SANGFOR

IAM

IWA SSO Configuration Guide

Version 12.0.42

Change Log

Date	Change Description
April 27, 2020	Version 12.0.42 document release.

CONTENT

Chapter 1 Problem Background

Customer's environment has AD domain to manage internal users and the IT manager wish to deploy a Sangfor IAM in their network for user authentication purpose. The manager wish to synchronize IAM with their AD controller (Domain SSO) which the process is transparent for internal users so that users do not need to reinsert the log in details again for IAM authentication. Below are some details of customer's requirements:

1. The manager hope to view users online with their user name in AD controller, then audit all the network behavior accordingly to the user name.
2. The manager does not want to change their domain GPO and therefore not allow domain SSO script mode (script mode required to add logon.exe and logoff.exe to the domain) which not comply with their company security policy.

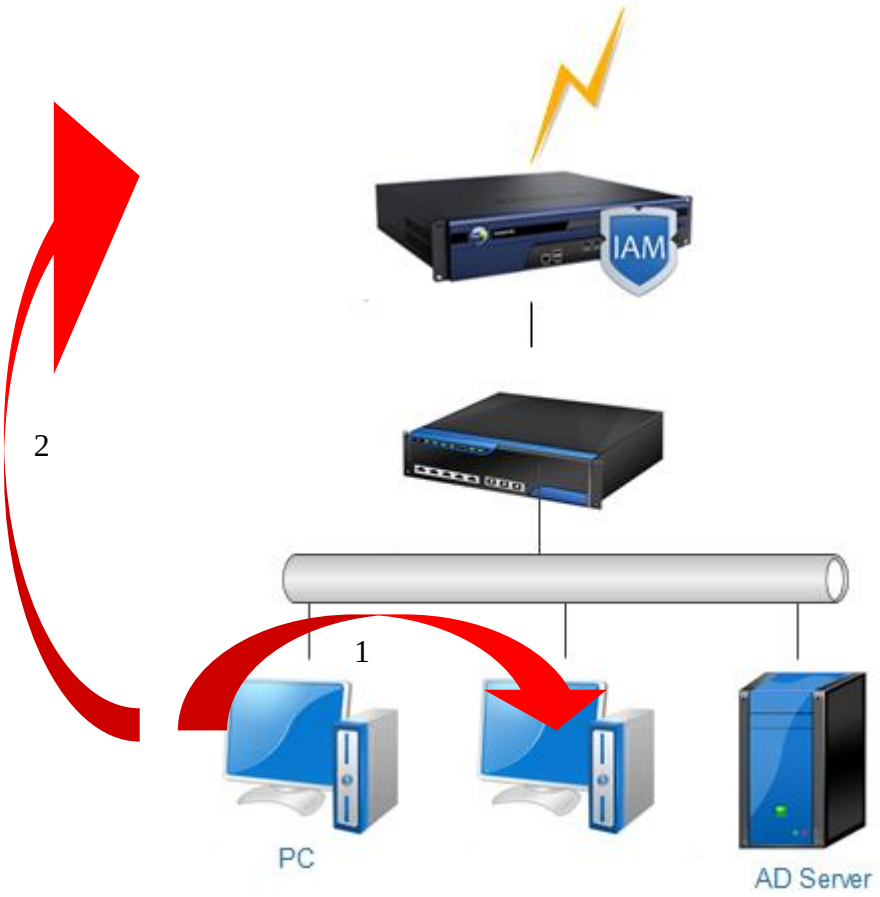
Chapter 2 Solution

2.1 IWA SSO Authentication

In this method, Sangfor IAM will join into customer's windows domain and act as a resource in the domain. When domain PC log on to the domain and browse a website, the request will be halt by IAM and redirect to IAM's resource page. This action will trigger kerberos authentication and IAM will obtain the ticket submit by domain PC then get the details for IWA SSO authentication. However this process is transparent for users.

Chapter 3 Test Environment

3.1 Topology



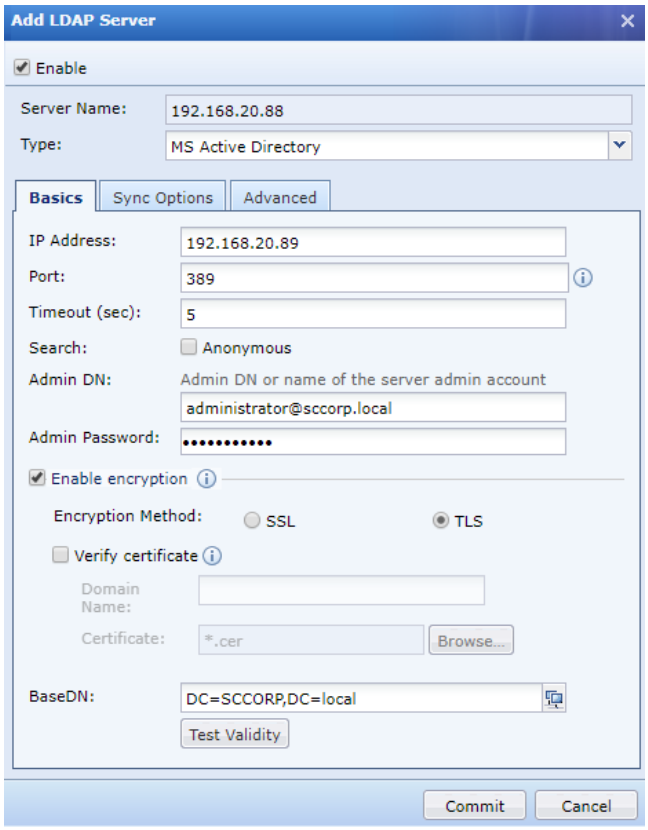
① PC log on to the domain.
② User browse a website (The processes include domain PC redirect to visit Sangfor IAM resource, trigger kerberos authentication, domain SSO authentication and all process are transparent for end users).

Note: If server signing requirement is enabled on the AD domain, encrypt connection needs to be enabled at the IWA single sign-on configuration, otherwise IWA single sign-on will be affected. [See Appendix B]

Chapter 4 Configuration

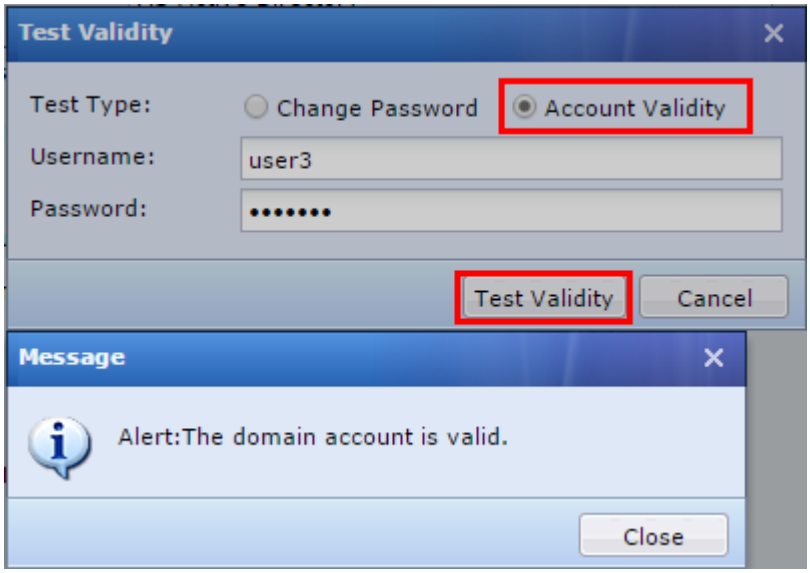
The configuration in IAM basically included 3 steps : add new LDAP server, add new authentication policy and configure IWA domain SSO, as shown below:

1. Add a new LDAP server.

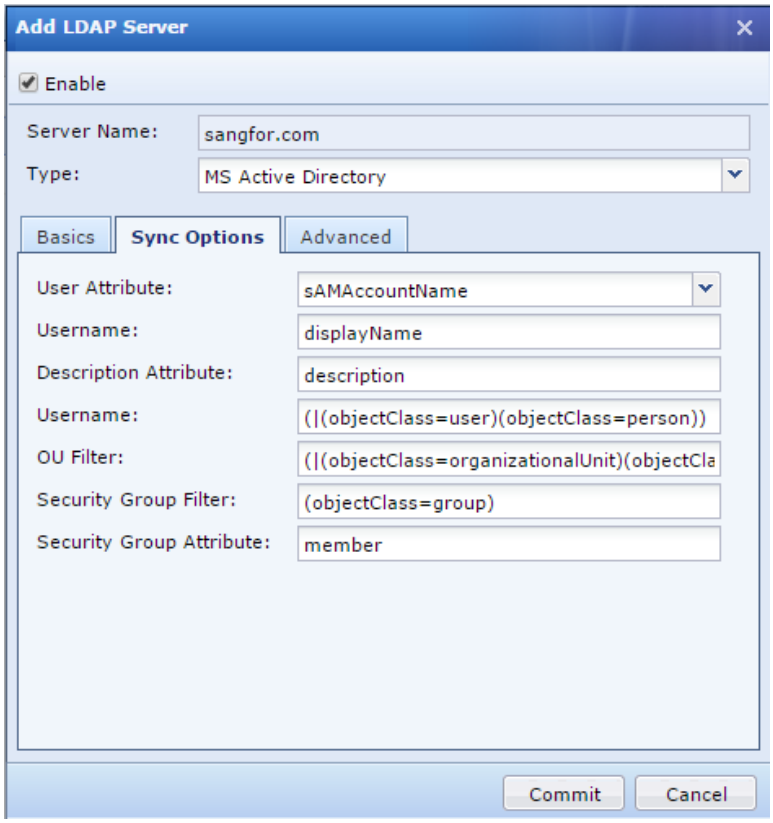


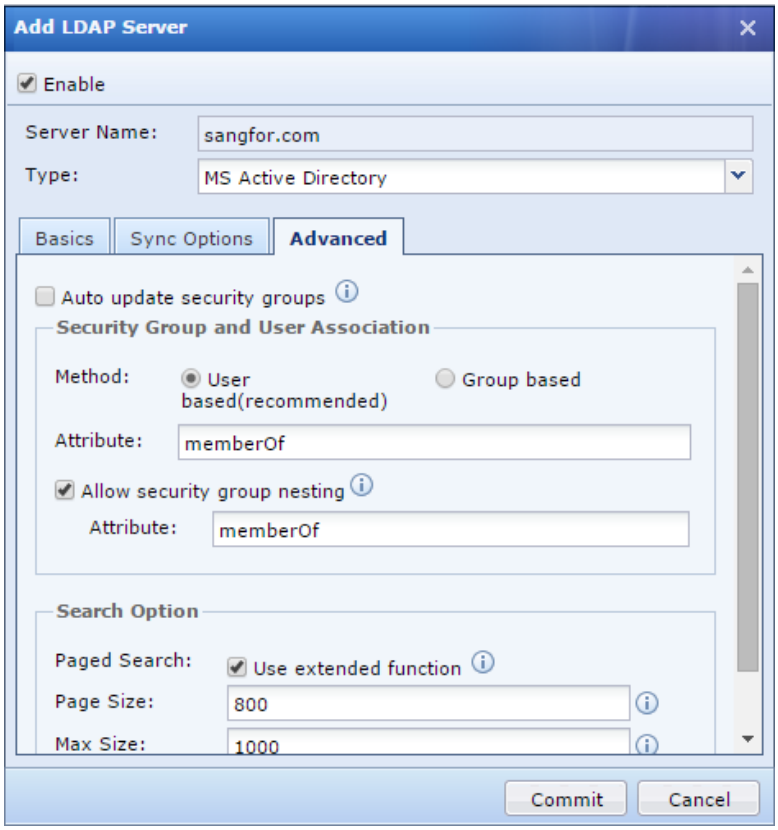
[Note]

a) The page "**Add LDAP Server**" has an option "**Test Validity**", it can test domain account validity and change domain account password via this function.



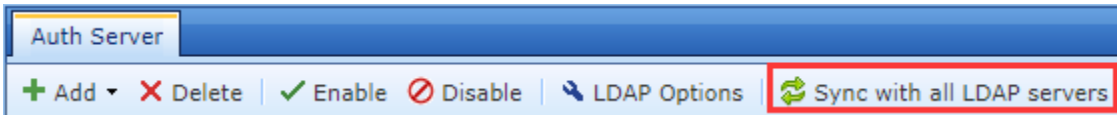
b) Other than that, the page "**Add LDAP Server**" contains also "**Sync Options**" and "**Advanced**" two tabs, AD domain and SUN domain need only "**Basics**" configuration, "**Sync Options**" and "**Advanced**" configuration keep to default settings. If other domains unable to grab domain OU by using default settings, can fine tune the "**Sync Options**" to solve the problem. The tabs are shown in the figures below:





c) If customer's environment is independent domain, need to configure authentication port number as 389 when adding the LDAP server. Otherwise, if the domain contains child domains, such as ssl.sangfor.com, iam.sangfor.com for the root domain sangfor.com, the port number need to be configured to 3268, IP address need to configure to root domain IP.

d) After configure the domain server, domain OU will automatically synchronize to IAM local database, and this action will be performed automatically for each 60 minutes. If the domain users or OU has been modified and the changes need to be applied to IAM immediately, click on the "**Sync with all LDAP servers**" as shown in the figure below :



e) If AD domain is not enabled with "**LDAPS signing requirement service**", "**LDAPS server certificate installation service**", in IAM no need to configure "**enable encryption**".

