#### TOMCAT 8.5.4 SAML SSO with ADFS

## Prepared

## **Active Directory Server**

OS: Windows server 2012 R2

IP:192.168.56.254

Computer Name:addc.inpanya.local

Domain name: inpanya.local

### **ADFS Server**

OS: Windows server 2012 R2

IP:192.168.56.252

Computer Name:adfs2012.inpanya.local

Domain name: inpanya.local

ADFS Service : adfs.inpanya.local

# Certificate Authority Server:

OS: Windows server 2012 R2

IP:192.168.56.253

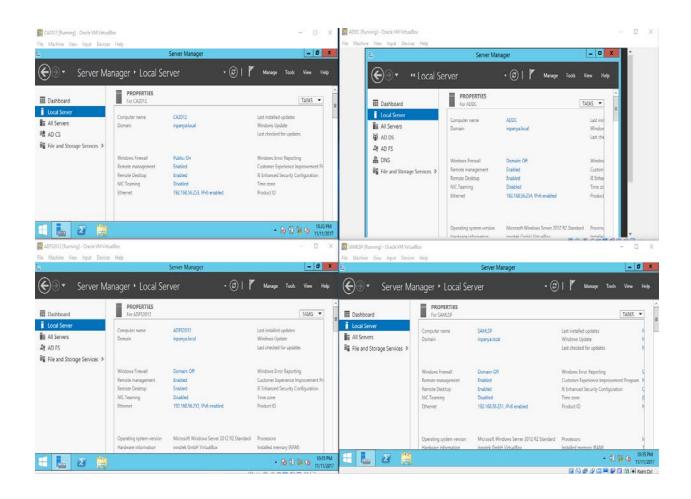
Computer Name:ac2012.inpanya.local

### Tomcat Server:

OS: Windows server 2012 R2

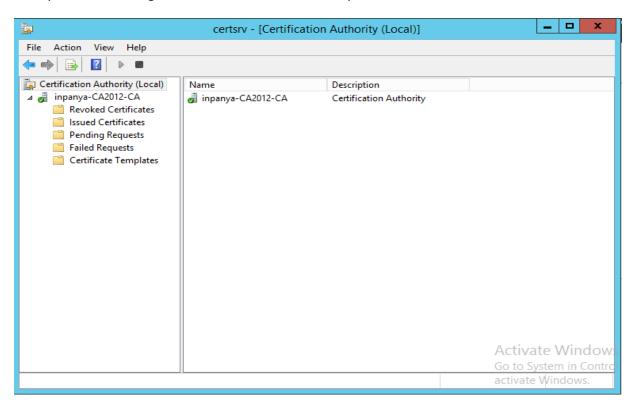
Computer Name :samlsp.inpanya.local

Domain address:tomcat1.inpanya.local

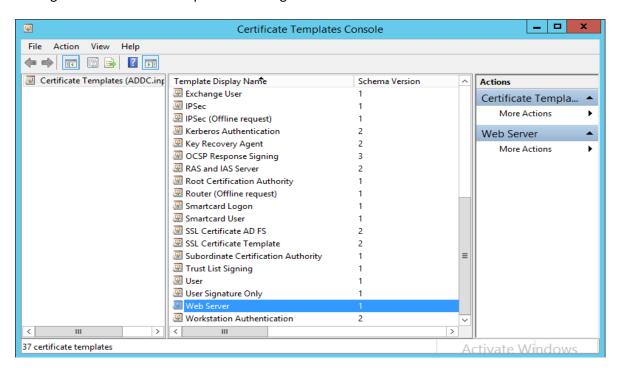


### Generate Certificate for ADFS 'Computer

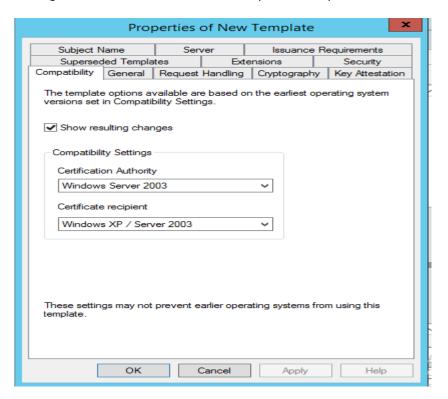
1. Open server manager ->Tool->Certification Authority



2. Right click Certificate Template -> Manage

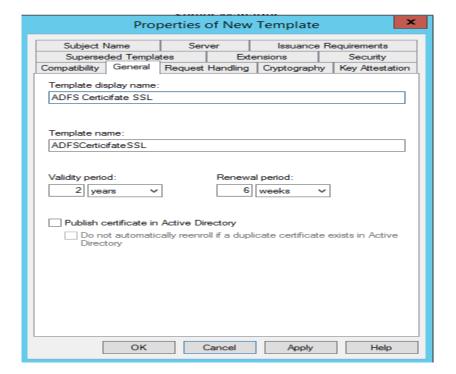


3. Right click Web Server and select Duplicate Template

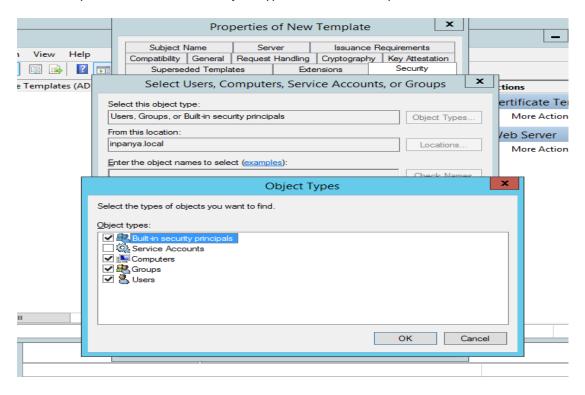


On General tab->Template Display name

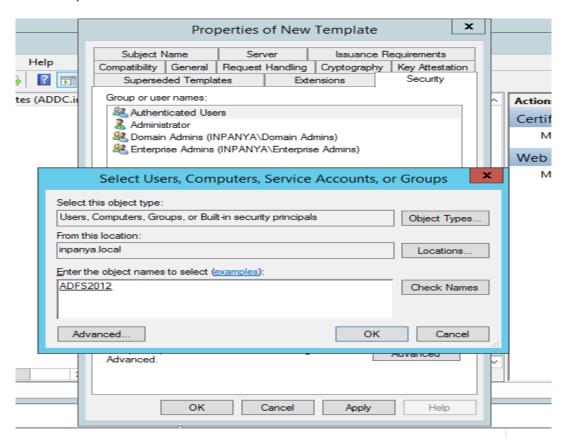
Enter: ADFS Certificate SSL



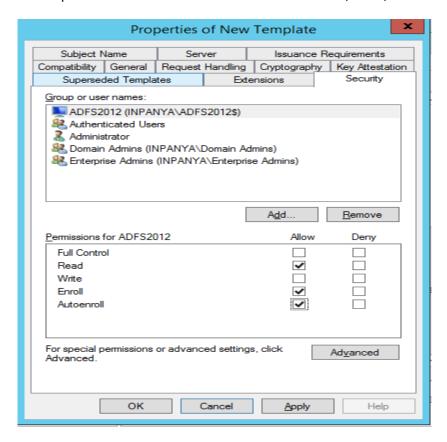
### On Security tab click Add → click Object Type → checked Computers → click OK

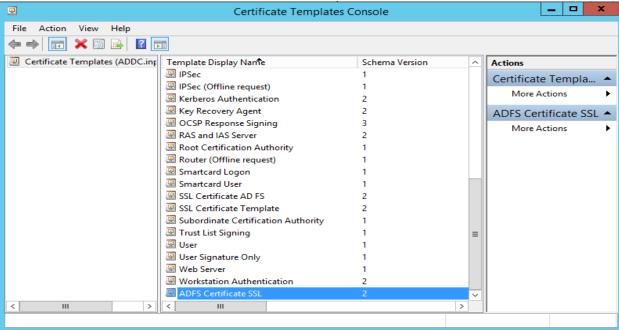


Enter computer name: ADFS2012 then click Check Names and click OK



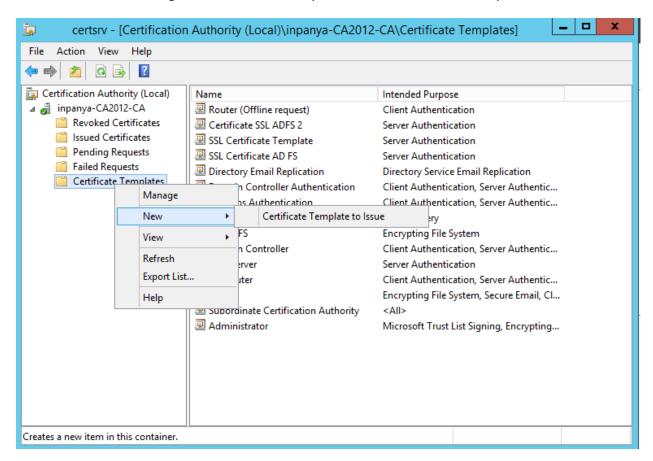
On the permissions for ADFS2012 checked Allow Read, Enroll, Autoenroll and then click OK

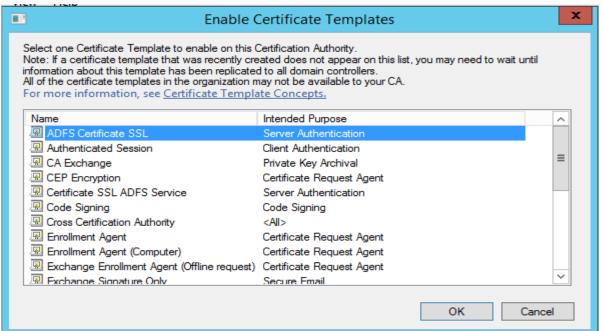




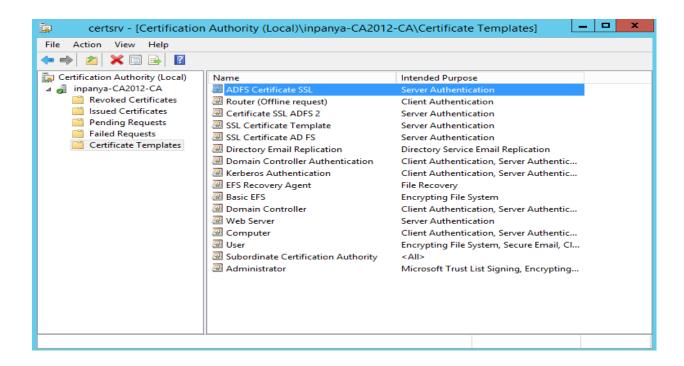
And close Certificate Template Console

Back to certsry console right click Certificate Templates ->New ->Certificate Template to Issue





Select ADFS Certificate SSL then click OK.



