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Serialized Form

## Package org.apache.commons.collections4

### Class [**org.apache.commons.collections4.ArrayStack**](http://docs.google.com/org/apache/commons/collections4/ArrayStack.html) extends [**ArrayList**](https://docs.oracle.com/javase/7/docs/api/java/util/ArrayList.html?is-external=true)<[**E**](http://docs.google.com/org/apache/commons/collections4/ArrayStack.html)> implements SerializableserialVersionUID: 2130079159931574599L

### Class [**org.apache.commons.collections4.FunctorException**](http://docs.google.com/org/apache/commons/collections4/FunctorException.html) extends [**RuntimeException**](https://docs.oracle.com/javase/7/docs/api/java/lang/RuntimeException.html?is-external=true) implements SerializableserialVersionUID: -4704772662059351193L

## Package org.apache.commons.collections4.bag

### Class [**org.apache.commons.collections4.bag.AbstractBagDecorator**](http://docs.google.com/org/apache/commons/collections4/bag/AbstractBagDecorator.html) extends [**AbstractCollectionDecorator**](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/bag/AbstractBagDecorator.html)> implements SerializableserialVersionUID: -3768146017343785417L

### Class [**org.apache.commons.collections4.bag.AbstractSortedBagDecorator**](http://docs.google.com/org/apache/commons/collections4/bag/AbstractSortedBagDecorator.html) extends [**AbstractBagDecorator**](http://docs.google.com/org/apache/commons/collections4/bag/AbstractBagDecorator.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/bag/AbstractSortedBagDecorator.html)> implements SerializableserialVersionUID: -8223473624050467718L

### Class [**org.apache.commons.collections4.bag.CollectionBag**](http://docs.google.com/org/apache/commons/collections4/bag/CollectionBag.html) extends [**AbstractBagDecorator**](http://docs.google.com/org/apache/commons/collections4/bag/AbstractBagDecorator.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/bag/CollectionBag.html)> implements SerializableserialVersionUID: -2560033712679053143L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the collection in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded [ClassCastException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassCastException.html?is-external=true) - if deserialised object has wrong type

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the collection out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream

### Class [**org.apache.commons.collections4.bag.CollectionSortedBag**](http://docs.google.com/org/apache/commons/collections4/bag/CollectionSortedBag.html) extends [**AbstractSortedBagDecorator**](http://docs.google.com/org/apache/commons/collections4/bag/AbstractSortedBagDecorator.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/bag/CollectionSortedBag.html)> implements SerializableserialVersionUID: -2560033712679053143L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the collection in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded [ClassCastException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassCastException.html?is-external=true) - if deserialised object has wrong type

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the collection out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream

### Class [**org.apache.commons.collections4.bag.HashBag**](http://docs.google.com/org/apache/commons/collections4/bag/HashBag.html) extends [**AbstractMapBag**](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/bag/HashBag.html)> implements SerializableserialVersionUID: -6561115435802554013L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the bag in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the bag out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream

### Class [**org.apache.commons.collections4.bag.PredicatedBag**](http://docs.google.com/org/apache/commons/collections4/bag/PredicatedBag.html) extends [**PredicatedCollection**](http://docs.google.com/org/apache/commons/collections4/collection/PredicatedCollection.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/bag/PredicatedBag.html)> implements SerializableserialVersionUID: -2575833140344736876L

### Class [**org.apache.commons.collections4.bag.PredicatedSortedBag**](http://docs.google.com/org/apache/commons/collections4/bag/PredicatedSortedBag.html) extends [**PredicatedBag**](http://docs.google.com/org/apache/commons/collections4/bag/PredicatedBag.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/bag/PredicatedSortedBag.html)> implements SerializableserialVersionUID: 3448581314086406616L

### Class [**org.apache.commons.collections4.bag.SynchronizedBag**](http://docs.google.com/org/apache/commons/collections4/bag/SynchronizedBag.html) extends [**SynchronizedCollection**](http://docs.google.com/org/apache/commons/collections4/collection/SynchronizedCollection.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/bag/SynchronizedBag.html)> implements SerializableserialVersionUID: 8084674570753837109L

### Class [**org.apache.commons.collections4.bag.SynchronizedSortedBag**](http://docs.google.com/org/apache/commons/collections4/bag/SynchronizedSortedBag.html) extends [**SynchronizedBag**](http://docs.google.com/org/apache/commons/collections4/bag/SynchronizedBag.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/bag/SynchronizedSortedBag.html)> implements SerializableserialVersionUID: 722374056718497858L

### Class [**org.apache.commons.collections4.bag.TransformedBag**](http://docs.google.com/org/apache/commons/collections4/bag/TransformedBag.html) extends [**TransformedCollection**](http://docs.google.com/org/apache/commons/collections4/collection/TransformedCollection.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/bag/TransformedBag.html)> implements SerializableserialVersionUID: 5421170911299074185L

### Class [**org.apache.commons.collections4.bag.TransformedSortedBag**](http://docs.google.com/org/apache/commons/collections4/bag/TransformedSortedBag.html) extends [**TransformedBag**](http://docs.google.com/org/apache/commons/collections4/bag/TransformedBag.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/bag/TransformedSortedBag.html)> implements SerializableserialVersionUID: -251737742649401930L

### Class [**org.apache.commons.collections4.bag.TreeBag**](http://docs.google.com/org/apache/commons/collections4/bag/TreeBag.html) extends [**AbstractMapBag**](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/bag/TreeBag.html)> implements SerializableserialVersionUID: -7740146511091606676L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the bag in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the bag out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream

### Class [**org.apache.commons.collections4.bag.UnmodifiableBag**](http://docs.google.com/org/apache/commons/collections4/bag/UnmodifiableBag.html) extends [**AbstractBagDecorator**](http://docs.google.com/org/apache/commons/collections4/bag/AbstractBagDecorator.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/bag/UnmodifiableBag.html)> implements SerializableserialVersionUID: -1873799975157099624L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the collection in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded [ClassCastException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassCastException.html?is-external=true) - if deserialised object has wrong type

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the collection out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream

### Class [**org.apache.commons.collections4.bag.UnmodifiableSortedBag**](http://docs.google.com/org/apache/commons/collections4/bag/UnmodifiableSortedBag.html) extends [**AbstractSortedBagDecorator**](http://docs.google.com/org/apache/commons/collections4/bag/AbstractSortedBagDecorator.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/bag/UnmodifiableSortedBag.html)> implements SerializableserialVersionUID: -3190437252665717841L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the collection in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded [ClassCastException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassCastException.html?is-external=true) - if deserialised object has wrong type

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the collection out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream

## Package org.apache.commons.collections4.bidimap

### Class [**org.apache.commons.collections4.bidimap.AbstractDualBidiMap.EntrySet**](http://docs.google.com/org/apache/commons/collections4/bidimap/AbstractDualBidiMap.EntrySet.html) extends [**AbstractDualBidiMap.View**](http://docs.google.com/org/apache/commons/collections4/bidimap/AbstractDualBidiMap.View.html)<[**K**](http://docs.google.com/org/apache/commons/collections4/bidimap/AbstractDualBidiMap.EntrySet.html),[**V**](http://docs.google.com/org/apache/commons/collections4/bidimap/AbstractDualBidiMap.EntrySet.html),[**Map.Entry**](https://docs.oracle.com/javase/7/docs/api/java/util/Map.Entry.html?is-external=true)<[**K**](http://docs.google.com/org/apache/commons/collections4/bidimap/AbstractDualBidiMap.EntrySet.html),[**V**](http://docs.google.com/org/apache/commons/collections4/bidimap/AbstractDualBidiMap.EntrySet.html)>> implements SerializableserialVersionUID: 4040410962603292348L

### Class [**org.apache.commons.collections4.bidimap.AbstractDualBidiMap.KeySet**](http://docs.google.com/org/apache/commons/collections4/bidimap/AbstractDualBidiMap.KeySet.html) extends [**AbstractDualBidiMap.View**](http://docs.google.com/org/apache/commons/collections4/bidimap/AbstractDualBidiMap.View.html)<[**K**](http://docs.google.com/org/apache/commons/collections4/bidimap/AbstractDualBidiMap.KeySet.html),[**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true),[**K**](http://docs.google.com/org/apache/commons/collections4/bidimap/AbstractDualBidiMap.KeySet.html)> implements SerializableserialVersionUID: -7107935777385040694L

### Class [**org.apache.commons.collections4.bidimap.AbstractDualBidiMap.Values**](http://docs.google.com/org/apache/commons/collections4/bidimap/AbstractDualBidiMap.Values.html) extends [**AbstractDualBidiMap.View**](http://docs.google.com/org/apache/commons/collections4/bidimap/AbstractDualBidiMap.View.html)<[**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true),[**V**](http://docs.google.com/org/apache/commons/collections4/bidimap/AbstractDualBidiMap.Values.html),[**V**](http://docs.google.com/org/apache/commons/collections4/bidimap/AbstractDualBidiMap.Values.html)> implements SerializableserialVersionUID: 4023777119829639864L

### Class [**org.apache.commons.collections4.bidimap.AbstractDualBidiMap.View**](http://docs.google.com/org/apache/commons/collections4/bidimap/AbstractDualBidiMap.View.html) extends [**AbstractCollectionDecorator**](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/bidimap/AbstractDualBidiMap.View.html)> implements SerializableserialVersionUID: 4621510560119690639L

