| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/AttributeSet.html) | [**Tree**](http://docs.google.com/package-tree.html) | [**Deprecated**](http://docs.google.com/deprecated-list.html) | [**Index**](http://docs.google.com/index-files/index-1.html) | [**Help**](http://docs.google.com/help-doc.html) | | --- | --- | --- | --- | --- | --- | --- | --- | | | ***Java™ Platform***  ***Standard Ed. 6*** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [**PREV CLASS**](http://docs.google.com/javax/print/attribute/Attribute.html)   [**NEXT CLASS**](http://docs.google.com/javax/print/attribute/AttributeSetUtilities.html) | [**FRAMES**](http://docs.google.com/index.html?javax/print/attribute/AttributeSet.html)    [**NO FRAMES**](http://docs.google.com/AttributeSet.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |
| SUMMARY: NESTED | FIELD | CONSTR | [METHOD](#3znysh7) | DETAIL: FIELD | CONSTR | [METHOD](#2et92p0) |

## **javax.print.attribute**

Interface AttributeSet

**All Known Subinterfaces:** [DocAttributeSet](http://docs.google.com/javax/print/attribute/DocAttributeSet.html), [PrintJobAttributeSet](http://docs.google.com/javax/print/attribute/PrintJobAttributeSet.html), [PrintRequestAttributeSet](http://docs.google.com/javax/print/attribute/PrintRequestAttributeSet.html), [PrintServiceAttributeSet](http://docs.google.com/javax/print/attribute/PrintServiceAttributeSet.html) **All Known Implementing Classes:** [HashAttributeSet](http://docs.google.com/javax/print/attribute/HashAttributeSet.html), [HashDocAttributeSet](http://docs.google.com/javax/print/attribute/HashDocAttributeSet.html), [HashPrintJobAttributeSet](http://docs.google.com/javax/print/attribute/HashPrintJobAttributeSet.html), [HashPrintRequestAttributeSet](http://docs.google.com/javax/print/attribute/HashPrintRequestAttributeSet.html), [HashPrintServiceAttributeSet](http://docs.google.com/javax/print/attribute/HashPrintServiceAttributeSet.html)

public interface **AttributeSet**

Interface AttributeSet specifies the interface for a set of printing attributes. A printing attribute is an object whose class implements interface [Attribute](http://docs.google.com/javax/print/attribute/Attribute.html).

An attribute set contains a group of *attribute values,* where duplicate values are not allowed in the set. Furthermore, each value in an attribute set is a member of some *category,* and at most one value in any particular category is allowed in the set. For an attribute set, the values are [Attribute](http://docs.google.com/javax/print/attribute/Attribute.html) objects, and the categories are [Class](http://docs.google.com/java/lang/Class.html) objects. An attribute's category is the class (or interface) at the root of the class hierarchy for that kind of attribute. Note that an attribute object's category may be a superclass of the attribute object's class rather than the attribute object's class itself. An attribute object's category is determined by calling the [getCategory()](http://docs.google.com/javax/print/attribute/Attribute.html#getCategory()) method defined in interface [Attribute](http://docs.google.com/javax/print/attribute/Attribute.html).

The interfaces of an AttributeSet resemble those of the Java Collections API's java.util.Map interface, but is more restrictive in the types it will accept, and combines keys and values into an Attribute.

Attribute sets are used in several places in the Print Service API. In each context, only certain kinds of attributes are allowed to appear in the attribute set, as determined by the tagging interfaces which the attribute class implements -- [DocAttribute](http://docs.google.com/javax/print/attribute/DocAttribute.html), [PrintRequestAttribute](http://docs.google.com/javax/print/attribute/PrintRequestAttribute.html), [PrintJobAttribute](http://docs.google.com/javax/print/attribute/PrintJobAttribute.html), and [PrintServiceAttribute](http://docs.google.com/javax/print/attribute/PrintServiceAttribute.html). There are four specializations of an attribute set that are restricted to contain just one of the four kinds of attribute -- [DocAttributeSet](http://docs.google.com/javax/print/attribute/DocAttributeSet.html), [PrintRequestAttributeSet](http://docs.google.com/javax/print/attribute/PrintRequestAttributeSet.html), [PrintJobAttributeSet](http://docs.google.com/javax/print/attribute/PrintJobAttributeSet.html), and [PrintServiceAttributeSet](http://docs.google.com/javax/print/attribute/PrintServiceAttributeSet.html), respectively. Note that many attribute classes implement more than one tagging interface and so may appear in more than one context.