Domain controller configuration

Create User for ADFS Service account on Domain Controller: adfsService

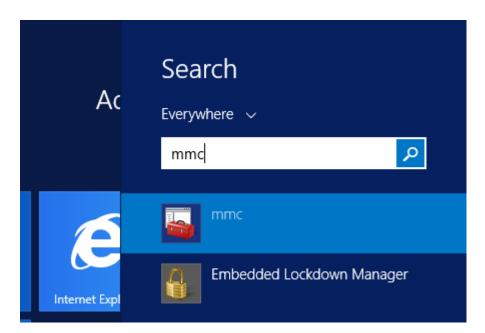
Set SPN for adfsService

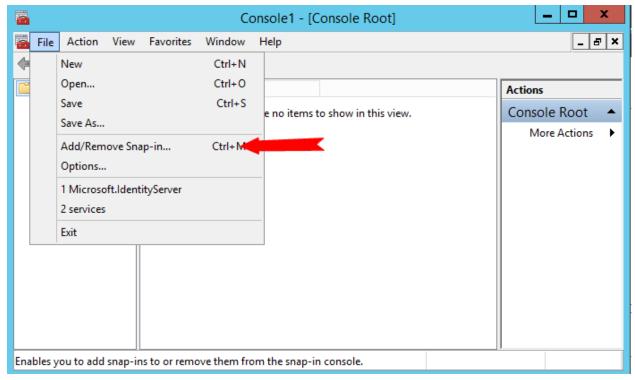


# **ADFS Configuration**

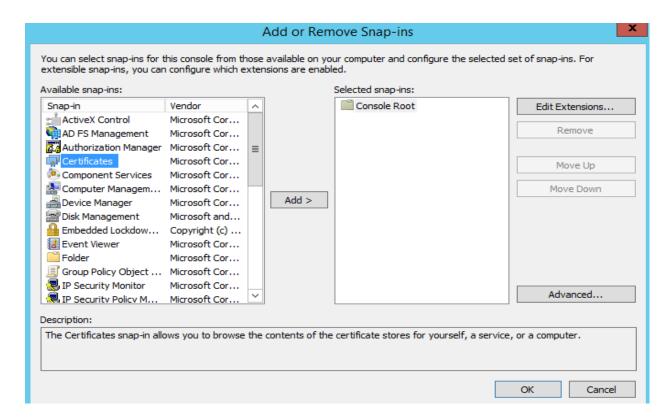
## Import certificate to ADFS Server

#### Execute mmc

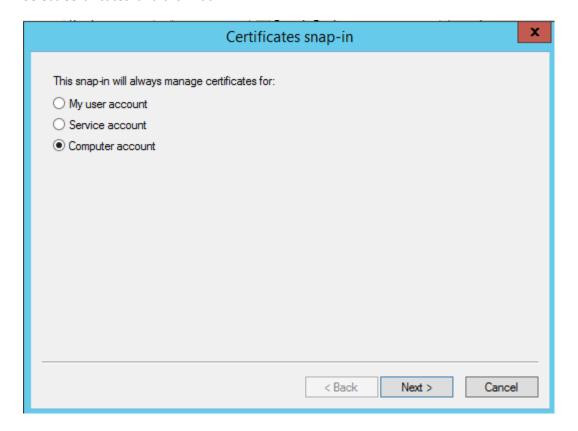




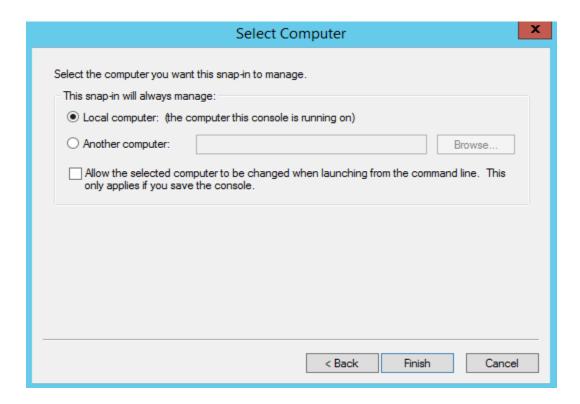
Click File ->Add/Remove Snap-in



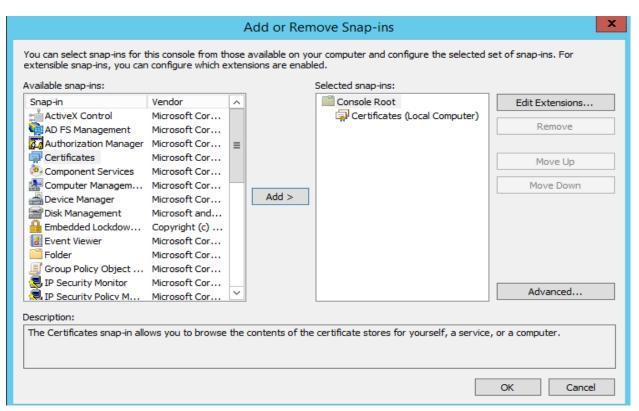
#### Select Certificates and click Add



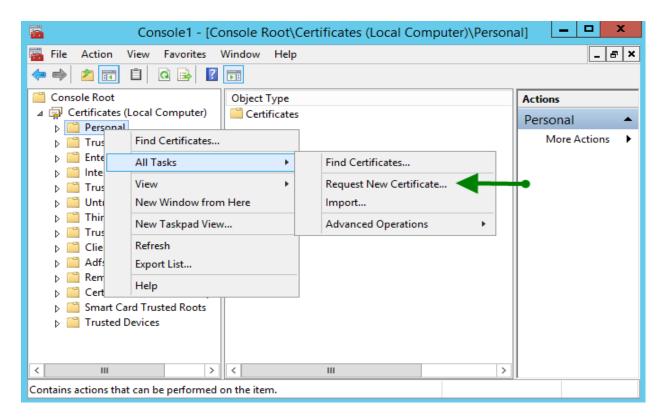
Select Computer account the click Next



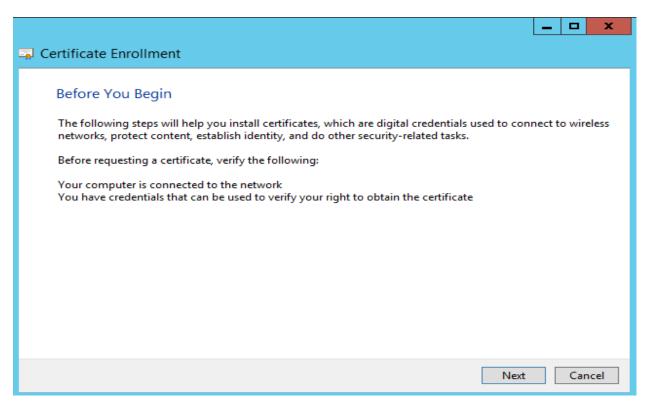
Select Local computer then click Finish



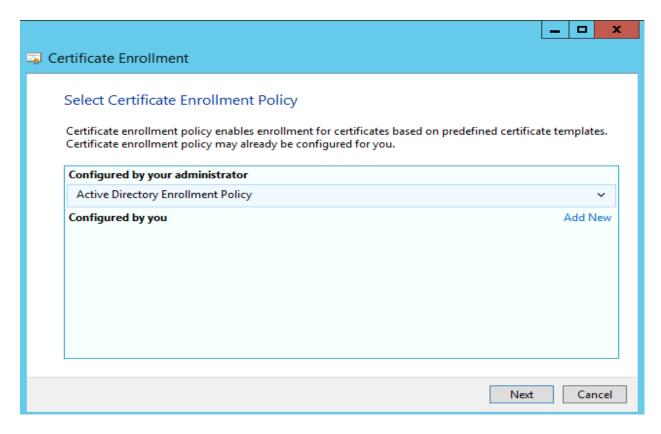
Click OK



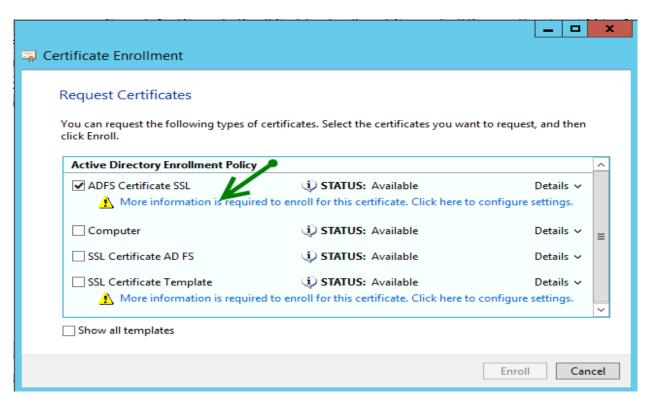
Personal →All Tasks →Request New Certificate



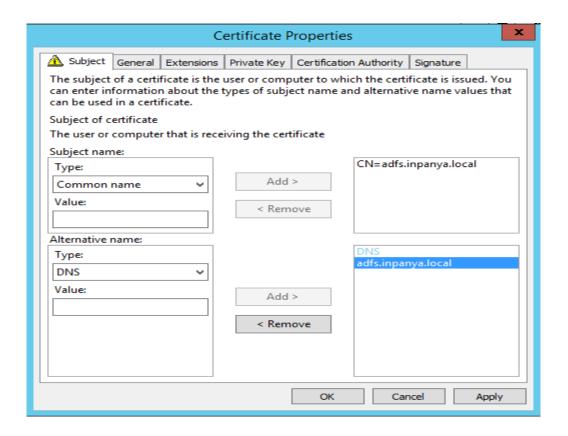
Click Next



### Click Next



Select ADFS Certificate SSL and click link More information is required to enroll for this certificate.



