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SSL Tools ⌄   🔍

The Most Common Java Keytool Keystore Commands

Java Keytool is a key and certificate management utility. It **allows users to manage their own public/private key pairs and certificates**. It also allows users to cache certificates. Java Keytool stores the keys and certificates in what is called a keystore. By default the Java keystore is implemented as a file. It protects private keys with a password. A *Keytool keystore contains the private key and any certificates* necessary to complete a chain of trust and establish the trustworthiness of the primary certificate.

Each certificate in a Java keystore is associated with a unique alias. When creating a Java keystore you will first create the .jks file that will initially only contain the private key. You will then generate a CSR (what-is-a-csr-certificate-signing-request.html) and have a certificate generated from it. Then you will import the certificate to the keystore including any root certificates. Java Keytool also several other functions that allow you to view the details of a certificate or list the certificates contained in a keystore or export a certificate.

Note: For easier management of your Java Keystores (using a GUI) check out Portecle (http://portecle.sourceforge.net/). If you need to buy a certificate, try to compare SSL (ssl-certificate-wizard.html) with our SSL Wizard.

Compare SSL Certificates (ssl-certificate-wizard.html)

Below, we have listed the **most common Java Keytool keystore commands** and their usage:

Java Keytool Commands for Creating and Importing

These commands allow you to generate a new Java Keytool keystore file, create a CSR, and import certificates. Any root or intermediate certificates will need to be imported before importing the primary certificate for your domain.

- **Generate a Java keystore and key pair**

  keytool -genkey -alias mydomain -keyalg RSA -keystore keystore.jks -keysize 2048

- **Generate a certificate signing request (CSR) for an existing Java keystore**

  keytool -certreq -alias mydomain -keystore keystore.jks -file mydomain.csr

- **Import a root or intermediate CA certificate to an existing Java keystore**

  keytool -import -trustcacerts -alias root -file Thawte.crt -keystore keystore.jks

- **Import a signed primary certificate to an existing Java keystore**

  keytool -import -trustcacerts -alias mydomain -file mydomain.crt -keystore keystore.jks

- **Generate a keystore and self-signed certificate** (see How to Create a Self Signed Certificate using Java

  Keytool (article-how-to-create-a-self-signed-certificate-using-java-keytool.html)for more info)

  keytool -genkey -keyalg RSA -alias selfsigned -keystore keystore.jks -storepass password -validity 360 -keysize 2048

Java Keytool Commands for Checking

If you need to check the information within a certificate, or Java keystore, use these commands.

- **Check a stand-alone certificate**

  keytool -printcert -v -file mydomain.crt

- **Check which certificates are in a Java keystore**

  keytool -list -v -keystore keystore.jks

- **Check a particular keystore entry using an alias**

  keytool -list -v -keystore keystore.jks -alias mydomain

Other Java Keytool Commands

- **Delete a certificate from a Java Keytool keystore**

  keytool -delete -alias mydomain -keystore keystore.jks

- **Change a Java keystore password**

  keytool -storepasswd -new new_storepass -keystore keystore.jks

- **Export a certificate from a keystore**

  keytool -export -alias mydomain -file mydomain.crt -keystore keystore.jks

- **List Trusted CA Certs**

  keytool -list -v -keystore $JAVA_HOME/jre/lib/security/cacerts

- **Import New CA into Trusted Certs**

  keytool -import -trustcacerts -file /path/to/ca/ca.pem -alias CA_ALIAS -keystore $JAVA_HOME/jre /lib/security/cacerts

If you need to move a certificate from Java Keytool to Apache or another type of system, check out these instructions for converting a Java Keytool keystore using OpenSSL (article-move-your-java-keytool-ssl-certificate-to-openssl.html). For more information, check out the Java Keytool documentation (http://java.sun.com/j2se/1.5.0/docs/tooldocs/solaris/keytool.html) or check out our Tomcat SSL Installation Instructions which use Java Keytool (tomcat-ssl-installation-instructions.html).

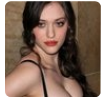Originally posted on Sun Jul 13, 2008

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Ⓓ Ⓕ Ⓣ Ⓖ   Name

Crazy **** • 4 years ago

Can you tell me more clearly about public key and private key.

>keytool -genkey -keyalg RSA -alias selfsigned -keystore keystore2.jks -storepass password -validity 9360 -keysize 2048

What is your first and last name?

[Unknown]: CLARK

What is the name of your organizational unit?

[Unknown]: OO

What is the name of your organization?

[Unknown]: O

What is the name of your City or Locality?

[Unknown]: JUMO

see more

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Cody Weber ➜ Crazy **** • 4 months ago • edited

Still learning, but to my understanding:
1. **truststore** = public key + details storage.
Examples: certs stored in a browser, *.crt, *.cer
Summary: A **truststore** is used for what public keys to trust, like cert files.

2. **keystore** = (public key + details) & (private key + details) storage.
(*Note: Storing the private key is why it requires a password, otherwise your security could be breached easily).
Examples: *.jks, cacerts file, p12 (**can be either keystore or truststore)
Summary: A **keystore** is primarily used as a storage of your public and private keys so that you can perform HTTPS TLS encryption for others, but as shown by cacerts file used by JREs and later versions of JDKs, a **keystore** can be used as a **truststore** as well since it has all the details of the truststore.

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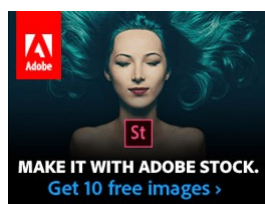
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