| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/HierarchyEvent.html) | [**Tree**](http://docs.google.com/package-tree.html) | [**Deprecated**](http://docs.google.com/deprecated-list.html) | [**Index**](http://docs.google.com/index-files/index-1.html) | [**Help**](http://docs.google.com/help-doc.html) | | --- | --- | --- | --- | --- | --- | --- | --- | | | ***Java™ Platform***  ***Standard Ed. 6*** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [**PREV CLASS**](http://docs.google.com/java/awt/event/HierarchyBoundsListener.html)   [**NEXT CLASS**](http://docs.google.com/java/awt/event/HierarchyListener.html) | [**FRAMES**](http://docs.google.com/index.html?java/awt/event/HierarchyEvent.html)    [**NO FRAMES**](http://docs.google.com/HierarchyEvent.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |
| SUMMARY: NESTED | [FIELD](#3znysh7) | [CONSTR](#3dy6vkm) | [METHOD](#1t3h5sf) | DETAIL: [FIELD](#3rdcrjn) | [CONSTR](#1y810tw) | [METHOD](#1ci93xb) |

## **java.awt.event**

Class HierarchyEvent

[java.lang.Object](http://docs.google.com/java/lang/Object.html)  
 [java.util.EventObject](http://docs.google.com/java/util/EventObject.html)  
 [java.awt.AWTEvent](http://docs.google.com/java/awt/AWTEvent.html)  
 **java.awt.event.HierarchyEvent**

**All Implemented Interfaces:** [Serializable](http://docs.google.com/java/io/Serializable.html)

public class **HierarchyEvent**extends [AWTEvent](http://docs.google.com/java/awt/AWTEvent.html)

An event which indicates a change to the Component hierarchy to which a Component belongs.

* Hierarchy Change Events (HierarchyListener)
  + addition of an ancestor
  + removal of an ancestor
  + hierarchy made displayable
  + hierarchy made undisplayable
  + hierarchy shown on the screen (both visible and displayable)
  + hierarchy hidden on the screen (either invisible or undisplayable)
* Ancestor Reshape Events (HierarchyBoundsListener)
  + an ancestor was resized
  + an ancestor was moved

Hierarchy events are provided for notification purposes ONLY. The AWT will automatically handle changes to the hierarchy internally so that GUI layout and displayability works properly regardless of whether a program is receiving these events or not.

This event is generated by a Container object (such as a Panel) when the Container is added, removed, moved, or resized, and passed down the hierarchy. It is also generated by a Component object when that object's addNotify, removeNotify, show, or hide method is called. ANCESTOR\_MOVED and ANCESTOR\_RESIZED events are dispatched to every HierarchyBoundsListener or HierarchyBoundsAdapter object which registered to receive such events using the Component's addHierarchyBoundsListener method. (HierarchyBoundsAdapter objects implement the HierarchyBoundsListener interface.) HIERARCHY\_CHANGED events are dispatched to every HierarchyListener object which registered to receive such events using the Component's addHierarchyListener method. Each such listener object gets this HierarchyEvent when the event occurs.

**Since:** 1.3 **See Also:**[HierarchyListener](http://docs.google.com/java/awt/event/HierarchyListener.html), [HierarchyBoundsAdapter](http://docs.google.com/java/awt/event/HierarchyBoundsAdapter.html), [HierarchyBoundsListener](http://docs.google.com/java/awt/event/HierarchyBoundsListener.html), [Serialized Form](http://docs.google.com/serialized-form.html#java.awt.event.HierarchyEvent)