If needed:

[Enable encryption]: In September 2019, Microsoft announced in the security bulletin [ADV190023 | Microsoft Guidance for Enabling LDAP Channel Binding and LDAP Signing] that LDAP channel binding and LDAP signing will be enabled on the Active Directory server through the security update method (KB patch) in mid-January 2020. The security of Active Directory domain controllers can be significantly improved by configuring the server to reject Simple Authentication and Security Layer (SASL) LDAP binds that do not request signing (integrity verification) or to reject LDAP simple binds that are performed on a clear text (non-SSL/TLS-encrypted) connection. SASLs may include protocols such as the Negotiate, Kerberos, NTLM, and Digest protocols. To fulfill the requirement of security for Sangfor IAM, Sangfor

IAM supports for encryption docking.

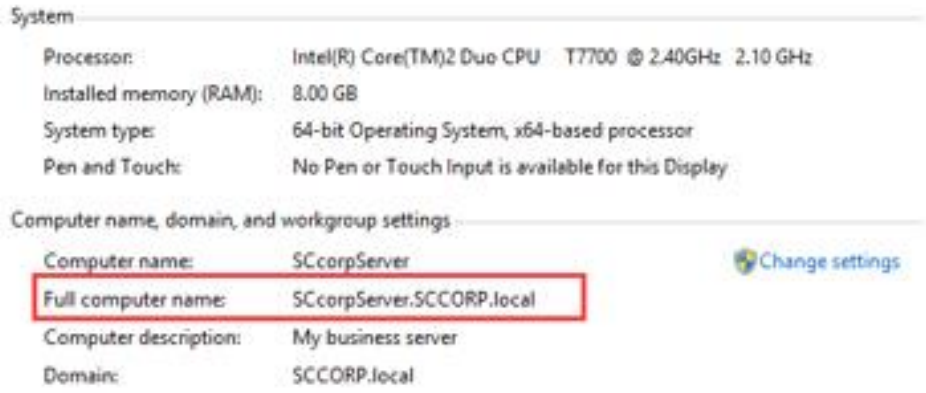
Official configuration by Microsoft：

https://support.microsoft.com/en-us/help/935834/how-to-enable-ldap-signing-in-windows-server

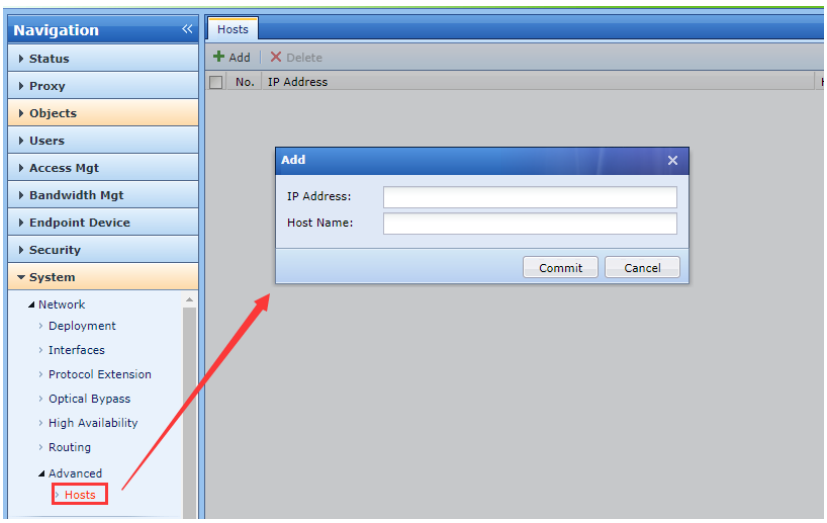
Encryption method: If the AD domain server is configured with [LDAPS signing requirement option], it is recommended to choose TLS as the encryption method (Microsoft supports SSL and TLS. After the AD domain enables the signature option, IAM can only connect to AD through encryption. In particular, Windows 2000/2003/2008 do not support TLS encryption, only SSL encryption can be used).

- When encryption docking is not enabled, the default port is 389.
- If encryption docking is enabled, when the encryption method is SSL, the authentication port is 636.
- If encryption docking is enabled, when the encryption method is TLS, the authentication port is 389.

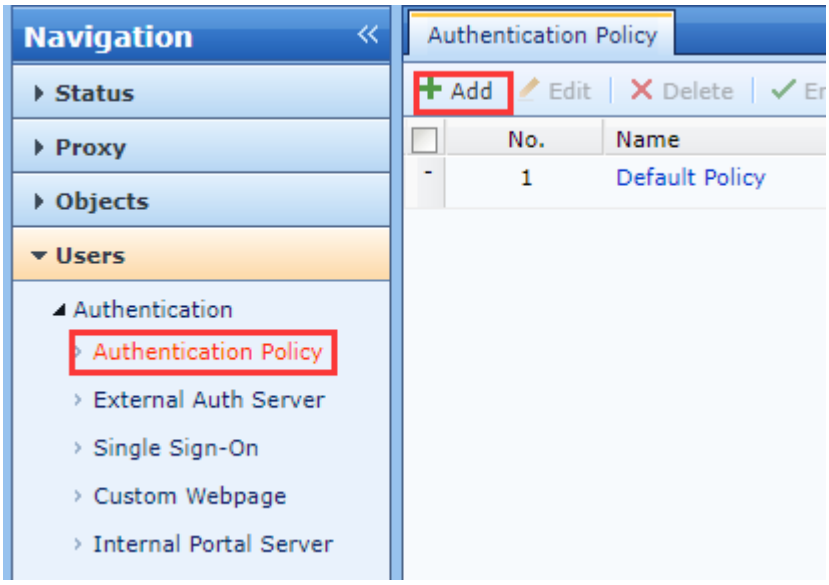
Verify certificate: If the AD domain server is configured with [LDAPS signing requirement option], you need to configure this item, fill in the domain name [AD domain server full computer name], and import the certificate.

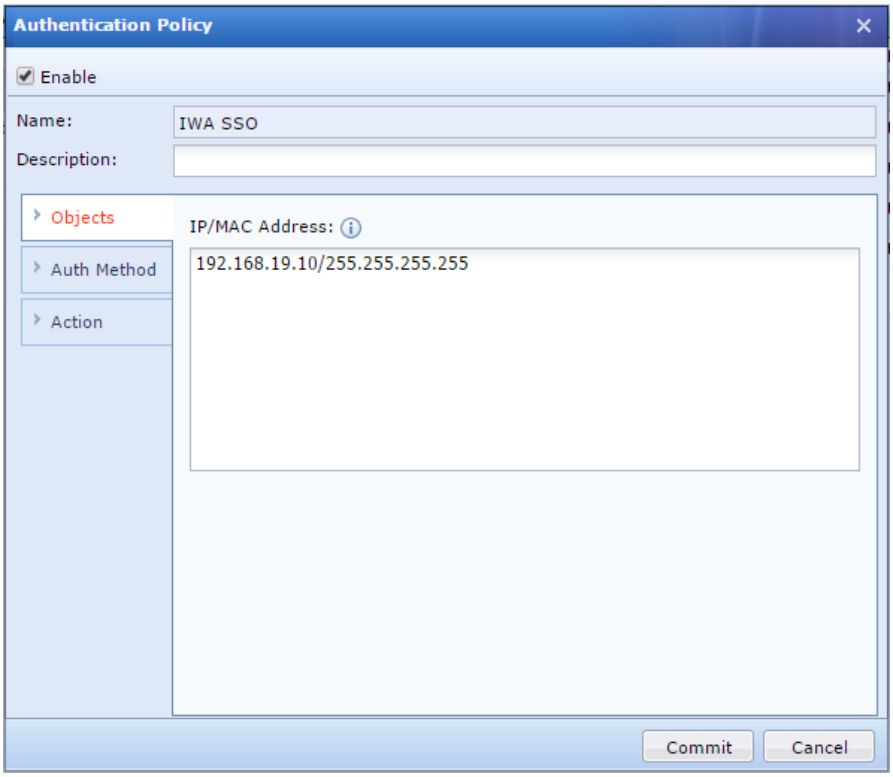


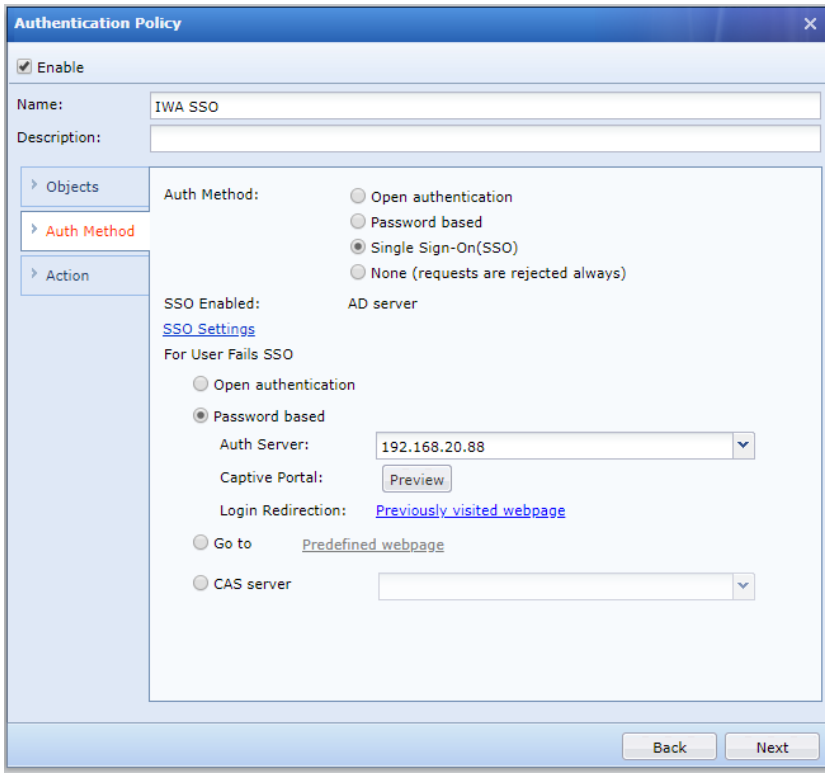
Configure hosts: HOSTS resolves the domain name to the IP of the AD domain server.

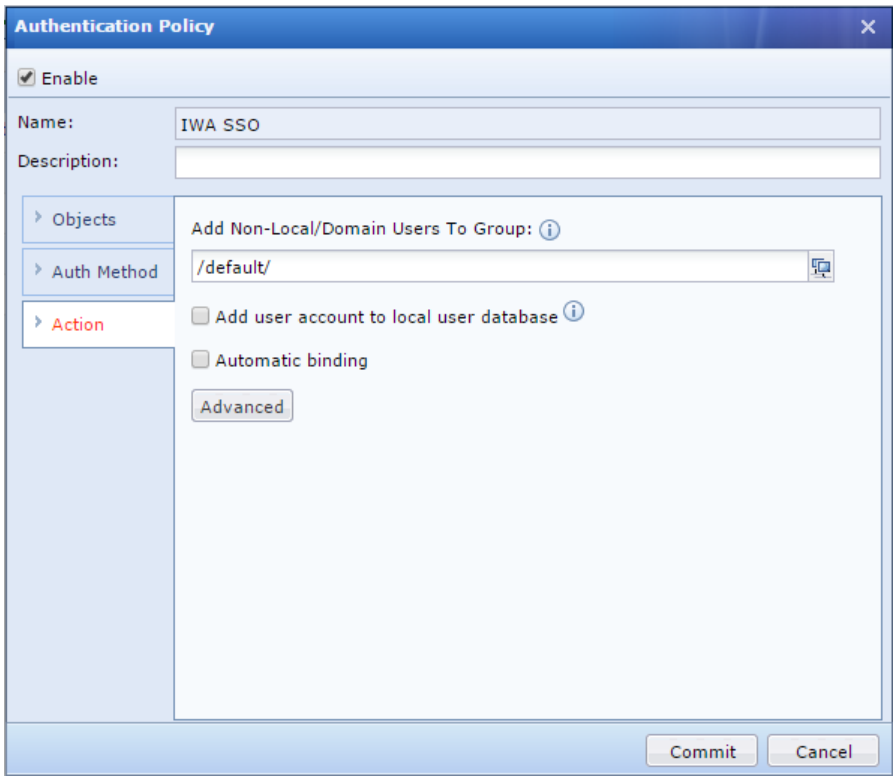


2. Add a new authentication policy.


Navigation
Status
Proxy
Objects
Users
Authentication
Authentication Policy
External Auth Server
Single Sign-On
Custom Webpage
Internal Portal Server
Authentication Policy
Add
Edit
Delete
No.
Name
1
Default Policy


Authentication Policy
Enable
Name:
IWA SSO
Description:
Objects
Auth Method
Action
IP/MAC Address:
192.168.19.10/255.255.255.255
Commit
Cancel





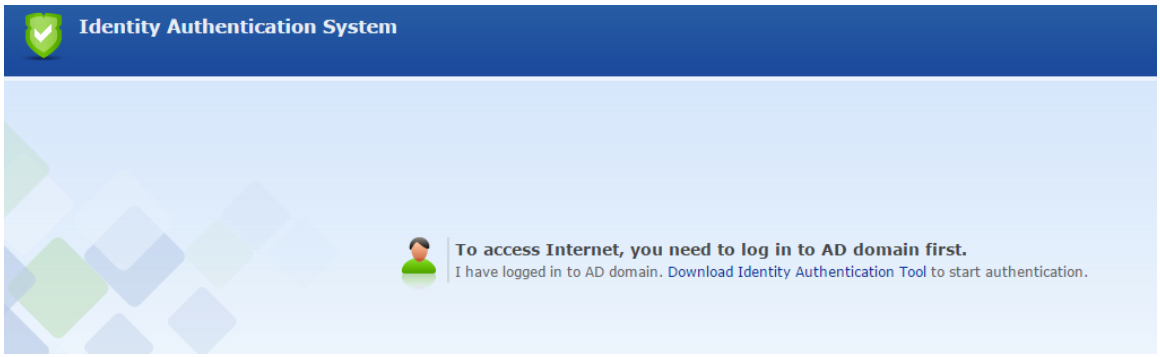
[Note]

① There are four handling methods for user who failed SSO authentication as shown in the "Auth Method" -> "For User Fails SSO" page; which are "Open authentication", "Password based", "Go to" and "CAS server". These methods can be configured based on user requirement.

