs.google.com/java/util/concurrent/CopyOnWriteArraySet.html) **extends** [**AbstractSet**](http://docs.google.com/java/util/AbstractSet.html)**<**[**E**](http://docs.google.com/java/util/concurrent/CopyOnWriteArraySet.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**5457747651344034263L

| **Serialized Fields** |
| --- |

### al

[CopyOnWriteArrayList](http://docs.google.com/java/util/concurrent/CopyOnWriteArrayList.html)<[E](http://docs.google.com/java/util/concurrent/CopyOnWriteArrayList.html)> **al**

| **Class** [**java.util.concurrent.ExecutionException**](http://docs.google.com/java/util/concurrent/ExecutionException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7830266012832686185L

| **Class** [**java.util.concurrent.LinkedBlockingDeque**](http://docs.google.com/java/util/concurrent/LinkedBlockingDeque.html) **extends** [**AbstractQueue**](http://docs.google.com/java/util/AbstractQueue.html)**<**[**E**](http://docs.google.com/java/util/concurrent/LinkedBlockingDeque.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**-387911632671998426L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reconstitute this deque from a stream (that is, deserialize it).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Save the state of this deque to a stream (that is, serialize it).

**Serial Data:** The capacity (int), followed by elements (each an Object) in the proper order, followed by a null **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### capacity

int **capacity**

Maximum number of items in the deque

### lock

[ReentrantLock](http://docs.google.com/java/util/concurrent/locks/ReentrantLock.html) **lock**

Main lock guarding all access

### notEmpty

[Condition](http://docs.google.com/java/util/concurrent/locks/Condition.html) **notEmpty**

Condition for waiting takes

### notFull

[Condition](http://docs.google.com/java/util/concurrent/locks/Condition.html) **notFull**

Condition for waiting puts

| **Class** [**java.util.concurrent.LinkedBlockingQueue**](http://docs.google.com/java/util/concurrent/LinkedBlockingQueue.html) **extends** [**AbstractQueue**](http://docs.google.com/java/util/AbstractQueue.html)**<**[**E**](http://docs.google.com/java/util/concurrent/LinkedBlockingQueue.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**-6903933977591709194L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reconstitute this queue instance from a stream (that is, deserialize it).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Save the state to a stream (that is, serialize it).

**Serial Data:** The capacity is emitted (int), followed by all of its elements (each an Object) in the proper order, followed by a null **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### capacity

int **capacity**

The capacity bound, or Integer.MAX\_VALUE if none

### count

[AtomicInteger](http://docs.google.com/java/util/concurrent/atomic/AtomicInteger.html) **count**

Current number of elements

### takeLock

[ReentrantLock](http://docs.google.com/java/util/concurrent/locks/ReentrantLock.html) **takeLock**

Lock held by take, poll, etc

### notEmpty

[Condition](http://docs.google.com/java/util/concurrent/locks/Condition.html) **notEmpty**

Wait queue for waiting takes

### putLock

[ReentrantLock](http://docs.google.com/java/util/concurrent/locks/ReentrantLock.html) **putLock**

Lock held by put, offer, etc

### notFull

[Condition](http://docs.google.com/java/util/concurrent/locks/Condition.html) **notFull**

Wait queue for waiting puts

| **Class** [**java.util.concurrent.PriorityBlockingQueue**](http://docs.google.com/java/util/concurrent/PriorityBlockingQueue.html) **extends** [**AbstractQueue**](http://docs.google.com/java/util/AbstractQueue.html)**<**[**E**](http://docs.google.com/java/util/concurrent/PriorityBlockingQueue.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**5595510919245408276L

| **Serialization Methods** |
| --- |

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Saves the state to a stream (that is, serializes it). This merely wraps default serialization within lock. The serialization strategy for items is left to underlying Queue. Note that locking is not needed on deserialization, so readObject is not defined, just relying on default.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### q

[PriorityQueue](http://docs.google.com/java/util/PriorityQueue.html)<[E](http://docs.google.com/java/util/PriorityQueue.html)> **q**

### lock

[ReentrantLock](http://docs.google.com/java/util/concurrent/locks/ReentrantLock.html) **lock**

### notEmpty

[Condition](http://docs.google.com/java/util/concurrent/locks/Condition.html) **notEmpty**

| **Class** [**java.util.concurrent.RejectedExecutionException**](http://docs.google.com/java/util/concurrent/RejectedExecutionException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-375805702767069545L

| **Class** [**java.util.concurrent.Semaphore**](http://docs.google.com/java/util/concurrent/Semaphore.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3222578661600680210L

| **Serialized Fields** |
| --- |

### sync

java.util.concurrent.Semaphore.Sync **sync**

All mechanics via AbstractQueuedSynchronizer subclass

| **Class** [**java.util.concurrent.SynchronousQueue**](http://docs.google.com/java/util/concurrent/SynchronousQueue.html) **extends** [**AbstractQueue**](http://docs.google.com/java/util/AbstractQueue.html)**<**[**E**](http://docs.google.com/java/util/concurrent/SynchronousQueue.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3223113410248163686L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Save the state to a stream (that is, serialize it).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### qlock

[ReentrantLock](http://docs.google.com/java/util/concurrent/locks/ReentrantLock.html) **qlock**

### waitingProducers

java.util.concurrent.SynchronousQueue.WaitQueue **waitingProducers**

### waitingConsumers

java.util.concurrent.SynchronousQueue.WaitQueue **waitingConsumers**

| **Class** [**java.util.concurrent.TimeoutException**](http://docs.google.com/java/util/concurrent/TimeoutException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1900926677490660714L

| **Package** **java.util.concurrent.atomic** |
| --- |

| **Class** [**java.util.concurrent.atomic.AtomicBoolean**](http://docs.google.com/java/util/concurrent/atomic/AtomicBoolean.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4654671469794556979L

| **Serialized Fields** |
| --- |

### value

int **value**

| **Class** [**java.util.concurrent.atomic.AtomicInteger**](http://docs.google.com/java/util/concurrent/atomic/AtomicInteger.html) **extends** [**Number**](http://docs.google.com/java/lang/Number.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6214790243416807050L

| **Serialized Fields** |
| --- |

### value

int **value**

| **Class** [**java.util.concurrent.atomic.AtomicIntegerArray**](http://docs.google.com/java/util/concurrent/atomic/AtomicIntegerArray.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2862133569453604235L

| **Serialized Fields** |
| --- |

### array

int[] **array**

| **Class** [**java.util.concurrent.atomic.AtomicLong**](http://docs.google.com/java/util/concurrent/atomic/AtomicLong.html) **extends** [**Number**](http://docs.google.com/java/lang/Number.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1927816293512124184L

| **Serialized Fields** |
| --- |

### value

long **value**

| **Class** [**java.util.concurrent.atomic.AtomicLongArray**](http://docs.google.com/java/util/concurrent/atomic/AtomicLongArray.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2308431214976778248L

| **Serialized Fields** |
| --- |

### array

long[] **array**

| **Class** [**java.util.concurrent.atomic.AtomicReference**](http://docs.google.com/java/util/concurrent/atomic/AtomicReference.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1848883965231344442L

| **Serialized Fields** |
| --- |

### value

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

| **Class** [**java.util.concurrent.atomic.AtomicReferenceArray**](http://docs.google.com/java/util/concurrent/atomic/AtomicReferenceArray.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-6209656149925076980L

| **Serialized Fields** |
| --- |

### array

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

| **Package** **java.util.concurrent.locks** |
| --- |

| **Class** [**java.util.concurrent.locks.AbstractOwnableSynchronizer**](http://docs.google.com/java/util/concurrent/locks/AbstractOwnableSynchronizer.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3737899427754241961L

| **Class** [**java.util.concurrent.locks.AbstractQueuedLongSynchronizer**](http://docs.google.com/java/util/concurrent/locks/AbstractQueuedLongSynchronizer.html) **extends** [**AbstractOwnableSynchronizer**](http://docs.google.com/java/util/concurrent/locks/AbstractOwnableSynchronizer.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7373984972572414692L

| **Serialized Fields** |
| --- |

### state

long **state**

The synchronization state.

| **Class** [**java.util.concurrent.locks.AbstractQueuedLongSynchronizer.ConditionObject**](http://docs.google.com/java/util/concurrent/locks/AbstractQueuedLongSynchronizer.ConditionObject.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1173984872572414699L

| **Class** [**java.util.concurrent.locks.AbstractQueuedSynchronizer**](http://docs.google.com/java/util/concurrent/locks/AbstractQueuedSynchronizer.html) **extends** [**AbstractOwnableSynchronizer**](http://docs.google.com/java/util/concurrent/locks/AbstractOwnableSynchronizer.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7373984972572414691L

| **Serialized Fields** |
| --- |

### state

int **state**

The synchronization state.

| **Class** [**java.util.concurrent.locks.AbstractQueuedSynchronizer.ConditionObject**](http://docs.google.com/java/util/concurrent/locks/AbstractQueuedSynchronizer.ConditionObject.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1173984872572414699L

| **Class** [**java.util.concurrent.locks.ReentrantLock**](http://docs.google.com/java/util/concurrent/locks/ReentrantLock.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7373984872572414699L

| **Serialized Fields** |
| --- |

### sync

java.util.concurrent.locks.ReentrantLock.Sync **sync**

Synchronizer providing all implementation mechanics

| **Class** [**java.util.concurrent.locks.ReentrantReadWriteLock**](http://docs.google.com/java/util/concurrent/locks/ReentrantReadWriteLock.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-6992448646407690164L

| **Serialized Fields** |
| --- |

### readerLock

[ReentrantReadWriteLock.ReadLock](http://docs.google.com/java/util/concurrent/locks/ReentrantReadWriteLock.ReadLock.html) **readerLock**

Inner class providing readlock

### writerLock

[ReentrantReadWriteLock.WriteLock](http://docs.google.com/java/util/concurrent/locks/ReentrantReadWriteLock.WriteLock.html) **writerLock**

Inner class providing writelock

### sync

java.util.concurrent.locks.ReentrantReadWriteLock.Sync **sync**

Performs all synchronization mechanics

| **Class** [**java.util.concurrent.locks.ReentrantReadWriteLock.ReadLock**](http://docs.google.com/java/util/concurrent/locks/ReentrantReadWriteLock.ReadLock.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5992448646407690164L

| **Serialized Fields** |
| --- |

### sync

java.util.concurrent.locks.ReentrantReadWriteLock.Sync **sync**

| **Class** [**java.util.concurrent.locks.ReentrantReadWriteLock.WriteLock**](http://docs.google.com/java/util/concurrent/locks/ReentrantReadWriteLock.WriteLock.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4992448646407690164L

| **Serialized Fields** |
| --- |

### sync

java.util.concurrent.locks.ReentrantReadWriteLock.Sync **sync**

| **Package** **java.util.jar** |
| --- |

| **Class** [**java.util.jar.JarException**](http://docs.google.com/java/util/jar/JarException.html) **extends** [**ZipException**](http://docs.google.com/java/util/zip/ZipException.html) **implements Serializable** | |
| --- | --- |

| **Package** **java.util.logging** |
| --- |

| **Class** [**java.util.logging.Level**](http://docs.google.com/java/util/logging/Level.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8176160795706313070L

| **Serialization Methods** |
| --- |

### readResolve

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

| **Serialized Fields** |
| --- |

### name

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

The non-localized name of the level.

### value

int **value**

The integer value of the level.

### resourceBundleName

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

The resource bundle name to be used in localizing the level name.

| **Class** [**java.util.logging.LoggingPermission**](http://docs.google.com/java/util/logging/LoggingPermission.html) **extends** [**BasicPermission**](http://docs.google.com/java/security/BasicPermission.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**63564341580231582L

| **Class** [**java.util.logging.LogRecord**](http://docs.google.com/java/util/logging/LogRecord.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5372048053134512534L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

**Serial Data:** Default fields, followed by a two byte version number (major byte, followed by minor byte), followed by information on the log record parameter array. If there is no parameter array, then -1 is written. If there is a parameter array (possible of zero length) then the array length is written as an integer, followed by String values for each parameter. If a parameter is null, then a null String is written. Otherwise the output of Object.toString() is written. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### level

[Level](http://docs.google.com/java/util/logging/Level.html) **level**

Logging message level

### sequenceNumber

long **sequenceNumber**

Sequence number

### sourceClassName

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

Class that issued logging call

### sourceMethodName

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

Method that issued logging call

### message

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

Non-localized raw message text

### threadID

int **threadID**

Thread ID for thread that issued logging call.

### millis

long **millis**

Event time in milliseconds since 1970

### thrown

[Throwable](http://docs.google.com/java/lang/Throwable.html) **thrown**

The Throwable (if any) associated with log message

### loggerName

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

Name of the source Logger.

### resourceBundleName

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

Resource bundle name to localized log message.

| **Package** **java.util.prefs** |
| --- |

| **Class** [**java.util.prefs.BackingStoreException**](http://docs.google.com/java/util/prefs/BackingStoreException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**859796500401108469L

| **Class** [**java.util.prefs.InvalidPreferencesFormatException**](http://docs.google.com/java/util/prefs/InvalidPreferencesFormatException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-791715184232119669L

| **Package** **java.util.regex** |
| --- |

| **Class** [**java.util.regex.Pattern**](http://docs.google.com/java/util/regex/Pattern.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5073258162644648461L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Recompile the Pattern instance from a stream. The original pattern string is read in and the object tree is recompiled from it.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

| **Serialized Fields** |
| --- |

### pattern

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

The original regular-expression pattern string.

### flags

int **flags**

The original pattern flags.

| **Class** [**java.util.regex.PatternSyntaxException**](http://docs.google.com/java/util/regex/PatternSyntaxException.html) **extends** [**IllegalArgumentException**](http://docs.google.com/java/lang/IllegalArgumentException.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### desc

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

### pattern

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

### index

int **index**

| **Package** **java.util.zip** |
| --- |

| **Class** [**java.util.zip.DataFormatException**](http://docs.google.com/java/util/zip/DataFormatException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Class** [**java.util.zip.ZipError**](http://docs.google.com/java/util/zip/ZipError.html) **extends** [**InternalError**](http://docs.google.com/java/lang/InternalError.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**853973422266861979L

| **Class** [**java.util.zip.ZipException**](http://docs.google.com/java/util/zip/ZipException.html) **extends** [**IOException**](http://docs.google.com/java/io/IOException.html) **implements Serializable** | |
| --- | --- |

| **Package** **javax.activation** |
| --- |

| **Class** [**javax.activation.ActivationDataFlavor**](http://docs.google.com/javax/activation/ActivationDataFlavor.html) **extends** [**DataFlavor**](http://docs.google.com/java/awt/datatransfer/DataFlavor.html) **implements Serializable** | |
| --- | --- |

| **Serialization Methods** |
| --- |

### readExternal

public void **readExternal**([ObjectInput](http://docs.google.com/java/io/ObjectInput.html) is)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Restores this DataFlavor from a Serialized state.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) - if I/O errors occur [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) - If the class for an object being restored cannot be found.

### writeExternal

public void **writeExternal**([ObjectOutput](http://docs.google.com/java/io/ObjectOutput.html) os)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serializes this DataFlavor.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) - Includes any I/O exceptions that may occur

| **Class** [**javax.activation.MimeType**](http://docs.google.com/javax/activation/MimeType.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

| **Serialization Methods** |
| --- |

### readExternal

public void **readExternal**([ObjectInput](http://docs.google.com/java/io/ObjectInput.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

The object implements the readExternal method to restore its contents by calling the methods of DataInput for primitive types and readObject for objects, strings and arrays. The readExternal method must read the values in the same sequence and with the same types as were written by writeExternal.

**Throws:** [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) - If the class for an object being restored cannot be found. [IOException](http://docs.google.com/java/io/IOException.html) - if I/O errors occur

### writeExternal

public void **writeExternal**([ObjectOutput](http://docs.google.com/java/io/ObjectOutput.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

The object implements the writeExternal method to save its contents by calling the methods of DataOutput for its primitive values or calling the writeObject method of ObjectOutput for objects, strings and arrays.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) - Includes any I/O exceptions that may occur

| **Class** [**javax.activation.MimeTypeParseException**](http://docs.google.com/javax/activation/MimeTypeParseException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.activation.UnsupportedDataTypeException**](http://docs.google.com/javax/activation/UnsupportedDataTypeException.html) **extends** [**IOException**](http://docs.google.com/java/io/IOException.html) **implements Serializable** | |
| --- | --- |

| **Package** **javax.activity** |
| --- |

| **Class** [**javax.activity.ActivityCompletedException**](http://docs.google.com/javax/activity/ActivityCompletedException.html) **extends** [**RemoteException**](http://docs.google.com/java/rmi/RemoteException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.activity.ActivityRequiredException**](http://docs.google.com/javax/activity/ActivityRequiredException.html) **extends** [**RemoteException**](http://docs.google.com/java/rmi/RemoteException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.activity.InvalidActivityException**](http://docs.google.com/javax/activity/InvalidActivityException.html) **extends** [**RemoteException**](http://docs.google.com/java/rmi/RemoteException.html) **implements Serializable** | |
| --- | --- |

| **Package** **javax.annotation.processing** |
| --- |

| **Class** [**javax.annotation.processing.FilerException**](http://docs.google.com/javax/annotation/processing/FilerException.html) **extends** [**IOException**](http://docs.google.com/java/io/IOException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8426423106453163293L

| **Package** **javax.crypto** |
| --- |

| **Class** [**javax.crypto.BadPaddingException**](http://docs.google.com/javax/crypto/BadPaddingException.html) **extends** [**GeneralSecurityException**](http://docs.google.com/java/security/GeneralSecurityException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.crypto.ExemptionMechanismException**](http://docs.google.com/javax/crypto/ExemptionMechanismException.html) **extends** [**GeneralSecurityException**](http://docs.google.com/java/security/GeneralSecurityException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.crypto.IllegalBlockSizeException**](http://docs.google.com/javax/crypto/IllegalBlockSizeException.html) **extends** [**GeneralSecurityException**](http://docs.google.com/java/security/GeneralSecurityException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.crypto.NoSuchPaddingException**](http://docs.google.com/javax/crypto/NoSuchPaddingException.html) **extends** [**GeneralSecurityException**](http://docs.google.com/java/security/GeneralSecurityException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.crypto.SealedObject**](http://docs.google.com/javax/crypto/SealedObject.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Restores the state of the SealedObject from a stream.

**Throws:** [NullPointerException](http://docs.google.com/java/lang/NullPointerException.html) - if s is null. [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

| **Serialized Fields** |
| --- |

### encodedParams

byte[] **encodedParams**

The cryptographic parameters used by the sealing Cipher, encoded in the default format.

That is, cipher.getParameters().getEncoded().

### encryptedContent

byte[] **encryptedContent**

The serialized object contents in encrypted format.

### sealAlg

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

The algorithm that was used to seal this object.

### paramsAlg

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

The algorithm of the parameters used.

| **Class** [**javax.crypto.ShortBufferException**](http://docs.google.com/javax/crypto/ShortBufferException.html) **extends** [**GeneralSecurityException**](http://docs.google.com/java/security/GeneralSecurityException.html) **implements Serializable** | |
| --- | --- |

| **Package** **javax.crypto.interfaces** |
| --- |

| **Package** **javax.crypto.spec** |
| --- |

| **Class** [**javax.crypto.spec.SecretKeySpec**](http://docs.google.com/javax/crypto/spec/SecretKeySpec.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### key

byte[] **key**

The secret key.

### algorithm

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

The name of the algorithm associated with this key.

| **Package** **javax.imageio** |
| --- |

| **Class** [**javax.imageio.IIOException**](http://docs.google.com/javax/imageio/IIOException.html) **extends** [**IOException**](http://docs.google.com/java/io/IOException.html) **implements Serializable** | |
| --- | --- |

| **Package** **javax.imageio.metadata** |
| --- |

| **Class** [**javax.imageio.metadata.IIOInvalidTreeException**](http://docs.google.com/javax/imageio/metadata/IIOInvalidTreeException.html) **extends** [**IIOException**](http://docs.google.com/javax/imageio/IIOException.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### offendingNode

[Node](http://docs.google.com/org/w3c/dom/Node.html) **offendingNode**

The Node that led to the parsing error, or null.

| **Package** **javax.lang.model.element** |
| --- |

| **Class** [**javax.lang.model.element.UnknownAnnotationValueException**](http://docs.google.com/javax/lang/model/element/UnknownAnnotationValueException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**269L

| **Class** [**javax.lang.model.element.UnknownElementException**](http://docs.google.com/javax/lang/model/element/UnknownElementException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**269L

| **Package** **javax.lang.model.type** |
| --- |

| **Class** [**javax.lang.model.type.MirroredTypeException**](http://docs.google.com/javax/lang/model/type/MirroredTypeException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**269L

| **Class** [**javax.lang.model.type.MirroredTypesException**](http://docs.google.com/javax/lang/model/type/MirroredTypesException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**269L

| **Class** [**javax.lang.model.type.UnknownTypeException**](http://docs.google.com/javax/lang/model/type/UnknownTypeException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**269L

| **Package** **javax.management** |
| --- |

| **Class javax.management.AndQueryExp extends** [**QueryEval**](http://docs.google.com/javax/management/QueryEval.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1081892073854801359L

| **Serialized Fields** |
| --- |

### exp1

[QueryExp](http://docs.google.com/javax/management/QueryExp.html) **exp1**

The first QueryExp of the conjunction

### exp2

[QueryExp](http://docs.google.com/javax/management/QueryExp.html) **exp2**

The second QueryExp of the conjunction

| **Class** [**javax.management.Attribute**](http://docs.google.com/javax/management/Attribute.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2484220110589082382L

| **Serialized Fields** |
| --- |

### name

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

Attribute name.

### value

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

Attribute value

| **Class** [**javax.management.AttributeChangeNotification**](http://docs.google.com/javax/management/AttributeChangeNotification.html) **extends** [**Notification**](http://docs.google.com/javax/management/Notification.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**535176054565814134L

| **Serialized Fields** |
| --- |

### attributeName

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

The MBean attribute name.

### attributeType

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

The MBean attribute type.

### oldValue

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

The MBean attribute old value.

### newValue

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

The MBean attribute new value.

| **Class** [**javax.management.AttributeChangeNotificationFilter**](http://docs.google.com/javax/management/AttributeChangeNotificationFilter.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-6347317584796410029L

| **Serialized Fields** |
| --- |

### enabledAttributes

[Vector](http://docs.google.com/java/util/Vector.html)<[E](http://docs.google.com/java/util/Vector.html)> **enabledAttributes**

[Vector](http://docs.google.com/java/util/Vector.html) that contains the enabled attribute names. The default value is an empty vector.

| **Class** [**javax.management.AttributeList**](http://docs.google.com/javax/management/AttributeList.html) **extends** [**ArrayList**](http://docs.google.com/java/util/ArrayList.html)**<**[**Object**](http://docs.google.com/java/lang/Object.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4077085769279709076L

| **Class** [**javax.management.AttributeNotFoundException**](http://docs.google.com/javax/management/AttributeNotFoundException.html) **extends** [**OperationsException**](http://docs.google.com/javax/management/OperationsException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6511584241791106926L

| **Class** [**javax.management.AttributeValueExp**](http://docs.google.com/javax/management/AttributeValueExp.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7768025046539163385L

| **Serialized Fields** |
| --- |

### attr

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

The name of the attribute

| **Class** [**javax.management.BadAttributeValueExpException**](http://docs.google.com/javax/management/BadAttributeValueExpException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3105272988410493376L

| **Serialized Fields** |
| --- |

### val

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

The attribute value that originated this exception

| **Class** [**javax.management.BadBinaryOpValueExpException**](http://docs.google.com/javax/management/BadBinaryOpValueExpException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5068475589449021227L

| **Serialized Fields** |
| --- |

### exp

[ValueExp](http://docs.google.com/javax/management/ValueExp.html) **exp**

the [ValueExp](http://docs.google.com/javax/management/ValueExp.html) that originated this exception

| **Class** [**javax.management.BadStringOperationException**](http://docs.google.com/javax/management/BadStringOperationException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7802201238441662100L

| **Serialized Fields** |
| --- |

### op

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

The description of the operation that originated this exception

| **Class javax.management.BetweenQueryExp extends** [**QueryEval**](http://docs.google.com/javax/management/QueryEval.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2933597532866307444L

| **Serialized Fields** |
| --- |

### exp1

[ValueExp](http://docs.google.com/javax/management/ValueExp.html) **exp1**

The checked value

### exp2

[ValueExp](http://docs.google.com/javax/management/ValueExp.html) **exp2**

The lower bound value

### exp3

[ValueExp](http://docs.google.com/javax/management/ValueExp.html) **exp3**

The upper bound value

| **Class javax.management.BinaryOpValueExp extends** [**QueryEval**](http://docs.google.com/javax/management/QueryEval.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1216286847881456786L

| **Serialized Fields** |
| --- |

### op

int **op**

The operator

### exp1

[ValueExp](http://docs.google.com/javax/management/ValueExp.html) **exp1**

The first value

### exp2

[ValueExp](http://docs.google.com/javax/management/ValueExp.html) **exp2**

The second value

| **Class javax.management.BinaryRelQueryExp extends** [**QueryEval**](http://docs.google.com/javax/management/QueryEval.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5690656271650491000L

| **Serialized Fields** |
| --- |

### relOp

int **relOp**

The operator

### exp1

[ValueExp](http://docs.google.com/javax/management/ValueExp.html) **exp1**

The first value

### exp2

[ValueExp](http://docs.google.com/javax/management/ValueExp.html) **exp2**

The second value

| **Class javax.management.BooleanValueExp extends** [**QueryEval**](http://docs.google.com/javax/management/QueryEval.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7754922052666594581L

| **Serialized Fields** |
| --- |

### val

boolean **val**

The boolean value

| **Class javax.management.ClassAttributeValueExp extends** [**AttributeValueExp**](http://docs.google.com/javax/management/AttributeValueExp.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### attr

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

The name of the attribute

The **serialVersionUID** of this class is -1081892073854801359L.

| **Class** [**javax.management.ImmutableDescriptor**](http://docs.google.com/javax/management/ImmutableDescriptor.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8853308591080540165L

| **Serialization Methods** |
| --- |

### readResolve

private [Object](http://docs.google.com/java/lang/Object.html) **readResolve**()  
 throws [InvalidObjectException](http://docs.google.com/java/io/InvalidObjectException.html)

This method can replace a deserialized instance of this class with another instance. For example, it might replace a deserialized empty ImmutableDescriptor with [ImmutableDescriptor.EMPTY\_DESCRIPTOR](http://docs.google.com/javax/management/ImmutableDescriptor.html#EMPTY_DESCRIPTOR).

