JavaScript is disabled on your browser.

[Skip navigation links](#1fob9te)

* [Overview](http://docs.google.com/overview-summary.html)
* [Package](http://docs.google.com/package-summary.html)
* Class
* [Use](http://docs.google.com/class-use/CompositeSet.html)
* [Tree](http://docs.google.com/package-tree.html)
* [Deprecated](http://docs.google.com/deprecated-list.html)
* [Index](http://docs.google.com/index-all.html)
* [Help](http://docs.google.com/help-doc.html)
* [Prev Class](http://docs.google.com/org/apache/commons/collections4/set/AbstractSortedSetDecorator.html)
* [Next Class](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.SetMutator.html)
* [Frames](http://docs.google.com/index.html?org/apache/commons/collections4/set/CompositeSet.html)
* [No Frames](http://docs.google.com/CompositeSet.html)
* [All Classes](http://docs.google.com/allclasses-noframe.html)
* Summary:
* [Nested](#3znysh7) |
* Field |
* [Constr](#2et92p0) |
* [Method](#tyjcwt)
* Detail:
* Field |
* [Constr](#17dp8vu) |
* [Method](#35nkun2)

org.apache.commons.collections4.set

## Class CompositeSet<E>

* [java.lang.Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)
  + org.apache.commons.collections4.set.CompositeSet<E>
* Type Parameters: E - the type of the elements in this set All Implemented Interfaces: [Serializable](https://docs.oracle.com/javase/7/docs/api/java/io/Serializable.html?is-external=true), [Iterable](https://docs.oracle.com/javase/7/docs/api/java/lang/Iterable.html?is-external=true)<E>, [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<E>, [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<E>  
    
  public class CompositeSet<E>  
  extends [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)  
  implements [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<E>, [Serializable](https://docs.oracle.com/javase/7/docs/api/java/io/Serializable.html?is-external=true)  
  Decorates a set of other sets to provide a single unified view.  
  Changes made to this set will actually be made on the decorated set. Add operations require the use of a pluggable strategy. If no strategy is provided then add is unsupported.  
  From version 4.0, this class does not extend [CompositeCollection](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html) anymore due to its input restrictions (only accepts Sets). See [COLLECTIONS-424](https://issues.apache.org/jira/browse/COLLECTIONS-424) for more details.Since: 3.0 See Also: [Serialized Form](http://docs.google.com/serialized-form.html#org.apache.commons.collections4.set.CompositeSet)

### Nested Class SummaryNested Classes

|  |  |
| --- | --- |
| * + Modifier and Type | * + Class and Description |
| * + static interface | * + [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)> Define callbacks for mutation operations. |

### Constructor SummaryConstructors

|  |
| --- |
| * + Constructor and Description |
| * + [CompositeSet](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html#CompositeSet--)() Create an empty CompositeSet. |
| * + [CompositeSet](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html#CompositeSet-java.util.Set...-)([Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)>... sets) Create a composite set with sets as the initial set of composited Sets. |
| * + [CompositeSet](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html#CompositeSet-java.util.Set-)([Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> set) Create a CompositeSet with just set composited. |

### Method SummaryAll Methods Instance Methods Concrete Methods

|  |  |
| --- | --- |
| * + Modifier and Type | * + Method and Description |
| * + boolean | * + [add](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html#add-E-)([E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html) obj) Adds an object to the collection, throwing UnsupportedOperationException unless a SetMutator strategy is specified. |
| * + boolean | * + [addAll](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html#addAll-java.util.Collection-)([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<? extends [E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> coll) Adds a collection of elements to this composite, throwing UnsupportedOperationException unless a SetMutator strategy is specified. |
| * + void | * + [addComposited](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html#addComposited-java.util.Set...-)([Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)>... sets) Add these Sets to the list of sets in this composite |
| * + void | * + [addComposited](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html#addComposited-java.util.Set-)([Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> set) Add a Set to this composite. |
| * + void | * + [addComposited](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html#addComposited-java.util.Set-java.util.Set-)([Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> set1, [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> set2) Add these Sets to the list of sets in this composite. |
| * + void | * + [clear](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html#clear--)() Removes all of the elements from this composite set. |
| * + boolean | * + [contains](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html#contains-java.lang.Object-)([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) obj) Checks whether this composite set contains the object. |
| * + boolean | * + [containsAll](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html#containsAll-java.util.Collection-)([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll) Checks whether this composite contains all the elements in the specified collection. |
| * + boolean | * + [equals](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html#equals-java.lang.Object-)([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) obj) |
| * + protected [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.html)> | * + [getMutator](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html#getMutator--)() Get the set mutator to be used for this CompositeSet. |
| * + [List](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true)<[Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)>> | * + [getSets](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html#getSets--)() Gets the sets being decorated. |
| * + int | * + [hashCode](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html#hashCode--)() |
| * + boolean | * + [isEmpty](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html#isEmpty--)() Checks whether this composite set is empty. |
| * + [Iterator](https://docs.oracle.com/javase/7/docs/api/java/util/Iterator.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> | * + [iterator](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html#iterator--)() Gets an iterator over all the sets in this composite. |
| * + boolean | * + [remove](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html#remove-java.lang.Object-)([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) obj) If a CollectionMutator is defined for this CompositeSet then this method will be called anyway. |
| * + boolean | * + [removeAll](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html#removeAll-java.util.Collection-)([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll) Removes the elements in the specified collection from this composite set. |
| * + void | * + [removeComposited](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html#removeComposited-java.util.Set-)([Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> set) Removes a set from those being decorated in this composite. |
| * + boolean | * + [removeIf](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html#removeIf-java.util.function.Predicate-)([Predicate](https://docs.oracle.com/javase/8/docs/api/java/util/function/Predicate.html?is-external=true)<? super [E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> filter) |
| * + boolean | * + [retainAll](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html#retainAll-java.util.Collection-)([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll) Retains all the elements in the specified collection in this composite set, removing all others. |
| * + void | * + [setMutator](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html#setMutator-org.apache.commons.collections4.set.CompositeSet.SetMutator-)([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.html)> mutator) Specify a SetMutator strategy instance to handle changes. |
| * + int | * + [size](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html#size--)() Gets the size of this composite set. |
| * + [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)[] | * + [toArray](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html#toArray--)() Returns an array containing all of the elements in this composite. |
| * + <T> T[] | * + [toArray](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html#toArray-T:A-)(T[] array) Returns an object array, populating the supplied array if possible. |
| * + [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> | * + [toSet](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html#toSet--)() Returns a new Set containing all of the elements. |

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

### Methods inherited from interface java.util.[**Set**](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)[spliterator](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#spliterator--)

### Methods inherited from interface java.util.[**Collection**](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)[parallelStream](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#parallelStream--), [stream](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#stream--)

### Methods inherited from interface java.lang.[**Iterable**](https://docs.oracle.com/javase/7/docs/api/java/lang/Iterable.html?is-external=true)[forEach](https://docs.oracle.com/javase/7/docs/api/java/lang/Iterable.html?is-external=true#forEach-java.util.function.Consumer-)

### Constructor Detail

#### CompositeSet public CompositeSet() Create an empty CompositeSet.

#### CompositeSet public CompositeSet([Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> set) Create a CompositeSet with just set composited.Parameters: set - the initial set in the composite

#### CompositeSet public CompositeSet([Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)>... sets) Create a composite set with sets as the initial set of composited Sets.Parameters: sets - the initial sets in the composite

### Method Detail

#### size public int size() Gets the size of this composite set. This implementation calls size() on each set.Specified by: [size](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#size--) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Specified by: [size](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#size--) in interface [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Returns: total number of elements in all contained containers

#### isEmpty public boolean isEmpty() Checks whether this composite set is empty. This implementation calls isEmpty() on each set.Specified by: [isEmpty](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#isEmpty--) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Specified by: [isEmpty](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#isEmpty--) in interface [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Returns: true if all of the contained sets are empty

#### contains public boolean contains([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) obj) Checks whether this composite set contains the object. This implementation calls contains() on each set.Specified by: [contains](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#contains-java.lang.Object-) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Specified by: [contains](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#contains-java.lang.Object-) in interface [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Parameters: obj - the object to search for Returns: true if obj is contained in any of the contained sets

#### iterator public [Iterator](https://docs.oracle.com/javase/7/docs/api/java/util/Iterator.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> iterator() Gets an iterator over all the sets in this composite. This implementation uses an IteratorChain.Specified by: [iterator](https://docs.oracle.com/javase/7/docs/api/java/lang/Iterable.html?is-external=true#iterator--) in interface [Iterable](https://docs.oracle.com/javase/7/docs/api/java/lang/Iterable.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Specified by: [iterator](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#iterator--) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Specified by: [iterator](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#iterator--) in interface [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Returns: an IteratorChain instance which supports remove(). Iteration occurs over contained collections in the order they were added, but this behavior should not be relied upon. See Also: [IteratorChain](http://docs.google.com/org/apache/commons/collections4/iterators/IteratorChain.html)

#### toArray public [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)[] toArray() Returns an array containing all of the elements in this composite.Specified by: [toArray](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#toArray--) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Specified by: [toArray](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#toArray--) in interface [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Returns: an object array of all the elements in the collection

#### toArray public <T> T[] toArray(T[] array) Returns an object array, populating the supplied array if possible. See Collection interface for full details.Specified by: [toArray](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#toArray-T:A-) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Specified by: [toArray](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#toArray-T:A-) in interface [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Type Parameters: T - the type of the elements in the collection Parameters: array - the array to use, populating if possible Returns: an array of all the elements in the collection

#### add public boolean add([E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html) obj) Adds an object to the collection, throwing UnsupportedOperationException unless a SetMutator strategy is specified.Specified by: [add](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#add-E-) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Specified by: [add](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#add-E-) in interface [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Parameters: obj - the object to add Returns: true if the collection was modified Throws: [UnsupportedOperationException](https://docs.oracle.com/javase/7/docs/api/java/lang/UnsupportedOperationException.html?is-external=true) - if SetMutator hasn't been set or add is unsupported [ClassCastException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassCastException.html?is-external=true) - if the object cannot be added due to its type [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if the object cannot be added because its null [IllegalArgumentException](https://docs.oracle.com/javase/7/docs/api/java/lang/IllegalArgumentException.html?is-external=true) - if the object cannot be added

#### remove public boolean remove([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) obj) If a CollectionMutator is defined for this CompositeSet then this method will be called anyway.Specified by: [remove](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#remove-java.lang.Object-) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Specified by: [remove](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#remove-java.lang.Object-) in interface [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Parameters: obj - object to be removed Returns: true if the object is removed, false otherwise

#### containsAll public boolean containsAll([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll) Checks whether this composite contains all the elements in the specified collection. This implementation calls contains() for each element in the specified collection.Specified by: [containsAll](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#containsAll-java.util.Collection-) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Specified by: [containsAll](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#containsAll-java.util.Collection-) in interface [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Parameters: coll - the collection to check for Returns: true if all elements contained

#### addAll public boolean addAll([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<? extends [E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> coll) Adds a collection of elements to this composite, throwing UnsupportedOperationException unless a SetMutator strategy is specified.Specified by: [addAll](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#addAll-java.util.Collection-) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Specified by: [addAll](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#addAll-java.util.Collection-) in interface [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Parameters: coll - the collection to add Returns: true if the composite was modified Throws: [UnsupportedOperationException](https://docs.oracle.com/javase/7/docs/api/java/lang/UnsupportedOperationException.html?is-external=true) - if SetMutator hasn't been set or add is unsupported [ClassCastException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassCastException.html?is-external=true) - if the object cannot be added due to its type [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if the object cannot be added because its null [IllegalArgumentException](https://docs.oracle.com/javase/7/docs/api/java/lang/IllegalArgumentException.html?is-external=true) - if the object cannot be added

#### removeIf public boolean removeIf([Predicate](https://docs.oracle.com/javase/8/docs/api/java/util/function/Predicate.html?is-external=true)<? super [E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> filter)Specified by: [removeIf](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#removeIf-java.util.function.Predicate-) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Since: 4.4

#### removeAll public boolean removeAll([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll) Removes the elements in the specified collection from this composite set. This implementation calls removeAll on each collection.Specified by: [removeAll](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#removeAll-java.util.Collection-) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Specified by: [removeAll](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#removeAll-java.util.Collection-) in interface [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Parameters: coll - the collection to remove Returns: true if the composite was modified Throws: [UnsupportedOperationException](https://docs.oracle.com/javase/7/docs/api/java/lang/UnsupportedOperationException.html?is-external=true) - if removeAll is unsupported

#### retainAll public boolean retainAll([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll) Retains all the elements in the specified collection in this composite set, removing all others. This implementation calls retainAll() on each collection.Specified by: [retainAll](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#retainAll-java.util.Collection-) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Specified by: [retainAll](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#retainAll-java.util.Collection-) in interface [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Parameters: coll - the collection to remove Returns: true if the composite was modified Throws: [UnsupportedOperationException](https://docs.oracle.com/javase/7/docs/api/java/lang/UnsupportedOperationException.html?is-external=true) - if retainAll is unsupported

#### clear public void clear() Removes all of the elements from this composite set. This implementation calls clear() on each set.Specified by: [clear](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#clear--) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Specified by: [clear](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#clear--) in interface [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Throws: [UnsupportedOperationException](https://docs.oracle.com/javase/7/docs/api/java/lang/UnsupportedOperationException.html?is-external=true) - if clear is unsupported

#### setMutator public void setMutator([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.html)> mutator) Specify a SetMutator strategy instance to handle changes.Parameters: mutator - the mutator to use

#### addComposited public void addComposited([Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> set) Add a Set to this composite.Parameters: set - the set to add Throws: [IllegalArgumentException](https://docs.oracle.com/javase/7/docs/api/java/lang/IllegalArgumentException.html?is-external=true) - if a SetMutator is set, but fails to resolve a collision [UnsupportedOperationException](https://docs.oracle.com/javase/7/docs/api/java/lang/UnsupportedOperationException.html?is-external=true) - if there is no SetMutator set [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if set is null See Also: [CompositeSet.SetMutator](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.SetMutator.html)

#### addComposited public void addComposited([Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> set1, [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> set2) Add these Sets to the list of sets in this composite.Parameters: set1 - the first Set to be appended to the composite set2 - the second Set to be appended to the composite

#### addComposited public void addComposited([Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)>... sets) Add these Sets to the list of sets in this compositeParameters: sets - the Sets to be appended to the composite

#### removeComposited public void removeComposited([Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> set) Removes a set from those being decorated in this composite.Parameters: set - set to be removed

#### toSet public [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> toSet() Returns a new Set containing all of the elements.Returns: A new HashSet containing all of the elements in this composite. The new collection is *not* backed by this composite.

#### getSets public [List](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true)<[Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)>> getSets() Gets the sets being decorated.Returns: Unmodifiable list of all sets in this composite.

#### getMutator protected [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.html)> getMutator() Get the set mutator to be used for this CompositeSet.Returns: the set mutator

#### equals public boolean equals([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) obj)Specified by: [equals](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#equals-java.lang.Object-) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Specified by: [equals](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#equals-java.lang.Object-) in interface [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Overrides: [equals](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#equals-java.lang.Object-) in class [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) See Also: [Set.equals(java.lang.Object)](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#equals-java.lang.Object-)

#### hashCode public int hashCode()Specified by: [hashCode](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#hashCode--) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Specified by: [hashCode](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#hashCode--) in interface [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.html)> Overrides: [hashCode](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#hashCode--) in class [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) See Also: [Set.hashCode()](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#hashCode--)

[Skip navigation links](#2u6wntf)

* [Overview](http://docs.google.com/overview-summary.html)
* [Package](http://docs.google.com/package-summary.html)
* Class
* [Use](http://docs.google.com/class-use/CompositeSet.html)
* [Tree](http://docs.google.com/package-tree.html)
* [Deprecated](http://docs.google.com/deprecated-list.html)
* [Index](http://docs.google.com/index-all.html)
* [Help](http://docs.google.com/help-doc.html)
* [Prev Class](http://docs.google.com/org/apache/commons/collections4/set/AbstractSortedSetDecorator.html)
* [Next Class](http://docs.google.com/org/apache/commons/collections4/set/CompositeSet.SetMutator.html)
* [Frames](http://docs.google.com/index.html?org/apache/commons/collections4/set/CompositeSet.html)
* [No Frames](http://docs.google.com/CompositeSet.html)
* [All Classes](http://docs.google.com/allclasses-noframe.html)
* Summary:
* [Nested](#3znysh7) |
* Field |
* [Constr](#2et92p0) |
* [Method](#tyjcwt)
* Detail:
* Field |
* [Constr](#17dp8vu) |
* [Method](#35nkun2)

Copyright © 2001–2019 [The Apache Software Foundation](https://www.apache.org/). All rights reserved.