If admin allow internet access for SSO authentication failed users, select "Open authentication" to prevent re-authenticate again.

If requirement is to log activity for all authenticated users based on user name in domain, select “Password based” method to meet the requirement.

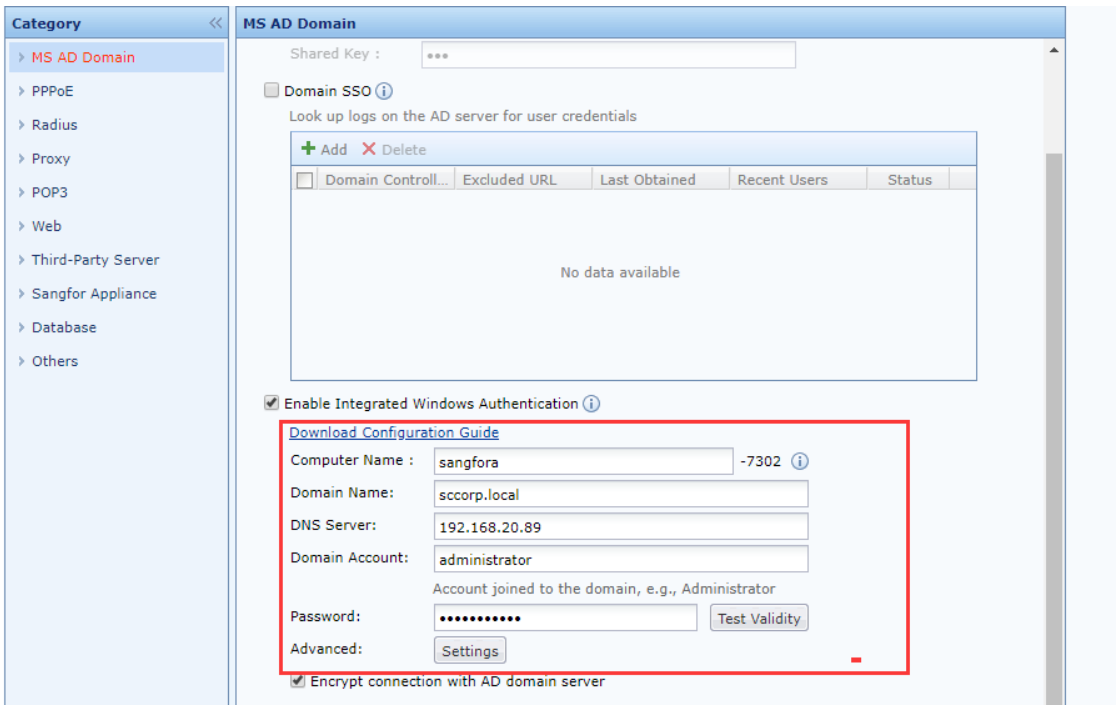
Other than that, if user requirements is to log internet activity, can select also option “Go to” and choose “predefined web page”. Domain users who failed in SSO authentication will be redirect to a custom web page as shown below to download Identity Authentication Tool and execute it for authentication purpose.



When the user has strict authentication requirements, that is, all Internet logs generated by the user must undergo CAS authentication, then select "CAS server". If single sign-on fails, CAS third-party authentication is used.

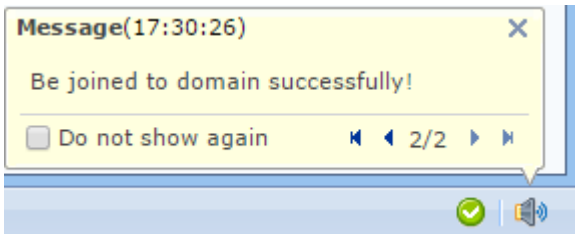
3. Configure IWA SSO option

The domain account used for IAM to join domain must have privilege to add workstation into domain such as administrator user account as shown below:



Note: When "Server Signing Requirement" is not enabled in the AD domain, it is not necessary to check "encrypt connection with AD domain server".

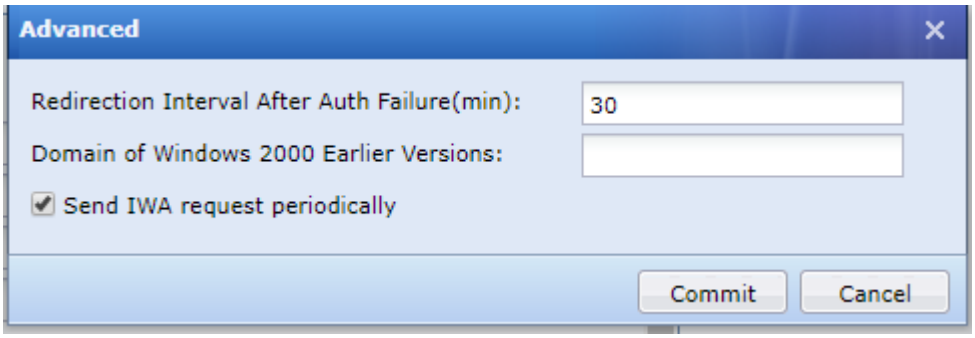
The message below is shown after click on Commit button and join domain successfully:



[Note]

a) The domain account configure in IAM IWA SSO must have privilege to add workstation into domain, recommend to use administrator account, regular domain account can add workstation into domain but can add only 10 times. If cannot provide administrator account and regular domain user account fail to add, can create a new user account for testing.

b) Then Advanced settings of IWA SSO configuration is shown below:



IWA SSO authentication require http redirection (this process is transparent to users), the figure above shows the redirection interval after auth failure (default is set to 30 min), if the SSO failure handling method is set to “Open authentication”, recommend to change the value to 5min, otherwise, keep the default settings.

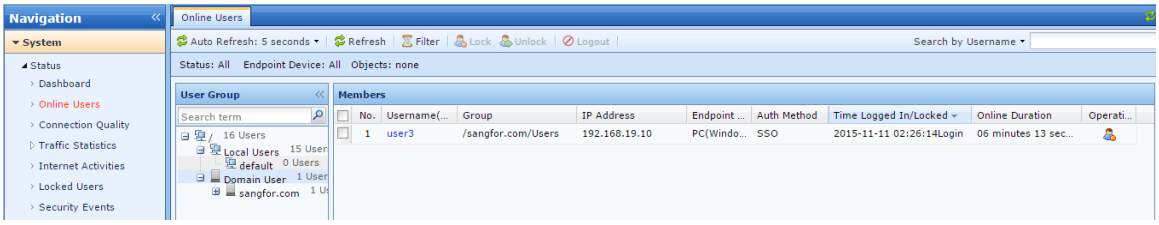
For domain Windows 2000 and before : windows 2003 until latest version, in order to compatible with domain in windows 2000, need to define the windows 2000 domain name during setup domain. If the domain name for Windows 2000 and Windows 2003are different, need to add the domain name into the setting “Domain of Windows 2000 Earlier Versions” as shown in the figure above. If the Windows 2003 domain prefix is same with the domain name in Windows 2000, then no need to add into the configuration.

After the configuration is done, proceed to the next section for testing result.

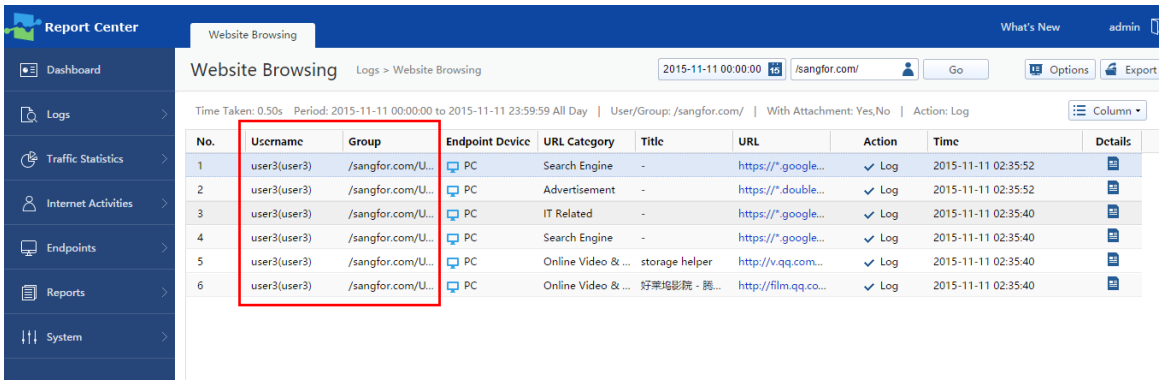
Chapter 5 Testing Result

The result is shown as below:

1. When user logon to domain with IWA SSO in IAM, browsing website will not require user to perform authentication again. The user details can be viewed in Online User list of IAM and it is shown as SSO in the figure below:

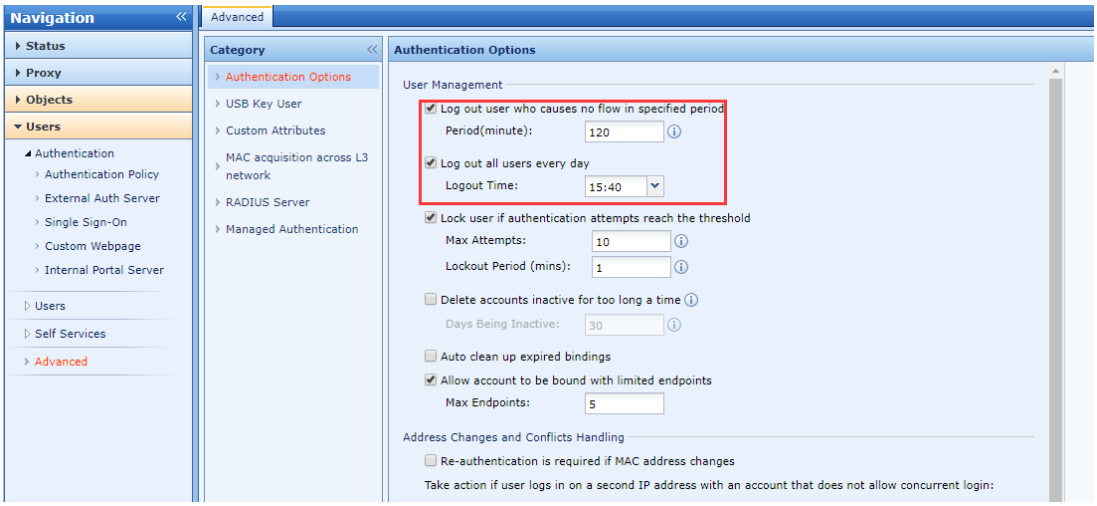


2. After PC online via SSO method, the logs in data center recorded user activities under their domain user name.

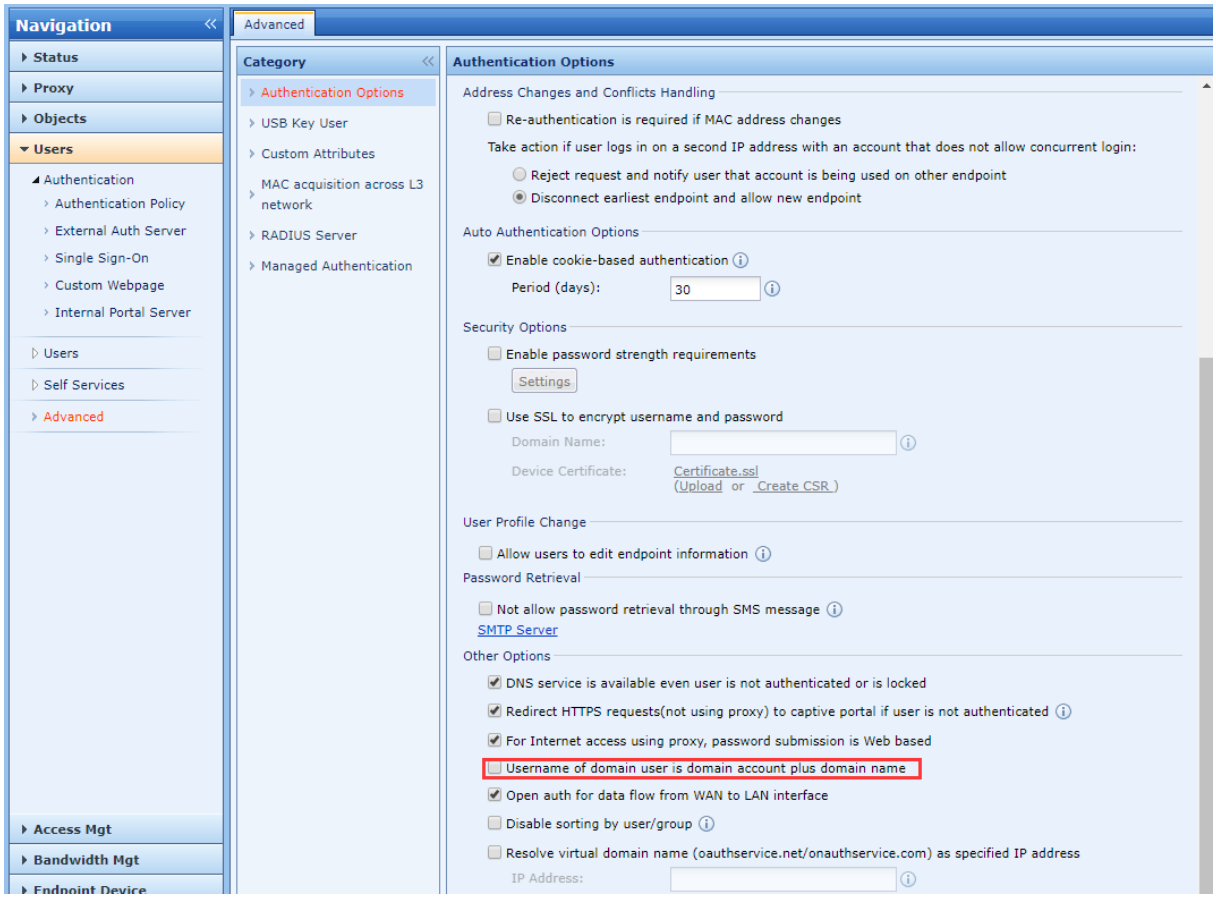


Chapter 6 Precautions

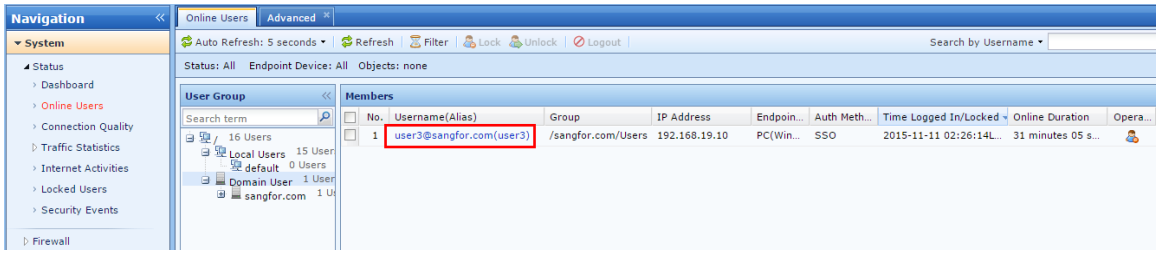
1. IWA SSO authentication not support online user logout in IAM when domain users logoff their PCs. However we can use the log out options under “Authentication Options” page to log out those users.