In Subject name section

Type: Common name

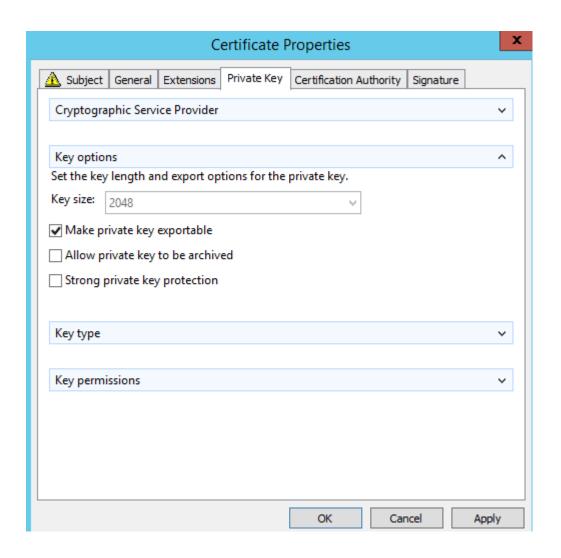
Value:adfs.inpanya.local

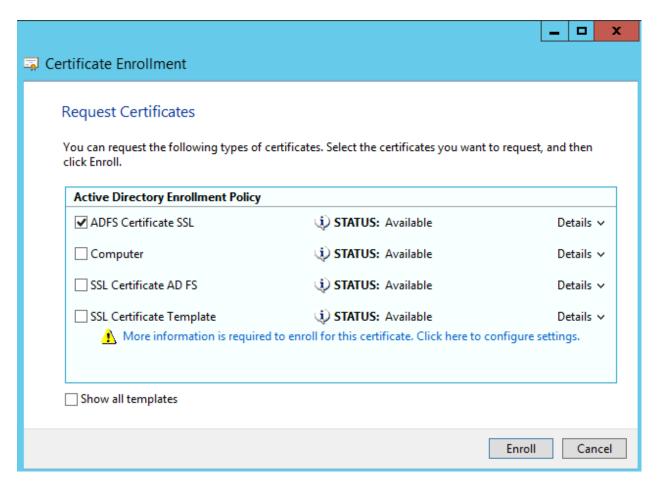
Click Add

In Alternative name

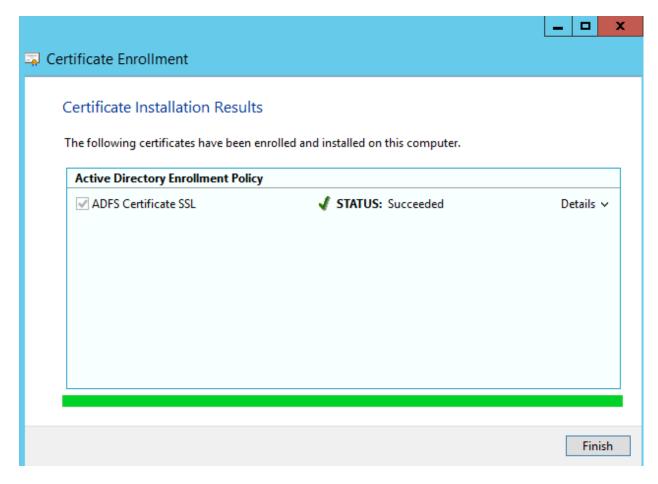
Type: DNS

Value:adfs.inpanya.local



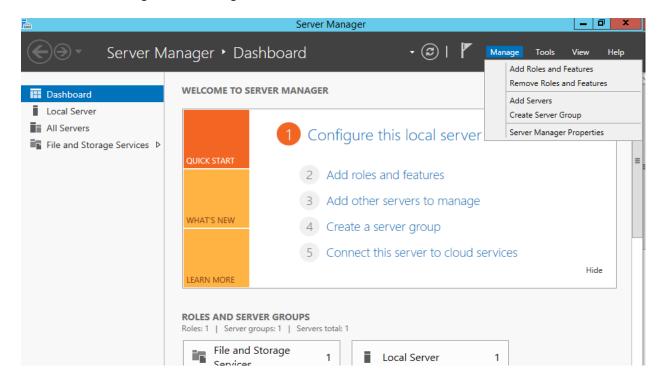


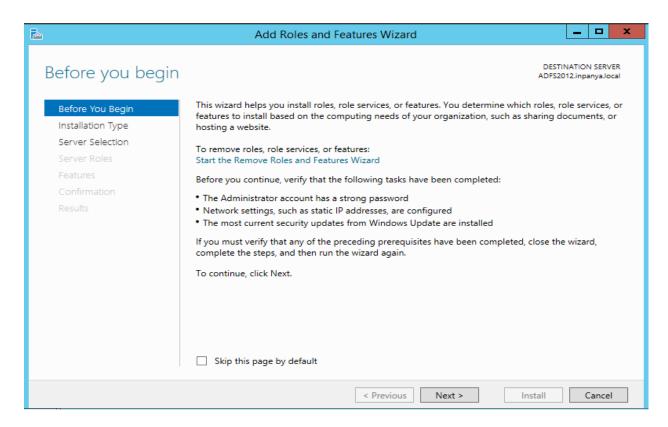
Click Enroll



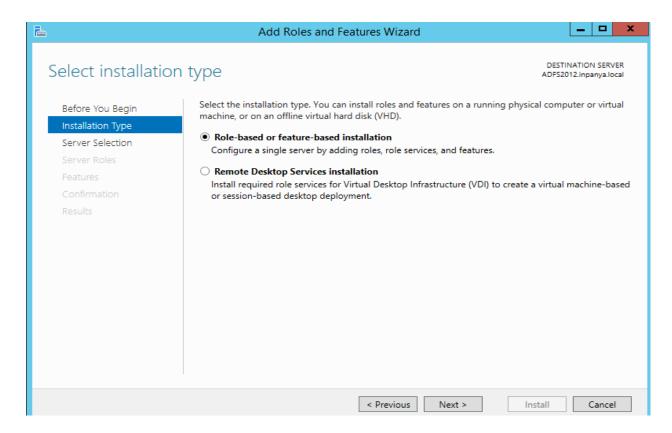
Click Finish and close MMC

### On the Server Manager click Manage -> Add Roles and Feature

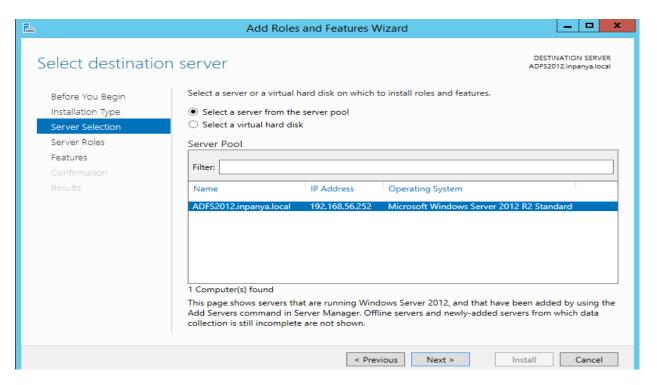




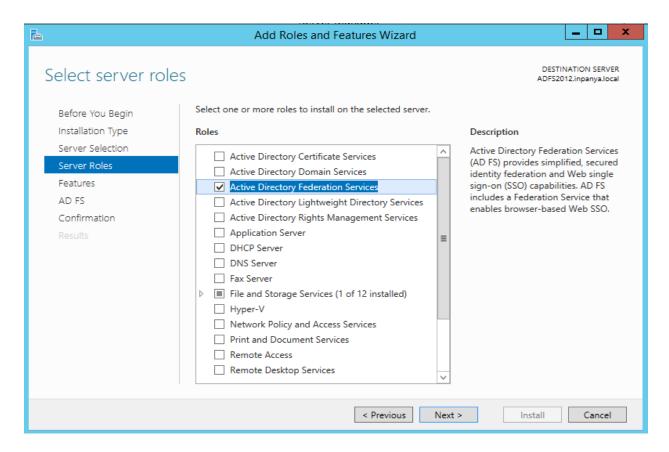
Click Next



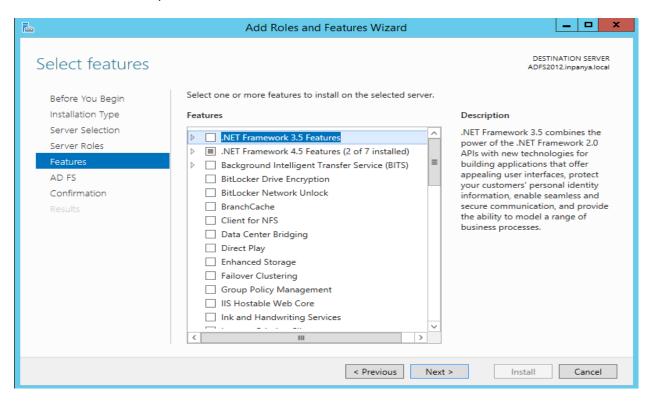
Select Role-based or feature-based installation the click Next



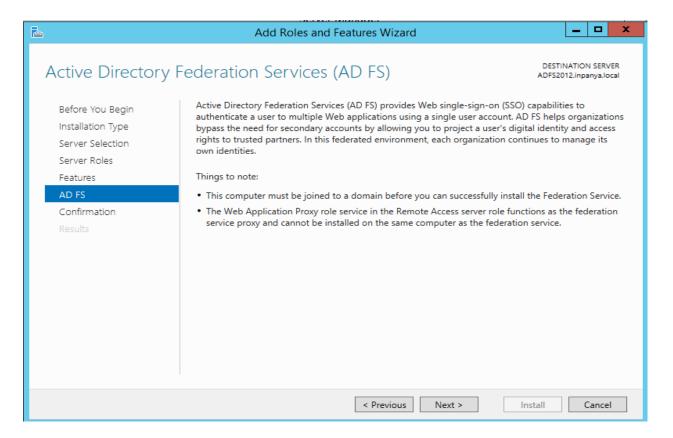
Click Next



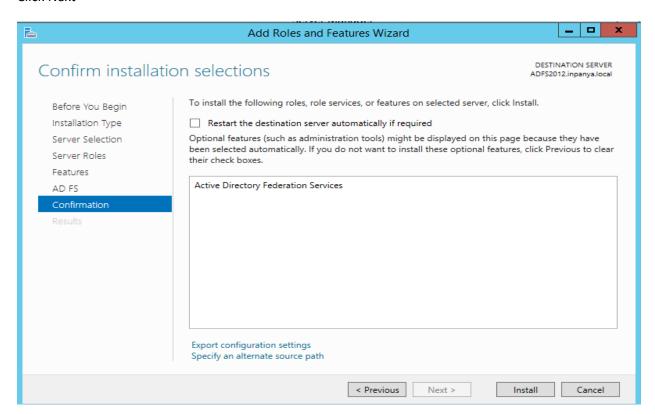
### Checked Active Directory Federation Services then click Next



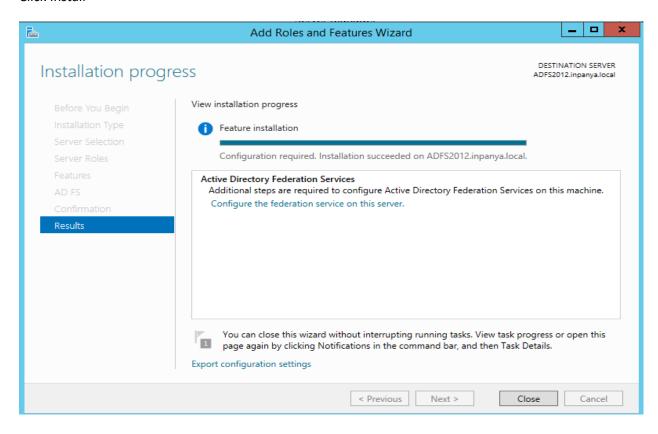
Click Next



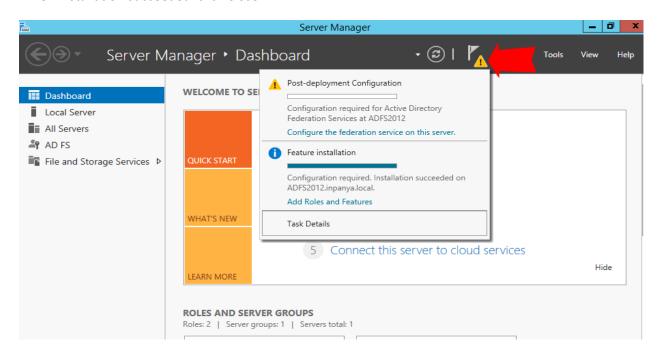
#### Click Next



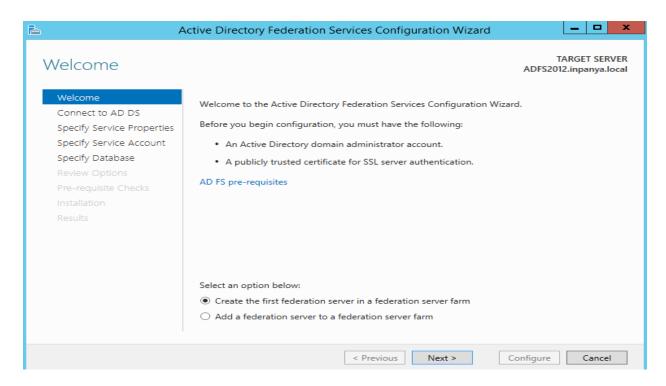
#### Click Install



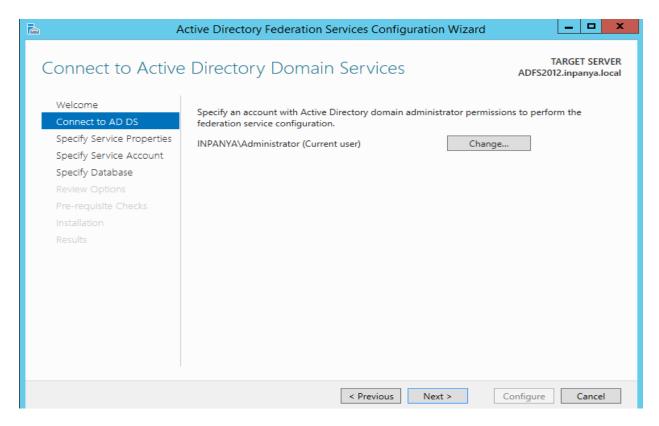
### When installation succeeded click Close



