| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/Sequencer.SyncMode.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/midi/Sequencer.html)   [**NEXT CLASS**](http://docs.google.com/javax/sound/midi/ShortMessage.html) | [**FRAMES**](http://docs.google.com/index.html?javax/sound/midi/Sequencer.SyncMode.html)    [**NO FRAMES**](http://docs.google.com/Sequencer.SyncMode.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |
| SUMMARY: NESTED | [FIELD](#3znysh7) | [CONSTR](#2et92p0) | [METHOD](#tyjcwt) | DETAIL: [FIELD](#1t3h5sf) | [CONSTR](#26in1rg) | [METHOD](#35nkun2) |

## **javax.sound.midi**

Class Sequencer.SyncMode

[java.lang.Object](http://docs.google.com/java/lang/Object.html)  
 **javax.sound.midi.Sequencer.SyncMode**

**Enclosing interface:**[Sequencer](http://docs.google.com/javax/sound/midi/Sequencer.html)

public static class **Sequencer.SyncMode**extends [Object](http://docs.google.com/java/lang/Object.html)

A SyncMode object represents one of the ways in which a MIDI sequencer's notion of time can be synchronized with a master or slave device. If the sequencer is being synchronized to a master, the sequencer revises its current time in response to messages from the master. If the sequencer has a slave, the sequencer similarly sends messages to control the slave's timing.

There are three predefined modes that specify possible masters for a sequencer: INTERNAL\_CLOCK, MIDI\_SYNC, and MIDI\_TIME\_CODE. The latter two work if the sequencer receives MIDI messages from another device. In these two modes, the sequencer's time gets reset based on system real-time timing clock messages or MIDI time code (MTC) messages, respectively. These two modes can also be used as slave modes, in which case the sequencer sends the corresponding types of MIDI messages to its receiver (whether or not the sequencer is also receiving them from a master). A fourth mode, NO\_SYNC, is used to indicate that the sequencer should not control its receiver's timing.

**See Also:**[Sequencer.setMasterSyncMode(Sequencer.SyncMode)](http://docs.google.com/javax/sound/midi/Sequencer.html#setMasterSyncMode(javax.sound.midi.Sequencer.SyncMode)), [Sequencer.setSlaveSyncMode(Sequencer.SyncMode)](http://docs.google.com/javax/sound/midi/Sequencer.html#setSlaveSyncMode(javax.sound.midi.Sequencer.SyncMode))

| **Field Summary** | |
| --- | --- |
| static [Sequencer.SyncMode](http://docs.google.com/javax/sound/midi/Sequencer.SyncMode.html) | [**INTERNAL\_CLOCK**](http://docs.google.com/javax/sound/midi/Sequencer.SyncMode.html#INTERNAL_CLOCK)            A master synchronization mode that makes the sequencer get its timing information from its internal clock. |
| static [Sequencer.SyncMode](http://docs.google.com/javax/sound/midi/Sequencer.SyncMode.html) | [**MIDI\_SYNC**](http://docs.google.com/javax/sound/midi/Sequencer.SyncMode.html#MIDI_SYNC)            A master or slave synchronization mode that specifies the use of MIDI clock messages. |
| static [Sequencer.SyncMode](http://docs.google.com/javax/sound/midi/Sequencer.SyncMode.html) | [**MIDI\_TIME\_CODE**](http://docs.google.com/javax/sound/midi/Sequencer.SyncMode.html#MIDI_TIME_CODE)            A master or slave synchronization mode that specifies the use of MIDI Time Code. |
| static [Sequencer.SyncMode](http://docs.google.com/javax/sound/midi/Sequencer.SyncMode.html) | [**NO\_SYNC**](http://docs.google.com/javax/sound/midi/Sequencer.SyncMode.html#NO_SYNC)            A slave synchronization mode indicating that no timing information should be sent to the receiver. |

| **Constructor Summary** | |
| --- | --- |
| protected | [**Sequencer.SyncMode**](http://docs.google.com/javax/sound/midi/Sequencer.SyncMode.html#Sequencer.SyncMode(java.lang.String))([String](http://docs.google.com/java/lang/String.html) name)            Constructs a synchronization mode. |

| **Method Summary** | |
| --- | --- |
| boolean | [**equals**](http://docs.google.com/javax/sound/midi/Sequencer.SyncMode.html#equals(java.lang.Object))([Object](http://docs.google.com/java/lang/Object.html) obj)            Determines whether two objects are equal. |
| int | [**hashCode**](http://docs.google.com/javax/sound/midi/Sequencer.SyncMode.html#hashCode())()            Finalizes the hashcode method. |
| [String](http://docs.google.com/java/lang/String.html) | [**toString**](http://docs.google.com/javax/sound/midi/Sequencer.SyncMode.html#toString())()            Provides this synchronization mode's name as the string representation of the mode. |

| **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()), [finalize](http://docs.google.com/java/lang/Object.html#finalize()), [getClass](http://docs.google.com/java/lang/Object.html#getClass()), [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** |
| --- |

### INTERNAL\_CLOCK

public static final [Sequencer.SyncMode](http://docs.google.com/javax/sound/midi/Sequencer.SyncMode.html) **INTERNAL\_CLOCK**

A master synchronization mode that makes the sequencer get its timing information from its internal clock. This is not a legal slave sync mode.

### MIDI\_SYNC

public static final [Sequencer.SyncMode](http://docs.google.com/javax/sound/midi/Sequencer.SyncMode.html) **MIDI\_SYNC**

A master or slave synchronization mode that specifies the use of MIDI clock messages. If this mode is used as the master sync mode, the sequencer gets its timing information from system real-time MIDI clock messages. This mode only applies as the master sync mode for sequencers that are also MIDI receivers. If this is the slave sync mode, the sequencer sends system real-time MIDI clock messages to its receiver. MIDI clock messages are sent at a rate of 24 per quarter note.

### MIDI\_TIME\_CODE

public static final [Sequencer.SyncMode](http://docs.google.com/javax/sound/midi/Sequencer.SyncMode.html) **MIDI\_TIME\_CODE**

A master or slave synchronization mode that specifies the use of MIDI Time Code. If this mode is used as the master sync mode, the sequencer gets its timing information from MIDI Time Code messages. This mode only applies as the master sync mode to sequencers that are also MIDI receivers. If this mode is used as the slave sync mode, the sequencer sends MIDI Time Code messages to its receiver. (See the MIDI 1.0 Detailed Specification for a description of MIDI Time Code.)

### NO\_SYNC

public static final [Sequencer.SyncMode](http://docs.google.com/javax/sound/midi/Sequencer.SyncMode.html) **NO\_SYNC**

A slave synchronization mode indicating that no timing information should be sent to the receiver. This is not a legal master sync mode.

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

### Sequencer.SyncMode

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

Constructs a synchronization mode.

**Parameters:**name - name of the synchronization mode

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

### equals

public final boolean **equals**([Object](http://docs.google.com/java/lang/Object.html) obj)

Determines whether two objects are equal. Returns true if the objects are identical

**Overrides:**[equals](http://docs.google.com/java/lang/Object.html#equals(java.lang.Object)) in class [Object](http://docs.google.com/java/lang/Object.html) **Parameters:**obj - the reference object with which to compare **Returns:**true if this object is the same as the obj argument, false otherwise**See Also:**[Object.hashCode()](http://docs.google.com/java/lang/Object.html#hashCode()), [Hashtable](http://docs.google.com/java/util/Hashtable.html)

### hashCode

public final int **hashCode**()

Finalizes the hashcode method.

**Overrides:**[hashCode](http://docs.google.com/java/lang/Object.html#hashCode()) in class [Object](http://docs.google.com/java/lang/Object.html) **Returns:**a hash code value for this object.**See Also:**[Object.equals(java.lang.Object)](http://docs.google.com/java/lang/Object.html#equals(java.lang.Object)), [Hashtable](http://docs.google.com/java/util/Hashtable.html)

### toString

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

Provides this synchronization mode's name as the string representation of the mode.

**Overrides:**[toString](http://docs.google.com/java/lang/Object.html#toString()) in class [Object](http://docs.google.com/java/lang/Object.html) **Returns:**the name of this synchronization mode

| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/Sequencer.SyncMode.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/midi/Sequencer.html)   [**NEXT CLASS**](http://docs.google.com/javax/sound/midi/ShortMessage.html) | [**FRAMES**](http://docs.google.com/index.html?javax/sound/midi/Sequencer.SyncMode.html)    [**NO FRAMES**](http://docs.google.com/Sequencer.SyncMode.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |
| SUMMARY: NESTED | [FIELD](#3znysh7) | [CONSTR](#2et92p0) | [METHOD](#tyjcwt) | DETAIL: [FIELD](#1t3h5sf) | [CONSTR](#26in1rg) | [METHOD](#35nkun2) |

[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.

Copyright 2006 Sun Microsystems, Inc. All rights reserved. Use is subject to [license terms](http://docs.google.com/legal/license.html). Also see the [documentation redistribution policy](http://java.sun.com/docs/redist.html).