### Serialized Fields

#### parent [AbstractDualBidiMap](http://docs.google.com/org/apache/commons/collections4/bidimap/AbstractDualBidiMap.html)<[K](http://docs.google.com/org/apache/commons/collections4/bidimap/AbstractDualBidiMap.html),[V](http://docs.google.com/org/apache/commons/collections4/bidimap/AbstractDualBidiMap.html)> parent The parent map

### Class [**org.apache.commons.collections4.bidimap.DualHashBidiMap**](http://docs.google.com/org/apache/commons/collections4/bidimap/DualHashBidiMap.html) extends [**AbstractDualBidiMap**](http://docs.google.com/org/apache/commons/collections4/bidimap/AbstractDualBidiMap.html)<[**K**](http://docs.google.com/org/apache/commons/collections4/bidimap/DualHashBidiMap.html),[**V**](http://docs.google.com/org/apache/commons/collections4/bidimap/DualHashBidiMap.html)> implements SerializableserialVersionUID: 721969328361808L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true)Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true)

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true)Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true)

### Class [**org.apache.commons.collections4.bidimap.DualLinkedHashBidiMap**](http://docs.google.com/org/apache/commons/collections4/bidimap/DualLinkedHashBidiMap.html) extends [**AbstractDualBidiMap**](http://docs.google.com/org/apache/commons/collections4/bidimap/AbstractDualBidiMap.html)<[**K**](http://docs.google.com/org/apache/commons/collections4/bidimap/DualLinkedHashBidiMap.html),[**V**](http://docs.google.com/org/apache/commons/collections4/bidimap/DualLinkedHashBidiMap.html)> implements SerializableserialVersionUID: 721969328361810L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true)Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true)

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true)Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true)

### Class [**org.apache.commons.collections4.bidimap.DualTreeBidiMap**](http://docs.google.com/org/apache/commons/collections4/bidimap/DualTreeBidiMap.html) extends [**AbstractDualBidiMap**](http://docs.google.com/org/apache/commons/collections4/bidimap/AbstractDualBidiMap.html)<[**K**](http://docs.google.com/org/apache/commons/collections4/bidimap/DualTreeBidiMap.html),[**V**](http://docs.google.com/org/apache/commons/collections4/bidimap/DualTreeBidiMap.html)> implements SerializableserialVersionUID: 721969328361809L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true)Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true)

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true)Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true)

### Serialized Fields

#### comparator [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<[T](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)> comparator The key comparator to use

#### valueComparator [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<[T](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)> valueComparator The value comparator to use

### Class [**org.apache.commons.collections4.bidimap.TreeBidiMap**](http://docs.google.com/org/apache/commons/collections4/bidimap/TreeBidiMap.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 721969328361807L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) stream) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Reads the content of the stream.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) stream) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Writes the content to the stream for serialization.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream

## Package org.apache.commons.collections4.collection

### Class [**org.apache.commons.collections4.collection.AbstractCollectionDecorator**](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 6249888059822088500L

### Serialized Fields

#### collection [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)> collection The collection being decorated

### Class [**org.apache.commons.collections4.collection.CompositeCollection**](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 8417515734108306801L

### Serialized Fields

#### mutator [CompositeCollection.CollectionMutator](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.CollectionMutator.html)<[E](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.CollectionMutator.html)> mutator CollectionMutator to handle changes to the collection

#### all [List](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true)<[E](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true)> all Collections in the composite

### Class [**org.apache.commons.collections4.collection.IndexedCollection**](http://docs.google.com/org/apache/commons/collections4/collection/IndexedCollection.html) extends [**AbstractCollectionDecorator**](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)<[**C**](http://docs.google.com/org/apache/commons/collections4/collection/IndexedCollection.html)> implements SerializableserialVersionUID: -5512610452568370038L

### Serialized Fields

#### keyTransformer [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<[I](http://docs.google.com/org/apache/commons/collections4/Transformer.html),[O](http://docs.google.com/org/apache/commons/collections4/Transformer.html)> keyTransformer The [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html) for generating index keys.

#### index [MultiMap](http://docs.google.com/org/apache/commons/collections4/MultiMap.html)<[K](http://docs.google.com/org/apache/commons/collections4/MultiMap.html),[V](http://docs.google.com/org/apache/commons/collections4/MultiMap.html)> index The map of indexes to collected objects.

#### uniqueIndex boolean uniqueIndex The uniqueness constraint for the index.

### Class [**org.apache.commons.collections4.collection.PredicatedCollection**](http://docs.google.com/org/apache/commons/collections4/collection/PredicatedCollection.html) extends [**AbstractCollectionDecorator**](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/collection/PredicatedCollection.html)> implements SerializableserialVersionUID: -5259182142076705162L

### Serialized Fields

#### predicate [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<[T](http://docs.google.com/org/apache/commons/collections4/Predicate.html)> predicate The predicate to use

### Class [**org.apache.commons.collections4.collection.SynchronizedCollection**](http://docs.google.com/org/apache/commons/collections4/collection/SynchronizedCollection.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 2412805092710877986L

### Serialized Fields

#### collection [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)> collection The collection to decorate

#### lock [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) lock The object to lock on, needed for List/SortedSet views

### Class [**org.apache.commons.collections4.collection.TransformedCollection**](http://docs.google.com/org/apache/commons/collections4/collection/TransformedCollection.html) extends [**AbstractCollectionDecorator**](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/collection/TransformedCollection.html)> implements SerializableserialVersionUID: 8692300188161871514L

### Serialized Fields

#### transformer [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<[I](http://docs.google.com/org/apache/commons/collections4/Transformer.html),[O](http://docs.google.com/org/apache/commons/collections4/Transformer.html)> transformer The transformer to use

### Class [**org.apache.commons.collections4.collection.UnmodifiableBoundedCollection**](http://docs.google.com/org/apache/commons/collections4/collection/UnmodifiableBoundedCollection.html) extends [**AbstractCollectionDecorator**](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/collection/UnmodifiableBoundedCollection.html)> implements SerializableserialVersionUID: -7112672385450340330L

### Class [**org.apache.commons.collections4.collection.UnmodifiableCollection**](http://docs.google.com/org/apache/commons/collections4/collection/UnmodifiableCollection.html) extends [**AbstractCollectionDecorator**](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/collection/UnmodifiableCollection.html)> implements SerializableserialVersionUID: -239892006883819945L

## Package org.apache.commons.collections4.comparators

### Class [**org.apache.commons.collections4.comparators.BooleanComparator**](http://docs.google.com/org/apache/commons/collections4/comparators/BooleanComparator.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 1830042991606340609L

### Serialized Fields

#### trueFirst boolean trueFirst true iff true values sort before false values.

### Class [**org.apache.commons.collections4.comparators.ComparableComparator**](http://docs.google.com/org/apache/commons/collections4/comparators/ComparableComparator.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: -291439688585137865L

### Class [**org.apache.commons.collections4.comparators.ComparatorChain**](http://docs.google.com/org/apache/commons/collections4/comparators/ComparatorChain.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: -721644942746081630L

### Serialized Fields

#### comparatorChain [List](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true)<[E](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true)> comparatorChain The list of comparators in the chain.

#### orderingBits [BitSet](https://docs.oracle.com/javase/7/docs/api/java/util/BitSet.html?is-external=true) orderingBits Order - false (clear) = ascend; true (set) = descend.

#### isLocked boolean isLocked Whether the chain has been "locked".

### Class [**org.apache.commons.collections4.comparators.FixedOrderComparator**](http://docs.google.com/org/apache/commons/collections4/comparators/FixedOrderComparator.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 82794675842863201L

### Serialized Fields

#### map [Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<[K](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true),[V](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)> map Internal map of object to position

#### counter int counter Counter used in determining the position in the map

#### isLocked boolean isLocked Is the comparator locked against further change

#### unknownObjectBehavior [FixedOrderComparator.UnknownObjectBehavior](http://docs.google.com/org/apache/commons/collections4/comparators/FixedOrderComparator.UnknownObjectBehavior.html) unknownObjectBehavior The behaviour in the case of an unknown object

### Class [**org.apache.commons.collections4.comparators.NullComparator**](http://docs.google.com/org/apache/commons/collections4/comparators/NullComparator.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: -5820772575483504339L

### Serialized Fields

#### nonNullComparator [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<[T](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)> nonNullComparator The comparator to use when comparing two non-null objects.

#### nullsAreHigh boolean nullsAreHigh Specifies whether a null are compared as higher than non-null objects.

### Class [**org.apache.commons.collections4.comparators.ReverseComparator**](http://docs.google.com/org/apache/commons/collections4/comparators/ReverseComparator.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 2858887242028539265L

### Serialized Fields

#### comparator [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<[T](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)> comparator The comparator being decorated.

### Class [**org.apache.commons.collections4.comparators.TransformingComparator**](http://docs.google.com/org/apache/commons/collections4/comparators/TransformingComparator.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 3456940356043606220L

### Serialized Fields

#### decorated [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<[T](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)> decorated The decorated comparator.

#### transformer [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<[I](http://docs.google.com/org/apache/commons/collections4/Transformer.html),[O](http://docs.google.com/org/apache/commons/collections4/Transformer.html)> transformer The transformer being used.

