

Implementation of digital certificate by using java keytool and keystore utilities

CA Command Prompt

```
Microsoft Windows [Version 10.0.19045.2251]
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C:\Users\91848>keytool -genkey -alias Harshal -keyalg RSA -keystore "D:\local.keystore"
Enter keystore password:
Re-enter new password:
What is your first and last name?
  [Unknown]:  Harshal Kodgire
What is the name of your organizational unit?
  [Unknown]:  CSE
What is the name of your organization?
  [Unknown]:  Walchand College Of Engineering
What is the name of your City or Locality?
  [Unknown]:  Maharashtra
What is the name of your State or Province?
  [Unknown]:  Sangli
What is the two-letter country code for this unit?
  [Unknown]:  IN
Is CN=Harshal Kodgire, OU=CSE, O=Walchand College Of Engineering, L=Maharashtra, ST=Sangli, C=IN correct?
[no]:
```

```
Enter key password for <Harshal>
  (RETURN if same as keystore password):
Key password is too short - must be at least 6 characters
Enter key password for <Harshal>
  (RETURN if same as keystore password):

Warning:
The JKS keystore uses a proprietary format. It is recommended to migrate to PKCS12 which is an industry standard format using "keytool -importkeystore -srckeystore D:\local.keystore -destkeystore D:\local.keystore -deststoretype pkcs12".
```

C:\>d:

```
d:\>keytool -v -list -keystore local.keystore
Enter keystore password:
Keystore type: jks
Keystore provider: SUN

Your keystore contains 1 entry

Alias name: harshal
Creation date: 15 Nov, 2022
Entry type: PrivateKeyEntry
Certificate chain length: 1
Certificate[1]:
Owner: CN=Harshal Kodgire, OU=CSE, O=Walchand College Of Engineering, L=Sangli, ST=Maharashtra, C=IN
Issuer: CN=Harshal Kodgire, OU=CSE, O=Walchand College Of Engineering, L=Sangli, ST=Maharashtra, C=IN
Serial number: 4bc6c769
Valid from: Tue Nov 15 14:34:55 IST 2022 until: Mon Feb 13 14:34:55 IST 2023
Certificate fingerprints:
    MD5:  B5:75:31:EF:F1:0C:E2:3E:B2:3F:3D:35:0C:59:82:87
    SHA1:  F4:80:72:CE:C8:02:6A:C5:2D:06:EF:70:79:B4:6A:64:DB:E5:48:97
    SHA256: E0:B2:18:95:BF:45:FB:38:C5:A5:75:7A:3E:96:B6:23:7D:5F:05:C8:BE:6F:8F:43:9E:04:CB:55:0F:C7:C1:16
Signature algorithm name: SHA256withRSA
Subject Public Key Algorithm: 2048-bit RSA key
Version: 3

Extensions:

#1: ObjectId: 2.5.29.14 Criticality=false
SubjectKeyIdentifier [
KeyIdentifier [
0000: 28 AA 5C F9 50 1C 1B 47   C6 DF 86 6A 95 6B FD AC   (.\.P..G...j.k..
0010: 18 DC 49 E2                ..I.
]
]
```


```
*****
*****
```

Alternative Method :

```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19045.2251]
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D:\>"C:\Program Files\Java\jdk1.8.0_202\bin\keytool" -genkeypair -alias HarshalKodgire -keystore HarshalKodgire.pfx -storepass Harshal@9 -validity 365 -keyalg RSA -keysize 2048 -storetype pkcs12
What is your first and last name?
[Unknown]: Harshal Kodgire
What is the name of your organizational unit?
[Unknown]: CSE
What is the name of your organization?
[Unknown]: Walchand College Of Engineering
What is the name of your City or Locality?
[Unknown]: Sangli
What is the name of your State or Province?
[Unknown]: Maharashtra
What is the two-letter country code for this unit?
[Unknown]: IN
Is CN=Harshal Kodgire, OU=CSE, O=Walchand College Of Engineering, L=Sangli, ST=Maharashtra, C=IN correct?
[no]: YES

D:\>
```

 **Certificate Import Wizard**

Private key protection
To maintain security, the private key was protected with a password.

Type the password for the private key.

Password:

☒ **Display Password**

Import options:
☐ **Enable strong private key protection.** You will be prompted every time the private key is used by an application if you enable this option.
☐ **Mark this key as exportable.** This will allow you to back up or transport your keys at a later time.
☐ **Protect private key using virtualized-based security(Non-exportable)**
☒ **Include all extended properties.**

Next **Cancel**



Certificate Import Wizard

Certificate Store

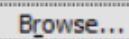
Certificate stores are system areas where certificates are kept.

Windows can automatically select a certificate store, or you can specify a location for the certificate.

- ☐ Automatically select the certificate store based on the type of certificate
- ☒ Place all certificates in the following store

Certificate store:

Personal

 Browse...

Next

Cancel



Certificate Import Wizard

Completing the Certificate Import Wizard

The certificate will be imported after you click Finish.

You have specified the following settings:

Certificate Store Selected by User	Personal
Content	PFX
File Name	D:\Harshalkodgire.pfx

Finish

Cancel



Certificate



General

Details

Certification Path



Certificate Information

This CA Root certificate is not trusted. To enable trust, install this certificate in the Trusted Root Certification Authorities store.

Issued to: Harshal Kodgire

Issued by: Harshal Kodgire

Valid from 15-11-2022 **to** 15-11-2023



You have a private key that corresponds to this certificate.

Issuer Statement

OK