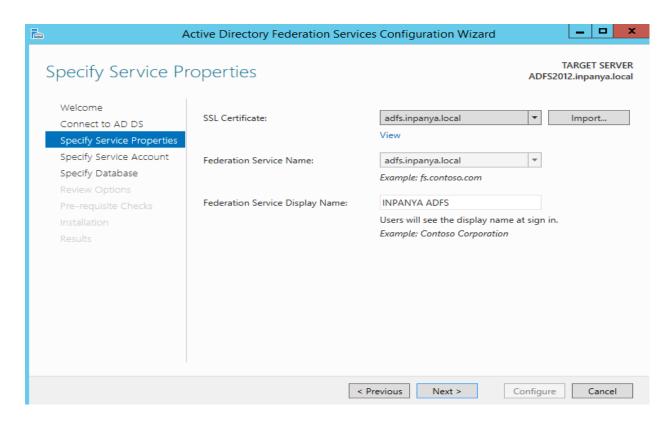
Click "Configure the federation services on this server" link



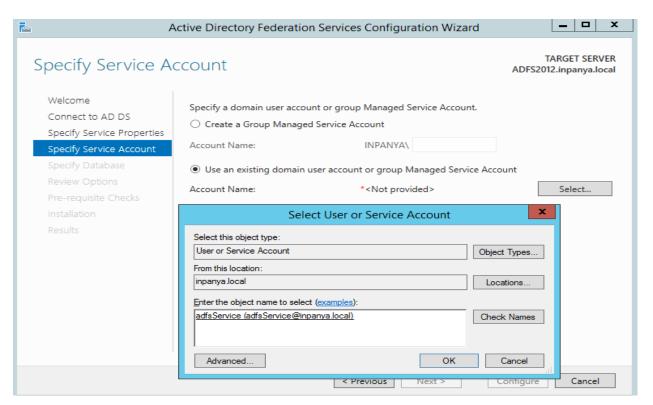
Selected Create the first federation server in a federation server farm and click Next



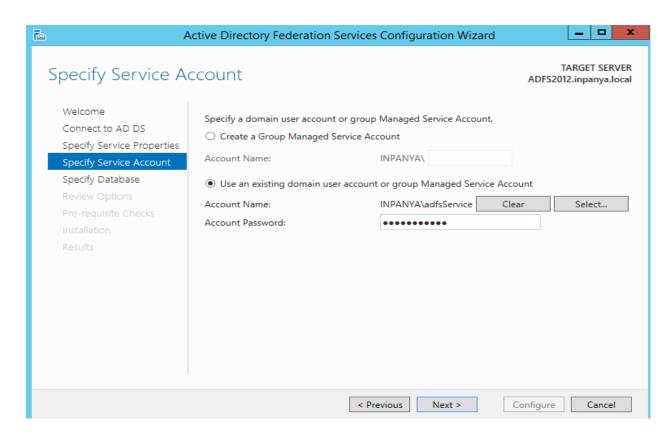
Click Next



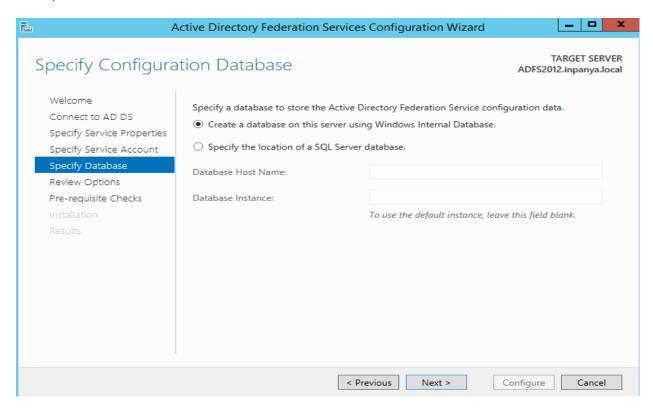
Select SSL Certificate in list box



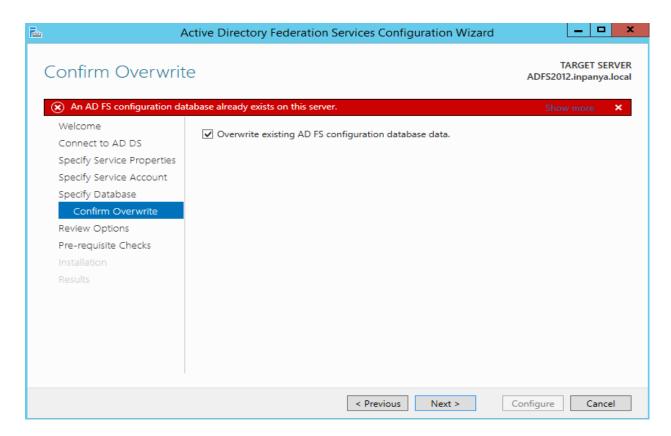
Select Use an existing domain user account then click Select button



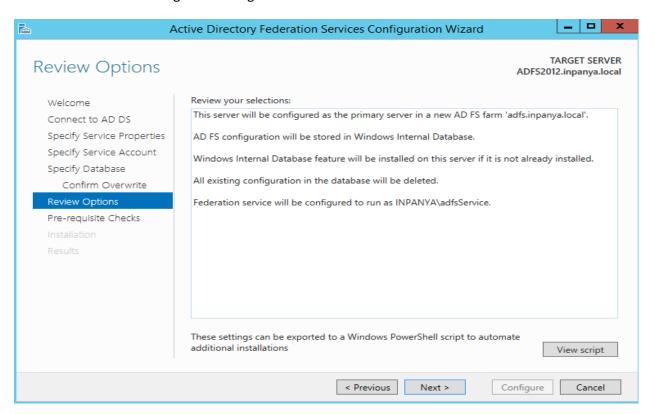
Enter password and click Next



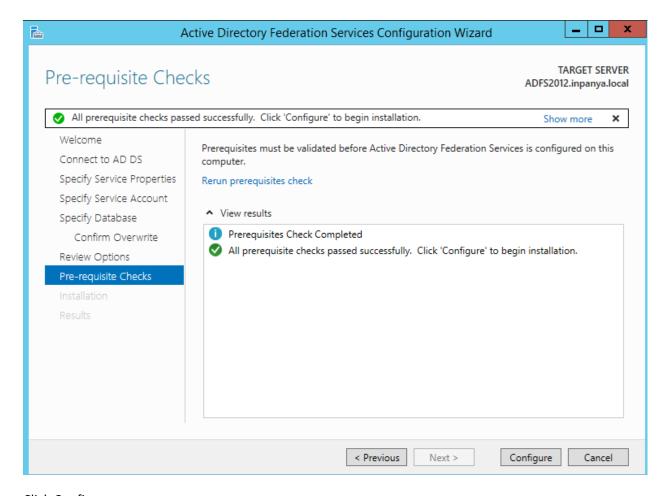
Selected Create a database on this server using Windows Internal Database then click Next



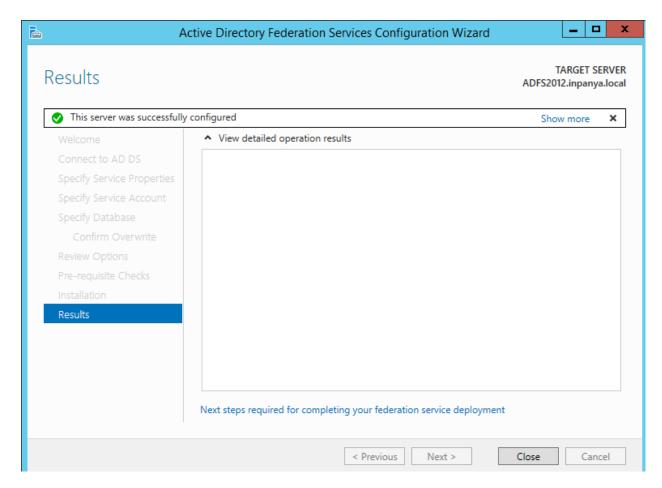
Checked Overwrite existing ADFS configuration database data the click Next



Click Next



Click Configure



Click Close

Execute command on Power shell for support user agent

Set-ADFSProperties -WIASupportedUserAgents @("MSIE 6.0", "MSIE 7.0", "MSIE 8.0", "MSIE 9.0", "MSIE 10.0", "MSIE 11.0", "Trident/7.0", "MSIPC", "Windows Rights Management Client", "Mozilla/5.0")

```
Administrator: Windows PowerShell

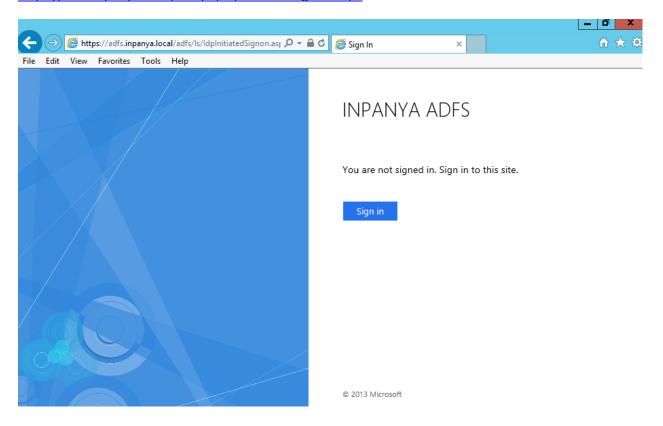
Mindows PowerShell
Copyright (C) 2014 Microsoft Corporation. All rights reserved.

PS C:\Users\administrator.INPANYA> Set-ADFSProperties -WIASupportedUserAgents @("MSIE 6.0", "MSIE 7.0", "MSIE 8.0", "MSIE 9.0", "MSIE 10.0", "Trident/7.0", "MSIPC", "Windows Rights Management Client", "Mozilla/5.0")
```

# Test ADFS IDP Initiated Sign on

Add trust site: https://adfs.inpanya.local

https://adfs.inpanya.local/adfs/ls/IdpInitiatedSignon.aspx



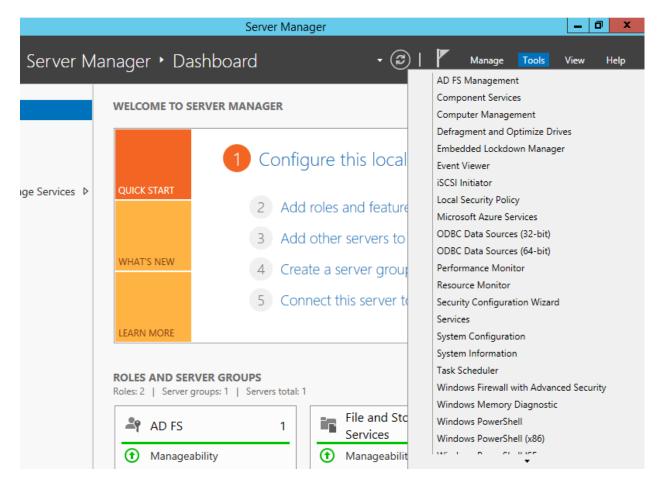
# \*\*\*\* PS\*\*\*

Add new IP in host file (All clients 'PC or DNS)

