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[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/AbstractConverter.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/beanutils/converters/AbstractArrayConverter.html)
* [Next Class](http://docs.google.com/org/apache/commons/beanutils/converters/ArrayConverter.html)
* [Frames](http://docs.google.com/index.html?org/apache/commons/beanutils/converters/AbstractConverter.html)
* [No Frames](http://docs.google.com/AbstractConverter.html)
* [All Classes](http://docs.google.com/allclasses-noframe.html)
* Summary:
* Nested |
* Field |
* [Constr](#3znysh7) |
* [Method](#2et92p0)
* Detail:
* Field |
* [Constr](#3dy6vkm) |
* [Method](#2s8eyo1)

org.apache.commons.beanutils.converters

## Class AbstractConverter

* [java.lang.Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)
  + org.apache.commons.beanutils.converters.AbstractConverter
* All Implemented Interfaces: [Converter](http://docs.google.com/org/apache/commons/beanutils/Converter.html) Direct Known Subclasses: [ArrayConverter](http://docs.google.com/org/apache/commons/beanutils/converters/ArrayConverter.html), [BooleanConverter](http://docs.google.com/org/apache/commons/beanutils/converters/BooleanConverter.html), [CharacterConverter](http://docs.google.com/org/apache/commons/beanutils/converters/CharacterConverter.html), [ClassConverter](http://docs.google.com/org/apache/commons/beanutils/converters/ClassConverter.html), [DateTimeConverter](http://docs.google.com/org/apache/commons/beanutils/converters/DateTimeConverter.html), [FileConverter](http://docs.google.com/org/apache/commons/beanutils/converters/FileConverter.html), [NumberConverter](http://docs.google.com/org/apache/commons/beanutils/converters/NumberConverter.html), [StringConverter](http://docs.google.com/org/apache/commons/beanutils/converters/StringConverter.html), [URLConverter](http://docs.google.com/org/apache/commons/beanutils/converters/URLConverter.html)  
    
  public abstract class AbstractConverter  
  extends [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)  
  implements [Converter](http://docs.google.com/org/apache/commons/beanutils/Converter.html)
* Base [Converter](http://docs.google.com/org/apache/commons/beanutils/Converter.html) implementation that provides the structure for handling conversion **to** and **from** a specified type.  
  This implementation provides the basic structure for converting to/from a specified type optionally using a default value or throwing a [ConversionException](http://docs.google.com/org/apache/commons/beanutils/ConversionException.html) if a conversion error occurs.  
  Implementations should provide conversion to the specified type and from the specified type to a String value by implementing the following methods:
  + convertToString(value) - convert to a String (default implementation uses the objects toString() method).
  + convertToType(Class, value) - convert to the specified type

The default value has to be compliant to the default type of this converter - which is enforced by the generic type parameter. If a conversion is not possible and a default value is set, the converter tries to transform the default value to the requested target type. If this fails, a ConversionException if thrown.Since: 1.8.0 Version: $Id$

### Constructor SummaryConstructors

|  |
| --- |
| * + Constructor and Description |
| * + [AbstractConverter](http://docs.google.com/org/apache/commons/beanutils/converters/AbstractConverter.html#AbstractConverter--)() Construct a *Converter* that throws a ConversionException if an error occurs. |
| * + [AbstractConverter](http://docs.google.com/org/apache/commons/beanutils/converters/AbstractConverter.html#AbstractConverter-java.lang.Object-)([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) defaultValue) Construct a *Converter* that returns a default value if an error occurs. |

### Method SummaryAll Methods Instance Methods Abstract Methods Concrete Methods

|  |  |
| --- | --- |
| * + Modifier and Type | * + Method and Description |
| * + protected [ConversionException](http://docs.google.com/org/apache/commons/beanutils/ConversionException.html) | * + [conversionException](http://docs.google.com/org/apache/commons/beanutils/converters/AbstractConverter.html#conversionException-java.lang.Class-java.lang.Object-)([Class](https://docs.oracle.com/javase/7/docs/api/java/lang/Class.html?is-external=true)<?> type, [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) value) Generates a standard conversion exception with a message indicating that the passed in value cannot be converted to the desired target type. |
| * + <T> T | * + [convert](http://docs.google.com/org/apache/commons/beanutils/converters/AbstractConverter.html#convert-java.lang.Class-java.lang.Object-)([Class](https://docs.oracle.com/javase/7/docs/api/java/lang/Class.html?is-external=true)<T> type, [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) value) Convert the input object into an output object of the specified type. |
| * + protected [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) | * + [convertArray](http://docs.google.com/org/apache/commons/beanutils/converters/AbstractConverter.html#convertArray-java.lang.Object-)([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) value) Return the first element from an Array (or Collection) or the value unchanged if not an Array (or Collection). |
| * + protected [String](https://docs.oracle.com/javase/7/docs/api/java/lang/String.html?is-external=true) | * + [convertToString](http://docs.google.com/org/apache/commons/beanutils/converters/AbstractConverter.html#convertToString-java.lang.Object-)([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) value) Convert the input object into a String. |
| * + protected abstract <T> T | * + [convertToType](http://docs.google.com/org/apache/commons/beanutils/converters/AbstractConverter.html#convertToType-java.lang.Class-java.lang.Object-)([Class](https://docs.oracle.com/javase/7/docs/api/java/lang/Class.html?is-external=true)<T> type, [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) value) Convert the input object into an output object of the specified type. |
| * + protected [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) | * + [getDefault](http://docs.google.com/org/apache/commons/beanutils/converters/AbstractConverter.html#getDefault-java.lang.Class-)([Class](https://docs.oracle.com/javase/7/docs/api/java/lang/Class.html?is-external=true)<?> type) Return the default value for conversions to the specified type. |
| * + protected abstract [Class](https://docs.oracle.com/javase/7/docs/api/java/lang/Class.html?is-external=true)<?> | * + [getDefaultType](http://docs.google.com/org/apache/commons/beanutils/converters/AbstractConverter.html#getDefaultType--)() Return the default type this Converter handles. |
| * + protected <T> T | * + [handleError](http://docs.google.com/org/apache/commons/beanutils/converters/AbstractConverter.html#handleError-java.lang.Class-java.lang.Object-java.lang.Throwable-)([Class](https://docs.oracle.com/javase/7/docs/api/java/lang/Class.html?is-external=true)<T> type, [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) value, [Throwable](https://docs.oracle.com/javase/7/docs/api/java/lang/Throwable.html?is-external=true) cause) Handle Conversion Errors. |
| * + protected <T> T | * + [handleMissing](http://docs.google.com/org/apache/commons/beanutils/converters/AbstractConverter.html#handleMissing-java.lang.Class-)([Class](https://docs.oracle.com/javase/7/docs/api/java/lang/Class.html?is-external=true)<T> type) Handle missing values. |
| * + boolean | * + [isUseDefault](http://docs.google.com/org/apache/commons/beanutils/converters/AbstractConverter.html#isUseDefault--)() Indicates whether a default value will be returned or exception thrown in the event of a conversion error. |
| * + protected void | * + [setDefaultValue](http://docs.google.com/org/apache/commons/beanutils/converters/AbstractConverter.html#setDefaultValue-java.lang.Object-)([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) defaultValue) Set the default value, converting as required. |
| * + [String](https://docs.oracle.com/javase/7/docs/api/java/lang/String.html?is-external=true) | * + [toString](http://docs.google.com/org/apache/commons/beanutils/converters/AbstractConverter.html#toString--)() Provide a String representation of this converter. |

### 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--), [equals](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#equals-java.lang.Object-), [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--), [hashCode](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#hashCode--), [notify](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#notify--), [notifyAll](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#notifyAll--), [wait](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#wait--), [wait](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#wait-long-), [wait](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#wait-long-int-)

### Constructor Detail

#### AbstractConverter public AbstractConverter() Construct a *Converter* that throws a ConversionException if an error occurs.

#### AbstractConverter public AbstractConverter([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) defaultValue) Construct a *Converter* that returns a default value if an error occurs.Parameters: defaultValue - The default value to be returned if the value to be converted is missing or an error occurs converting the value.

### Method Detail

#### isUseDefault public boolean isUseDefault() Indicates whether a default value will be returned or exception thrown in the event of a conversion error.Returns: true if a default value will be returned for conversion errors or false if a [ConversionException](http://docs.google.com/org/apache/commons/beanutils/ConversionException.html) will be thrown.

#### convert public <T> T convert([Class](https://docs.oracle.com/javase/7/docs/api/java/lang/Class.html?is-external=true)<T> type, [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) value) Convert the input object into an output object of the specified type.Specified by: [convert](http://docs.google.com/org/apache/commons/beanutils/Converter.html#convert-java.lang.Class-java.lang.Object-) in interface [Converter](http://docs.google.com/org/apache/commons/beanutils/Converter.html) Type Parameters: T - the target type of the conversion Parameters: type - Data type to which this value should be converted value - The input value to be converted Returns: The converted value. Throws: [ConversionException](http://docs.google.com/org/apache/commons/beanutils/ConversionException.html) - if conversion cannot be performed successfully and no default is specified.

