CUCILync Installation and Configuration

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Introduction

This document provides step−by−step installations and integrations of CUCILync with Microsoft Lync 2010 and Cisco Unified Communication Manager.

Note: The document covers steps that are required to install AD, Exchange and Lync in the lab and does not cover CUCM, Cisco Unity Connection.

Prerequisites

Requirements

For staged approach to the Standard Edition Lync deployment, this is the minimum configuration required to run Lync. The initial Standard Edition topology deployment described in this document includes these environment and components:

- A single forest, single domain Active Directory structure.

- A single domain controller with Domain Name System (DNS) and an Enterprise Root certification authority (CA)
- Exchange

Components Used

The information in this document is based on these software and hardware versions:

- Active Directory Server
- Exchange Server
- Lync 2010 Server
- Cisco Unified Communication Manager (CUCM) 8.5
- PC Client Machine

Note: VMWare for AD, Exchange and Lync.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Conventions

Refer to the Cisco Technical Tips Conventions for more information on document conventions.

Cisco UC Integration for Microsoft Lync

Microsoft Lync Server 2010 communications server offers instant messaging (IM), presence, conferencing, and telephony solutions that can support enterprise−level collaboration requirements.

Cisco Unified Communication Integration (CUCI) for Microsoft Lync is a desktop integration that provides access to Cisco Unified Communications for Microsoft Lync. The solution extends the presence and instant messaging (IM) capabilities of Microsoft Lync by providing access to a broad set of Cisco Unified Communications capabilities, which includes softphone standards−based video, unified messaging, audio, video and web conferencing, desk−phone control, and phone presence.

Cisco UC Integration for Microsoft Lync is tightly integrated with Microsoft Lync to deliver a consistent and compelling user experience while providing the benefits of increased employee productivity and collaboration, reduced infrastructure complexity, and a lower total cost of ownership (TCO).

Configure

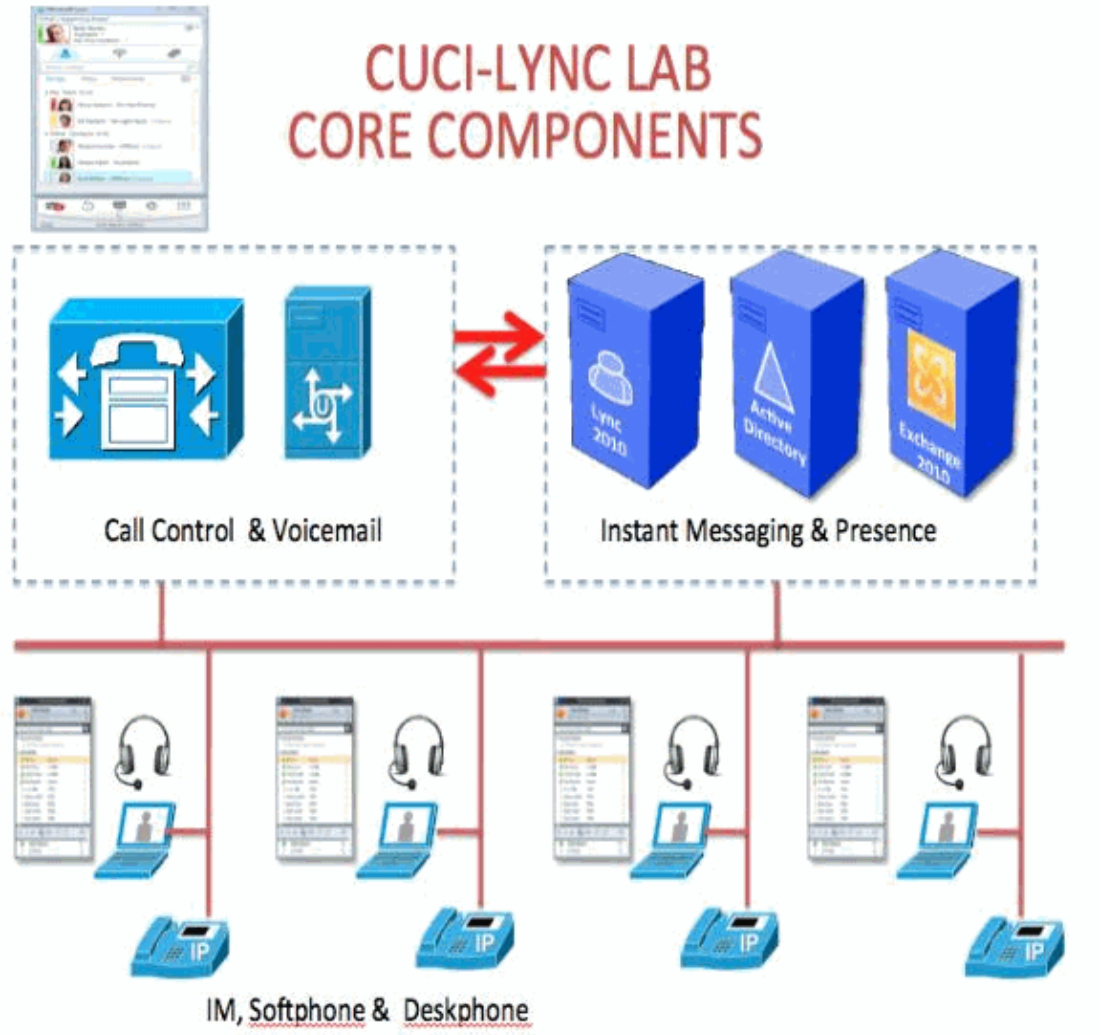
These are the pre−requisites for CUCILYNC integration.

1. After the installation of Pre−requisites install Active Directory (AD)
2. Create Users inside Active Directory
3. Activate DNS and add DNS entries for Servers and Clients
4. Activate Certificate Authority (CA) Services on the same server
5. After installing Pre−requisites install Exchange
6. Create Mailbox
7. Verify email exchange through Outlook
8. After the installation of Pre−requisites install Microsoft Lync 2010 server
9. Verify IM & Presence with native Lync 2010 client

10. Install Lync 2010 Clients on PC.
11. Install Outlook 2010 and configure user Mailbox

Network Diagram

This document uses this network setup:



Install Active Directory Server

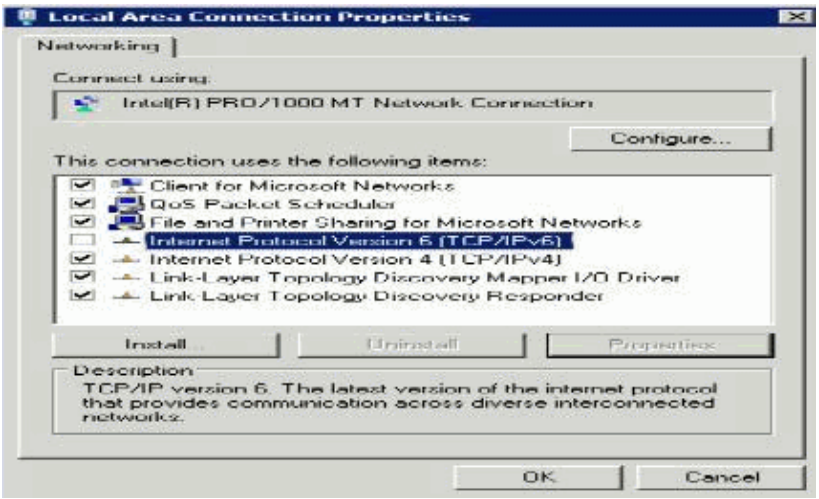
Install Active Directory Domain Services (AD DS) on a member server that runs Windows Server 2008 R2 with the Active Directory Domain Services Installation Wizard (Dcpromo.exe).

The member server should be located in the forest root domain. After you install AD DS successfully, the member server becomes a domain controller.

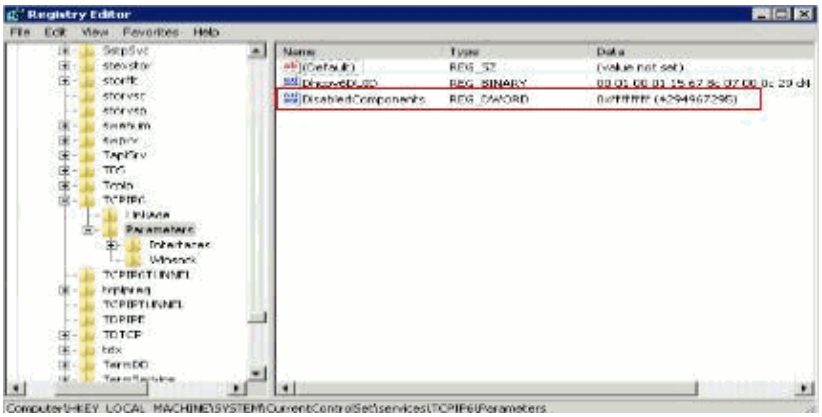
You can install AD DS with the Windows user interface (UI). The Windows UI provides two wizards that guide you through the installation process for AD DS. One wizard is the Add Roles Wizard, which you can access in Server Manager. The second wizard is the Active Directory Domain Services Installation Wizard (Dcpromo.exe). Complete these steps for installation.

1. Disable IPv6 with these steps:

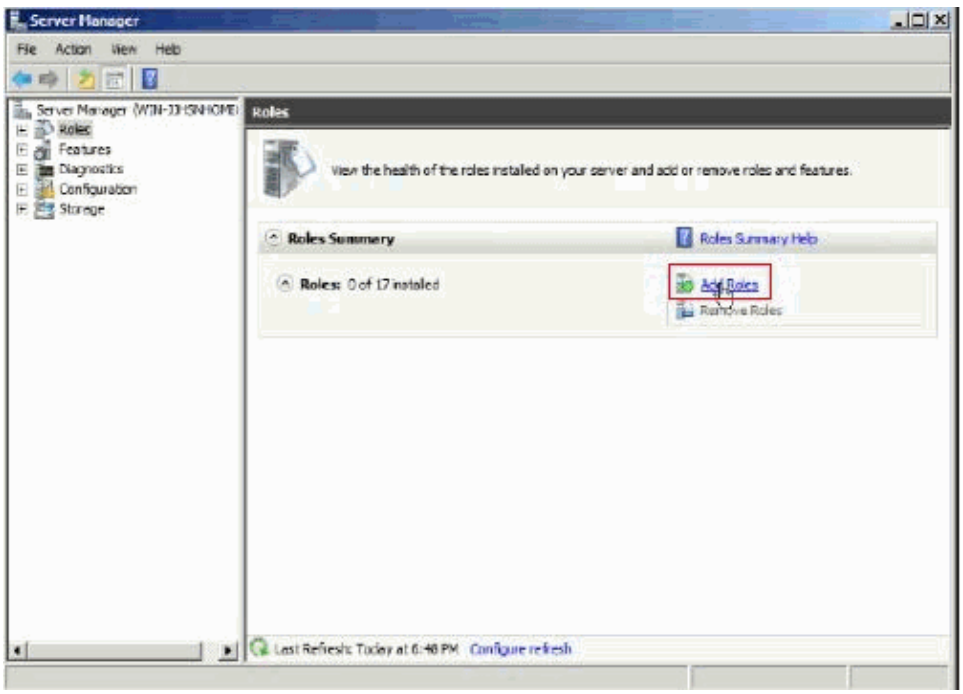
- Uncheck it on the network adapter in order to disable IPv6.



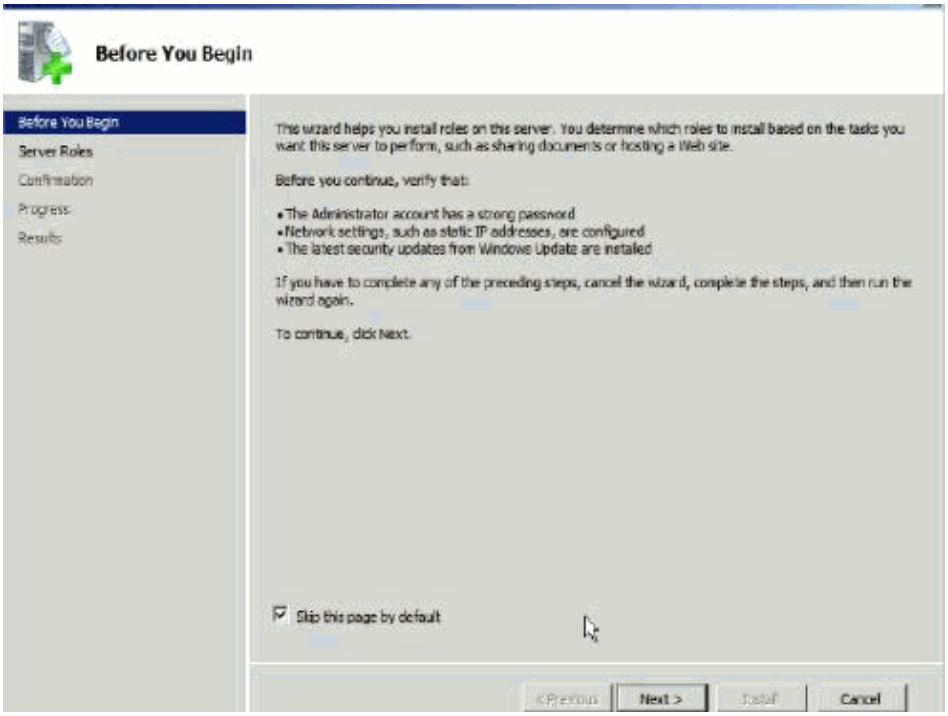
- In order to add the DWORD to the registry, choose **Run** and type **Regedit**. Then choose **HKEY_LOCAL_MACHINESYSTEM > CurrentControl > SetServices > Tcpip6 > Parameters > DisabledComponents** and set the value to **0xFFFFFFFF**.



