| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/FloatControl.html) | [**Tree**](http://docs.google.com/package-tree.html) | [**Deprecated**](http://docs.google.com/deprecated-list.html) | [**Index**](http://docs.google.com/index-files/index-1.html) | [**Help**](http://docs.google.com/help-doc.html) | | --- | --- | --- | --- | --- | --- | --- | --- | | | ***Java™ Platform***  ***Standard Ed. 6*** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [**PREV CLASS**](http://docs.google.com/javax/sound/sampled/EnumControl.Type.html)   [**NEXT CLASS**](http://docs.google.com/javax/sound/sampled/FloatControl.Type.html) | [**FRAMES**](http://docs.google.com/index.html?javax/sound/sampled/FloatControl.html)    [**NO FRAMES**](http://docs.google.com/FloatControl.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |
| SUMMARY: [NESTED](#3znysh7) | FIELD | [CONSTR](#2et92p0) | [METHOD](#tyjcwt) | DETAIL: FIELD | [CONSTR](#4d34og8) | [METHOD](#3rdcrjn) |

## **javax.sound.sampled**

Class FloatControl

[java.lang.Object](http://docs.google.com/java/lang/Object.html)  
 [javax.sound.sampled.Control](http://docs.google.com/javax/sound/sampled/Control.html)  
 **javax.sound.sampled.FloatControl**

public abstract class **FloatControl**extends [Control](http://docs.google.com/javax/sound/sampled/Control.html)

A FloatControl object provides control over a range of floating-point values. Float controls are often represented in graphical user interfaces by continuously adjustable objects such as sliders or rotary knobs. Concrete subclasses of FloatControl implement controls, such as gain and pan, that affect a line's audio signal in some way that an application can manipulate. The [FloatControl.Type](http://docs.google.com/javax/sound/sampled/FloatControl.Type.html) inner class provides static instances of types that are used to identify some common kinds of float control.

The FloatControl abstract class provides methods to set and get the control's current floating-point value. Other methods obtain the possible range of values and the control's resolution (the smallest increment between returned values). Some float controls allow ramping to a new value over a specified period of time. FloatControl also includes methods that return string labels for the minimum, maximum, and midpoint positions of the control.

**Since:** 1.3 **See Also:**[Line.getControls()](http://docs.google.com/javax/sound/sampled/Line.html#getControls()), [Line.isControlSupported(javax.sound.sampled.Control.Type)](http://docs.google.com/javax/sound/sampled/Line.html#isControlSupported(javax.sound.sampled.Control.Type))

| **Nested Class Summary** | |
| --- | --- |
| static class | [**FloatControl.Type**](http://docs.google.com/javax/sound/sampled/FloatControl.Type.html)            An instance of the FloatControl.Type inner class identifies one kind of float control. |

| **Constructor Summary** | |
| --- | --- |
| protected | [**FloatControl**](http://docs.google.com/javax/sound/sampled/FloatControl.html#FloatControl(javax.sound.sampled.FloatControl.Type,%20float,%20float,%20float,%20int,%20float,%20java.lang.String))([FloatControl.Type](http://docs.google.com/javax/sound/sampled/FloatControl.Type.html) type, float minimum, float maximum, float precision, int updatePeriod, float initialValue, [String](http://docs.google.com/java/lang/String.html) units)            Constructs a new float control object with the given parameters. |
| protected | [**FloatControl**](http://docs.google.com/javax/sound/sampled/FloatControl.html#FloatControl(javax.sound.sampled.FloatControl.Type,%20float,%20float,%20float,%20int,%20float,%20java.lang.String,%20java.lang.String,%20java.lang.String,%20java.lang.String))([FloatControl.Type](http://docs.google.com/javax/sound/sampled/FloatControl.Type.html) type, float minimum, float maximum, float precision, int updatePeriod, float initialValue, [String](http://docs.google.com/java/lang/String.html) units, [String](http://docs.google.com/java/lang/String.html) minLabel, [String](http://docs.google.com/java/lang/String.html) midLabel, [String](http://docs.google.com/java/lang/String.html) maxLabel)            Constructs a new float control object with the given parameters |

| **Method Summary** | |
| --- | --- |
| float | [**getMaximum**](http://docs.google.com/javax/sound/sampled/FloatControl.html#getMaximum())()            Obtains the maximum value permitted. |
| [String](http://docs.google.com/java/lang/String.html) | [**getMaxLabel**](http://docs.google.com/javax/sound/sampled/FloatControl.html#getMaxLabel())()            Obtains the label for the maximum value, such as "Right" or "Full." |
| [String](http://docs.google.com/java/lang/String.html) | [**getMidLabel**](http://docs.google.com/javax/sound/sampled/FloatControl.html#getMidLabel())()            Obtains the label for the mid-point value, such as "Center" or "Default." |
| float | [**getMinimum**](http://docs.google.com/javax/sound/sampled/FloatControl.html#getMinimum())()            Obtains the minimum value permitted. |
| [String](http://docs.google.com/java/lang/String.html) | [**getMinLabel**](http://docs.google.com/javax/sound/sampled/FloatControl.html#getMinLabel())()            Obtains the label for the minimum value, such as "Left" or "Off." |
| float | [**getPrecision**](http://docs.google.com/javax/sound/sampled/FloatControl.html#getPrecision())()            Obtains the resolution or granularity of the control, in the units that the control measures. |
| [String](http://docs.google.com/java/lang/String.html) | [**getUnits**](http://docs.google.com/javax/sound/sampled/FloatControl.html#getUnits())()            Obtains the label for the units in which the control's values are expressed, such as "dB" or "frames per second." |
| int | [**getUpdatePeriod**](http://docs.google.com/javax/sound/sampled/FloatControl.html#getUpdatePeriod())()            Obtains the smallest time interval, in microseconds, over which the control's value can change during a shift. |
| float | [**getValue**](http://docs.google.com/javax/sound/sampled/FloatControl.html#getValue())()            Obtains this control's current value. |
| void | [**setValue**](http://docs.google.com/javax/sound/sampled/FloatControl.html#setValue(float))(float newValue)            Sets the current value for the control. |
| void | [**shift**](http://docs.google.com/javax/sound/sampled/FloatControl.html#shift(float,%20float,%20int))(float from, float to, int microseconds)            Changes the control value from the initial value to the final value linearly over the specified time period, specified in microseconds. |
| [String](http://docs.google.com/java/lang/String.html) | [**toString**](http://docs.google.com/javax/sound/sampled/FloatControl.html#toString())()            Provides a string representation of the control |

| **Methods inherited from class javax.sound.sampled.**[**Control**](http://docs.google.com/javax/sound/sampled/Control.html) |
| --- |
| [getType](http://docs.google.com/javax/sound/sampled/Control.html#getType()) |

| **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)) |

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

### FloatControl

protected **FloatControl**([FloatControl.Type](http://docs.google.com/javax/sound/sampled/FloatControl.Type.html) type,  
 float minimum,  
 float maximum,  
 float precision,  
 int updatePeriod,  
 float initialValue,  
 [String](http://docs.google.com/java/lang/String.html) units,  
 [String](http://docs.google.com/java/lang/String.html) minLabel,  
 [String](http://docs.google.com/java/lang/String.html) midLabel,  
 [String](http://docs.google.com/java/lang/String.html) maxLabel)

Constructs a new float control object with the given parameters

**Parameters:**type - the kind of control represented by this float control objectminimum - the smallest value permitted for the controlmaximum - the largest value permitted for the controlprecision - the resolution or granularity of the control. This is the size of the increment between discrete valid values.updatePeriod - the smallest time interval, in microseconds, over which the control can change from one discrete value to the next during a [shift](http://docs.google.com/javax/sound/sampled/FloatControl.html#shift(float,%20float,%20int))initialValue - the value that the control starts with when constructedunits - the label for the units in which the control's values are expressed, such as "dB" or "frames per second"minLabel - the label for the minimum value, such as "Left" or "Off"midLabel - the label for the midpoint value, such as "Center" or "Default"maxLabel - the label for the maximum value, such as "Right" or "Full"

### FloatControl

protected **FloatControl**([FloatControl.Type](http://docs.google.com/javax/sound/sampled/FloatControl.Type.html) type,  
 float minimum,  
 float maximum,  
 float precision,  
 int updatePeriod,  
 float initialValue,  
 [String](http://docs.google.com/java/lang/String.html) units)

Constructs a new float control object with the given parameters. The labels for the minimum, maximum, and mid-point values are set to zero-length strings.