## Package org.apache.commons.collections4.functors

### Class [**org.apache.commons.collections4.functors.AbstractQuantifierPredicate**](http://docs.google.com/org/apache/commons/collections4/functors/AbstractQuantifierPredicate.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: -3094696765038308799L

### Serialized Fields

#### iPredicates [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<[T](http://docs.google.com/org/apache/commons/collections4/Predicate.html)>[] iPredicates The array of predicates to call

### Class [**org.apache.commons.collections4.functors.AllPredicate**](http://docs.google.com/org/apache/commons/collections4/functors/AllPredicate.html) extends [**AbstractQuantifierPredicate**](http://docs.google.com/org/apache/commons/collections4/functors/AbstractQuantifierPredicate.html)<[**T**](http://docs.google.com/org/apache/commons/collections4/functors/AllPredicate.html)> implements SerializableserialVersionUID: -3094696765038308799L

### Class [**org.apache.commons.collections4.functors.AndPredicate**](http://docs.google.com/org/apache/commons/collections4/functors/AndPredicate.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 4189014213763186912L

### Serialized Fields

#### iPredicate1 [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<[T](http://docs.google.com/org/apache/commons/collections4/Predicate.html)> iPredicate1 The array of predicates to call

#### iPredicate2 [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<[T](http://docs.google.com/org/apache/commons/collections4/Predicate.html)> iPredicate2 The array of predicates to call

### Class [**org.apache.commons.collections4.functors.AnyPredicate**](http://docs.google.com/org/apache/commons/collections4/functors/AnyPredicate.html) extends [**AbstractQuantifierPredicate**](http://docs.google.com/org/apache/commons/collections4/functors/AbstractQuantifierPredicate.html)<[**T**](http://docs.google.com/org/apache/commons/collections4/functors/AnyPredicate.html)> implements SerializableserialVersionUID: 7429999530934647542L

### Class [**org.apache.commons.collections4.functors.ChainedClosure**](http://docs.google.com/org/apache/commons/collections4/functors/ChainedClosure.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: -3520677225766901240L

### Serialized Fields

#### iClosures [Closure](http://docs.google.com/org/apache/commons/collections4/Closure.html)<[T](http://docs.google.com/org/apache/commons/collections4/Closure.html)>[] iClosures The closures to call in turn

### Class [**org.apache.commons.collections4.functors.ChainedTransformer**](http://docs.google.com/org/apache/commons/collections4/functors/ChainedTransformer.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 3514945074733160196L

### Serialized Fields

#### iTransformers [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<[I](http://docs.google.com/org/apache/commons/collections4/Transformer.html),[O](http://docs.google.com/org/apache/commons/collections4/Transformer.html)>[] iTransformers The transformers to call in turn

### Class [**org.apache.commons.collections4.functors.ClosureTransformer**](http://docs.google.com/org/apache/commons/collections4/functors/ClosureTransformer.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 478466901448617286L

### Serialized Fields

#### iClosure [Closure](http://docs.google.com/org/apache/commons/collections4/Closure.html)<[T](http://docs.google.com/org/apache/commons/collections4/Closure.html)> iClosure The closure to wrap

### Class [**org.apache.commons.collections4.functors.ComparatorPredicate**](http://docs.google.com/org/apache/commons/collections4/functors/ComparatorPredicate.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: -1863209236504077399L

### Serialized Fields

#### object [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object The internal object to compare with

#### comparator [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<[T](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)> comparator The comparator to use for comparison

#### criterion [ComparatorPredicate.Criterion](http://docs.google.com/org/apache/commons/collections4/functors/ComparatorPredicate.Criterion.html) criterion The comparison evaluation criterion to use

### Class [**org.apache.commons.collections4.functors.ConstantFactory**](http://docs.google.com/org/apache/commons/collections4/functors/ConstantFactory.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: -3520677225766901240L

### Serialized Fields

#### iConstant [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) iConstant The closures to call in turn

### Class [**org.apache.commons.collections4.functors.ConstantTransformer**](http://docs.google.com/org/apache/commons/collections4/functors/ConstantTransformer.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 6374440726369055124L

### Serialized Fields

#### iConstant [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) iConstant The closures to call in turn

### Class [**org.apache.commons.collections4.functors.DefaultEquator**](http://docs.google.com/org/apache/commons/collections4/functors/DefaultEquator.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 825802648423525485L

### Serialization Methods

#### readResolve private [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) readResolve()

### Class [**org.apache.commons.collections4.functors.EqualPredicate**](http://docs.google.com/org/apache/commons/collections4/functors/EqualPredicate.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 5633766978029907089L

### Serialized Fields

#### iValue [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) iValue The value to compare to

#### equator [Equator](http://docs.google.com/org/apache/commons/collections4/Equator.html)<[T](http://docs.google.com/org/apache/commons/collections4/Equator.html)> equator The equator to use for comparison

### Class [**org.apache.commons.collections4.functors.ExceptionClosure**](http://docs.google.com/org/apache/commons/collections4/functors/ExceptionClosure.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 7179106032121985545L

### Serialization Methods

#### readResolve private [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) readResolve()

### Class [**org.apache.commons.collections4.functors.ExceptionFactory**](http://docs.google.com/org/apache/commons/collections4/functors/ExceptionFactory.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 7179106032121985545L

### Serialization Methods

#### readResolve private [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) readResolve()

### Class [**org.apache.commons.collections4.functors.ExceptionPredicate**](http://docs.google.com/org/apache/commons/collections4/functors/ExceptionPredicate.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 7179106032121985545L

### Serialization Methods

#### readResolve private [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) readResolve()

### Class [**org.apache.commons.collections4.functors.ExceptionTransformer**](http://docs.google.com/org/apache/commons/collections4/functors/ExceptionTransformer.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 7179106032121985545L

### Serialization Methods

#### readResolve private [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) readResolve()

### Class [**org.apache.commons.collections4.functors.FactoryTransformer**](http://docs.google.com/org/apache/commons/collections4/functors/FactoryTransformer.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: -6817674502475353160L

### Serialized Fields

#### iFactory [Factory](http://docs.google.com/org/apache/commons/collections4/Factory.html)<[T](http://docs.google.com/org/apache/commons/collections4/Factory.html)> iFactory The factory to wrap

### Class [**org.apache.commons.collections4.functors.FalsePredicate**](http://docs.google.com/org/apache/commons/collections4/functors/FalsePredicate.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 7533784454832764388L

### Serialization Methods

#### readResolve private [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) readResolve()

### Class [**org.apache.commons.collections4.functors.IdentityPredicate**](http://docs.google.com/org/apache/commons/collections4/functors/IdentityPredicate.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: -89901658494523293L

### Serialized Fields

#### iValue [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) iValue The value to compare to

### Class [**org.apache.commons.collections4.functors.IfClosure**](http://docs.google.com/org/apache/commons/collections4/functors/IfClosure.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 3518477308466486130L

### Serialized Fields

#### iPredicate [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<[T](http://docs.google.com/org/apache/commons/collections4/Predicate.html)> iPredicate The test

#### iTrueClosure [Closure](http://docs.google.com/org/apache/commons/collections4/Closure.html)<[T](http://docs.google.com/org/apache/commons/collections4/Closure.html)> iTrueClosure The closure to use if true

#### iFalseClosure [Closure](http://docs.google.com/org/apache/commons/collections4/Closure.html)<[T](http://docs.google.com/org/apache/commons/collections4/Closure.html)> iFalseClosure The closure to use if false

### Class [**org.apache.commons.collections4.functors.IfTransformer**](http://docs.google.com/org/apache/commons/collections4/functors/IfTransformer.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 8069309411242014252L

### Serialized Fields

#### iPredicate [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<[T](http://docs.google.com/org/apache/commons/collections4/Predicate.html)> iPredicate The test

#### iTrueTransformer [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<[I](http://docs.google.com/org/apache/commons/collections4/Transformer.html),[O](http://docs.google.com/org/apache/commons/collections4/Transformer.html)> iTrueTransformer The transformer to use if true

#### iFalseTransformer [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<[I](http://docs.google.com/org/apache/commons/collections4/Transformer.html),[O](http://docs.google.com/org/apache/commons/collections4/Transformer.html)> iFalseTransformer The transformer to use if false

### Class [**org.apache.commons.collections4.functors.InstanceofPredicate**](http://docs.google.com/org/apache/commons/collections4/functors/InstanceofPredicate.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: -6682656911025165584L

### Serialized Fields

#### iType [Class](https://docs.oracle.com/javase/7/docs/api/java/lang/Class.html?is-external=true)<[T](https://docs.oracle.com/javase/7/docs/api/java/lang/Class.html?is-external=true)> iType The type to compare to

### Class [**org.apache.commons.collections4.functors.MapTransformer**](http://docs.google.com/org/apache/commons/collections4/functors/MapTransformer.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 862391807045468939L

### Serialized Fields

#### iMap [Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<[K](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true),[V](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)> iMap The map of data to lookup in

### Class [**org.apache.commons.collections4.functors.NonePredicate**](http://docs.google.com/org/apache/commons/collections4/functors/NonePredicate.html) extends [**AbstractQuantifierPredicate**](http://docs.google.com/org/apache/commons/collections4/functors/AbstractQuantifierPredicate.html)<[**T**](http://docs.google.com/org/apache/commons/collections4/functors/NonePredicate.html)> implements SerializableserialVersionUID: 2007613066565892961L

### Class [**org.apache.commons.collections4.functors.NOPClosure**](http://docs.google.com/org/apache/commons/collections4/functors/NOPClosure.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 3518477308466486130L

### Serialization Methods

#### readResolve private [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) readResolve()

### Class [**org.apache.commons.collections4.functors.NOPTransformer**](http://docs.google.com/org/apache/commons/collections4/functors/NOPTransformer.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 2133891748318574490L

### Serialization Methods

#### readResolve private [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) readResolve()

### Class [**org.apache.commons.collections4.functors.NotNullPredicate**](http://docs.google.com/org/apache/commons/collections4/functors/NotNullPredicate.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 7533784454832764388L

