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* [Overview](http://docs.google.com/overview-summary.html)
* [Package](http://docs.google.com/package-summary.html)
* Class
* [Use](http://docs.google.com/class-use/ReferenceMap.html)
* [Tree](http://docs.google.com/package-tree.html)
* [Deprecated](http://docs.google.com/deprecated-list.html)
* [Index](http://docs.google.com/index-all.html)
* [Help](http://docs.google.com/help-doc.html)
* [Prev Class](http://docs.google.com/org/apache/commons/collections4/map/ReferenceIdentityMap.html)
* [Next Class](http://docs.google.com/org/apache/commons/collections4/map/SingletonMap.html)
* [Frames](http://docs.google.com/index.html?org/apache/commons/collections4/map/ReferenceMap.html)
* [No Frames](http://docs.google.com/ReferenceMap.html)
* [All Classes](http://docs.google.com/allclasses-noframe.html)
* Summary:
* [Nested](#2et92p0) |
* [Field](#2s8eyo1) |
* [Constr](#17dp8vu) |
* [Method](#26in1rg)
* Detail:
* Field |
* [Constr](#44sinio) |
* Method

org.apache.commons.collections4.map

## Class ReferenceMap<K,V>

* [java.lang.Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)
  + [java.util.AbstractMap](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractMap.html?is-external=true)<K,V>
    - [org.apache.commons.collections4.map.AbstractHashedMap](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html)<K,V>
      * [org.apache.commons.collections4.map.AbstractReferenceMap](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html)<K,V>
        + org.apache.commons.collections4.map.ReferenceMap<K,V>
* Type Parameters: K - the type of the keys in the map V - the type of the values in the map All Implemented Interfaces: [Serializable](https://docs.oracle.com/javase/7/docs/api/java/io/Serializable.html?is-external=true), [Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<K,V>, [Get](http://docs.google.com/org/apache/commons/collections4/Get.html)<K,V>, [IterableGet](http://docs.google.com/org/apache/commons/collections4/IterableGet.html)<K,V>, [IterableMap](http://docs.google.com/org/apache/commons/collections4/IterableMap.html)<K,V>, [Put](http://docs.google.com/org/apache/commons/collections4/Put.html)<K,V>  
    
  public class ReferenceMap<K,V>  
  extends [AbstractReferenceMap](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html)<K,V>  
  implements [Serializable](https://docs.oracle.com/javase/7/docs/api/java/io/Serializable.html?is-external=true)  
  A Map implementation that allows mappings to be removed by the garbage collector.  
  When you construct a ReferenceMap, you can specify what kind of references are used to store the map's keys and values. If non-hard references are used, then the garbage collector can remove mappings if a key or value becomes unreachable, or if the JVM's memory is running low. For information on how the different reference types behave, see [Reference](https://docs.oracle.com/javase/7/docs/api/java/lang/ref/Reference.html?is-external=true).  
  Different types of references can be specified for keys and values. The keys can be configured to be weak but the values hard, in which case this class will behave like a  [WeakHashMap](http://java.sun.com/j2se/1.4/docs/api/java/util/WeakHashMap.html). However, you can also specify hard keys and weak values, or any other combination. The default constructor uses hard keys and soft values, providing a memory-sensitive cache.  
  This map is similar to [ReferenceIdentityMap](http://docs.google.com/org/apache/commons/collections4/map/ReferenceIdentityMap.html). It differs in that keys and values in this class are compared using equals().  
  This [Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true) implementation does *not* allow null elements. Attempting to add a null key or value to the map will raise a NullPointerException.  
  This implementation is not synchronized. You can use [Collections.synchronizedMap(java.util.Map<K, V>)](https://docs.oracle.com/javase/7/docs/api/java/util/Collections.html?is-external=true#synchronizedMap-java.util.Map-) to provide synchronized access to a ReferenceMap. Remember that synchronization will not stop the garbage collector removing entries.  
  All the available iterators can be reset back to the start by casting to ResettableIterator and calling reset().  
  **Note that ReferenceMap is not synchronized and is not thread-safe.** If you wish to use this map from multiple threads concurrently, you must use appropriate synchronization. The simplest approach is to wrap this map using [Collections.synchronizedMap(java.util.Map<K, V>)](https://docs.oracle.com/javase/7/docs/api/java/util/Collections.html?is-external=true#synchronizedMap-java.util.Map-). This class may throw exceptions when accessed by concurrent threads without synchronization.  
  NOTE: As from Commons Collections 3.1 this map extends AbstractReferenceMap (previously it extended AbstractMap). As a result, the implementation is now extensible and provides a MapIterator.Since: 3.0 (previously in main package v2.1) See Also: [Reference](https://docs.oracle.com/javase/7/docs/api/java/lang/ref/Reference.html?is-external=true), [Serialized Form](http://docs.google.com/serialized-form.html#org.apache.commons.collections4.map.ReferenceMap)

