

## How To Sign Java Code Applets

1/. Download and install the Java SE Development Kit (JDK) – We recommend you register to keep updated with the latest releases and access to all support pages.

<http://www.oracle.com/technetwork/java/javase/downloads/index.html>

2/. You will find the installed files by default here - C:\Program Files\Java

3/. Run “**Command Prompt**” – make sure in Vista/Win7 you run as Administrator and go to the Java directory.

*If you are already logged in as Administrator you can get to “Command Prompt” by clicking **Start -> Run -> cmd***

Eg. `chdir c:\Program Files\Java\jdk{version}\bin`

```
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\Stuart R>chdir c:\program files\java\jdk1.6.0_20\bin
```

The Java JDK depends on which version you have installed. On this example it is folder `jdk1.6.0_20` however this number may be different on your machine.

4/. Using Keytool enter your details and create the private key.

The alias name is something you can choose.

On this example we have used **MyCert2** (shown in the screenshot below)

```
c:\Program Files\Java\jdk1.6.0_20\bin>keytool -genkey -keyalg rsa -keysize 2048
-alias MyCert2
Enter keystore password:
What is your first and last name?
 [Unknown]: Stuart Rugg
What is the name of your organizational unit?
 [Unknown]: Technical Support
What is the name of your organization?
 [Unknown]: GMO GlobalSign Ltd
What is the name of your City or Locality?
 [Unknown]: Maidstone
What is the name of your State or Province?
 [Unknown]: Kent
What is the two-letter country code for this unit?
 [Unknown]: GB
Is CN=Stuart Rugg, OU=Technical Support, O=GMO GlobalSign Ltd, L=Maidstone, ST=Kent, C=GB correct?
 [no]: yes

Enter key password for <MyCert2>
 (RETURN if same as keystore password):

c:\Program Files\Java\jdk1.6.0_20\bin>_
```

5/. Then use the command to create the CSR.

```
c:\Program Files\Java\jdk1.6.0_20\bin>keytool -certreq -alias MyCert2
Enter keystore password:
-----BEGIN NEW CERTIFICATE REQUEST-----
MIICxwCCCAwCAQAwfzELMAkGA1UEBhMCFR0IExDTALBgNVBAgTBEt1bnQxeEjaQBgNVBAcTCU1haWRz
dG9uZTEhMBkGA1UEChMRS01PIEdsY2JhbFNpZ24gTHRkMR0wGAYDUQQLExFUZWNoYm1jYVwvU3Uw
cG9ydDEUMBI GA1UEAxMLU3R1YXJ0I FJ1Z2cwgwEiMA0GCSqGSIb3DQEBAQUAA4IBDwAwggEKAoIB
AQc//xEDuxxo1e4xk/WqwZeK8WPxZTDGyI ZRHUH7SJDdf1e5vBxM/7Lh9bh417nw8jjwW8khHs1f
GKOPHHRlopE6mA5X0fjdGsnWEimFDwSDlhX/eD6XXu6KhJK6nZMbUmksgeN1LtrJPCnBfDxjBA6
c+Gtxnby/+EXI0PunDF434Xz2UBLndk5jUt2eK7HfM9fRrBYVp02p6bmX1q7smZ62yxs/mi98ix
PbztIaUh7ORC6dGL4+D8lZccnfzrg/RBicZvDyRORfNL4WZiyangG0So/RgQd4PGTh3zHp3LM1YA
Y97a/nffB0Lbn+7ekBZ+/5gwp9tgoJ2a39DhpujAgMBAAGgADANBgkqhkiG9w0BAQUFAAOCAQEA
jujDl1DH4W23nrf1fBjkh65p5c4K/RdL1iUtboxg9CthokH6ci+DEUZJaJ0zGytmG4wfe0zXL4mf
UoHud7qz7RAEhr2wv73sYgmI+ZNL25tan5aXqZusXKvtjmSpJpU+zfJL519tDWtu7bLhwGCCIMv
Dp1laTKW+KNj2f4rGn3w0UtvgoKNU5MNh/ygbNMMjYsOBAnUXtW/9+UJrd8KZZSfwIUPltQF217+
MFLTpJfpPYf8GNiRBA9usZx8e5QIwZrxFAzcEYF7jq7wCIx68dmiOM0Ylm5JCGFOYaz9w8+4F8qZ
6NaEZYKRp+ZF7r3tD4UMn8082gGQuPxQHJwzdq==
-----END NEW CERTIFICATE REQUEST-----

c:\Program Files\Java\jdk1.6.0_20\bin>
```