#### convertToString protected [String](https://docs.oracle.com/javase/7/docs/api/java/lang/String.html?is-external=true) convertToString([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) value) throws [Throwable](https://docs.oracle.com/javase/7/docs/api/java/lang/Throwable.html?is-external=true) Convert the input object into a String. **N.B.**This implementation simply uses the value's toString() method and should be overriden if a more sophisticated mechanism for *conversion to a String* is required.Parameters: value - The input value to be converted. Returns: the converted String value. Throws: [Throwable](https://docs.oracle.com/javase/7/docs/api/java/lang/Throwable.html?is-external=true) - if an error occurs converting to a String

#### convertToType protected abstract <T> T convertToType([Class](https://docs.oracle.com/javase/7/docs/api/java/lang/Class.html?is-external=true)<T> type, [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) value) throws [Throwable](https://docs.oracle.com/javase/7/docs/api/java/lang/Throwable.html?is-external=true) Convert the input object into an output object of the specified type. Typical implementations will provide a minimum of String --> type conversion.Type Parameters: T - Target type of the conversion. Parameters: type - Data type to which this value should be converted. value - The input value to be converted. Returns: The converted value. Throws: [Throwable](https://docs.oracle.com/javase/7/docs/api/java/lang/Throwable.html?is-external=true) - if an error occurs converting to the specified type

#### convertArray protected [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) convertArray([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) value) Return the first element from an Array (or Collection) or the value unchanged if not an Array (or Collection). N.B. This needs to be overriden for array/Collection converters.Parameters: value - The value to convert Returns: The first element in an Array (or Collection) or the value unchanged if not an Array (or Collection)

#### handleError protected <T> T handleError([Class](https://docs.oracle.com/javase/7/docs/api/java/lang/Class.html?is-external=true)<T> type, [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) value, [Throwable](https://docs.oracle.com/javase/7/docs/api/java/lang/Throwable.html?is-external=true) cause) Handle Conversion Errors. If a default value has been specified then it is returned otherwise a ConversionException is thrown.Type Parameters: T - Target type of the conversion. Parameters: type - Data type to which this value should be converted. value - The input value to be converted cause - The exception thrown by the convert method Returns: The default value. Throws: [ConversionException](http://docs.google.com/org/apache/commons/beanutils/ConversionException.html) - if no default value has been specified for this [Converter](http://docs.google.com/org/apache/commons/beanutils/Converter.html).

#### handleMissing protected <T> T handleMissing([Class](https://docs.oracle.com/javase/7/docs/api/java/lang/Class.html?is-external=true)<T> type) Handle missing values. If a default value has been specified, then it is returned (after a cast to the desired target class); otherwise a ConversionException is thrown.Type Parameters: T - the desired target type Parameters: type - Data type to which this value should be converted. Returns: The default value. Throws: [ConversionException](http://docs.google.com/org/apache/commons/beanutils/ConversionException.html) - if no default value has been specified for this [Converter](http://docs.google.com/org/apache/commons/beanutils/Converter.html).

#### setDefaultValue protected void setDefaultValue([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) defaultValue) Set the default value, converting as required. If the default value is different from the type the Converter handles, it will be converted to the handled type.Parameters: defaultValue - The default value to be returned if the value to be converted is missing or an error occurs converting the value. Throws: [ConversionException](http://docs.google.com/org/apache/commons/beanutils/ConversionException.html) - if an error occurs converting the default value

#### getDefaultType protected abstract [Class](https://docs.oracle.com/javase/7/docs/api/java/lang/Class.html?is-external=true)<?> getDefaultType() Return the default type this Converter handles.Returns: The default type this Converter handles.

#### getDefault protected [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) getDefault([Class](https://docs.oracle.com/javase/7/docs/api/java/lang/Class.html?is-external=true)<?> type) Return the default value for conversions to the specified type.Parameters: type - Data type to which this value should be converted. Returns: The default value for the specified type.

#### toString public [String](https://docs.oracle.com/javase/7/docs/api/java/lang/String.html?is-external=true) toString() Provide a String representation of this converter.Overrides: [toString](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#toString--) in class [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) Returns: A String representation of this converter

#### conversionException protected [ConversionException](http://docs.google.com/org/apache/commons/beanutils/ConversionException.html) conversionException([Class](https://docs.oracle.com/javase/7/docs/api/java/lang/Class.html?is-external=true)<?> type, [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) value) Generates a standard conversion exception with a message indicating that the passed in value cannot be converted to the desired target type.Parameters: type - the target type value - the value to be converted Returns: a ConversionException with a standard message Since: 1.9

[Skip navigation links](#3whwml4)

* [Overview](http://docs.google.com/overview-summary.html)
* [Package](http://docs.google.com/package-summary.html)
* Class
* [Use](http://docs.google.com/class-use/AbstractConverter.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/beanutils/converters/AbstractArrayConverter.html)
* [Next Class](http://docs.google.com/org/apache/commons/beanutils/converters/ArrayConverter.html)
* [Frames](http://docs.google.com/index.html?org/apache/commons/beanutils/converters/AbstractConverter.html)
* [No Frames](http://docs.google.com/AbstractConverter.html)
* [All Classes](http://docs.google.com/allclasses-noframe.html)
* Summary:
* Nested |
* Field |
* [Constr](#3znysh7) |
* [Method](#2et92p0)
* Detail:
* Field |
* [Constr](#3dy6vkm) |
* [Method](#2s8eyo1)

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