### Nested Class Summary

### Nested classes/interfaces inherited from class org.apache.commons.collections4.map.[**AbstractReferenceMap**](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html)[AbstractReferenceMap.ReferenceEntry](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceEntry.html)<[K](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceEntry.html),[V](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceEntry.html)>, [AbstractReferenceMap.ReferenceStrength](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html)

### Nested classes/interfaces inherited from class org.apache.commons.collections4.map.[**AbstractHashedMap**](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html)[AbstractHashedMap.EntrySet](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.EntrySet.html)<[K](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.EntrySet.html),[V](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.EntrySet.html)>, [AbstractHashedMap.EntrySetIterator](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.EntrySetIterator.html)<[K](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.EntrySetIterator.html),[V](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.EntrySetIterator.html)>, [AbstractHashedMap.HashEntry](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.HashEntry.html)<[K](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.HashEntry.html),[V](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.HashEntry.html)>, [AbstractHashedMap.HashIterator](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.HashIterator.html)<[K](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.HashIterator.html),[V](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.HashIterator.html)>, [AbstractHashedMap.HashMapIterator](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.HashMapIterator.html)<[K](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.HashMapIterator.html),[V](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.HashMapIterator.html)>, [AbstractHashedMap.KeySet](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.KeySet.html)<[K](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.KeySet.html)>, [AbstractHashedMap.KeySetIterator](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.KeySetIterator.html)<[K](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.KeySetIterator.html)>, [AbstractHashedMap.Values](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.Values.html)<[V](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.Values.html)>, [AbstractHashedMap.ValuesIterator](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.ValuesIterator.html)<[V](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.ValuesIterator.html)>

### Nested classes/interfaces inherited from class java.util.[**AbstractMap**](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractMap.html?is-external=true)[AbstractMap.SimpleEntry](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractMap.SimpleEntry.html?is-external=true)<[K](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractMap.SimpleEntry.html?is-external=true),[V](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractMap.SimpleEntry.html?is-external=true)>, [AbstractMap.SimpleImmutableEntry](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractMap.SimpleImmutableEntry.html?is-external=true)<[K](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractMap.SimpleImmutableEntry.html?is-external=true),[V](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractMap.SimpleImmutableEntry.html?is-external=true)>

### Nested classes/interfaces inherited from interface java.util.[**Map**](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)[Map.Entry](https://docs.oracle.com/javase/7/docs/api/java/util/Map.Entry.html?is-external=true)<[K](https://docs.oracle.com/javase/7/docs/api/java/util/Map.Entry.html?is-external=true),[V](https://docs.oracle.com/javase/7/docs/api/java/util/Map.Entry.html?is-external=true)>

