| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/MemoryUsage.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/lang/management/MemoryType.html)   [**NEXT CLASS**](http://docs.google.com/java/lang/management/MonitorInfo.html) | [**FRAMES**](http://docs.google.com/index.html?java/lang/management/MemoryUsage.html)    [**NO FRAMES**](http://docs.google.com/MemoryUsage.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |
| SUMMARY: NESTED | FIELD | [CONSTR](#3znysh7) | [METHOD](#2et92p0) | DETAIL: FIELD | [CONSTR](#3dy6vkm) | [METHOD](#4d34og8) |

## **java.lang.management**

Class MemoryUsage

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

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

A MemoryUsage object represents a snapshot of memory usage. Instances of the MemoryUsage class are usually constructed by methods that are used to obtain memory usage information about individual memory pool of the Java virtual machine or the heap or non-heap memory of the Java virtual machine as a whole.

A MemoryUsage object contains four values:

| init | represents the initial amount of memory (in bytes) that the Java virtual machine requests from the operating system for memory management during startup. The Java virtual machine may request additional memory from the operating system and may also release memory to the system over time. The value of init may be undefined. |
| --- | --- |
| used | represents the amount of memory currently used (in bytes). |
| committed | represents the amount of memory (in bytes) that is guaranteed to be available for use by the Java virtual machine. The amount of committed memory may change over time (increase or decrease). The Java virtual machine may release memory to the system and committed could be less than init. committed will always be greater than or equal to used. |
| max | represents the maximum amount of memory (in bytes) that can be used for memory management. Its value may be undefined. The maximum amount of memory may change over time if defined. The amount of used and committed memory will always be less than or equal to max if max is defined. A memory allocation may fail if it attempts to increase the used memory such that used > committed even if used <= max would still be true (for example, when the system is low on virtual memory). |

Below is a picture showing an example of a memory pool:

+----------------------------------------------+  
 +//////////////// | +  
 +//////////////// | +  
 +----------------------------------------------+  
  
 |--------|  
 init  
 |---------------|  
 used  
 |---------------------------|  
 committed   
 |----------------------------------------------|  
 max

#### MXBean Mapping

MemoryUsage is mapped to a [CompositeData](http://docs.google.com/javax/management/openmbean/CompositeData.html) with attributes as specified in the [from](http://docs.google.com/java/lang/management/MemoryUsage.html#from(javax.management.openmbean.CompositeData)) method.

**Since:** 1.5

| **Constructor Summary** | |
| --- | --- |
| [**MemoryUsage**](http://docs.google.com/java/lang/management/MemoryUsage.html#MemoryUsage(long,%20long,%20long,%20long))(long init, long used, long committed, long max)            Constructs a MemoryUsage object. |

| **Method Summary** | |
| --- | --- |
| static [MemoryUsage](http://docs.google.com/java/lang/management/MemoryUsage.html) | [**from**](http://docs.google.com/java/lang/management/MemoryUsage.html#from(javax.management.openmbean.CompositeData))([CompositeData](http://docs.google.com/javax/management/openmbean/CompositeData.html) cd)            Returns a MemoryUsage object represented by the given CompositeData. |
| long | [**getCommitted**](http://docs.google.com/java/lang/management/MemoryUsage.html#getCommitted())()            Returns the amount of memory in bytes that is committed for the Java virtual machine to use. |
| long | [**getInit**](http://docs.google.com/java/lang/management/MemoryUsage.html#getInit())()            Returns the amount of memory in bytes that the Java virtual machine initially requests from the operating system for memory management. |
| long | [**getMax**](http://docs.google.com/java/lang/management/MemoryUsage.html#getMax())()            Returns the maximum amount of memory in bytes that can be used for memory management. |
| long | [**getUsed**](http://docs.google.com/java/lang/management/MemoryUsage.html#getUsed())()            Returns the amount of used memory in bytes. |
| [String](http://docs.google.com/java/lang/String.html) | [**toString**](http://docs.google.com/java/lang/management/MemoryUsage.html#toString())()            Returns a descriptive representation of this memory usage. |

| **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** |
| --- |

### MemoryUsage

public **MemoryUsage**(long init,  
 long used,  
 long committed,  
 long max)

Constructs a MemoryUsage object.

**Parameters:**init - the initial amount of memory in bytes that the Java virtual machine allocates; or -1 if undefined.used - the amount of used memory in bytes.committed - the amount of committed memory in bytes.max - the maximum amount of memory in bytes that can be used; or -1 if undefined. **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if

* the value of init or max is negative but not -1; or
* the value of used or committed is negative; or
* used is greater than the value of committed; or
* committed is greater than the value of max max if defined.

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

### getInit

public long **getInit**()

Returns the amount of memory in bytes that the Java virtual machine initially requests from the operating system for memory management. This method returns -1 if the initial memory size is undefined.

**Returns:**the initial size of memory in bytes; -1 if undefined.

### getUsed

public long **getUsed**()

Returns the amount of used memory in bytes.

**Returns:**the amount of used memory in bytes.

### getCommitted

public long **getCommitted**()

Returns the amount of memory in bytes that is committed for the Java virtual machine to use. This amount of memory is guaranteed for the Java virtual machine to use.

**Returns:**the amount of committed memory in bytes.

### getMax

public long **getMax**()

Returns the maximum amount of memory in bytes that can be used for memory management. This method returns -1 if the maximum memory size is undefined.

This amount of memory is not guaranteed to be available for memory management if it is greater than the amount of committed memory. The Java virtual machine may fail to allocate memory even if the amount of used memory does not exceed this maximum size.

**Returns:**the maximum amount of memory in bytes; -1 if undefined.

### toString

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

Returns a descriptive representation of this memory usage.

**Overrides:**[toString](http://docs.google.com/java/lang/Object.html#toString()) in class [Object](http://docs.google.com/java/lang/Object.html) **Returns:**a string representation of the object.

### from

public static [MemoryUsage](http://docs.google.com/java/lang/management/MemoryUsage.html) **from**([CompositeData](http://docs.google.com/javax/management/openmbean/CompositeData.html) cd)

Returns a MemoryUsage object represented by the given CompositeData. The given CompositeData must contain the following attributes:

| Attribute Name | Type |
| --- | --- |
| init | java.lang.Long |
| used | java.lang.Long |
| committed | java.lang.Long |
| max | java.lang.Long |

**Parameters:**cd - CompositeData representing a MemoryUsage **Returns:**a MemoryUsage object represented by cd if cd is not null; null otherwise. **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if cd does not represent a MemoryUsage with the attributes described above.

| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/MemoryUsage.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*** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
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| SUMMARY: NESTED | FIELD | [CONSTR](#3znysh7) | [METHOD](#2et92p0) | DETAIL: FIELD | [CONSTR](#3dy6vkm) | [METHOD](#4d34og8) |

[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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