**Parameters:**type - the kind of control represented by this float control objectminimum - the smallest value permitted for the controlmaximum - the largest value permitted for the controlprecision - the resolution or granularity of the control. This is the size of the increment between discrete valid values.updatePeriod - the smallest time interval, in microseconds, over which the control can change from one discrete value to the next during a [shift](http://docs.google.com/javax/sound/sampled/FloatControl.html#shift(float,%20float,%20int))initialValue - the value that the control starts with when constructedunits - the label for the units in which the control's values are expressed, such as "dB" or "frames per second"

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

### setValue

public void **setValue**(float newValue)

Sets the current value for the control. The default implementation simply sets the value as indicated. If the value indicated is greater than the maximum value, or smaller than the minimum value, an IllegalArgumentException is thrown. Some controls require that their line be open before they can be affected by setting a value.

**Parameters:**newValue - desired new value **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if the value indicated does not fall within the allowable range

### getValue

public float **getValue**()

Obtains this control's current value.

**Returns:**the current value

### getMaximum

public float **getMaximum**()

Obtains the maximum value permitted.

**Returns:**the maximum allowable value

### getMinimum

public float **getMinimum**()

Obtains the minimum value permitted.

**Returns:**the minimum allowable value

### getUnits

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

Obtains the label for the units in which the control's values are expressed, such as "dB" or "frames per second."

**Returns:**the units label, or a zero-length string if no label

### getMinLabel

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

Obtains the label for the minimum value, such as "Left" or "Off."

**Returns:**the minimum value label, or a zero-length string if no label \* has been set

### getMidLabel

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

Obtains the label for the mid-point value, such as "Center" or "Default."

**Returns:**the mid-point value label, or a zero-length string if no label \* has been set

### getMaxLabel

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

Obtains the label for the maximum value, such as "Right" or "Full."

**Returns:**the maximum value label, or a zero-length string if no label \* has been set

### getPrecision

public float **getPrecision**()

Obtains the resolution or granularity of the control, in the units that the control measures. The precision is the size of the increment between discrete valid values for this control, over the set of supported floating-point values.

**Returns:**the control's precision

### getUpdatePeriod

public int **getUpdatePeriod**()

Obtains the smallest time interval, in microseconds, over which the control's value can change during a shift. The update period is the inverse of the frequency with which the control updates its value during a shift. If the implementation does not support value shifting over time, it should set the control's value to the final value immediately and return -1 from this method.

**Returns:**update period in microseconds, or -1 if shifting over time is unsupported**See Also:**[shift(float, float, int)](http://docs.google.com/javax/sound/sampled/FloatControl.html#shift(float,%20float,%20int))

### shift

public void **shift**(float from,  
 float to,  
 int microseconds)

Changes the control value from the initial value to the final value linearly over the specified time period, specified in microseconds. This method returns without blocking; it does not wait for the shift to complete. An implementation should complete the operation within the time specified. The default implementation simply changes the value to the final value immediately.

**Parameters:**from - initial value at the beginning of the shiftto - final value after the shiftmicroseconds - maximum duration of the shift in microseconds**See Also:**[getUpdatePeriod()](http://docs.google.com/javax/sound/sampled/FloatControl.html#getUpdatePeriod())

### toString

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

Provides a string representation of the control

**Overrides:**[toString](http://docs.google.com/javax/sound/sampled/Control.html#toString()) in class [Control](http://docs.google.com/javax/sound/sampled/Control.html) **Returns:**a string description

| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/FloatControl.html) | [**Tree**](http://docs.google.com/package-tree.html) | [**Deprecated**](http://docs.google.com/deprecated-list.html) | [**Index**](http://docs.google.com/index-files/index-1.html) | [**Help**](http://docs.google.com/help-doc.html) | | --- | --- | --- | --- | --- | --- | --- | --- | | | ***Java™ Platform***  ***Standard Ed. 6*** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [**PREV CLASS**](http://docs.google.com/javax/sound/sampled/EnumControl.Type.html)   [**NEXT CLASS**](http://docs.google.com/javax/sound/sampled/FloatControl.Type.html) | [**FRAMES**](http://docs.google.com/index.html?javax/sound/sampled/FloatControl.html)    [**NO FRAMES**](http://docs.google.com/FloatControl.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |
| SUMMARY: [NESTED](#3znysh7) | FIELD | [CONSTR](#2et92p0) | [METHOD](#tyjcwt) | DETAIL: FIELD | [CONSTR](#4d34og8) | [METHOD](#3rdcrjn) |

[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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