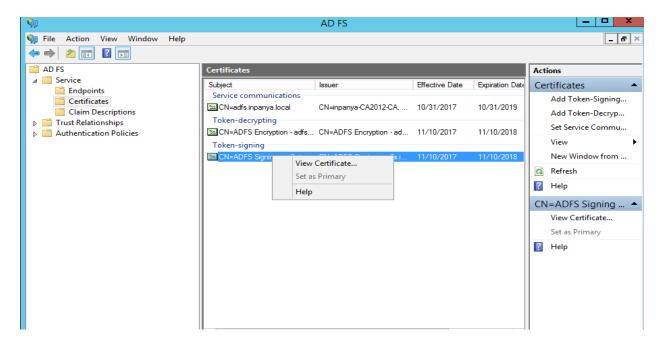
192.168.56.252 adfs.inpanya.local

### Configuration Tomcat8.5.4 SSO

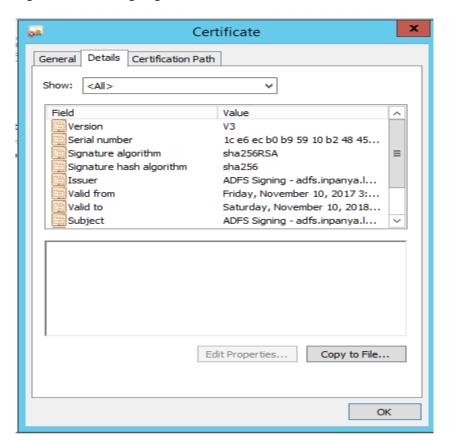
Export ADFS Certificate (On ADFS Server)



On Server Manager: click Tools->AD FS Management



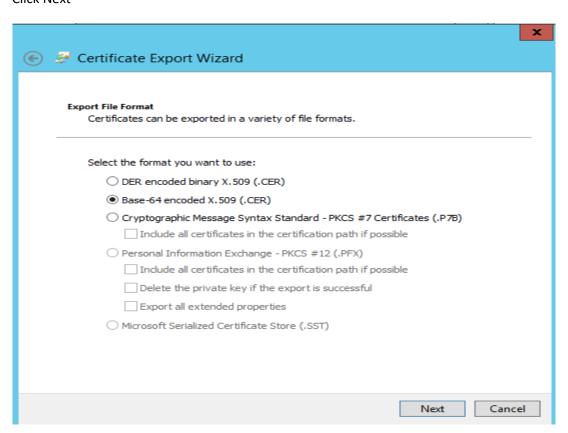
Right click Token-signing -> View Certificate



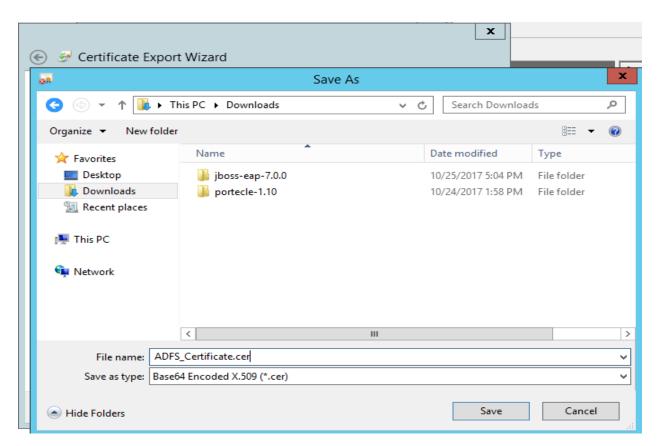
Click Copy to File

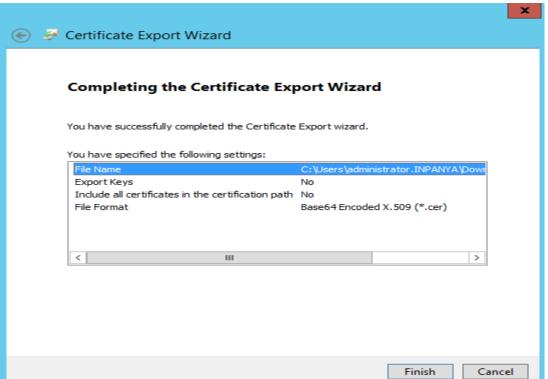


#### Click Next



Selected Base-64 encoded x.509 then click Next

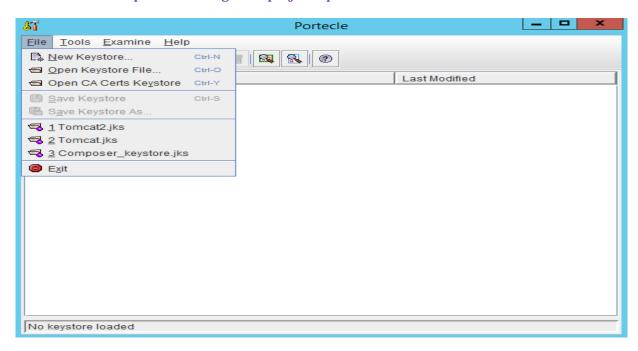




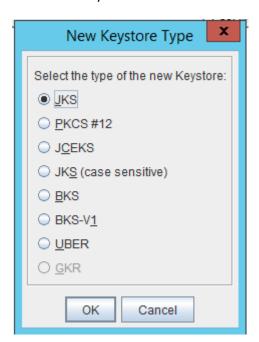
Click Finish

Generate Self sign key for tomcat server using Portecle

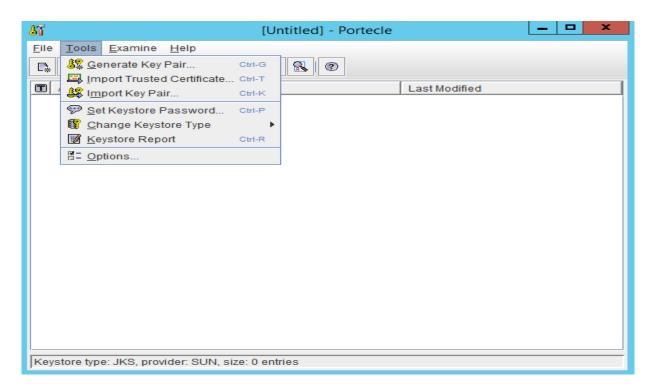
Download from <a href="http://sourceforge.net/projects/portecle/">http://sourceforge.net/projects/portecle/</a>



