| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/CertPathBuilder.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/java/security/cert/CertPath.CertPathRep.html)   [**NEXT CLASS**](http://docs.google.com/java/security/cert/CertPathBuilderException.html) | [**FRAMES**](http://docs.google.com/index.html?java/security/cert/CertPathBuilder.html)    [**NO FRAMES**](http://docs.google.com/CertPathBuilder.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |
| SUMMARY: NESTED | FIELD | [CONSTR](#3znysh7) | [METHOD](#2et92p0) | DETAIL: FIELD | [CONSTR](#3dy6vkm) | [METHOD](#4d34og8) |

## **java.security.cert**

Class CertPathBuilder

[java.lang.Object](http://docs.google.com/java/lang/Object.html)  
 **java.security.cert.CertPathBuilder**

public class **CertPathBuilder**extends [Object](http://docs.google.com/java/lang/Object.html)

A class for building certification paths (also known as certificate chains).

This class uses a provider-based architecture. To create a CertPathBuilder, call one of the static getInstance methods, passing in the algorithm name of the CertPathBuilder desired and optionally the name of the provider desired.

Once a CertPathBuilder object has been created, certification paths can be constructed by calling the [build](http://docs.google.com/java/security/cert/CertPathBuilder.html#build(java.security.cert.CertPathParameters)) method and passing it an algorithm-specific set of parameters. If successful, the result (including the CertPath that was built) is returned in an object that implements the CertPathBuilderResult interface.

**Concurrent Access**

The static methods of this class are guaranteed to be thread-safe. Multiple threads may concurrently invoke the static methods defined in this class with no ill effects.

However, this is not true for the non-static methods defined by this class. Unless otherwise documented by a specific provider, threads that need to access a single CertPathBuilder instance concurrently should synchronize amongst themselves and provide the necessary locking. Multiple threads each manipulating a different CertPathBuilder instance need not synchronize.

**Since:** 1.4 **See Also:**[CertPath](http://docs.google.com/java/security/cert/CertPath.html)

| **Constructor Summary** | |
| --- | --- |
| protected | [**CertPathBuilder**](http://docs.google.com/java/security/cert/CertPathBuilder.html#CertPathBuilder(java.security.cert.CertPathBuilderSpi,%20java.security.Provider,%20java.lang.String))([CertPathBuilderSpi](http://docs.google.com/java/security/cert/CertPathBuilderSpi.html) builderSpi, [Provider](http://docs.google.com/java/security/Provider.html) provider, [String](http://docs.google.com/java/lang/String.html) algorithm)            Creates a CertPathBuilder object of the given algorithm, and encapsulates the given provider implementation (SPI object) in it. |

| **Method Summary** | |
| --- | --- |
| [CertPathBuilderResult](http://docs.google.com/java/security/cert/CertPathBuilderResult.html) | [**build**](http://docs.google.com/java/security/cert/CertPathBuilder.html#build(java.security.cert.CertPathParameters))([CertPathParameters](http://docs.google.com/java/security/cert/CertPathParameters.html) params)            Attempts to build a certification path using the specified algorithm parameter set. |
| [String](http://docs.google.com/java/lang/String.html) | [**getAlgorithm**](http://docs.google.com/java/security/cert/CertPathBuilder.html#getAlgorithm())()            Returns the name of the algorithm of this CertPathBuilder. |
| static [String](http://docs.google.com/java/lang/String.html) | [**getDefaultType**](http://docs.google.com/java/security/cert/CertPathBuilder.html#getDefaultType())()            Returns the default CertPathBuilder type as specified in the Java security properties file, or the string "PKIX" if no such property exists. |
| static [CertPathBuilder](http://docs.google.com/java/security/cert/CertPathBuilder.html) | [**getInstance**](http://docs.google.com/java/security/cert/CertPathBuilder.html#getInstance(java.lang.String))([String](http://docs.google.com/java/lang/String.html) algorithm)            Returns a CertPathBuilder object that implements the specified algorithm. |
| static [CertPathBuilder](http://docs.google.com/java/security/cert/CertPathBuilder.html) | [**getInstance**](http://docs.google.com/java/security/cert/CertPathBuilder.html#getInstance(java.lang.String,%20java.security.Provider))([String](http://docs.google.com/java/lang/String.html) algorithm, [Provider](http://docs.google.com/java/security/Provider.html) provider)            Returns a CertPathBuilder object that implements the specified algorithm. |
| static [CertPathBuilder](http://docs.google.com/java/security/cert/CertPathBuilder.html) | [**getInstance**](http://docs.google.com/java/security/cert/CertPathBuilder.html#getInstance(java.lang.String,%20java.lang.String))([String](http://docs.google.com/java/lang/String.html) algorithm, [String](http://docs.google.com/java/lang/String.html) provider)            Returns a CertPathBuilder object that implements the specified algorithm. |
| [Provider](http://docs.google.com/java/security/Provider.html) | [**getProvider**](http://docs.google.com/java/security/cert/CertPathBuilder.html#getProvider())()            Returns the provider of this CertPathBuilder. |

| **Methods inherited from class java.lang.**[**Object**](http://docs.google.com/java/lang/Object.html) |
| --- |
| [clone](http://docs.google.com/java/lang/Object.html#clone()), [equals](http://docs.google.com/java/lang/Object.html#equals(java.lang.Object)), [finalize](http://docs.google.com/java/lang/Object.html#finalize()), [getClass](http://docs.google.com/java/lang/Object.html#getClass()), [hashCode](http://docs.google.com/java/lang/Object.html#hashCode()), [notify](http://docs.google.com/java/lang/Object.html#notify()), [notifyAll](http://docs.google.com/java/lang/Object.html#notifyAll()), [toString](http://docs.google.com/java/lang/Object.html#toString()), [wait](http://docs.google.com/java/lang/Object.html#wait()), [wait](http://docs.google.com/java/lang/Object.html#wait(long)), [wait](http://docs.google.com/java/lang/Object.html#wait(long,%20int)) |

| **Constructor Detail** |
| --- |

### CertPathBuilder

protected **CertPathBuilder**([CertPathBuilderSpi](http://docs.google.com/java/security/cert/CertPathBuilderSpi.html) builderSpi,  
 [Provider](http://docs.google.com/java/security/Provider.html) provider,  
 [String](http://docs.google.com/java/lang/String.html) algorithm)

Creates a CertPathBuilder object of the given algorithm, and encapsulates the given provider implementation (SPI object) in it.

**Parameters:**builderSpi - the provider implementationprovider - the provideralgorithm - the algorithm name

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

### getInstance

public static [CertPathBuilder](http://docs.google.com/java/security/cert/CertPathBuilder.html) **getInstance**([String](http://docs.google.com/java/lang/String.html) algorithm)  
 throws [NoSuchAlgorithmException](http://docs.google.com/java/security/NoSuchAlgorithmException.html)

Returns a CertPathBuilder object that implements the specified algorithm.

This method traverses the list of registered security Providers, starting with the most preferred Provider. A new CertPathBuilder object encapsulating the CertPathBuilderSpi implementation from the first Provider that supports the specified algorithm is returned.

Note that the list of registered providers may be retrieved via the [Security.getProviders()](http://docs.google.com/java/security/Security.html#getProviders()) method.

**Parameters:**algorithm - the name of the requested CertPathBuilder algorithm. See Appendix A in the  [Java Certification Path API Programmer's Guide](http://docs.google.com/technotes/guides/security/certpath/CertPathProgGuide.html#AppA)  for information about standard algorithm names. **Returns:**a CertPathBuilder object that implements the specified algorithm. **Throws:** [NoSuchAlgorithmException](http://docs.google.com/java/security/NoSuchAlgorithmException.html) - if no Provider supports a CertPathBuilderSpi implementation for the specified algorithm.**See Also:**[Provider](http://docs.google.com/java/security/Provider.html)

### getInstance

public static [CertPathBuilder](http://docs.google.com/java/security/cert/CertPathBuilder.html) **getInstance**([String](http://docs.google.com/java/lang/String.html) algorithm,  
 [String](http://docs.google.com/java/lang/String.html) provider)  
 throws [NoSuchAlgorithmException](http://docs.google.com/java/security/NoSuchAlgorithmException.html),  
 [NoSuchProviderException](http://docs.google.com/java/security/NoSuchProviderException.html)

Returns a CertPathBuilder object that implements the specified algorithm.

A new CertPathBuilder object encapsulating the CertPathBuilderSpi implementation from the specified provider is returned. The specified provider must be registered in the security provider list.

Note that the list of registered providers may be retrieved via the [Security.getProviders()](http://docs.google.com/java/security/Security.html#getProviders()) method.

**Parameters:**algorithm - the name of the requested CertPathBuilder algorithm. See Appendix A in the  [Java Certification Path API Programmer's Guide](http://docs.google.com/technotes/guides/security/certpath/CertPathProgGuide.html#AppA)  for information about standard algorithm names.provider - the name of the provider. **Returns:**a CertPathBuilder object that implements the specified algorithm. **Throws:** [NoSuchAlgorithmException](http://docs.google.com/java/security/NoSuchAlgorithmException.html) - if a CertPathBuilderSpi implementation for the specified algorithm is not available from the specified provider. [NoSuchProviderException](http://docs.google.com/java/security/NoSuchProviderException.html) - if the specified provider is not registered in the security provider list. [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if the provider is null or empty.**See Also:**[Provider](http://docs.google.com/java/security/Provider.html)

### getInstance

public static [CertPathBuilder](http://docs.google.com/java/security/cert/CertPathBuilder.html) **getInstance**([String](http://docs.google.com/java/lang/String.html) algorithm,  
 [Provider](http://docs.google.com/java/security/Provider.html) provider)  
 throws [NoSuchAlgorithmException](http://docs.google.com/java/security/NoSuchAlgorithmException.html)

Returns a CertPathBuilder object that implements the specified algorithm.

A new CertPathBuilder object encapsulating the CertPathBuilderSpi implementation from the specified Provider object is returned. Note that the specified Provider object does not have to be registered in the provider list.

**Parameters:**algorithm - the name of the requested CertPathBuilder algorithm. See Appendix A in the  [Java Certification Path API Programmer's Guide](http://docs.google.com/technotes/guides/security/certpath/CertPathProgGuide.html#AppA)  for information about standard algorithm names.provider - the provider. **Returns:**a CertPathBuilder object that implements the specified algorithm. **Throws:** [NoSuchAlgorithmException](http://docs.google.com/java/security/NoSuchAlgorithmException.html) - if a CertPathBuilderSpi implementation for the specified algorithm is not available from the specified Provider object. [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if the provider is null.**See Also:**[Provider](http://docs.google.com/java/security/Provider.html)

### getProvider

public final [Provider](http://docs.google.com/java/security/Provider.html) **getProvider**()

Returns the provider of this CertPathBuilder.

**Returns:**the provider of this CertPathBuilder

### getAlgorithm

public final [String](http://docs.google.com/java/lang/String.html) **getAlgorithm**()

Returns the name of the algorithm of this CertPathBuilder.

**Returns:**the name of the algorithm of this CertPathBuilder

### build

public final [CertPathBuilderResult](http://docs.google.com/java/security/cert/CertPathBuilderResult.html) **build**([CertPathParameters](http://docs.google.com/java/security/cert/CertPathParameters.html) params)  
 throws [CertPathBuilderException](http://docs.google.com/java/security/cert/CertPathBuilderException.html),  
 [InvalidAlgorithmParameterException](http://docs.google.com/java/security/InvalidAlgorithmParameterException.html)

Attempts to build a certification path using the specified algorithm parameter set.

**Parameters:**params - the algorithm parameters **Returns:**the result of the build algorithm **Throws:** [CertPathBuilderException](http://docs.google.com/java/security/cert/CertPathBuilderException.html) - if the builder is unable to construct a certification path that satisfies the specified parameters [InvalidAlgorithmParameterException](http://docs.google.com/java/security/InvalidAlgorithmParameterException.html) - if the specified parameters are inappropriate for this CertPathBuilder

### getDefaultType

public static final [String](http://docs.google.com/java/lang/String.html) **getDefaultType**()

Returns the default CertPathBuilder type as specified in the Java security properties file, or the string "PKIX" if no such property exists. The Java security properties file is located in the file named <JAVA\_HOME>/lib/security/java.security. <JAVA\_HOME> refers to the value of the java.home system property, and specifies the directory where the JRE is installed.

The default CertPathBuilder type can be used by applications that do not want to use a hard-coded type when calling one of the getInstance methods, and want to provide a default type in case a user does not specify its own.

The default CertPathBuilder type can be changed by setting the value of the "certpathbuilder.type" security property (in the Java security properties file) to the desired type.

**Returns:**the default CertPathBuilder type as specified in the Java security properties file, or the string "PKIX" if no such property exists.

| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/CertPathBuilder.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/java/security/cert/CertPath.CertPathRep.html)   [**NEXT CLASS**](http://docs.google.com/java/security/cert/CertPathBuilderException.html) | [**FRAMES**](http://docs.google.com/index.html?java/security/cert/CertPathBuilder.html)    [**NO FRAMES**](http://docs.google.com/CertPathBuilder.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |
| SUMMARY: NESTED | FIELD | [CONSTR](#3znysh7) | [METHOD](#2et92p0) | DETAIL: FIELD | [CONSTR](#3dy6vkm) | [METHOD](#4d34og8) |

[Submit a bug or feature](http://bugs.sun.com/services/bugreport/index.jsp)

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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