* A [DocAttributeSet](http://docs.google.com/javax/print/attribute/DocAttributeSet.html), containing [DocAttribute](http://docs.google.com/javax/print/attribute/DocAttribute.html)s, specifies the characteristics of an individual doc and the print job settings to be applied to an individual doc.
* A [PrintRequestAttributeSet](http://docs.google.com/javax/print/attribute/PrintRequestAttributeSet.html), containing [PrintRequestAttribute](http://docs.google.com/javax/print/attribute/PrintRequestAttribute.html)s, specifies the settings to be applied to a whole print job and to all the docs in the print job.
* A [PrintJobAttributeSet](http://docs.google.com/javax/print/attribute/PrintJobAttributeSet.html), containing [PrintJobAttribute](http://docs.google.com/javax/print/attribute/PrintJobAttribute.html)s, reports the status of a print job.
* A [PrintServiceAttributeSet](http://docs.google.com/javax/print/attribute/PrintServiceAttributeSet.html), containing [PrintServiceAttribute](http://docs.google.com/javax/print/attribute/PrintServiceAttribute.html)s, reports the status of a Print Service instance.

In some contexts, the client is only allowed to examine an attribute set's contents but not change them (the set is read-only). In other places, the client is allowed both to examine and to change an attribute set's contents (the set is read-write). For a read-only attribute set, calling a mutating operation throws an UnmodifiableSetException.

The Print Service API provides one implementation of interface AttributeSet, class [HashAttributeSet](http://docs.google.com/javax/print/attribute/HashAttributeSet.html). A client can use class [HashAttributeSet](http://docs.google.com/javax/print/attribute/HashAttributeSet.html) or provide its own implementation of interface AttributeSet. The Print Service API also provides implementations of interface AttributeSet's subinterfaces -- classes [HashDocAttributeSet](http://docs.google.com/javax/print/attribute/HashDocAttributeSet.html), [HashPrintRequestAttributeSet](http://docs.google.com/javax/print/attribute/HashPrintRequestAttributeSet.html), [HashPrintJobAttributeSet](http://docs.google.com/javax/print/attribute/HashPrintJobAttributeSet.html), and [HashPrintServiceAttributeSet](http://docs.google.com/javax/print/attribute/HashPrintServiceAttributeSet.html).

| **Method Summary** | |
| --- | --- |
| boolean | [**add**](http://docs.google.com/javax/print/attribute/AttributeSet.html#add(javax.print.attribute.Attribute))([Attribute](http://docs.google.com/javax/print/attribute/Attribute.html) attribute)            Adds the specified attribute to this attribute set if it is not already present, first removing any existing value in the same attribute category as the specified attribute value. |
| boolean | [**addAll**](http://docs.google.com/javax/print/attribute/AttributeSet.html#addAll(javax.print.attribute.AttributeSet))([AttributeSet](http://docs.google.com/javax/print/attribute/AttributeSet.html) attributes)            Adds all of the elements in the specified set to this attribute. |
| void | [**clear**](http://docs.google.com/javax/print/attribute/AttributeSet.html#clear())()            Removes all attributes from this attribute set. |
| boolean | [**containsKey**](http://docs.google.com/javax/print/attribute/AttributeSet.html#containsKey(java.lang.Class))([Class](http://docs.google.com/java/lang/Class.html)<?> category)            Returns true if this attribute set contains an attribute for the specified category. |
| boolean | [**containsValue**](http://docs.google.com/javax/print/attribute/AttributeSet.html#containsValue(javax.print.attribute.Attribute))([Attribute](http://docs.google.com/javax/print/attribute/Attribute.html) attribute)            Returns true if this attribute set contains the given attribute value. |
| boolean | [**equals**](http://docs.google.com/javax/print/attribute/AttributeSet.html#equals(java.lang.Object))([Object](http://docs.google.com/java/lang/Object.html) object)            Compares the specified object with this attribute set for equality. |
| [Attribute](http://docs.google.com/javax/print/attribute/Attribute.html) | [**get**](http://docs.google.com/javax/print/attribute/AttributeSet.html#get(java.lang.Class))([Class](http://docs.google.com/java/lang/Class.html)<?> category)            Returns the attribute value which this attribute set contains in the given attribute category. |
| int | [**hashCode**](http://docs.google.com/javax/print/attribute/AttributeSet.html#hashCode())()            Returns the hash code value for this attribute set. |
| boolean | [**isEmpty**](http://docs.google.com/javax/print/attribute/AttributeSet.html#isEmpty())()            Returns true if this attribute set contains no attributes. |
| boolean | [**remove**](http://docs.google.com/javax/print/attribute/AttributeSet.html#remove(javax.print.attribute.Attribute))([Attribute](http://docs.google.com/javax/print/attribute/Attribute.html) attribute)            Removes the specified attribute from this attribute set if present. |
| boolean | [**remove**](http://docs.google.com/javax/print/attribute/AttributeSet.html#remove(java.lang.Class))([Class](http://docs.google.com/java/lang/Class.html)<?> category)            Removes any attribute for this category from this attribute set if present. |
| int | [**size**](http://docs.google.com/javax/print/attribute/AttributeSet.html#size())()            Returns the number of attributes in this attribute set. |
| [Attribute](http://docs.google.com/javax/print/attribute/Attribute.html)[] | [**toArray**](http://docs.google.com/javax/print/attribute/AttributeSet.html#toArray())()            Returns an array of the attributes contained in this set. |