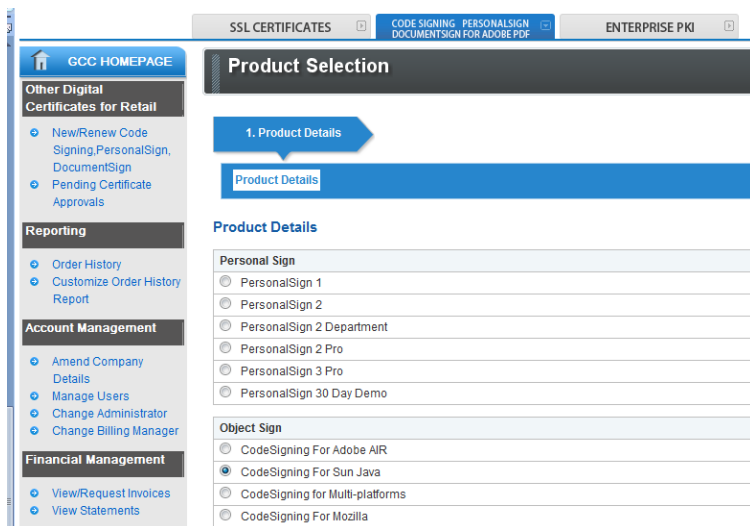
6/. You are now ready to use this CSR information to place the order on our system. Log in and go to the page to start the ordering process.

7/. Go through the steps of placing your order. Separate details on this can be found on our support pages.

8/. While you wait to receive your GlobalSign Certificate make sure you have the root and intermediate certificates stored in your keystore.

You can get these certificates from our support website:

<http://www.globalsign.com/support/root-certificate/osroot.php>



### Install the ObjectSign Root Certificates

Click on each of the **Binary DER** certificate links below and follow the onscreen instructions to install the ObjectSign root and intermediate certificates or click the **Base 64 DER.pem** for a text version of the certificates.

[GlobalSign Root CA \(Binary DER and Base 64 DER .pem\)](#)

[GlobalSign Primary Object Publishing CA \(Binary DER and Base 64 DER .pem\)](#)

[GlobalSign ObjectSign CA \(Binary DER and Base 64 DER .pem\)](#)

Save the three certificates above to your computer and install them (Binary DER recommended). Firstly, install the root (GlobalSign Root CA).

