| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | Class | **Use** | [**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   NEXT | [**FRAMES**](http://docs.google.com/index.html?java/util/concurrent/package-use.html)    [**NO FRAMES**](http://docs.google.com/package-use.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |

**Uses of Package**

**java.util.concurrent**

| Packages that use [java.util.concurrent](http://docs.google.com/java/util/concurrent/package-summary.html) | |
| --- | --- |
| [**java.util.concurrent**](#3znysh7) | Utility classes commonly useful in concurrent programming. |
| [**java.util.concurrent.locks**](#2et92p0) | Interfaces and classes providing a framework for locking and waiting for conditions that is distinct from built-in synchronization and monitors. |
| [**javax.management**](#tyjcwt) | Provides the core classes for the Java Management Extensions. |
| [**javax.swing**](#3dy6vkm) | Provides a set of "lightweight" (all-Java language) components that, to the maximum degree possible, work the same on all platforms. |
| [**javax.tools**](#1t3h5sf) | Provides interfaces for tools which can be invoked from a program, for example, compilers. |
| [**javax.xml.ws**](#4d34og8) | This package contains the core JAX-WS APIs. |
| [**javax.xml.ws.spi**](#2s8eyo1) | This package defines SPIs for JAX-WS 2.0. |

| Classes in [java.util.concurrent](http://docs.google.com/java/util/concurrent/package-summary.html) used by [java.util.concurrent](http://docs.google.com/java/util/concurrent/package-summary.html) | |
| --- | --- |
| [**AbstractExecutorService**](http://docs.google.com/java/util/concurrent/class-use/AbstractExecutorService.html#java.util.concurrent)            Provides default implementations of [ExecutorService](http://docs.google.com/java/util/concurrent/ExecutorService.html) execution methods. |
| [**BlockingDeque**](http://docs.google.com/java/util/concurrent/class-use/BlockingDeque.html#java.util.concurrent)            A [Deque](http://docs.google.com/java/util/Deque.html) that additionally supports blocking operations that wait for the deque to become non-empty when retrieving an element, and wait for space to become available in the deque when storing an element. |
| [**BlockingQueue**](http://docs.google.com/java/util/concurrent/class-use/BlockingQueue.html#java.util.concurrent)            A [Queue](http://docs.google.com/java/util/Queue.html) that additionally supports operations that wait for the queue to become non-empty when retrieving an element, and wait for space to become available in the queue when storing an element. |
| [**BrokenBarrierException**](http://docs.google.com/java/util/concurrent/class-use/BrokenBarrierException.html#java.util.concurrent)            Exception thrown when a thread tries to wait upon a barrier that is in a broken state, or which enters the broken state while the thread is waiting. |
| [**Callable**](http://docs.google.com/java/util/concurrent/class-use/Callable.html#java.util.concurrent)            A task that returns a result and may throw an exception. |
| [**CompletionService**](http://docs.google.com/java/util/concurrent/class-use/CompletionService.html#java.util.concurrent)            A service that decouples the production of new asynchronous tasks from the consumption of the results of completed tasks. |
| [**ConcurrentMap**](http://docs.google.com/java/util/concurrent/class-use/ConcurrentMap.html#java.util.concurrent)            A [Map](http://docs.google.com/java/util/Map.html) providing additional atomic putIfAbsent, remove, and replace methods. |
| [**ConcurrentNavigableMap**](http://docs.google.com/java/util/concurrent/class-use/ConcurrentNavigableMap.html#java.util.concurrent)            A [ConcurrentMap](http://docs.google.com/java/util/concurrent/ConcurrentMap.html) supporting [NavigableMap](http://docs.google.com/java/util/NavigableMap.html) operations, and recursively so for its navigable sub-maps. |
| [**ConcurrentSkipListMap**](http://docs.google.com/java/util/concurrent/class-use/ConcurrentSkipListMap.html#java.util.concurrent)            A scalable concurrent [ConcurrentNavigableMap](http://docs.google.com/java/util/concurrent/ConcurrentNavigableMap.html) implementation. |