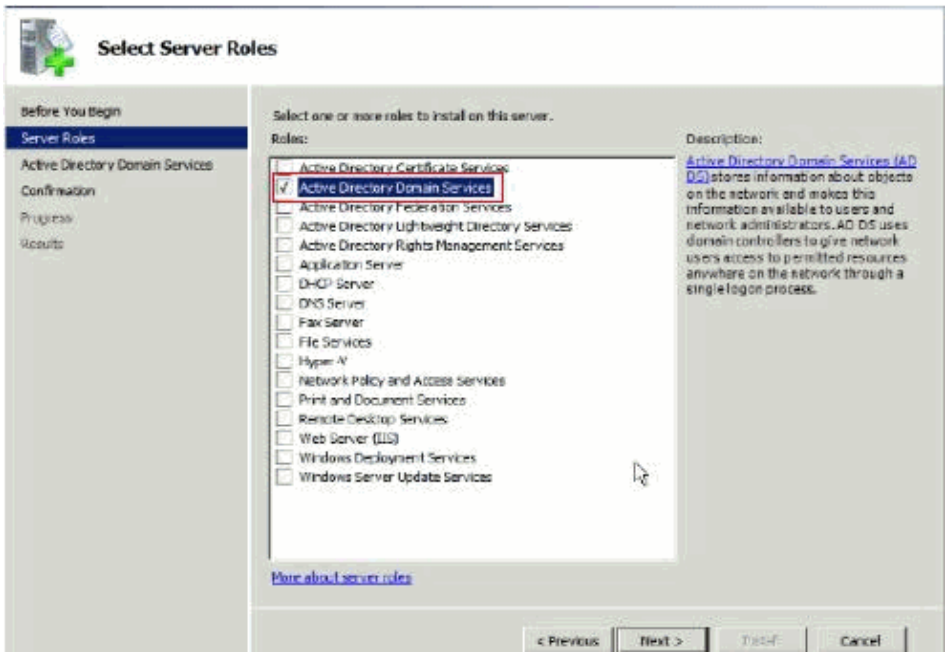
2. Start the Server Manager and start the installation of the AD DS role. For that from Server Manager, Click **Add Roles**.



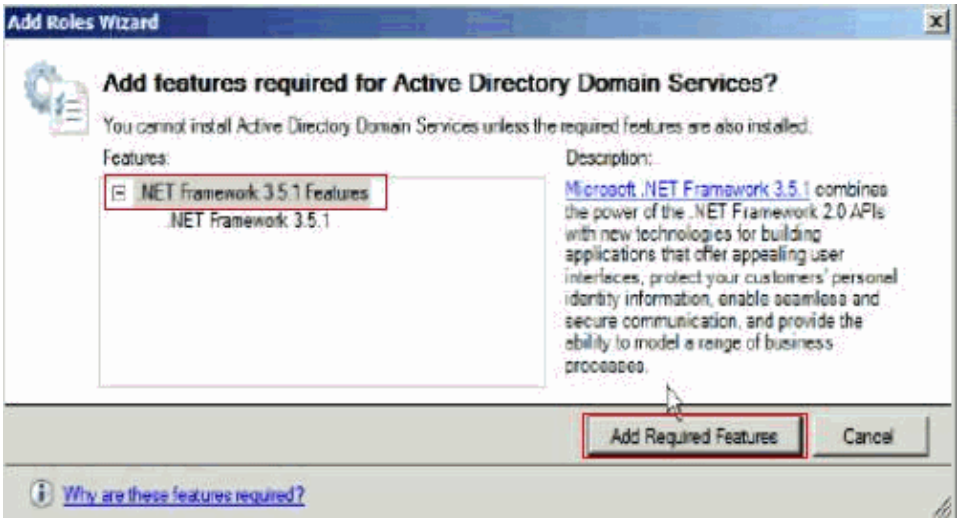
3. On the Add Roles wizard window, click **Next**.



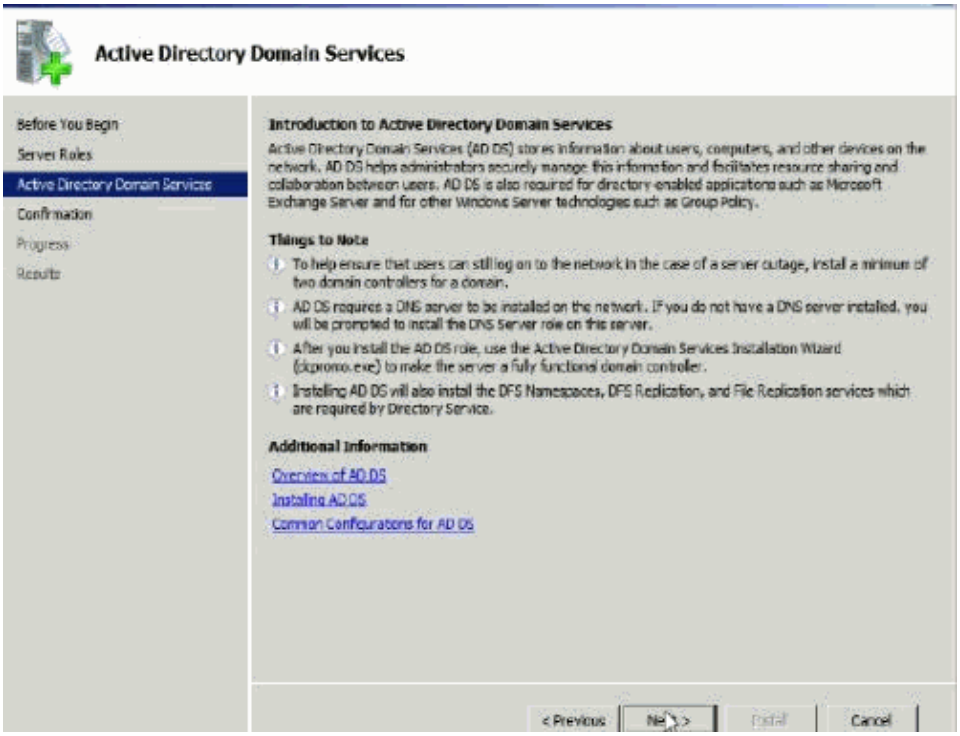
4. Choose the **Active Directory Domain Services** Role.



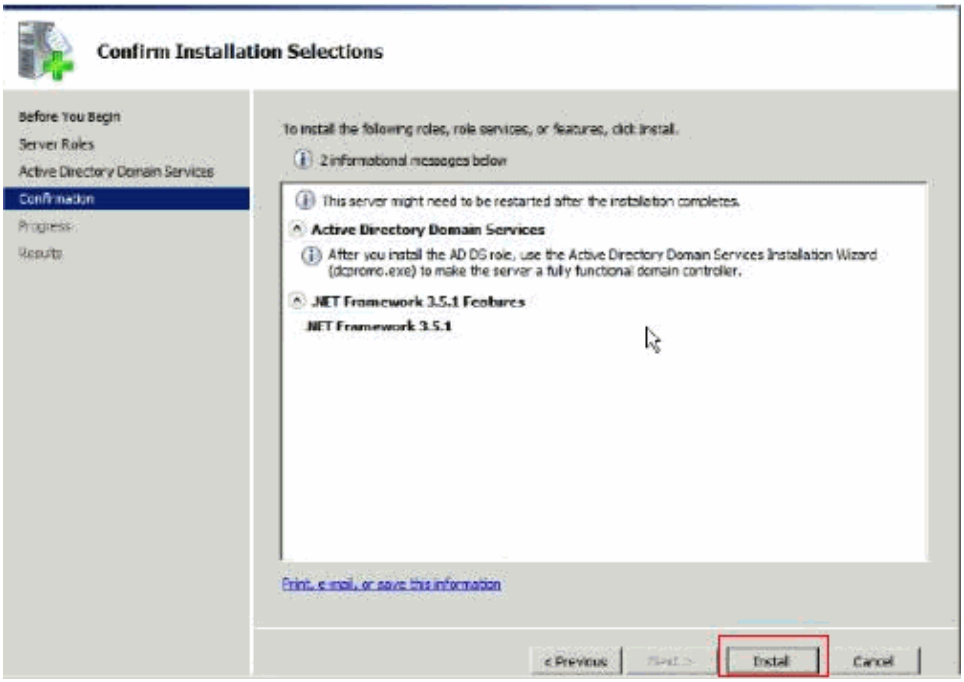
5. You are prompted to install the *.NET framework 3.5.1 features*. Choose **Add Required Features** and click **Next**.



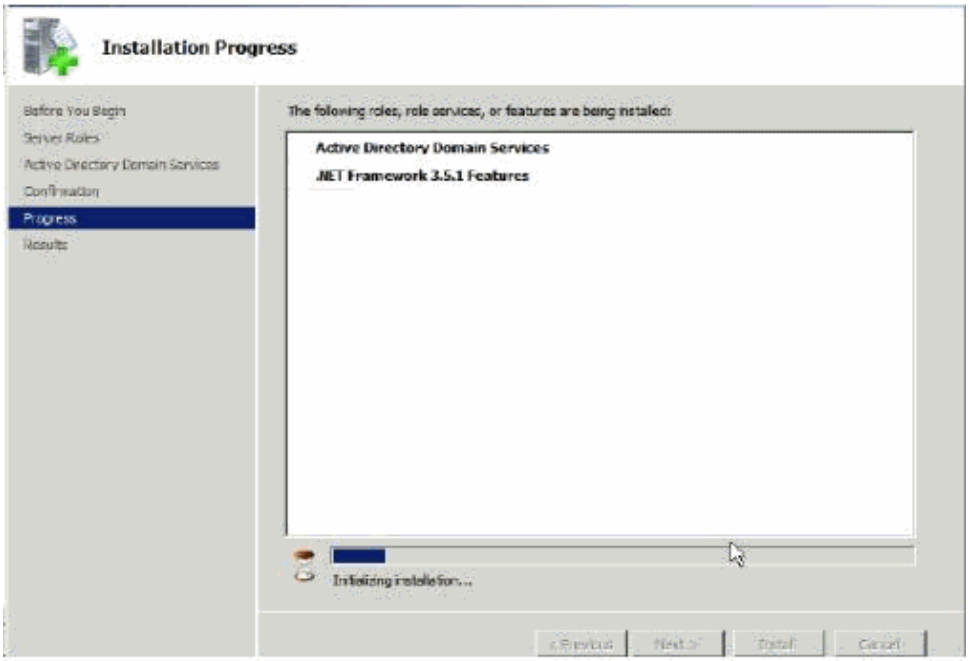
6. An introduction to Active Directory Domain Services appears with some points to note that you have to read. Then click **Next**.