**Throws:** [InvalidObjectException](http://docs.google.com/java/io/InvalidObjectException.html) - if the read object has invalid fields.

| **Serialized Fields** |
| --- |

### names

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

The names of the fields in this ImmutableDescriptor with their original case. The names must be in alphabetical order as determined by [String.CASE\_INSENSITIVE\_ORDER](http://docs.google.com/java/lang/String.html#CASE_INSENSITIVE_ORDER).

### values

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

The values of the fields in this ImmutableDescriptor. The elements in this array match the corresponding elements in the names array.

| **Class javax.management.InQueryExp extends** [**QueryEval**](http://docs.google.com/javax/management/QueryEval.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5801329450358952434L

| **Serialized Fields** |
| --- |

### val

[ValueExp](http://docs.google.com/javax/management/ValueExp.html) **val**

The [ValueExp](http://docs.google.com/javax/management/ValueExp.html) to be found

### valueList

[ValueExp](http://docs.google.com/javax/management/ValueExp.html)[] **valueList**

The array of [ValueExp](http://docs.google.com/javax/management/ValueExp.html) to be searched

| **Class** [**javax.management.InstanceAlreadyExistsException**](http://docs.google.com/javax/management/InstanceAlreadyExistsException.html) **extends** [**OperationsException**](http://docs.google.com/javax/management/OperationsException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8893743928912733931L

| **Class** [**javax.management.InstanceNotFoundException**](http://docs.google.com/javax/management/InstanceNotFoundException.html) **extends** [**OperationsException**](http://docs.google.com/javax/management/OperationsException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-882579438394773049L

| **Class javax.management.InstanceOfQueryExp extends** [**QueryEval**](http://docs.google.com/javax/management/QueryEval.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1081892073854801359L

| **Serialized Fields** |
| --- |

### classNameValue

[StringValueExp](http://docs.google.com/javax/management/StringValueExp.html) **classNameValue**

The [StringValueExp](http://docs.google.com/javax/management/StringValueExp.html) returning the name of the class of which selected MBeans should be instances.

| **Class** [**javax.management.IntrospectionException**](http://docs.google.com/javax/management/IntrospectionException.html) **extends** [**OperationsException**](http://docs.google.com/javax/management/OperationsException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1054516935875481725L

| **Class** [**javax.management.InvalidApplicationException**](http://docs.google.com/javax/management/InvalidApplicationException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3048022274675537269L

| **Serialized Fields** |
| --- |

### val

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

The object representing the class of the MBean

| **Class** [**javax.management.InvalidAttributeValueException**](http://docs.google.com/javax/management/InvalidAttributeValueException.html) **extends** [**OperationsException**](http://docs.google.com/javax/management/OperationsException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2164571879317142449L

| **Class** [**javax.management.JMException**](http://docs.google.com/javax/management/JMException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**350520924977331825L

| **Class** [**javax.management.JMRuntimeException**](http://docs.google.com/javax/management/JMRuntimeException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6573344628407841861L

| **Class** [**javax.management.ListenerNotFoundException**](http://docs.google.com/javax/management/ListenerNotFoundException.html) **extends** [**OperationsException**](http://docs.google.com/javax/management/OperationsException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7242605822448519061L

| **Class** [**javax.management.MalformedObjectNameException**](http://docs.google.com/javax/management/MalformedObjectNameException.html) **extends** [**OperationsException**](http://docs.google.com/javax/management/OperationsException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-572689714442915824L

| **Class javax.management.MatchQueryExp extends** [**QueryEval**](http://docs.google.com/javax/management/QueryEval.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7156603696948215014L

| **Serialized Fields** |
| --- |

### exp

[AttributeValueExp](http://docs.google.com/javax/management/AttributeValueExp.html) **exp**

The attribute value to be matched

### pattern

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

The pattern to be matched

| **Class** [**javax.management.MBeanAttributeInfo**](http://docs.google.com/javax/management/MBeanAttributeInfo.html) **extends** [**MBeanFeatureInfo**](http://docs.google.com/javax/management/MBeanFeatureInfo.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### attributeType

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

The actual attribute type.

### isWrite

boolean **isWrite**

The attribute write right.

### isRead

boolean **isRead**

The attribute read right.

### is

boolean **is**

Indicates if this method is a "is"

| **Class** [**javax.management.MBeanConstructorInfo**](http://docs.google.com/javax/management/MBeanConstructorInfo.html) **extends** [**MBeanFeatureInfo**](http://docs.google.com/javax/management/MBeanFeatureInfo.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4433990064191844427L

| **Serialized Fields** |
| --- |

### signature

[MBeanParameterInfo](http://docs.google.com/javax/management/MBeanParameterInfo.html)[] **signature**

The signature of the method, that is, the class names of the arguments.

| **Class** [**javax.management.MBeanException**](http://docs.google.com/javax/management/MBeanException.html) **extends** [**JMException**](http://docs.google.com/javax/management/JMException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4066342430588744142L

| **Serialized Fields** |
| --- |

### exception

[Exception](http://docs.google.com/java/lang/Exception.html) **exception**

Encapsulated [Exception](http://docs.google.com/java/lang/Exception.html)

| **Class** [**javax.management.MBeanFeatureInfo**](http://docs.google.com/javax/management/MBeanFeatureInfo.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3952882688968447265L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Deserializes an [MBeanFeatureInfo](http://docs.google.com/javax/management/MBeanFeatureInfo.html) from an [ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html).

**Serial Data:** For compatibility reasons, an object of this class is deserialized as follows.

The method [defaultReadObject()](http://docs.google.com/java/io/ObjectInputStream.html#defaultReadObject()) is called first to deserialize the object except the field descriptor, which is not serialized in the default way. Then the method [read()](http://docs.google.com/java/io/ObjectInputStream.html#read()) is called to read a byte, the field descriptor is deserialized according to the value of the byte value:

* + 1. The method [readObject()](http://docs.google.com/java/io/ObjectInputStream.html#readObject()) is called twice to obtain the field names (a String[]) and the field values (a Object[]) of the descriptor. The two obtained values then are used to construct an [ImmutableDescriptor](http://docs.google.com/javax/management/ImmutableDescriptor.html) instance for the field descriptor;
  + 0. The value for the field descriptor is obtained directly by calling the method [readObject()](http://docs.google.com/java/io/ObjectInputStream.html#readObject()). If the obtained value is null, the field descriptor is set to [EMPTY\_DESCRIPTOR](http://docs.google.com/javax/management/ImmutableDescriptor.html#EMPTY_DESCRIPTOR);
  + -1. This means that there is no byte to read and that the object is from an earlier version of the JMX API. The field descriptor is set to [EMPTY\_DESCRIPTOR](http://docs.google.com/javax/management/ImmutableDescriptor.html#EMPTY_DESCRIPTOR)
  + Any other value. A [StreamCorruptedException](http://docs.google.com/java/io/StreamCorruptedException.html) is thrown.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)**Since:** 1.6

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serializes an [MBeanFeatureInfo](http://docs.google.com/javax/management/MBeanFeatureInfo.html) to an [ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html).

**Serial Data:** For compatibility reasons, an object of this class is serialized as follows.

The method [defaultWriteObject()](http://docs.google.com/java/io/ObjectOutputStream.html#defaultWriteObject()) is called first to serialize the object except the field descriptor which is declared as transient. The field descriptor is serialized as follows:

* + If descriptor is an instance of the class [ImmutableDescriptor](http://docs.google.com/javax/management/ImmutableDescriptor.html), the method [write(int val)](http://docs.google.com/java/io/ObjectOutputStream.html#write(int)) is called to write a byte with the value 1, then the method [writeObject(Object obj)](http://docs.google.com/java/io/ObjectOutputStream.html#writeObject(java.lang.Object)) is called twice to serialize the field names and the field values of the descriptor, respectively as a String[] and an Object[];
  + Otherwise, the method [write(int val)](http://docs.google.com/java/io/ObjectOutputStream.html#write(int)) is called to write a byte with the value 0, then the method [writeObject(Object obj)](http://docs.google.com/java/io/ObjectOutputStream.html#writeObject(java.lang.Object)) is called to serialize directly the field descriptor.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)**Since:** 1.6

| **Serialized Fields** |
| --- |

### name

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

The name of the feature. It is recommended that subclasses call [MBeanFeatureInfo.getName()](http://docs.google.com/javax/management/MBeanFeatureInfo.html#getName()) rather than reading this field, and that they not change it.

The name of the feature.

### description

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

The human-readable description of the feature. It is recommended that subclasses call [MBeanFeatureInfo.getDescription()](http://docs.google.com/javax/management/MBeanFeatureInfo.html#getDescription()) rather than reading this field, and that they not change it.

The human-readable description of the feature.

| **Class** [**javax.management.MBeanInfo**](http://docs.google.com/javax/management/MBeanInfo.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-6451021435135161911L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Deserializes an [MBeanInfo](http://docs.google.com/javax/management/MBeanInfo.html) from an [ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html).

**Serial Data:** For compatibility reasons, an object of this class is deserialized as follows.

The method [defaultReadObject()](http://docs.google.com/java/io/ObjectInputStream.html#defaultReadObject()) is called first to deserialize the object except the field descriptor, which is not serialized in the default way. Then the method [read()](http://docs.google.com/java/io/ObjectInputStream.html#read()) is called to read a byte, the field descriptor is deserialized according to the value of the byte value:

* + 1. The method [readObject()](http://docs.google.com/java/io/ObjectInputStream.html#readObject()) is called twice to obtain the field names (a String[]) and the field values (a Object[]) of the descriptor. The two obtained values then are used to construct an [ImmutableDescriptor](http://docs.google.com/javax/management/ImmutableDescriptor.html) instance for the field descriptor;
  + 0. The value for the field descriptor is obtained directly by calling the method [readObject()](http://docs.google.com/java/io/ObjectInputStream.html#readObject()). If the obtained value is null, the field descriptor is set to [EMPTY\_DESCRIPTOR](http://docs.google.com/javax/management/ImmutableDescriptor.html#EMPTY_DESCRIPTOR);
  + -1. This means that there is no byte to read and that the object is from an earlier version of the JMX API. The field descriptor is set to [EMPTY\_DESCRIPTOR](http://docs.google.com/javax/management/ImmutableDescriptor.html#EMPTY_DESCRIPTOR).
  + Any other value. A [StreamCorruptedException](http://docs.google.com/java/io/StreamCorruptedException.html) is thrown.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)**Since:** 1.6

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serializes an [MBeanInfo](http://docs.google.com/javax/management/MBeanInfo.html) to an [ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html).

**Serial Data:** For compatibility reasons, an object of this class is serialized as follows.

The method [defaultWriteObject()](http://docs.google.com/java/io/ObjectOutputStream.html#defaultWriteObject()) is called first to serialize the object except the field descriptor which is declared as transient. The field descriptor is serialized as follows:

* + If descriptor is an instance of the class [ImmutableDescriptor](http://docs.google.com/javax/management/ImmutableDescriptor.html), the method [write(int val)](http://docs.google.com/java/io/ObjectOutputStream.html#write(int)) is called to write a byte with the value 1, then the method [writeObject(Object obj)](http://docs.google.com/java/io/ObjectOutputStream.html#writeObject(java.lang.Object)) is called twice to serialize the field names and the field values of the descriptor, respectively as a String[] and an Object[];
  + Otherwise, the method [write(int val)](http://docs.google.com/java/io/ObjectOutputStream.html#write(int)) is called to write a byte with the value 0, then the method [writeObject(Object obj)](http://docs.google.com/java/io/ObjectOutputStream.html#writeObject(java.lang.Object)) is called to serialize the field descriptor directly.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)**Since:** 1.6

| **Serialized Fields** |
| --- |

### description

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

The human readable description of the class.

### className

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

The MBean qualified name.

### attributes

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

The MBean attribute descriptors.

### operations

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

The MBean operation descriptors.

### constructors

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

The MBean constructor descriptors.

### notifications

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

The MBean notification descriptors.

| **Class** [**javax.management.MBeanNotificationInfo**](http://docs.google.com/javax/management/MBeanNotificationInfo.html) **extends** [**MBeanFeatureInfo**](http://docs.google.com/javax/management/MBeanFeatureInfo.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3888371564530107064L

| **Serialized Fields** |
| --- |

### types

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

The different types of the notification.

| **Class** [**javax.management.MBeanOperationInfo**](http://docs.google.com/javax/management/MBeanOperationInfo.html) **extends** [**MBeanFeatureInfo**](http://docs.google.com/javax/management/MBeanFeatureInfo.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-6178860474881375330L

| **Serialized Fields** |
| --- |

### type

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

The method's return value.

### signature

[MBeanParameterInfo](http://docs.google.com/javax/management/MBeanParameterInfo.html)[] **signature**

The signature of the method, that is, the class names of the arguments.

### impact

int **impact**

The impact of the method, one of INFO, ACTION, ACTION\_INFO, UNKNOWN

| **Class** [**javax.management.MBeanParameterInfo**](http://docs.google.com/javax/management/MBeanParameterInfo.html) **extends** [**MBeanFeatureInfo**](http://docs.google.com/javax/management/MBeanFeatureInfo.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7432616882776782338L

| **Serialized Fields** |
| --- |

### type

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

The type or class name of the data.

| **Class** [**javax.management.MBeanPermission**](http://docs.google.com/javax/management/MBeanPermission.html) **extends** [**Permission**](http://docs.google.com/java/security/Permission.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2416928705275160661L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Deserialize this object based on its name and actions.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

| **Serialized Fields** |
| --- |

### actions

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

The actions string.

| **Class** [**javax.management.MBeanRegistrationException**](http://docs.google.com/javax/management/MBeanRegistrationException.html) **extends** [**MBeanException**](http://docs.google.com/javax/management/MBeanException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4482382455277067805L

| **Class** [**javax.management.MBeanServerNotification**](http://docs.google.com/javax/management/MBeanServerNotification.html) **extends** [**Notification**](http://docs.google.com/javax/management/Notification.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2876477500475969677L

| **Serialized Fields** |
| --- |

### objectName

[ObjectName](http://docs.google.com/javax/management/ObjectName.html) **objectName**

The object names of the MBeans concerned by this notification

| **Class** [**javax.management.MBeanServerPermission**](http://docs.google.com/javax/management/MBeanServerPermission.html) **extends** [**BasicPermission**](http://docs.google.com/java/security/BasicPermission.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5661980843569388590L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

| **Class javax.management.MBeanServerPermissionCollection extends** [**PermissionCollection**](http://docs.google.com/java/security/PermissionCollection.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5661980843569388590L

| **Serialized Fields** |
| --- |

### collectionPermission

[MBeanServerPermission](http://docs.google.com/javax/management/MBeanServerPermission.html) **collectionPermission**

Null if no permissions in collection, otherwise a single permission that is the union of all permissions that have been added.

| **Class** [**javax.management.MBeanTrustPermission**](http://docs.google.com/javax/management/MBeanTrustPermission.html) **extends** [**BasicPermission**](http://docs.google.com/java/security/BasicPermission.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2952178077029018140L

| **Class** [**javax.management.NotCompliantMBeanException**](http://docs.google.com/javax/management/NotCompliantMBeanException.html) **extends** [**OperationsException**](http://docs.google.com/javax/management/OperationsException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5175579583207963577L

| **Class** [**javax.management.Notification**](http://docs.google.com/javax/management/Notification.html) **extends** [**EventObject**](http://docs.google.com/java/util/EventObject.html) **implements Serializable** | |
| --- | --- |

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Deserializes a [Notification](http://docs.google.com/javax/management/Notification.html) from an [ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serializes a [Notification](http://docs.google.com/javax/management/Notification.html) to an [ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### message

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

The notification message.

### sequenceNumber

long **sequenceNumber**

The notification sequence number. A serial number which identify particular instance of notification in the context of the notification source.

### source

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

The object on which the notification initially occurred.

### timeStamp

long **timeStamp**

The notification timestamp. Indicating when the notification was generated

### type

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

The notification type. A string expressed in a dot notation similar to Java properties. An example of a notification type is network.alarm.router

### userData

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

The notification user data. Used for whatever other data the notification source wishes to communicate to its consumers

| **Class** [**javax.management.NotificationFilterSupport**](http://docs.google.com/javax/management/NotificationFilterSupport.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6579080007561786969L

| **Serialized Fields** |
| --- |

### enabledTypes

[List](http://docs.google.com/java/util/List.html)<[E](http://docs.google.com/java/util/List.html)> **enabledTypes**

[Vector](http://docs.google.com/java/util/Vector.html) that contains the enabled notification types. The default value is an empty vector.

| **Class javax.management.NotQueryExp extends** [**QueryEval**](http://docs.google.com/javax/management/QueryEval.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5269643775896723397L

| **Serialized Fields** |
| --- |

### exp

[QueryExp](http://docs.google.com/javax/management/QueryExp.html) **exp**

The negated [QueryExp](http://docs.google.com/javax/management/QueryExp.html)

| **Class javax.management.NumericValueExp extends** [**QueryEval**](http://docs.google.com/javax/management/QueryEval.html) **implements Serializable** | |
| --- | --- |

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Deserializes a NumericValueExp from an [ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serializes a NumericValueExp to an [ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### val

[Number](http://docs.google.com/java/lang/Number.html) **val**

The numeric value

The **serialVersionUID** of this class is -4679739485102359104L.

| **Class** [**javax.management.ObjectInstance**](http://docs.google.com/javax/management/ObjectInstance.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4099952623687795850L

| **Serialized Fields** |
| --- |

### name

[ObjectName](http://docs.google.com/javax/management/ObjectName.html) **name**

Object name.

### className

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

Class name.

| **Class** [**javax.management.ObjectName**](http://docs.google.com/javax/management/ObjectName.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Deserializes an [ObjectName](http://docs.google.com/javax/management/ObjectName.html) from an [ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html).

**Serial Data:**

* In the current serial form (value of property jmx.serial.form differs from 1.0): the string "<domain>:<properties><wild>", where:
  + <domain> represents the domain part of the [ObjectName](http://docs.google.com/javax/management/ObjectName.html)
  + <properties> represents the list of properties, as returned by [ObjectName.getKeyPropertyListString()](http://docs.google.com/javax/management/ObjectName.html#getKeyPropertyListString())
  + <wild> is empty if not isPropertyPattern, or is the character "\*" if isPropertyPattern and <properties> is empty, or is ",\*" if isPropertyPattern and <properties> is not empty.

The intent is that this string could be supplied to the [ObjectName.ObjectName(String)](http://docs.google.com/javax/management/ObjectName.html#ObjectName(java.lang.String)) constructor to produce an equivalent [ObjectName](http://docs.google.com/javax/management/ObjectName.html).

* In the old serial form (value of property jmx.serial.form is 1.0): <domain> <propertyList> <propertyListString> <canonicalName> <pattern> <propertyPattern>, where:
  + <domain> represents the domain part of the [ObjectName](http://docs.google.com/javax/management/ObjectName.html)
  + <propertyList> is the [Hashtable](http://docs.google.com/java/util/Hashtable.html) that contains all the pairs (key,value) for this [ObjectName](http://docs.google.com/javax/management/ObjectName.html)
  + <propertyListString> is the [String](http://docs.google.com/java/lang/String.html) representation of the list of properties in any order (not mandatorily a canonical representation)
  + <canonicalName> is the [String](http://docs.google.com/java/lang/String.html) containing this [ObjectName](http://docs.google.com/javax/management/ObjectName.html)'s canonical name
  + <pattern> is a boolean which is true if this [ObjectName](http://docs.google.com/javax/management/ObjectName.html) contains a pattern
  + <propertyPattern> is a boolean which is true if this [ObjectName](http://docs.google.com/javax/management/ObjectName.html) contains a pattern in the list of properties

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serializes an [ObjectName](http://docs.google.com/javax/management/ObjectName.html) to an [ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html).

**Serial Data:**

* In the current serial form (value of property jmx.serial.form differs from 1.0): the string "<domain>:<properties><wild>", where:
  + <domain> represents the domain part of the [ObjectName](http://docs.google.com/javax/management/ObjectName.html)
  + <properties> represents the list of properties, as returned by [ObjectName.getKeyPropertyListString()](http://docs.google.com/javax/management/ObjectName.html#getKeyPropertyListString())
  + <wild> is empty if not isPropertyPattern, or is the character "\*" if this isPropertyPattern and <properties> is empty, or is ",\*" if isPropertyPattern and <properties> is not empty.

The intent is that this string could be supplied to the [ObjectName.ObjectName(String)](http://docs.google.com/javax/management/ObjectName.html#ObjectName(java.lang.String)) constructor to produce an equivalent [ObjectName](http://docs.google.com/javax/management/ObjectName.html).

* In the old serial form (value of property jmx.serial.form is 1.0): <domain> <propertyList> <propertyListString> <canonicalName> <pattern> <propertyPattern>, where:
  + <domain> represents the domain part of the [ObjectName](http://docs.google.com/javax/management/ObjectName.html)
  + <propertyList> is the [Hashtable](http://docs.google.com/java/util/Hashtable.html) that contains all the pairs (key,value) for this [ObjectName](http://docs.google.com/javax/management/ObjectName.html)
  + <propertyListString> is the [String](http://docs.google.com/java/lang/String.html) representation of the list of properties in any order (not mandatorily a canonical representation)
  + <canonicalName> is the [String](http://docs.google.com/java/lang/String.html) containing this [ObjectName](http://docs.google.com/javax/management/ObjectName.html)'s canonical name
  + <pattern> is a boolean which is true if this [ObjectName](http://docs.google.com/javax/management/ObjectName.html) contains a pattern
  + <propertyPattern> is a boolean which is true if this [ObjectName](http://docs.google.com/javax/management/ObjectName.html) contains a pattern in the list of properties

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

| **Class** [**javax.management.OperationsException**](http://docs.google.com/javax/management/OperationsException.html) **extends** [**JMException**](http://docs.google.com/javax/management/JMException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4967597595580536216L

| **Class javax.management.OrQueryExp extends** [**QueryEval**](http://docs.google.com/javax/management/QueryEval.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2962973084421716523L

| **Serialized Fields** |
| --- |

### exp1

[QueryExp](http://docs.google.com/javax/management/QueryExp.html) **exp1**

The left query expression

### exp2

[QueryExp](http://docs.google.com/javax/management/QueryExp.html) **exp2**

The right query expression

| **Class javax.management.QualifiedAttributeValueExp extends** [**AttributeValueExp**](http://docs.google.com/javax/management/AttributeValueExp.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8832517277410933254L

| **Serialized Fields** |
| --- |

### className

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

The attribute class name

| **Class** [**javax.management.QueryEval**](http://docs.google.com/javax/management/QueryEval.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2675899265640874796L

| **Class** [**javax.management.ReflectionException**](http://docs.google.com/javax/management/ReflectionException.html) **extends** [**JMException**](http://docs.google.com/javax/management/JMException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**9170809325636915553L

| **Serialized Fields** |
| --- |

### exception

[Exception](http://docs.google.com/java/lang/Exception.html) **exception**

The wrapped [Exception](http://docs.google.com/java/lang/Exception.html)

| **Class** [**javax.management.RuntimeErrorException**](http://docs.google.com/javax/management/RuntimeErrorException.html) **extends** [**JMRuntimeException**](http://docs.google.com/javax/management/JMRuntimeException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**704338937753949796L

| **Serialized Fields** |
| --- |

### error

[Error](http://docs.google.com/java/lang/Error.html) **error**

The encapsulated [Error](http://docs.google.com/java/lang/Error.html)

| **Class** [**javax.management.RuntimeMBeanException**](http://docs.google.com/javax/management/RuntimeMBeanException.html) **extends** [**JMRuntimeException**](http://docs.google.com/javax/management/JMRuntimeException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5274912751982730171L

| **Serialized Fields** |
| --- |

### runtimeException

[RuntimeException](http://docs.google.com/java/lang/RuntimeException.html) **runtimeException**

The encapsulated [RuntimeException](http://docs.google.com/java/lang/RuntimeException.html)

| **Class** [**javax.management.RuntimeOperationsException**](http://docs.google.com/javax/management/RuntimeOperationsException.html) **extends** [**JMRuntimeException**](http://docs.google.com/javax/management/JMRuntimeException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8408923047489133588L

| **Serialized Fields** |
| --- |

### runtimeException

[RuntimeException](http://docs.google.com/java/lang/RuntimeException.html) **runtimeException**

The encapsulated [RuntimeException](http://docs.google.com/java/lang/RuntimeException.html)

| **Class** [**javax.management.ServiceNotFoundException**](http://docs.google.com/javax/management/ServiceNotFoundException.html) **extends** [**OperationsException**](http://docs.google.com/javax/management/OperationsException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3990675661956646827L

| **Class** [**javax.management.StringValueExp**](http://docs.google.com/javax/management/StringValueExp.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3256390509806284044L

| **Serialized Fields** |
| --- |

### val

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

The string literal

| **Package** **javax.management.loading** |
| --- |

| **Class** [**javax.management.loading.MLet**](http://docs.google.com/javax/management/loading/MLet.html) **extends** [**URLClassLoader**](http://docs.google.com/java/net/URLClassLoader.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3636148327800330130L

| **Serialization Methods** |
| --- |

### readExternal

public void **readExternal**([ObjectInput](http://docs.google.com/java/io/ObjectInput.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [UnsupportedOperationException](http://docs.google.com/java/lang/UnsupportedOperationException.html)

Restore this MLet's contents from the given [ObjectInput](http://docs.google.com/java/io/ObjectInput.html). Not all implementations support this method. Those that do not throw [UnsupportedOperationException](http://docs.google.com/java/lang/UnsupportedOperationException.html). A subclass may override this method to support it or to change the format of the read data.