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

### get

[Attribute](http://docs.google.com/javax/print/attribute/Attribute.html) **get**([Class](http://docs.google.com/java/lang/Class.html)<?> category)

Returns the attribute value which this attribute set contains in the given attribute category. Returns null if this attribute set does not contain any attribute value in the given attribute category.

**Parameters:**category - Attribute category whose associated attribute value is to be returned. It must be a [Class](http://docs.google.com/java/lang/Class.html) that implements interface [Attribute](http://docs.google.com/javax/print/attribute/Attribute.html). **Returns:**The attribute value in the given attribute category contained in this attribute set, or null if this attribute set does not contain any attribute value in the given attribute category. **Throws:** [NullPointerException](http://docs.google.com/java/lang/NullPointerException.html) - (unchecked exception) Thrown if the category is null. [ClassCastException](http://docs.google.com/java/lang/ClassCastException.html) - (unchecked exception) Thrown if the category is not a [Class](http://docs.google.com/java/lang/Class.html) that implements interface [Attribute](http://docs.google.com/javax/print/attribute/Attribute.html).

### add

boolean **add**([Attribute](http://docs.google.com/javax/print/attribute/Attribute.html) attribute)

Adds the specified attribute to this attribute set if it is not already present, first removing any existing value in the same attribute category as the specified attribute value.

**Parameters:**attribute - Attribute value to be added to this attribute set. **Returns:**true if this attribute set changed as a result of the call, i.e., the given attribute value was not already a member of this attribute set. **Throws:** [NullPointerException](http://docs.google.com/java/lang/NullPointerException.html) - (unchecked exception) Thrown if the attribute is null. [UnmodifiableSetException](http://docs.google.com/javax/print/attribute/UnmodifiableSetException.html) - (unchecked exception) Thrown if this attribute set does not support the add() operation.

### remove

boolean **remove**([Class](http://docs.google.com/java/lang/Class.html)<?> category)

Removes any attribute for this category from this attribute set if present. If category is null, then remove() does nothing and returns false.

**Parameters:**category - Attribute category to be removed from this attribute set. **Returns:**true if this attribute set changed as a result of the call, i.e., the given attribute value had been a member of this attribute set. **Throws:** [UnmodifiableSetException](http://docs.google.com/javax/print/attribute/UnmodifiableSetException.html) - (unchecked exception) Thrown if this attribute set does not support the remove() operation.

### remove

boolean **remove**([Attribute](http://docs.google.com/javax/print/attribute/Attribute.html) attribute)

Removes the specified attribute from this attribute set if present. If attribute is null, then remove() does nothing and returns false.

**Parameters:**attribute - Attribute value to be removed from this attribute set. **Returns:**true if this attribute set changed as a result of the call, i.e., the given attribute value had been a member of this attribute set. **Throws:** [UnmodifiableSetException](http://docs.google.com/javax/print/attribute/UnmodifiableSetException.html) - (unchecked exception) Thrown if this attribute set does not support the remove() operation.

### containsKey

boolean **containsKey**([Class](http://docs.google.com/java/lang/Class.html)<?> category)

Returns true if this attribute set contains an attribute for the specified category.

**Parameters:**category - whose presence in this attribute set is to be tested. **Returns:**true if this attribute set contains an attribute value for the specified category.

### containsValue

boolean **containsValue**([Attribute](http://docs.google.com/javax/print/attribute/Attribute.html) attribute)

Returns true if this attribute set contains the given attribute value.

**Parameters:**attribute - Attribute value whose presence in this attribute set is to be tested. **Returns:**true if this attribute set contains the given attribute value.