| **Field Summary** | |
| --- | --- |
| static int | [**ANCESTOR\_MOVED**](http://docs.google.com/java/awt/event/HierarchyEvent.html#ANCESTOR_MOVED)            The event id indicating an ancestor-Container was moved. |
| static int | [**ANCESTOR\_RESIZED**](http://docs.google.com/java/awt/event/HierarchyEvent.html#ANCESTOR_RESIZED)            The event id indicating an ancestor-Container was resized. |
| static int | [**DISPLAYABILITY\_CHANGED**](http://docs.google.com/java/awt/event/HierarchyEvent.html#DISPLAYABILITY_CHANGED)            Indicates that the HIERARCHY\_CHANGED event was generated due to a change in the displayability of the hierarchy. |
| static int | [**HIERARCHY\_CHANGED**](http://docs.google.com/java/awt/event/HierarchyEvent.html#HIERARCHY_CHANGED)            The event id indicating that modification was made to the entire hierarchy tree. |
| static int | [**HIERARCHY\_FIRST**](http://docs.google.com/java/awt/event/HierarchyEvent.html#HIERARCHY_FIRST)            Marks the first integer id for the range of hierarchy event ids. |
| static int | [**HIERARCHY\_LAST**](http://docs.google.com/java/awt/event/HierarchyEvent.html#HIERARCHY_LAST)            Marks the last integer id for the range of ancestor event ids. |
| static int | [**PARENT\_CHANGED**](http://docs.google.com/java/awt/event/HierarchyEvent.html#PARENT_CHANGED)            Indicates that the HIERARCHY\_CHANGED event was generated by a reparenting operation. |
| static int | [**SHOWING\_CHANGED**](http://docs.google.com/java/awt/event/HierarchyEvent.html#SHOWING_CHANGED)            Indicates that the HIERARCHY\_CHANGED event was generated due to a change in the showing state of the hierarchy. |

| **Fields inherited from class java.awt.**[**AWTEvent**](http://docs.google.com/java/awt/AWTEvent.html) |
| --- |
| [ACTION\_EVENT\_MASK](http://docs.google.com/java/awt/AWTEvent.html#ACTION_EVENT_MASK), [ADJUSTMENT\_EVENT\_MASK](http://docs.google.com/java/awt/AWTEvent.html#ADJUSTMENT_EVENT_MASK), [COMPONENT\_EVENT\_MASK](http://docs.google.com/java/awt/AWTEvent.html#COMPONENT_EVENT_MASK), [consumed](http://docs.google.com/java/awt/AWTEvent.html#consumed), [CONTAINER\_EVENT\_MASK](http://docs.google.com/java/awt/AWTEvent.html#CONTAINER_EVENT_MASK), [FOCUS\_EVENT\_MASK](http://docs.google.com/java/awt/AWTEvent.html#FOCUS_EVENT_MASK), [HIERARCHY\_BOUNDS\_EVENT\_MASK](http://docs.google.com/java/awt/AWTEvent.html#HIERARCHY_BOUNDS_EVENT_MASK), [HIERARCHY\_EVENT\_MASK](http://docs.google.com/java/awt/AWTEvent.html#HIERARCHY_EVENT_MASK), [id](http://docs.google.com/java/awt/AWTEvent.html#id), [INPUT\_METHOD\_EVENT\_MASK](http://docs.google.com/java/awt/AWTEvent.html#INPUT_METHOD_EVENT_MASK), [INVOCATION\_EVENT\_MASK](http://docs.google.com/java/awt/AWTEvent.html#INVOCATION_EVENT_MASK), [ITEM\_EVENT\_MASK](http://docs.google.com/java/awt/AWTEvent.html#ITEM_EVENT_MASK), [KEY\_EVENT\_MASK](http://docs.google.com/java/awt/AWTEvent.html#KEY_EVENT_MASK), [MOUSE\_EVENT\_MASK](http://docs.google.com/java/awt/AWTEvent.html#MOUSE_EVENT_MASK), [MOUSE\_MOTION\_EVENT\_MASK](http://docs.google.com/java/awt/AWTEvent.html#MOUSE_MOTION_EVENT_MASK), [MOUSE\_WHEEL\_EVENT\_MASK](http://docs.google.com/java/awt/AWTEvent.html#MOUSE_WHEEL_EVENT_MASK), [PAINT\_EVENT\_MASK](http://docs.google.com/java/awt/AWTEvent.html#PAINT_EVENT_MASK), [RESERVED\_ID\_MAX](http://docs.google.com/java/awt/AWTEvent.html#RESERVED_ID_MAX), [TEXT\_EVENT\_MASK](http://docs.google.com/java/awt/AWTEvent.html#TEXT_EVENT_MASK), [WINDOW\_EVENT\_MASK](http://docs.google.com/java/awt/AWTEvent.html#WINDOW_EVENT_MASK), [WINDOW\_FOCUS\_EVENT\_MASK](http://docs.google.com/java/awt/AWTEvent.html#WINDOW_FOCUS_EVENT_MASK), [WINDOW\_STATE\_EVENT\_MASK](http://docs.google.com/java/awt/AWTEvent.html#WINDOW_STATE_EVENT_MASK) |

| **Fields inherited from class java.util.**[**EventObject**](http://docs.google.com/java/util/EventObject.html) |
| --- |
| [source](http://docs.google.com/java/util/EventObject.html#source) |

| **Constructor Summary** | |
| --- | --- |
| [**HierarchyEvent**](http://docs.google.com/java/awt/event/HierarchyEvent.html#HierarchyEvent(java.awt.Component,%20int,%20java.awt.Component,%20java.awt.Container))([Component](http://docs.google.com/java/awt/Component.html) source, int id, [Component](http://docs.google.com/java/awt/Component.html) changed, [Container](http://docs.google.com/java/awt/Container.html) changedParent)            Constructs an HierarchyEvent object to identify a change in the Component hierarchy. |
| [**HierarchyEvent**](http://docs.google.com/java/awt/event/HierarchyEvent.html#HierarchyEvent(java.awt.Component,%20int,%20java.awt.Component,%20java.awt.Container,%20long))([Component](http://docs.google.com/java/awt/Component.html) source, int id, [Component](http://docs.google.com/java/awt/Component.html) changed, [Container](http://docs.google.com/java/awt/Container.html) changedParent, long changeFlags)            Constructs an HierarchyEvent object to identify a change in the Component hierarchy. |

| **Method Summary** | |
| --- | --- |
| [Component](http://docs.google.com/java/awt/Component.html) | [**getChanged**](http://docs.google.com/java/awt/event/HierarchyEvent.html#getChanged())()            Returns the Component at the top of the hierarchy which was changed. |
| [Container](http://docs.google.com/java/awt/Container.html) | [**getChangedParent**](http://docs.google.com/java/awt/event/HierarchyEvent.html#getChangedParent())()            Returns the parent of the Component returned by getChanged(). |
| long | [**getChangeFlags**](http://docs.google.com/java/awt/event/HierarchyEvent.html#getChangeFlags())()            Returns a bitmask which indicates the type(s) of HIERARCHY\_CHANGED events represented in this event object. |
| [Component](http://docs.google.com/java/awt/Component.html) | [**getComponent**](http://docs.google.com/java/awt/event/HierarchyEvent.html#getComponent())()            Returns the originator of the event. |
| [String](http://docs.google.com/java/lang/String.html) | [**paramString**](http://docs.google.com/java/awt/event/HierarchyEvent.html#paramString())()            Returns a parameter string identifying this event. |

| **Methods inherited from class java.awt.**[**AWTEvent**](http://docs.google.com/java/awt/AWTEvent.html) |
| --- |
| [consume](http://docs.google.com/java/awt/AWTEvent.html#consume()), [getID](http://docs.google.com/java/awt/AWTEvent.html#getID()), [isConsumed](http://docs.google.com/java/awt/AWTEvent.html#isConsumed()), [setSource](http://docs.google.com/java/awt/AWTEvent.html#setSource(java.lang.Object)), [toString](http://docs.google.com/java/awt/AWTEvent.html#toString()) |

| **Methods inherited from class java.util.**[**EventObject**](http://docs.google.com/java/util/EventObject.html) |
| --- |
| [getSource](http://docs.google.com/java/util/EventObject.html#getSource()) |