The format of the read data is not specified, but if an implementation supports [MLet.readExternal(java.io.ObjectInput)](http://docs.google.com/javax/management/loading/MLet.html#readExternal(java.io.ObjectInput)) it must also support [MLet.writeExternal(java.io.ObjectOutput)](http://docs.google.com/javax/management/loading/MLet.html#writeExternal(java.io.ObjectOutput)) in such a way that what is written by the latter can be read by the former.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) - if a problem occurred while reading. [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) - if the class for the object being restored cannot be found. [UnsupportedOperationException](http://docs.google.com/java/lang/UnsupportedOperationException.html) - if this implementation does not support this operation.

### writeExternal

public void **writeExternal**([ObjectOutput](http://docs.google.com/java/io/ObjectOutput.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [UnsupportedOperationException](http://docs.google.com/java/lang/UnsupportedOperationException.html)

Save this MLet's contents to the given [ObjectOutput](http://docs.google.com/java/io/ObjectOutput.html). Not all implementations support this method. Those that do not throw [UnsupportedOperationException](http://docs.google.com/java/lang/UnsupportedOperationException.html). A subclass may override this method to support it or to change the format of the written data.

The format of the written data is not specified, but if an implementation supports [MLet.writeExternal(java.io.ObjectOutput)](http://docs.google.com/javax/management/loading/MLet.html#writeExternal(java.io.ObjectOutput)) it must also support [MLet.readExternal(java.io.ObjectInput)](http://docs.google.com/javax/management/loading/MLet.html#readExternal(java.io.ObjectInput)) in such a way that what is written by the former can be read by the latter.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) - If a problem occurred while writing. [UnsupportedOperationException](http://docs.google.com/java/lang/UnsupportedOperationException.html) - If this implementation does not support this operation.

| **Class** [**javax.management.loading.PrivateMLet**](http://docs.google.com/javax/management/loading/PrivateMLet.html) **extends** [**MLet**](http://docs.google.com/javax/management/loading/MLet.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2503458973393711979L

| **Serialization Methods** |
| --- |

### readExternal

public void **readExternal**([ObjectInput](http://docs.google.com/java/io/ObjectInput.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [UnsupportedOperationException](http://docs.google.com/java/lang/UnsupportedOperationException.html)

Restore this MLet's contents from the given [ObjectInput](http://docs.google.com/java/io/ObjectInput.html). Not all implementations support this method. Those that do not throw [UnsupportedOperationException](http://docs.google.com/java/lang/UnsupportedOperationException.html). A subclass may override this method to support it or to change the format of the read data.

The format of the read data is not specified, but if an implementation supports [MLet.readExternal(java.io.ObjectInput)](http://docs.google.com/javax/management/loading/MLet.html#readExternal(java.io.ObjectInput)) it must also support [MLet.writeExternal(java.io.ObjectOutput)](http://docs.google.com/javax/management/loading/MLet.html#writeExternal(java.io.ObjectOutput)) in such a way that what is written by the latter can be read by the former.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) - if a problem occurred while reading. [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) - if the class for the object being restored cannot be found. [UnsupportedOperationException](http://docs.google.com/java/lang/UnsupportedOperationException.html) - if this implementation does not support this operation.

### writeExternal

public void **writeExternal**([ObjectOutput](http://docs.google.com/java/io/ObjectOutput.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [UnsupportedOperationException](http://docs.google.com/java/lang/UnsupportedOperationException.html)

Save this MLet's contents to the given [ObjectOutput](http://docs.google.com/java/io/ObjectOutput.html). Not all implementations support this method. Those that do not throw [UnsupportedOperationException](http://docs.google.com/java/lang/UnsupportedOperationException.html). A subclass may override this method to support it or to change the format of the written data.

The format of the written data is not specified, but if an implementation supports [MLet.writeExternal(java.io.ObjectOutput)](http://docs.google.com/javax/management/loading/MLet.html#writeExternal(java.io.ObjectOutput)) it must also support [MLet.readExternal(java.io.ObjectInput)](http://docs.google.com/javax/management/loading/MLet.html#readExternal(java.io.ObjectInput)) in such a way that what is written by the former can be read by the latter.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) - If a problem occurred while writing. [UnsupportedOperationException](http://docs.google.com/java/lang/UnsupportedOperationException.html) - If this implementation does not support this operation.

| **Package** **javax.management.modelmbean** |
| --- |

| **Class** [**javax.management.modelmbean.DescriptorSupport**](http://docs.google.com/javax/management/modelmbean/DescriptorSupport.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Deserializes a [DescriptorSupport](http://docs.google.com/javax/management/modelmbean/DescriptorSupport.html) from an [ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serializes a [DescriptorSupport](http://docs.google.com/javax/management/modelmbean/DescriptorSupport.html) to an [ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### descriptor

[HashMap](http://docs.google.com/java/util/HashMap.html)<[K](http://docs.google.com/java/util/HashMap.html),[V](http://docs.google.com/java/util/HashMap.html)> **descriptor**

The collection of fields representing this descriptor

| **Class** [**javax.management.modelmbean.InvalidTargetObjectTypeException**](http://docs.google.com/javax/management/modelmbean/InvalidTargetObjectTypeException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Deserializes an [InvalidTargetObjectTypeException](http://docs.google.com/javax/management/modelmbean/InvalidTargetObjectTypeException.html) from an [ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serializes an [InvalidTargetObjectTypeException](http://docs.google.com/javax/management/modelmbean/InvalidTargetObjectTypeException.html) to an [ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### exception

[Exception](http://docs.google.com/java/lang/Exception.html) **exception**

Encapsulated {@link Exception}

| **Class** [**javax.management.modelmbean.ModelMBeanAttributeInfo**](http://docs.google.com/javax/management/modelmbean/ModelMBeanAttributeInfo.html) **extends** [**MBeanAttributeInfo**](http://docs.google.com/javax/management/MBeanAttributeInfo.html) **implements Serializable** | |
| --- | --- |

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Deserializes a [ModelMBeanAttributeInfo](http://docs.google.com/javax/management/modelmbean/ModelMBeanAttributeInfo.html) from an [ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serializes a [ModelMBeanAttributeInfo](http://docs.google.com/javax/management/modelmbean/ModelMBeanAttributeInfo.html) to an [ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### attrDescriptor

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

The {@link Descriptor} containing the metadata corresponding to this attribute

| **Class** [**javax.management.modelmbean.ModelMBeanConstructorInfo**](http://docs.google.com/javax/management/modelmbean/ModelMBeanConstructorInfo.html) **extends** [**MBeanConstructorInfo**](http://docs.google.com/javax/management/MBeanConstructorInfo.html) **implements Serializable** | |
| --- | --- |

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Deserializes a [ModelMBeanConstructorInfo](http://docs.google.com/javax/management/modelmbean/ModelMBeanConstructorInfo.html) from an [ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serializes a [ModelMBeanConstructorInfo](http://docs.google.com/javax/management/modelmbean/ModelMBeanConstructorInfo.html) to an [ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### consDescriptor

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

The {@link Descriptor} containing the metadata for this instance

| **Class** [**javax.management.modelmbean.ModelMBeanInfoSupport**](http://docs.google.com/javax/management/modelmbean/ModelMBeanInfoSupport.html) **extends** [**MBeanInfo**](http://docs.google.com/javax/management/MBeanInfo.html) **implements Serializable** | |
| --- | --- |

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Deserializes a [ModelMBeanInfoSupport](http://docs.google.com/javax/management/modelmbean/ModelMBeanInfoSupport.html) from an [ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serializes a [ModelMBeanInfoSupport](http://docs.google.com/javax/management/modelmbean/ModelMBeanInfoSupport.html) to an [ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### modelMBeanAttributes

ModelMBeanAttributeInfo[] **modelMBeanAttributes**

The array of {@link ModelMBeanAttributeInfo} objects which have descriptors

### modelMBeanConstructors

MBeanConstructorInfo[] **modelMBeanConstructors**

The array of {@link ModelMBeanConstructorInfo} objects which have descriptors

### modelMBeanDescriptor

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

The descriptor containing MBean wide policy

### modelMBeanNotifications

MBeanNotificationInfo[] **modelMBeanNotifications**

The array of {@link ModelMBeanNotificationInfo} objects which have descriptors

### modelMBeanOperations

MBeanOperationInfo[] **modelMBeanOperations**

The array of {@link ModelMBeanOperationInfo} objects which have descriptors

| **Class** [**javax.management.modelmbean.ModelMBeanNotificationInfo**](http://docs.google.com/javax/management/modelmbean/ModelMBeanNotificationInfo.html) **extends** [**MBeanNotificationInfo**](http://docs.google.com/javax/management/MBeanNotificationInfo.html) **implements Serializable** | |
| --- | --- |

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Deserializes a [ModelMBeanNotificationInfo](http://docs.google.com/javax/management/modelmbean/ModelMBeanNotificationInfo.html) from an [ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serializes a [ModelMBeanNotificationInfo](http://docs.google.com/javax/management/modelmbean/ModelMBeanNotificationInfo.html) to an [ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### notificationDescriptor

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

The descriptor containing the appropriate metadata for this instance

| **Class** [**javax.management.modelmbean.ModelMBeanOperationInfo**](http://docs.google.com/javax/management/modelmbean/ModelMBeanOperationInfo.html) **extends** [**MBeanOperationInfo**](http://docs.google.com/javax/management/MBeanOperationInfo.html) **implements Serializable** | |
| --- | --- |

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Deserializes a [ModelMBeanOperationInfo](http://docs.google.com/javax/management/modelmbean/ModelMBeanOperationInfo.html) from an [ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serializes a [ModelMBeanOperationInfo](http://docs.google.com/javax/management/modelmbean/ModelMBeanOperationInfo.html) to an [ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### operationDescriptor

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

The descriptor containing the appropriate metadata for this instance

| **Class** [**javax.management.modelmbean.XMLParseException**](http://docs.google.com/javax/management/modelmbean/XMLParseException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Deserializes an [XMLParseException](http://docs.google.com/javax/management/modelmbean/XMLParseException.html) from an [ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serializes an [XMLParseException](http://docs.google.com/javax/management/modelmbean/XMLParseException.html) to an [ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

| **Package** **javax.management.monitor** |
| --- |

| **Class** [**javax.management.monitor.MonitorNotification**](http://docs.google.com/javax/management/monitor/MonitorNotification.html) **extends** [**Notification**](http://docs.google.com/javax/management/Notification.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4608189663661929204L

| **Serialized Fields** |
| --- |

### observedObject

[ObjectName](http://docs.google.com/javax/management/ObjectName.html) **observedObject**

Monitor notification observed object.

### observedAttribute

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

Monitor notification observed attribute.

### derivedGauge

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

Monitor notification derived gauge.

### trigger

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

Monitor notification release mechanism. This value is used to keep the threshold/string (depending on the monitor type) that triggered off this notification.

| **Class** [**javax.management.monitor.MonitorSettingException**](http://docs.google.com/javax/management/monitor/MonitorSettingException.html) **extends** [**JMRuntimeException**](http://docs.google.com/javax/management/JMRuntimeException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8807913418190202007L

| **Package** **javax.management.openmbean** |
| --- |

| **Class** [**javax.management.openmbean.ArrayType**](http://docs.google.com/javax/management/openmbean/ArrayType.html) **extends** [**OpenType**](http://docs.google.com/javax/management/openmbean/OpenType.html)**<**[**T**](http://docs.google.com/javax/management/openmbean/ArrayType.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**720504429830309770L

| **Serialization Methods** |
| --- |

### readResolve

private [Object](http://docs.google.com/java/lang/Object.html) **readResolve**()  
 throws [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html)

Replace/resolve the object read from the stream before it is returned to the caller.

**Serial Data:** The new serial form of this class defines a new serializable boolean field primitiveArray. In order to guarantee the interoperability with previous versions of this class the new serial form must continue to refer to primitive wrapper types even when the ArrayType instance describes a primitive type array. So when primitiveArray is true the className, typeName and description serializable fields are converted into primitive types before the deserialized ArrayType instance is return to the caller. The elementType field always returns the SimpleType corresponding to the primitive wrapper type of the array's primitive type.

Therefore the following serializable fields are deserialized as follows:

* if primitiveArray is true the className field is deserialized by replacing the array's component primitive wrapper type by the corresponding array's component primitive type, e.g. "[[Ljava.lang.Integer;" will be deserialized as "[[I".
* if primitiveArray is true the typeName field is deserialized by replacing the array's component primitive wrapper type by the corresponding array's component primitive type, e.g. "[[Ljava.lang.Integer;" will be deserialized as "[[I".
* if primitiveArray is true the description field is deserialized by replacing the array's component primitive wrapper type by the corresponding array's component primitive type, e.g. "2-dimension array of java.lang.Integer" will be deserialized as "2-dimension array of int".

**Throws:** [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html)**Since:** 1.6

### writeReplace

private [Object](http://docs.google.com/java/lang/Object.html) **writeReplace**()  
 throws [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html)

Nominate a replacement for this object in the stream before the object is written.

**Serial Data:** The new serial form of this class defines a new serializable boolean field primitiveArray. In order to guarantee the interoperability with previous versions of this class the new serial form must continue to refer to primitive wrapper types even when the ArrayType instance describes a primitive type array. So when primitiveArray is true the className, typeName and description serializable fields are converted into wrapper types before the serialized ArrayType instance is written to the stream. The elementType field always returns the SimpleType corresponding to the primitive wrapper type of the array's primitive type.

Therefore the following serializable fields are serialized as follows:

* if primitiveArray is true the className field is serialized by replacing the array's component primitive type by the corresponding array's component primitive wrapper type, e.g. "[[I" will be serialized as "[[Ljava.lang.Integer;".
* if primitiveArray is true the typeName field is serialized by replacing the array's component primitive type by the corresponding array's component primitive wrapper type, e.g. "[[I" will be serialized as "[[Ljava.lang.Integer;".
* if primitiveArray is true the description field is serialized by replacing the array's component primitive type by the corresponding array's component primitive wrapper type, e.g. "2-dimension array of int" will be serialized as "2-dimension array of java.lang.Integer".

**Throws:** [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html)**Since:** 1.6

| **Serialized Fields** |
| --- |

### dimension

int **dimension**

The dimension of arrays described by this [ArrayType](http://docs.google.com/javax/management/openmbean/ArrayType.html) instance.

### elementType

[OpenType](http://docs.google.com/javax/management/openmbean/OpenType.html)<[T](http://docs.google.com/javax/management/openmbean/OpenType.html)> **elementType**

The *open type* of element values contained in the arrays described by this [ArrayType](http://docs.google.com/javax/management/openmbean/ArrayType.html) instance.

### primitiveArray

boolean **primitiveArray**

This flag indicates whether this [ArrayType](http://docs.google.com/javax/management/openmbean/ArrayType.html) describes a primitive array. **Since:** 1.6

| **Class** [**javax.management.openmbean.CompositeDataSupport**](http://docs.google.com/javax/management/openmbean/CompositeDataSupport.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8003518976613702244L

| **Serialized Fields** |
| --- |

### contents

[SortedMap](http://docs.google.com/java/util/SortedMap.html)<[K](http://docs.google.com/java/util/SortedMap.html),[V](http://docs.google.com/java/util/SortedMap.html)> **contents**

Internal representation of the mapping of item names to their respective values. A [SortedMap](http://docs.google.com/java/util/SortedMap.html) is used for faster retrieval of elements.

### compositeType

[CompositeType](http://docs.google.com/javax/management/openmbean/CompositeType.html) **compositeType**

The *composite type*  of this *composite data* instance.

| **Class** [**javax.management.openmbean.CompositeType**](http://docs.google.com/javax/management/openmbean/CompositeType.html) **extends** [**OpenType**](http://docs.google.com/javax/management/openmbean/OpenType.html)**<**[**CompositeData**](http://docs.google.com/javax/management/openmbean/CompositeData.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5366242454346948798L

| **Serialized Fields** |
| --- |

### nameToDescription

[TreeMap](http://docs.google.com/java/util/TreeMap.html)<[K](http://docs.google.com/java/util/TreeMap.html),[V](http://docs.google.com/java/util/TreeMap.html)> **nameToDescription**

Sorted mapping of the item names to their descriptions

### nameToType

[TreeMap](http://docs.google.com/java/util/TreeMap.html)<[K](http://docs.google.com/java/util/TreeMap.html),[V](http://docs.google.com/java/util/TreeMap.html)> **nameToType**

Sorted mapping of the item names to their open types

| **Class** [**javax.management.openmbean.InvalidKeyException**](http://docs.google.com/javax/management/openmbean/InvalidKeyException.html) **extends** [**IllegalArgumentException**](http://docs.google.com/java/lang/IllegalArgumentException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4224269443946322062L

| **Class** [**javax.management.openmbean.InvalidOpenTypeException**](http://docs.google.com/javax/management/openmbean/InvalidOpenTypeException.html) **extends** [**IllegalArgumentException**](http://docs.google.com/java/lang/IllegalArgumentException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2837312755412327534L

| **Class** [**javax.management.openmbean.KeyAlreadyExistsException**](http://docs.google.com/javax/management/openmbean/KeyAlreadyExistsException.html) **extends** [**IllegalArgumentException**](http://docs.google.com/java/lang/IllegalArgumentException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1845183636745282866L

| **Class** [**javax.management.openmbean.OpenDataException**](http://docs.google.com/javax/management/openmbean/OpenDataException.html) **extends** [**JMException**](http://docs.google.com/javax/management/JMException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8346311255433349870L

| **Class** [**javax.management.openmbean.OpenMBeanAttributeInfoSupport**](http://docs.google.com/javax/management/openmbean/OpenMBeanAttributeInfoSupport.html) **extends** [**MBeanAttributeInfo**](http://docs.google.com/javax/management/MBeanAttributeInfo.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4867215622149721849L

| **Serialization Methods** |
| --- |

### readResolve

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

An object serialized in a version of the API before Descriptors were added to this class will have an empty or null Descriptor. For consistency with our behavior in this version, we must replace the object with one where the Descriptors reflect the same values of openType, defaultValue, etc.

| **Serialized Fields** |
| --- |

### openType

[OpenType](http://docs.google.com/javax/management/openmbean/OpenType.html)<[T](http://docs.google.com/javax/management/openmbean/OpenType.html)> **openType**

The open mbean attribute's *open type*

### defaultValue

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

The open mbean attribute's default value

### legalValues

[Set](http://docs.google.com/java/util/Set.html)<[E](http://docs.google.com/java/util/Set.html)> **legalValues**

The open mbean attribute's legal values. This [Set](http://docs.google.com/java/util/Set.html) is unmodifiable

### minValue

[Comparable](http://docs.google.com/java/lang/Comparable.html)<[T](http://docs.google.com/java/lang/Comparable.html)> **minValue**

The open mbean attribute's min value

### maxValue

[Comparable](http://docs.google.com/java/lang/Comparable.html)<[T](http://docs.google.com/java/lang/Comparable.html)> **maxValue**

The open mbean attribute's max value

| **Class** [**javax.management.openmbean.OpenMBeanConstructorInfoSupport**](http://docs.google.com/javax/management/openmbean/OpenMBeanConstructorInfoSupport.html) **extends** [**MBeanConstructorInfo**](http://docs.google.com/javax/management/MBeanConstructorInfo.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4400441579007477003L

| **Class** [**javax.management.openmbean.OpenMBeanInfoSupport**](http://docs.google.com/javax/management/openmbean/OpenMBeanInfoSupport.html) **extends** [**MBeanInfo**](http://docs.google.com/javax/management/MBeanInfo.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4349395935420511492L

| **Class** [**javax.management.openmbean.OpenMBeanOperationInfoSupport**](http://docs.google.com/javax/management/openmbean/OpenMBeanOperationInfoSupport.html) **extends** [**MBeanOperationInfo**](http://docs.google.com/javax/management/MBeanOperationInfo.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4996859732565369366L

| **Serialization Methods** |
| --- |

### readResolve

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

An object serialized in a version of the API before Descriptors were added to this class will have an empty or null Descriptor. For consistency with our behavior in this version, we must replace the object with one where the Descriptors reflect the same value of returned openType.

| **Serialized Fields** |
| --- |

### returnOpenType

[OpenType](http://docs.google.com/javax/management/openmbean/OpenType.html)<[T](http://docs.google.com/javax/management/openmbean/OpenType.html)> **returnOpenType**

The *open type* of the values returned by the operation described by this [OpenMBeanOperationInfo](http://docs.google.com/javax/management/openmbean/OpenMBeanOperationInfo.html) instance

| **Class** [**javax.management.openmbean.OpenMBeanParameterInfoSupport**](http://docs.google.com/javax/management/openmbean/OpenMBeanParameterInfoSupport.html) **extends** [**MBeanParameterInfo**](http://docs.google.com/javax/management/MBeanParameterInfo.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7235016873758443122L

| **Serialization Methods** |
| --- |

### readResolve

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

An object serialized in a version of the API before Descriptors were added to this class will have an empty or null Descriptor. For consistency with our behavior in this version, we must replace the object with one where the Descriptors reflect the same values of openType, defaultValue, etc.

| **Serialized Fields** |
| --- |

### openType

[OpenType](http://docs.google.com/javax/management/openmbean/OpenType.html)<[T](http://docs.google.com/javax/management/openmbean/OpenType.html)> **openType**

The open mbean parameter's *open type*

### defaultValue

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

The open mbean parameter's default value

### legalValues

[Set](http://docs.google.com/java/util/Set.html)<[E](http://docs.google.com/java/util/Set.html)> **legalValues**

The open mbean parameter's legal values. This [Set](http://docs.google.com/java/util/Set.html) is unmodifiable

### minValue

[Comparable](http://docs.google.com/java/lang/Comparable.html)<[T](http://docs.google.com/java/lang/Comparable.html)> **minValue**

The open mbean parameter's min value

### maxValue

[Comparable](http://docs.google.com/java/lang/Comparable.html)<[T](http://docs.google.com/java/lang/Comparable.html)> **maxValue**

The open mbean parameter's max value

| **Class** [**javax.management.openmbean.OpenType**](http://docs.google.com/javax/management/openmbean/OpenType.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-9195195325186646468L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Deserializes an [OpenType](http://docs.google.com/javax/management/openmbean/OpenType.html) from an [ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

| **Serialized Fields** |
| --- |

### className

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

The fully qualified Java class name of open data values this type describes.

### description

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

The type description (should not be null or empty).

### typeName

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

The name given to this type (should not be null or empty).

| **Class** [**javax.management.openmbean.SimpleType**](http://docs.google.com/javax/management/openmbean/SimpleType.html) **extends** [**OpenType**](http://docs.google.com/javax/management/openmbean/OpenType.html)**<**[**T**](http://docs.google.com/javax/management/openmbean/SimpleType.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**2215577471957694503L

| **Serialization Methods** |
| --- |

### readResolve

public [Object](http://docs.google.com/java/lang/Object.html) **readResolve**()  
 throws [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html)

Replace an object read from an [ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) with the unique instance for that value.

