| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/Certificate.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   [**NEXT CLASS**](http://docs.google.com/java/security/cert/Certificate.CertificateRep.html) | [**FRAMES**](http://docs.google.com/index.html?java/security/cert/Certificate.html)    [**NO FRAMES**](http://docs.google.com/Certificate.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |
| SUMMARY: [NESTED](#3znysh7) | FIELD | [CONSTR](#2et92p0) | [METHOD](#tyjcwt) | DETAIL: FIELD | [CONSTR](#1t3h5sf) | [METHOD](#2s8eyo1) |

## **java.security.cert**

Class Certificate

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

**All Implemented Interfaces:** [Serializable](http://docs.google.com/java/io/Serializable.html) **Direct Known Subclasses:** [X509Certificate](http://docs.google.com/java/security/cert/X509Certificate.html)

public abstract class **Certificate**extends [Object](http://docs.google.com/java/lang/Object.html)implements [Serializable](http://docs.google.com/java/io/Serializable.html)

Abstract class for managing a variety of identity certificates. An identity certificate is a binding of a principal to a public key which is vouched for by another principal. (A principal represents an entity such as an individual user, a group, or a corporation.)

This class is an abstraction for certificates that have different formats but important common uses. For example, different types of certificates, such as X.509 and PGP, share general certificate functionality (like encoding and verifying) and some types of information (like a public key).

X.509, PGP, and SDSI certificates can all be implemented by subclassing the Certificate class, even though they contain different sets of information, and they store and retrieve the information in different ways.

**See Also:**[X509Certificate](http://docs.google.com/java/security/cert/X509Certificate.html), [CertificateFactory](http://docs.google.com/java/security/cert/CertificateFactory.html), [Serialized Form](http://docs.google.com/serialized-form.html#java.security.cert.Certificate)

| **Nested Class Summary** | |
| --- | --- |
| protected static class | [**Certificate.CertificateRep**](http://docs.google.com/java/security/cert/Certificate.CertificateRep.html)            Alternate Certificate class for serialization. |

| **Constructor Summary** | |
| --- | --- |
| protected | [**Certificate**](http://docs.google.com/java/security/cert/Certificate.html#Certificate(java.lang.String))([String](http://docs.google.com/java/lang/String.html) type)            Creates a certificate of the specified type. |

| **Method Summary** | |
| --- | --- |
| boolean | [**equals**](http://docs.google.com/java/security/cert/Certificate.html#equals(java.lang.Object))([Object](http://docs.google.com/java/lang/Object.html) other)            Compares this certificate for equality with the specified object. |
| abstract  byte[] | [**getEncoded**](http://docs.google.com/java/security/cert/Certificate.html#getEncoded())()            Returns the encoded form of this certificate. |
| abstract  [PublicKey](http://docs.google.com/java/security/PublicKey.html) | [**getPublicKey**](http://docs.google.com/java/security/cert/Certificate.html#getPublicKey())()            Gets the public key from this certificate. |
| [String](http://docs.google.com/java/lang/String.html) | [**getType**](http://docs.google.com/java/security/cert/Certificate.html#getType())()            Returns the type of this certificate. |
| int | [**hashCode**](http://docs.google.com/java/security/cert/Certificate.html#hashCode())()            Returns a hashcode value for this certificate from its encoded form. |
| abstract  [String](http://docs.google.com/java/lang/String.html) | [**toString**](http://docs.google.com/java/security/cert/Certificate.html#toString())()            Returns a string representation of this certificate. |
| abstract  void | [**verify**](http://docs.google.com/java/security/cert/Certificate.html#verify(java.security.PublicKey))([PublicKey](http://docs.google.com/java/security/PublicKey.html) key)            Verifies that this certificate was signed using the private key that corresponds to the specified public key. |
| abstract  void | [**verify**](http://docs.google.com/java/security/cert/Certificate.html#verify(java.security.PublicKey,%20java.lang.String))([PublicKey](http://docs.google.com/java/security/PublicKey.html) key, [String](http://docs.google.com/java/lang/String.html) sigProvider)            Verifies that this certificate was signed using the private key that corresponds to the specified public key. |
| protected  [Object](http://docs.google.com/java/lang/Object.html) | [**writeReplace**](http://docs.google.com/java/security/cert/Certificate.html#writeReplace())()            Replace the Certificate to be serialized. |

| **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()), [finalize](http://docs.google.com/java/lang/Object.html#finalize()), [getClass](http://docs.google.com/java/lang/Object.html#getClass()), [notify](http://docs.google.com/java/lang/Object.html#notify()), [notifyAll](http://docs.google.com/java/lang/Object.html#notifyAll()), [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** |
| --- |

### Certificate

protected **Certificate**([String](http://docs.google.com/java/lang/String.html) type)

Creates a certificate of the specified type.

**Parameters:**type - the standard name of the certificate type. See Appendix A in the  [Java Cryptography Architecture API Specification & Reference](http://docs.google.com/technotes/guides/security/crypto/CryptoSpec.html#AppA)  for information about standard certificate types.

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

### getType

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

Returns the type of this certificate.

**Returns:**the type of this certificate.

### equals

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

Compares this certificate for equality with the specified object. If the other object is an instanceof Certificate, then its encoded form is retrieved and compared with the encoded form of this certificate.