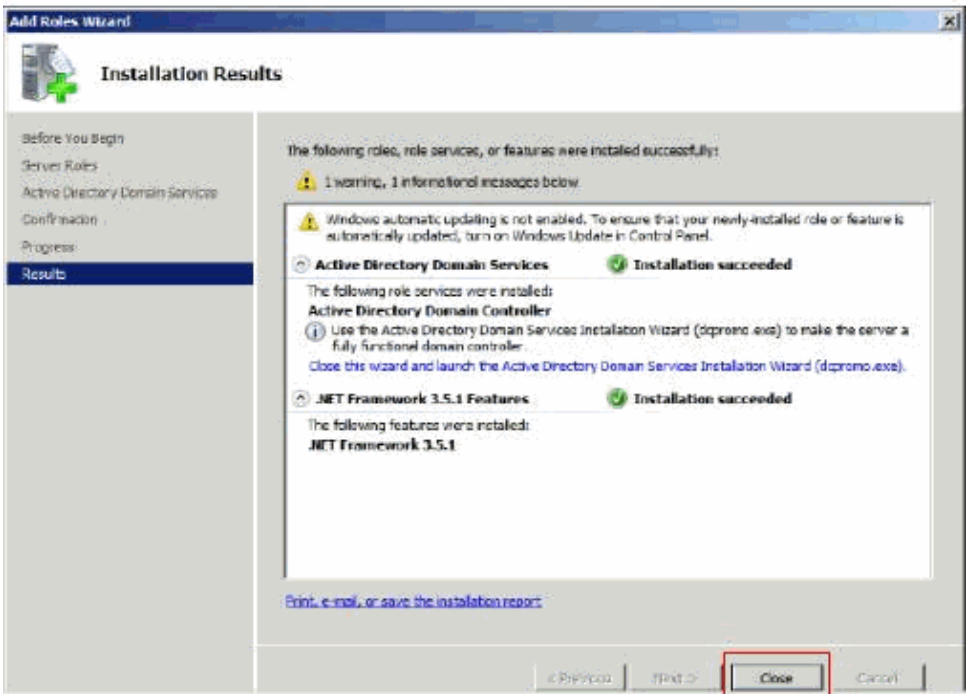


7. Next is the confirmation and summary page of the role installation. Click **Install**.



8. When the installation role finishes. Click on **Close**.

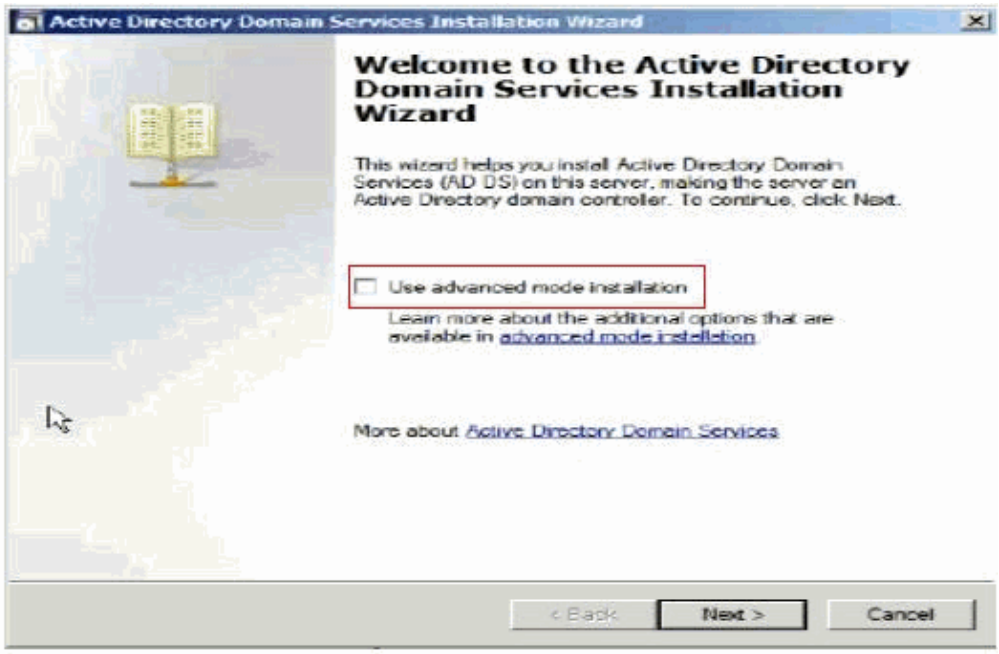


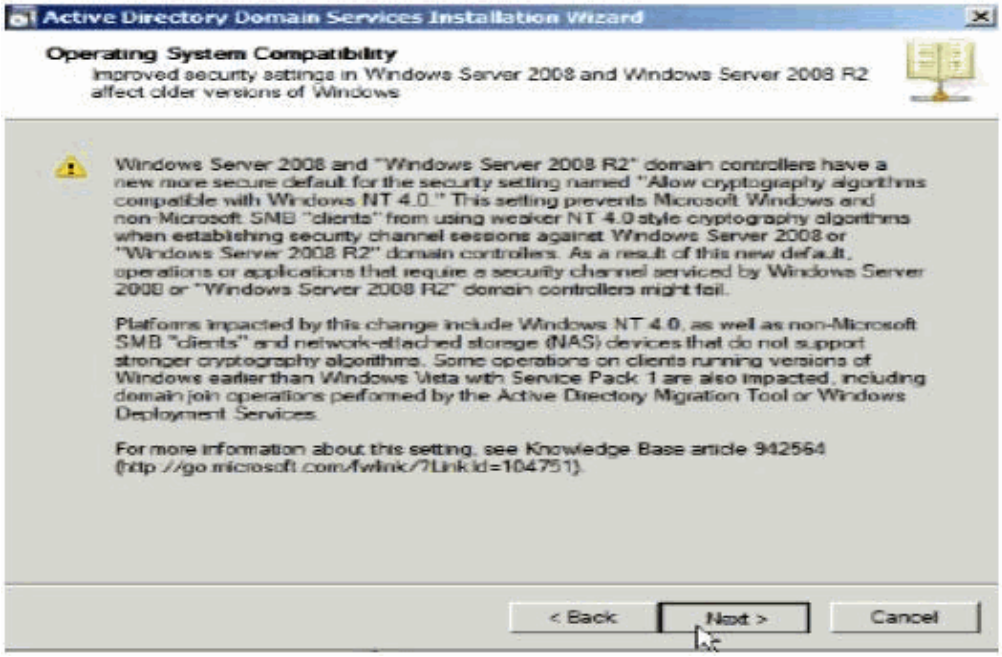


Active Directory Domain Services Installation Wizard

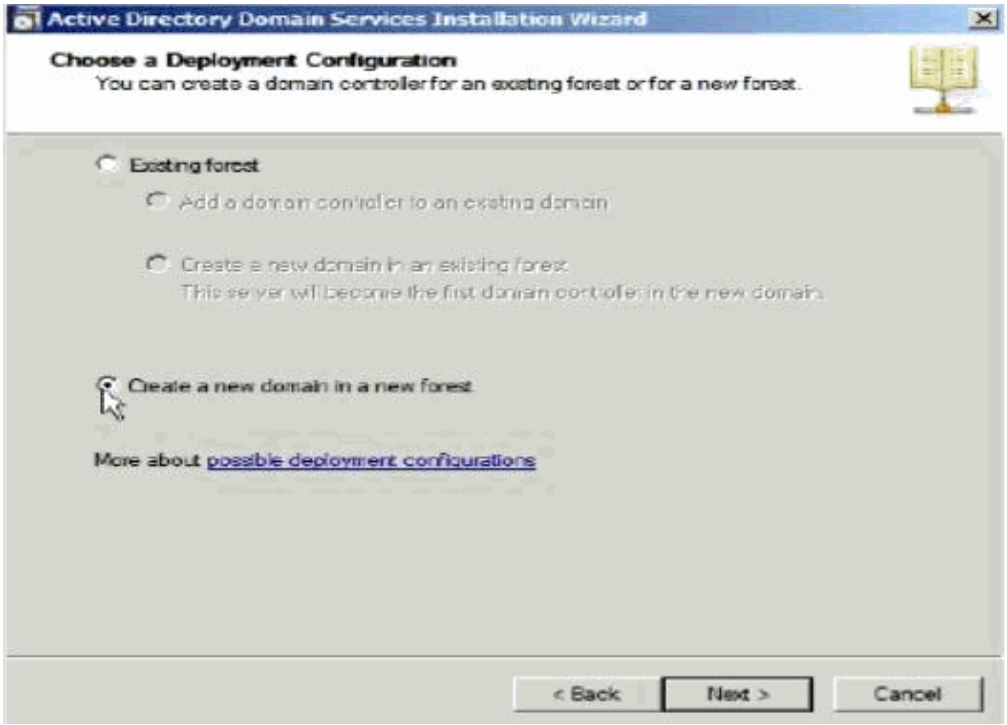
Complete these steps in order to install **Active Directory**.

1. Choose **Start > Run** and type **dcpromo**.
2. On the window that appears, uncheck **Use advanced mode installation** and click **Next**.

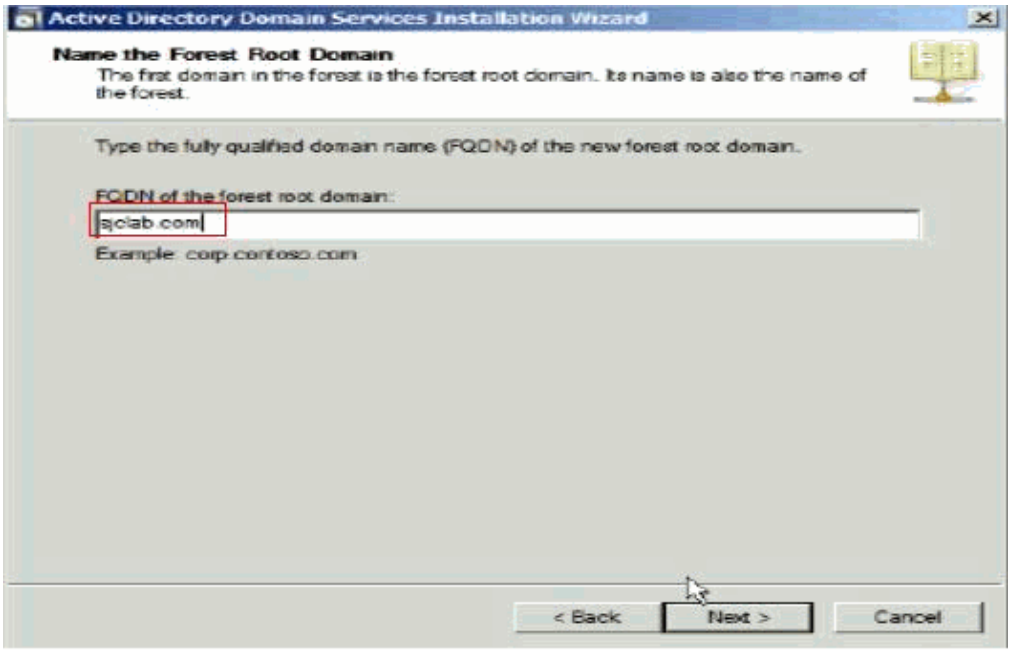




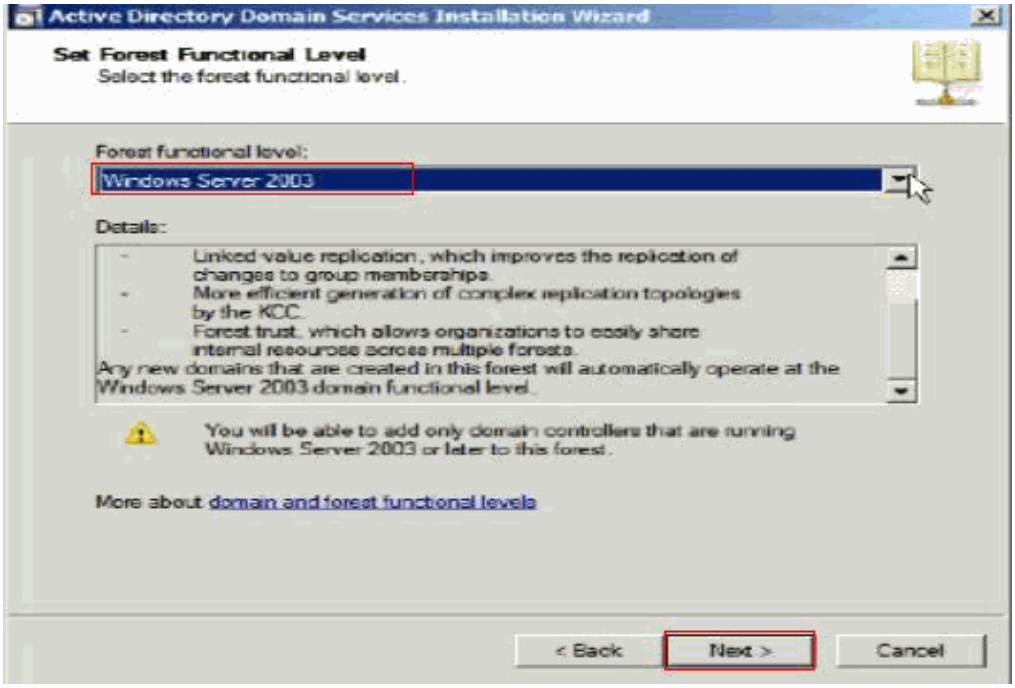
3. Choose **Create a new domain in a new forest**.



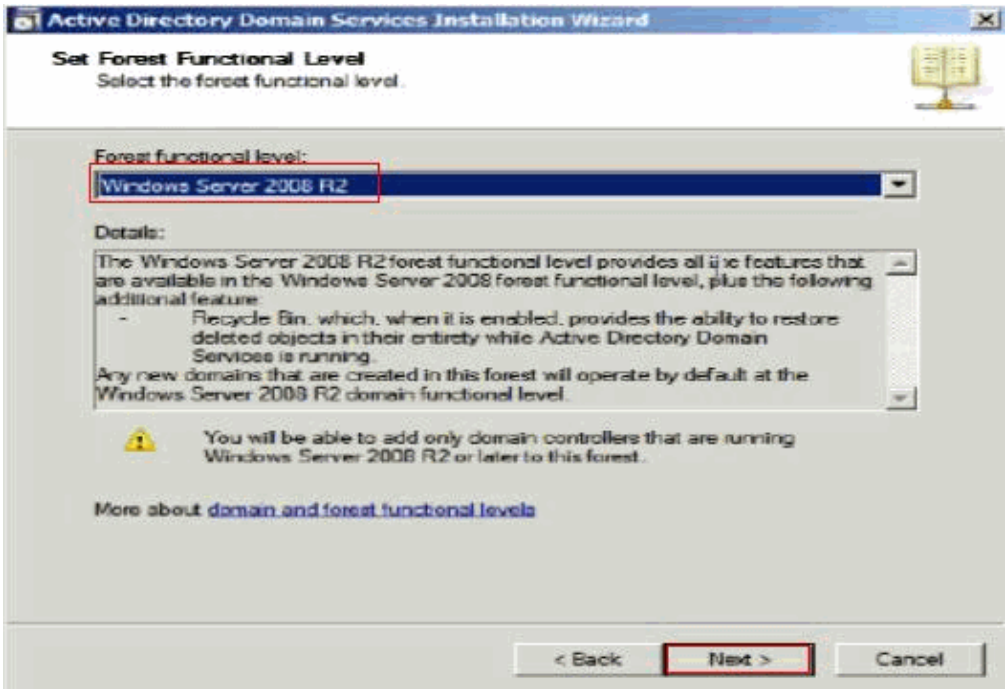
4. Set the FQDN of the forest root domain as **sjclab.com**. You can give any name here based on your domain name.