**Throws:** [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html) - if the read object cannot be resolved.

| **Class** [**javax.management.openmbean.TabularDataSupport**](http://docs.google.com/javax/management/openmbean/TabularDataSupport.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5720150593236309827L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Deserializes a [TabularDataSupport](http://docs.google.com/javax/management/openmbean/TabularDataSupport.html) from an [ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

| **Serialized Fields** |
| --- |

### dataMap

[Map](http://docs.google.com/java/util/Map.html)<[K](http://docs.google.com/java/util/Map.html),[V](http://docs.google.com/java/util/Map.html)> **dataMap**

This tabular data instance's contents: a [HashMap](http://docs.google.com/java/util/HashMap.html)

### tabularType

[TabularType](http://docs.google.com/javax/management/openmbean/TabularType.html) **tabularType**

This tabular data instance's tabular type

| **Class** [**javax.management.openmbean.TabularType**](http://docs.google.com/javax/management/openmbean/TabularType.html) **extends** [**OpenType**](http://docs.google.com/javax/management/openmbean/OpenType.html)**<**[**TabularData**](http://docs.google.com/javax/management/openmbean/TabularData.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**6554071860220659261L

| **Serialized Fields** |
| --- |

### rowType

[CompositeType](http://docs.google.com/javax/management/openmbean/CompositeType.html) **rowType**

The composite type of rows

### indexNames

[List](http://docs.google.com/java/util/List.html)<[E](http://docs.google.com/java/util/List.html)> **indexNames**

The items used to index each row element, kept in the order the user gave This is an unmodifiable [ArrayList](http://docs.google.com/java/util/ArrayList.html)

| **Package** **javax.management.relation** |
| --- |

| **Class** [**javax.management.relation.InvalidRelationIdException**](http://docs.google.com/javax/management/relation/InvalidRelationIdException.html) **extends** [**RelationException**](http://docs.google.com/javax/management/relation/RelationException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7115040321202754171L

| **Class** [**javax.management.relation.InvalidRelationServiceException**](http://docs.google.com/javax/management/relation/InvalidRelationServiceException.html) **extends** [**RelationException**](http://docs.google.com/javax/management/relation/RelationException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3400722103759507559L

| **Class** [**javax.management.relation.InvalidRelationTypeException**](http://docs.google.com/javax/management/relation/InvalidRelationTypeException.html) **extends** [**RelationException**](http://docs.google.com/javax/management/relation/RelationException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3007446608299169961L

| **Class** [**javax.management.relation.InvalidRoleInfoException**](http://docs.google.com/javax/management/relation/InvalidRoleInfoException.html) **extends** [**RelationException**](http://docs.google.com/javax/management/relation/RelationException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7517834705158932074L

| **Class** [**javax.management.relation.InvalidRoleValueException**](http://docs.google.com/javax/management/relation/InvalidRoleValueException.html) **extends** [**RelationException**](http://docs.google.com/javax/management/relation/RelationException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2066091747301983721L

| **Class** [**javax.management.relation.MBeanServerNotificationFilter**](http://docs.google.com/javax/management/relation/MBeanServerNotificationFilter.html) **extends** [**NotificationFilterSupport**](http://docs.google.com/javax/management/NotificationFilterSupport.html) **implements Serializable** | |
| --- | --- |

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Deserializes an [MBeanServerNotificationFilter](http://docs.google.com/javax/management/relation/MBeanServerNotificationFilter.html) from an [ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serializes an [MBeanServerNotificationFilter](http://docs.google.com/javax/management/relation/MBeanServerNotificationFilter.html) to an [ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### deselectedNames

[List](http://docs.google.com/java/util/List.html)<[E](http://docs.google.com/java/util/List.html)> **deselectedNames**

List of {@link ObjectName}s with no interest

* null means that all {@link ObjectName}s are implicitly deselected (check for explicit selections))
* Empty vector means that no {@link ObjectName} is explicitly deselected

### selectedNames

[List](http://docs.google.com/java/util/List.html)<[E](http://docs.google.com/java/util/List.html)> **selectedNames**

List of {@link ObjectName}s of interest

* null means that all {@link ObjectName}s are implicitly selected (check for explicit deselections)
* Empty vector means that no {@link ObjectName} is explicitly selected

| **Class** [**javax.management.relation.RelationException**](http://docs.google.com/javax/management/relation/RelationException.html) **extends** [**JMException**](http://docs.google.com/javax/management/JMException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5434016005679159613L

| **Class** [**javax.management.relation.RelationNotFoundException**](http://docs.google.com/javax/management/relation/RelationNotFoundException.html) **extends** [**RelationException**](http://docs.google.com/javax/management/relation/RelationException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3793951411158559116L

| **Class** [**javax.management.relation.RelationNotification**](http://docs.google.com/javax/management/relation/RelationNotification.html) **extends** [**Notification**](http://docs.google.com/javax/management/Notification.html) **implements Serializable** | |
| --- | --- |

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Deserializes a [RelationNotification](http://docs.google.com/javax/management/relation/RelationNotification.html) from an [ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serializes a [RelationNotification](http://docs.google.com/javax/management/relation/RelationNotification.html) to an [ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### newRoleValue

[List](http://docs.google.com/java/util/List.html)<[E](http://docs.google.com/java/util/List.html)> **newRoleValue**

New role value ({@link ArrayList} of {@link ObjectName}s) (only for role update)

### oldRoleValue

[List](http://docs.google.com/java/util/List.html)<[E](http://docs.google.com/java/util/List.html)> **oldRoleValue**

Old role value ({@link ArrayList} of {@link ObjectName}s) (only for role update)

### relationId

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

Relation identifier of created/removed/updated relation

### relationObjName

[ObjectName](http://docs.google.com/javax/management/ObjectName.html) **relationObjName**

{@link ObjectName} of the relation MBean of created/removed/updated relation (only if the relation is represented by an MBean)

### relationTypeName

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

Relation type name of created/removed/updated relation

### roleName

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

Name of updated role (only for role update)

### unregisterMBeanList

[List](http://docs.google.com/java/util/List.html)<[E](http://docs.google.com/java/util/List.html)> **unregisterMBeanList**

List of {@link ObjectName}s of referenced MBeans to be unregistered due to relation removal

| **Class** [**javax.management.relation.RelationServiceNotRegisteredException**](http://docs.google.com/javax/management/relation/RelationServiceNotRegisteredException.html) **extends** [**RelationException**](http://docs.google.com/javax/management/relation/RelationException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8454744887157122910L

| **Class** [**javax.management.relation.RelationTypeNotFoundException**](http://docs.google.com/javax/management/relation/RelationTypeNotFoundException.html) **extends** [**RelationException**](http://docs.google.com/javax/management/relation/RelationException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1274155316284300752L

| **Class** [**javax.management.relation.RelationTypeSupport**](http://docs.google.com/javax/management/relation/RelationTypeSupport.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Deserializes a [RelationTypeSupport](http://docs.google.com/javax/management/relation/RelationTypeSupport.html) from an [ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serializes a [RelationTypeSupport](http://docs.google.com/javax/management/relation/RelationTypeSupport.html) to an [ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### isInRelationService

boolean **isInRelationService**

Flag specifying whether the relation type has been declared in the Relation Service (so can no longer be updated)

### roleName2InfoMap

[Map](http://docs.google.com/java/util/Map.html)<[K](http://docs.google.com/java/util/Map.html),[V](http://docs.google.com/java/util/Map.html)> **roleName2InfoMap**

{@link Map} holding the mapping: <role name ({@link String})> -> <role info ({@link RoleInfo} object)>

### typeName

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

Relation type name

| **Class** [**javax.management.relation.Role**](http://docs.google.com/javax/management/relation/Role.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Deserializes a [Role](http://docs.google.com/javax/management/relation/Role.html) from an [ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serializes a [Role](http://docs.google.com/javax/management/relation/Role.html) to an [ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### name

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

Role name

### objectNameList

[List](http://docs.google.com/java/util/List.html)<[E](http://docs.google.com/java/util/List.html)> **objectNameList**

{@link List} of {@link ObjectName}s of referenced MBeans

| **Class** [**javax.management.relation.RoleInfo**](http://docs.google.com/javax/management/relation/RoleInfo.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Deserializes a [RoleInfo](http://docs.google.com/javax/management/relation/RoleInfo.html) from an [ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serializes a [RoleInfo](http://docs.google.com/javax/management/relation/RoleInfo.html) to an [ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### description

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

Role description

### isReadable

boolean **isReadable**

Read access mode: true if role is readable

### isWritable

boolean **isWritable**

Write access mode: true if role is writable

### maxDegree

int **maxDegree**

Maximum degree (i.e. maximum number of referenced MBeans in corresponding role)

### minDegree

int **minDegree**

Minimum degree (i.e. minimum number of referenced MBeans in corresponding role)

### name

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

Role name

### referencedMBeanClassName

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

Name of class of MBean(s) expected to be referenced in corresponding role

| **Class** [**javax.management.relation.RoleInfoNotFoundException**](http://docs.google.com/javax/management/relation/RoleInfoNotFoundException.html) **extends** [**RelationException**](http://docs.google.com/javax/management/relation/RelationException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4394092234999959939L

| **Class** [**javax.management.relation.RoleList**](http://docs.google.com/javax/management/relation/RoleList.html) **extends** [**ArrayList**](http://docs.google.com/java/util/ArrayList.html)**<**[**Object**](http://docs.google.com/java/lang/Object.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**5568344346499649313L

| **Class** [**javax.management.relation.RoleNotFoundException**](http://docs.google.com/javax/management/relation/RoleNotFoundException.html) **extends** [**RelationException**](http://docs.google.com/javax/management/relation/RelationException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2986406101364031481L

| **Class** [**javax.management.relation.RoleResult**](http://docs.google.com/javax/management/relation/RoleResult.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Deserializes a [RoleResult](http://docs.google.com/javax/management/relation/RoleResult.html) from an [ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serializes a [RoleResult](http://docs.google.com/javax/management/relation/RoleResult.html) to an [ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### roleList

[RoleList](http://docs.google.com/javax/management/relation/RoleList.html) **roleList**

List of roles successfully accessed

### unresolvedRoleList

[RoleUnresolvedList](http://docs.google.com/javax/management/relation/RoleUnresolvedList.html) **unresolvedRoleList**

List of roles unsuccessfully accessed

| **Class** [**javax.management.relation.RoleUnresolved**](http://docs.google.com/javax/management/relation/RoleUnresolved.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) in)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Deserializes a [RoleUnresolved](http://docs.google.com/javax/management/relation/RoleUnresolved.html) from an [ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) out)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serializes a [RoleUnresolved](http://docs.google.com/javax/management/relation/RoleUnresolved.html) to an [ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### problemType

int **problemType**

Problem type

### roleName

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

Role name

### roleValue

[List](http://docs.google.com/java/util/List.html)<[E](http://docs.google.com/java/util/List.html)> **roleValue**

Role value ({@link List} of {@link ObjectName} objects)

| **Class** [**javax.management.relation.RoleUnresolvedList**](http://docs.google.com/javax/management/relation/RoleUnresolvedList.html) **extends** [**ArrayList**](http://docs.google.com/java/util/ArrayList.html)**<**[**Object**](http://docs.google.com/java/lang/Object.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**4054902803091433324L

| **Package** **javax.management.remote** |
| --- |

| **Class** [**javax.management.remote.JMXConnectionNotification**](http://docs.google.com/javax/management/remote/JMXConnectionNotification.html) **extends** [**Notification**](http://docs.google.com/javax/management/Notification.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2331308725952627538L

| **Serialized Fields** |
| --- |

### connectionId

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

The connection ID to which this notification pertains. **See Also:**[JMXConnectionNotification.getConnectionId()](http://docs.google.com/javax/management/remote/JMXConnectionNotification.html#getConnectionId())

| **Class** [**javax.management.remote.JMXPrincipal**](http://docs.google.com/javax/management/remote/JMXPrincipal.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4184480100214577411L

| **Serialized Fields** |
| --- |

### name

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

The JMX Remote API name for the identity represented by this JMXPrincipal object. **See Also:**[JMXPrincipal.getName()](http://docs.google.com/javax/management/remote/JMXPrincipal.html#getName())

| **Class** [**javax.management.remote.JMXProviderException**](http://docs.google.com/javax/management/remote/JMXProviderException.html) **extends** [**IOException**](http://docs.google.com/java/io/IOException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3166703627550447198L

| **Serialized Fields** |
| --- |

### cause

[Throwable](http://docs.google.com/java/lang/Throwable.html) **cause**

An exception that caused this exception to be thrown. This field may be null. **See Also:**[JMXProviderException.getCause()](http://docs.google.com/javax/management/remote/JMXProviderException.html#getCause())

| **Class** [**javax.management.remote.JMXServerErrorException**](http://docs.google.com/javax/management/remote/JMXServerErrorException.html) **extends** [**IOException**](http://docs.google.com/java/io/IOException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3996732239558744666L

| **Serialized Fields** |
| --- |

### cause

[Error](http://docs.google.com/java/lang/Error.html) **cause**

An [Error](http://docs.google.com/java/lang/Error.html) that caused this exception to be thrown. **See Also:**[JMXServerErrorException.getCause()](http://docs.google.com/javax/management/remote/JMXServerErrorException.html#getCause())

| **Class** [**javax.management.remote.JMXServiceURL**](http://docs.google.com/javax/management/remote/JMXServiceURL.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8173364409860779292L

| **Serialized Fields** |
| --- |

### protocol

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

The value returned by [JMXServiceURL.getProtocol()](http://docs.google.com/javax/management/remote/JMXServiceURL.html#getProtocol()).

### host

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

The value returned by [JMXServiceURL.getHost()](http://docs.google.com/javax/management/remote/JMXServiceURL.html#getHost()).

### port

int **port**

The value returned by [JMXServiceURL.getPort()](http://docs.google.com/javax/management/remote/JMXServiceURL.html#getPort()).

### urlPath

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

The value returned by [JMXServiceURL.getURLPath()](http://docs.google.com/javax/management/remote/JMXServiceURL.html#getURLPath()).

| **Class** [**javax.management.remote.NotificationResult**](http://docs.google.com/javax/management/remote/NotificationResult.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1191800228721395279L

| **Serialized Fields** |
| --- |

### earliestSequenceNumber

long **earliestSequenceNumber**

### nextSequenceNumber

long **nextSequenceNumber**

### targetedNotifications

[TargetedNotification](http://docs.google.com/javax/management/remote/TargetedNotification.html)[] **targetedNotifications**

| **Class** [**javax.management.remote.SubjectDelegationPermission**](http://docs.google.com/javax/management/remote/SubjectDelegationPermission.html) **extends** [**BasicPermission**](http://docs.google.com/java/security/BasicPermission.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1481618113008682343L

| **Class** [**javax.management.remote.TargetedNotification**](http://docs.google.com/javax/management/remote/TargetedNotification.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7676132089779300926L

| **Serialized Fields** |
| --- |

### notif

[Notification](http://docs.google.com/javax/management/Notification.html) **notif**

A notification to transmit to the other side. **See Also:**[TargetedNotification.getNotification()](http://docs.google.com/javax/management/remote/TargetedNotification.html#getNotification())

### id

[Integer](http://docs.google.com/java/lang/Integer.html) **id**

The ID of the listener to which the notification is targeted. **See Also:**[TargetedNotification.getListenerID()](http://docs.google.com/javax/management/remote/TargetedNotification.html#getListenerID())

| **Package** **javax.management.remote.rmi** |
| --- |

| **Class javax.management.remote.rmi.\_RMIConnection\_Stub extends** [**Stub**](http://docs.google.com/javax/rmi/CORBA/Stub.html) **implements Serializable** | |
| --- | --- |

| **Class javax.management.remote.rmi.\_RMIServer\_Stub extends** [**Stub**](http://docs.google.com/javax/rmi/CORBA/Stub.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.management.remote.rmi.RMIConnectionImpl\_Stub**](http://docs.google.com/javax/management/remote/rmi/RMIConnectionImpl_Stub.html) **extends** [**RemoteStub**](http://docs.google.com/java/rmi/server/RemoteStub.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2L

| **Class** [**javax.management.remote.rmi.RMIConnector**](http://docs.google.com/javax/management/remote/rmi/RMIConnector.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**817323035842634473L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Read RMIConnector fields from an [ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html). Calls s.defaultReadObject() and then initializes all transient variables that need initializing.

**Throws:** [InvalidObjectException](http://docs.google.com/java/io/InvalidObjectException.html) - if none of rmiServer stub or jmxServiceURL are set. [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)**See Also:**[RMIConnector.RMIConnector(JMXServiceURL,Map)](http://docs.google.com/javax/management/remote/rmi/RMIConnector.html#RMIConnector(javax.management.remote.JMXServiceURL,%20java.util.Map)), [RMIConnector.RMIConnector(RMIServer,Map)](http://docs.google.com/javax/management/remote/rmi/RMIConnector.html#RMIConnector(javax.management.remote.rmi.RMIServer,%20java.util.Map))

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Writes the RMIConnector fields to an [ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html).

Connects the underlying RMIServer stub to an ORB, if needed, before serializing it. This is done using the environment map that was provided to the constructor, if any, and as documented in [javax.management.remote.rmi](http://docs.google.com/javax/management/remote/rmi/package-summary.html).

This method then calls s.defaultWriteObject(). Usually, rmiServer is null if this object was constructed with a JMXServiceURL, and jmxServiceURL is null if this object is constructed with a RMIServer stub.

Note that the environment Map is not serialized, since the objects it contains are assumed to be contextual and relevant only with respect to the local environment (class loader, ORB, etc...).

After an RMIConnector is deserialized, it is assumed that the user will call [RMIConnector.connect(Map)](http://docs.google.com/javax/management/remote/rmi/RMIConnector.html#connect(java.util.Map)), providing a new Map that can contain values which are contextually relevant to the new local environment.

Since connection to the ORB is needed prior to serializing, and since the ORB to connect to is one of those contextual parameters, it is not recommended to re-serialize a just de-serialized object - as the de-serialized object has no map. Thus, when an RMIConnector object is needed for serialization or transmission to a remote application, it is recommended to obtain a new RMIConnector stub by calling [RMIConnectorServer.toJMXConnector(Map)](http://docs.google.com/javax/management/remote/rmi/RMIConnectorServer.html#toJMXConnector(java.util.Map)).

**Throws:** [InvalidObjectException](http://docs.google.com/java/io/InvalidObjectException.html) - if none of rmiServer stub or jmxServiceURL are set. [IOException](http://docs.google.com/java/io/IOException.html)**See Also:**[RMIConnector.RMIConnector(JMXServiceURL,Map)](http://docs.google.com/javax/management/remote/rmi/RMIConnector.html#RMIConnector(javax.management.remote.JMXServiceURL,%20java.util.Map)), [RMIConnector.RMIConnector(RMIServer,Map)](http://docs.google.com/javax/management/remote/rmi/RMIConnector.html#RMIConnector(javax.management.remote.rmi.RMIServer,%20java.util.Map))

| **Serialized Fields** |
| --- |

### rmiServer

[RMIServer](http://docs.google.com/javax/management/remote/rmi/RMIServer.html) **rmiServer**

The RMIServer stub of the RMI JMX Connector server to which this client connector is (or will be) connected. This field can be null when jmxServiceURL is not null. This includes the case where jmxServiceURL contains a serialized RMIServer stub. If both rmiServer and jmxServiceURL are null then serialization will fail. **See Also:**[RMIConnector.RMIConnector(RMIServer,Map)](http://docs.google.com/javax/management/remote/rmi/RMIConnector.html#RMIConnector(javax.management.remote.rmi.RMIServer,%20java.util.Map))

### jmxServiceURL

[JMXServiceURL](http://docs.google.com/javax/management/remote/JMXServiceURL.html) **jmxServiceURL**

The JMXServiceURL of the RMI JMX Connector server to which this client connector will be connected. This field can be null when rmiServer is not null. If both rmiServer and jmxServiceURL are null then serialization will fail. **See Also:**[RMIConnector.RMIConnector(JMXServiceURL,Map)](http://docs.google.com/javax/management/remote/rmi/RMIConnector.html#RMIConnector(javax.management.remote.JMXServiceURL,%20java.util.Map))

| **Class** [**javax.management.remote.rmi.RMIServerImpl\_Stub**](http://docs.google.com/javax/management/remote/rmi/RMIServerImpl_Stub.html) **extends** [**RemoteStub**](http://docs.google.com/java/rmi/server/RemoteStub.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2L

| **Package** **javax.management.timer** |
| --- |

| **Class** [**javax.management.timer.TimerNotification**](http://docs.google.com/javax/management/timer/TimerNotification.html) **extends** [**Notification**](http://docs.google.com/javax/management/Notification.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1798492029603825750L

| **Serialized Fields** |
| --- |

### notificationID

[Integer](http://docs.google.com/java/lang/Integer.html) **notificationID**

Timer notification identifier. This identifier is used to retrieve a timer notification from the timer list of notifications.

| **Package** **javax.naming** |
| --- |

| **Class** [**javax.naming.AuthenticationException**](http://docs.google.com/javax/naming/AuthenticationException.html) **extends** [**NamingSecurityException**](http://docs.google.com/javax/naming/NamingSecurityException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3678497619904568096L

| **Class** [**javax.naming.AuthenticationNotSupportedException**](http://docs.google.com/javax/naming/AuthenticationNotSupportedException.html) **extends** [**NamingSecurityException**](http://docs.google.com/javax/naming/NamingSecurityException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7149033933259492300L

| **Class** [**javax.naming.BinaryRefAddr**](http://docs.google.com/javax/naming/BinaryRefAddr.html) **extends** [**RefAddr**](http://docs.google.com/javax/naming/RefAddr.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3415254970957330361L

| **Serialized Fields** |
| --- |

### buf

byte[] **buf**

Contains the bytes of the address. This field is initialized by the constructor and returned using getAddressBytes() and getAddressContents().

| **Class** [**javax.naming.Binding**](http://docs.google.com/javax/naming/Binding.html) **extends** [**NameClassPair**](http://docs.google.com/javax/naming/NameClassPair.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8839217842691845890L

| **Serialized Fields** |
| --- |

### boundObj

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

Contains this binding's object. It is initialized by the constuctor and can be updated using setObject.

**See Also:**[Binding.getObject()](http://docs.google.com/javax/naming/Binding.html#getObject()), [Binding.setObject(java.lang.Object)](http://docs.google.com/javax/naming/Binding.html#setObject(java.lang.Object))

| **Class** [**javax.naming.CannotProceedException**](http://docs.google.com/javax/naming/CannotProceedException.html) **extends** [**NamingException**](http://docs.google.com/javax/naming/NamingException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1219724816191576813L

| **Serialized Fields** |
| --- |

### remainingNewName

[Name](http://docs.google.com/javax/naming/Name.html) **remainingNewName**

Contains the remaining unresolved part of the second "name" argument to Context.rename(). This information necessary for continuing the Context.rename() operation.

This field is initialized to null. It should not be manipulated directly: it should be accessed and updated using getRemainingName() and setRemainingName().

**See Also:**[CannotProceedException.getRemainingNewName()](http://docs.google.com/javax/naming/CannotProceedException.html#getRemainingNewName()), [CannotProceedException.setRemainingNewName(javax.naming.Name)](http://docs.google.com/javax/naming/CannotProceedException.html#setRemainingNewName(javax.naming.Name))

### environment

[Hashtable](http://docs.google.com/java/util/Hashtable.html)<[K](http://docs.google.com/java/util/Hashtable.html),[V](http://docs.google.com/java/util/Hashtable.html)> **environment**

Contains the environment relevant for the Context or DirContext method that cannot proceed.

This field is initialized to null. It should not be manipulated directly: it should be accessed and updated using getEnvironment() and setEnvironment().

**See Also:**[CannotProceedException.getEnvironment()](http://docs.google.com/javax/naming/CannotProceedException.html#getEnvironment()), [CannotProceedException.setEnvironment(java.util.Hashtable)](http://docs.google.com/javax/naming/CannotProceedException.html#setEnvironment(java.util.Hashtable))

### altName

[Name](http://docs.google.com/javax/naming/Name.html) **altName**

Contains the name of the resolved object, relative to the context altNameCtx. It is a composite name. If null, then no name is specified. See the javax.naming.spi.ObjectFactory.getObjectInstance method for details on how this is used.

This field is initialized to null. It should not be manipulated directly: it should be accessed and updated using getAltName() and setAltName().

**See Also:**[CannotProceedException.getAltName()](http://docs.google.com/javax/naming/CannotProceedException.html#getAltName()), [CannotProceedException.setAltName(javax.naming.Name)](http://docs.google.com/javax/naming/CannotProceedException.html#setAltName(javax.naming.Name)), [CannotProceedException.altNameCtx](http://docs.google.com/javax/naming/CannotProceedException.html#altNameCtx), [ObjectFactory.getObjectInstance(java.lang.Object, javax.naming.Name, javax.naming.Context, java.util.Hashtable)](http://docs.google.com/javax/naming/spi/ObjectFactory.html#getObjectInstance(java.lang.Object,%20javax.naming.Name,%20javax.naming.Context,%20java.util.Hashtable))

### altNameCtx

[Context](http://docs.google.com/javax/naming/Context.html) **altNameCtx**

Contains the context relative to which altName is specified. If null, then the default initial context is implied. See the javax.naming.spi.ObjectFactory.getObjectInstance method for details on how this is used.

This field is initialized to null. It should not be manipulated directly: it should be accessed and updated using getAltNameCtx() and setAltNameCtx().

**See Also:**[CannotProceedException.getAltNameCtx()](http://docs.google.com/javax/naming/CannotProceedException.html#getAltNameCtx()), [CannotProceedException.setAltNameCtx(javax.naming.Context)](http://docs.google.com/javax/naming/CannotProceedException.html#setAltNameCtx(javax.naming.Context)), [CannotProceedException.altName](http://docs.google.com/javax/naming/CannotProceedException.html#altName), [ObjectFactory.getObjectInstance(java.lang.Object, javax.naming.Name, javax.naming.Context, java.util.Hashtable)](http://docs.google.com/javax/naming/spi/ObjectFactory.html#getObjectInstance(java.lang.Object,%20javax.naming.Name,%20javax.naming.Context,%20java.util.Hashtable))

| **Class** [**javax.naming.CommunicationException**](http://docs.google.com/javax/naming/CommunicationException.html) **extends** [**NamingException**](http://docs.google.com/javax/naming/NamingException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3618507780299986611L

| **Class** [**javax.naming.CompositeName**](http://docs.google.com/javax/naming/CompositeName.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1667768148915813118L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Overridden to avoid implementation dependency.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Overridden to avoid implementation dependency.

**Serial Data:** The number of components (an int) followed by the individual components (each a String). **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Class** [**javax.naming.CompoundName**](http://docs.google.com/javax/naming/CompoundName.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3513100557083972036L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Overridden to avoid implementation dependency.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Overridden to avoid implementation dependency.