### Field Summary

### Fields inherited from class org.apache.commons.collections4.map.[**AbstractHashedMap**](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html)[DEFAULT\_CAPACITY](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#DEFAULT_CAPACITY), [DEFAULT\_LOAD\_FACTOR](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#DEFAULT_LOAD_FACTOR), [DEFAULT\_THRESHOLD](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#DEFAULT_THRESHOLD), [GETKEY\_INVALID](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#GETKEY_INVALID), [GETVALUE\_INVALID](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#GETVALUE_INVALID), [MAXIMUM\_CAPACITY](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#MAXIMUM_CAPACITY), [NO\_NEXT\_ENTRY](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#NO_NEXT_ENTRY), [NO\_PREVIOUS\_ENTRY](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#NO_PREVIOUS_ENTRY), [NULL](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#NULL), [REMOVE\_INVALID](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#REMOVE_INVALID), [SETVALUE\_INVALID](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#SETVALUE_INVALID)

### Constructor SummaryConstructors

|  |
| --- |
| * + Constructor and Description |
| * + [ReferenceMap](http://docs.google.com/org/apache/commons/collections4/map/ReferenceMap.html#ReferenceMap--)() Constructs a new ReferenceMap that will use hard references to keys and soft references to values. |
| * + [ReferenceMap](http://docs.google.com/org/apache/commons/collections4/map/ReferenceMap.html#ReferenceMap-org.apache.commons.collections4.map.AbstractReferenceMap.ReferenceStrength-org.apache.commons.collections4.map.AbstractReferenceMap.ReferenceStrength-)([AbstractReferenceMap.ReferenceStrength](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html) keyType, [AbstractReferenceMap.ReferenceStrength](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html) valueType) Constructs a new ReferenceMap that will use the specified types of references. |
| * + [ReferenceMap](http://docs.google.com/org/apache/commons/collections4/map/ReferenceMap.html#ReferenceMap-org.apache.commons.collections4.map.AbstractReferenceMap.ReferenceStrength-org.apache.commons.collections4.map.AbstractReferenceMap.ReferenceStrength-boolean-)([AbstractReferenceMap.ReferenceStrength](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html) keyType, [AbstractReferenceMap.ReferenceStrength](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html) valueType, boolean purgeValues) Constructs a new ReferenceMap that will use the specified types of references. |
| * + [ReferenceMap](http://docs.google.com/org/apache/commons/collections4/map/ReferenceMap.html#ReferenceMap-org.apache.commons.collections4.map.AbstractReferenceMap.ReferenceStrength-org.apache.commons.collections4.map.AbstractReferenceMap.ReferenceStrength-int-float-)([AbstractReferenceMap.ReferenceStrength](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html) keyType, [AbstractReferenceMap.ReferenceStrength](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html) valueType, int capacity, float loadFactor) Constructs a new ReferenceMap with the specified reference types, load factor and initial capacity. |
| * + [ReferenceMap](http://docs.google.com/org/apache/commons/collections4/map/ReferenceMap.html#ReferenceMap-org.apache.commons.collections4.map.AbstractReferenceMap.ReferenceStrength-org.apache.commons.collections4.map.AbstractReferenceMap.ReferenceStrength-int-float-boolean-)([AbstractReferenceMap.ReferenceStrength](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html) keyType, [AbstractReferenceMap.ReferenceStrength](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html) valueType, int capacity, float loadFactor, boolean purgeValues) Constructs a new ReferenceMap with the specified reference types, load factor and initial capacity. |

### Method Summary

### Methods inherited from class org.apache.commons.collections4.map.[**AbstractReferenceMap**](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html)[clear](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html#clear--), [containsKey](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html#containsKey-java.lang.Object-), [containsValue](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html#containsValue-java.lang.Object-), [createEntry](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html#createEntry-org.apache.commons.collections4.map.AbstractHashedMap.HashEntry-int-K-V-), [createEntrySetIterator](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html#createEntrySetIterator--), [createKeySetIterator](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html#createKeySetIterator--), [createValuesIterator](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html#createValuesIterator--), [doReadObject](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html#doReadObject-java.io.ObjectInputStream-), [doWriteObject](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html#doWriteObject-java.io.ObjectOutputStream-), [entrySet](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html#entrySet--), [get](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html#get-java.lang.Object-), [getEntry](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html#getEntry-java.lang.Object-), [hashEntry](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html#hashEntry-java.lang.Object-java.lang.Object-), [init](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html#init--), [isEmpty](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html#isEmpty--), [isEqualKey](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html#isEqualKey-java.lang.Object-java.lang.Object-), [isKeyType](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html#isKeyType-org.apache.commons.collections4.map.AbstractReferenceMap.ReferenceStrength-), [isValueType](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html#isValueType-org.apache.commons.collections4.map.AbstractReferenceMap.ReferenceStrength-), [keySet](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html#keySet--), [mapIterator](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html#mapIterator--), [purge](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html#purge--), [purge](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html#purge-java.lang.ref.Reference-), [purgeBeforeRead](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html#purgeBeforeRead--), [purgeBeforeWrite](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html#purgeBeforeWrite--), [put](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html#put-K-V-), [remove](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html#remove-java.lang.Object-), [size](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html#size--), [values](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html#values--)