2. If customer has multiple independent domains and all domains are sync with IAM, configure the option as shown in the figure below to identify users which has the same user name in different domains.



Enable the option and IAM will automatically add @domain name in online user list such support@sangfor.com as shown below:



3. For SSO authentication, endpoint device must generate traffics and flowing through IAM , then only the user details (username, IP address) will be shown in online user list. IAM backend process will perform checking for each 10 minutes, if there is no traffics detected, the user will not been added into online user list.

4. If AD server located at the WAN zone of IAM, and domain PC not able to logon to domain as usual, then the IP address of domain server need to be added into global excluded address in IAM due to PC traffics unable to pass through IAM before authentication.

5. In IWA authentication, after IAM joined domain, need to make sure domain PC able to telnet IAM PC name with port 80.

6. With the signature service enabled, IAM can only connect to the AD domain through encryption. In particular, Windows 2000/2003/2008 does not support TLS encryption, and only SSL encryption can be used. Windows Server 2008 R2 and above support both TLS and SSL encryption.

Chapter 7 Appendix A: LDAPS Configuration Guide

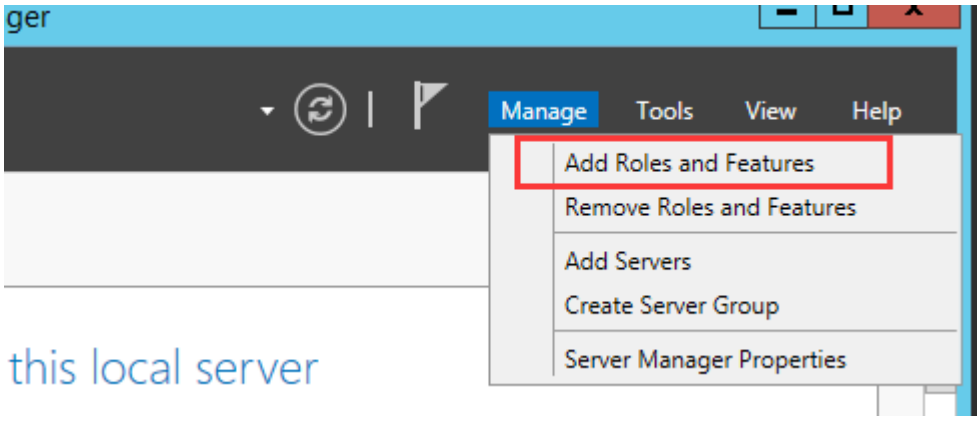
7.1 Background

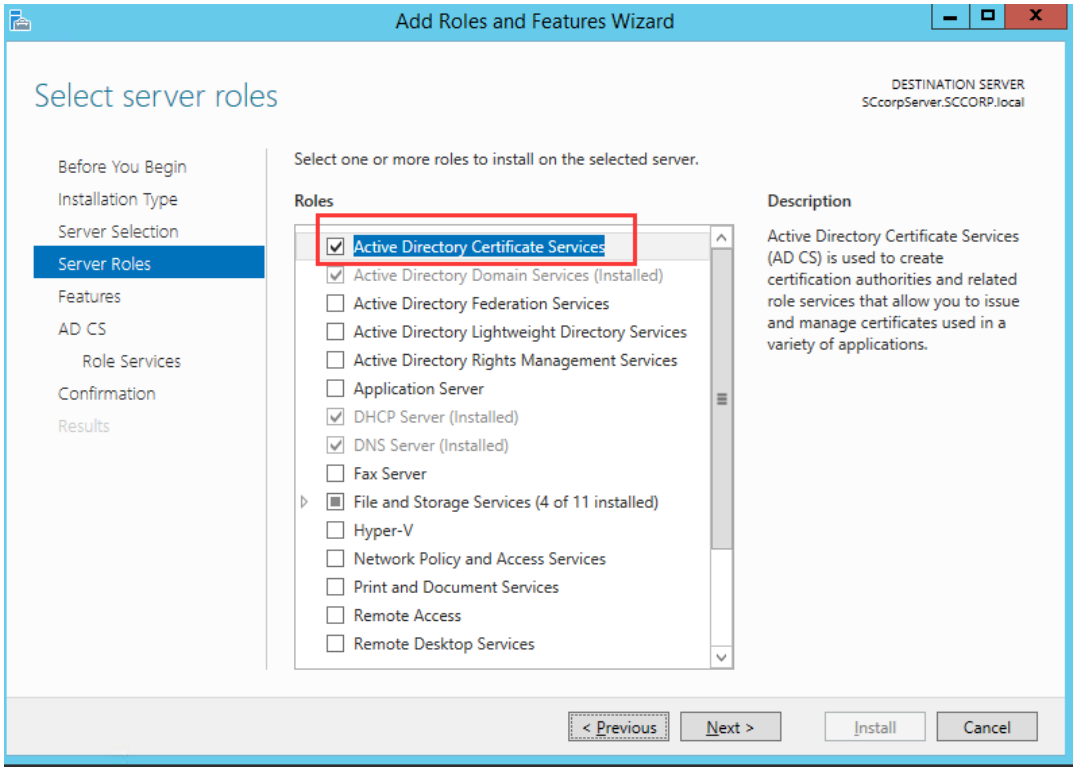
In September 2019, Microsoft announced in the security bulletin [ADV190023 | Microsoft Guidance for Enabling LDAP Channel Binding and LDAP Signing] that LDAP channel binding and LDAP signing will be enabled on the Active Directory server through the security update method (KB patch) in mid-January 2020. The security of Active Directory domain controllers can be significantly improved by configuring the server to reject Simple Authentication and Security Layer (SASL) LDAP binds that do not request signing (integrity verification) or to reject LDAP simple binds that are performed on a clear text (non-SSL/TLS-encrypted) connection. SASLs may include protocols such as the Negotiate, Kerberos, NTLM, and Digest protocols.

7.2 Configuration of Server Certificate Installation

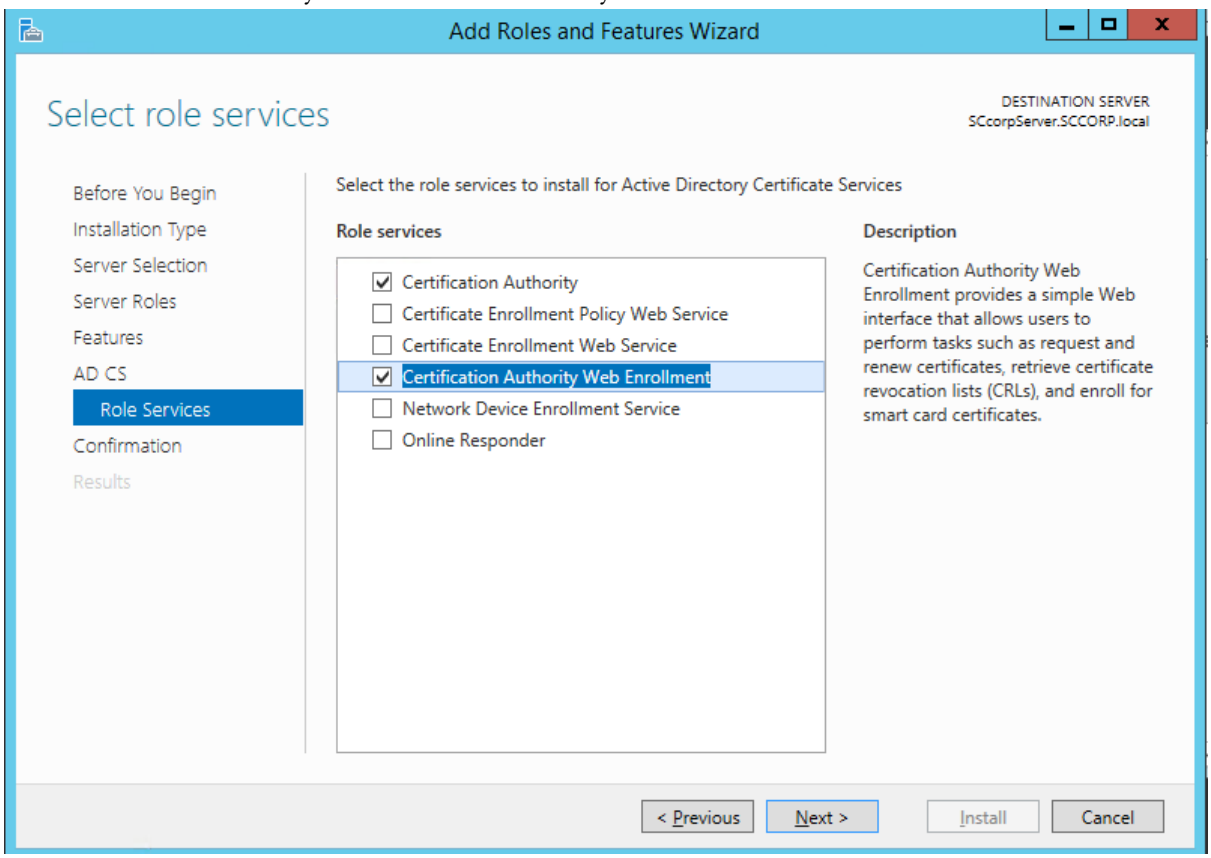
After installing certificate service, the server root certificate can be exported for client certificate verification to enhance security. For how to install certificate service on the Active Directory server, refer to the following tutorial:

Open the Server Manager, right click add Roles and Features (using 2012 R2 to test), install Active Directory Certificate Services:

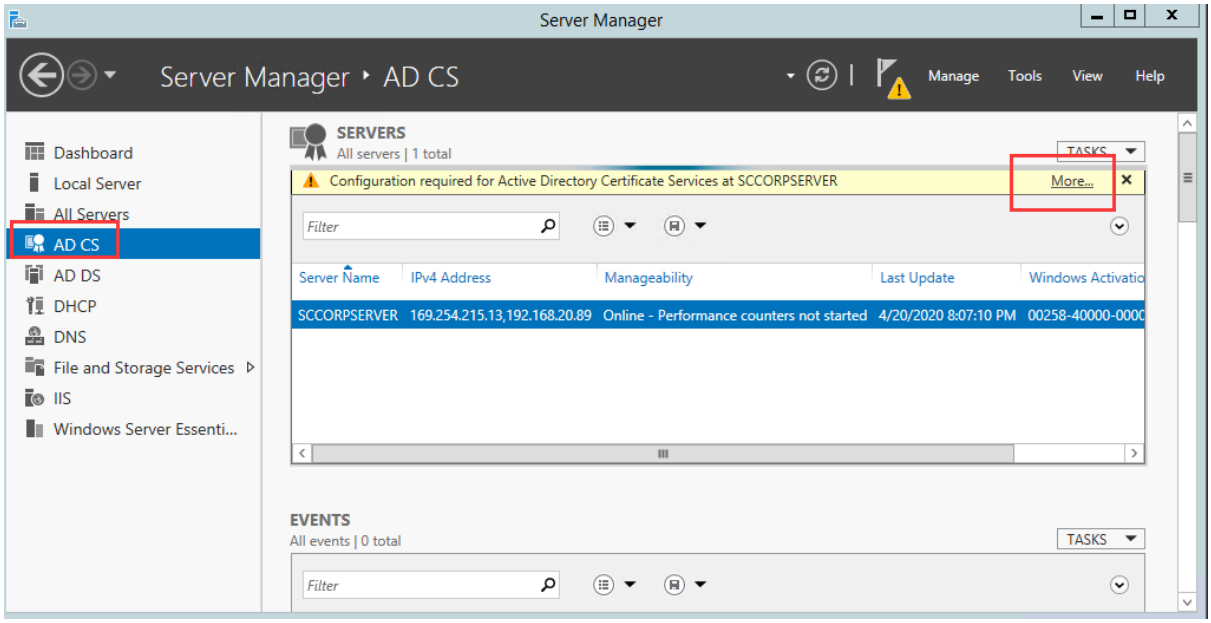


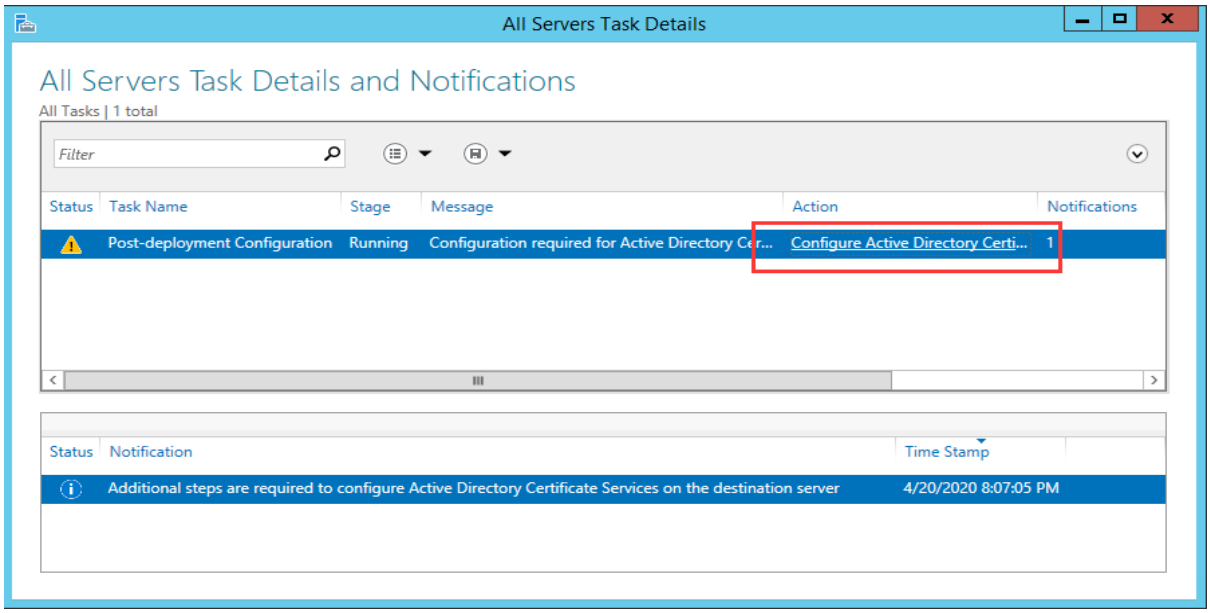


Select Certificate Authority and Certificate Authority Web Enrollment:

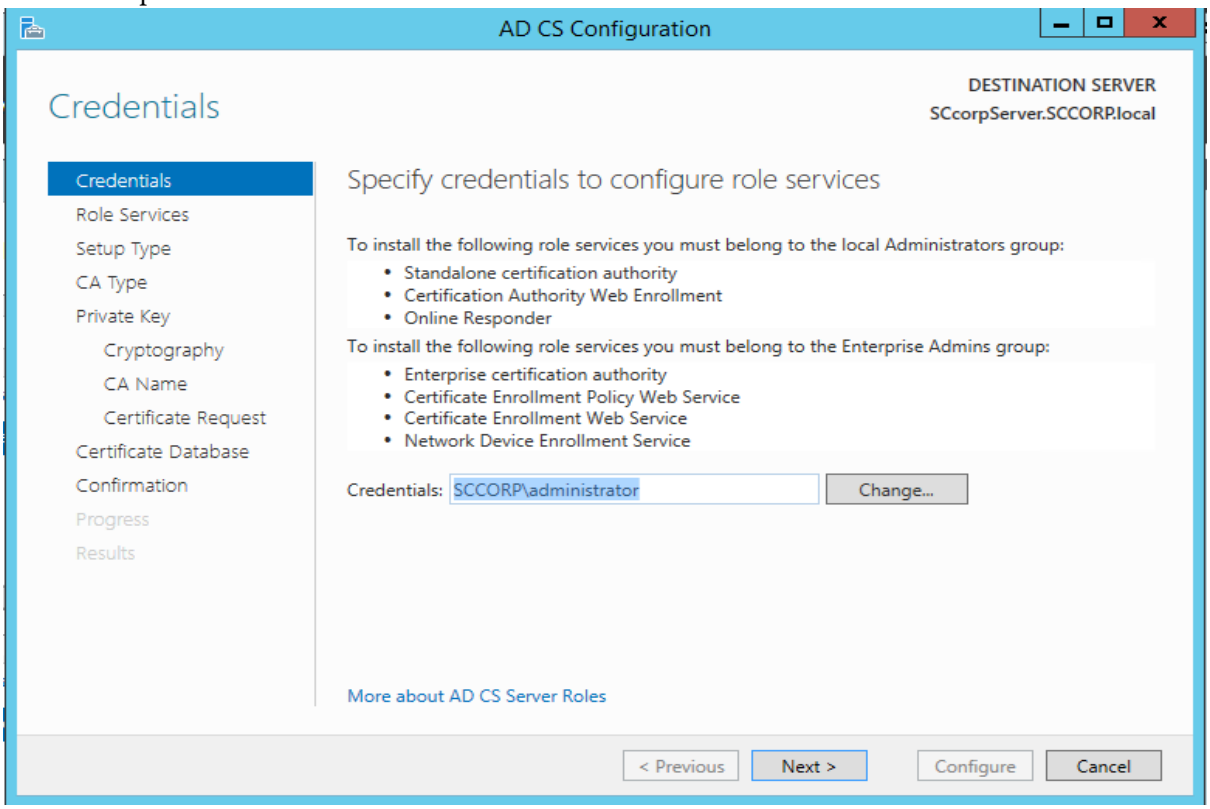


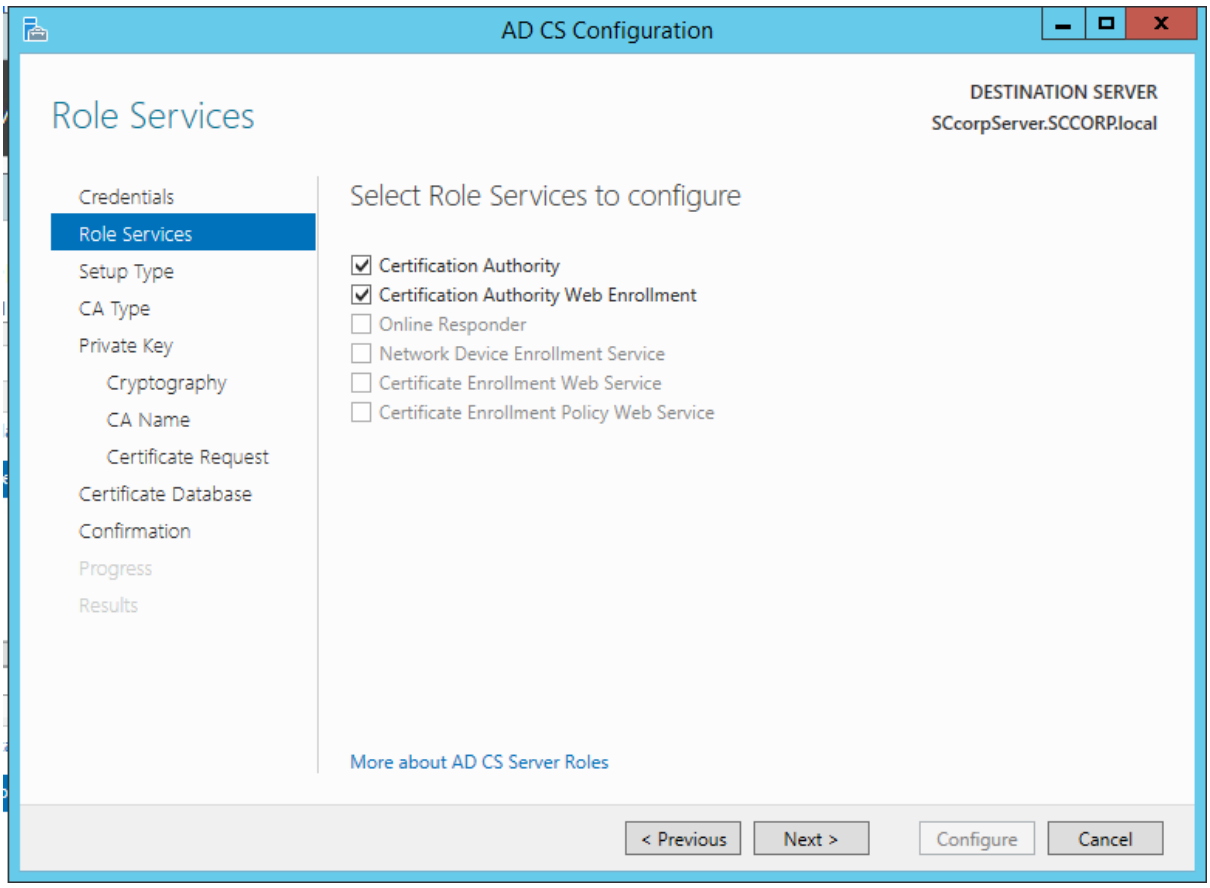
Go to AD CS, select more and click on Configure Active Directory Certification:

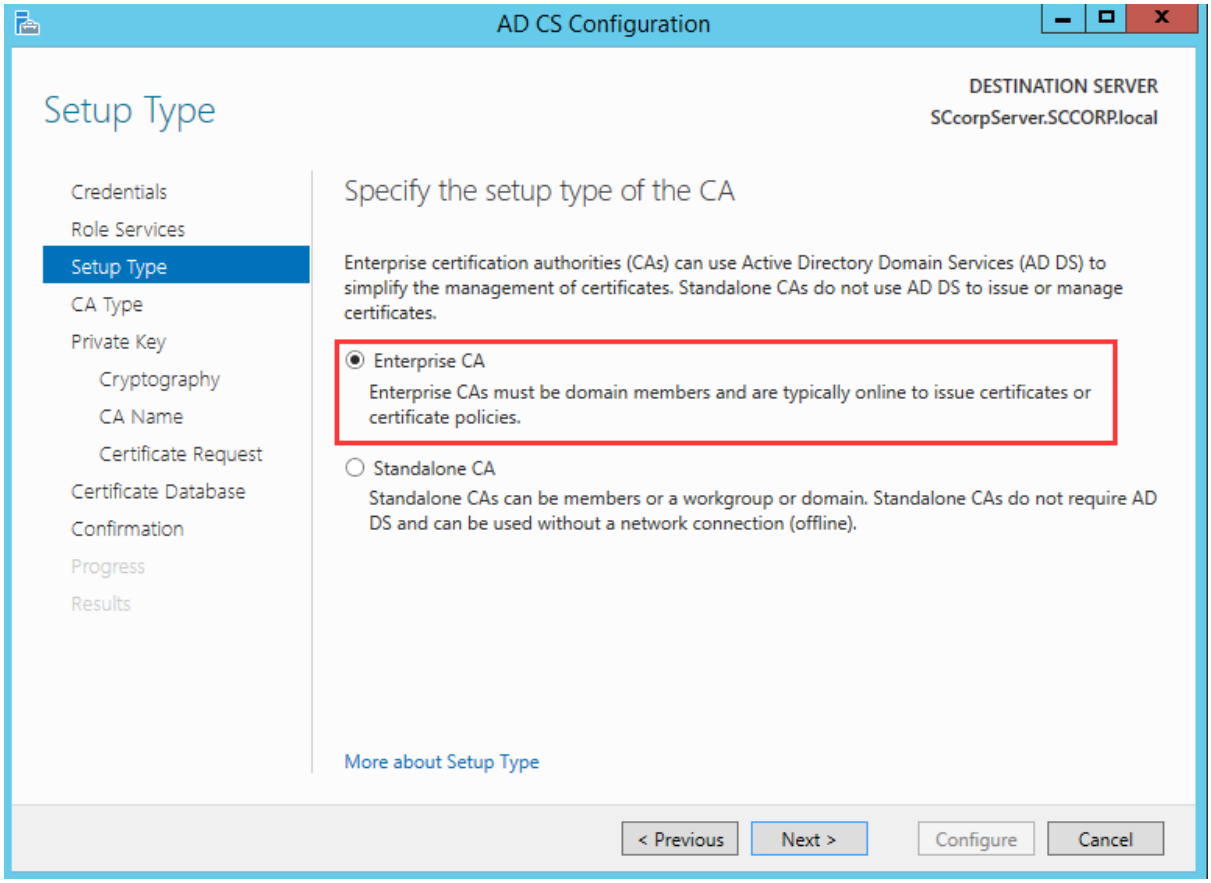




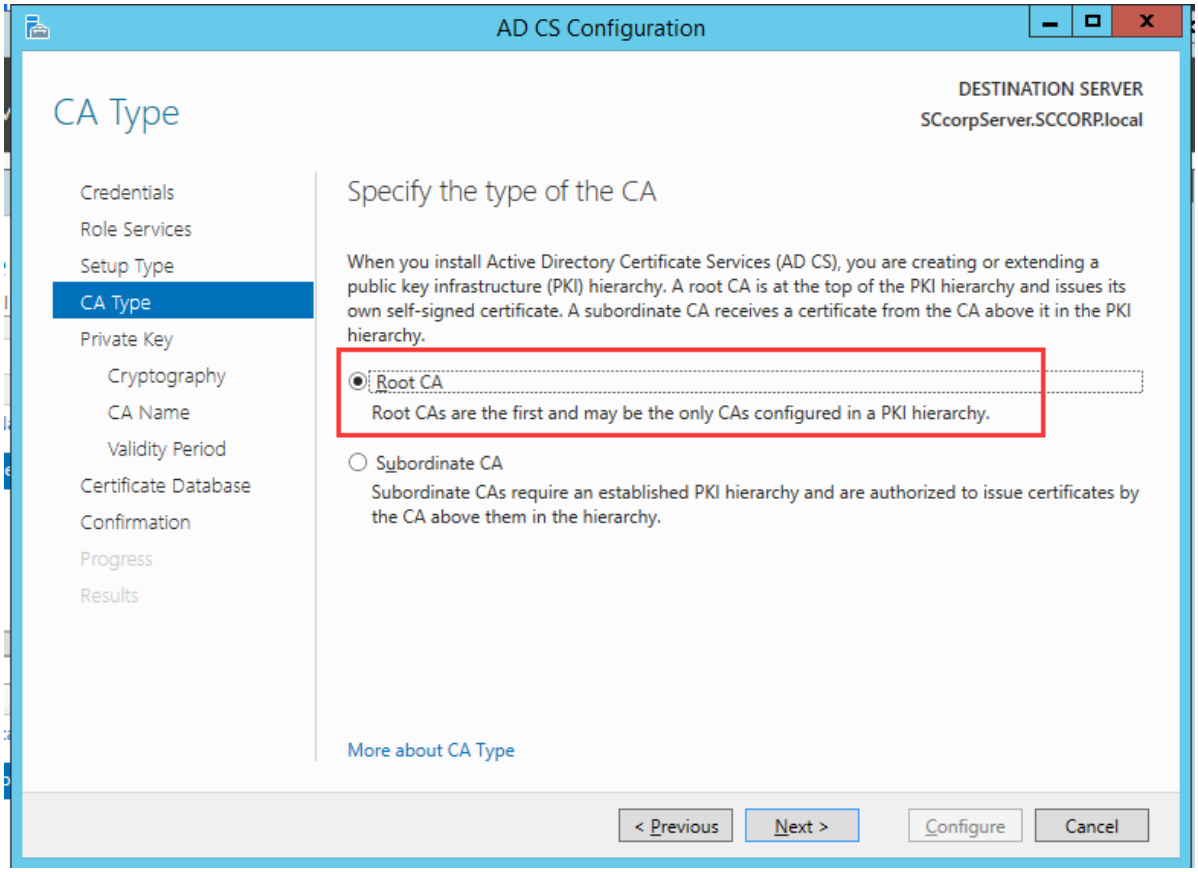
Select Enterprise CA:

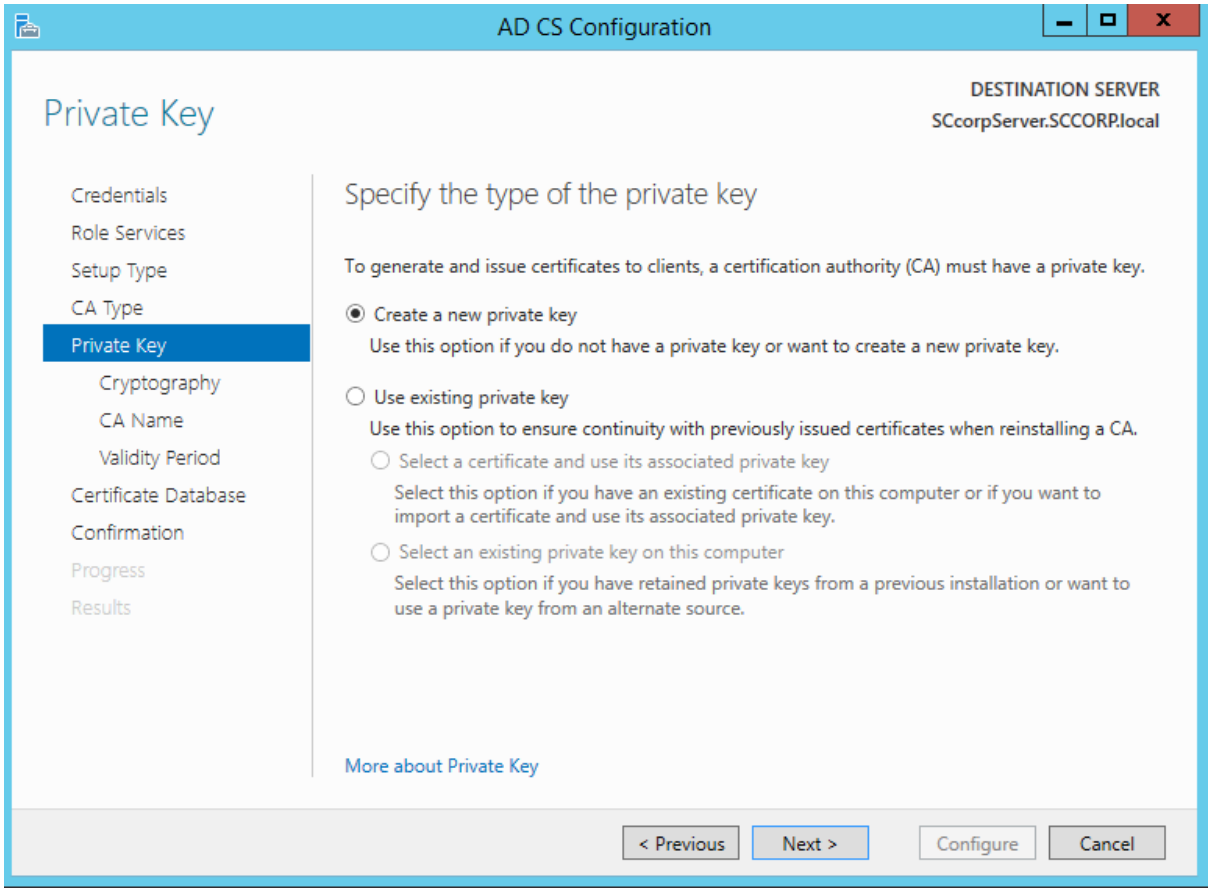




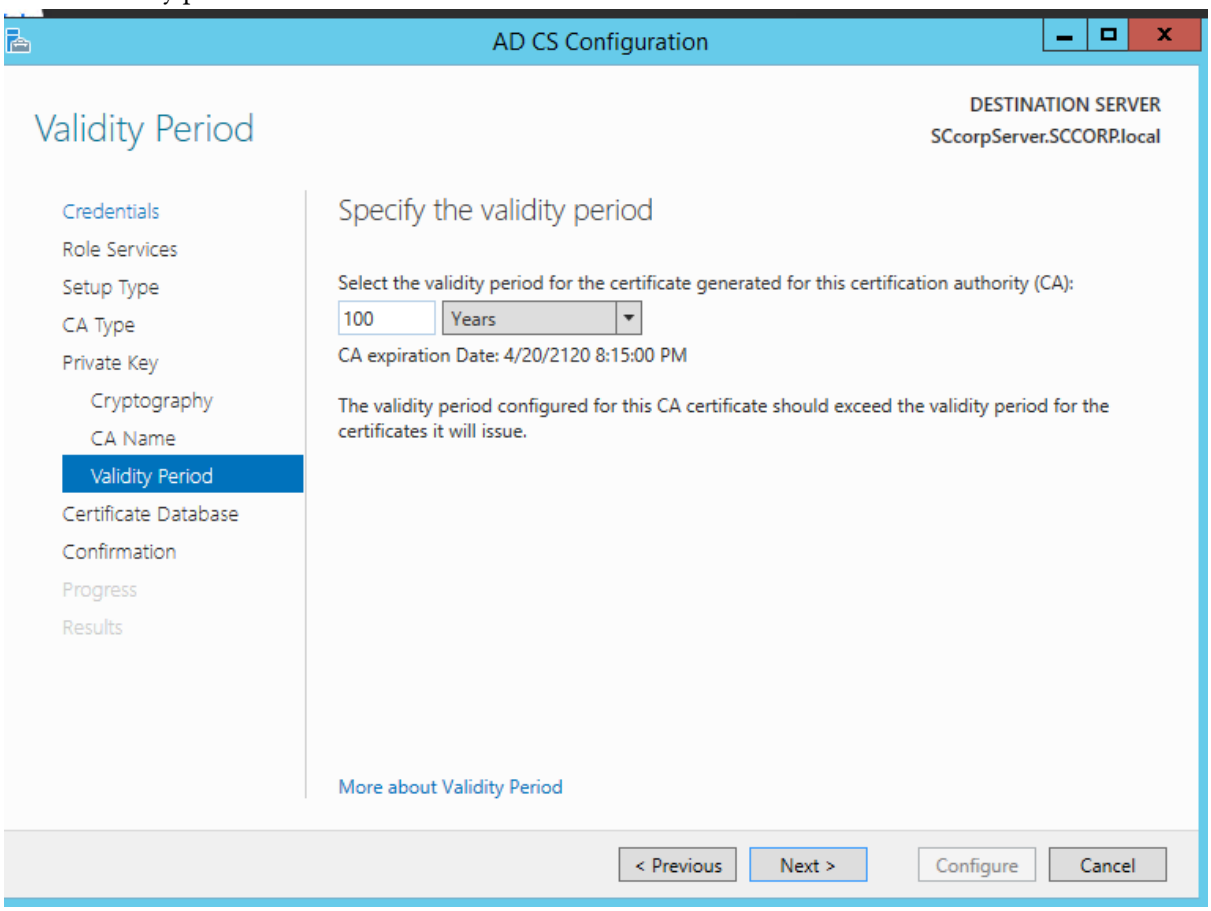


Select Root CA and create New Private Key:

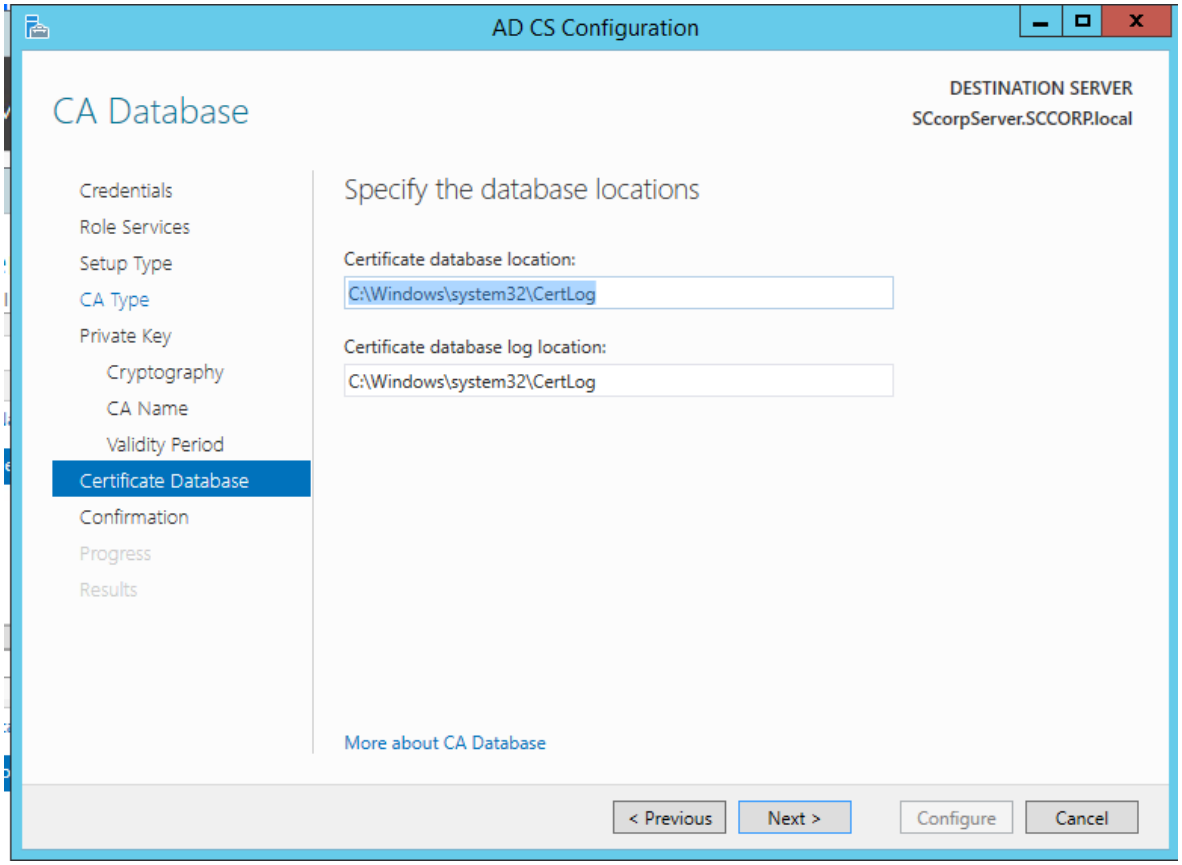




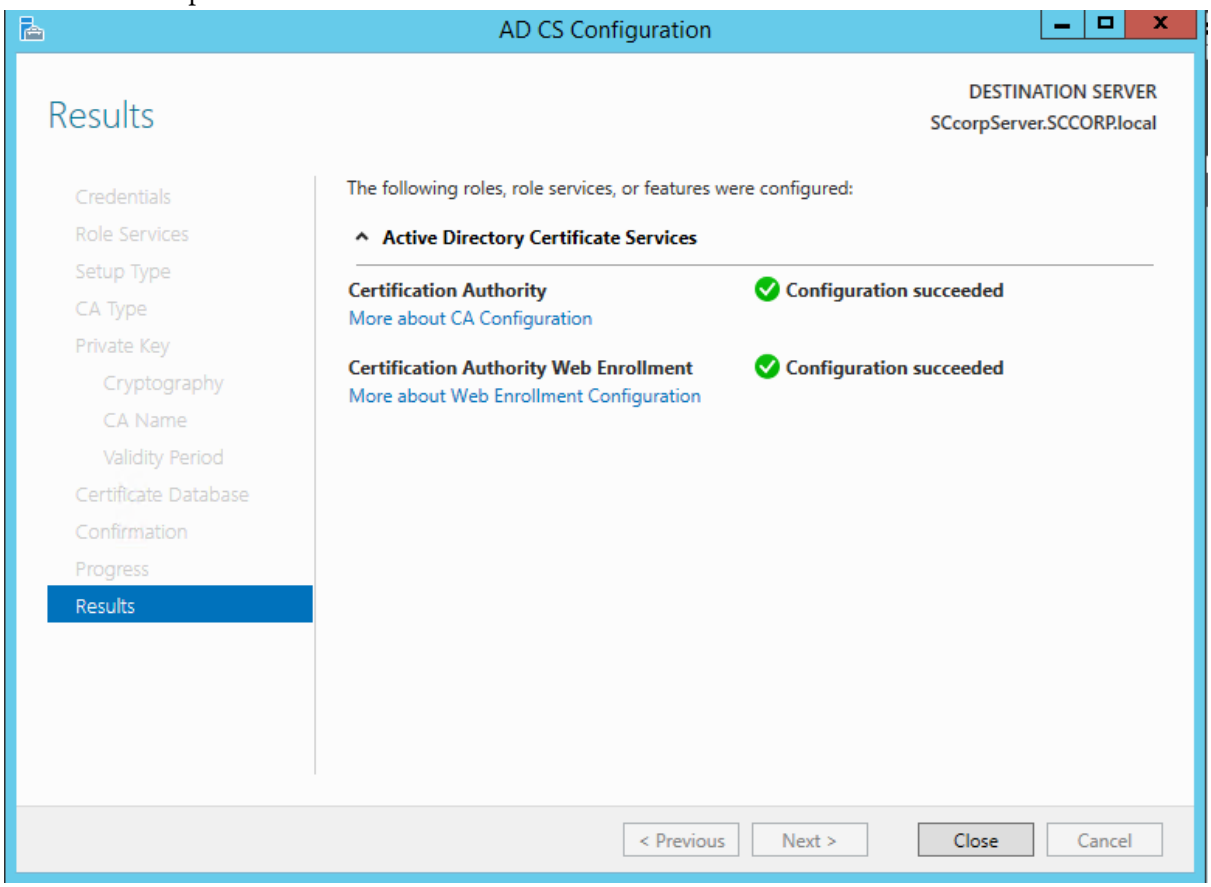
Set the validity period:



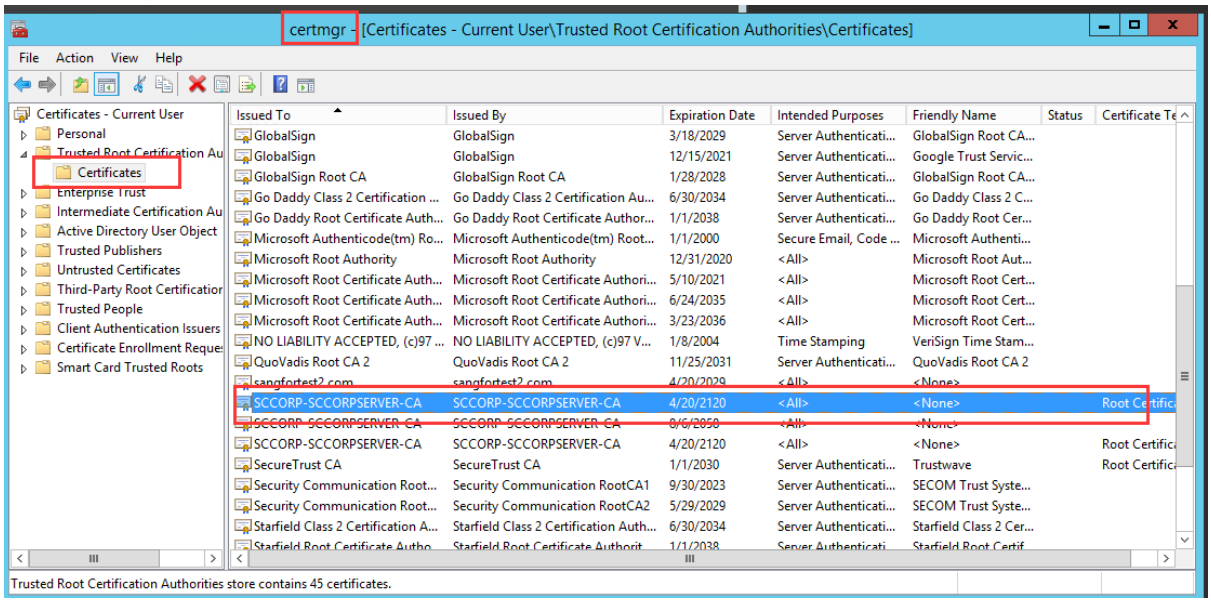
Specify the database location:



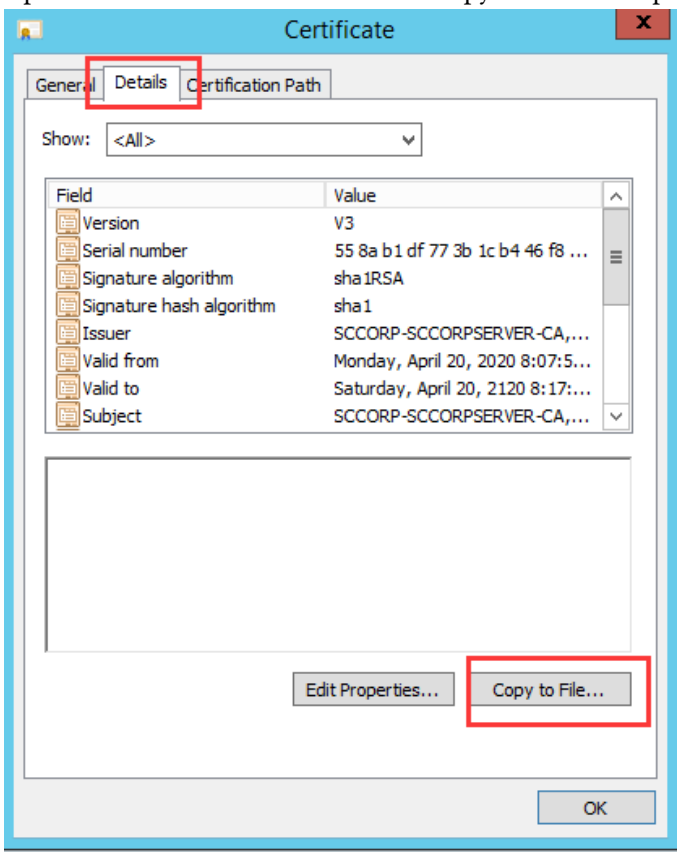
Installation complete:

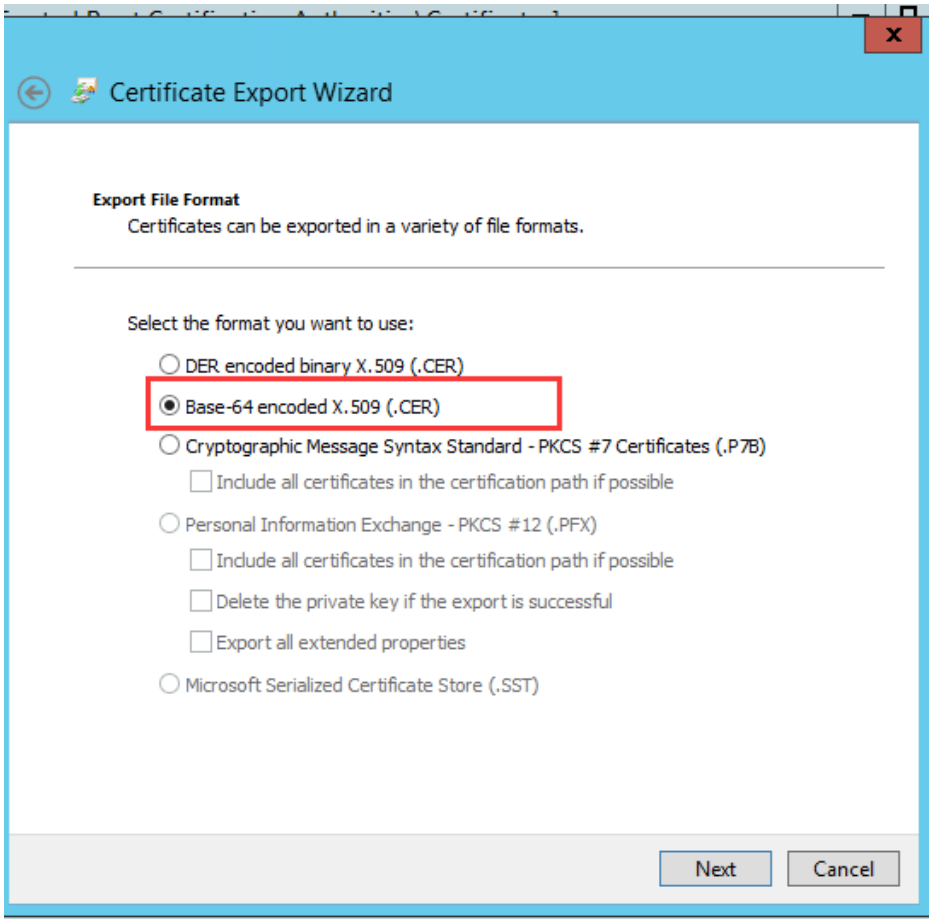


Go to certmgr.msc:



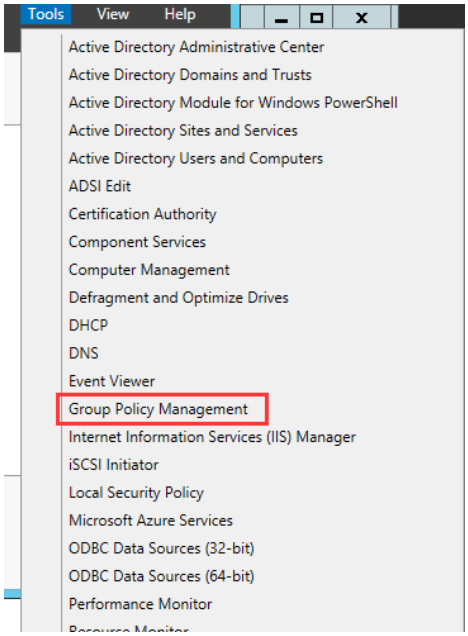
Open the cert and click on Details -> Copy to File and export as Base-64 with .cer format:



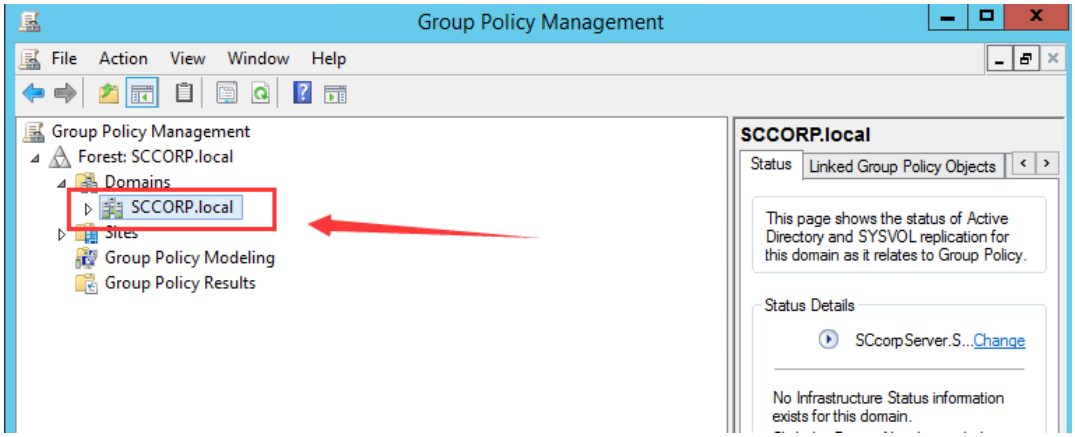


7.3 Configuration of LDAPS Server Signing

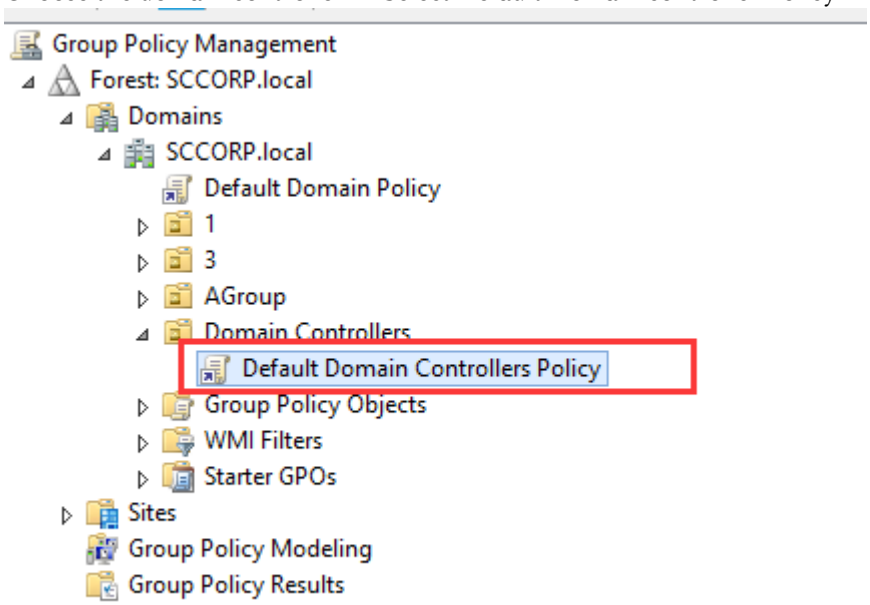
Go to Server Manager ->Tools -> Click Group Policy Management:



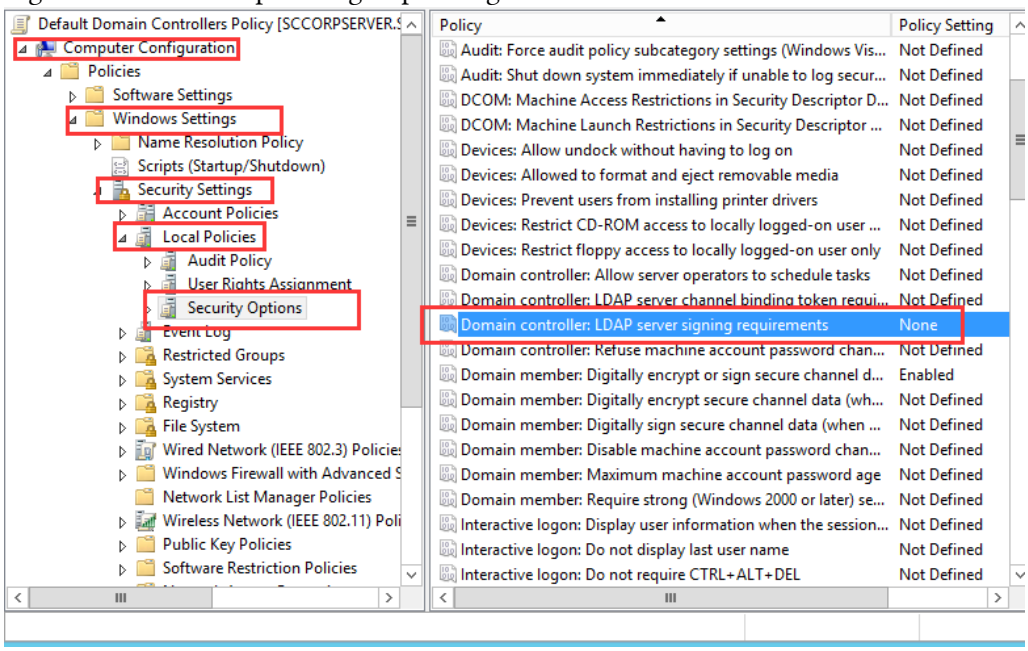
Choose the correct Domain name and Extend it.



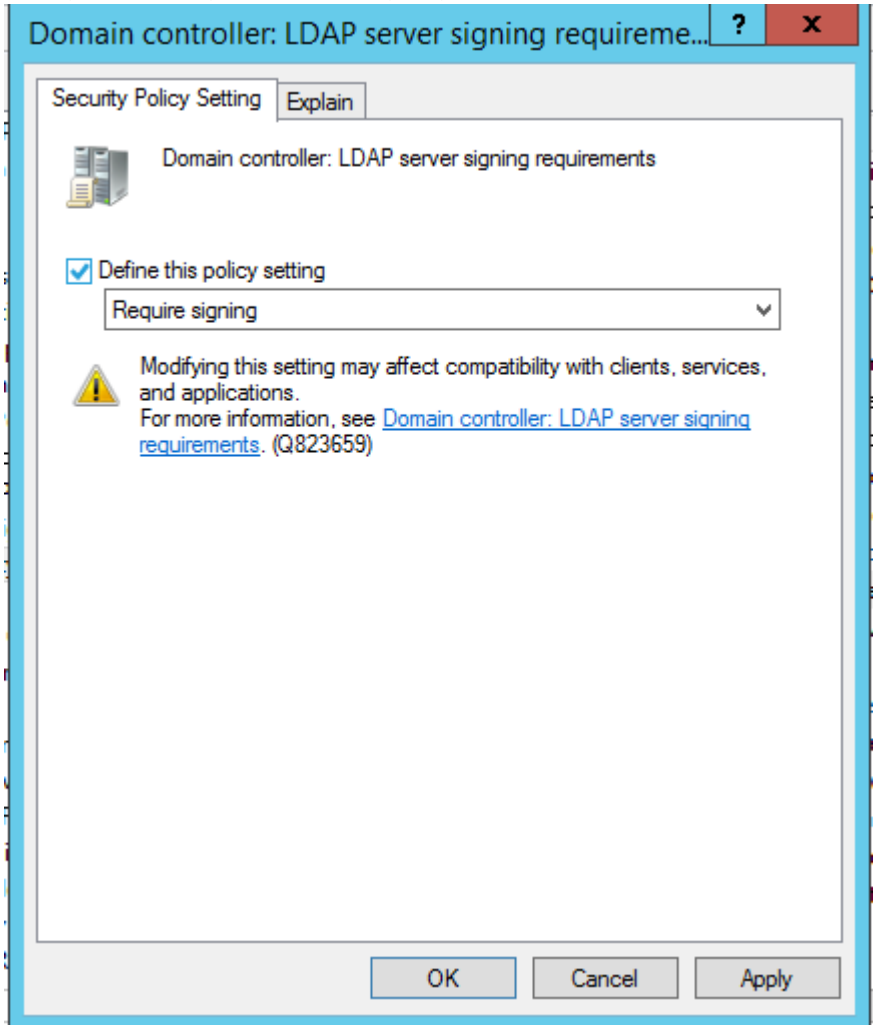
Choose the domain controller -> Select Default Domain controller Policy:



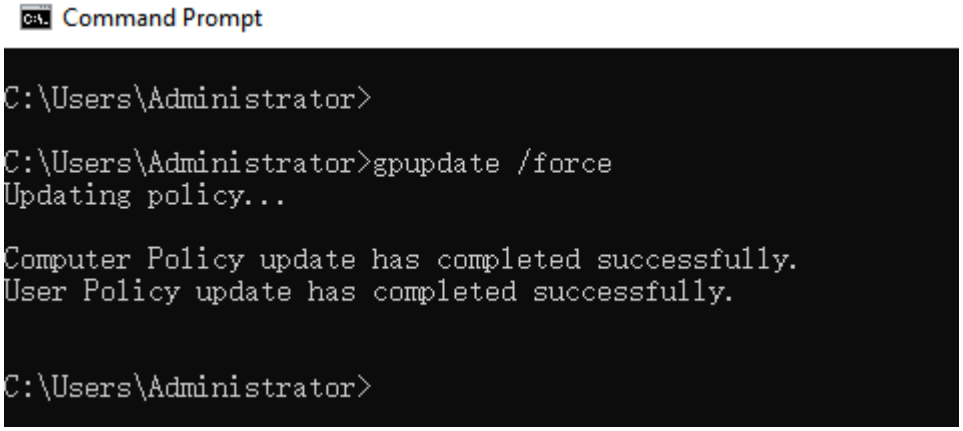
Right Click Edit and open the group management editor:



Change the setting to Required signing.



After configured, CMD run the gpupdate /force to push the group policy.



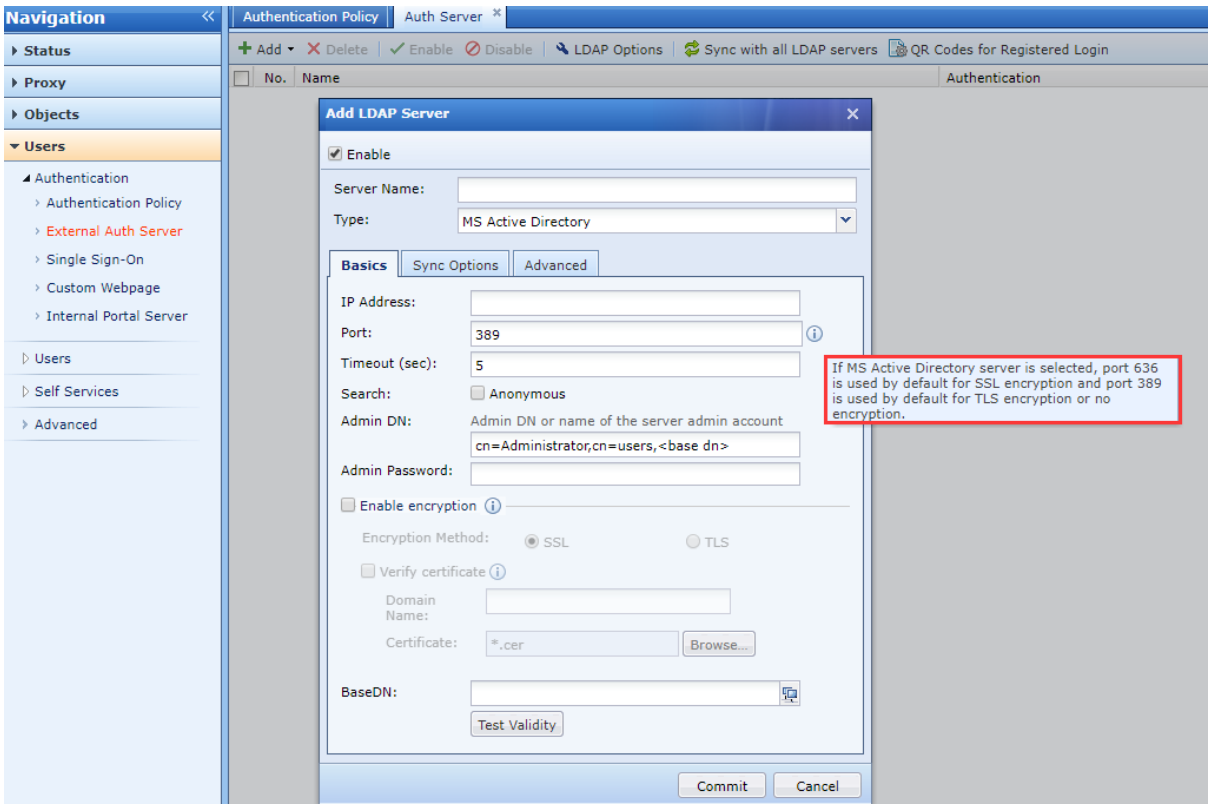
7.4 AD Configuration on IAM

The above are the configuration tutorial on the AD domain. This section describes the configuration of the AD domain server on IAM:

7.4.1 Authentication Port Description

As shown in the figure, the LDAP server is configured at the external authentication server to connect with the Microsoft AD domain:

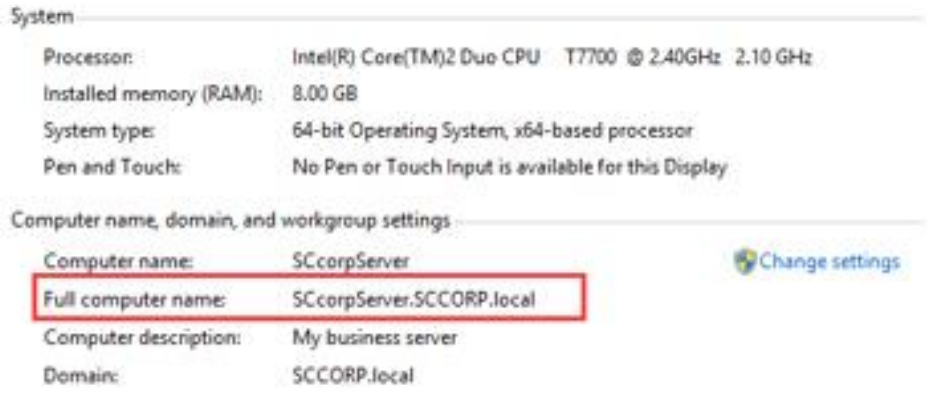
- When encryption is not enabled, the default port is 389.
- If encryption is enabled, when the encryption method is SSL, the authentication port is 636.
- If encrypted is enabled, when the encryption method is TLS, the authentication port is 389.



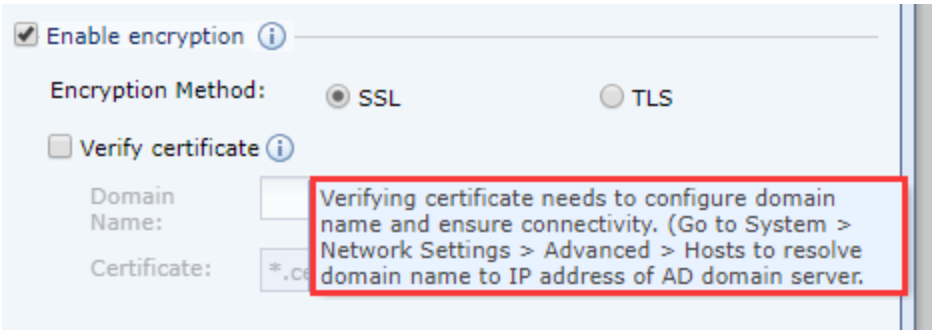
7.4.2 Enable Encryption

As shown in the figures below:

- The LDAP server can be configured not to enable encryption. In this scenario, the LDAP server signing requirement is not enabled on the Microsoft AD domain.
- If the AD domain has been configured to enable LDAP server signing requirement, then encryption must be turned on here. The encryption method can be selected by yourself, and the authentication port can be modified according to the selected encryption method as described above.
- The verify certificate function can be turned off, and it will not affect the connection with the AD domain with server signing requirement enabled.
- If the verify certificate function is enabled, you need to configure the domain name and import the certificate file:
    - The configuration of the domain name needs to be configured as the full computer name of the AD domain server: as shown below, you can log in to the AD domain server to obtain this field, as shown in the following figure:



- After the domain name is configured, you need to add the host rule to resolve the filled domain name to the IP address of the AD domain server:



- Import the certificate. The certificate needs to be a Base64 encoded .cer format certificate exported from the root certificate file on the AD domain server. This is described in the [Configuration of Server Certification Installation] section and will not be repeated here.

7.5 IWA SSO Configuration

The IWA single sign-on function will be affected by the **server signing requirement** enabled in the AD domain. If the server signing requirement is enabled on the AD domain, you need to enable the encrypt connection at the IWA single sign-on location: