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

## **javax.crypto**

Class SecretKeyFactory

[java.lang.Object](http://docs.google.com/java/lang/Object.html)  
 **javax.crypto.SecretKeyFactory**

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

This class represents a factory for secret keys.

Key factories are used to convert *keys* (opaque cryptographic keys of type Key) into *key specifications* (transparent representations of the underlying key material), and vice versa. Secret key factories operate only on secret (symmetric) keys.

Key factories are bi-directional, i.e., they allow to build an opaque key object from a given key specification (key material), or to retrieve the underlying key material of a key object in a suitable format.

Application developers should refer to their provider's documentation to find out which key specifications are supported by the [generateSecret](http://docs.google.com/javax/crypto/SecretKeyFactory.html#generateSecret(java.security.spec.KeySpec)) and [getKeySpec](http://docs.google.com/javax/crypto/SecretKeyFactory.html#getKeySpec(javax.crypto.SecretKey,%20java.lang.Class)) methods. For example, the DES secret-key factory supplied by the "SunJCE" provider supports DESKeySpec as a transparent representation of DES keys, and that provider's secret-key factory for Triple DES keys supports DESedeKeySpec as a transparent representation of Triple DES keys.

**Since:** 1.4 **See Also:**[SecretKey](http://docs.google.com/javax/crypto/SecretKey.html), [DESKeySpec](http://docs.google.com/javax/crypto/spec/DESKeySpec.html), [DESedeKeySpec](http://docs.google.com/javax/crypto/spec/DESedeKeySpec.html), [PBEKeySpec](http://docs.google.com/javax/crypto/spec/PBEKeySpec.html)

| **Constructor Summary** | |
| --- | --- |
| protected | [**SecretKeyFactory**](http://docs.google.com/javax/crypto/SecretKeyFactory.html#SecretKeyFactory(javax.crypto.SecretKeyFactorySpi,%20java.security.Provider,%20java.lang.String))([SecretKeyFactorySpi](http://docs.google.com/javax/crypto/SecretKeyFactorySpi.html) keyFacSpi, [Provider](http://docs.google.com/java/security/Provider.html) provider, [String](http://docs.google.com/java/lang/String.html) algorithm)            Creates a SecretKeyFactory object. |

| **Method Summary** | |
| --- | --- |
| [SecretKey](http://docs.google.com/javax/crypto/SecretKey.html) | [**generateSecret**](http://docs.google.com/javax/crypto/SecretKeyFactory.html#generateSecret(java.security.spec.KeySpec))([KeySpec](http://docs.google.com/java/security/spec/KeySpec.html) keySpec)            Generates a SecretKey object from the provided key specification (key material). |
| [String](http://docs.google.com/java/lang/String.html) | [**getAlgorithm**](http://docs.google.com/javax/crypto/SecretKeyFactory.html#getAlgorithm())()            Returns the algorithm name of this SecretKeyFactory object. |
| static [SecretKeyFactory](http://docs.google.com/javax/crypto/SecretKeyFactory.html) | [**getInstance**](http://docs.google.com/javax/crypto/SecretKeyFactory.html#getInstance(java.lang.String))([String](http://docs.google.com/java/lang/String.html) algorithm)            Returns a SecretKeyFactory object that converts secret keys of the specified algorithm. |
| static [SecretKeyFactory](http://docs.google.com/javax/crypto/SecretKeyFactory.html) | [**getInstance**](http://docs.google.com/javax/crypto/SecretKeyFactory.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 SecretKeyFactory object that converts secret keys of the specified algorithm. |
| static [SecretKeyFactory](http://docs.google.com/javax/crypto/SecretKeyFactory.html) | [**getInstance**](http://docs.google.com/javax/crypto/SecretKeyFactory.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 SecretKeyFactory object that converts secret keys of the specified algorithm. |
| [KeySpec](http://docs.google.com/java/security/spec/KeySpec.html) | [**getKeySpec**](http://docs.google.com/javax/crypto/SecretKeyFactory.html#getKeySpec(javax.crypto.SecretKey,%20java.lang.Class))([SecretKey](http://docs.google.com/javax/crypto/SecretKey.html) key, [Class](http://docs.google.com/java/lang/Class.html) keySpec)            Returns a specification (key material) of the given key object in the requested format. |
| [Provider](http://docs.google.com/java/security/Provider.html) | [**getProvider**](http://docs.google.com/javax/crypto/SecretKeyFactory.html#getProvider())()            Returns the provider of this SecretKeyFactory object. |
| [SecretKey](http://docs.google.com/javax/crypto/SecretKey.html) | [**translateKey**](http://docs.google.com/javax/crypto/SecretKeyFactory.html#translateKey(javax.crypto.SecretKey))([SecretKey](http://docs.google.com/javax/crypto/SecretKey.html) key)            Translates a key object, whose provider may be unknown or potentially untrusted, into a corresponding key object of this secret-key factory. |

| **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** |
| --- |

### SecretKeyFactory

protected **SecretKeyFactory**([SecretKeyFactorySpi](http://docs.google.com/javax/crypto/SecretKeyFactorySpi.html) keyFacSpi,  
 [Provider](http://docs.google.com/java/security/Provider.html) provider,  
 [String](http://docs.google.com/java/lang/String.html) algorithm)

Creates a SecretKeyFactory object.

**Parameters:**keyFacSpi - the delegateprovider - the provideralgorithm - the secret-key algorithm

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

### getInstance

public static final [SecretKeyFactory](http://docs.google.com/javax/crypto/SecretKeyFactory.html) **getInstance**([String](http://docs.google.com/java/lang/String.html) algorithm)  
 throws [NoSuchAlgorithmException](http://docs.google.com/java/security/NoSuchAlgorithmException.html)

Returns a SecretKeyFactory object that converts secret keys of the specified algorithm.