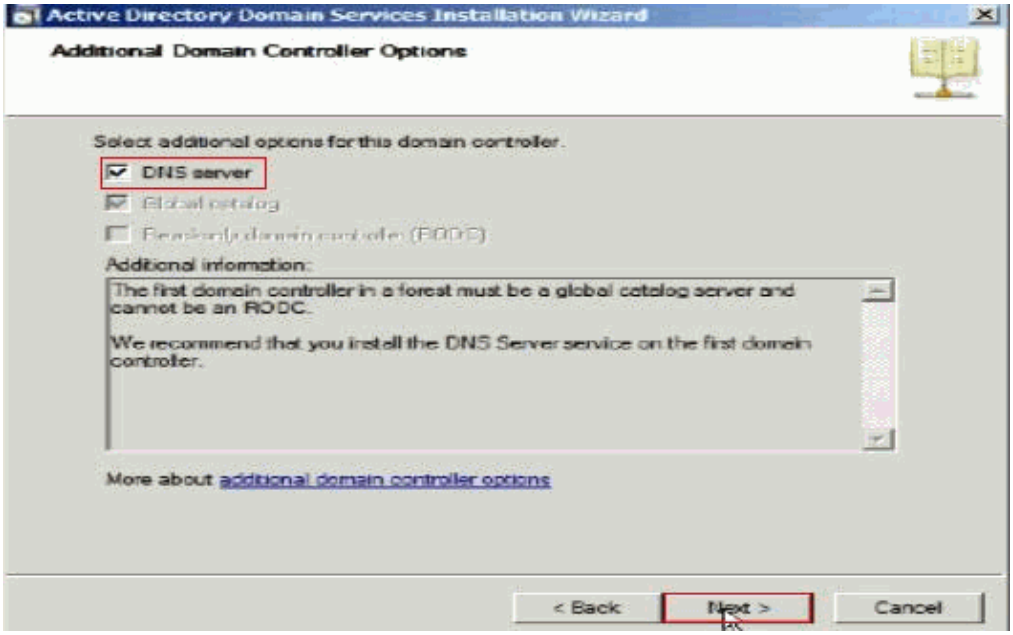
5. Set the Forest functional level to **Windows Server 2008** and click **Next**.



6. Set the Domain functional level to **Windows Server 2008 R2** and click **Next**.

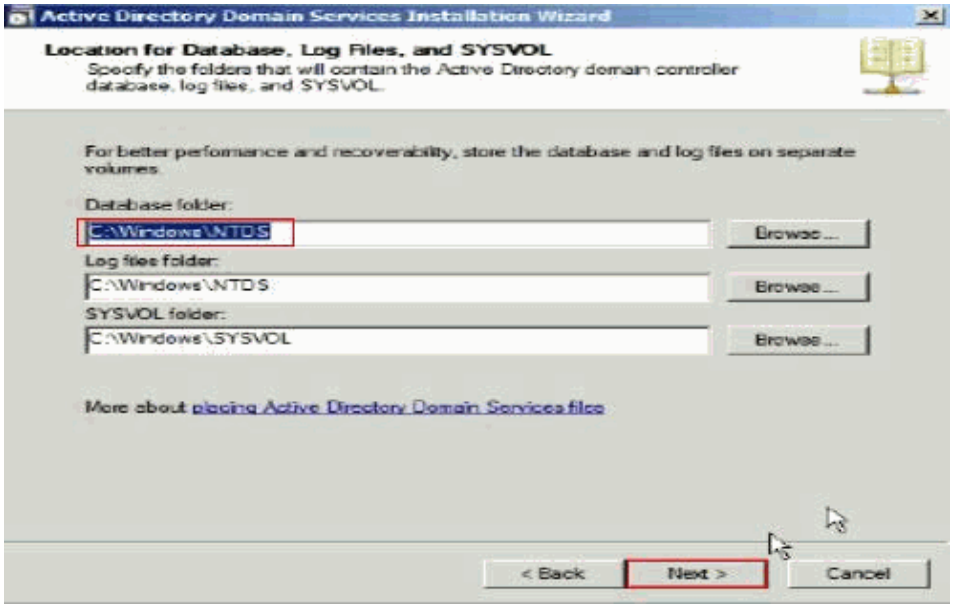


7. Choose additional options for this domain controller. Ensure that the **DNS server** is checked and click**Next**.

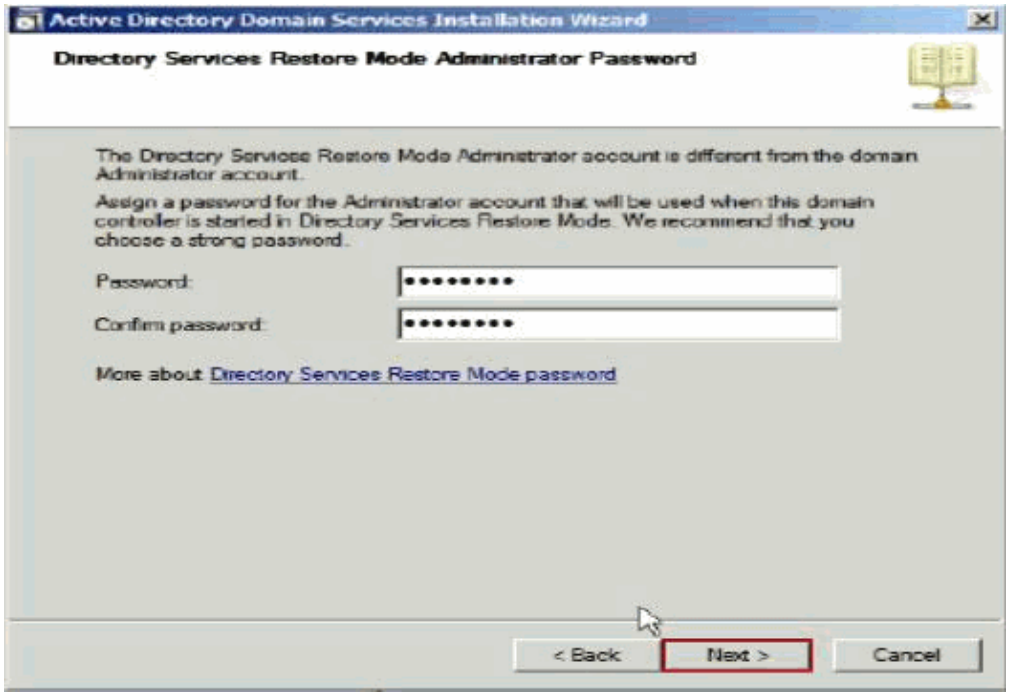


8. The `A delegation for this DNS server cannot be created... Do you want to continue?` message appears. Click **Yes**. This particular setup assumes a brand−new forest and everything, so no action is required.

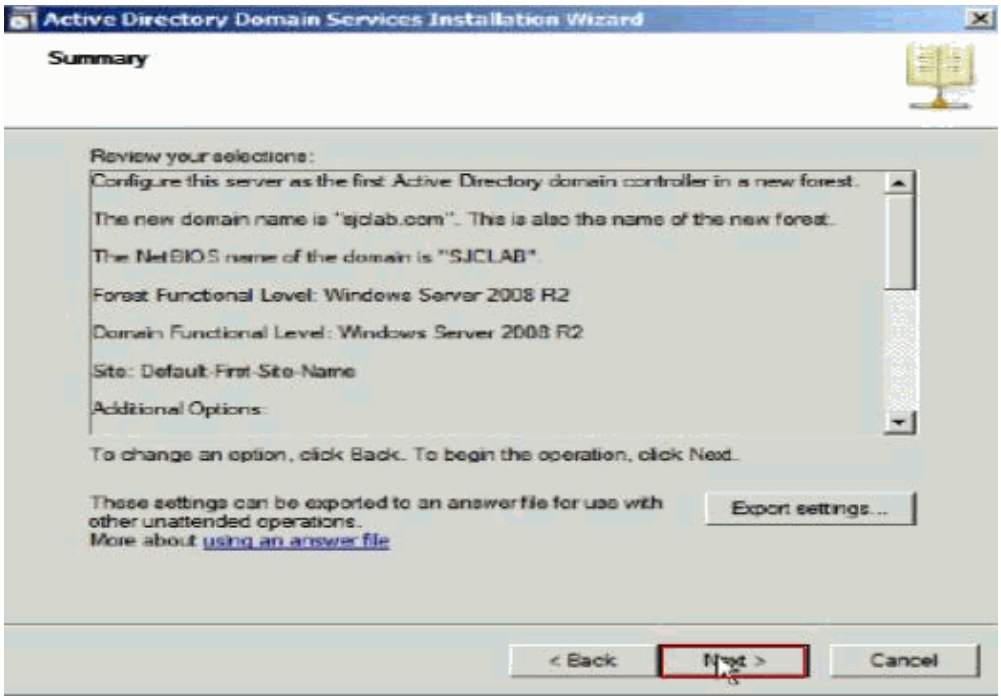
9. Default **Database / Log files / SYSVOL** folder locations as **C:\Windows\NTDS** should be fine, when you create a smaller deployment with less loads. Otherwise you need to reconsider the locations. Click **Next** after you choose those locations.



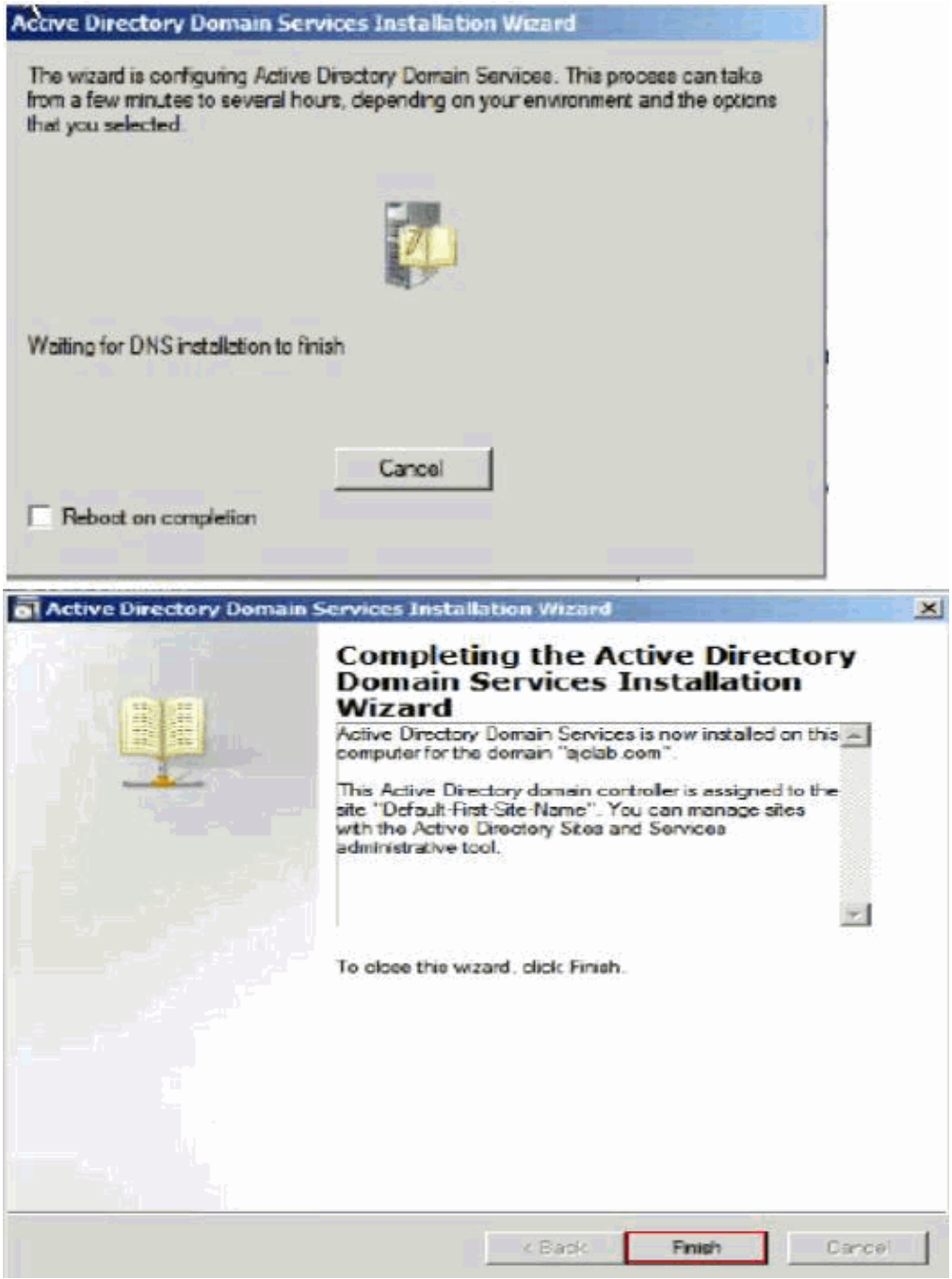
10. Enter a *Directory Services Restore mode administrator password* and click **Next**.