**Keytool -import -v -trustcacerts -alias globalsignroot -file root.crt**

```
C:\Program Files\Java\jdk1.6.0_20\bin>keytool -import -v -trustcacerts -alias g
balsignroot -file root.crt
Enter keystore password:
Owner: CN=GlobalSign Root CA, OU=Root CA, O=GlobalSign nv-sa, C=BE
Issuer: CN=GlobalSign Root CA, OU=Root CA, O=GlobalSign nv-sa, C=BE
Serial number: 20000000000d678b79405
Valid from: Tue Sep 01 13:00:00 BST 1998 until: Tue Jan 28 12:00:00 GMT 2014
Certificate fingerprints:
    MD5: AB:BF:EA:E3:6B:29:A6:CC:A6:78:35:99:EF:AD:2B:80
    SHA1: 2F:17:3F:7D:E9:96:67:AF:A5:7A:F8:0A:A2:D1:B1:2F:AC:83:03:38
Signature algorithm name: MD5withRSA
Version: 3

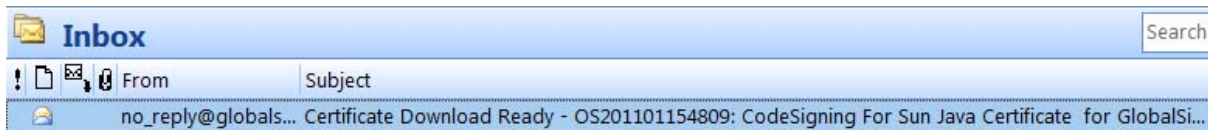
Extensions:
#1: ObjectId: 2.5.29.15 Criticality=true
KeyUsage [
  Key_CertSign
  Crl_Sign
]
#2: ObjectId: 2.5.29.19 Criticality=true
BasicConstraints:[
  CA:true
  PathLen:2147483647
]
#3: ObjectId: 2.5.29.14 Criticality=false
SubjectKeyIdentifier [
KeyIdentifier [
0000: 60 7B 66 1A 45 0D 97 CA 89 50 2F 7D 04 CD 34 A8 '.f.E....P/...4.
0010: FF FC FD 4B ...K
]
]
Trust this certificate? [no]: yes
Certificate was added to keystore
[Storing C:\Users\Stuart R\keystore]
```

Then install the two intermediate certificates.  
(GlobalSign Primary Object Publishing CA and the GlobalSign ObjectSign CA)

```
Keytool -import -v -trustcacerts -alias inter1 -file PrimObject.crt  
Keytool -import -v -trustcacerts -alias inter2 -file ObjectSign.crt
```

```
C:\Program Files\Java\jdk1.6.0_20\bin>keytool -import -v -trustcacerts -alias in  
ter1 -file PrimObject.crt  
Enter keystore password:  
Certificate was added to keystore  
[Storing C:\Users\Stuart R\.keystore]  
  
C:\Program Files\Java\jdk1.6.0_20\bin>keytool -import -v -trustcacerts -alias in  
ter2 -file ObjectSign.crt  
Enter keystore password:  
Certificate was added to keystore  
[Storing C:\Users\Stuart R\.keystore]
```

When your certificate is ready to download, you will receive an email with a link to download it.



When you have received your certificate from GlobalSign you can then install it.

```
C:\Program Files\Java\jdk1.6.0_20\bin>keytool -import -alias MyCert -file YourCS  
cert.cer  
Enter keystore password:  
Certificate reply was installed in keystore
```

You are now ready to use jarsigner to sign your JAR file. Please make sure your file is compiled correctly before signing. When ready use the following command to sign, and if no errors appear you can then confirm and verify the jar files.

```
C:\Program Files\Java\jdk1.6.0_20\bin>jarsigner c:\clocktest.jar MyCert  
Enter Passphrase for keystore:  
  
C:\Program Files\Java\jdk1.6.0_20\bin>jarsigner -verify -verbose -certs c:\clock  
test.jar  
  
282 Thu Aug 26 13:12:46 BST 2010 META-INF/MANIFEST.MF  
403 Thu Aug 26 13:12:46 BST 2010 META-INF/MYCERT.SF  
4611 Thu Aug 26 13:12:46 BST 2010 META-INF/MYCERT.RSA  
0 Thu Aug 26 13:08:56 BST 2010 META-INF/  
0 Thu Aug 26 13:06:24 BST 2010 clock/  
smk 4939 Mon Jul 05 12:41:30 BST 2010 clock/Clock.class
```

```
s = signature was verified  
m = entry is listed in manifest  
k = at least one certificate was found in keystore  
i = at least one certificate was found in identity scope  
  
jar verified.
```

Remember alias names (our were MyCert, MyCert2) can be anything you want it to be, therefore if you receive any errors, make sure you have not copied the alias names we used if you decided to use a different alias name at the start of this process.

If you have any further questions please do not hesitate to contact the GlobalSign Support Team.