File → New Keystore

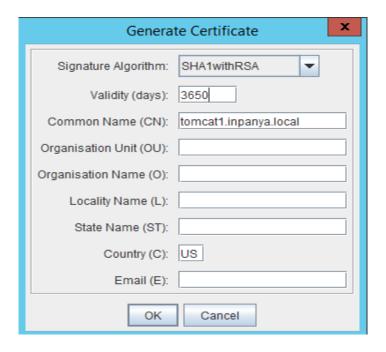


Select JKS then click OK



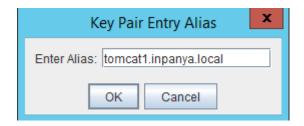
Tools → Generate Key Pair





Signature Algorithm:SHA1withRSA

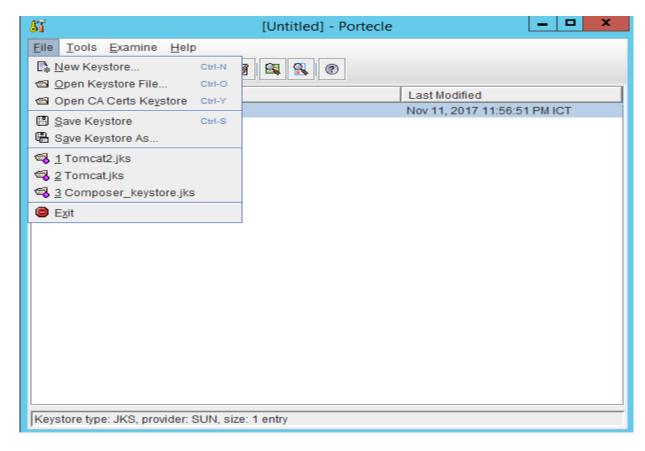
Common Name(CN):tomcat1.inpanya.local



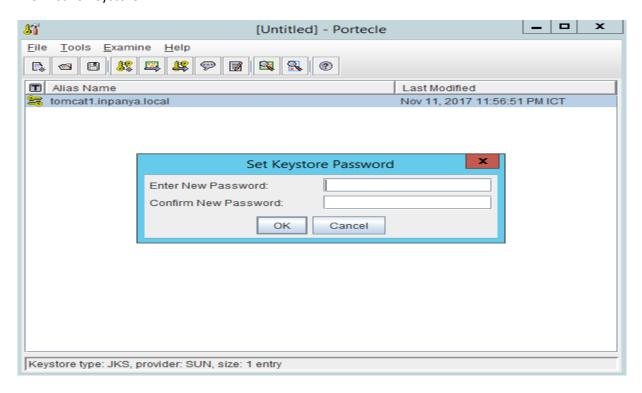


Enter Password:P@ssw0rd

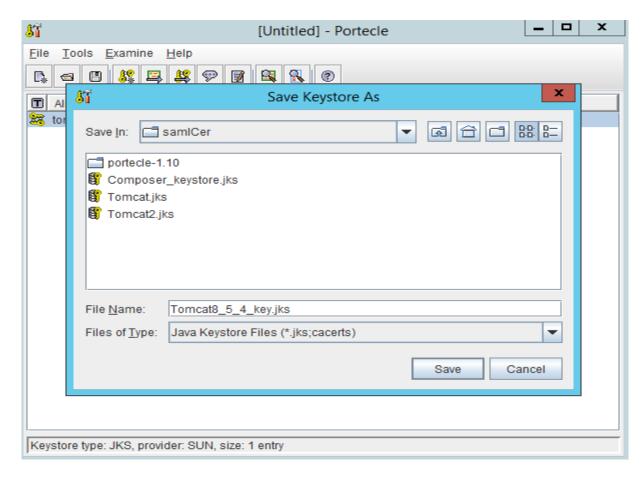




File →Save Keystore



Enter password:P@ssw0rd



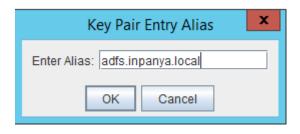
Save file name:Tomcat8\_5\_4\_key.jks

# Import ADFS CA on the keystore

Create new keystore and save file name Composer\_tomcat.jks

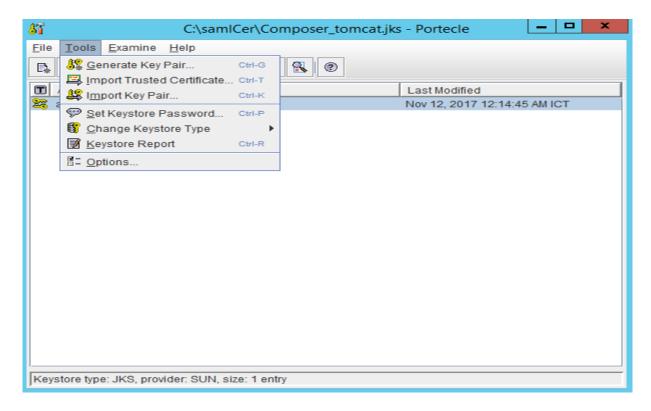


CN:adfs.inpanya.local

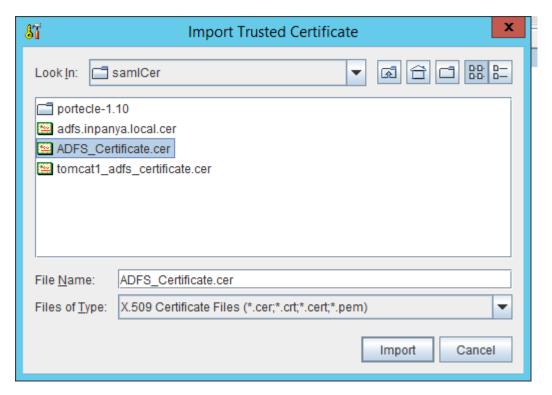




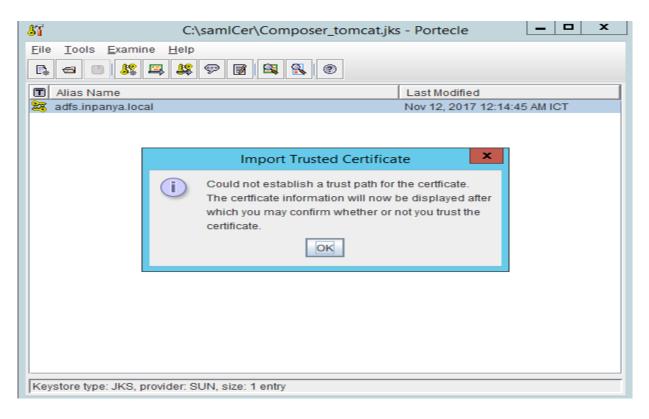
Enter password:P@ssw0rd



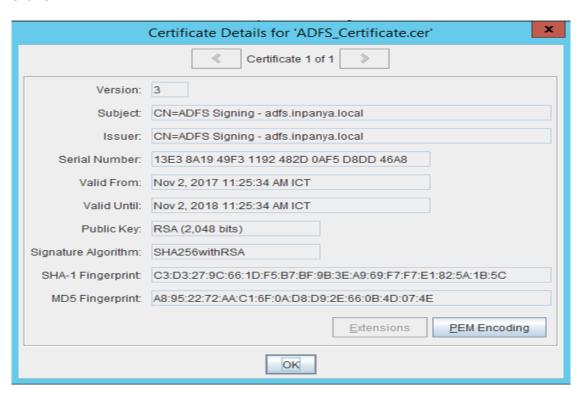
Tools →Import Trusted Certificate



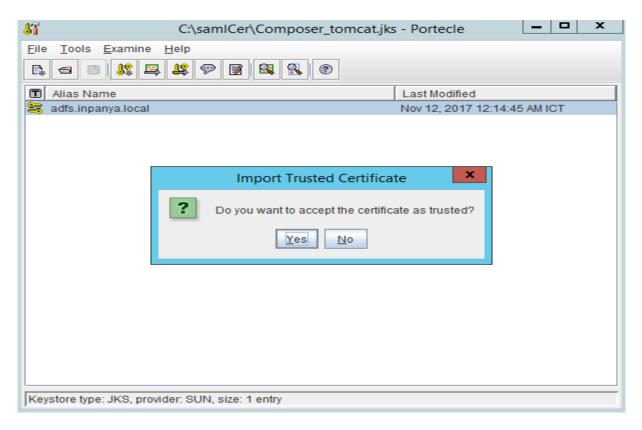
Selected ADFS\_Certificate.cer (Copy this file from ADFS Server ) then click Import



#### Click OK



Click OK

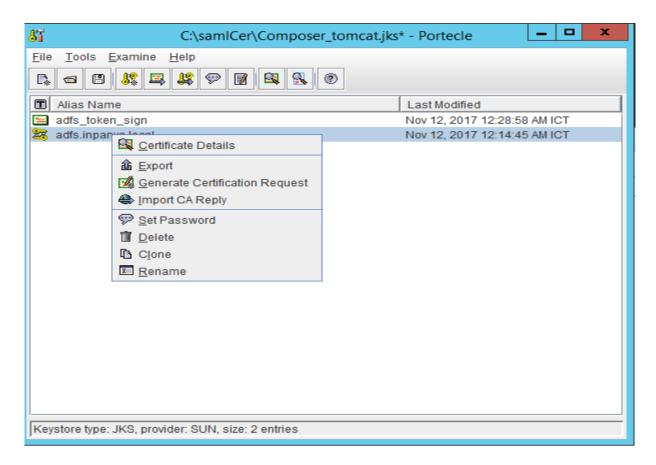


### Click YES

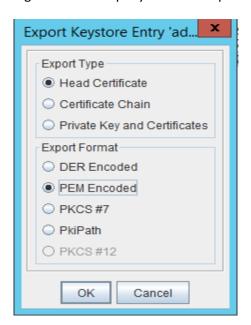


Enter Alias:adfs\_token\_sign

**Export Certificate file** 

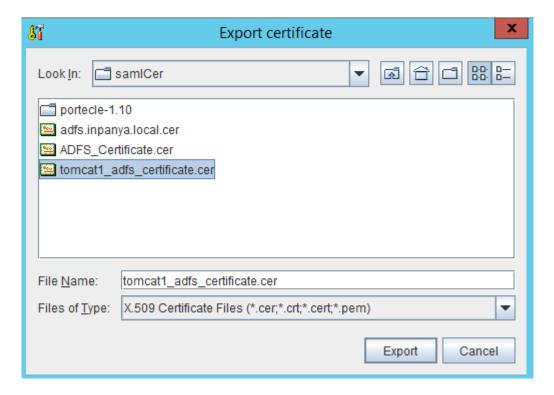


Right click adfs.inpanya.local →Export



Export Type:Head Certificate

Export Format:PEM Encoded



Save file name:tomcat1\_adfs\_certificate.cer then click Export

Save and close Portecle

**Tomcat Configuration** 

Add jar file to %TOMCAT\_HOME%\lib

jboss-logging-3.0.0.GA.jar

jboss-security-spi-3.0.0.Final.jar

picketlink-common-2.7.1.Final.jar

picketlink-config-2.7.1.Final.jar

picketlink-federation-2.7.1.Final.jar

picketlink-tomcat7-2.7.1.Final.jar

picketlink-tomcat-common-8-2.7.1.Final.jar

```
enable port 8443 (server.xml)
<Connector port="8443" protocol="HTTP/1.1" SSLEnabled="true"</p>
    maxThreads="150" minSpareThreads="25" maxSpareThreads="75"
    enableLookups="false" disableUploadTimeout="true"
    acceptCount="100" scheme="https" secure="true"
    clientAuth="want"
    keystoreFile="C:/tomcat/security/ Tomcat8 5 4 key.jks"
    keystorePass="P@ssw0rd"
    truststoreFile=" C:/tomcat/security/ Tomcat8_5_4_key.jks "
    truststorePass="P@ssw0rd"
    sslProtocol="TLS"
    keyAlias="tomcat1.inpanya.local"
    />
Context.xml
<?xml version="1.0" encoding="UTF-8"?>
<Context path="/samltest">
    <Valve
className="org.picketlink.identity.federation.bindings.tomcat.sp.ServiceProviderAuthenticator" />
</Context>
Web.xml
<?xml version="1.0" encoding="UTF-8"?>
<web-app >
  <display-name>My Application</display-name>
  <description>My Web Application</description>
```

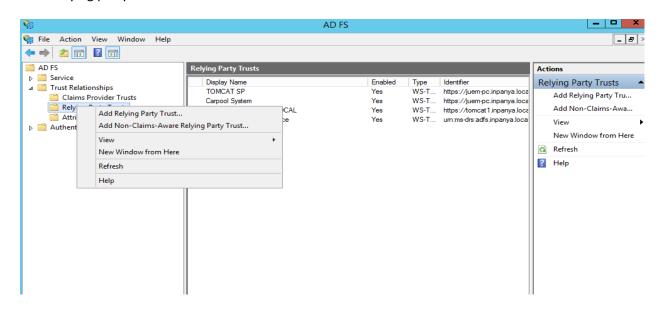
```
<servlet>
  <servlet-name>SSO</servlet-name>
  <servlet-class>com.saml.test.SSO</servlet-class>
</servlet>
<servlet-mapping>
  <servlet-name>SSO</servlet-name>
  <url-pattern>/SSO</url-pattern>
</servlet-mapping>
  <welcome-file-list>
  <welcome-file>index.jsp</welcome-file>
</welcome-file-list>
<security-constraint>
  <web-resource-collection>
    <web-resource-name>All Pages</web-resource-name>
    <url-pattern>/SSO</url-pattern>
  </web-resource-collection>
  <auth-constraint>
    <role-name>SAMLUser</role-name>
  </auth-constraint>
  <user-data-constraint>
    <transport-guarantee>CONFIDENTIAL</transport-guarantee>
  </user-data-constraint>
```

```
</security-constraint>
    <security-role>
    <role-name>SAMLUser</role-name>
  </security-role>
</web-app>
Picketlink.xml
<?xml version="1.0" encoding="UTF-8"?>
<PicketLink xmlns="urn:picketlink:identity-federation:config:2.1">
  <PicketLinkSP xmlns="urn:picketlink:identity-federation:config:2.1"
      CanonicalizationMethod="http://www.w3.org/2001/10/xml-exc-c14n#"
      BindingType="POST"
      IDPUsesPostBindings="true"
      SupportsSignatures="true">
    <IdentityURL>https://adfs.inpanya.local/adfs/ls/</IdentityURL>
    <ServiceURL>https://tomcat1.inpanya.local:8443/samltest/SSO</ServiceURL>
    <Trust>
      <Domains>adfs.inpanya.local</Domains>
    </Trust>
           <KeyProvider
ClassName="org.picketlink.identity.federation.core.impl.KeyStoreKeyManager">
                   <!-- Path to keystore of certificates -->
                   <a href="Auth Key="KeyStoreURL" Value="C:/ tomcat/security/ Composer_tomcat.jks"</a>
/>
```

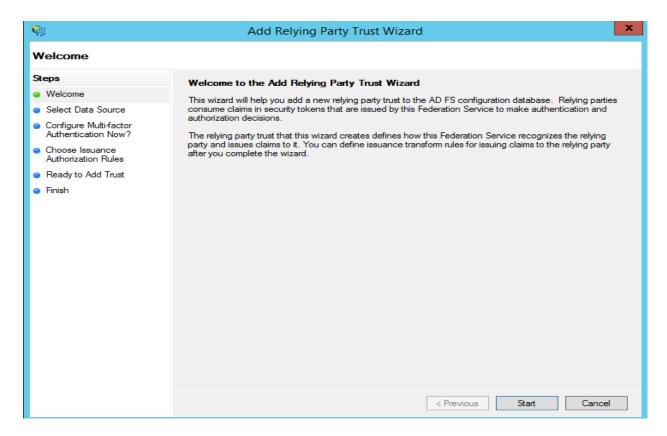
```
<Auth Key="KeyStorePass" Value="P@ssw0rd" />
                   <!-- Which certificate in the keystore do we use ourself for signing the SAML
AuthnRequest to the IDP? -->
                    <a href=""><Auth Key="SigningKeyAlias" Value="adfs.inpanya.local" /></a>
                   <Auth Key="SigningKeyPass" Value="P@ssw0rd" />
                   <!-- Every SAML Response from the IDP is/mustbe signed and the signing must
be checked to makeu
                   use the IDP can be trusted -->
                   <!-- Key=Domain name for which this certificate can be used to check the
signing -->
                   <!-- Value=Aliasname in keystore -->
                   <ValidatingAlias Key="adfs.inpanya.local" Value="adfs_token_sign" />
           </KeyProvider>
  </PicketLinkSP>
  <Handlers xmlns="urn:picketlink:identity-federation:handler:config:2.1">
    <Handler
class="org.picketlink.identity.federation.web.handlers.saml2.SAML2IssuerTrustHandler" />
    <Handler class="org.picketlink.identity.federation.web.handlers.saml2.SAML2LogOutHandler"</p>
/>
    <Handler
class="org.picketlink.identity.federation.web.handlers.saml2.SAML2AuthenticationHandler">
      <Option Key="ROLE_KEY"
Value="http://schemas.microsoft.com/ws/2008/06/identity/claims/role"/>
    </Handler>
    <Handler
class="org.picketlink.identity.federation.web.handlers.saml2.RolesGenerationHandler" />
  </Handlers>
</PicketLink>
```

```
sso.jsp
<%--
  Document : index
  Created on: Oct 19, 2017, 1:37:45 PM
  Author : JUEM
--%>
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
    <title>SSO Page</title>
  </head>
  <body>
    <h1>Hello World!</h1>
<%
   String userId = null;
if (request.getUserPrincipal() != null){
 userId = request.getUserPrincipal().getName();
}else{
userId = request.getRemoteUser();
}
if (userId == null){
```