11. On the Summary Window, click **Next**.



12. The Installation continues to proceed. Click **Finish** when it is done.

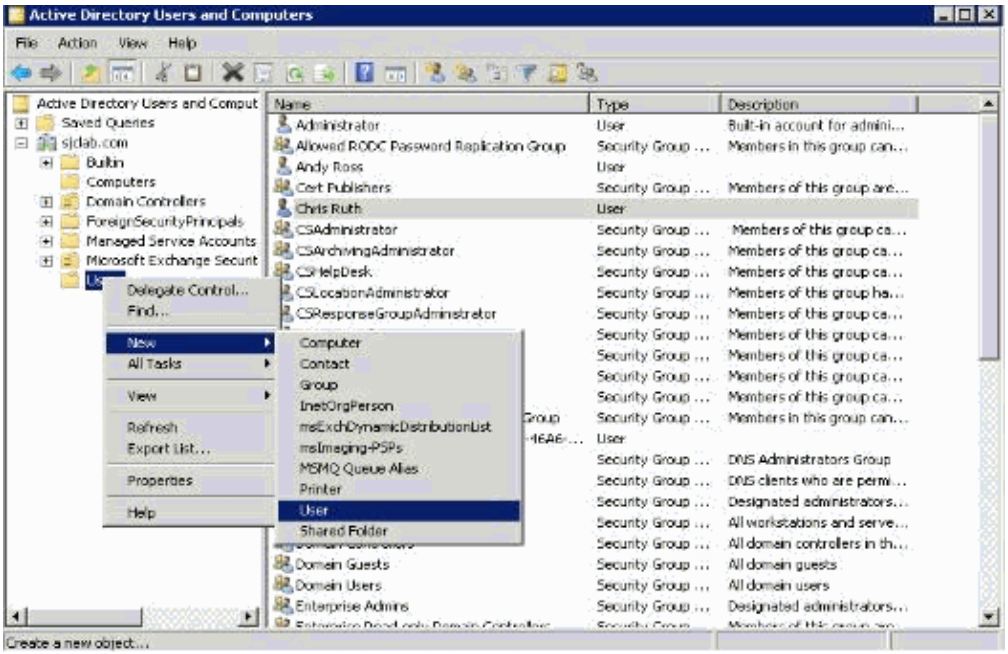


13. Then the system restarts.

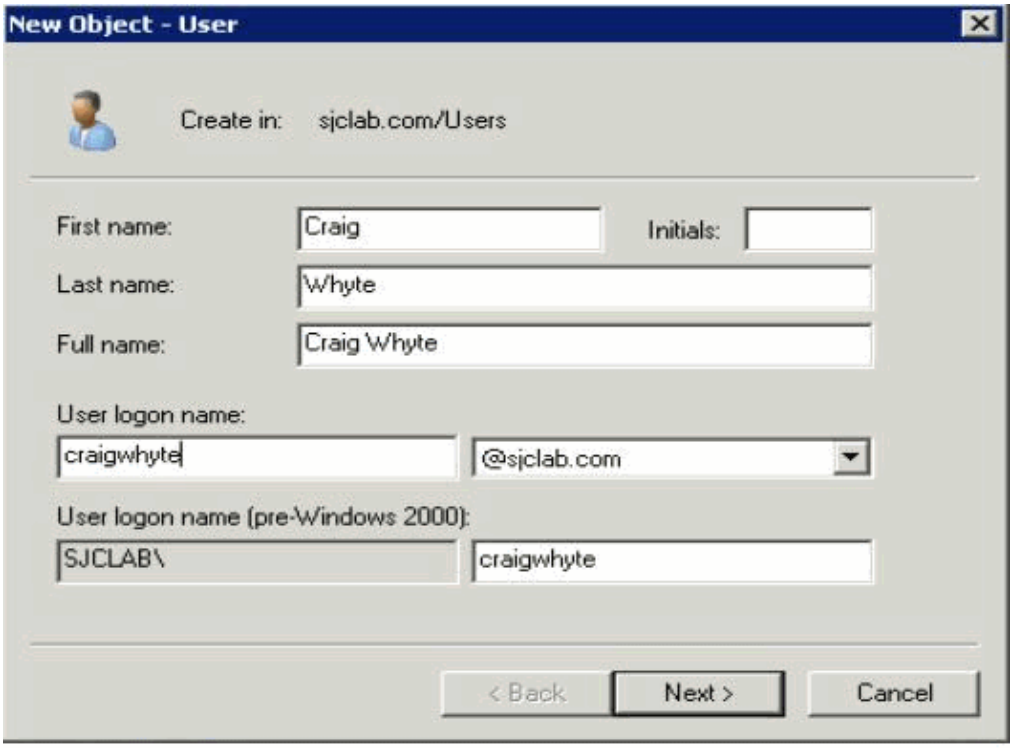
Create Users Inside Active Directory

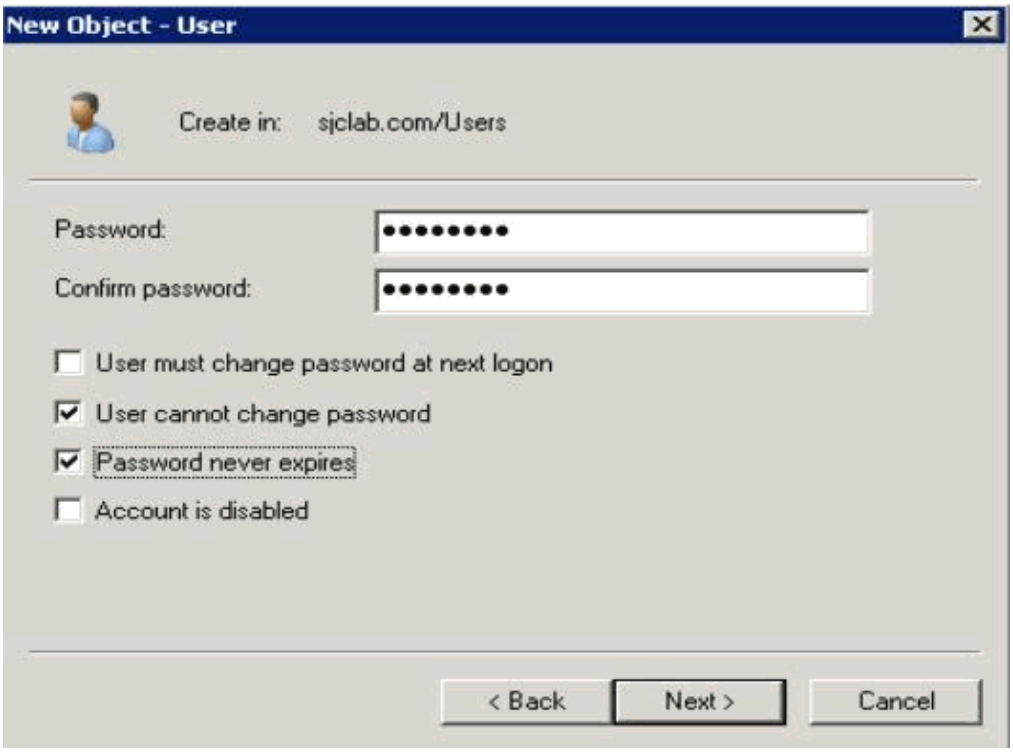
Complete these steps in order to create a new user:

1. Choose **Start > All Programs > Administrative Tools >| Active Directory Users and Computers**.
2. Create a **new user** object in the current container

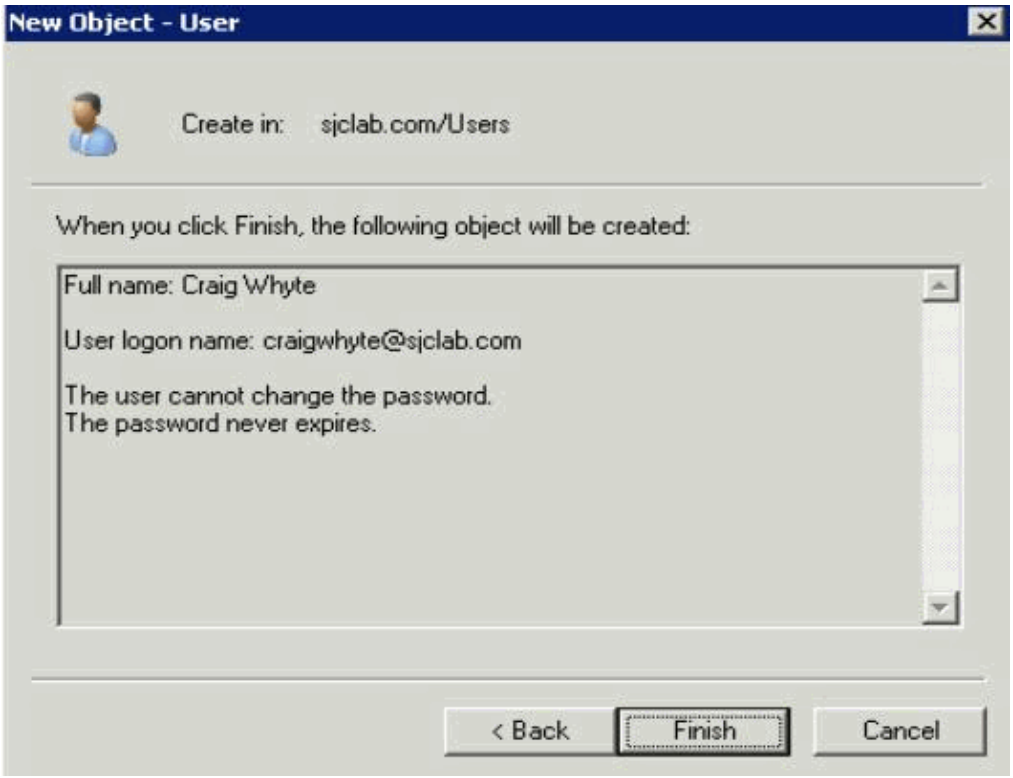


3. Enter the New User details and password. Click **Next**.

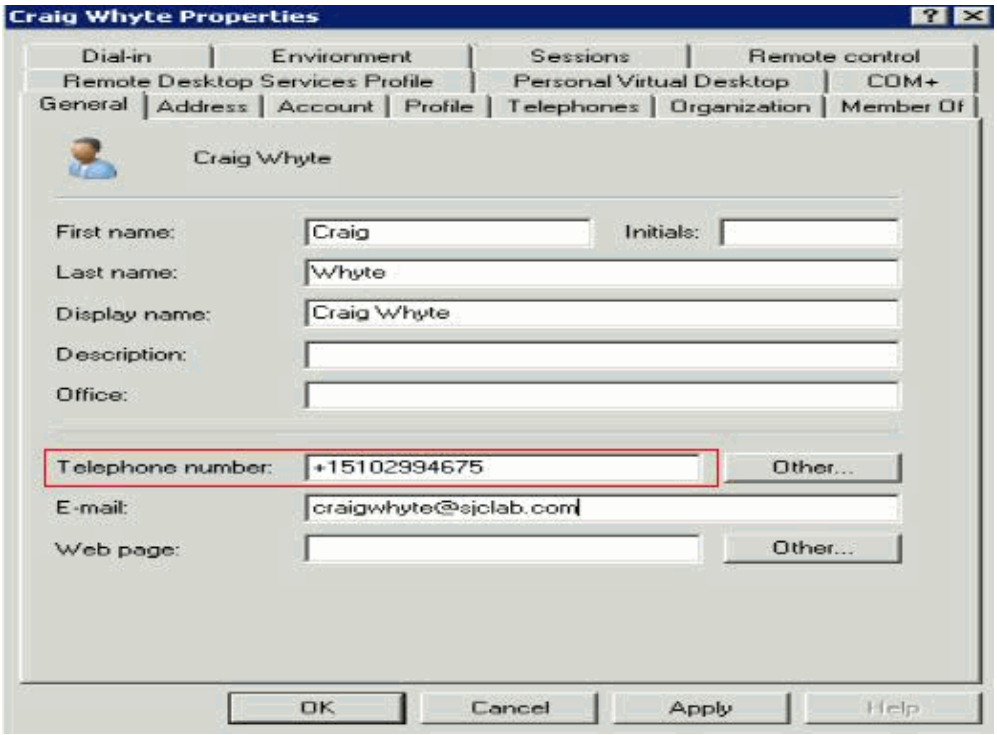




4. Click **Finish** and then the new user is created.



5. Now right click on the newly created user and choose **Properties**.
6. On the Window that appeared in the General tab, ensure that you add E164 Telephone number to AD Users.

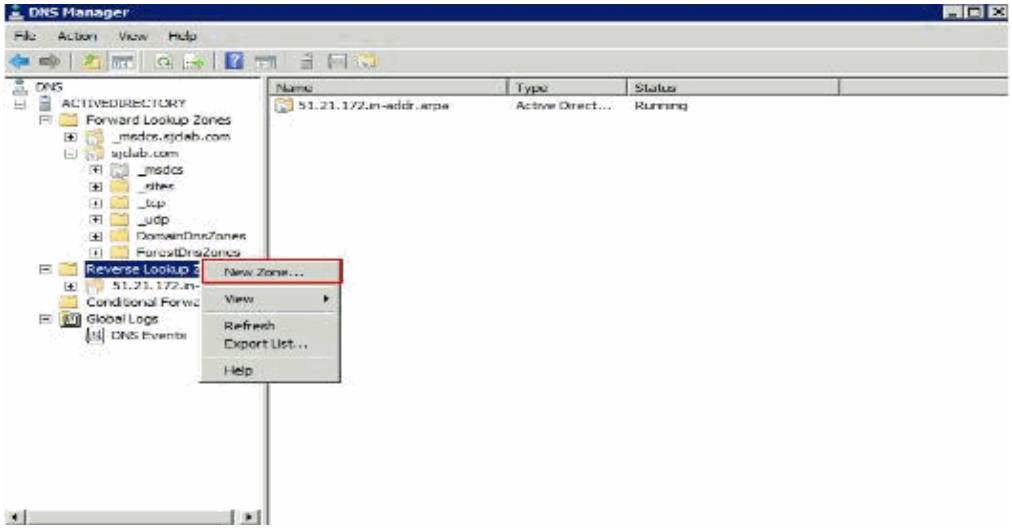


Create DNS Entries for Servers and Clients

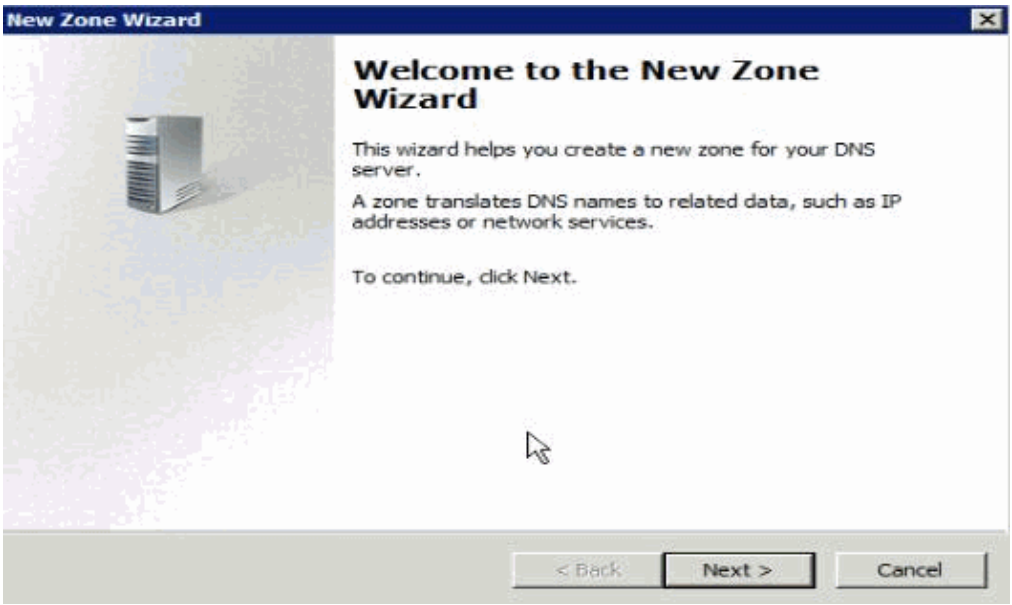
Complete these steps in order to accomplish the task.