### addAll

boolean **addAll**([AttributeSet](http://docs.google.com/javax/print/attribute/AttributeSet.html) attributes)

Adds all of the elements in the specified set to this attribute. The outcome is the same as if the = [add(Attribute)](http://docs.google.com/javax/print/attribute/AttributeSet.html#add(javax.print.attribute.Attribute)) operation had been applied to this attribute set successively with each element from the specified set. The behavior of the addAll(AttributeSet) operation is unspecified if the specified set is modified while the operation is in progress.

If the addAll(AttributeSet) operation throws an exception, the effect on this attribute set's state is implementation dependent; elements from the specified set before the point of the exception may or may not have been added to this attribute set.

**Parameters:**attributes - whose elements are to be added to this attribute set. **Returns:**true if this attribute set changed as a result of the call. **Throws:** [UnmodifiableSetException](http://docs.google.com/javax/print/attribute/UnmodifiableSetException.html) - (Unchecked exception) Thrown if this attribute set does not support the addAll(AttributeSet) method. [NullPointerException](http://docs.google.com/java/lang/NullPointerException.html) - (Unchecked exception) Thrown if some element in the specified set is null.**See Also:**[add(Attribute)](http://docs.google.com/javax/print/attribute/AttributeSet.html#add(javax.print.attribute.Attribute))

### size

int **size**()

Returns the number of attributes in this attribute set. If this attribute set contains more than Integer.MAX\_VALUE elements, returns Integer.MAX\_VALUE.

**Returns:**The number of attributes in this attribute set.

### toArray

[Attribute](http://docs.google.com/javax/print/attribute/Attribute.html)[] **toArray**()

Returns an array of the attributes contained in this set.

**Returns:**the Attributes contained in this set as an array, zero length if the AttributeSet is empty.

### clear

void **clear**()

Removes all attributes from this attribute set.

**Throws:** [UnmodifiableSetException](http://docs.google.com/javax/print/attribute/UnmodifiableSetException.html) - (unchecked exception) Thrown if this attribute set does not support the clear() operation.

### isEmpty

boolean **isEmpty**()

Returns true if this attribute set contains no attributes.

**Returns:**true if this attribute set contains no attributes.

### equals

boolean **equals**([Object](http://docs.google.com/java/lang/Object.html) object)

Compares the specified object with this attribute set for equality. Returns true if the given object is also an attribute set and the two attribute sets contain the same attribute category-attribute value mappings. This ensures that the equals() method works properly across different implementations of the AttributeSet interface.

**Overrides:**[equals](http://docs.google.com/java/lang/Object.html#equals(java.lang.Object)) in class [Object](http://docs.google.com/java/lang/Object.html) **Parameters:**object - to be compared for equality with this attribute set. **Returns:**true if the specified object is equal to this attribute set.**See Also:**[Object.hashCode()](http://docs.google.com/java/lang/Object.html#hashCode()), [Hashtable](http://docs.google.com/java/util/Hashtable.html)

### hashCode

int **hashCode**()

Returns the hash code value for this attribute set. The hash code of an attribute set is defined to be the sum of the hash codes of each entry in the AttributeSet. This ensures that t1.equals(t2) implies that t1.hashCode()==t2.hashCode() for any two attribute sets t1 and t2, as required by the general contract of [Object.hashCode()](http://docs.google.com/java/lang/Object.html#hashCode()).

**Overrides:**[hashCode](http://docs.google.com/java/lang/Object.html#hashCode()) in class [Object](http://docs.google.com/java/lang/Object.html) **Returns:**The hash code value for this attribute set.**See Also:**[Object.equals(java.lang.Object)](http://docs.google.com/java/lang/Object.html#equals(java.lang.Object)), [Hashtable](http://docs.google.com/java/util/Hashtable.html)

| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/AttributeSet.html) | [**Tree**](http://docs.google.com/package-tree.html) | [**Deprecated**](http://docs.google.com/deprecated-list.html) | [**Index**](http://docs.google.com/index-files/index-1.html) | [**Help**](http://docs.google.com/help-doc.html) | | --- | --- | --- | --- | --- | --- | --- | --- | | | ***Java™ Platform***  ***Standard Ed. 6*** |
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For further API reference and developer documentation, see [Java SE Developer Documentation](http://docs.google.com/webnotes/devdocs-vs-specs.html). That documentation contains more detailed, developer-targeted descriptions, with conceptual overviews, definitions of terms, workarounds, and working code examples.

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