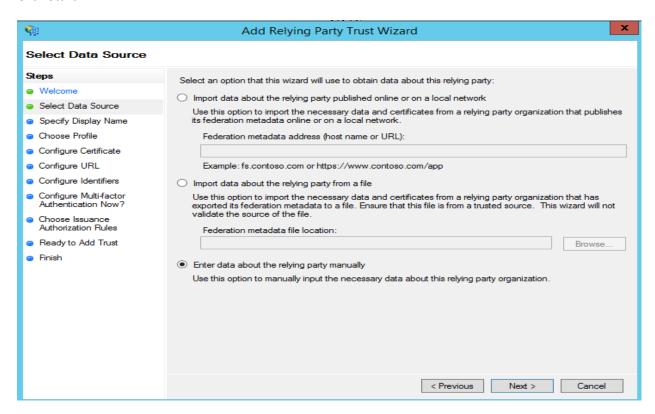
Add Relying party trust



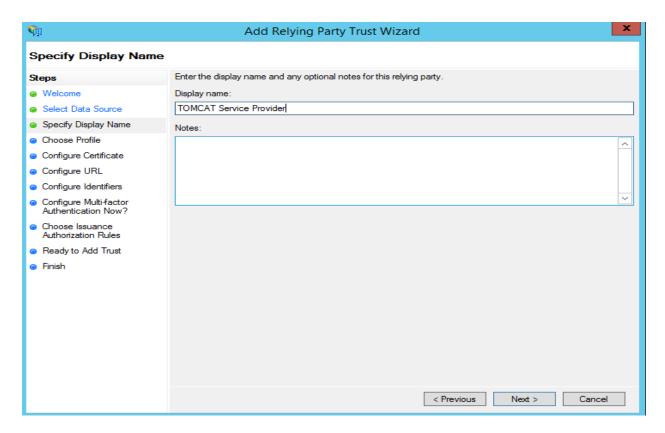
On the AD FS Management. Right click Relying Party Trust → Add Relying Party Trust



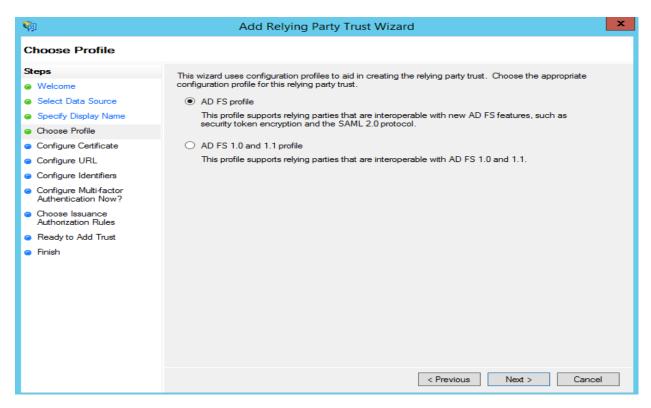
#### Click Start



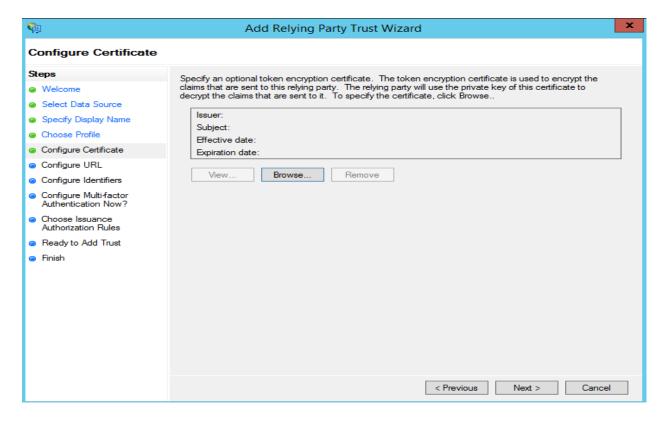
Selected Enter data about the relying party manually then click Next



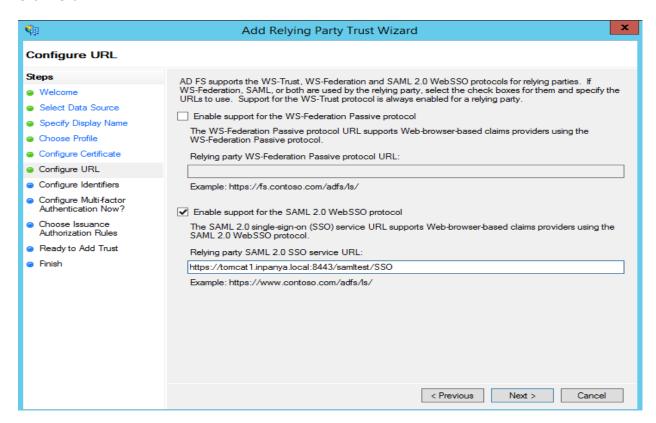
## Enter display name then click Next



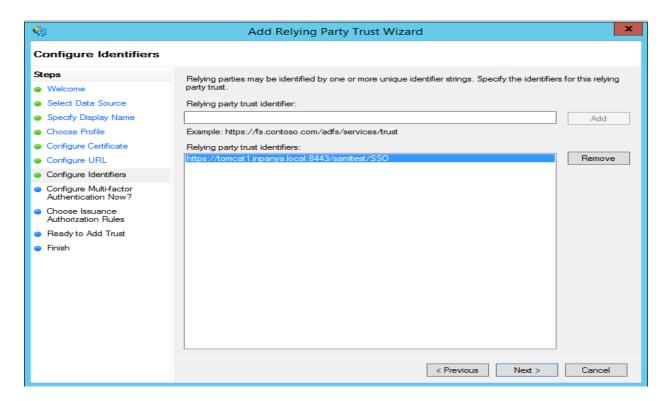
Click Next



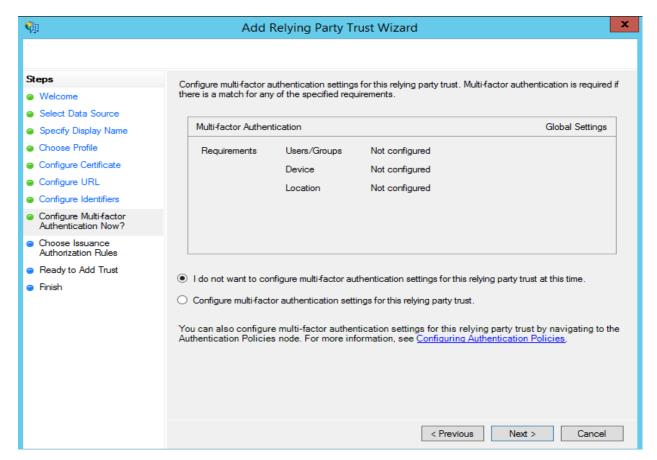
#### Click Next

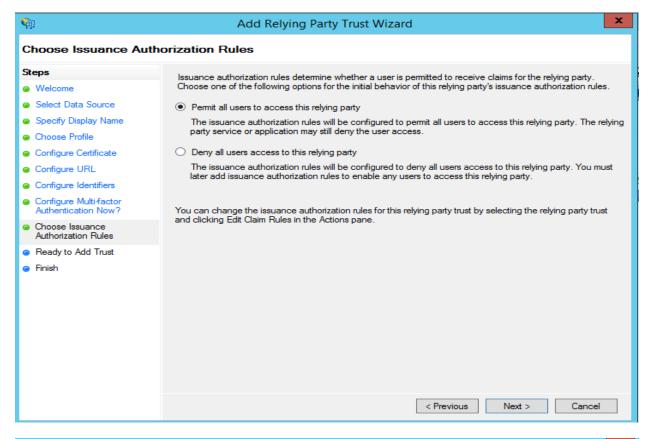


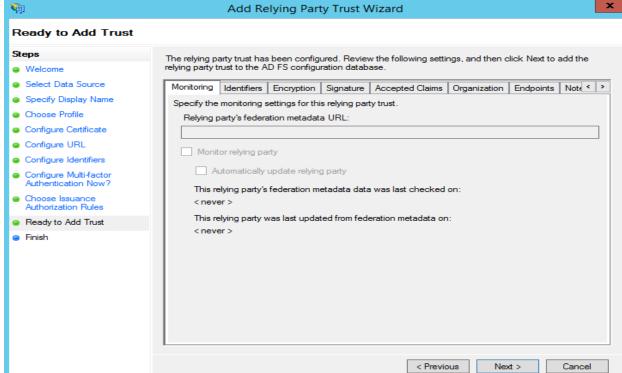
Relying party SAML2.0 SSO service URL: https://tomcat1.inpanya.local:8443/samltest/SSO



Relying party trust identifiers: <a href="https://tomcat1.inpanya.local:8443/samltest/SSO">https://tomcat1.inpanya.local:8443/samltest/SSO</a>