| [**ConcurrentSkipListSet**](http://docs.google.com/java/util/concurrent/class-use/ConcurrentSkipListSet.html#java.util.concurrent)            A scalable concurrent [NavigableSet](http://docs.google.com/java/util/NavigableSet.html) implementation based on a [ConcurrentSkipListMap](http://docs.google.com/java/util/concurrent/ConcurrentSkipListMap.html). |
| [**Delayed**](http://docs.google.com/java/util/concurrent/class-use/Delayed.html#java.util.concurrent)            A mix-in style interface for marking objects that should be acted upon after a given delay. |
| [**ExecutionException**](http://docs.google.com/java/util/concurrent/class-use/ExecutionException.html#java.util.concurrent)            Exception thrown when attempting to retrieve the result of a task that aborted by throwing an exception. |
| [**Executor**](http://docs.google.com/java/util/concurrent/class-use/Executor.html#java.util.concurrent)            An object that executes submitted [Runnable](http://docs.google.com/java/lang/Runnable.html) tasks. |
| [**ExecutorService**](http://docs.google.com/java/util/concurrent/class-use/ExecutorService.html#java.util.concurrent)            An [Executor](http://docs.google.com/java/util/concurrent/Executor.html) that provides methods to manage termination and methods that can produce a [Future](http://docs.google.com/java/util/concurrent/Future.html) for tracking progress of one or more asynchronous tasks. |
| [**Future**](http://docs.google.com/java/util/concurrent/class-use/Future.html#java.util.concurrent)            A Future represents the result of an asynchronous computation. |
| [**RejectedExecutionHandler**](http://docs.google.com/java/util/concurrent/class-use/RejectedExecutionHandler.html#java.util.concurrent)            A handler for tasks that cannot be executed by a [ThreadPoolExecutor](http://docs.google.com/java/util/concurrent/ThreadPoolExecutor.html). |
| [**RunnableFuture**](http://docs.google.com/java/util/concurrent/class-use/RunnableFuture.html#java.util.concurrent)            A [Future](http://docs.google.com/java/util/concurrent/Future.html) that is [Runnable](http://docs.google.com/java/lang/Runnable.html). |
| [**RunnableScheduledFuture**](http://docs.google.com/java/util/concurrent/class-use/RunnableScheduledFuture.html#java.util.concurrent)            A [ScheduledFuture](http://docs.google.com/java/util/concurrent/ScheduledFuture.html) that is [Runnable](http://docs.google.com/java/lang/Runnable.html). |
| [**ScheduledExecutorService**](http://docs.google.com/java/util/concurrent/class-use/ScheduledExecutorService.html#java.util.concurrent)            An [ExecutorService](http://docs.google.com/java/util/concurrent/ExecutorService.html) that can schedule commands to run after a given delay, or to execute periodically. |
| [**ScheduledFuture**](http://docs.google.com/java/util/concurrent/class-use/ScheduledFuture.html#java.util.concurrent)            A delayed result-bearing action that can be cancelled. |
| [**ThreadFactory**](http://docs.google.com/java/util/concurrent/class-use/ThreadFactory.html#java.util.concurrent)            An object that creates new threads on demand. |
| [**ThreadPoolExecutor**](http://docs.google.com/java/util/concurrent/class-use/ThreadPoolExecutor.html#java.util.concurrent)            An [ExecutorService](http://docs.google.com/java/util/concurrent/ExecutorService.html) that executes each submitted task using one of possibly several pooled threads, normally configured using [Executors](http://docs.google.com/java/util/concurrent/Executors.html) factory methods. |
| [**TimeoutException**](http://docs.google.com/java/util/concurrent/class-use/TimeoutException.html#java.util.concurrent)            Exception thrown when a blocking operation times out. |
| [**TimeUnit**](http://docs.google.com/java/util/concurrent/class-use/TimeUnit.html#java.util.concurrent)            A TimeUnit represents time durations at a given unit of granularity and provides utility methods to convert across units, and to perform timing and delay operations in these units. |