**Serial Data:** The syntax Properties, followed by the number of components (an int), and the individual components (each a String). **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Class** [**javax.naming.ConfigurationException**](http://docs.google.com/javax/naming/ConfigurationException.html) **extends** [**NamingException**](http://docs.google.com/javax/naming/NamingException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2535156726228855704L

| **Class** [**javax.naming.ContextNotEmptyException**](http://docs.google.com/javax/naming/ContextNotEmptyException.html) **extends** [**NamingException**](http://docs.google.com/javax/naming/NamingException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1090963683348219877L

| **Class** [**javax.naming.InsufficientResourcesException**](http://docs.google.com/javax/naming/InsufficientResourcesException.html) **extends** [**NamingException**](http://docs.google.com/javax/naming/NamingException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6227672693037844532L

| **Class** [**javax.naming.InterruptedNamingException**](http://docs.google.com/javax/naming/InterruptedNamingException.html) **extends** [**NamingException**](http://docs.google.com/javax/naming/NamingException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6404516648893194728L

| **Class** [**javax.naming.InvalidNameException**](http://docs.google.com/javax/naming/InvalidNameException.html) **extends** [**NamingException**](http://docs.google.com/javax/naming/NamingException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8370672380823801105L

| **Class** [**javax.naming.LimitExceededException**](http://docs.google.com/javax/naming/LimitExceededException.html) **extends** [**NamingException**](http://docs.google.com/javax/naming/NamingException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-776898738660207856L

| **Class** [**javax.naming.LinkException**](http://docs.google.com/javax/naming/LinkException.html) **extends** [**NamingException**](http://docs.google.com/javax/naming/NamingException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7967662604076777712L

| **Serialized Fields** |
| --- |

### linkResolvedName

[Name](http://docs.google.com/javax/naming/Name.html) **linkResolvedName**

Contains the part of the link that has been successfully resolved. It is a composite name and can be null. This field is initialized by the constructors. You should access and manipulate this field through its get and set methods.

**See Also:**[LinkException.getLinkResolvedName()](http://docs.google.com/javax/naming/LinkException.html#getLinkResolvedName()), [LinkException.setLinkResolvedName(javax.naming.Name)](http://docs.google.com/javax/naming/LinkException.html#setLinkResolvedName(javax.naming.Name))

### linkResolvedObj

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

Contains the object to which resolution of the part of the link was successful. Can be null. This field is initialized by the constructors. You should access and manipulate this field through its get and set methods.

**See Also:**[LinkException.getLinkResolvedObj()](http://docs.google.com/javax/naming/LinkException.html#getLinkResolvedObj()), [LinkException.setLinkResolvedObj(java.lang.Object)](http://docs.google.com/javax/naming/LinkException.html#setLinkResolvedObj(java.lang.Object))

### linkRemainingName

[Name](http://docs.google.com/javax/naming/Name.html) **linkRemainingName**

Contains the remaining link name that has not been resolved yet. It is a composite name and can be null. This field is initialized by the constructors. You should access and manipulate this field through its get and set methods.

**See Also:**[LinkException.getLinkRemainingName()](http://docs.google.com/javax/naming/LinkException.html#getLinkRemainingName()), [LinkException.setLinkRemainingName(javax.naming.Name)](http://docs.google.com/javax/naming/LinkException.html#setLinkRemainingName(javax.naming.Name))

### linkExplanation

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

Contains the exception of why resolution of the link failed. Can be null. This field is initialized by the constructors. You should access and manipulate this field through its get and set methods.

**See Also:**[LinkException.getLinkExplanation()](http://docs.google.com/javax/naming/LinkException.html#getLinkExplanation()), [LinkException.setLinkExplanation(java.lang.String)](http://docs.google.com/javax/naming/LinkException.html#setLinkExplanation(java.lang.String))

| **Class** [**javax.naming.LinkLoopException**](http://docs.google.com/javax/naming/LinkLoopException.html) **extends** [**LinkException**](http://docs.google.com/javax/naming/LinkException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3119189944325198009L

| **Class** [**javax.naming.LinkRef**](http://docs.google.com/javax/naming/LinkRef.html) **extends** [**Reference**](http://docs.google.com/javax/naming/Reference.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5386290613498931298L

| **Class** [**javax.naming.MalformedLinkException**](http://docs.google.com/javax/naming/MalformedLinkException.html) **extends** [**LinkException**](http://docs.google.com/javax/naming/LinkException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3066740437737830242L

| **Class** [**javax.naming.NameAlreadyBoundException**](http://docs.google.com/javax/naming/NameAlreadyBoundException.html) **extends** [**NamingException**](http://docs.google.com/javax/naming/NamingException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8491441000356780586L

| **Class** [**javax.naming.NameClassPair**](http://docs.google.com/javax/naming/NameClassPair.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5620776610160863339L

| **Serialized Fields** |
| --- |

### name

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

Contains the name of this NameClassPair. It is initialized by the constructor and can be updated using setName().

**See Also:**[NameClassPair.getName()](http://docs.google.com/javax/naming/NameClassPair.html#getName()), [NameClassPair.setName(java.lang.String)](http://docs.google.com/javax/naming/NameClassPair.html#setName(java.lang.String))

### className

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

Contains the class name contained in this NameClassPair. It is initialized by the constructor and can be updated using setClassName().

**See Also:**[NameClassPair.getClassName()](http://docs.google.com/javax/naming/NameClassPair.html#getClassName()), [NameClassPair.setClassName(java.lang.String)](http://docs.google.com/javax/naming/NameClassPair.html#setClassName(java.lang.String))

### fullName

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

Contains the full name of this NameClassPair within its own namespace. It is initialized using setNameInNamespace()

**See Also:**[NameClassPair.getNameInNamespace()](http://docs.google.com/javax/naming/NameClassPair.html#getNameInNamespace()), [NameClassPair.setNameInNamespace(java.lang.String)](http://docs.google.com/javax/naming/NameClassPair.html#setNameInNamespace(java.lang.String))

### isRel

boolean **isRel**

Records whether the name of this NameClassPair is relative to the target context. It is initialized by the constructor and can be updated using setRelative().

**See Also:**[NameClassPair.isRelative()](http://docs.google.com/javax/naming/NameClassPair.html#isRelative()), [NameClassPair.setRelative(boolean)](http://docs.google.com/javax/naming/NameClassPair.html#setRelative(boolean)), [NameClassPair.getName()](http://docs.google.com/javax/naming/NameClassPair.html#getName()), [NameClassPair.setName(java.lang.String)](http://docs.google.com/javax/naming/NameClassPair.html#setName(java.lang.String))

| **Class** [**javax.naming.NameNotFoundException**](http://docs.google.com/javax/naming/NameNotFoundException.html) **extends** [**NamingException**](http://docs.google.com/javax/naming/NamingException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8007156725367842053L

| **Class** [**javax.naming.NamingException**](http://docs.google.com/javax/naming/NamingException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1299181962103167177L

| **Serialized Fields** |
| --- |

### resolvedName

[Name](http://docs.google.com/javax/naming/Name.html) **resolvedName**

Contains the part of the name that has been successfully resolved. It is a composite name and can be null. This field is initialized by the constructors. You should access and manipulate this field through its get and set methods.

**See Also:**[NamingException.getResolvedName()](http://docs.google.com/javax/naming/NamingException.html#getResolvedName()), [NamingException.setResolvedName(javax.naming.Name)](http://docs.google.com/javax/naming/NamingException.html#setResolvedName(javax.naming.Name))

### resolvedObj

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

Contains the object to which resolution of the part of the name was successful. Can be null. This field is initialized by the constructors. You should access and manipulate this field through its get and set methods.

**See Also:**[NamingException.getResolvedObj()](http://docs.google.com/javax/naming/NamingException.html#getResolvedObj()), [NamingException.setResolvedObj(java.lang.Object)](http://docs.google.com/javax/naming/NamingException.html#setResolvedObj(java.lang.Object))

### remainingName

[Name](http://docs.google.com/javax/naming/Name.html) **remainingName**

Contains the remaining name that has not been resolved yet. It is a composite name and can be null. This field is initialized by the constructors. You should access and manipulate this field through its get, set, "append" methods.

**See Also:**[NamingException.getRemainingName()](http://docs.google.com/javax/naming/NamingException.html#getRemainingName()), [NamingException.setRemainingName(javax.naming.Name)](http://docs.google.com/javax/naming/NamingException.html#setRemainingName(javax.naming.Name)), [NamingException.appendRemainingName(javax.naming.Name)](http://docs.google.com/javax/naming/NamingException.html#appendRemainingName(javax.naming.Name)), [NamingException.appendRemainingComponent(java.lang.String)](http://docs.google.com/javax/naming/NamingException.html#appendRemainingComponent(java.lang.String))

### rootException

[Throwable](http://docs.google.com/java/lang/Throwable.html) **rootException**

Contains the original exception that caused this NamingException to be thrown. This field is set if there is additional information that could be obtained from the original exception, or if the original exception could not be mapped to a subclass of NamingException. Can be null.

This field predates the general-purpose exception chaining facility. The [NamingException.initCause(Throwable)](http://docs.google.com/javax/naming/NamingException.html#initCause(java.lang.Throwable)) and [NamingException.getCause()](http://docs.google.com/javax/naming/NamingException.html#getCause()) methods are now the preferred means of accessing this information.

**See Also:**[NamingException.getRootCause()](http://docs.google.com/javax/naming/NamingException.html#getRootCause()), [NamingException.setRootCause(Throwable)](http://docs.google.com/javax/naming/NamingException.html#setRootCause(java.lang.Throwable)), [NamingException.initCause(Throwable)](http://docs.google.com/javax/naming/NamingException.html#initCause(java.lang.Throwable)), [NamingException.getCause()](http://docs.google.com/javax/naming/NamingException.html#getCause())

| **Class** [**javax.naming.NamingSecurityException**](http://docs.google.com/javax/naming/NamingSecurityException.html) **extends** [**NamingException**](http://docs.google.com/javax/naming/NamingException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5855287647294685775L

| **Class** [**javax.naming.NoInitialContextException**](http://docs.google.com/javax/naming/NoInitialContextException.html) **extends** [**NamingException**](http://docs.google.com/javax/naming/NamingException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3413733186901258623L

| **Class** [**javax.naming.NoPermissionException**](http://docs.google.com/javax/naming/NoPermissionException.html) **extends** [**NamingSecurityException**](http://docs.google.com/javax/naming/NamingSecurityException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8395332708699751775L

| **Class** [**javax.naming.NotContextException**](http://docs.google.com/javax/naming/NotContextException.html) **extends** [**NamingException**](http://docs.google.com/javax/naming/NamingException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**849752551644540417L

| **Class** [**javax.naming.OperationNotSupportedException**](http://docs.google.com/javax/naming/OperationNotSupportedException.html) **extends** [**NamingException**](http://docs.google.com/javax/naming/NamingException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5493232822427682064L

| **Class** [**javax.naming.PartialResultException**](http://docs.google.com/javax/naming/PartialResultException.html) **extends** [**NamingException**](http://docs.google.com/javax/naming/NamingException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2572144970049426786L

| **Class** [**javax.naming.RefAddr**](http://docs.google.com/javax/naming/RefAddr.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1468165120479154358L

| **Serialized Fields** |
| --- |

### addrType

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

Contains the type of this address.

| **Class** [**javax.naming.Reference**](http://docs.google.com/javax/naming/Reference.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1673475790065791735L

| **Serialized Fields** |
| --- |

### className

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

Contains the fully-qualified name of the class of the object to which this Reference refers.

**See Also:**[Class.getName()](http://docs.google.com/java/lang/Class.html#getName())

### addrs

[Vector](http://docs.google.com/java/util/Vector.html)<[E](http://docs.google.com/java/util/Vector.html)> **addrs**

Contains the addresses contained in this Reference. Initialized by constructor.

### classFactory

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

Contains the name of the factory class for creating an instance of the object to which this Reference refers. Initialized to null.

### classFactoryLocation

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

Contains the location of the factory class. Initialized to null.

| **Class** [**javax.naming.ReferralException**](http://docs.google.com/javax/naming/ReferralException.html) **extends** [**NamingException**](http://docs.google.com/javax/naming/NamingException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2881363844695698876L

| **Class** [**javax.naming.ServiceUnavailableException**](http://docs.google.com/javax/naming/ServiceUnavailableException.html) **extends** [**NamingException**](http://docs.google.com/javax/naming/NamingException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4996964726566773444L

| **Class** [**javax.naming.SizeLimitExceededException**](http://docs.google.com/javax/naming/SizeLimitExceededException.html) **extends** [**LimitExceededException**](http://docs.google.com/javax/naming/LimitExceededException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7129289564879168579L

| **Class** [**javax.naming.StringRefAddr**](http://docs.google.com/javax/naming/StringRefAddr.html) **extends** [**RefAddr**](http://docs.google.com/javax/naming/RefAddr.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8913762495138505527L

| **Serialized Fields** |
| --- |

### contents

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

Contains the contents of this address. Can be null.

| **Class** [**javax.naming.TimeLimitExceededException**](http://docs.google.com/javax/naming/TimeLimitExceededException.html) **extends** [**LimitExceededException**](http://docs.google.com/javax/naming/LimitExceededException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3597009011385034696L

| **Package** **javax.naming.directory** |
| --- |

| **Class** [**javax.naming.directory.AttributeInUseException**](http://docs.google.com/javax/naming/directory/AttributeInUseException.html) **extends** [**NamingException**](http://docs.google.com/javax/naming/NamingException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4437710305529322564L

| **Class** [**javax.naming.directory.AttributeModificationException**](http://docs.google.com/javax/naming/directory/AttributeModificationException.html) **extends** [**NamingException**](http://docs.google.com/javax/naming/NamingException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8060676069678710186L

| **Serialized Fields** |
| --- |

### unexecs

[ModificationItem](http://docs.google.com/javax/naming/directory/ModificationItem.html)[] **unexecs**

Contains the possibly null list of unexecuted modifications.

| **Class** [**javax.naming.directory.BasicAttribute**](http://docs.google.com/javax/naming/directory/BasicAttribute.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6743528196119291326L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Overridden to avoid exposing implementation details.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Overridden to avoid exposing implementation details

**Serial Data:** Default field (the attribute ID -- a String), followed by the number of values (an int), and the individual values. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### attrID

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

Holds the attribute's id. It is initialized by the public constructor and cannot be null unless methods in BasicAttribute that use attrID have been overridden.

### ordered

boolean **ordered**

A flag for recording whether this attribute's values are ordered.

| **Class** [**javax.naming.directory.BasicAttributes**](http://docs.google.com/javax/naming/directory/BasicAttributes.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4980164073184639448L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Overridden to avoid exposing implementation details.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Overridden to avoid exposing implementation details.

**Serial Data:** Default field (ignoreCase flag -- a boolean), followed by the number of attributes in the set (an int), and then the individual Attribute objects. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### ignoreCase

boolean **ignoreCase**

Indicates whether case of attribute ids is ignored.

| **Class** [**javax.naming.directory.InvalidAttributeIdentifierException**](http://docs.google.com/javax/naming/directory/InvalidAttributeIdentifierException.html) **extends** [**NamingException**](http://docs.google.com/javax/naming/NamingException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-9036920266322999923L

| **Class** [**javax.naming.directory.InvalidAttributesException**](http://docs.google.com/javax/naming/directory/InvalidAttributesException.html) **extends** [**NamingException**](http://docs.google.com/javax/naming/NamingException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2607612850539889765L

| **Class** [**javax.naming.directory.InvalidAttributeValueException**](http://docs.google.com/javax/naming/directory/InvalidAttributeValueException.html) **extends** [**NamingException**](http://docs.google.com/javax/naming/NamingException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8720050295499275011L

| **Class** [**javax.naming.directory.InvalidSearchControlsException**](http://docs.google.com/javax/naming/directory/InvalidSearchControlsException.html) **extends** [**NamingException**](http://docs.google.com/javax/naming/NamingException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5124108943352665777L

| **Class** [**javax.naming.directory.InvalidSearchFilterException**](http://docs.google.com/javax/naming/directory/InvalidSearchFilterException.html) **extends** [**NamingException**](http://docs.google.com/javax/naming/NamingException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2902700940682875441L

| **Class** [**javax.naming.directory.ModificationItem**](http://docs.google.com/javax/naming/directory/ModificationItem.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7573258562534746850L

| **Serialized Fields** |
| --- |

### mod\_op

int **mod\_op**

Contains an integer identify the modification to be performed.

### attr

[Attribute](http://docs.google.com/javax/naming/directory/Attribute.html) **attr**

Contains the attribute identifying the attribute and/or its value to be applied for the modification.

| **Class** [**javax.naming.directory.NoSuchAttributeException**](http://docs.google.com/javax/naming/directory/NoSuchAttributeException.html) **extends** [**NamingException**](http://docs.google.com/javax/naming/NamingException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4836415647935888137L

| **Class** [**javax.naming.directory.SchemaViolationException**](http://docs.google.com/javax/naming/directory/SchemaViolationException.html) **extends** [**NamingException**](http://docs.google.com/javax/naming/NamingException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3041762429525049663L

| **Class** [**javax.naming.directory.SearchControls**](http://docs.google.com/javax/naming/directory/SearchControls.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2480540967773454797L

| **Serialized Fields** |
| --- |

### searchScope

int **searchScope**

Contains the scope with which to apply the search. One of ONELEVEL\_SCOPE, OBJECT\_SCOPE, or SUBTREE\_SCOPE.

### timeLimit

int **timeLimit**

Contains the milliseconds to wait before returning from search.

### derefLink

boolean **derefLink**

Indicates whether JNDI links are dereferenced during search.

### returnObj

boolean **returnObj**

Indicates whether object is returned in SearchResult.

### countLimit

long **countLimit**

Contains the maximum number of SearchResults to return.

### attributesToReturn

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

Contains the list of attributes to be returned in SearchResult for each matching entry of search. null indicates that all attributes are to be returned.

| **Class** [**javax.naming.directory.SearchResult**](http://docs.google.com/javax/naming/directory/SearchResult.html) **extends** [**Binding**](http://docs.google.com/javax/naming/Binding.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-9158063327699723172L

| **Serialized Fields** |
| --- |

### attrs

[Attributes](http://docs.google.com/javax/naming/directory/Attributes.html) **attrs**

Contains the attributes returned with the object.

| **Package** **javax.naming.event** |
| --- |

| **Class** [**javax.naming.event.NamingEvent**](http://docs.google.com/javax/naming/event/NamingEvent.html) **extends** [**EventObject**](http://docs.google.com/java/util/EventObject.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7126752885365133499L

| **Serialized Fields** |
| --- |

### changeInfo

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

Contains information about the change that generated this event.

### type

int **type**

Contains the type of this event.

**See Also:**[NamingEvent.OBJECT\_ADDED](http://docs.google.com/javax/naming/event/NamingEvent.html#OBJECT_ADDED), [NamingEvent.OBJECT\_REMOVED](http://docs.google.com/javax/naming/event/NamingEvent.html#OBJECT_REMOVED), [NamingEvent.OBJECT\_RENAMED](http://docs.google.com/javax/naming/event/NamingEvent.html#OBJECT_RENAMED), [NamingEvent.OBJECT\_CHANGED](http://docs.google.com/javax/naming/event/NamingEvent.html#OBJECT_CHANGED)

### oldBinding

[Binding](http://docs.google.com/javax/naming/Binding.html) **oldBinding**

Contains information about the object before the change.

### newBinding

[Binding](http://docs.google.com/javax/naming/Binding.html) **newBinding**

Contains information about the object after the change.

| **Class** [**javax.naming.event.NamingExceptionEvent**](http://docs.google.com/javax/naming/event/NamingExceptionEvent.html) **extends** [**EventObject**](http://docs.google.com/java/util/EventObject.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4877678086134736336L

| **Serialized Fields** |
| --- |

### exception

[NamingException](http://docs.google.com/javax/naming/NamingException.html) **exception**

Contains the exception that was thrown

| **Package** **javax.naming.ldap** |
| --- |

| **Class** [**javax.naming.ldap.BasicControl**](http://docs.google.com/javax/naming/ldap/BasicControl.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4233907508771791687L

| **Serialized Fields** |
| --- |

### id

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

The control's object identifier string.

### criticality

boolean **criticality**

The control's criticality.

### value

byte[] **value**

The control's ASN.1 BER encoded value.

| **Class** [**javax.naming.ldap.LdapName**](http://docs.google.com/javax/naming/ldap/LdapName.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1595520034788997356L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serializes only the unparsed DN, for compactness and to avoid any implementation dependency.

**Serial Data:** The DN string **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Class** [**javax.naming.ldap.LdapReferralException**](http://docs.google.com/javax/naming/ldap/LdapReferralException.html) **extends** [**ReferralException**](http://docs.google.com/javax/naming/ReferralException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1668992791764950804L

| **Class** [**javax.naming.ldap.ManageReferralControl**](http://docs.google.com/javax/naming/ldap/ManageReferralControl.html) **extends** [**BasicControl**](http://docs.google.com/javax/naming/ldap/BasicControl.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3017756160149982566L

| **Class** [**javax.naming.ldap.PagedResultsControl**](http://docs.google.com/javax/naming/ldap/PagedResultsControl.html) **extends** [**BasicControl**](http://docs.google.com/javax/naming/ldap/BasicControl.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6684806685736844298L

| **Class** [**javax.naming.ldap.PagedResultsResponseControl**](http://docs.google.com/javax/naming/ldap/PagedResultsResponseControl.html) **extends** [**BasicControl**](http://docs.google.com/javax/naming/ldap/BasicControl.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8819778744844514666L

| **Serialized Fields** |
| --- |

### resultSize

int **resultSize**

An estimate of the number of entries in the search result.

### cookie

byte[] **cookie**

A server-generated cookie.

| **Class** [**javax.naming.ldap.Rdn**](http://docs.google.com/javax/naming/ldap/Rdn.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5994465067210009656L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serializes only the unparsed RDN, for compactness and to avoid any implementation dependency.

**Serial Data:** The RDN string **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Class** [**javax.naming.ldap.SortControl**](http://docs.google.com/javax/naming/ldap/SortControl.html) **extends** [**BasicControl**](http://docs.google.com/javax/naming/ldap/BasicControl.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1965961680233330744L

| **Class** [**javax.naming.ldap.SortResponseControl**](http://docs.google.com/javax/naming/ldap/SortResponseControl.html) **extends** [**BasicControl**](http://docs.google.com/javax/naming/ldap/BasicControl.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5142939176006310877L

| **Serialized Fields** |
| --- |

### resultCode

int **resultCode**

The sort result code.

### badAttrId

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

The ID of the attribute that caused the sort to fail.

| **Class** [**javax.naming.ldap.StartTlsRequest**](http://docs.google.com/javax/naming/ldap/StartTlsRequest.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4441679576360753397L

| **Class** [**javax.naming.ldap.StartTlsResponse**](http://docs.google.com/javax/naming/ldap/StartTlsResponse.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8372842182579276418L

| **Class** [**javax.naming.ldap.UnsolicitedNotificationEvent**](http://docs.google.com/javax/naming/ldap/UnsolicitedNotificationEvent.html) **extends** [**EventObject**](http://docs.google.com/java/util/EventObject.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2382603380799883705L

| **Serialized Fields** |
| --- |

### notice

[UnsolicitedNotification](http://docs.google.com/javax/naming/ldap/UnsolicitedNotification.html) **notice**

The notification that caused this event to be fired.

| **Package** **javax.naming.spi** |
| --- |

| **Class** [**javax.naming.spi.ResolveResult**](http://docs.google.com/javax/naming/spi/ResolveResult.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4552108072002407559L

| **Serialized Fields** |
| --- |

### resolvedObj

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

Field containing the Object that was resolved to successfully. It can be null only when constructed using a subclass. Constructors should always initialize this.

### remainingName

[Name](http://docs.google.com/javax/naming/Name.html) **remainingName**

Field containing the remaining name yet to be resolved. It can be null only when constructed using a subclass. Constructors should always initialize this.

| **Package** **javax.net.ssl** |
| --- |

| **Class** [**javax.net.ssl.HandshakeCompletedEvent**](http://docs.google.com/javax/net/ssl/HandshakeCompletedEvent.html) **extends** [**EventObject**](http://docs.google.com/java/util/EventObject.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.net.ssl.SSLException**](http://docs.google.com/javax/net/ssl/SSLException.html) **extends** [**IOException**](http://docs.google.com/java/io/IOException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.net.ssl.SSLHandshakeException**](http://docs.google.com/javax/net/ssl/SSLHandshakeException.html) **extends** [**SSLException**](http://docs.google.com/javax/net/ssl/SSLException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.net.ssl.SSLKeyException**](http://docs.google.com/javax/net/ssl/SSLKeyException.html) **extends** [**SSLException**](http://docs.google.com/javax/net/ssl/SSLException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.net.ssl.SSLPeerUnverifiedException**](http://docs.google.com/javax/net/ssl/SSLPeerUnverifiedException.html) **extends** [**SSLException**](http://docs.google.com/javax/net/ssl/SSLException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.net.ssl.SSLPermission**](http://docs.google.com/javax/net/ssl/SSLPermission.html) **extends** [**BasicPermission**](http://docs.google.com/java/security/BasicPermission.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.net.ssl.SSLProtocolException**](http://docs.google.com/javax/net/ssl/SSLProtocolException.html) **extends** [**SSLException**](http://docs.google.com/javax/net/ssl/SSLException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.net.ssl.SSLSessionBindingEvent**](http://docs.google.com/javax/net/ssl/SSLSessionBindingEvent.html) **extends** [**EventObject**](http://docs.google.com/java/util/EventObject.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### name

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

The name to which the object is being bound or unbound

| **Package** **javax.print** |
| --- |

| **Class** [**javax.print.DocFlavor**](http://docs.google.com/javax/print/DocFlavor.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4512080796965449721L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html)

Reconstitute an instance from a stream (that is, deserialize it).