| **Methods inherited from class java.lang.**[**Object**](http://docs.google.com/java/lang/Object.html) |
| --- |
| [clone](http://docs.google.com/java/lang/Object.html#clone()), [equals](http://docs.google.com/java/lang/Object.html#equals(java.lang.Object)), [finalize](http://docs.google.com/java/lang/Object.html#finalize()), [getClass](http://docs.google.com/java/lang/Object.html#getClass()), [hashCode](http://docs.google.com/java/lang/Object.html#hashCode()), [notify](http://docs.google.com/java/lang/Object.html#notify()), [notifyAll](http://docs.google.com/java/lang/Object.html#notifyAll()), [wait](http://docs.google.com/java/lang/Object.html#wait()), [wait](http://docs.google.com/java/lang/Object.html#wait(long)), [wait](http://docs.google.com/java/lang/Object.html#wait(long,%20int)) |

| **Field Detail** |
| --- |

### HIERARCHY\_FIRST

public static final int **HIERARCHY\_FIRST**

Marks the first integer id for the range of hierarchy event ids.

**See Also:**[Constant Field Values](http://docs.google.com/constant-values.html#java.awt.event.HierarchyEvent.HIERARCHY_FIRST)

### HIERARCHY\_CHANGED

public static final int **HIERARCHY\_CHANGED**

The event id indicating that modification was made to the entire hierarchy tree.

**See Also:**[Constant Field Values](http://docs.google.com/constant-values.html#java.awt.event.HierarchyEvent.HIERARCHY_CHANGED)

### ANCESTOR\_MOVED

public static final int **ANCESTOR\_MOVED**

The event id indicating an ancestor-Container was moved.

**See Also:**[Constant Field Values](http://docs.google.com/constant-values.html#java.awt.event.HierarchyEvent.ANCESTOR_MOVED)

### ANCESTOR\_RESIZED

public static final int **ANCESTOR\_RESIZED**

The event id indicating an ancestor-Container was resized.

**See Also:**[Constant Field Values](http://docs.google.com/constant-values.html#java.awt.event.HierarchyEvent.ANCESTOR_RESIZED)

### HIERARCHY\_LAST

public static final int **HIERARCHY\_LAST**

Marks the last integer id for the range of ancestor event ids.

**See Also:**[Constant Field Values](http://docs.google.com/constant-values.html#java.awt.event.HierarchyEvent.HIERARCHY_LAST)

### PARENT\_CHANGED

public static final int **PARENT\_CHANGED**

Indicates that the HIERARCHY\_CHANGED event was generated by a reparenting operation.

**See Also:**[Constant Field Values](http://docs.google.com/constant-values.html#java.awt.event.HierarchyEvent.PARENT_CHANGED)

### DISPLAYABILITY\_CHANGED

public static final int **DISPLAYABILITY\_CHANGED**

Indicates that the HIERARCHY\_CHANGED event was generated due to a change in the displayability of the hierarchy. To discern the current displayability of the hierarchy, call Component.isDisplayable. Displayability changes occur in response to explicit or implicit calls to Component.addNotify and Component.removeNotify.

**See Also:**[Component.isDisplayable()](http://docs.google.com/java/awt/Component.html#isDisplayable()), [Component.addNotify()](http://docs.google.com/java/awt/Component.html#addNotify()), [Component.removeNotify()](http://docs.google.com/java/awt/Component.html#removeNotify()), [Constant Field Values](http://docs.google.com/constant-values.html#java.awt.event.HierarchyEvent.DISPLAYABILITY_CHANGED)

### SHOWING\_CHANGED

public static final int **SHOWING\_CHANGED**

Indicates that the HIERARCHY\_CHANGED event was generated due to a change in the showing state of the hierarchy. To discern the current showing state of the hierarchy, call Component.isShowing. Showing state changes occur when either the displayability or visibility of the hierarchy occurs. Visibility changes occur in response to explicit or implicit calls to Component.show and Component.hide.

**See Also:**[Component.isShowing()](http://docs.google.com/java/awt/Component.html#isShowing()), [Component.addNotify()](http://docs.google.com/java/awt/Component.html#addNotify()), [Component.removeNotify()](http://docs.google.com/java/awt/Component.html#removeNotify()), [Component.show()](http://docs.google.com/java/awt/Component.html#show()), [Component.hide()](http://docs.google.com/java/awt/Component.html#hide()), [Constant Field Values](http://docs.google.com/constant-values.html#java.awt.event.HierarchyEvent.SHOWING_CHANGED)

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

### HierarchyEvent

public **HierarchyEvent**([Component](http://docs.google.com/java/awt/Component.html) source,  
 int id,  
 [Component](http://docs.google.com/java/awt/Component.html) changed,  
 [Container](http://docs.google.com/java/awt/Container.html) changedParent)

Constructs an HierarchyEvent object to identify a change in the Component hierarchy.