| Classes in [java.util.concurrent](http://docs.google.com/java/util/concurrent/package-summary.html) used by [java.util.concurrent.locks](http://docs.google.com/java/util/concurrent/locks/package-summary.html) | |
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| [**TimeUnit**](http://docs.google.com/java/util/concurrent/class-use/TimeUnit.html#java.util.concurrent.locks)            A TimeUnit represents time durations at a given unit of granularity and provides utility methods to convert across units, and to perform timing and delay operations in these units. |

| Classes in [java.util.concurrent](http://docs.google.com/java/util/concurrent/package-summary.html) used by [javax.management](http://docs.google.com/javax/management/package-summary.html) | |
| --- | --- |
| [**Executor**](http://docs.google.com/java/util/concurrent/class-use/Executor.html#javax.management)            An object that executes submitted [Runnable](http://docs.google.com/java/lang/Runnable.html) tasks. |

| Classes in [java.util.concurrent](http://docs.google.com/java/util/concurrent/package-summary.html) used by [javax.swing](http://docs.google.com/javax/swing/package-summary.html) | |
| --- | --- |
| [**ExecutionException**](http://docs.google.com/java/util/concurrent/class-use/ExecutionException.html#javax.swing)            Exception thrown when attempting to retrieve the result of a task that aborted by throwing an exception. |
| [**Future**](http://docs.google.com/java/util/concurrent/class-use/Future.html#javax.swing)            A Future represents the result of an asynchronous computation. |
| [**RunnableFuture**](http://docs.google.com/java/util/concurrent/class-use/RunnableFuture.html#javax.swing)            A [Future](http://docs.google.com/java/util/concurrent/Future.html) that is [Runnable](http://docs.google.com/java/lang/Runnable.html). |
| [**TimeoutException**](http://docs.google.com/java/util/concurrent/class-use/TimeoutException.html#javax.swing)            Exception thrown when a blocking operation times out. |
| [**TimeUnit**](http://docs.google.com/java/util/concurrent/class-use/TimeUnit.html#javax.swing)            A TimeUnit represents time durations at a given unit of granularity and provides utility methods to convert across units, and to perform timing and delay operations in these units. |

| Classes in [java.util.concurrent](http://docs.google.com/java/util/concurrent/package-summary.html) used by [javax.tools](http://docs.google.com/javax/tools/package-summary.html) | |
| --- | --- |
| [**Callable**](http://docs.google.com/java/util/concurrent/class-use/Callable.html#javax.tools)            A task that returns a result and may throw an exception. |

| Classes in [java.util.concurrent](http://docs.google.com/java/util/concurrent/package-summary.html) used by [javax.xml.ws](http://docs.google.com/javax/xml/ws/package-summary.html) | |
| --- | --- |
| [**Executor**](http://docs.google.com/java/util/concurrent/class-use/Executor.html#javax.xml.ws)            An object that executes submitted [Runnable](http://docs.google.com/java/lang/Runnable.html) tasks. |
| [**Future**](http://docs.google.com/java/util/concurrent/class-use/Future.html#javax.xml.ws)            A Future represents the result of an asynchronous computation. |

| Classes in [java.util.concurrent](http://docs.google.com/java/util/concurrent/package-summary.html) used by [javax.xml.ws.spi](http://docs.google.com/javax/xml/ws/spi/package-summary.html) | |
| --- | --- |
| [**Executor**](http://docs.google.com/java/util/concurrent/class-use/Executor.html#javax.xml.ws.spi)            An object that executes submitted [Runnable](http://docs.google.com/java/lang/Runnable.html) tasks. |

| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | Class | **Use** | [**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*** |
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[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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