**Serial Data:** The serialised form of a DocFlavor is the String naming the representation class followed by the String representing the canonical form of the mime type. **Throws:** [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Write the instance to a stream (ie serialize the object).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### myClassName

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

Representation class name.

| **Class** [**javax.print.DocFlavor.BYTE\_ARRAY**](http://docs.google.com/javax/print/DocFlavor.BYTE_ARRAY.html) **extends** [**DocFlavor**](http://docs.google.com/javax/print/DocFlavor.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-9065578006593857475L

| **Class** [**javax.print.DocFlavor.CHAR\_ARRAY**](http://docs.google.com/javax/print/DocFlavor.CHAR_ARRAY.html) **extends** [**DocFlavor**](http://docs.google.com/javax/print/DocFlavor.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8720590903724405128L

| **Class** [**javax.print.DocFlavor.INPUT\_STREAM**](http://docs.google.com/javax/print/DocFlavor.INPUT_STREAM.html) **extends** [**DocFlavor**](http://docs.google.com/javax/print/DocFlavor.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7045842700749194127L

| **Class** [**javax.print.DocFlavor.READER**](http://docs.google.com/javax/print/DocFlavor.READER.html) **extends** [**DocFlavor**](http://docs.google.com/javax/print/DocFlavor.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7100295812579351567L

| **Class** [**javax.print.DocFlavor.SERVICE\_FORMATTED**](http://docs.google.com/javax/print/DocFlavor.SERVICE_FORMATTED.html) **extends** [**DocFlavor**](http://docs.google.com/javax/print/DocFlavor.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6181337766266637256L

| **Class** [**javax.print.DocFlavor.STRING**](http://docs.google.com/javax/print/DocFlavor.STRING.html) **extends** [**DocFlavor**](http://docs.google.com/javax/print/DocFlavor.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4414407504887034035L

| **Class** [**javax.print.DocFlavor.URL**](http://docs.google.com/javax/print/DocFlavor.URL.html) **extends** [**DocFlavor**](http://docs.google.com/javax/print/DocFlavor.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.print.PrintException**](http://docs.google.com/javax/print/PrintException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Package** **javax.print.attribute** |
| --- |

| **Class javax.print.attribute.AttributeSetUtilities.SynchronizedAttributeSet extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### attrset

[AttributeSet](http://docs.google.com/javax/print/attribute/AttributeSet.html) **attrset**

| **Class javax.print.attribute.AttributeSetUtilities.SynchronizedDocAttributeSet extends javax.print.attribute.AttributeSetUtilities.SynchronizedAttributeSet implements Serializable** | |
| --- | --- |

| **Class javax.print.attribute.AttributeSetUtilities.SynchronizedPrintJobAttributeSet extends javax.print.attribute.AttributeSetUtilities.SynchronizedAttributeSet implements Serializable** | |
| --- | --- |

| **Class javax.print.attribute.AttributeSetUtilities.SynchronizedPrintRequestAttributeSet extends javax.print.attribute.AttributeSetUtilities.SynchronizedAttributeSet implements Serializable** | |
| --- | --- |

| **Class javax.print.attribute.AttributeSetUtilities.SynchronizedPrintServiceAttributeSet extends javax.print.attribute.AttributeSetUtilities.SynchronizedAttributeSet implements Serializable** | |
| --- | --- |

| **Class javax.print.attribute.AttributeSetUtilities.UnmodifiableAttributeSet extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### attrset

[AttributeSet](http://docs.google.com/javax/print/attribute/AttributeSet.html) **attrset**

| **Class javax.print.attribute.AttributeSetUtilities.UnmodifiableDocAttributeSet extends javax.print.attribute.AttributeSetUtilities.UnmodifiableAttributeSet implements Serializable** | |
| --- | --- |

| **Class javax.print.attribute.AttributeSetUtilities.UnmodifiablePrintJobAttributeSet extends javax.print.attribute.AttributeSetUtilities.UnmodifiableAttributeSet implements Serializable** | |
| --- | --- |

| **Class javax.print.attribute.AttributeSetUtilities.UnmodifiablePrintRequestAttributeSet extends javax.print.attribute.AttributeSetUtilities.UnmodifiableAttributeSet implements Serializable** | |
| --- | --- |

| **Class javax.print.attribute.AttributeSetUtilities.UnmodifiablePrintServiceAttributeSet extends javax.print.attribute.AttributeSetUtilities.UnmodifiableAttributeSet implements Serializable** | |
| --- | --- |

| **Class** [**javax.print.attribute.DateTimeSyntax**](http://docs.google.com/javax/print/attribute/DateTimeSyntax.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1400819079791208582L

| **Serialized Fields** |
| --- |

### value

[Date](http://docs.google.com/java/util/Date.html) **value**

This date-time attribute'sjava.util.Date value.

| **Class** [**javax.print.attribute.EnumSyntax**](http://docs.google.com/javax/print/attribute/EnumSyntax.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2739521845085831642L

| **Serialization Methods** |
| --- |

### readResolve

protected [Object](http://docs.google.com/java/lang/Object.html) **readResolve**()  
 throws [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html)

During object input, convert this deserialized enumeration instance to the proper enumeration value defined in the enumeration attribute class.

**Throws:** [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html) - if the stream can't be deserialised [InvalidObjectException](http://docs.google.com/java/io/InvalidObjectException.html) - Thrown if the enumeration value table is null, this enumeration value's integer value does not correspond to an element in the enumeration value table, or the corresponding element in the enumeration value table is null. (Note: [InvalidObjectException](http://docs.google.com/java/io/InvalidObjectException.html) is a subclass of [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html), which readResolve() is declared to throw.)

| **Serialized Fields** |
| --- |

### value

int **value**

This enumeration value's integer value.

| **Class** [**javax.print.attribute.HashAttributeSet**](http://docs.google.com/javax/print/attribute/HashAttributeSet.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5311560590283707917L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html),  
 [IOException](http://docs.google.com/java/io/IOException.html)

Reconstitute an instance from a stream that is, deserialize it).

**Throws:** [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) [IOException](http://docs.google.com/java/io/IOException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Write the instance to a stream (ie serialize the object)

**Serial Data:** The serialized form of an attribute set explicitly writes the number of attributes in the set, and each of the attributes. This does not guarantee equality of serialized forms since the order in which the attributes are written is not defined. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### myInterface

[Class](http://docs.google.com/java/lang/Class.html)<[T](http://docs.google.com/java/lang/Class.html)> **myInterface**

The interface of which all members of this attribute set must be an instance. It is assumed to be interface [Attribute](http://docs.google.com/javax/print/attribute/Attribute.html) or a subinterface thereof.

| **Class** [**javax.print.attribute.HashDocAttributeSet**](http://docs.google.com/javax/print/attribute/HashDocAttributeSet.html) **extends** [**HashAttributeSet**](http://docs.google.com/javax/print/attribute/HashAttributeSet.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1128534486061432528L

| **Class** [**javax.print.attribute.HashPrintJobAttributeSet**](http://docs.google.com/javax/print/attribute/HashPrintJobAttributeSet.html) **extends** [**HashAttributeSet**](http://docs.google.com/javax/print/attribute/HashAttributeSet.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4204473656070350348L

| **Class** [**javax.print.attribute.HashPrintRequestAttributeSet**](http://docs.google.com/javax/print/attribute/HashPrintRequestAttributeSet.html) **extends** [**HashAttributeSet**](http://docs.google.com/javax/print/attribute/HashAttributeSet.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2364756266107751933L

| **Class** [**javax.print.attribute.HashPrintServiceAttributeSet**](http://docs.google.com/javax/print/attribute/HashPrintServiceAttributeSet.html) **extends** [**HashAttributeSet**](http://docs.google.com/javax/print/attribute/HashAttributeSet.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6642904616179203070L

| **Class** [**javax.print.attribute.IntegerSyntax**](http://docs.google.com/javax/print/attribute/IntegerSyntax.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3644574816328081943L

| **Serialized Fields** |
| --- |

### value

int **value**

This integer attribute's integer value.

| **Class** [**javax.print.attribute.ResolutionSyntax**](http://docs.google.com/javax/print/attribute/ResolutionSyntax.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2706743076526672017L

| **Serialized Fields** |
| --- |

### crossFeedResolution

int **crossFeedResolution**

Cross feed direction resolution in units of dots per 100 inches (dphi).

### feedResolution

int **feedResolution**

Feed direction resolution in units of dots per 100 inches (dphi).

| **Class** [**javax.print.attribute.SetOfIntegerSyntax**](http://docs.google.com/javax/print/attribute/SetOfIntegerSyntax.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3666874174847632203L

| **Serialized Fields** |
| --- |

### members

int[][] **members**

This set's members in canonical array form.

| **Class** [**javax.print.attribute.Size2DSyntax**](http://docs.google.com/javax/print/attribute/Size2DSyntax.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5584439964938660530L

| **Serialized Fields** |
| --- |

### x

int **x**

X dimension in units of micrometers (µm).

### y

int **y**

Y dimension in units of micrometers (µm).

| **Class** [**javax.print.attribute.TextSyntax**](http://docs.google.com/javax/print/attribute/TextSyntax.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8130648736378144102L

| **Serialized Fields** |
| --- |

### value

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

String value of this text attribute.

### locale

[Locale](http://docs.google.com/java/util/Locale.html) **locale**

Locale of this text attribute.

| **Class** [**javax.print.attribute.UnmodifiableSetException**](http://docs.google.com/javax/print/attribute/UnmodifiableSetException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.print.attribute.URISyntax**](http://docs.google.com/javax/print/attribute/URISyntax.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7842661210486401678L

| **Serialized Fields** |
| --- |

### uri

[URI](http://docs.google.com/java/net/URI.html) **uri**

URI value of this URI attribute.

| **Package** **javax.print.attribute.standard** |
| --- |

| **Class** [**javax.print.attribute.standard.Chromaticity**](http://docs.google.com/javax/print/attribute/standard/Chromaticity.html) **extends** [**EnumSyntax**](http://docs.google.com/javax/print/attribute/EnumSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4660543931355214012L

| **Class** [**javax.print.attribute.standard.ColorSupported**](http://docs.google.com/javax/print/attribute/standard/ColorSupported.html) **extends** [**EnumSyntax**](http://docs.google.com/javax/print/attribute/EnumSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2700555589688535545L

| **Class** [**javax.print.attribute.standard.Compression**](http://docs.google.com/javax/print/attribute/standard/Compression.html) **extends** [**EnumSyntax**](http://docs.google.com/javax/print/attribute/EnumSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5716748913324997674L

| **Class** [**javax.print.attribute.standard.Copies**](http://docs.google.com/javax/print/attribute/standard/Copies.html) **extends** [**IntegerSyntax**](http://docs.google.com/javax/print/attribute/IntegerSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-6426631521680023833L

| **Class** [**javax.print.attribute.standard.CopiesSupported**](http://docs.google.com/javax/print/attribute/standard/CopiesSupported.html) **extends** [**SetOfIntegerSyntax**](http://docs.google.com/javax/print/attribute/SetOfIntegerSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6927711687034846001L

| **Class** [**javax.print.attribute.standard.DateTimeAtCompleted**](http://docs.google.com/javax/print/attribute/standard/DateTimeAtCompleted.html) **extends** [**DateTimeSyntax**](http://docs.google.com/javax/print/attribute/DateTimeSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6497399708058490000L

| **Class** [**javax.print.attribute.standard.DateTimeAtCreation**](http://docs.google.com/javax/print/attribute/standard/DateTimeAtCreation.html) **extends** [**DateTimeSyntax**](http://docs.google.com/javax/print/attribute/DateTimeSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2923732231056647903L

| **Class** [**javax.print.attribute.standard.DateTimeAtProcessing**](http://docs.google.com/javax/print/attribute/standard/DateTimeAtProcessing.html) **extends** [**DateTimeSyntax**](http://docs.google.com/javax/print/attribute/DateTimeSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3710068197278263244L

| **Class** [**javax.print.attribute.standard.Destination**](http://docs.google.com/javax/print/attribute/standard/Destination.html) **extends** [**URISyntax**](http://docs.google.com/javax/print/attribute/URISyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6776739171700415321L

| **Class** [**javax.print.attribute.standard.DocumentName**](http://docs.google.com/javax/print/attribute/standard/DocumentName.html) **extends** [**TextSyntax**](http://docs.google.com/javax/print/attribute/TextSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7883105848533280430L

| **Class** [**javax.print.attribute.standard.Fidelity**](http://docs.google.com/javax/print/attribute/standard/Fidelity.html) **extends** [**EnumSyntax**](http://docs.google.com/javax/print/attribute/EnumSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6320827847329172308L

| **Class** [**javax.print.attribute.standard.Finishings**](http://docs.google.com/javax/print/attribute/standard/Finishings.html) **extends** [**EnumSyntax**](http://docs.google.com/javax/print/attribute/EnumSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-627840419548391754L

| **Class** [**javax.print.attribute.standard.JobHoldUntil**](http://docs.google.com/javax/print/attribute/standard/JobHoldUntil.html) **extends** [**DateTimeSyntax**](http://docs.google.com/javax/print/attribute/DateTimeSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1664471048860415024L

| **Class** [**javax.print.attribute.standard.JobImpressions**](http://docs.google.com/javax/print/attribute/standard/JobImpressions.html) **extends** [**IntegerSyntax**](http://docs.google.com/javax/print/attribute/IntegerSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8225537206784322464L

| **Class** [**javax.print.attribute.standard.JobImpressionsCompleted**](http://docs.google.com/javax/print/attribute/standard/JobImpressionsCompleted.html) **extends** [**IntegerSyntax**](http://docs.google.com/javax/print/attribute/IntegerSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6722648442432393294L

| **Class** [**javax.print.attribute.standard.JobImpressionsSupported**](http://docs.google.com/javax/print/attribute/standard/JobImpressionsSupported.html) **extends** [**SetOfIntegerSyntax**](http://docs.google.com/javax/print/attribute/SetOfIntegerSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4887354803843173692L

| **Class** [**javax.print.attribute.standard.JobKOctets**](http://docs.google.com/javax/print/attribute/standard/JobKOctets.html) **extends** [**IntegerSyntax**](http://docs.google.com/javax/print/attribute/IntegerSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8959710146498202869L

| **Class** [**javax.print.attribute.standard.JobKOctetsProcessed**](http://docs.google.com/javax/print/attribute/standard/JobKOctetsProcessed.html) **extends** [**IntegerSyntax**](http://docs.google.com/javax/print/attribute/IntegerSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-6265238509657881806L

| **Class** [**javax.print.attribute.standard.JobKOctetsSupported**](http://docs.google.com/javax/print/attribute/standard/JobKOctetsSupported.html) **extends** [**SetOfIntegerSyntax**](http://docs.google.com/javax/print/attribute/SetOfIntegerSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2867871140549897443L

| **Class** [**javax.print.attribute.standard.JobMediaSheets**](http://docs.google.com/javax/print/attribute/standard/JobMediaSheets.html) **extends** [**IntegerSyntax**](http://docs.google.com/javax/print/attribute/IntegerSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**408871131531979741L

| **Class** [**javax.print.attribute.standard.JobMediaSheetsCompleted**](http://docs.google.com/javax/print/attribute/standard/JobMediaSheetsCompleted.html) **extends** [**IntegerSyntax**](http://docs.google.com/javax/print/attribute/IntegerSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1739595973810840475L

| **Class** [**javax.print.attribute.standard.JobMediaSheetsSupported**](http://docs.google.com/javax/print/attribute/standard/JobMediaSheetsSupported.html) **extends** [**SetOfIntegerSyntax**](http://docs.google.com/javax/print/attribute/SetOfIntegerSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2953685470388672940L

| **Class** [**javax.print.attribute.standard.JobMessageFromOperator**](http://docs.google.com/javax/print/attribute/standard/JobMessageFromOperator.html) **extends** [**TextSyntax**](http://docs.google.com/javax/print/attribute/TextSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4620751846003142047L

| **Class** [**javax.print.attribute.standard.JobName**](http://docs.google.com/javax/print/attribute/standard/JobName.html) **extends** [**TextSyntax**](http://docs.google.com/javax/print/attribute/TextSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4660359192078689545L

| **Class** [**javax.print.attribute.standard.JobOriginatingUserName**](http://docs.google.com/javax/print/attribute/standard/JobOriginatingUserName.html) **extends** [**TextSyntax**](http://docs.google.com/javax/print/attribute/TextSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8052537926362933477L

| **Class** [**javax.print.attribute.standard.JobPriority**](http://docs.google.com/javax/print/attribute/standard/JobPriority.html) **extends** [**IntegerSyntax**](http://docs.google.com/javax/print/attribute/IntegerSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4599900369040602769L

| **Class** [**javax.print.attribute.standard.JobPrioritySupported**](http://docs.google.com/javax/print/attribute/standard/JobPrioritySupported.html) **extends** [**IntegerSyntax**](http://docs.google.com/javax/print/attribute/IntegerSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2564840378013555894L

| **Class** [**javax.print.attribute.standard.JobSheets**](http://docs.google.com/javax/print/attribute/standard/JobSheets.html) **extends** [**EnumSyntax**](http://docs.google.com/javax/print/attribute/EnumSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4735258056132519759L

| **Class** [**javax.print.attribute.standard.JobState**](http://docs.google.com/javax/print/attribute/standard/JobState.html) **extends** [**EnumSyntax**](http://docs.google.com/javax/print/attribute/EnumSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**400465010094018920L

| **Class** [**javax.print.attribute.standard.JobStateReason**](http://docs.google.com/javax/print/attribute/standard/JobStateReason.html) **extends** [**EnumSyntax**](http://docs.google.com/javax/print/attribute/EnumSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8765894420449009168L

| **Class** [**javax.print.attribute.standard.JobStateReasons**](http://docs.google.com/javax/print/attribute/standard/JobStateReasons.html) **extends** [**HashSet**](http://docs.google.com/java/util/HashSet.html)**<**[**JobStateReason**](http://docs.google.com/javax/print/attribute/standard/JobStateReason.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**8849088261264331812L

| **Class** [**javax.print.attribute.standard.Media**](http://docs.google.com/javax/print/attribute/standard/Media.html) **extends** [**EnumSyntax**](http://docs.google.com/javax/print/attribute/EnumSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2823970704630722439L

| **Class** [**javax.print.attribute.standard.MediaName**](http://docs.google.com/javax/print/attribute/standard/MediaName.html) **extends** [**Media**](http://docs.google.com/javax/print/attribute/standard/Media.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4653117714524155448L

| **Class** [**javax.print.attribute.standard.MediaPrintableArea**](http://docs.google.com/javax/print/attribute/standard/MediaPrintableArea.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1597171464050795793L

| **Serialized Fields** |
| --- |

### x

int **x**

### y

int **y**

### w

int **w**

### h

int **h**

### units

int **units**

| **Class** [**javax.print.attribute.standard.MediaSize**](http://docs.google.com/javax/print/attribute/standard/MediaSize.html) **extends** [**Size2DSyntax**](http://docs.google.com/javax/print/attribute/Size2DSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1967958664615414771L

| **Serialized Fields** |
| --- |

### mediaName

[MediaSizeName](http://docs.google.com/javax/print/attribute/standard/MediaSizeName.html) **mediaName**

| **Class** [**javax.print.attribute.standard.MediaSizeName**](http://docs.google.com/javax/print/attribute/standard/MediaSizeName.html) **extends** [**Media**](http://docs.google.com/javax/print/attribute/standard/Media.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2778798329756942747L

| **Class** [**javax.print.attribute.standard.MediaTray**](http://docs.google.com/javax/print/attribute/standard/MediaTray.html) **extends** [**Media**](http://docs.google.com/javax/print/attribute/standard/Media.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-982503611095214703L

| **Class** [**javax.print.attribute.standard.MultipleDocumentHandling**](http://docs.google.com/javax/print/attribute/standard/MultipleDocumentHandling.html) **extends** [**EnumSyntax**](http://docs.google.com/javax/print/attribute/EnumSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8098326460746413466L

| **Class** [**javax.print.attribute.standard.NumberOfDocuments**](http://docs.google.com/javax/print/attribute/standard/NumberOfDocuments.html) **extends** [**IntegerSyntax**](http://docs.google.com/javax/print/attribute/IntegerSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7891881310684461097L

| **Class** [**javax.print.attribute.standard.NumberOfInterveningJobs**](http://docs.google.com/javax/print/attribute/standard/NumberOfInterveningJobs.html) **extends** [**IntegerSyntax**](http://docs.google.com/javax/print/attribute/IntegerSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2568141124844982746L

| **Class** [**javax.print.attribute.standard.NumberUp**](http://docs.google.com/javax/print/attribute/standard/NumberUp.html) **extends** [**IntegerSyntax**](http://docs.google.com/javax/print/attribute/IntegerSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3040436486786527811L

| **Class** [**javax.print.attribute.standard.NumberUpSupported**](http://docs.google.com/javax/print/attribute/standard/NumberUpSupported.html) **extends** [**SetOfIntegerSyntax**](http://docs.google.com/javax/print/attribute/SetOfIntegerSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1041573395759141805L

| **Class** [**javax.print.attribute.standard.OrientationRequested**](http://docs.google.com/javax/print/attribute/standard/OrientationRequested.html) **extends** [**EnumSyntax**](http://docs.google.com/javax/print/attribute/EnumSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4447437289862822276L

| **Class** [**javax.print.attribute.standard.OutputDeviceAssigned**](http://docs.google.com/javax/print/attribute/standard/OutputDeviceAssigned.html) **extends** [**TextSyntax**](http://docs.google.com/javax/print/attribute/TextSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5486733778854271081L

| **Class** [**javax.print.attribute.standard.PageRanges**](http://docs.google.com/javax/print/attribute/standard/PageRanges.html) **extends** [**SetOfIntegerSyntax**](http://docs.google.com/javax/print/attribute/SetOfIntegerSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8639895197656148392L

| **Class** [**javax.print.attribute.standard.PagesPerMinute**](http://docs.google.com/javax/print/attribute/standard/PagesPerMinute.html) **extends** [**IntegerSyntax**](http://docs.google.com/javax/print/attribute/IntegerSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-6366403993072862015L

| **Class** [**javax.print.attribute.standard.PagesPerMinuteColor**](http://docs.google.com/javax/print/attribute/standard/PagesPerMinuteColor.html) **extends** [**IntegerSyntax**](http://docs.google.com/javax/print/attribute/IntegerSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1684993151687470944L

| **Class** [**javax.print.attribute.standard.PDLOverrideSupported**](http://docs.google.com/javax/print/attribute/standard/PDLOverrideSupported.html) **extends** [**EnumSyntax**](http://docs.google.com/javax/print/attribute/EnumSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4393264467928463934L

| **Class** [**javax.print.attribute.standard.PresentationDirection**](http://docs.google.com/javax/print/attribute/standard/PresentationDirection.html) **extends** [**EnumSyntax**](http://docs.google.com/javax/print/attribute/EnumSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8294728067230931780L

| **Class** [**javax.print.attribute.standard.PrinterInfo**](http://docs.google.com/javax/print/attribute/standard/PrinterInfo.html) **extends** [**TextSyntax**](http://docs.google.com/javax/print/attribute/TextSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7765280618777599727L

| **Class** [**javax.print.attribute.standard.PrinterIsAcceptingJobs**](http://docs.google.com/javax/print/attribute/standard/PrinterIsAcceptingJobs.html) **extends** [**EnumSyntax**](http://docs.google.com/javax/print/attribute/EnumSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5052010680537678061L

| **Class** [**javax.print.attribute.standard.PrinterLocation**](http://docs.google.com/javax/print/attribute/standard/PrinterLocation.html) **extends** [**TextSyntax**](http://docs.google.com/javax/print/attribute/TextSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1598610039865566337L

| **Class** [**javax.print.attribute.standard.PrinterMakeAndModel**](http://docs.google.com/javax/print/attribute/standard/PrinterMakeAndModel.html) **extends** [**TextSyntax**](http://docs.google.com/javax/print/attribute/TextSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4580461489499351411L

| **Class** [**javax.print.attribute.standard.PrinterMessageFromOperator**](http://docs.google.com/javax/print/attribute/standard/PrinterMessageFromOperator.html) **extends** [**TextSyntax**](http://docs.google.com/javax/print/attribute/TextSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4486871203218629318L

| **Class** [**javax.print.attribute.standard.PrinterMoreInfo**](http://docs.google.com/javax/print/attribute/standard/PrinterMoreInfo.html) **extends** [**URISyntax**](http://docs.google.com/javax/print/attribute/URISyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4555850007675338574L

| **Class** [**javax.print.attribute.standard.PrinterMoreInfoManufacturer**](http://docs.google.com/javax/print/attribute/standard/PrinterMoreInfoManufacturer.html) **extends** [**URISyntax**](http://docs.google.com/javax/print/attribute/URISyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3323271346485076608L

| **Class** [**javax.print.attribute.standard.PrinterName**](http://docs.google.com/javax/print/attribute/standard/PrinterName.html) **extends** [**TextSyntax**](http://docs.google.com/javax/print/attribute/TextSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**299740639137803127L

| **Class** [**javax.print.attribute.standard.PrinterResolution**](http://docs.google.com/javax/print/attribute/standard/PrinterResolution.html) **extends** [**ResolutionSyntax**](http://docs.google.com/javax/print/attribute/ResolutionSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**13090306561090558L

| **Class** [**javax.print.attribute.standard.PrinterState**](http://docs.google.com/javax/print/attribute/standard/PrinterState.html) **extends** [**EnumSyntax**](http://docs.google.com/javax/print/attribute/EnumSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-649578618346507718L

| **Class** [**javax.print.attribute.standard.PrinterStateReason**](http://docs.google.com/javax/print/attribute/standard/PrinterStateReason.html) **extends** [**EnumSyntax**](http://docs.google.com/javax/print/attribute/EnumSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1623720656201472593L

| **Class** [**javax.print.attribute.standard.PrinterStateReasons**](http://docs.google.com/javax/print/attribute/standard/PrinterStateReasons.html) **extends** [**HashMap**](http://docs.google.com/java/util/HashMap.html)**<**[**PrinterStateReason**](http://docs.google.com/javax/print/attribute/standard/PrinterStateReason.html)**,**[**Severity**](http://docs.google.com/javax/print/attribute/standard/Severity.html)**> implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3731791085163619457L