### Methods inherited from class org.apache.commons.collections4.map.[**AbstractHashedMap**](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html)[addEntry](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#addEntry-org.apache.commons.collections4.map.AbstractHashedMap.HashEntry-int-), [addMapping](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#addMapping-int-int-K-V-), [calculateNewCapacity](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#calculateNewCapacity-int-), [calculateThreshold](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#calculateThreshold-int-float-), [checkCapacity](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#checkCapacity--), [clone](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#clone--), [convertKey](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#convertKey-java.lang.Object-), [destroyEntry](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#destroyEntry-org.apache.commons.collections4.map.AbstractHashedMap.HashEntry-), [ensureCapacity](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#ensureCapacity-int-), [entryHashCode](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#entryHashCode-org.apache.commons.collections4.map.AbstractHashedMap.HashEntry-), [entryKey](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#entryKey-org.apache.commons.collections4.map.AbstractHashedMap.HashEntry-), [entryNext](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#entryNext-org.apache.commons.collections4.map.AbstractHashedMap.HashEntry-), [entryValue](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#entryValue-org.apache.commons.collections4.map.AbstractHashedMap.HashEntry-), [equals](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#equals-java.lang.Object-), [hash](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#hash-java.lang.Object-), [hashCode](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#hashCode--), [hashIndex](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#hashIndex-int-int-), [isEqualValue](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#isEqualValue-java.lang.Object-java.lang.Object-), [putAll](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#putAll-java.util.Map-), [removeEntry](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#removeEntry-org.apache.commons.collections4.map.AbstractHashedMap.HashEntry-int-org.apache.commons.collections4.map.AbstractHashedMap.HashEntry-), [removeMapping](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#removeMapping-org.apache.commons.collections4.map.AbstractHashedMap.HashEntry-int-org.apache.commons.collections4.map.AbstractHashedMap.HashEntry-), [reuseEntry](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#reuseEntry-org.apache.commons.collections4.map.AbstractHashedMap.HashEntry-int-int-K-V-), [toString](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#toString--), [updateEntry](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html#updateEntry-org.apache.commons.collections4.map.AbstractHashedMap.HashEntry-V-)

### Methods inherited from class java.lang.[**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)[finalize](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#finalize--), [getClass](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#getClass--), [notify](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#notify--), [notifyAll](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#notifyAll--), [wait](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#wait--), [wait](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#wait-long-), [wait](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#wait-long-int-)

### Methods inherited from interface java.util.[**Map**](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)[compute](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true#compute-K-java.util.function.BiFunction-), [computeIfAbsent](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true#computeIfAbsent-K-java.util.function.Function-), [computeIfPresent](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true#computeIfPresent-K-java.util.function.BiFunction-), [forEach](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true#forEach-java.util.function.BiConsumer-), [getOrDefault](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true#getOrDefault-java.lang.Object-V-), [merge](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true#merge-K-V-java.util.function.BiFunction-), [putIfAbsent](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true#putIfAbsent-K-V-), [remove](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true#remove-java.lang.Object-java.lang.Object-), [replace](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true#replace-K-V-), [replace](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true#replace-K-V-V-), [replaceAll](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true#replaceAll-java.util.function.BiFunction-)

### Constructor Detail

#### ReferenceMap public ReferenceMap() Constructs a new ReferenceMap that will use hard references to keys and soft references to values.

#### ReferenceMap public ReferenceMap([AbstractReferenceMap.ReferenceStrength](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html) keyType, [AbstractReferenceMap.ReferenceStrength](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html) valueType) Constructs a new ReferenceMap that will use the specified types of references.Parameters: keyType - the type of reference to use for keys; must be [HARD](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html#HARD), [SOFT](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html#SOFT), [WEAK](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html#WEAK) valueType - the type of reference to use for values; must be [HARD](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html#HARD), [SOFT](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html#SOFT), [WEAK](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html#WEAK)

#### ReferenceMap public ReferenceMap([AbstractReferenceMap.ReferenceStrength](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html) keyType, [AbstractReferenceMap.ReferenceStrength](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html) valueType, boolean purgeValues) Constructs a new ReferenceMap that will use the specified types of references.Parameters: keyType - the type of reference to use for keys; must be [HARD](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html#HARD), [SOFT](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html#SOFT), [WEAK](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html#WEAK) valueType - the type of reference to use for values; must be [HARD](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html#HARD), [SOFT](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html#SOFT), [WEAK](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html#WEAK) purgeValues - should the value be automatically purged when the key is garbage collected

#### ReferenceMap public ReferenceMap([AbstractReferenceMap.ReferenceStrength](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html) keyType, [AbstractReferenceMap.ReferenceStrength](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html) valueType, int capacity, float loadFactor) Constructs a new ReferenceMap with the specified reference types, load factor and initial capacity.Parameters: keyType - the type of reference to use for keys; must be [HARD](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html#HARD), [SOFT](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html#SOFT), [WEAK](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html#WEAK) valueType - the type of reference to use for values; must be [HARD](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html#HARD), [SOFT](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html#SOFT), [WEAK](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html#WEAK) capacity - the initial capacity for the map loadFactor - the load factor for the map

#### ReferenceMap public ReferenceMap([AbstractReferenceMap.ReferenceStrength](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html) keyType, [AbstractReferenceMap.ReferenceStrength](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html) valueType, int capacity, float loadFactor, boolean purgeValues) Constructs a new ReferenceMap with the specified reference types, load factor and initial capacity.Parameters: keyType - the type of reference to use for keys; must be [HARD](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html#HARD), [SOFT](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html#SOFT), [WEAK](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html#WEAK) valueType - the type of reference to use for values; must be [HARD](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html#HARD), [SOFT](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html#SOFT), [WEAK](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.ReferenceStrength.html#WEAK) capacity - the initial capacity for the map loadFactor - the load factor for the map purgeValues - should the value be automatically purged when the key is garbage collected

[Skip navigation links](#3whwml4)

* [Overview](http://docs.google.com/overview-summary.html)
* [Package](http://docs.google.com/package-summary.html)
* Class
* [Use](http://docs.google.com/class-use/ReferenceMap.html)
* [Tree](http://docs.google.com/package-tree.html)
* [Deprecated](http://docs.google.com/deprecated-list.html)
* [Index](http://docs.google.com/index-all.html)
* [Help](http://docs.google.com/help-doc.html)
* [Prev Class](http://docs.google.com/org/apache/commons/collections4/map/ReferenceIdentityMap.html)
* [Next Class](http://docs.google.com/org/apache/commons/collections4/map/SingletonMap.html)
* [Frames](http://docs.google.com/index.html?org/apache/commons/collections4/map/ReferenceMap.html)
* [No Frames](http://docs.google.com/ReferenceMap.html)
* [All Classes](http://docs.google.com/allclasses-noframe.html)
* Summary:
* [Nested](#2et92p0) |
* [Field](#2s8eyo1) |
* [Constr](#17dp8vu) |
* [Method](#26in1rg)
* Detail:
* Field |
* [Constr](#44sinio) |
* Method

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