**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:**other - the object to test for equality with this certificate. **Returns:**true iff the encoded forms of the two certificates match, false otherwise.**See Also:**[Object.hashCode()](http://docs.google.com/java/lang/Object.html#hashCode()), [Hashtable](http://docs.google.com/java/util/Hashtable.html)

### hashCode

public int **hashCode**()

Returns a hashcode value for this certificate from its encoded form.

**Overrides:**[hashCode](http://docs.google.com/java/lang/Object.html#hashCode()) in class [Object](http://docs.google.com/java/lang/Object.html) **Returns:**the hashcode value.**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)

### getEncoded

public abstract byte[] **getEncoded**()  
 throws [CertificateEncodingException](http://docs.google.com/java/security/cert/CertificateEncodingException.html)

Returns the encoded form of this certificate. It is assumed that each certificate type would have only a single form of encoding; for example, X.509 certificates would be encoded as ASN.1 DER.

**Returns:**the encoded form of this certificate **Throws:** [CertificateEncodingException](http://docs.google.com/java/security/cert/CertificateEncodingException.html) - if an encoding error occurs.

### verify

public abstract void **verify**([PublicKey](http://docs.google.com/java/security/PublicKey.html) key)  
 throws [CertificateException](http://docs.google.com/java/security/cert/CertificateException.html),  
 [NoSuchAlgorithmException](http://docs.google.com/java/security/NoSuchAlgorithmException.html),  
 [InvalidKeyException](http://docs.google.com/java/security/InvalidKeyException.html),  
 [NoSuchProviderException](http://docs.google.com/java/security/NoSuchProviderException.html),  
 [SignatureException](http://docs.google.com/java/security/SignatureException.html)

Verifies that this certificate was signed using the private key that corresponds to the specified public key.

**Parameters:**key - the PublicKey used to carry out the verification. **Throws:** [NoSuchAlgorithmException](http://docs.google.com/java/security/NoSuchAlgorithmException.html) - on unsupported signature algorithms. [InvalidKeyException](http://docs.google.com/java/security/InvalidKeyException.html) - on incorrect key. [NoSuchProviderException](http://docs.google.com/java/security/NoSuchProviderException.html) - if there's no default provider. [SignatureException](http://docs.google.com/java/security/SignatureException.html) - on signature errors. [CertificateException](http://docs.google.com/java/security/cert/CertificateException.html) - on encoding errors.

### verify

public abstract void **verify**([PublicKey](http://docs.google.com/java/security/PublicKey.html) key,  
 [String](http://docs.google.com/java/lang/String.html) sigProvider)  
 throws [CertificateException](http://docs.google.com/java/security/cert/CertificateException.html),  
 [NoSuchAlgorithmException](http://docs.google.com/java/security/NoSuchAlgorithmException.html),  
 [InvalidKeyException](http://docs.google.com/java/security/InvalidKeyException.html),  
 [NoSuchProviderException](http://docs.google.com/java/security/NoSuchProviderException.html),  
 [SignatureException](http://docs.google.com/java/security/SignatureException.html)

Verifies that this certificate was signed using the private key that corresponds to the specified public key. This method uses the signature verification engine supplied by the specified provider.

**Parameters:**key - the PublicKey used to carry out the verification.sigProvider - the name of the signature provider. **Throws:** [NoSuchAlgorithmException](http://docs.google.com/java/security/NoSuchAlgorithmException.html) - on unsupported signature algorithms. [InvalidKeyException](http://docs.google.com/java/security/InvalidKeyException.html) - on incorrect key. [NoSuchProviderException](http://docs.google.com/java/security/NoSuchProviderException.html) - on incorrect provider. [SignatureException](http://docs.google.com/java/security/SignatureException.html) - on signature errors. [CertificateException](http://docs.google.com/java/security/cert/CertificateException.html) - on encoding errors.

### toString

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

Returns a string representation of this certificate.

**Overrides:**[toString](http://docs.google.com/java/lang/Object.html#toString()) in class [Object](http://docs.google.com/java/lang/Object.html) **Returns:**a string representation of this certificate.

### getPublicKey

public abstract [PublicKey](http://docs.google.com/java/security/PublicKey.html) **getPublicKey**()

Gets the public key from this certificate.

**Returns:**the public key.

### writeReplace

protected [Object](http://docs.google.com/java/lang/Object.html) **writeReplace**()  
 throws [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html)

Replace the Certificate to be serialized.

**Returns:**the alternate Certificate object to be serialized **Throws:** [ObjectStreamException](http://docs.google.com/java/io/ObjectStreamException.html) - if a new object representing this Certificate could not be created**Since:** 1.3

| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/Certificate.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   [**NEXT CLASS**](http://docs.google.com/java/security/cert/Certificate.CertificateRep.html) | [**FRAMES**](http://docs.google.com/index.html?java/security/cert/Certificate.html)    [**NO FRAMES**](http://docs.google.com/Certificate.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |
| SUMMARY: [NESTED](#3znysh7) | FIELD | [CONSTR](#2et92p0) | [METHOD](#tyjcwt) | DETAIL: FIELD | [CONSTR](#1t3h5sf) | [METHOD](#2s8eyo1) |

[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.

Copyright 2006 Sun Microsystems, Inc. All rights reserved. Use is subject to [license terms](http://docs.google.com/legal/license.html). Also see the [documentation redistribution policy](http://java.sun.com/docs/redist.html).