### Serialization Methods

#### readResolve private [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) readResolve()

### Class [**org.apache.commons.collections4.functors.NotPredicate**](http://docs.google.com/org/apache/commons/collections4/functors/NotPredicate.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: -2654603322338049674L

### Serialized Fields

#### iPredicate [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<[T](http://docs.google.com/org/apache/commons/collections4/Predicate.html)> iPredicate The predicate to decorate

### Class [**org.apache.commons.collections4.functors.NullIsExceptionPredicate**](http://docs.google.com/org/apache/commons/collections4/functors/NullIsExceptionPredicate.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 3243449850504576071L

### Serialized Fields

#### iPredicate [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<[T](http://docs.google.com/org/apache/commons/collections4/Predicate.html)> iPredicate The predicate to decorate

### Class [**org.apache.commons.collections4.functors.NullIsFalsePredicate**](http://docs.google.com/org/apache/commons/collections4/functors/NullIsFalsePredicate.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: -2997501534564735525L

### Serialized Fields

#### iPredicate [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<[T](http://docs.google.com/org/apache/commons/collections4/Predicate.html)> iPredicate The predicate to decorate

### Class [**org.apache.commons.collections4.functors.NullIsTruePredicate**](http://docs.google.com/org/apache/commons/collections4/functors/NullIsTruePredicate.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: -7625133768987126273L

### Serialized Fields

#### iPredicate [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<[T](http://docs.google.com/org/apache/commons/collections4/Predicate.html)> iPredicate The predicate to decorate

### Class [**org.apache.commons.collections4.functors.NullPredicate**](http://docs.google.com/org/apache/commons/collections4/functors/NullPredicate.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 7533784454832764388L

### Serialization Methods

#### readResolve private [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) readResolve()

### Class [**org.apache.commons.collections4.functors.OnePredicate**](http://docs.google.com/org/apache/commons/collections4/functors/OnePredicate.html) extends [**AbstractQuantifierPredicate**](http://docs.google.com/org/apache/commons/collections4/functors/AbstractQuantifierPredicate.html)<[**T**](http://docs.google.com/org/apache/commons/collections4/functors/OnePredicate.html)> implements SerializableserialVersionUID: -8125389089924745785L

### Class [**org.apache.commons.collections4.functors.OrPredicate**](http://docs.google.com/org/apache/commons/collections4/functors/OrPredicate.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: -8791518325735182855L

### Serialized Fields

#### iPredicate1 [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<[T](http://docs.google.com/org/apache/commons/collections4/Predicate.html)> iPredicate1 The array of predicates to call

#### iPredicate2 [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<[T](http://docs.google.com/org/apache/commons/collections4/Predicate.html)> iPredicate2 The array of predicates to call

### Class [**org.apache.commons.collections4.functors.PredicateTransformer**](http://docs.google.com/org/apache/commons/collections4/functors/PredicateTransformer.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 5278818408044349346L

### Serialized Fields

#### iPredicate [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<[T](http://docs.google.com/org/apache/commons/collections4/Predicate.html)> iPredicate The closure to wrap

### Class [**org.apache.commons.collections4.functors.StringValueTransformer**](http://docs.google.com/org/apache/commons/collections4/functors/StringValueTransformer.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 7511110693171758606L

### Serialization Methods

#### readResolve private [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) readResolve()

### Class [**org.apache.commons.collections4.functors.SwitchClosure**](http://docs.google.com/org/apache/commons/collections4/functors/SwitchClosure.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 3518477308466486130L

### Serialized Fields

#### iPredicates [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<[T](http://docs.google.com/org/apache/commons/collections4/Predicate.html)>[] iPredicates The tests to consider

#### iClosures [Closure](http://docs.google.com/org/apache/commons/collections4/Closure.html)<[T](http://docs.google.com/org/apache/commons/collections4/Closure.html)>[] iClosures The matching closures to call

#### iDefault [Closure](http://docs.google.com/org/apache/commons/collections4/Closure.html)<[T](http://docs.google.com/org/apache/commons/collections4/Closure.html)> iDefault The default closure to call if no tests match

### Class [**org.apache.commons.collections4.functors.SwitchTransformer**](http://docs.google.com/org/apache/commons/collections4/functors/SwitchTransformer.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: -6404460890903469332L

### Serialized Fields

#### iPredicates [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<[T](http://docs.google.com/org/apache/commons/collections4/Predicate.html)>[] iPredicates The tests to consider

#### iTransformers [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<[I](http://docs.google.com/org/apache/commons/collections4/Transformer.html),[O](http://docs.google.com/org/apache/commons/collections4/Transformer.html)>[] iTransformers The matching transformers to call

#### iDefault [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<[I](http://docs.google.com/org/apache/commons/collections4/Transformer.html),[O](http://docs.google.com/org/apache/commons/collections4/Transformer.html)> iDefault The default transformer to call if no tests match

### Class [**org.apache.commons.collections4.functors.TransformedPredicate**](http://docs.google.com/org/apache/commons/collections4/functors/TransformedPredicate.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: -5596090919668315834L

### Serialized Fields

#### iTransformer [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<[I](http://docs.google.com/org/apache/commons/collections4/Transformer.html),[O](http://docs.google.com/org/apache/commons/collections4/Transformer.html)> iTransformer The transformer to call

#### iPredicate [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<[T](http://docs.google.com/org/apache/commons/collections4/Predicate.html)> iPredicate The predicate to call

### Class [**org.apache.commons.collections4.functors.TransformerClosure**](http://docs.google.com/org/apache/commons/collections4/functors/TransformerClosure.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: -5194992589193388969L

### Serialized Fields

#### iTransformer [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<[I](http://docs.google.com/org/apache/commons/collections4/Transformer.html),[O](http://docs.google.com/org/apache/commons/collections4/Transformer.html)> iTransformer The transformer to wrap

### Class [**org.apache.commons.collections4.functors.TransformerPredicate**](http://docs.google.com/org/apache/commons/collections4/functors/TransformerPredicate.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: -2407966402920578741L

### Serialized Fields

#### iTransformer [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<[I](http://docs.google.com/org/apache/commons/collections4/Transformer.html),[O](http://docs.google.com/org/apache/commons/collections4/Transformer.html)> iTransformer The transformer to call

### Class [**org.apache.commons.collections4.functors.TruePredicate**](http://docs.google.com/org/apache/commons/collections4/functors/TruePredicate.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 3374767158756189740L

### Serialization Methods

#### readResolve private [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) readResolve()

### Class [**org.apache.commons.collections4.functors.UniquePredicate**](http://docs.google.com/org/apache/commons/collections4/functors/UniquePredicate.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: -3319417438027438040L

### Serialized Fields

#### iSet [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)> iSet The set of previously seen objects

## Package org.apache.commons.collections4.keyvalue

### Class [**org.apache.commons.collections4.keyvalue.MultiKey**](http://docs.google.com/org/apache/commons/collections4/keyvalue/MultiKey.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 4465448607415788805L

### Serialization Methods

#### readResolve protected [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) readResolve() Recalculate the hash code after deserialization. The hash code of some keys might have change (hash codes based on the system hash code are only stable for the same process).

### Serialized Fields

#### keys [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)[] keys The individual keys

### Class [**org.apache.commons.collections4.keyvalue.TiedMapEntry**](http://docs.google.com/org/apache/commons/collections4/keyvalue/TiedMapEntry.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: -8453869361373831205L

### Serialized Fields

#### map [Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<[K](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true),[V](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)> map The map underlying the entry/iterator

#### key [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) key The key

## Package org.apache.commons.collections4.list

### Class [**org.apache.commons.collections4.list.AbstractListDecorator**](http://docs.google.com/org/apache/commons/collections4/list/AbstractListDecorator.html) extends [**AbstractCollectionDecorator**](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/list/AbstractListDecorator.html)> implements SerializableserialVersionUID: 4500739654952315623L

### Class [**org.apache.commons.collections4.list.AbstractSerializableListDecorator**](http://docs.google.com/org/apache/commons/collections4/list/AbstractSerializableListDecorator.html) extends [**AbstractListDecorator**](http://docs.google.com/org/apache/commons/collections4/list/AbstractListDecorator.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/list/AbstractSerializableListDecorator.html)> implements SerializableserialVersionUID: 2684959196747496299L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the list in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the list out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream

### Class [**org.apache.commons.collections4.list.CursorableLinkedList**](http://docs.google.com/org/apache/commons/collections4/list/CursorableLinkedList.html) extends [**AbstractLinkedList**](http://docs.google.com/org/apache/commons/collections4/list/AbstractLinkedList.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/list/CursorableLinkedList.html)> implements SerializableserialVersionUID: 8836393098519411393L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Deserializes the data held in this object to the stream specified.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Serializes the data held in this object to the stream specified.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream

### Class [**org.apache.commons.collections4.list.FixedSizeList**](http://docs.google.com/org/apache/commons/collections4/list/FixedSizeList.html) extends [**AbstractSerializableListDecorator**](http://docs.google.com/org/apache/commons/collections4/list/AbstractSerializableListDecorator.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/list/FixedSizeList.html)> implements SerializableserialVersionUID: -2218010673611160319L

### Class [**org.apache.commons.collections4.list.GrowthList**](http://docs.google.com/org/apache/commons/collections4/list/GrowthList.html) extends [**AbstractSerializableListDecorator**](http://docs.google.com/org/apache/commons/collections4/list/AbstractSerializableListDecorator.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/list/GrowthList.html)> implements SerializableserialVersionUID: -3620001881672L

### Class [**org.apache.commons.collections4.list.LazyList**](http://docs.google.com/org/apache/commons/collections4/list/LazyList.html) extends [**AbstractSerializableListDecorator**](http://docs.google.com/org/apache/commons/collections4/list/AbstractSerializableListDecorator.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/list/LazyList.html)> implements SerializableserialVersionUID: -3677737457567429713L

### Serialized Fields

#### factory [Factory](http://docs.google.com/org/apache/commons/collections4/Factory.html)<[T](http://docs.google.com/org/apache/commons/collections4/Factory.html)> factory The factory to use to lazily instantiate the objects

#### transformer [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<[I](http://docs.google.com/org/apache/commons/collections4/Transformer.html),[O](http://docs.google.com/org/apache/commons/collections4/Transformer.html)> transformer The transformer to use to lazily instantiate the objects

### Class [**org.apache.commons.collections4.list.NodeCachingLinkedList**](http://docs.google.com/org/apache/commons/collections4/list/NodeCachingLinkedList.html) extends [**AbstractLinkedList**](http://docs.google.com/org/apache/commons/collections4/list/AbstractLinkedList.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/list/NodeCachingLinkedList.html)> implements SerializableserialVersionUID: 6897789178562232073L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Deserializes the data held in this object to the stream specified.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Serializes the data held in this object to the stream specified.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream

### Serialized Fields

#### maximumCacheSize int maximumCacheSize The maximum size of the cache.

### Class [**org.apache.commons.collections4.list.PredicatedList**](http://docs.google.com/org/apache/commons/collections4/list/PredicatedList.html) extends [**PredicatedCollection**](http://docs.google.com/org/apache/commons/collections4/collection/PredicatedCollection.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/list/PredicatedList.html)> implements SerializableserialVersionUID: -5722039223898659102L

### Class [**org.apache.commons.collections4.list.SetUniqueList**](http://docs.google.com/org/apache/commons/collections4/list/SetUniqueList.html) extends [**AbstractSerializableListDecorator**](http://docs.google.com/org/apache/commons/collections4/list/AbstractSerializableListDecorator.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/list/SetUniqueList.html)> implements SerializableserialVersionUID: 7196982186153478694L

### Serialized Fields

#### set [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)> set Internal Set to maintain uniqueness.

### Class [**org.apache.commons.collections4.list.TransformedList**](http://docs.google.com/org/apache/commons/collections4/list/TransformedList.html) extends [**TransformedCollection**](http://docs.google.com/org/apache/commons/collections4/collection/TransformedCollection.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/list/TransformedList.html)> implements SerializableserialVersionUID: 1077193035000013141L

### Class [**org.apache.commons.collections4.list.UnmodifiableList**](http://docs.google.com/org/apache/commons/collections4/list/UnmodifiableList.html) extends [**AbstractSerializableListDecorator**](http://docs.google.com/org/apache/commons/collections4/list/AbstractSerializableListDecorator.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/list/UnmodifiableList.html)> implements SerializableserialVersionUID: 6595182819922443652L

## Package org.apache.commons.collections4.map

### Class [**org.apache.commons.collections4.map.CaseInsensitiveMap**](http://docs.google.com/org/apache/commons/collections4/map/CaseInsensitiveMap.html) extends [**AbstractHashedMap**](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html)<[**K**](http://docs.google.com/org/apache/commons/collections4/map/CaseInsensitiveMap.html),[**V**](http://docs.google.com/org/apache/commons/collections4/map/CaseInsensitiveMap.html)> implements SerializableserialVersionUID: -7074655917369299456L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the map in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the map out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream

### Class [**org.apache.commons.collections4.map.CompositeMap**](http://docs.google.com/org/apache/commons/collections4/map/CompositeMap.html) extends [**AbstractIterableMap**](http://docs.google.com/org/apache/commons/collections4/map/AbstractIterableMap.html)<[**K**](http://docs.google.com/org/apache/commons/collections4/map/CompositeMap.html),[**V**](http://docs.google.com/org/apache/commons/collections4/map/CompositeMap.html)> implements SerializableserialVersionUID: -6096931280583808322L

### Serialized Fields

#### composite [Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<[K](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true),[V](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)>[] composite Array of all maps in the composite

#### mutator [CompositeMap.MapMutator](http://docs.google.com/org/apache/commons/collections4/map/CompositeMap.MapMutator.html)<[K](http://docs.google.com/org/apache/commons/collections4/map/CompositeMap.MapMutator.html),[V](http://docs.google.com/org/apache/commons/collections4/map/CompositeMap.MapMutator.html)> mutator Handle mutation operations

### Class [**org.apache.commons.collections4.map.DefaultedMap**](http://docs.google.com/org/apache/commons/collections4/map/DefaultedMap.html) extends [**AbstractMapDecorator**](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html)<[**K**](http://docs.google.com/org/apache/commons/collections4/map/DefaultedMap.html),[**V**](http://docs.google.com/org/apache/commons/collections4/map/DefaultedMap.html)> implements SerializableserialVersionUID: 19698628745827L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the map in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the map out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream

### Serialized Fields

#### value [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<[I](http://docs.google.com/org/apache/commons/collections4/Transformer.html),[O](http://docs.google.com/org/apache/commons/collections4/Transformer.html)> value The transformer to use if the map does not contain a key

### Class [**org.apache.commons.collections4.map.FixedSizeMap**](http://docs.google.com/org/apache/commons/collections4/map/FixedSizeMap.html) extends [**AbstractMapDecorator**](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html)<[**K**](http://docs.google.com/org/apache/commons/collections4/map/FixedSizeMap.html),[**V**](http://docs.google.com/org/apache/commons/collections4/map/FixedSizeMap.html)> implements SerializableserialVersionUID: 7450927208116179316L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the map in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded Since: 3.1

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the map out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream Since: 3.1

### Class [**org.apache.commons.collections4.map.FixedSizeSortedMap**](http://docs.google.com/org/apache/commons/collections4/map/FixedSizeSortedMap.html) extends [**AbstractSortedMapDecorator**](http://docs.google.com/org/apache/commons/collections4/map/AbstractSortedMapDecorator.html)<[**K**](http://docs.google.com/org/apache/commons/collections4/map/FixedSizeSortedMap.html),[**V**](http://docs.google.com/org/apache/commons/collections4/map/FixedSizeSortedMap.html)> implements SerializableserialVersionUID: 3126019624511683653L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the map in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the map out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream

### Class [**org.apache.commons.collections4.map.Flat3Map**](http://docs.google.com/org/apache/commons/collections4/map/Flat3Map.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: -6701087419741928296L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the map in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the map out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream

### Class [**org.apache.commons.collections4.map.HashedMap**](http://docs.google.com/org/apache/commons/collections4/map/HashedMap.html) extends [**AbstractHashedMap**](http://docs.google.com/org/apache/commons/collections4/map/AbstractHashedMap.html)<[**K**](http://docs.google.com/org/apache/commons/collections4/map/HashedMap.html),[**V**](http://docs.google.com/org/apache/commons/collections4/map/HashedMap.html)> implements SerializableserialVersionUID: -1788199231038721040L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the map in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the map out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream

### Class [**org.apache.commons.collections4.map.LazyMap**](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html) extends [**AbstractMapDecorator**](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html)<[**K**](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html),[**V**](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html)> implements SerializableserialVersionUID: 7990956402564206740L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the map in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded Since: 3.1

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the map out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream Since: 3.1

### Serialized Fields

#### factory [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<[I](http://docs.google.com/org/apache/commons/collections4/Transformer.html),[O](http://docs.google.com/org/apache/commons/collections4/Transformer.html)> factory The factory to use to construct elements

### Class [**org.apache.commons.collections4.map.LazySortedMap**](http://docs.google.com/org/apache/commons/collections4/map/LazySortedMap.html) extends [**LazyMap**](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html)<[**K**](http://docs.google.com/org/apache/commons/collections4/map/LazySortedMap.html),[**V**](http://docs.google.com/org/apache/commons/collections4/map/LazySortedMap.html)> implements SerializableserialVersionUID: 2715322183617658933L

### Class [**org.apache.commons.collections4.map.LinkedMap**](http://docs.google.com/org/apache/commons/collections4/map/LinkedMap.html) extends [**AbstractLinkedMap**](http://docs.google.com/org/apache/commons/collections4/map/AbstractLinkedMap.html)<[**K**](http://docs.google.com/org/apache/commons/collections4/map/LinkedMap.html),[**V**](http://docs.google.com/org/apache/commons/collections4/map/LinkedMap.html)> implements SerializableserialVersionUID: 9077234323521161066L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the map in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the map out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream

### Class [**org.apache.commons.collections4.map.ListOrderedMap**](http://docs.google.com/org/apache/commons/collections4/map/ListOrderedMap.html) extends [**AbstractMapDecorator**](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html)<[**K**](http://docs.google.com/org/apache/commons/collections4/map/ListOrderedMap.html),[**V**](http://docs.google.com/org/apache/commons/collections4/map/ListOrderedMap.html)> implements SerializableserialVersionUID: 2728177751851003750L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the map in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded Since: 3.1

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the map out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream Since: 3.1

### Serialized Fields

#### insertOrder [List](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true)<[E](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true)> insertOrder Internal list to hold the sequence of objects

### Class [**org.apache.commons.collections4.map.LRUMap**](http://docs.google.com/org/apache/commons/collections4/map/LRUMap.html) extends [**AbstractLinkedMap**](http://docs.google.com/org/apache/commons/collections4/map/AbstractLinkedMap.html)<[**K**](http://docs.google.com/org/apache/commons/collections4/map/LRUMap.html),[**V**](http://docs.google.com/org/apache/commons/collections4/map/LRUMap.html)> implements SerializableserialVersionUID: -612114643488955218L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the map in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the map out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream

### Serialized Fields

#### scanUntilRemovable boolean scanUntilRemovable Scan behaviour

### Class [**org.apache.commons.collections4.map.MultiKeyMap**](http://docs.google.com/org/apache/commons/collections4/map/MultiKeyMap.html) extends [**AbstractMapDecorator**](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html)<[**MultiKey**](http://docs.google.com/org/apache/commons/collections4/keyvalue/MultiKey.html)<? extends [**K**](http://docs.google.com/org/apache/commons/collections4/map/MultiKeyMap.html)>,[**V**](http://docs.google.com/org/apache/commons/collections4/map/MultiKeyMap.html)> implements SerializableserialVersionUID: -1788199231038721040L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the map in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the map out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream

### Class [**org.apache.commons.collections4.map.MultiValueMap**](http://docs.google.com/org/apache/commons/collections4/map/MultiValueMap.html) extends [**AbstractMapDecorator**](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html)<[**K**](http://docs.google.com/org/apache/commons/collections4/map/MultiValueMap.html),[**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)> implements SerializableserialVersionUID: -2214159910087182007L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Deprecated.  Read the map in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded Since: 4.0

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Deprecated.  Write the map out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream Since: 4.0

### Serialized Fields

#### collectionFactory [Factory](http://docs.google.com/org/apache/commons/collections4/Factory.html)<[T](http://docs.google.com/org/apache/commons/collections4/Factory.html)> collectionFactory Deprecated.  The factory for creating value collections.

### Class [**org.apache.commons.collections4.map.PassiveExpiringMap**](http://docs.google.com/org/apache/commons/collections4/map/PassiveExpiringMap.html) extends [**AbstractMapDecorator**](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html)<[**K**](http://docs.google.com/org/apache/commons/collections4/map/PassiveExpiringMap.html),[**V**](http://docs.google.com/org/apache/commons/collections4/map/PassiveExpiringMap.html)> implements SerializableserialVersionUID: 1L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the map in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the map out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream

### Serialized Fields

#### expirationMap [Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<[K](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true),[V](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)> expirationMap map used to manage expiration times for the actual map entries.

#### expiringPolicy [PassiveExpiringMap.ExpirationPolicy](http://docs.google.com/org/apache/commons/collections4/map/PassiveExpiringMap.ExpirationPolicy.html)<[K](http://docs.google.com/org/apache/commons/collections4/map/PassiveExpiringMap.ExpirationPolicy.html),[V](http://docs.google.com/org/apache/commons/collections4/map/PassiveExpiringMap.ExpirationPolicy.html)> expiringPolicy the policy used to determine time-to-live values for map entries.

### Class [**org.apache.commons.collections4.map.PassiveExpiringMap.ConstantTimeToLiveExpirationPolicy**](http://docs.google.com/org/apache/commons/collections4/map/PassiveExpiringMap.ConstantTimeToLiveExpirationPolicy.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 1L

### Serialized Fields

#### timeToLiveMillis long timeToLiveMillis the constant time-to-live value measured in milliseconds.

### Class [**org.apache.commons.collections4.map.PredicatedMap**](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html) extends org.apache.commons.collections4.map.AbstractInputCheckedMapDecorator<[**K**](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html),[**V**](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html)> implements SerializableserialVersionUID: 7412622456128415156L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the map in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded Since: 3.1

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the map out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream Since: 3.1

### Serialized Fields

#### keyPredicate [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<[T](http://docs.google.com/org/apache/commons/collections4/Predicate.html)> keyPredicate The key predicate to use

#### valuePredicate [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<[T](http://docs.google.com/org/apache/commons/collections4/Predicate.html)> valuePredicate The value predicate to use

### Class [**org.apache.commons.collections4.map.PredicatedSortedMap**](http://docs.google.com/org/apache/commons/collections4/map/PredicatedSortedMap.html) extends [**PredicatedMap**](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html)<[**K**](http://docs.google.com/org/apache/commons/collections4/map/PredicatedSortedMap.html),[**V**](http://docs.google.com/org/apache/commons/collections4/map/PredicatedSortedMap.html)> implements SerializableserialVersionUID: 3359846175935304332L

### Class [**org.apache.commons.collections4.map.ReferenceIdentityMap**](http://docs.google.com/org/apache/commons/collections4/map/ReferenceIdentityMap.html) extends [**AbstractReferenceMap**](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html)<[**K**](http://docs.google.com/org/apache/commons/collections4/map/ReferenceIdentityMap.html),[**V**](http://docs.google.com/org/apache/commons/collections4/map/ReferenceIdentityMap.html)> implements SerializableserialVersionUID: -1266190134568365852L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the map in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the map out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream

### Class [**org.apache.commons.collections4.map.ReferenceMap**](http://docs.google.com/org/apache/commons/collections4/map/ReferenceMap.html) extends [**AbstractReferenceMap**](http://docs.google.com/org/apache/commons/collections4/map/AbstractReferenceMap.html)<[**K**](http://docs.google.com/org/apache/commons/collections4/map/ReferenceMap.html),[**V**](http://docs.google.com/org/apache/commons/collections4/map/ReferenceMap.html)> implements SerializableserialVersionUID: 1555089888138299607L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the map in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the map out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream

### Class [**org.apache.commons.collections4.map.SingletonMap**](http://docs.google.com/org/apache/commons/collections4/map/SingletonMap.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: -8931271118676803261L

### Serialized Fields

#### key [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) key Singleton key

#### value [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) value Singleton value

### Class [**org.apache.commons.collections4.map.TransformedMap**](http://docs.google.com/org/apache/commons/collections4/map/TransformedMap.html) extends org.apache.commons.collections4.map.AbstractInputCheckedMapDecorator<[**K**](http://docs.google.com/org/apache/commons/collections4/map/TransformedMap.html),[**V**](http://docs.google.com/org/apache/commons/collections4/map/TransformedMap.html)> implements SerializableserialVersionUID: 7023152376788900464L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the map in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded Since: 3.1

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the map out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream Since: 3.1

### Serialized Fields

#### keyTransformer [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<[I](http://docs.google.com/org/apache/commons/collections4/Transformer.html),[O](http://docs.google.com/org/apache/commons/collections4/Transformer.html)> keyTransformer The transformer to use for the key

#### valueTransformer [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<[I](http://docs.google.com/org/apache/commons/collections4/Transformer.html),[O](http://docs.google.com/org/apache/commons/collections4/Transformer.html)> valueTransformer The transformer to use for the value

### Class [**org.apache.commons.collections4.map.TransformedSortedMap**](http://docs.google.com/org/apache/commons/collections4/map/TransformedSortedMap.html) extends [**TransformedMap**](http://docs.google.com/org/apache/commons/collections4/map/TransformedMap.html)<[**K**](http://docs.google.com/org/apache/commons/collections4/map/TransformedSortedMap.html),[**V**](http://docs.google.com/org/apache/commons/collections4/map/TransformedSortedMap.html)> implements SerializableserialVersionUID: -8751771676410385778L

### Class [**org.apache.commons.collections4.map.UnmodifiableEntrySet**](http://docs.google.com/org/apache/commons/collections4/map/UnmodifiableEntrySet.html) extends [**AbstractSetDecorator**](http://docs.google.com/org/apache/commons/collections4/set/AbstractSetDecorator.html)<[**Map.Entry**](https://docs.oracle.com/javase/7/docs/api/java/util/Map.Entry.html?is-external=true)<[**K**](http://docs.google.com/org/apache/commons/collections4/map/UnmodifiableEntrySet.html),[**V**](http://docs.google.com/org/apache/commons/collections4/map/UnmodifiableEntrySet.html)>> implements SerializableserialVersionUID: 1678353579659253473L

### Class [**org.apache.commons.collections4.map.UnmodifiableMap**](http://docs.google.com/org/apache/commons/collections4/map/UnmodifiableMap.html) extends [**AbstractMapDecorator**](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html)<[**K**](http://docs.google.com/org/apache/commons/collections4/map/UnmodifiableMap.html),[**V**](http://docs.google.com/org/apache/commons/collections4/map/UnmodifiableMap.html)> implements SerializableserialVersionUID: 2737023427269031941L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the map in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded Since: 3.1

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the map out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream Since: 3.1

### Class [**org.apache.commons.collections4.map.UnmodifiableOrderedMap**](http://docs.google.com/org/apache/commons/collections4/map/UnmodifiableOrderedMap.html) extends [**AbstractOrderedMapDecorator**](http://docs.google.com/org/apache/commons/collections4/map/AbstractOrderedMapDecorator.html)<[**K**](http://docs.google.com/org/apache/commons/collections4/map/UnmodifiableOrderedMap.html),[**V**](http://docs.google.com/org/apache/commons/collections4/map/UnmodifiableOrderedMap.html)> implements SerializableserialVersionUID: 8136428161720526266L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the map in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded Since: 3.1

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the map out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream Since: 3.1

### Class [**org.apache.commons.collections4.map.UnmodifiableSortedMap**](http://docs.google.com/org/apache/commons/collections4/map/UnmodifiableSortedMap.html) extends [**AbstractSortedMapDecorator**](http://docs.google.com/org/apache/commons/collections4/map/AbstractSortedMapDecorator.html)<[**K**](http://docs.google.com/org/apache/commons/collections4/map/UnmodifiableSortedMap.html),[**V**](http://docs.google.com/org/apache/commons/collections4/map/UnmodifiableSortedMap.html)> implements SerializableserialVersionUID: 5805344239827376360L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the map in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded Since: 3.1

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the map out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream Since: 3.1

## Package org.apache.commons.collections4.multimap

### Class [**org.apache.commons.collections4.multimap.AbstractMultiValuedMapDecorator**](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 20150612L

### Serialized Fields

#### map [MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html)<[K](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html)> map MultiValuedMap to decorate

### Class [**org.apache.commons.collections4.multimap.ArrayListValuedHashMap**](http://docs.google.com/org/apache/commons/collections4/multimap/ArrayListValuedHashMap.html) extends [**AbstractListValuedMap**](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractListValuedMap.html)<[**K**](http://docs.google.com/org/apache/commons/collections4/multimap/ArrayListValuedHashMap.html),[**V**](http://docs.google.com/org/apache/commons/collections4/multimap/ArrayListValuedHashMap.html)> implements SerializableserialVersionUID: 20151118L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) ois) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true)Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true)

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) oos) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true)Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true)

### Serialized Fields

#### initialListCapacity int initialListCapacity The initial list capacity when creating a new value collection.

### Class [**org.apache.commons.collections4.multimap.HashSetValuedHashMap**](http://docs.google.com/org/apache/commons/collections4/multimap/HashSetValuedHashMap.html) extends [**AbstractSetValuedMap**](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractSetValuedMap.html)<[**K**](http://docs.google.com/org/apache/commons/collections4/multimap/HashSetValuedHashMap.html),[**V**](http://docs.google.com/org/apache/commons/collections4/multimap/HashSetValuedHashMap.html)> implements SerializableserialVersionUID: 20151118L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) ois) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true)Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true)

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) oos) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true)Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true)

### Serialized Fields

#### initialSetCapacity int initialSetCapacity The initial list capacity when creating a new value collection.

### Class [**org.apache.commons.collections4.multimap.TransformedMultiValuedMap**](http://docs.google.com/org/apache/commons/collections4/multimap/TransformedMultiValuedMap.html) extends [**AbstractMultiValuedMapDecorator**](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html)<[**K**](http://docs.google.com/org/apache/commons/collections4/multimap/TransformedMultiValuedMap.html),[**V**](http://docs.google.com/org/apache/commons/collections4/multimap/TransformedMultiValuedMap.html)> implements SerializableserialVersionUID: 20150612L

### Serialized Fields

#### keyTransformer [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<[I](http://docs.google.com/org/apache/commons/collections4/Transformer.html),[O](http://docs.google.com/org/apache/commons/collections4/Transformer.html)> keyTransformer The key transformer

#### valueTransformer [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<[I](http://docs.google.com/org/apache/commons/collections4/Transformer.html),[O](http://docs.google.com/org/apache/commons/collections4/Transformer.html)> valueTransformer The value transformer

### Class [**org.apache.commons.collections4.multimap.UnmodifiableMultiValuedMap**](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html) extends [**AbstractMultiValuedMapDecorator**](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html)<[**K**](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[**V**](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> implements SerializableserialVersionUID: 20150612L

## Package org.apache.commons.collections4.multiset

### Class [**org.apache.commons.collections4.multiset.AbstractMultiSetDecorator**](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSetDecorator.html) extends [**AbstractCollectionDecorator**](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSetDecorator.html)> implements SerializableserialVersionUID: 20150610L

### Class [**org.apache.commons.collections4.multiset.HashMultiSet**](http://docs.google.com/org/apache/commons/collections4/multiset/HashMultiSet.html) extends [**AbstractMapMultiSet**](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMapMultiSet.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/multiset/HashMultiSet.html)> implements SerializableserialVersionUID: 20150610L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the multiset in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the multiset out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream

### Class [**org.apache.commons.collections4.multiset.PredicatedMultiSet**](http://docs.google.com/org/apache/commons/collections4/multiset/PredicatedMultiSet.html) extends [**PredicatedCollection**](http://docs.google.com/org/apache/commons/collections4/collection/PredicatedCollection.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/multiset/PredicatedMultiSet.html)> implements SerializableserialVersionUID: 20150629L

### Class [**org.apache.commons.collections4.multiset.SynchronizedMultiSet**](http://docs.google.com/org/apache/commons/collections4/multiset/SynchronizedMultiSet.html) extends [**SynchronizedCollection**](http://docs.google.com/org/apache/commons/collections4/collection/SynchronizedCollection.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/multiset/SynchronizedMultiSet.html)> implements SerializableserialVersionUID: 20150629L

### Class [**org.apache.commons.collections4.multiset.UnmodifiableMultiSet**](http://docs.google.com/org/apache/commons/collections4/multiset/UnmodifiableMultiSet.html) extends [**AbstractMultiSetDecorator**](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSetDecorator.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/multiset/UnmodifiableMultiSet.html)> implements SerializableserialVersionUID: 20150611L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the collection in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded [ClassCastException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassCastException.html?is-external=true) - if deserialised object has wrong type

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the collection out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream

## Package org.apache.commons.collections4.properties

### Class [**org.apache.commons.collections4.properties.SortedProperties**](http://docs.google.com/org/apache/commons/collections4/properties/SortedProperties.html) extends [**Properties**](https://docs.oracle.com/javase/7/docs/api/java/util/Properties.html?is-external=true) implements SerializableserialVersionUID: 1L

## Package org.apache.commons.collections4.queue

### Class [**org.apache.commons.collections4.queue.AbstractQueueDecorator**](http://docs.google.com/org/apache/commons/collections4/queue/AbstractQueueDecorator.html) extends [**AbstractCollectionDecorator**](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/queue/AbstractQueueDecorator.html)> implements SerializableserialVersionUID: -2629815475789577029L

### Class [**org.apache.commons.collections4.queue.CircularFifoQueue**](http://docs.google.com/org/apache/commons/collections4/queue/CircularFifoQueue.html) extends [**AbstractCollection**](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractCollection.html?is-external=true)<[**E**](http://docs.google.com/org/apache/commons/collections4/queue/CircularFifoQueue.html)> implements SerializableserialVersionUID: -8423413834657610406L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the queue in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an I/O error occurs while writing to the output stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if the class of a serialized object can not be found

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the queue out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an I/O error occurs while writing to the output stream

### Serialized Fields

#### maxElements int maxElements Capacity of the queue.

### Class [**org.apache.commons.collections4.queue.PredicatedQueue**](http://docs.google.com/org/apache/commons/collections4/queue/PredicatedQueue.html) extends [**PredicatedCollection**](http://docs.google.com/org/apache/commons/collections4/collection/PredicatedCollection.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/queue/PredicatedQueue.html)> implements SerializableserialVersionUID: 2307609000539943581L

### Class [**org.apache.commons.collections4.queue.SynchronizedQueue**](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html) extends [**SynchronizedCollection**](http://docs.google.com/org/apache/commons/collections4/collection/SynchronizedCollection.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html)> implements SerializableserialVersionUID: 1L

### Class [**org.apache.commons.collections4.queue.TransformedQueue**](http://docs.google.com/org/apache/commons/collections4/queue/TransformedQueue.html) extends [**TransformedCollection**](http://docs.google.com/org/apache/commons/collections4/collection/TransformedCollection.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/queue/TransformedQueue.html)> implements SerializableserialVersionUID: -7901091318986132033L

### Class [**org.apache.commons.collections4.queue.UnmodifiableQueue**](http://docs.google.com/org/apache/commons/collections4/queue/UnmodifiableQueue.html) extends [**AbstractQueueDecorator**](http://docs.google.com/org/apache/commons/collections4/queue/AbstractQueueDecorator.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/queue/UnmodifiableQueue.html)> implements SerializableserialVersionUID: 1832948656215393357L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the collection in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an I/O error occurs while reading from the input stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if the class of a serialized object can not be found

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the collection out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an I/O error occurs while writing to the output stream

## Package org.apache.commons.collections4.set

### Class [**org.apache.commons.collections4.set.AbstractNavigableSetDecorator**](http://docs.google.com/org/apache/commons/collections4/set/AbstractNavigableSetDecorator.html) extends [**AbstractSortedSetDecorator**](http://docs.google.com/org/apache/commons/collections4/set/AbstractSortedSetDecorator.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/set/AbstractNavigableSetDecorator.html)> implements SerializableserialVersionUID: 20150528L

### Class [**org.apache.commons.collections4.set.AbstractSerializableSetDecorator**](http://docs.google.com/org/apache/commons/collections4/set/AbstractSerializableSetDecorator.html) extends [**AbstractSetDecorator**](http://docs.google.com/org/apache/commons/collections4/set/AbstractSetDecorator.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/set/AbstractSerializableSetDecorator.html)> implements SerializableserialVersionUID: 1229469966212206107L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the set in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the set out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream

### Class [**org.apache.commons.collections4.set.AbstractSetDecorator**](http://docs.google.com/org/apache/commons/collections4/set/AbstractSetDecorator.html) extends [**AbstractCollectionDecorator**](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/set/AbstractSetDecorator.html)> implements SerializableserialVersionUID: -4678668309576958546L

### Class [**org.apache.commons.collections4.set.AbstractSortedSetDecorator**](http://docs.google.com/org/apache/commons/collections4/set/AbstractSortedSetDecorator.html) extends [**AbstractSetDecorator**](http://docs.google.com/org/apache/commons/collections4/set/AbstractSetDecorator.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/set/AbstractSortedSetDecorator.html)> implements SerializableserialVersionUID: -3462240946294214398L

### Class [**org.apache.commons.collections4.set.CompositeSet**](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 5185069727540378940L

### Serialized Fields

#### mutator [CompositeSet.SetMutator](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.SetMutator.html)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.SetMutator.html)> mutator SetMutator to handle changes to the collection

#### all [List](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true)<[E](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true)> all Sets in the composite

### Class [**org.apache.commons.collections4.set.ListOrderedSet**](http://docs.google.com/org/apache/commons/collections4/set/ListOrderedSet.html) extends [**AbstractSerializableSetDecorator**](http://docs.google.com/org/apache/commons/collections4/set/AbstractSerializableSetDecorator.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/set/ListOrderedSet.html)> implements SerializableserialVersionUID: -228664372470420141L

### Serialized Fields

#### setOrder [List](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true)<[E](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true)> setOrder Internal list to hold the sequence of objects

### Class [**org.apache.commons.collections4.set.MapBackedSet**](http://docs.google.com/org/apache/commons/collections4/set/MapBackedSet.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: 6723912213766056587L

### Serialized Fields

#### map [Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<[K](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true),[V](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)> map The map being used as the backing store

#### dummyValue [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) dummyValue The dummyValue to use

### Class [**org.apache.commons.collections4.set.PredicatedNavigableSet**](http://docs.google.com/org/apache/commons/collections4/set/PredicatedNavigableSet.html) extends [**PredicatedSortedSet**](http://docs.google.com/org/apache/commons/collections4/set/PredicatedSortedSet.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/set/PredicatedNavigableSet.html)> implements SerializableserialVersionUID: 20150528L

### Class [**org.apache.commons.collections4.set.PredicatedSet**](http://docs.google.com/org/apache/commons/collections4/set/PredicatedSet.html) extends [**PredicatedCollection**](http://docs.google.com/org/apache/commons/collections4/collection/PredicatedCollection.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/set/PredicatedSet.html)> implements SerializableserialVersionUID: -684521469108685117L

### Class [**org.apache.commons.collections4.set.PredicatedSortedSet**](http://docs.google.com/org/apache/commons/collections4/set/PredicatedSortedSet.html) extends [**PredicatedSet**](http://docs.google.com/org/apache/commons/collections4/set/PredicatedSet.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/set/PredicatedSortedSet.html)> implements SerializableserialVersionUID: -9110948148132275052L

### Class [**org.apache.commons.collections4.set.TransformedNavigableSet**](http://docs.google.com/org/apache/commons/collections4/set/TransformedNavigableSet.html) extends [**TransformedSortedSet**](http://docs.google.com/org/apache/commons/collections4/set/TransformedSortedSet.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/set/TransformedNavigableSet.html)> implements SerializableserialVersionUID: 20150528L

### Class [**org.apache.commons.collections4.set.TransformedSet**](http://docs.google.com/org/apache/commons/collections4/set/TransformedSet.html) extends [**TransformedCollection**](http://docs.google.com/org/apache/commons/collections4/collection/TransformedCollection.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/set/TransformedSet.html)> implements SerializableserialVersionUID: 306127383500410386L

### Class [**org.apache.commons.collections4.set.TransformedSortedSet**](http://docs.google.com/org/apache/commons/collections4/set/TransformedSortedSet.html) extends [**TransformedSet**](http://docs.google.com/org/apache/commons/collections4/set/TransformedSet.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/set/TransformedSortedSet.html)> implements SerializableserialVersionUID: -1675486811351124386L

### Class [**org.apache.commons.collections4.set.UnmodifiableNavigableSet**](http://docs.google.com/org/apache/commons/collections4/set/UnmodifiableNavigableSet.html) extends [**AbstractNavigableSetDecorator**](http://docs.google.com/org/apache/commons/collections4/set/AbstractNavigableSetDecorator.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/set/UnmodifiableNavigableSet.html)> implements SerializableserialVersionUID: 20150528L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the collection in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the collection out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream

### Class [**org.apache.commons.collections4.set.UnmodifiableSet**](http://docs.google.com/org/apache/commons/collections4/set/UnmodifiableSet.html) extends [**AbstractSerializableSetDecorator**](http://docs.google.com/org/apache/commons/collections4/set/AbstractSerializableSetDecorator.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/set/UnmodifiableSet.html)> implements SerializableserialVersionUID: 6499119872185240161L

### Class [**org.apache.commons.collections4.set.UnmodifiableSortedSet**](http://docs.google.com/org/apache/commons/collections4/set/UnmodifiableSortedSet.html) extends [**AbstractSortedSetDecorator**](http://docs.google.com/org/apache/commons/collections4/set/AbstractSortedSetDecorator.html)<[**E**](http://docs.google.com/org/apache/commons/collections4/set/UnmodifiableSortedSet.html)> implements SerializableserialVersionUID: -725356885467962424L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the collection in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the collection out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream

## Package org.apache.commons.collections4.splitmap

### Class [**org.apache.commons.collections4.splitmap.TransformedSplitMap**](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html) extends [**AbstractIterableGetMapDecorator**](http://docs.google.com/org/apache/commons/collections4/splitmap/AbstractIterableGetMapDecorator.html)<[**K**](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html),[**V**](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html)> implements SerializableserialVersionUID: 5966875321133456994L

### Serialization Methods

#### readObject private void readObject([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the map in using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while reading from the stream [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if an object read from the stream can not be loaded Since: 3.1

#### writeObject private void writeObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the map out using a custom routine.Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - if an error occurs while writing to the stream

### Serialized Fields

#### keyTransformer [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<[I](http://docs.google.com/org/apache/commons/collections4/Transformer.html),[O](http://docs.google.com/org/apache/commons/collections4/Transformer.html)> keyTransformer The transformer to use for the key

#### valueTransformer [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<[I](http://docs.google.com/org/apache/commons/collections4/Transformer.html),[O](http://docs.google.com/org/apache/commons/collections4/Transformer.html)> valueTransformer The transformer to use for the value

## Package org.apache.commons.collections4.trie

### Class [**org.apache.commons.collections4.trie.AbstractBitwiseTrie**](http://docs.google.com/org/apache/commons/collections4/trie/AbstractBitwiseTrie.html) extends [**AbstractMap**](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractMap.html?is-external=true)<[**K**](http://docs.google.com/org/apache/commons/collections4/trie/AbstractBitwiseTrie.html),[**V**](http://docs.google.com/org/apache/commons/collections4/trie/AbstractBitwiseTrie.html)> implements SerializableserialVersionUID: 5826987063535505652L

### Serialized Fields

#### keyAnalyzer [KeyAnalyzer](http://docs.google.com/org/apache/commons/collections4/trie/KeyAnalyzer.html)<[K](http://docs.google.com/org/apache/commons/collections4/trie/KeyAnalyzer.html)> keyAnalyzer The [KeyAnalyzer](http://docs.google.com/org/apache/commons/collections4/trie/KeyAnalyzer.html) that's being used to build the PATRICIA [Trie](http://docs.google.com/org/apache/commons/collections4/Trie.html).

### Class org.apache.commons.collections4.trie.AbstractPatriciaTrie.TrieEntry extends org.apache.commons.collections4.trie.AbstractBitwiseTrie.BasicEntry<K,V> implements SerializableserialVersionUID: 4596023148184140013L

### Serialized Fields

#### bitIndex int bitIndex The index this entry is comparing.

#### parent org.apache.commons.collections4.trie.AbstractPatriciaTrie.TrieEntry<K,V> parent The parent of this entry.

#### left org.apache.commons.collections4.trie.AbstractPatriciaTrie.TrieEntry<K,V> left The left child of this entry.

#### right org.apache.commons.collections4.trie.AbstractPatriciaTrie.TrieEntry<K,V> right The right child of this entry.

#### predecessor org.apache.commons.collections4.trie.AbstractPatriciaTrie.TrieEntry<K,V> predecessor The entry who uplinks to this entry.

### Class [**org.apache.commons.collections4.trie.KeyAnalyzer**](http://docs.google.com/org/apache/commons/collections4/trie/KeyAnalyzer.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: -20497563720380683L

### Class [**org.apache.commons.collections4.trie.PatriciaTrie**](http://docs.google.com/org/apache/commons/collections4/trie/PatriciaTrie.html) extends org.apache.commons.collections4.trie.AbstractPatriciaTrie<[**String**](https://docs.oracle.com/javase/7/docs/api/java/lang/String.html?is-external=true),[**E**](http://docs.google.com/org/apache/commons/collections4/trie/PatriciaTrie.html)> implements SerializableserialVersionUID: 4446367780901817838L

### Class [**org.apache.commons.collections4.trie.UnmodifiableTrie**](http://docs.google.com/org/apache/commons/collections4/trie/UnmodifiableTrie.html) extends [**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) implements SerializableserialVersionUID: -7156426030315945159L

### Serialized Fields

#### delegate [Trie](http://docs.google.com/org/apache/commons/collections4/Trie.html)<[K](http://docs.google.com/org/apache/commons/collections4/Trie.html),[V](http://docs.google.com/org/apache/commons/collections4/Trie.html)> delegate

## Package org.apache.commons.collections4.trie.analyzer

### Class [**org.apache.commons.collections4.trie.analyzer.StringKeyAnalyzer**](http://docs.google.com/org/apache/commons/collections4/trie/analyzer/StringKeyAnalyzer.html) extends [**KeyAnalyzer**](http://docs.google.com/org/apache/commons/collections4/trie/KeyAnalyzer.html)<[**String**](https://docs.oracle.com/javase/7/docs/api/java/lang/String.html?is-external=true)> implements SerializableserialVersionUID: -7032449491269434877L

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