1. The first step is to configure the Reverse lookup zone. This has to be done before you add the DNS entries for Servers and Clients.

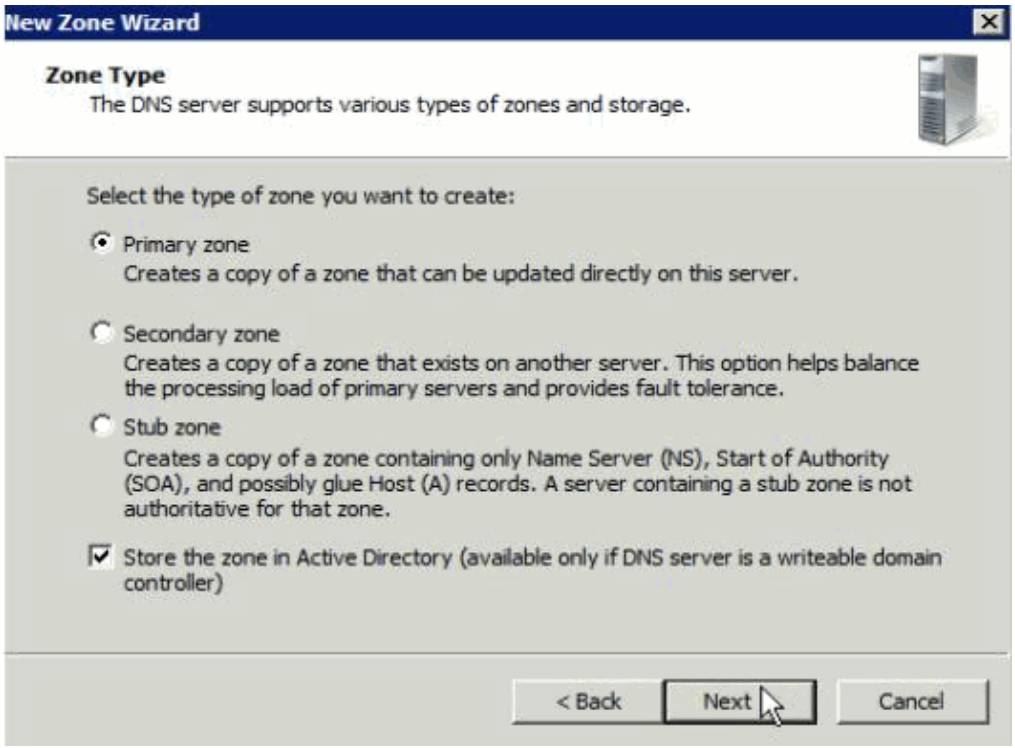
2. Choose **Start > Administrative Tools > DNS**.
3. Launch DNS Manager and navigate to the root domain, right−click on **Reverse Lookup Zone** and choose the option to create **New Zone** in order to launch the wizard.



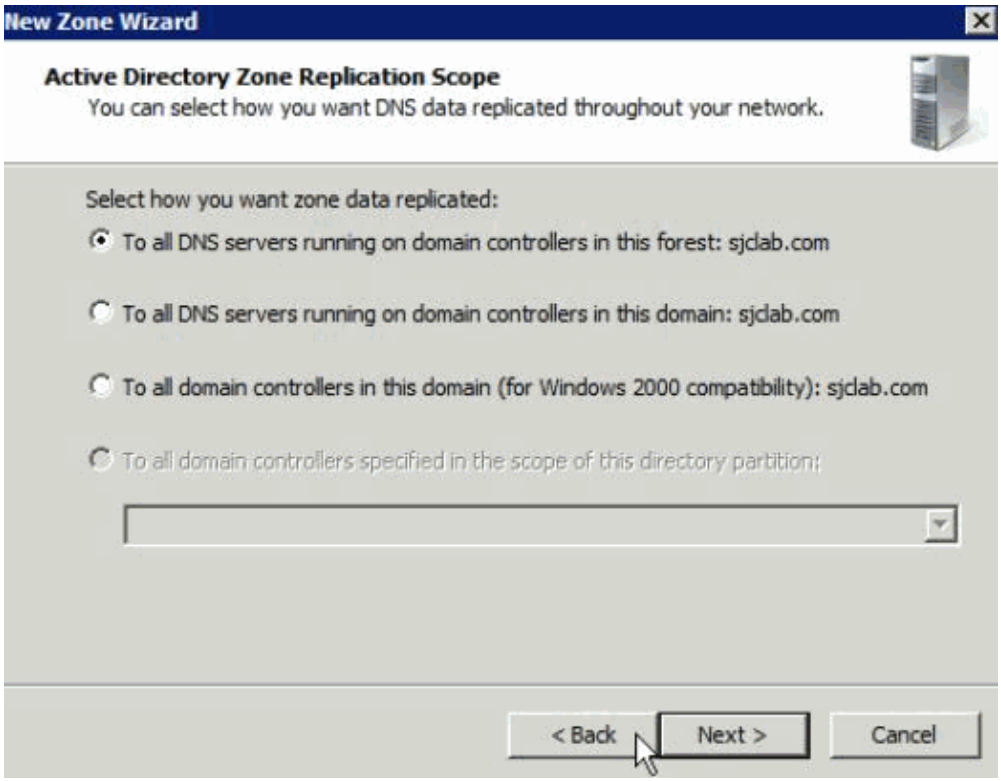
4. When the New Zone Wizard appears, click **Next**.



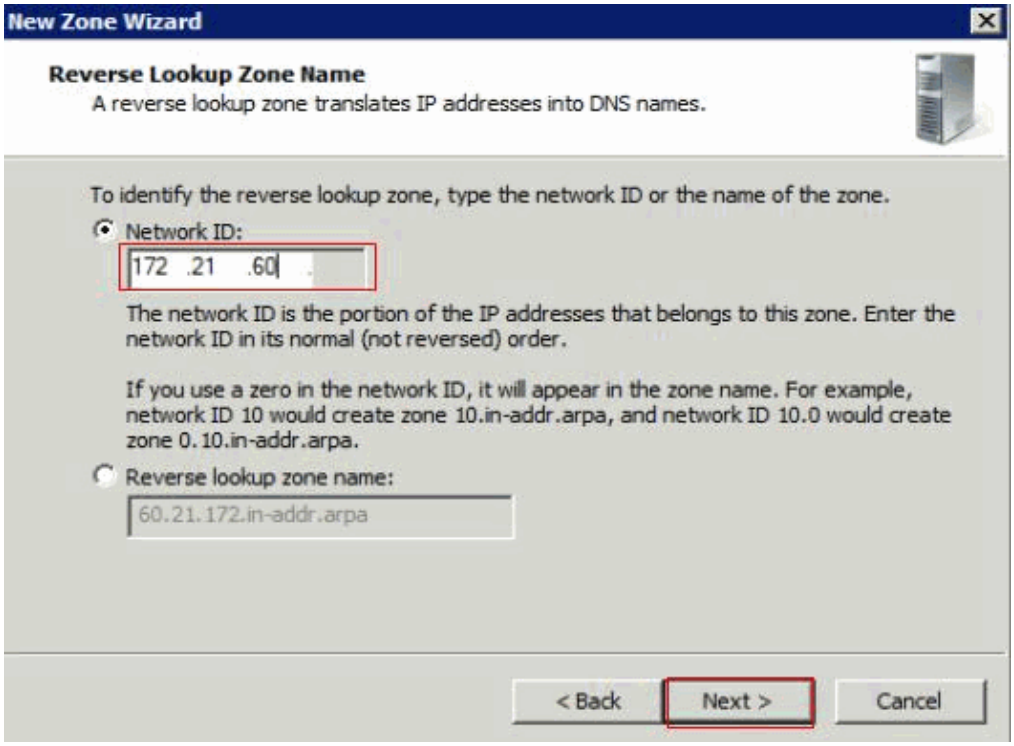
5. On the Zone Type page, choose **Primary Zone**, and then click **Next**.



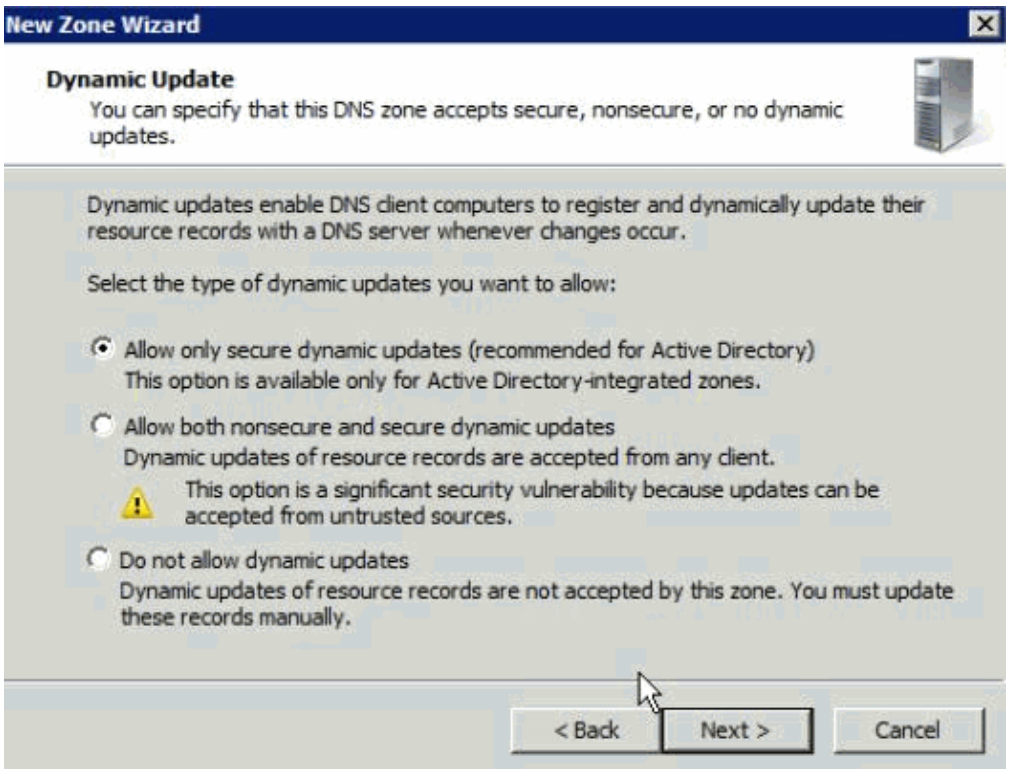
6. On the Active Directory Zone Replication Scope page, choose replication **To all DNS servers running on domain controllers in the forest**, and then click **Next**.



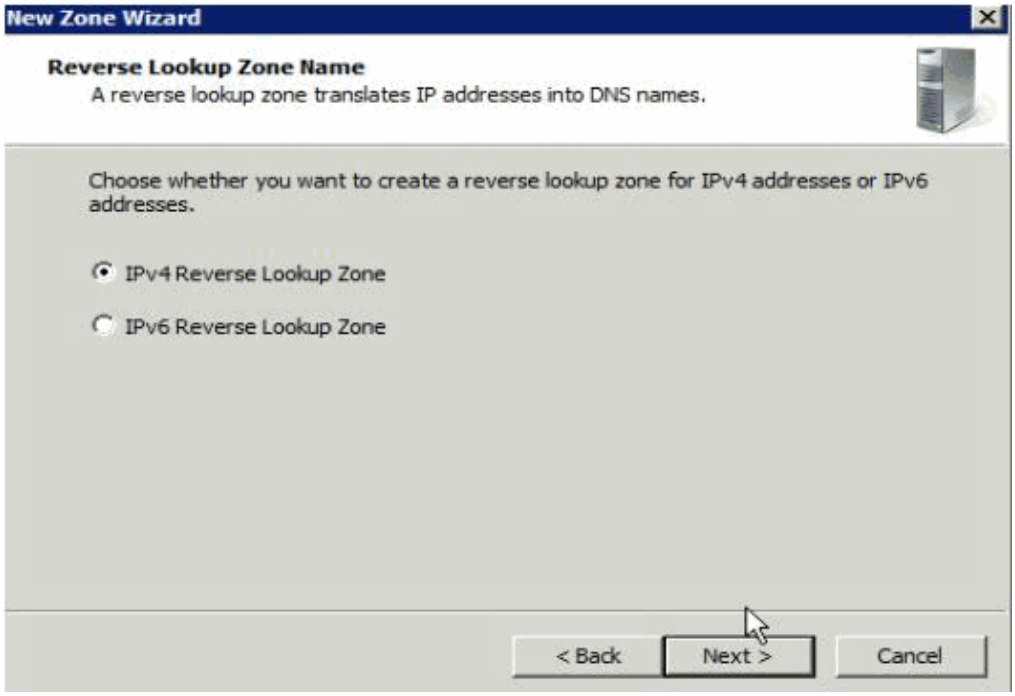
7. On the Reverse Lookup Zone Name page, in the Network ID field, type the start of the subnet range of your network, and then click **Next**.