| **Class** [**javax.print.attribute.standard.PrinterURI**](http://docs.google.com/javax/print/attribute/standard/PrinterURI.html) **extends** [**URISyntax**](http://docs.google.com/javax/print/attribute/URISyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7923912792485606497L

| **Class** [**javax.print.attribute.standard.PrintQuality**](http://docs.google.com/javax/print/attribute/standard/PrintQuality.html) **extends** [**EnumSyntax**](http://docs.google.com/javax/print/attribute/EnumSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3072341285225858365L

| **Class** [**javax.print.attribute.standard.QueuedJobCount**](http://docs.google.com/javax/print/attribute/standard/QueuedJobCount.html) **extends** [**IntegerSyntax**](http://docs.google.com/javax/print/attribute/IntegerSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7499723077864047742L

| **Class** [**javax.print.attribute.standard.ReferenceUriSchemesSupported**](http://docs.google.com/javax/print/attribute/standard/ReferenceUriSchemesSupported.html) **extends** [**EnumSyntax**](http://docs.google.com/javax/print/attribute/EnumSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8989076942813442805L

| **Class** [**javax.print.attribute.standard.RequestingUserName**](http://docs.google.com/javax/print/attribute/standard/RequestingUserName.html) **extends** [**TextSyntax**](http://docs.google.com/javax/print/attribute/TextSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2683049894310331454L

| **Class** [**javax.print.attribute.standard.Severity**](http://docs.google.com/javax/print/attribute/standard/Severity.html) **extends** [**EnumSyntax**](http://docs.google.com/javax/print/attribute/EnumSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8781881462717925380L

| **Class** [**javax.print.attribute.standard.SheetCollate**](http://docs.google.com/javax/print/attribute/standard/SheetCollate.html) **extends** [**EnumSyntax**](http://docs.google.com/javax/print/attribute/EnumSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7080587914259873003L

| **Class** [**javax.print.attribute.standard.Sides**](http://docs.google.com/javax/print/attribute/standard/Sides.html) **extends** [**EnumSyntax**](http://docs.google.com/javax/print/attribute/EnumSyntax.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-6890309414893262822L

| **Package** **javax.print.event** |
| --- |

| **Class** [**javax.print.event.PrintEvent**](http://docs.google.com/javax/print/event/PrintEvent.html) **extends** [**EventObject**](http://docs.google.com/java/util/EventObject.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2286914924430763847L

| **Class** [**javax.print.event.PrintJobAttributeEvent**](http://docs.google.com/javax/print/event/PrintJobAttributeEvent.html) **extends** [**PrintEvent**](http://docs.google.com/javax/print/event/PrintEvent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-6534469883874742101L

| **Serialized Fields** |
| --- |

### attributes

[PrintJobAttributeSet](http://docs.google.com/javax/print/attribute/PrintJobAttributeSet.html) **attributes**

| **Class** [**javax.print.event.PrintJobEvent**](http://docs.google.com/javax/print/event/PrintJobEvent.html) **extends** [**PrintEvent**](http://docs.google.com/javax/print/event/PrintEvent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1711656903622072997L

| **Serialized Fields** |
| --- |

### reason

int **reason**

| **Class** [**javax.print.event.PrintServiceAttributeEvent**](http://docs.google.com/javax/print/event/PrintServiceAttributeEvent.html) **extends** [**PrintEvent**](http://docs.google.com/javax/print/event/PrintEvent.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7565987018140326600L

| **Serialized Fields** |
| --- |

### attributes

[PrintServiceAttributeSet](http://docs.google.com/javax/print/attribute/PrintServiceAttributeSet.html) **attributes**

| **Package** **javax.rmi.CORBA** |
| --- |

| **Class** [**javax.rmi.CORBA.ClassDesc**](http://docs.google.com/javax/rmi/CORBA/ClassDesc.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### repid

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

The class's RepositoryId.

### codebase

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

A space-separated list of codebase URLs.

| **Class** [**javax.rmi.CORBA.Stub**](http://docs.google.com/javax/rmi/CORBA/Stub.html) **extends** [**ObjectImpl**](http://docs.google.com/org/omg/CORBA_2_3/portable/ObjectImpl.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1087775603798577179L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) stream)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Serialization method to restore the IOR state.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) stream)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Serialization method to save the IOR state.

**Serial Data:** The length of the IOR type ID (int), followed by the IOR type ID (byte array encoded using ISO8859-1), followed by the number of IOR profiles (int), followed by the IOR profiles. Each IOR profile is written as a profile tag (int), followed by the length of the profile data (int), followed by the profile data (byte array). **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Package** **javax.rmi.ssl** |
| --- |

| **Class** [**javax.rmi.ssl.SslRMIClientSocketFactory**](http://docs.google.com/javax/rmi/ssl/SslRMIClientSocketFactory.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8310631444933958385L

| **Package** **javax.script** |
| --- |

| **Class** [**javax.script.ScriptException**](http://docs.google.com/javax/script/ScriptException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### fileName

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

### lineNumber

int **lineNumber**

### columnNumber

int **columnNumber**

| **Package** **javax.security.auth** |
| --- |

| **Class** [**javax.security.auth.AuthPermission**](http://docs.google.com/javax/security/auth/AuthPermission.html) **extends** [**BasicPermission**](http://docs.google.com/java/security/BasicPermission.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5806031445061587174L

| **Class** [**javax.security.auth.DestroyFailedException**](http://docs.google.com/javax/security/auth/DestroyFailedException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7790152857282749162L

| **Class** [**javax.security.auth.PrivateCredentialPermission**](http://docs.google.com/javax/security/auth/PrivateCredentialPermission.html) **extends** [**Permission**](http://docs.google.com/java/security/Permission.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5284372143517237068L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reads this object from a stream (i.e., deserializes it)

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

| **Serialized Fields** |
| --- |

### credentialClass

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

### principals

[Set](http://docs.google.com/java/util/Set.html)<[E](http://docs.google.com/java/util/Set.html)> **principals**

The Principals associated with this permission. The set contains elements of type, PrivateCredentialPermission.CredOwner.

### testing

boolean **testing**

| **Class javax.security.auth.PrivateCredentialPermission.CredOwner extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5607449830436408266L

| **Serialized Fields** |
| --- |

### principalClass

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

### principalName

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

| **Class** [**javax.security.auth.RefreshFailedException**](http://docs.google.com/javax/security/auth/RefreshFailedException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5058444488565265840L

| **Class** [**javax.security.auth.Subject**](http://docs.google.com/javax/security/auth/Subject.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8308522755600156056L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reads this object from a stream (i.e., deserializes it)

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) oos)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Writes this object out to a stream (i.e., serializes it).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### principals

[Set](http://docs.google.com/java/util/Set.html)<[E](http://docs.google.com/java/util/Set.html)> **principals**

A Set that provides a view of all of this Subject's Principals

Each element in this set is a java.security.Principal. The set is a Subject.SecureSet.

### readOnly

boolean **readOnly**

Whether this Subject is read-only

| **Class javax.security.auth.Subject.SecureSet extends** [**AbstractSet**](http://docs.google.com/java/util/AbstractSet.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7911754171111800359L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) ois)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) oos)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Writes this object out to a stream (i.e., serializes it).

**Serial Data:** If this is a private credential set, a security check is performed to ensure that the caller has permission to access each credential in the set. If the security check passes, the set is serialized. **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### elements

[LinkedList](http://docs.google.com/java/util/LinkedList.html)<[E](http://docs.google.com/java/util/LinkedList.html)> **elements**

The elements in this set.

### this$0

[Subject](http://docs.google.com/javax/security/auth/Subject.html) **this$0**

The outer Subject instance.

| **Package** **javax.security.auth.callback** |
| --- |

| **Class** [**javax.security.auth.callback.ChoiceCallback**](http://docs.google.com/javax/security/auth/callback/ChoiceCallback.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3975664071579892167L

| **Serialized Fields** |
| --- |

### prompt

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

**Since:** 1.4

### choices

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

the list of choices **Since:** 1.4

### defaultChoice

int **defaultChoice**

the choice to be used as the default choice **Since:** 1.4

### multipleSelectionsAllowed

boolean **multipleSelectionsAllowed**

whether multiple selections are allowed from the list of choices **Since:** 1.4

### selections

int[] **selections**

the selected choices, represented as indexes into the choices list. **Since:** 1.4

| **Class** [**javax.security.auth.callback.ConfirmationCallback**](http://docs.google.com/javax/security/auth/callback/ConfirmationCallback.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-9095656433782481624L

| **Serialized Fields** |
| --- |

### prompt

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

**Since:** 1.4

### messageType

int **messageType**

**Since:** 1.4

### optionType

int **optionType**

**Since:** 1.4

### defaultOption

int **defaultOption**

**Since:** 1.4

### options

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

**Since:** 1.4

### selection

int **selection**

**Since:** 1.4

| **Class** [**javax.security.auth.callback.LanguageCallback**](http://docs.google.com/javax/security/auth/callback/LanguageCallback.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2019050433478903213L

| **Serialized Fields** |
| --- |

### locale

[Locale](http://docs.google.com/java/util/Locale.html) **locale**

**Since:** 1.4

| **Class** [**javax.security.auth.callback.NameCallback**](http://docs.google.com/javax/security/auth/callback/NameCallback.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**3770938795909392253L

| **Serialized Fields** |
| --- |

### prompt

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

**Since:** 1.4

### defaultName

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

**Since:** 1.4

### inputName

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

**Since:** 1.4

| **Class** [**javax.security.auth.callback.PasswordCallback**](http://docs.google.com/javax/security/auth/callback/PasswordCallback.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2267422647454909926L

| **Serialized Fields** |
| --- |

### prompt

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

**Since:** 1.4

### echoOn

boolean **echoOn**

**Since:** 1.4

### inputPassword

char[] **inputPassword**

**Since:** 1.4

| **Class** [**javax.security.auth.callback.TextInputCallback**](http://docs.google.com/javax/security/auth/callback/TextInputCallback.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8064222478852811804L

| **Serialized Fields** |
| --- |

### prompt

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

**Since:** 1.4

### defaultText

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

**Since:** 1.4

### inputText

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

**Since:** 1.4

| **Class** [**javax.security.auth.callback.TextOutputCallback**](http://docs.google.com/javax/security/auth/callback/TextOutputCallback.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1689502495511663102L

| **Serialized Fields** |
| --- |

### messageType

int **messageType**

**Since:** 1.4

### message

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

**Since:** 1.4

| **Class** [**javax.security.auth.callback.UnsupportedCallbackException**](http://docs.google.com/javax/security/auth/callback/UnsupportedCallbackException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-6873556327655666839L

| **Serialized Fields** |
| --- |

### callback

[Callback](http://docs.google.com/javax/security/auth/callback/Callback.html) **callback**

| **Package** **javax.security.auth.kerberos** |
| --- |

| **Class** [**javax.security.auth.kerberos.DelegationPermission**](http://docs.google.com/javax/security/auth/kerberos/DelegationPermission.html) **extends** [**BasicPermission**](http://docs.google.com/java/security/BasicPermission.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**883133252142523922L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

readObject is called to restore the state of the DelegationPermission from a stream.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

WriteObject is called to save the state of the DelegationPermission to a stream. The actions are serialized, and the superclass takes care of the name.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Class** [**javax.security.auth.kerberos.KerberosKey**](http://docs.google.com/javax/security/auth/kerberos/KerberosKey.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4625402278148246993L

| **Serialized Fields** |
| --- |

### principal

[KerberosPrincipal](http://docs.google.com/javax/security/auth/kerberos/KerberosPrincipal.html) **principal**

The principal that this secret key belongs to.

### versionNum

int **versionNum**

the version number of this secret key

### key

javax.security.auth.kerberos.KeyImpl **key**

KeyImpl is serialized by writing out the ASN1 Encoded bytes of the encryption key. The ASN1 encoding is defined in RFC1510 and as follows:

EncryptionKey ::= SEQUENCE {  
 keytype[0] INTEGER,  
 keyvalue[1] OCTET STRING   
 }

| **Class** [**javax.security.auth.kerberos.KerberosPrincipal**](http://docs.google.com/javax/security/auth/kerberos/KerberosPrincipal.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7374788026156829911L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) ois)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reads this object from a stream (i.e., deserializes it)

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) oos)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Save the KerberosPrincipal object to a stream

**Serial Data:** this KerberosPrincipal is serialized by writing out the PrincipalName and the realm in their DER-encoded form as specified in Section 5.2 of  [RFC1510](http://www.ietf.org/rfc/rfc1510.txt). **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Class** [**javax.security.auth.kerberos.KerberosTicket**](http://docs.google.com/javax/security/auth/kerberos/KerberosTicket.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7395334370157380539L

| **Serialized Fields** |
| --- |

### asn1Encoding

byte[] **asn1Encoding**

ASN.1 DER Encoding of the Ticket as defined in the Kerberos Protocol Specification RFC1510.

### sessionKey

javax.security.auth.kerberos.KeyImpl **sessionKey**

KeyImpl is serialized by writing out the ASN1 Encoded bytes of the encryption key. The ASN1 encoding is defined in RFC1510 and as follows:

EncryptionKey ::= SEQUENCE {  
 keytype[0] INTEGER,  
 keyvalue[1] OCTET STRING   
 }

### flags

boolean[] **flags**

Ticket Flags as defined in the Kerberos Protocol Specification RFC1510.

### authTime

[Date](http://docs.google.com/java/util/Date.html) **authTime**

Time of initial authentication

### startTime

[Date](http://docs.google.com/java/util/Date.html) **startTime**

Time after which the ticket is valid.

### endTime

[Date](http://docs.google.com/java/util/Date.html) **endTime**

Time after which the ticket will not be honored. (its expiration time).

### renewTill

[Date](http://docs.google.com/java/util/Date.html) **renewTill**

For renewable Tickets it indicates the maximum endtime that may be included in a renewal. It can be thought of as the absolute expiration time for the ticket, including all renewals. This field may be null for tickets that are not renewable.

### client

[KerberosPrincipal](http://docs.google.com/javax/security/auth/kerberos/KerberosPrincipal.html) **client**

Client that owns the service ticket

### server

[KerberosPrincipal](http://docs.google.com/javax/security/auth/kerberos/KerberosPrincipal.html) **server**

The service for which the ticket was issued.

### clientAddresses

[InetAddress](http://docs.google.com/java/net/InetAddress.html)[] **clientAddresses**

The addresses from where the ticket may be used by the client. This field may be null when the ticket is usable from any address.

| **Class javax.security.auth.kerberos.KeyImpl extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7889313790214321193L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) ois)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) ois)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

**Serial Data:** this KeyImpl is serialized by writing out the ASN1 Encoded bytes of the encryption key. The ASN1 encoding is defined in RFC1510 and as follows: EncryptionKey ::= SEQUENCE { keytype[0] INTEGER, keyvalue[1] OCTET STRING } **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Class** [**javax.security.auth.kerberos.ServicePermission**](http://docs.google.com/javax/security/auth/kerberos/ServicePermission.html) **extends** [**Permission**](http://docs.google.com/java/security/Permission.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1227585031618624935L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

readObject is called to restore the state of the ServicePermission from a stream.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

WriteObject is called to save the state of the ServicePermission to a stream. The actions are serialized, and the superclass takes care of the name.

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Serialized Fields** |
| --- |

### actions

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

the actions string.

| **Package** **javax.security.auth.login** |
| --- |

| **Class** [**javax.security.auth.login.AccountException**](http://docs.google.com/javax/security/auth/login/AccountException.html) **extends** [**LoginException**](http://docs.google.com/javax/security/auth/login/LoginException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2112878680072211787L

| **Class** [**javax.security.auth.login.AccountExpiredException**](http://docs.google.com/javax/security/auth/login/AccountExpiredException.html) **extends** [**AccountException**](http://docs.google.com/javax/security/auth/login/AccountException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-6064064890162661560L

| **Class** [**javax.security.auth.login.AccountLockedException**](http://docs.google.com/javax/security/auth/login/AccountLockedException.html) **extends** [**AccountException**](http://docs.google.com/javax/security/auth/login/AccountException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**8280345554014066334L

| **Class** [**javax.security.auth.login.AccountNotFoundException**](http://docs.google.com/javax/security/auth/login/AccountNotFoundException.html) **extends** [**AccountException**](http://docs.google.com/javax/security/auth/login/AccountException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1498349563916294614L

| **Class** [**javax.security.auth.login.CredentialException**](http://docs.google.com/javax/security/auth/login/CredentialException.html) **extends** [**LoginException**](http://docs.google.com/javax/security/auth/login/LoginException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4772893876810601859L

| **Class** [**javax.security.auth.login.CredentialExpiredException**](http://docs.google.com/javax/security/auth/login/CredentialExpiredException.html) **extends** [**CredentialException**](http://docs.google.com/javax/security/auth/login/CredentialException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5344739593859737937L

| **Class** [**javax.security.auth.login.CredentialNotFoundException**](http://docs.google.com/javax/security/auth/login/CredentialNotFoundException.html) **extends** [**CredentialException**](http://docs.google.com/javax/security/auth/login/CredentialException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7779934467214319475L

| **Class** [**javax.security.auth.login.FailedLoginException**](http://docs.google.com/javax/security/auth/login/FailedLoginException.html) **extends** [**LoginException**](http://docs.google.com/javax/security/auth/login/LoginException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**802556922354616286L

| **Class** [**javax.security.auth.login.LoginException**](http://docs.google.com/javax/security/auth/login/LoginException.html) **extends** [**GeneralSecurityException**](http://docs.google.com/java/security/GeneralSecurityException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4679091624035232488L

| **Package** **javax.security.auth.x500** |
| --- |

| **Class** [**javax.security.auth.x500.X500Principal**](http://docs.google.com/javax/security/auth/x500/X500Principal.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-500463348111345721L

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html),  
 [NotActiveException](http://docs.google.com/java/io/NotActiveException.html),  
 [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Reads this object from a stream (i.e., deserializes it).

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html) [NotActiveException](http://docs.google.com/java/io/NotActiveException.html) [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Save the X500Principal object to a stream.

**Serial Data:** this X500Principal is serialized by writing out its DER-encoded form (the value of getEncoded is serialized). **Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Package** **javax.security.cert** |
| --- |

| **Class** [**javax.security.cert.CertificateEncodingException**](http://docs.google.com/javax/security/cert/CertificateEncodingException.html) **extends** [**CertificateException**](http://docs.google.com/javax/security/cert/CertificateException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.security.cert.CertificateException**](http://docs.google.com/javax/security/cert/CertificateException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.security.cert.CertificateExpiredException**](http://docs.google.com/javax/security/cert/CertificateExpiredException.html) **extends** [**CertificateException**](http://docs.google.com/javax/security/cert/CertificateException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.security.cert.CertificateNotYetValidException**](http://docs.google.com/javax/security/cert/CertificateNotYetValidException.html) **extends** [**CertificateException**](http://docs.google.com/javax/security/cert/CertificateException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.security.cert.CertificateParsingException**](http://docs.google.com/javax/security/cert/CertificateParsingException.html) **extends** [**CertificateException**](http://docs.google.com/javax/security/cert/CertificateException.html) **implements Serializable** | |
| --- | --- |

| **Package** **javax.security.sasl** |
| --- |

| **Class** [**javax.security.sasl.AuthenticationException**](http://docs.google.com/javax/security/sasl/AuthenticationException.html) **extends** [**SaslException**](http://docs.google.com/javax/security/sasl/SaslException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3579708765071815007L

| **Class** [**javax.security.sasl.AuthorizeCallback**](http://docs.google.com/javax/security/sasl/AuthorizeCallback.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2353344186490470805L

| **Serialized Fields** |
| --- |

### authenticationID

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

The (authenticated) authentication id to check.

### authorizationID

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

The authorization id to check.

### authorizedID

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

The id of the authorized entity. If null, the id of the authorized entity is authorizationID.

### authorized

boolean **authorized**

A flag indicating whether the authentication id is allowed to act on behalf of the authorization id.

| **Class** [**javax.security.sasl.RealmCallback**](http://docs.google.com/javax/security/sasl/RealmCallback.html) **extends** [**TextInputCallback**](http://docs.google.com/javax/security/auth/callback/TextInputCallback.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4342673378785456908L

| **Class** [**javax.security.sasl.RealmChoiceCallback**](http://docs.google.com/javax/security/sasl/RealmChoiceCallback.html) **extends** [**ChoiceCallback**](http://docs.google.com/javax/security/auth/callback/ChoiceCallback.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8588141348846281332L

| **Class** [**javax.security.sasl.SaslException**](http://docs.google.com/javax/security/sasl/SaslException.html) **extends** [**IOException**](http://docs.google.com/java/io/IOException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4579784287983423626L

| **Serialized Fields** |
| --- |

### \_exception

[Throwable](http://docs.google.com/java/lang/Throwable.html) **\_exception**

The possibly null root cause exception.

| **Package** **javax.sound.midi** |
| --- |

| **Class** [**javax.sound.midi.InvalidMidiDataException**](http://docs.google.com/javax/sound/midi/InvalidMidiDataException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.sound.midi.MidiUnavailableException**](http://docs.google.com/javax/sound/midi/MidiUnavailableException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Package** **javax.sound.sampled** |
| --- |

| **Class** [**javax.sound.sampled.AudioPermission**](http://docs.google.com/javax/sound/sampled/AudioPermission.html) **extends** [**BasicPermission**](http://docs.google.com/java/security/BasicPermission.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.sound.sampled.LineUnavailableException**](http://docs.google.com/javax/sound/sampled/LineUnavailableException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.sound.sampled.UnsupportedAudioFileException**](http://docs.google.com/javax/sound/sampled/UnsupportedAudioFileException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Package** **javax.sql** |
| --- |

| **Class** [**javax.sql.ConnectionEvent**](http://docs.google.com/javax/sql/ConnectionEvent.html) **extends** [**EventObject**](http://docs.google.com/java/util/EventObject.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4843217645290030002L

| **Serialized Fields** |
| --- |

### ex

[SQLException](http://docs.google.com/java/sql/SQLException.html) **ex**

The SQLException that the driver will throw to the application when an error occurs and the pooled connection is no longer usable.

| **Class** [**javax.sql.RowSetEvent**](http://docs.google.com/javax/sql/RowSetEvent.html) **extends** [**EventObject**](http://docs.google.com/java/util/EventObject.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1875450876546332005L

| **Class** [**javax.sql.StatementEvent**](http://docs.google.com/javax/sql/StatementEvent.html) **extends** [**EventObject**](http://docs.google.com/java/util/EventObject.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### exception

[SQLException](http://docs.google.com/java/sql/SQLException.html) **exception**

### statement

[PreparedStatement](http://docs.google.com/java/sql/PreparedStatement.html) **statement**

| **Package** **javax.sql.rowset** |
| --- |

| **Class** [**javax.sql.rowset.BaseRowSet**](http://docs.google.com/javax/sql/rowset/BaseRowSet.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4886719666485113312L

| **Serialized Fields** |
| --- |

### binaryStream

[InputStream](http://docs.google.com/java/io/InputStream.html) **binaryStream**

The InputStream object that will be returned by the method getBinaryStream, which is specified in the ResultSet interface.

### unicodeStream

[InputStream](http://docs.google.com/java/io/InputStream.html) **unicodeStream**

The InputStream object that will be returned by the method getUnicodeStream, which is specified in the ResultSet interface.

### asciiStream

[InputStream](http://docs.google.com/java/io/InputStream.html) **asciiStream**

The InputStream object that will be returned by the method getAsciiStream, which is specified in the ResultSet interface.

### charStream

[Reader](http://docs.google.com/java/io/Reader.html) **charStream**

The Reader object that will be returned by the method getCharacterStream, which is specified in the ResultSet interface.

### command

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

The query that will be sent to the DBMS for execution when the method execute is called.

### URL

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

The JDBC URL the reader, writer, or both supply to the method DriverManager.getConnection when the DriverManager is used to get a connection.

The JDBC URL identifies the driver to be used to make the conndection. This URL can be found in the documentation supplied by the driver vendor.

### dataSource

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

The logical name of the data source that the reader/writer should use in order to retrieve a DataSource object from a Java Directory and Naming Interface (JNDI) naming service.

### rowSetType

int **rowSetType**

A constant indicating the type of this JDBC RowSet object. It must be one of the following ResultSet constants: TYPE\_FORWARD\_ONLY, TYPE\_SCROLL\_INSENSITIVE, or TYPE\_SCROLL\_SENSITIVE.

### showDeleted

boolean **showDeleted**

A boolean indicating whether deleted rows are visible in this JDBC RowSet object .

### queryTimeout

int **queryTimeout**

The maximum number of seconds the driver will wait for a command to execute. This limit applies while this JDBC RowSet object is connected to its data source, that is, while it is populating itself with data and while it is writing data back to the data source.

### maxRows

int **maxRows**

The maximum number of rows the reader should read.

### maxFieldSize

int **maxFieldSize**

The maximum field size the reader should read.

### concurrency

int **concurrency**

A constant indicating the concurrency of this JDBC RowSet object. It must be one of the following ResultSet constants: CONCUR\_READ\_ONLY or CONCUR\_UPDATABLE.

### readOnly

boolean **readOnly**

A boolean indicating whether this JDBC RowSet object is read-only. true indicates that it is read-only; false that it is writable.

### escapeProcessing

boolean **escapeProcessing**

A boolean indicating whether the reader for this JDBC RowSet object should perform escape processing. true means that escape processing is turned on; false that it is not. The default is true.

### isolation

int **isolation**

A constant indicating the isolation level of the connection for this JDBC RowSet object . It must be one of the following Connection constants: TRANSACTION\_NONE, TRANSACTION\_READ\_UNCOMMITTED, TRANSACTION\_READ\_COMMITTED, TRANSACTION\_REPEATABLE\_READ or TRANSACTION\_SERIALIZABLE.

### fetchDir

int **fetchDir**

A constant used as a hint to the driver that indicates the direction in which data from this JDBC RowSet object is going to be fetched. The following ResultSet constants are possible values: FETCH\_FORWARD, FETCH\_REVERSE, FETCH\_UNKNOWN.

Unused at this time.

### fetchSize

int **fetchSize**

A hint to the driver that indicates the expected number of rows in this JDBC RowSet object .

Unused at this time.

### map

[Map](http://docs.google.com/java/util/Map.html)<[K](http://docs.google.com/java/util/Map.html),[V](http://docs.google.com/java/util/Map.html)> **map**

The java.util.Map object that contains entries mapping SQL type names to classes in the Java programming language for the custom mapping of user-defined types.

### listeners

[Vector](http://docs.google.com/java/util/Vector.html)<[E](http://docs.google.com/java/util/Vector.html)> **listeners**

A Vector object that holds the list of listeners that have registered with this RowSet object.

### params

[Hashtable](http://docs.google.com/java/util/Hashtable.html)<[K](http://docs.google.com/java/util/Hashtable.html),[V](http://docs.google.com/java/util/Hashtable.html)> **params**

A Vector object that holds the parameters set for this RowSet object's current command.

| **Class** [**javax.sql.rowset.RowSetMetaDataImpl**](http://docs.google.com/javax/sql/rowset/RowSetMetaDataImpl.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6893806403181801867L

| **Serialized Fields** |
| --- |

### colCount

int **colCount**

The number of columns in the RowSet object that created this RowSetMetaDataImpl object.

### colInfo

javax.sql.rowset.RowSetMetaDataImpl.ColInfo[] **colInfo**

An array of ColInfo objects used to store information about each column in the RowSet object for which this RowSetMetaDataImpl object was created. The first ColInfo object in this array contains information about the first column in the RowSet object, the second element contains information about the second column, and so on.

| **Class** [**javax.sql.rowset.RowSetWarning**](http://docs.google.com/javax/sql/rowset/RowSetWarning.html) **extends** [**SQLException**](http://docs.google.com/java/sql/SQLException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6678332766434564774L

| **Serialized Fields** |
| --- |

### rwarning

[RowSetWarning](http://docs.google.com/javax/sql/rowset/RowSetWarning.html) **rwarning**

RowSetWarning object handle.

| **Package** **javax.sql.rowset.serial** |
| --- |

| **Class** [**javax.sql.rowset.serial.SerialArray**](http://docs.google.com/javax/sql/rowset/serial/SerialArray.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8466174297270688520L

| **Serialized Fields** |
| --- |

### elements

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

A serialized array in which each element is an Object in the Java programming language that represents an element in the SQL ARRAY value.

### baseType

int **baseType**

The SQL type of the elements in this SerialArray object. The type is expressed as one of the constants from the class java.sql.Types.

### baseTypeName

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

The type name used by the DBMS for the elements in the SQL ARRAY value that this SerialArray object represents.

### len

int **len**

The number of elements in this SerialArray object, which is also the number of elements in the SQL ARRAY value that this SerialArray object represents.

| **Class** [**javax.sql.rowset.serial.SerialBlob**](http://docs.google.com/javax/sql/rowset/serial/SerialBlob.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8144641928112860441L

| **Serialized Fields** |
| --- |

### buf

byte[] **buf**

A serialized array of uninterpreted bytes representing the value of this SerialBlob object.

### blob

[Blob](http://docs.google.com/java/sql/Blob.html) **blob**

The internal representation of the Blob object on which this SerialBlob object is based.

### len

long **len**

The number of bytes in this SerialBlob object's array of bytes.

### origLen

long **origLen**

The orginal number of bytes in this SerialBlob object's array of bytes when it was first established.

| **Class** [**javax.sql.rowset.serial.SerialClob**](http://docs.google.com/javax/sql/rowset/serial/SerialClob.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1662519690087375313L

| **Serialized Fields** |
| --- |

### buf

char[] **buf**

A serialized array of characters containing the data of the SQL CLOB value that this SerialClob object represents.

### clob

[Clob](http://docs.google.com/java/sql/Clob.html) **clob**

Internal Clob representation if SerialClob is intialized with a Clob

### len

long **len**

The length in characters of this SerialClob object's internal array of characters.

### origLen

long **origLen**

The original length in characters of tgus SerialClob objects internal array of characters.

| **Class** [**javax.sql.rowset.serial.SerialDatalink**](http://docs.google.com/javax/sql/rowset/serial/SerialDatalink.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**2826907821828733626L

| **Serialized Fields** |
| --- |

### url

[URL](http://docs.google.com/java/net/URL.html) **url**

The extracted URL field retrieved from the DATALINK field.

### baseType

int **baseType**

The SQL type of the elements in this SerialDatalink object. The type is expressed as one of the contants from the class java.sql.Types.

### baseTypeName

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

The type name used by the DBMS for the elements in the SQL DATALINK value that this SerialDatalink object represents.

| **Class** [**javax.sql.rowset.serial.SerialException**](http://docs.google.com/javax/sql/rowset/serial/SerialException.html) **extends** [**SQLException**](http://docs.google.com/java/sql/SQLException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-489794565168592690L

| **Class** [**javax.sql.rowset.serial.SerialJavaObject**](http://docs.google.com/javax/sql/rowset/serial/SerialJavaObject.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1465795139032831023L

| **Serialized Fields** |
| --- |

### obj

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

Placeholder for object to be serialized.

### chain

[Vector](http://docs.google.com/java/util/Vector.html)<[E](http://docs.google.com/java/util/Vector.html)> **chain**

A container for the warnings issued on this SerialJavaObject object. When there are multiple warnings, each warning is chained to the previous warning.

| **Class** [**javax.sql.rowset.serial.SerialRef**](http://docs.google.com/javax/sql/rowset/serial/SerialRef.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4727123500609662274L

| **Serialized Fields** |
| --- |

### baseTypeName

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

String containing the base type name.

### object

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

This will store the type Ref as an Object.

### reference

[Ref](http://docs.google.com/java/sql/Ref.html) **reference**

Private copy of the Ref reference.

| **Class** [**javax.sql.rowset.serial.SerialStruct**](http://docs.google.com/javax/sql/rowset/serial/SerialStruct.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-8322445504027483372L

| **Serialized Fields** |
| --- |

### SQLTypeName

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

The SQL type name for the structured type that this SerialStruct object represents. This is the name used in the SQL definition of the SQL structured type.

### attribs

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

An array of Object instances in which each element is an attribute of the SQL structured type that this SerialStruct object represents. The attributes are ordered according to their order in the definition of the SQL structured type.

| **Package** **javax.sql.rowset.spi** |
| --- |

| **Class** [**javax.sql.rowset.spi.SyncFactoryException**](http://docs.google.com/javax/sql/rowset/spi/SyncFactoryException.html) **extends** [**SQLException**](http://docs.google.com/java/sql/SQLException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-4354595476433200352L

| **Class** [**javax.sql.rowset.spi.SyncProviderException**](http://docs.google.com/javax/sql/rowset/spi/SyncProviderException.html) **extends** [**SQLException**](http://docs.google.com/java/sql/SQLException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-939908523620640692L

| **Serialized Fields** |
| --- |

### syncResolver

[SyncResolver](http://docs.google.com/javax/sql/rowset/spi/SyncResolver.html) **syncResolver**

The instance of javax.sql.rowset.spi.SyncResolver that this SyncProviderException object will return when its getSyncResolver method is called.

| **Package** **javax.transaction** |
| --- |

| **Class** [**javax.transaction.InvalidTransactionException**](http://docs.google.com/javax/transaction/InvalidTransactionException.html) **extends** [**RemoteException**](http://docs.google.com/java/rmi/RemoteException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.transaction.TransactionRequiredException**](http://docs.google.com/javax/transaction/TransactionRequiredException.html) **extends** [**RemoteException**](http://docs.google.com/java/rmi/RemoteException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.transaction.TransactionRolledbackException**](http://docs.google.com/javax/transaction/TransactionRolledbackException.html) **extends** [**RemoteException**](http://docs.google.com/java/rmi/RemoteException.html) **implements Serializable** | |
| --- | --- |

| **Package** **javax.transaction.xa** |
| --- |

| **Class** [**javax.transaction.xa.XAException**](http://docs.google.com/javax/transaction/xa/XAException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### errorCode

int **errorCode**

The error code with which to create the SystemException.

The error code for the exception

| **Package** **javax.xml.bind** |
| --- |

| **Class** [**javax.xml.bind.JAXBElement**](http://docs.google.com/javax/xml/bind/JAXBElement.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**1L

| **Serialized Fields** |
| --- |

### name

[QName](http://docs.google.com/javax/xml/namespace/QName.html) **name**

xml element tag name

### declaredType

[Class](http://docs.google.com/java/lang/Class.html)<[T](http://docs.google.com/java/lang/Class.html)> **declaredType**

Java datatype binding for xml element declaration's type.

### scope

[Class](http://docs.google.com/java/lang/Class.html)<[T](http://docs.google.com/java/lang/Class.html)> **scope**

Scope of xml element declaration representing this xml element instance. Can be one of the following values: - [JAXBElement.GlobalScope](http://docs.google.com/javax/xml/bind/JAXBElement.GlobalScope.html) for global xml element declaration. - local element declaration has a scope set to the Java class representation of complex type defintion containing xml element declaration.

### value

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

xml element value. Represents content model and attributes of an xml element instance.

### nil

boolean **nil**

true iff the xml element instance has xsi:nil="true".

| **Class** [**javax.xml.bind.JAXBException**](http://docs.google.com/javax/xml/bind/JAXBException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5621384651494307979L

| **Serialized Fields** |
| --- |

### errorCode

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

Vendor specific error code

### linkedException

[Throwable](http://docs.google.com/java/lang/Throwable.html) **linkedException**

Exception reference

| **Class** [**javax.xml.bind.MarshalException**](http://docs.google.com/javax/xml/bind/MarshalException.html) **extends** [**JAXBException**](http://docs.google.com/javax/xml/bind/JAXBException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.xml.bind.PropertyException**](http://docs.google.com/javax/xml/bind/PropertyException.html) **extends** [**JAXBException**](http://docs.google.com/javax/xml/bind/JAXBException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.xml.bind.TypeConstraintException**](http://docs.google.com/javax/xml/bind/TypeConstraintException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### errorCode

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

Vendor specific error code

### linkedException

[Throwable](http://docs.google.com/java/lang/Throwable.html) **linkedException**

Exception reference

| **Class** [**javax.xml.bind.UnmarshalException**](http://docs.google.com/javax/xml/bind/UnmarshalException.html) **extends** [**JAXBException**](http://docs.google.com/javax/xml/bind/JAXBException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.xml.bind.ValidationException**](http://docs.google.com/javax/xml/bind/ValidationException.html) **extends** [**JAXBException**](http://docs.google.com/javax/xml/bind/JAXBException.html) **implements Serializable** | |
| --- | --- |

| **Package** **javax.xml.crypto** |
| --- |

| **Class** [**javax.xml.crypto.KeySelectorException**](http://docs.google.com/javax/xml/crypto/KeySelectorException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-7480033639322531109L

| **Serialized Fields** |
| --- |

### cause

[Throwable](http://docs.google.com/java/lang/Throwable.html) **cause**

The throwable that caused this exception to get thrown, or null if this exception was not caused by another throwable or if the causative throwable is unknown.

| **Class** [**javax.xml.crypto.MarshalException**](http://docs.google.com/javax/xml/crypto/MarshalException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-863185580332643547L

| **Serialized Fields** |
| --- |

### cause

[Throwable](http://docs.google.com/java/lang/Throwable.html) **cause**

The throwable that caused this exception to get thrown, or null if this exception was not caused by another throwable or if the causative throwable is unknown.

| **Class** [**javax.xml.crypto.NoSuchMechanismException**](http://docs.google.com/javax/xml/crypto/NoSuchMechanismException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**4189669069570660166L

| **Serialized Fields** |
| --- |

### cause

[Throwable](http://docs.google.com/java/lang/Throwable.html) **cause**

The throwable that caused this exception to get thrown, or null if this exception was not caused by another throwable or if the causative throwable is unknown.

| **Class** [**javax.xml.crypto.URIReferenceException**](http://docs.google.com/javax/xml/crypto/URIReferenceException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**7173469703932561419L

| **Serialized Fields** |
| --- |

### cause

[Throwable](http://docs.google.com/java/lang/Throwable.html) **cause**

The throwable that caused this exception to get thrown, or null if this exception was not caused by another throwable or if the causative throwable is unknown.

### uriReference

[URIReference](http://docs.google.com/javax/xml/crypto/URIReference.html) **uriReference**

| **Package** **javax.xml.crypto.dsig** |
| --- |

| **Class** [**javax.xml.crypto.dsig.TransformException**](http://docs.google.com/javax/xml/crypto/dsig/TransformException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5082634801360427800L

| **Serialized Fields** |
| --- |

### cause

[Throwable](http://docs.google.com/java/lang/Throwable.html) **cause**

The throwable that caused this exception to get thrown, or null if this exception was not caused by another throwable or if the causative throwable is unknown.

| **Class** [**javax.xml.crypto.dsig.XMLSignatureException**](http://docs.google.com/javax/xml/crypto/dsig/XMLSignatureException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-3438102491013869995L

| **Serialized Fields** |
| --- |

### cause

[Throwable](http://docs.google.com/java/lang/Throwable.html) **cause**

The throwable that caused this exception to get thrown, or null if this exception was not caused by another throwable or if the causative throwable is unknown.

| **Package** **javax.xml.datatype** |
| --- |

| **Class** [**javax.xml.datatype.DatatypeConfigurationException**](http://docs.google.com/javax/xml/datatype/DatatypeConfigurationException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Package** **javax.xml.namespace** |
| --- |

| **Class** [**javax.xml.namespace.QName**](http://docs.google.com/javax/xml/namespace/QName.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### namespaceURI

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

Namespace URI of this QName.

### localPart

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

local part of this QName.

### prefix

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

prefix of this QName.

| **Package** **javax.xml.parsers** |
| --- |

| **Class** [**javax.xml.parsers.FactoryConfigurationError**](http://docs.google.com/javax/xml/parsers/FactoryConfigurationError.html) **extends** [**Error**](http://docs.google.com/java/lang/Error.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### exception

[Exception](http://docs.google.com/java/lang/Exception.html) **exception**

Exception that represents the error.

| **Class** [**javax.xml.parsers.ParserConfigurationException**](http://docs.google.com/javax/xml/parsers/ParserConfigurationException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Package** **javax.xml.soap** |
| --- |

| **Class** [**javax.xml.soap.SOAPException**](http://docs.google.com/javax/xml/soap/SOAPException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### cause

[Throwable](http://docs.google.com/java/lang/Throwable.html) **cause**

| **Package** **javax.xml.stream** |
| --- |

| **Class** [**javax.xml.stream.FactoryConfigurationError**](http://docs.google.com/javax/xml/stream/FactoryConfigurationError.html) **extends** [**Error**](http://docs.google.com/java/lang/Error.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### nested

[Exception](http://docs.google.com/java/lang/Exception.html) **nested**

| **Class** [**javax.xml.stream.XMLStreamException**](http://docs.google.com/javax/xml/stream/XMLStreamException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### nested

[Throwable](http://docs.google.com/java/lang/Throwable.html) **nested**

### location

[Location](http://docs.google.com/javax/xml/stream/Location.html) **location**

| **Package** **javax.xml.transform** |
| --- |

| **Class** [**javax.xml.transform.TransformerConfigurationException**](http://docs.google.com/javax/xml/transform/TransformerConfigurationException.html) **extends** [**TransformerException**](http://docs.google.com/javax/xml/transform/TransformerException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.xml.transform.TransformerException**](http://docs.google.com/javax/xml/transform/TransformerException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### locator

[SourceLocator](http://docs.google.com/javax/xml/transform/SourceLocator.html) **locator**

Field locator specifies where the error occured

### containedException

[Throwable](http://docs.google.com/java/lang/Throwable.html) **containedException**

Field containedException specifies a wrapped exception. May be null.

| **Class** [**javax.xml.transform.TransformerFactoryConfigurationError**](http://docs.google.com/javax/xml/transform/TransformerFactoryConfigurationError.html) **extends** [**Error**](http://docs.google.com/java/lang/Error.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### exception

[Exception](http://docs.google.com/java/lang/Exception.html) **exception**

Exception for the TransformerFactoryConfigurationError.

| **Package** **javax.xml.ws** |
| --- |

| **Class** [**javax.xml.ws.ProtocolException**](http://docs.google.com/javax/xml/ws/ProtocolException.html) **extends** [**WebServiceException**](http://docs.google.com/javax/xml/ws/WebServiceException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.xml.ws.WebServiceException**](http://docs.google.com/javax/xml/ws/WebServiceException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

| **Class** [**javax.xml.ws.WebServicePermission**](http://docs.google.com/javax/xml/ws/WebServicePermission.html) **extends** [**BasicPermission**](http://docs.google.com/java/security/BasicPermission.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-146474640053770988L

| **Package** **javax.xml.ws.http** |
| --- |

| **Class** [**javax.xml.ws.http.HTTPException**](http://docs.google.com/javax/xml/ws/http/HTTPException.html) **extends** [**ProtocolException**](http://docs.google.com/javax/xml/ws/ProtocolException.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### statusCode

int **statusCode**

| **Package** **javax.xml.ws.soap** |
| --- |

| **Class** [**javax.xml.ws.soap.SOAPFaultException**](http://docs.google.com/javax/xml/ws/soap/SOAPFaultException.html) **extends** [**ProtocolException**](http://docs.google.com/javax/xml/ws/ProtocolException.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### fault

[SOAPFault](http://docs.google.com/javax/xml/soap/SOAPFault.html) **fault**

| **Package** **javax.xml.xpath** |
| --- |

| **Class** [**javax.xml.xpath.XPathException**](http://docs.google.com/javax/xml/xpath/XPathException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1837080260374986980L

| **Serialized Fields** |
| --- |

### cause

[Throwable](http://docs.google.com/java/lang/Throwable.html) **cause**

| **Class** [**javax.xml.xpath.XPathExpressionException**](http://docs.google.com/javax/xml/xpath/XPathExpressionException.html) **extends** [**XPathException**](http://docs.google.com/javax/xml/xpath/XPathException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1837080260374986980L

| **Class** [**javax.xml.xpath.XPathFactoryConfigurationException**](http://docs.google.com/javax/xml/xpath/XPathFactoryConfigurationException.html) **extends** [**XPathException**](http://docs.google.com/javax/xml/xpath/XPathException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1837080260374986980L

| **Class** [**javax.xml.xpath.XPathFunctionException**](http://docs.google.com/javax/xml/xpath/XPathFunctionException.html) **extends** [**XPathExpressionException**](http://docs.google.com/javax/xml/xpath/XPathExpressionException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1837080260374986980L

| **Package** **org.ietf.jgss** |
| --- |

| **Class** [**org.ietf.jgss.GSSException**](http://docs.google.com/org/ietf/jgss/GSSException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-2706218945227726672L

| **Serialized Fields** |
| --- |

### major

int **major**

The major code for this exception

### minor

int **minor**

The minor code for this exception

### minorMessage

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

The text string for minor code

### majorString

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

Alternate text string for major code

| **Package** **org.omg.CosNaming** |
| --- |

| **Class** [**org.omg.CosNaming.\_BindingIteratorImplBase**](http://docs.google.com/org/omg/CosNaming/_BindingIteratorImplBase.html) **extends** [**DynamicImplementation**](http://docs.google.com/org/omg/CORBA/DynamicImplementation.html) **implements Serializable** | |
| --- | --- |

| **Class** [**org.omg.CosNaming.\_BindingIteratorStub**](http://docs.google.com/org/omg/CosNaming/_BindingIteratorStub.html) **extends** [**ObjectImpl**](http://docs.google.com/org/omg/CORBA/portable/ObjectImpl.html) **implements Serializable** | |
| --- | --- |

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Class** [**org.omg.CosNaming.\_NamingContextExtStub**](http://docs.google.com/org/omg/CosNaming/_NamingContextExtStub.html) **extends** [**ObjectImpl**](http://docs.google.com/org/omg/CORBA/portable/ObjectImpl.html) **implements Serializable** | |
| --- | --- |

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Class** [**org.omg.CosNaming.\_NamingContextImplBase**](http://docs.google.com/org/omg/CosNaming/_NamingContextImplBase.html) **extends** [**DynamicImplementation**](http://docs.google.com/org/omg/CORBA/DynamicImplementation.html) **implements Serializable** | |
| --- | --- |

| **Class** [**org.omg.CosNaming.\_NamingContextStub**](http://docs.google.com/org/omg/CosNaming/_NamingContextStub.html) **extends** [**ObjectImpl**](http://docs.google.com/org/omg/CORBA/portable/ObjectImpl.html) **implements Serializable** | |
| --- | --- |

| **Serialization Methods** |
| --- |

### readObject

private void **readObject**([ObjectInputStream](http://docs.google.com/java/io/ObjectInputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

### writeObject

private void **writeObject**([ObjectOutputStream](http://docs.google.com/java/io/ObjectOutputStream.html) s)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

**Throws:** [IOException](http://docs.google.com/java/io/IOException.html)

| **Class** [**org.omg.CosNaming.Binding**](http://docs.google.com/org/omg/CosNaming/Binding.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### binding\_name

[NameComponent](http://docs.google.com/org/omg/CosNaming/NameComponent.html)[] **binding\_name**

### binding\_type

[BindingType](http://docs.google.com/org/omg/CosNaming/BindingType.html) **binding\_type**

| **Class** [**org.omg.CosNaming.BindingType**](http://docs.google.com/org/omg/CosNaming/BindingType.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### \_\_value

int **\_\_value**

| **Class** [**org.omg.CosNaming.NameComponent**](http://docs.google.com/org/omg/CosNaming/NameComponent.html) **extends** [**Object**](http://docs.google.com/java/lang/Object.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### id

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

### kind

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

| **Package** **org.w3c.dom** |
| --- |

| **Class** [**org.w3c.dom.DOMException**](http://docs.google.com/org/w3c/dom/DOMException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**6627732366795969916L

| **Serialized Fields** |
| --- |

### code

short **code**

| **Package** **org.w3c.dom.events** |
| --- |

| **Class** [**org.w3c.dom.events.EventException**](http://docs.google.com/org/w3c/dom/events/EventException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### code

short **code**

| **Package** **org.w3c.dom.ls** |
| --- |

| **Class** [**org.w3c.dom.ls.LSException**](http://docs.google.com/org/w3c/dom/ls/LSException.html) **extends** [**RuntimeException**](http://docs.google.com/java/lang/RuntimeException.html) **implements Serializable** | |
| --- | --- |

| **Serialized Fields** |
| --- |

### code

short **code**

| **Package** **org.xml.sax** |
| --- |

| **Class** [**org.xml.sax.SAXException**](http://docs.google.com/org/xml/sax/SAXException.html) **extends** [**Exception**](http://docs.google.com/java/lang/Exception.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**583241635256073760L

| **Serialized Fields** |
| --- |

### exception

[Exception](http://docs.google.com/java/lang/Exception.html) **exception**

The embedded exception if tunnelling, or null.

| **Class** [**org.xml.sax.SAXNotRecognizedException**](http://docs.google.com/org/xml/sax/SAXNotRecognizedException.html) **extends** [**SAXException**](http://docs.google.com/org/xml/sax/SAXException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**5440506620509557213L

| **Class** [**org.xml.sax.SAXNotSupportedException**](http://docs.google.com/org/xml/sax/SAXNotSupportedException.html) **extends** [**SAXException**](http://docs.google.com/org/xml/sax/SAXException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-1422818934641823846L

| **Class** [**org.xml.sax.SAXParseException**](http://docs.google.com/org/xml/sax/SAXParseException.html) **extends** [**SAXException**](http://docs.google.com/org/xml/sax/SAXException.html) **implements Serializable** | |
| --- | --- |

**serialVersionUID:**-5651165872476709336L

| **Serialized Fields** |
| --- |

### publicId

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

The public identifier, or null. **See Also:**[SAXParseException.getPublicId()](http://docs.google.com/org/xml/sax/SAXParseException.html#getPublicId())

### systemId

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

The system identifier, or null. **See Also:**[SAXParseException.getSystemId()](http://docs.google.com/org/xml/sax/SAXParseException.html#getSystemId())

### lineNumber

int **lineNumber**

The line number, or -1. **See Also:**[SAXParseException.getLineNumber()](http://docs.google.com/org/xml/sax/SAXParseException.html#getLineNumber())

### columnNumber

int **columnNumber**

The column number, or -1. **See Also:**[SAXParseException.getColumnNumber()](http://docs.google.com/org/xml/sax/SAXParseException.html#getColumnNumber())

| | [**Overview**](http://docs.google.com/overview-summary.html) | Package | Class | Use | [**Tree**](http://docs.google.com/overview-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   NEXT | [**FRAMES**](http://docs.google.com/index.html?serialized-form.html)    [**NO FRAMES**](http://docs.google.com/serialized-form.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |

[Submit a bug or feature](http://bugs.sun.com/services/bugreport/index.jsp)

For further API reference and developer documentation, see [Java SE Developer Documentation](http://docs.google.com/webnotes/devdocs-vs-specs.html). That documentation contains more detailed, developer-targeted descriptions, with conceptual overviews, definitions of terms, workarounds, and working code examples.

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