Note that passing in an invalid id results in unspecified behavior. This method throws an IllegalArgumentException if source is null.

**Parameters:**source - the Component object that originated the eventid - an integer indicating the type of eventchanged - the Component at the top of the hierarchy which was changedchangedParent - the parent of changed; this may be the parent before or after the change, depending on the type of change **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if source is null

### HierarchyEvent

public **HierarchyEvent**([Component](http://docs.google.com/java/awt/Component.html) source,  
 int id,  
 [Component](http://docs.google.com/java/awt/Component.html) changed,  
 [Container](http://docs.google.com/java/awt/Container.html) changedParent,  
 long changeFlags)

Constructs an HierarchyEvent object to identify a change in the Component hierarchy.

Note that passing in an invalid id results in unspecified behavior. This method throws an IllegalArgumentException if source is null.

**Parameters:**source - the Component object that originated the eventid - an integer indicating the type of eventchanged - the Component at the top of the hierarchy which was changedchangedParent - the parent of changed; this may be the parent before or after the change, depending on the type of changechangeFlags - a bitmask which indicates the type(s) of HIERARCHY\_CHANGED events represented in this event object **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if source is null

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

### getComponent

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

Returns the originator of the event.

**Returns:**the Component object that originated the event, or null if the object is not a Component.

### getChanged

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

Returns the Component at the top of the hierarchy which was changed.

**Returns:**the changed Component

### getChangedParent

public [Container](http://docs.google.com/java/awt/Container.html) **getChangedParent**()

Returns the parent of the Component returned by getChanged(). For a HIERARCHY\_CHANGED event where the change was of type PARENT\_CHANGED via a call to Container.add, the parent returned is the parent after the add operation. For a HIERARCHY\_CHANGED event where the change was of type PARENT\_CHANGED via a call to Container.remove, the parent returned is the parent before the remove operation. For all other events and types, the parent returned is the parent during the operation.

**Returns:**the parent of the changed Component

### getChangeFlags

public long **getChangeFlags**()

Returns a bitmask which indicates the type(s) of HIERARCHY\_CHANGED events represented in this event object. The bits have been bitwise-ored together.

**Returns:**the bitmask, or 0 if this is not an HIERARCHY\_CHANGED event

### paramString

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

Returns a parameter string identifying this event. This method is useful for event-logging and for debugging.

**Overrides:**[paramString](http://docs.google.com/java/awt/AWTEvent.html#paramString()) in class [AWTEvent](http://docs.google.com/java/awt/AWTEvent.html) **Returns:**a string identifying the event and its attributes

| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/HierarchyEvent.html) | [**Tree**](http://docs.google.com/package-tree.html) | [**Deprecated**](http://docs.google.com/deprecated-list.html) | [**Index**](http://docs.google.com/index-files/index-1.html) | [**Help**](http://docs.google.com/help-doc.html) | | --- | --- | --- | --- | --- | --- | --- | --- | | | ***Java™ Platform***  ***Standard Ed. 6*** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [**PREV CLASS**](http://docs.google.com/java/awt/event/HierarchyBoundsListener.html)   [**NEXT CLASS**](http://docs.google.com/java/awt/event/HierarchyListener.html) | [**FRAMES**](http://docs.google.com/index.html?java/awt/event/HierarchyEvent.html)    [**NO FRAMES**](http://docs.google.com/HierarchyEvent.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |
| SUMMARY: NESTED | [FIELD](#3znysh7) | [CONSTR](#3dy6vkm) | [METHOD](#1t3h5sf) | DETAIL: [FIELD](#3rdcrjn) | [CONSTR](#1y810tw) | [METHOD](#1ci93xb) |

[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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