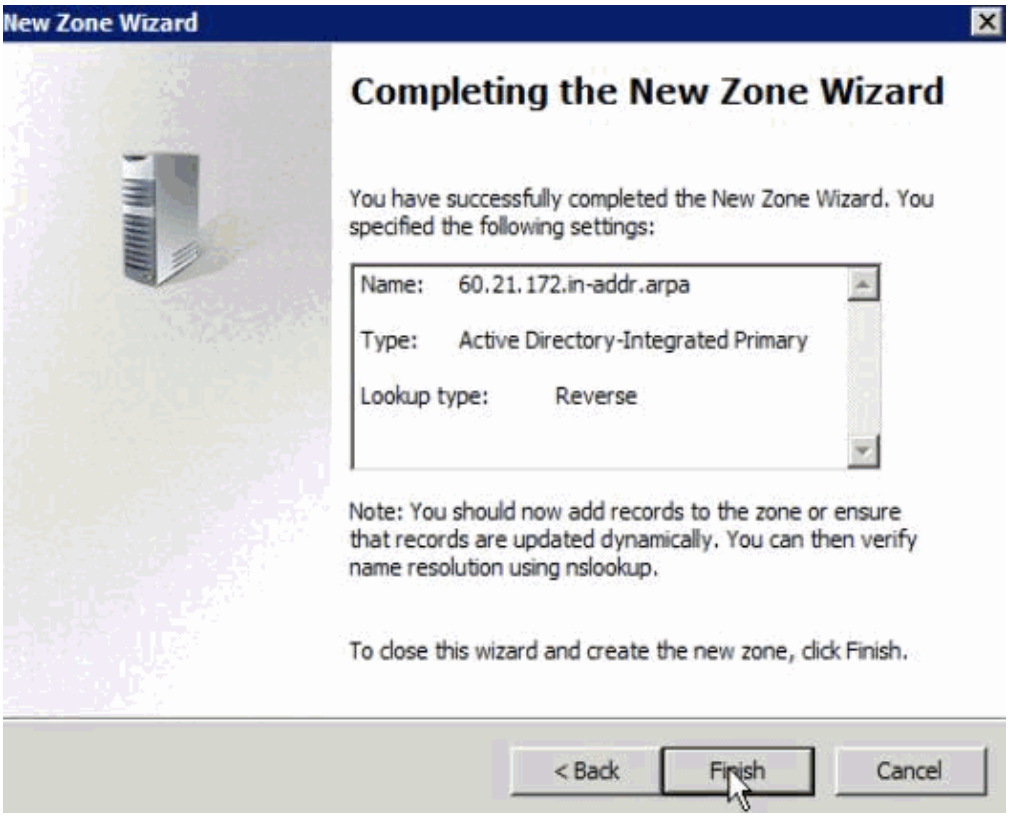
8. On the Dynamic Update page, choose **Allow only secure dynamic updates** and click **Next**.



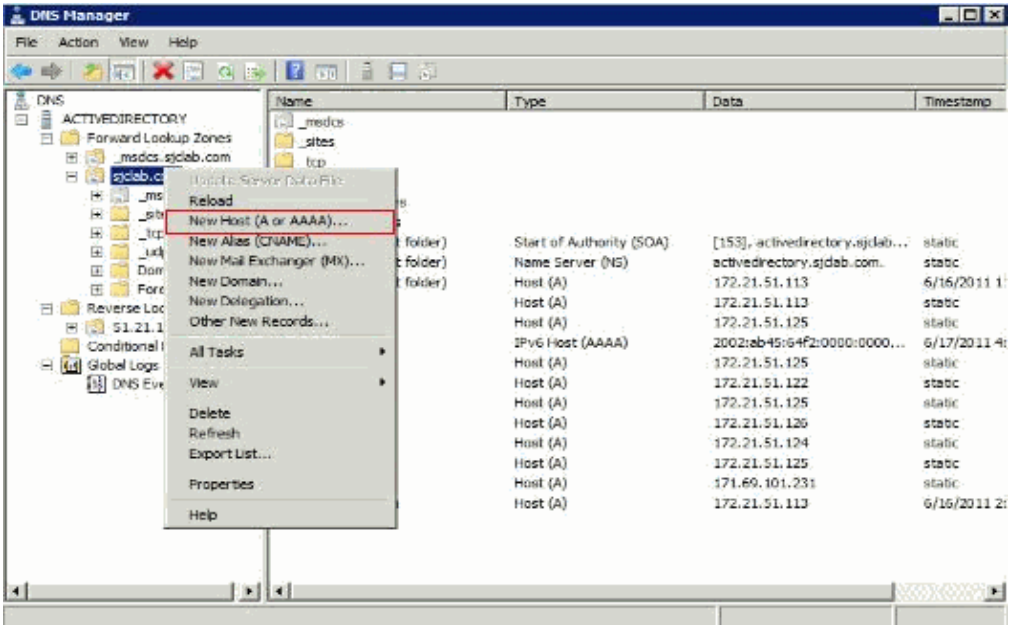
9. On the Reverse Lookup Zone Name page, choose **IPv4 Reverse Lookup Zone**, and then click **Next**.



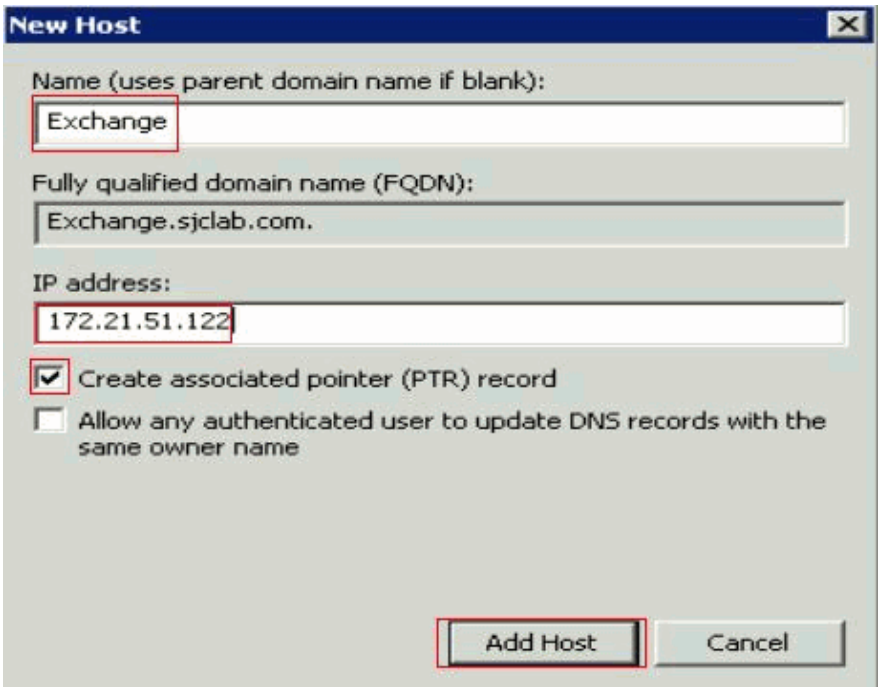
10. On the Completing The New Zone Wizard page, click **Finish**.



11. Now add DNS entries for Exchange, Lync servers and Lync clients. (Forward and Reverse DNS)
12. Launch DNS Manager and navigate to root domain under forward lookup zones.
13. Right−click on domain and choose **New Host (A orAAAA)** in order to add the DNS entry.



14. On the New Host wizard page enter the **Name, IP Address** and Check **Create associated pointer (PTR) record** for reverse lookup entries and click **Add Host**.

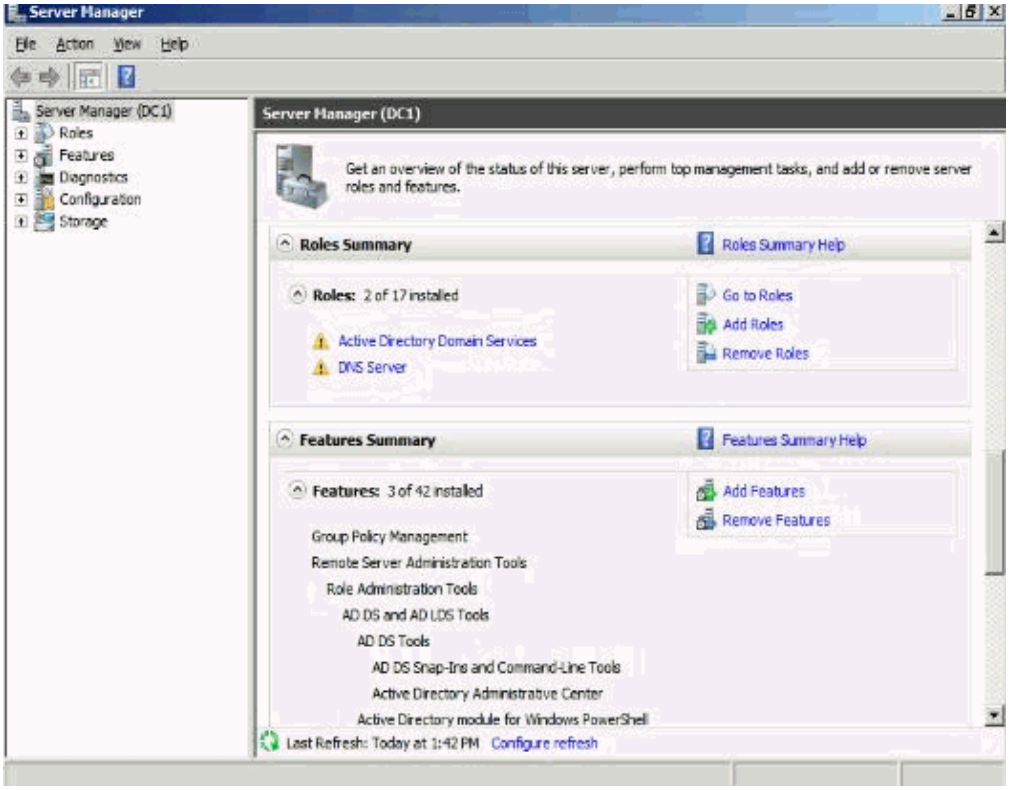


Note: The steps from 12 to 14 have to be done for Lync Servers and Lync Clients with their respective name and IP Address.

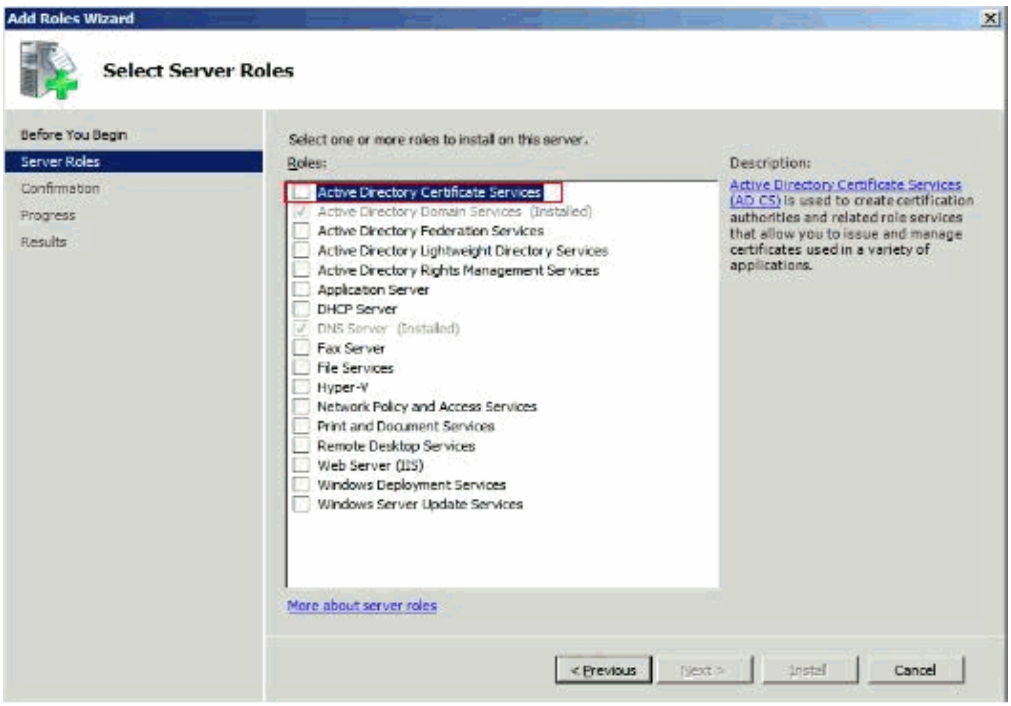
Certificate Authority Install

Complete these steps in order to accomplish the task.