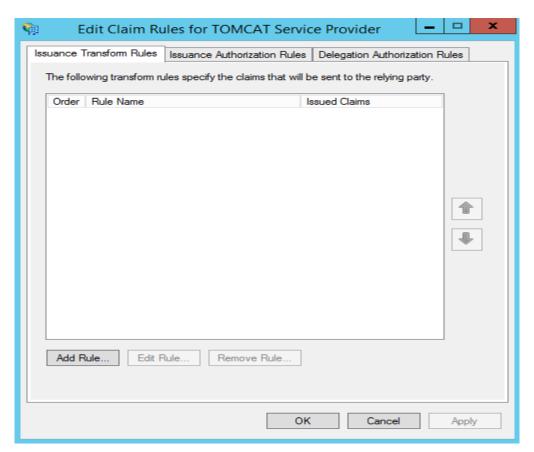




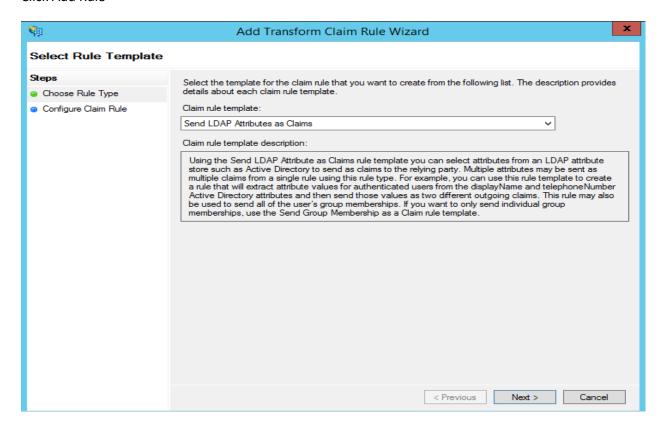




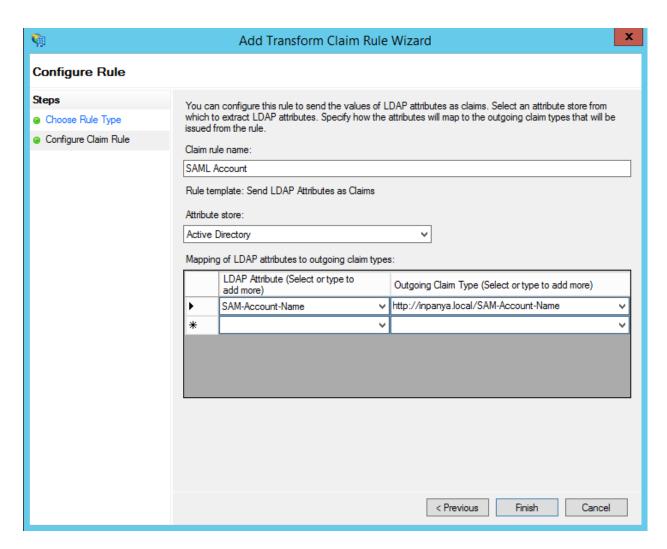
### Click Close



#### Click Add Rule

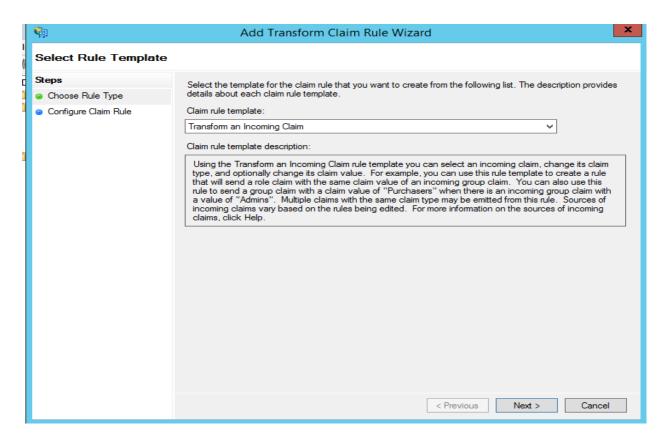


Claim rule template: Send LDAP Attributes as Claims

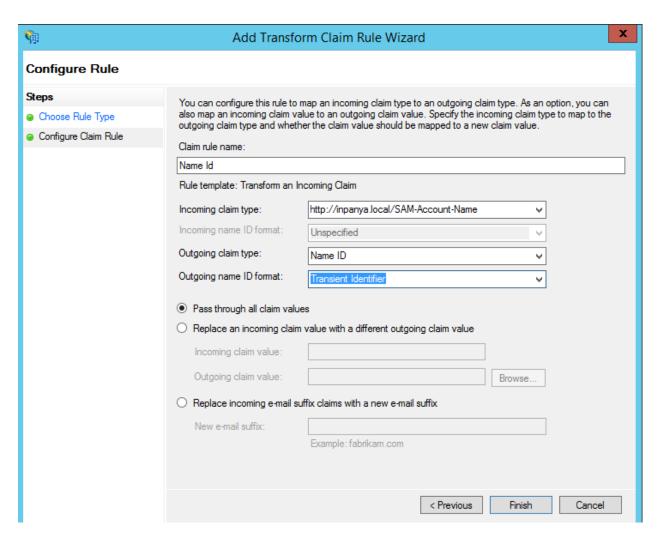


Click Finish

Add new Rule

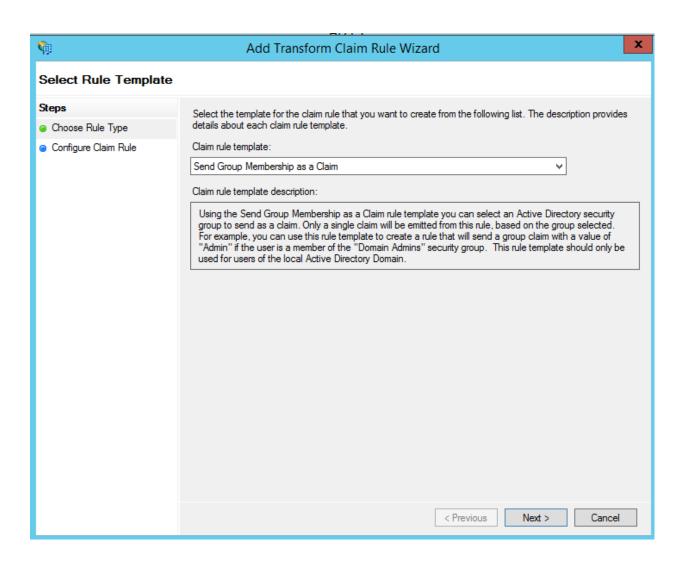


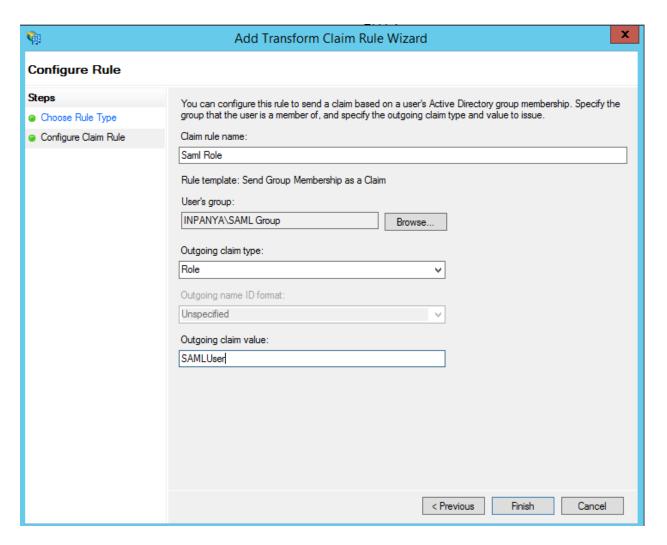
Claim rule template: Transform an Incoming Claim



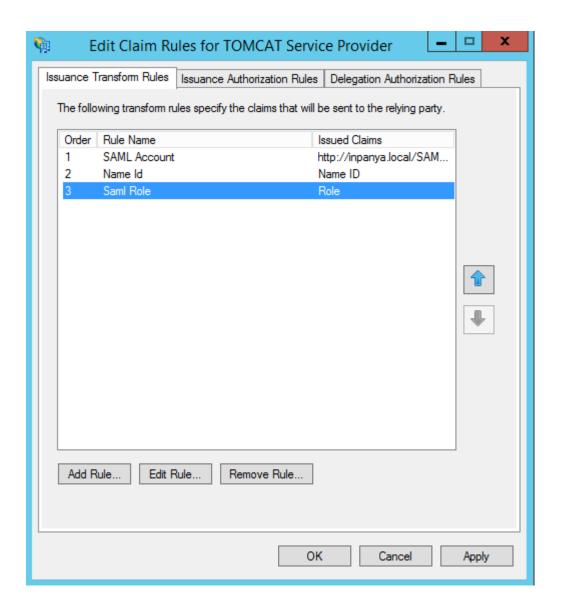
Click Finish

Add new Rule

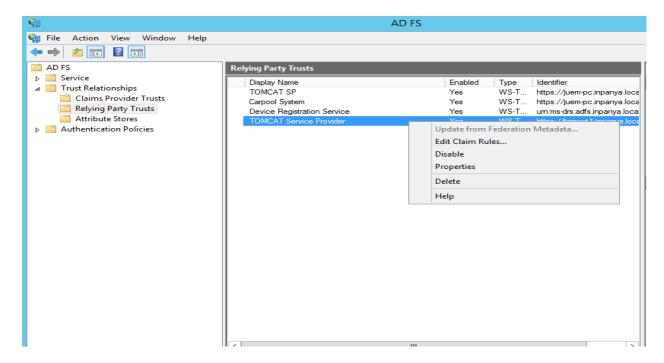




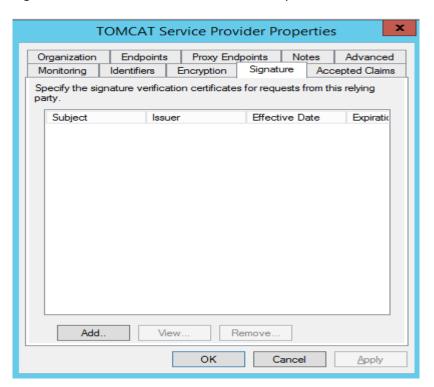
<sup>\*\*\*</sup> Create User Group in Active Directory server :SAML Group\*\*\*\*



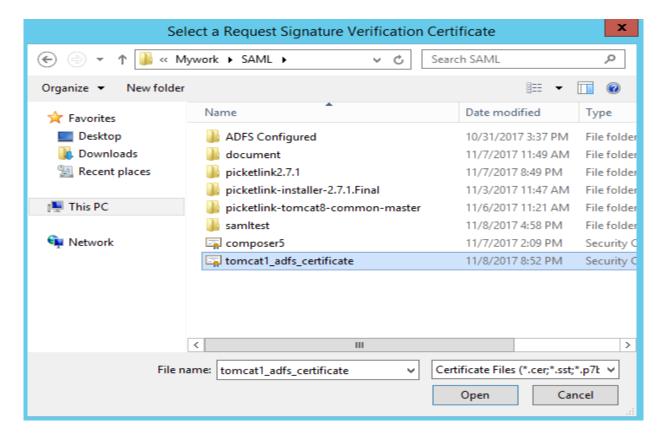
Add Signature certificate to Relying party Trust



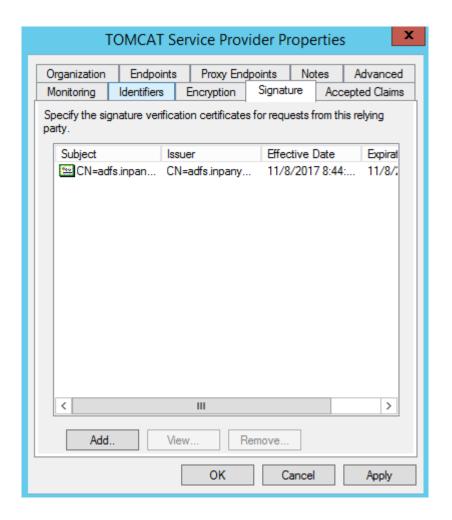
Right click on TOMCAT Service Provider → Properties



On Signature tab click Add

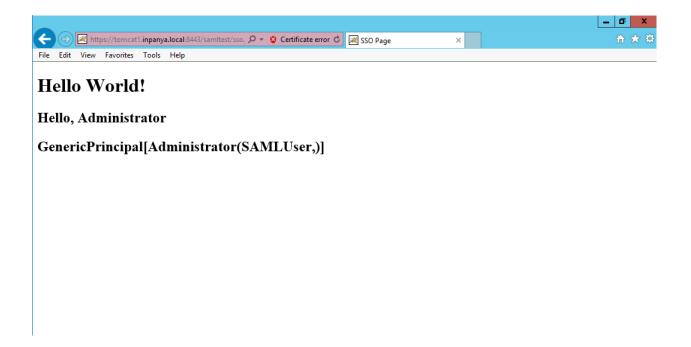


Browse to tomcat1\_adfs\_certificate.cer



# Test Result

http://tomcat1.inpanya.local:8080/samltest/SSO



If Single Sign on popup windows security .You need to add adfs.inpanya.local in to intranet Zone