This method traverses the list of registered security Providers, starting with the most preferred Provider. A new SecretKeyFactory object encapsulating the SecretKeyFactorySpi 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 standard name of the requested secret-key algorithm. See Appendix A in the  [Java Cryptography Architecture Reference Guide](http://docs.google.com/technotes/guides/security/crypto/CryptoSpec.html#AppA) for information about standard algorithm names. **Returns:**the new SecretKeyFactory object. **Throws:** [NullPointerException](http://docs.google.com/java/lang/NullPointerException.html) - if the specified algorithm is null. [NoSuchAlgorithmException](http://docs.google.com/java/security/NoSuchAlgorithmException.html) - if no Provider supports a SecretKeyFactorySpi implementation for the specified algorithm.**See Also:**[Provider](http://docs.google.com/java/security/Provider.html)

### getInstance

public static final [SecretKeyFactory](http://docs.google.com/javax/crypto/SecretKeyFactory.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 SecretKeyFactory object that converts secret keys of the specified algorithm.

A new SecretKeyFactory object encapsulating the SecretKeyFactorySpi 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 standard name of the requested secret-key algorithm. See Appendix A in the  [Java Cryptography Architecture Reference Guide](http://docs.google.com/technotes/guides/security/crypto/CryptoSpec.html#AppA) for information about standard algorithm names.provider - the name of the provider. **Returns:**the new SecretKeyFactory object. **Throws:** [NoSuchAlgorithmException](http://docs.google.com/java/security/NoSuchAlgorithmException.html) - if a SecretKeyFactorySpi implementation for the specified algorithm is not available from the specified provider. [NullPointerException](http://docs.google.com/java/lang/NullPointerException.html) - if the specified algorithm is null. [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 final [SecretKeyFactory](http://docs.google.com/javax/crypto/SecretKeyFactory.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 SecretKeyFactory object that converts secret keys of the specified algorithm.

A new SecretKeyFactory object encapsulating the SecretKeyFactorySpi 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 standard name of the requested secret-key algorithm. See Appendix A in the  [Java Cryptography Architecture Reference Guide](http://docs.google.com/technotes/guides/security/crypto/CryptoSpec.html#AppA) for information about standard algorithm names.provider - the provider. **Returns:**the new SecretKeyFactory object. **Throws:** [NullPointerException](http://docs.google.com/java/lang/NullPointerException.html) - if the specified algorithm is null. [NoSuchAlgorithmException](http://docs.google.com/java/security/NoSuchAlgorithmException.html) - if a SecretKeyFactorySpi 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 SecretKeyFactory object.

**Returns:**the provider of this SecretKeyFactory object

### getAlgorithm

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

Returns the algorithm name of this SecretKeyFactory object.

This is the same name that was specified in one of the getInstance calls that created this SecretKeyFactory object.

**Returns:**the algorithm name of this SecretKeyFactory object.

### generateSecret

public final [SecretKey](http://docs.google.com/javax/crypto/SecretKey.html) **generateSecret**([KeySpec](http://docs.google.com/java/security/spec/KeySpec.html) keySpec)  
 throws [InvalidKeySpecException](http://docs.google.com/java/security/spec/InvalidKeySpecException.html)

Generates a SecretKey object from the provided key specification (key material).

**Parameters:**keySpec - the specification (key material) of the secret key **Returns:**the secret key **Throws:** [InvalidKeySpecException](http://docs.google.com/java/security/spec/InvalidKeySpecException.html) - if the given key specification is inappropriate for this secret-key factory to produce a secret key.

### getKeySpec

public final [KeySpec](http://docs.google.com/java/security/spec/KeySpec.html) **getKeySpec**([SecretKey](http://docs.google.com/javax/crypto/SecretKey.html) key,  
 [Class](http://docs.google.com/java/lang/Class.html) keySpec)  
 throws [InvalidKeySpecException](http://docs.google.com/java/security/spec/InvalidKeySpecException.html)

Returns a specification (key material) of the given key object in the requested format.

**Parameters:**key - the keykeySpec - the requested format in which the key material shall be returned **Returns:**the underlying key specification (key material) in the requested format **Throws:** [InvalidKeySpecException](http://docs.google.com/java/security/spec/InvalidKeySpecException.html) - if the requested key specification is inappropriate for the given key (e.g., the algorithms associated with key and keySpec do not match, or key references a key on a cryptographic hardware device whereas keySpec is the specification of a software-based key), or the given key cannot be dealt with (e.g., the given key has an algorithm or format not supported by this secret-key factory).

### translateKey

public final [SecretKey](http://docs.google.com/javax/crypto/SecretKey.html) **translateKey**([SecretKey](http://docs.google.com/javax/crypto/SecretKey.html) key)  
 throws [InvalidKeyException](http://docs.google.com/java/security/InvalidKeyException.html)

Translates a key object, whose provider may be unknown or potentially untrusted, into a corresponding key object of this secret-key factory.

**Parameters:**key - the key whose provider is unknown or untrusted **Returns:**the translated key **Throws:** [InvalidKeyException](http://docs.google.com/java/security/InvalidKeyException.html) - if the given key cannot be processed by this secret-key factory.

| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/SecretKeyFactory.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/crypto/SecretKey.html)   [**NEXT CLASS**](http://docs.google.com/javax/crypto/SecretKeyFactorySpi.html) | [**FRAMES**](http://docs.google.com/index.html?javax/crypto/SecretKeyFactory.html)    [**NO FRAMES**](http://docs.google.com/SecretKeyFactory.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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