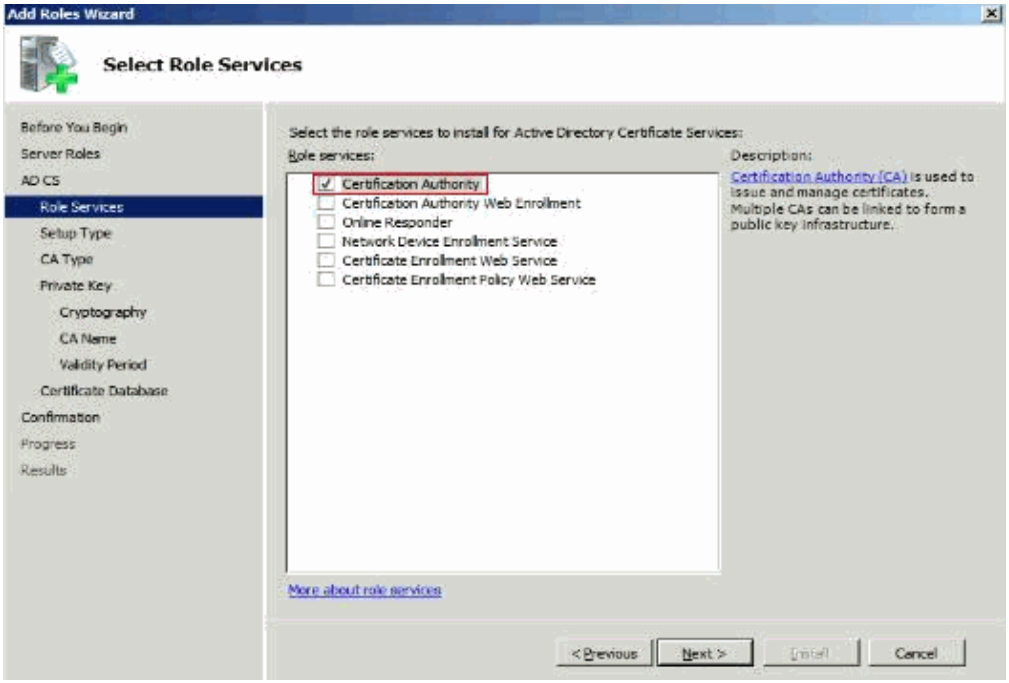
1. Log on to AD as a domain administrator.
2. Choose **Start > Administrative Tools > Server Manager**.



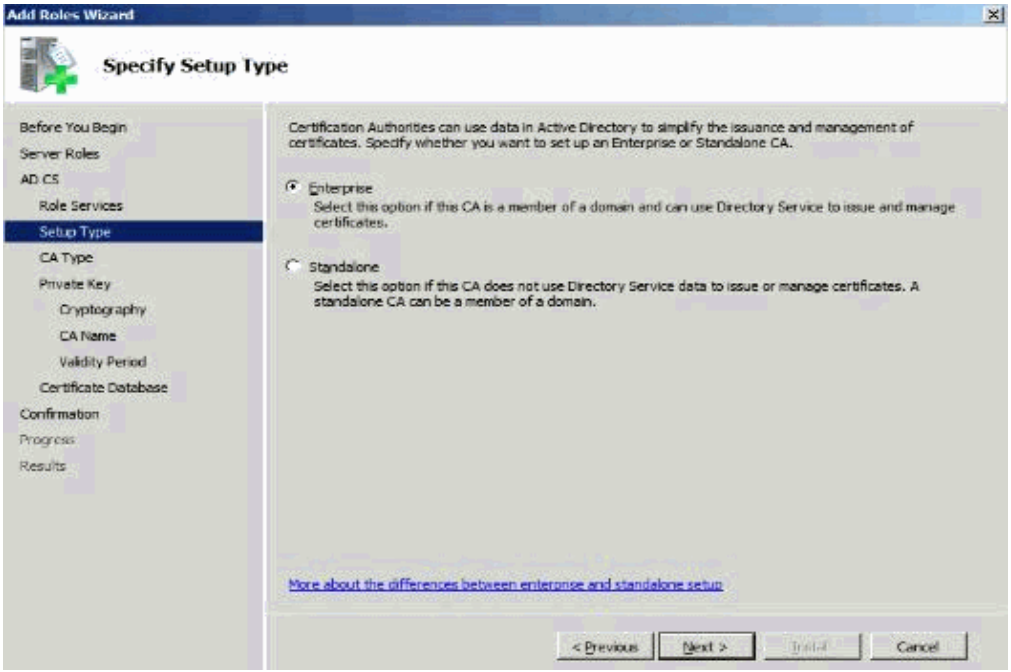
3. In the Roles Summary section, click **Add Roles**.
4. On the Select Server Roles page, choose the **Active Directory Certificate Services** check box. Then click **Next** two times.



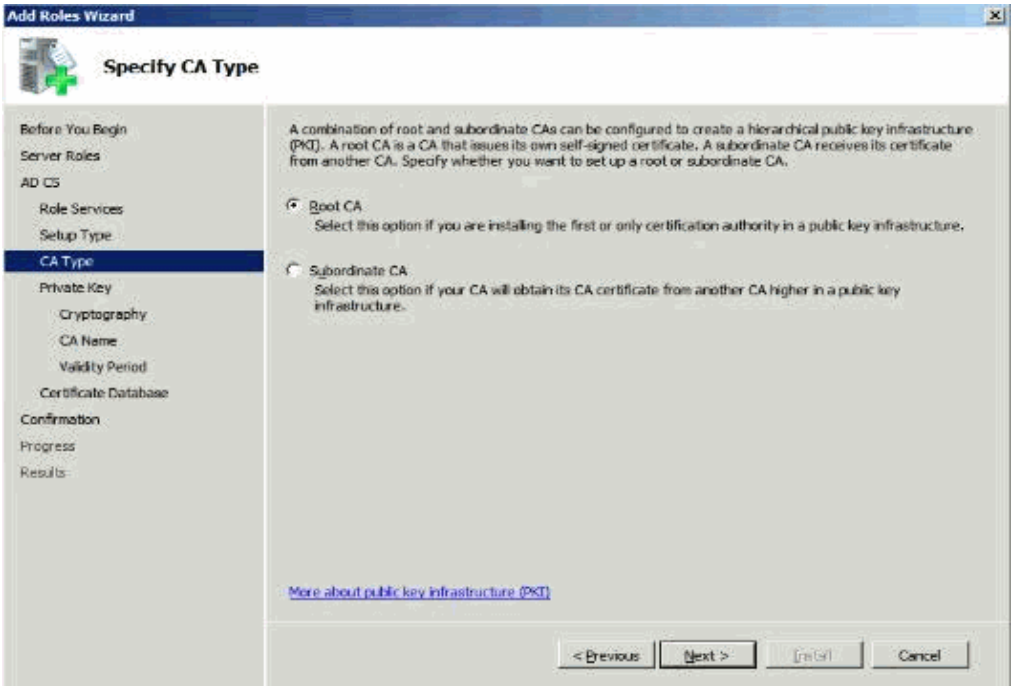
5. On the Select Role Services page, choose the **Certification Authority** check box, and then click **Next**.



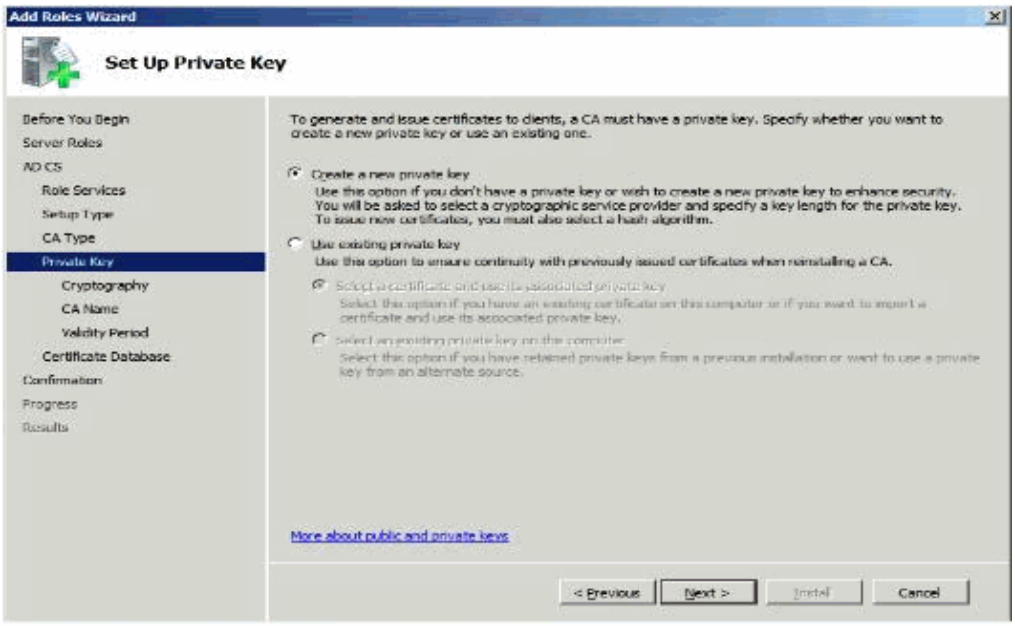
6. On the Specify Setup Type page, click **Enterprise**, and then click **Next**.

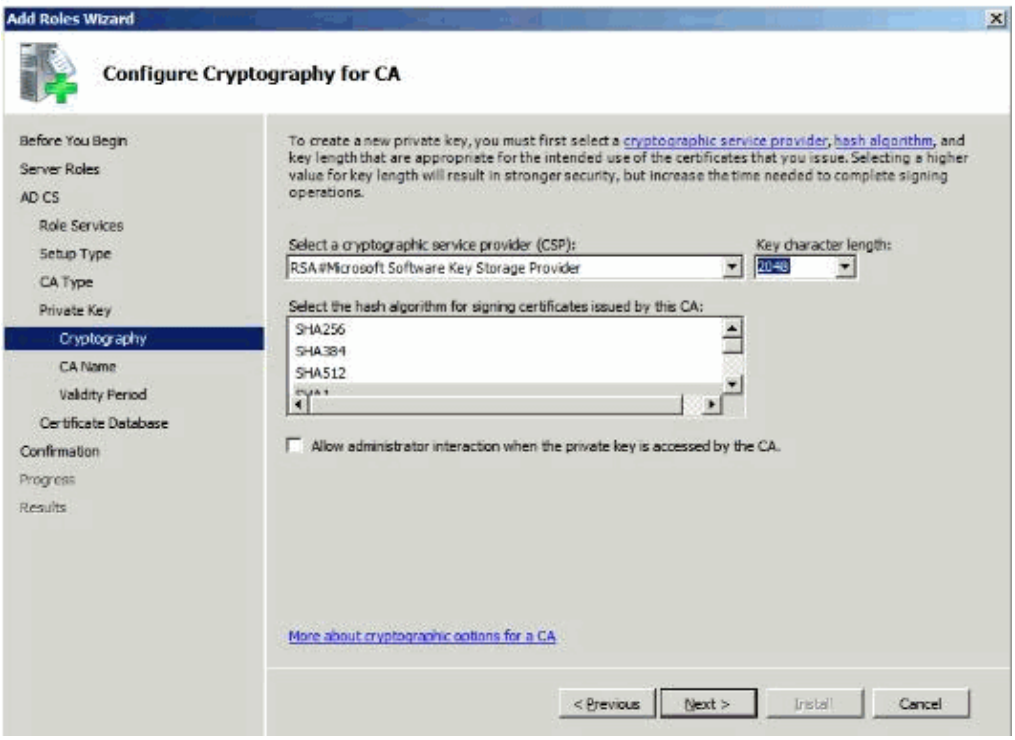


7. On the Specify CA Type page, click **Root CA**, and then click **Next**.

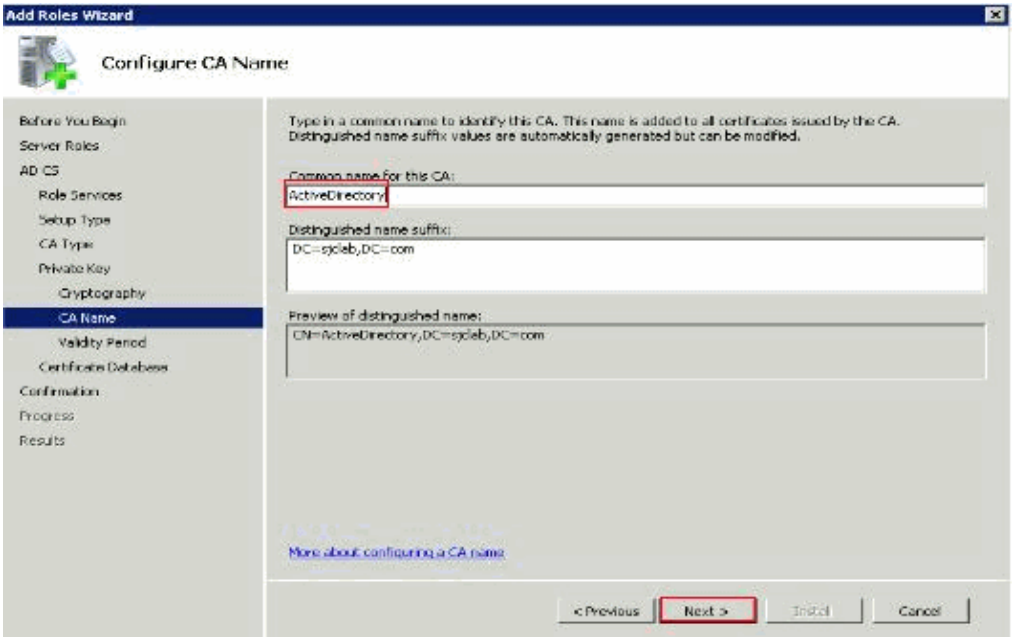


8. On the Set Up Private Key and Configure Cryptography for CA pages, you can configure optional configuration settings, which includes cryptographic service providers. But, for basic testing purposes, click **Next** twice in order to accept the default values.

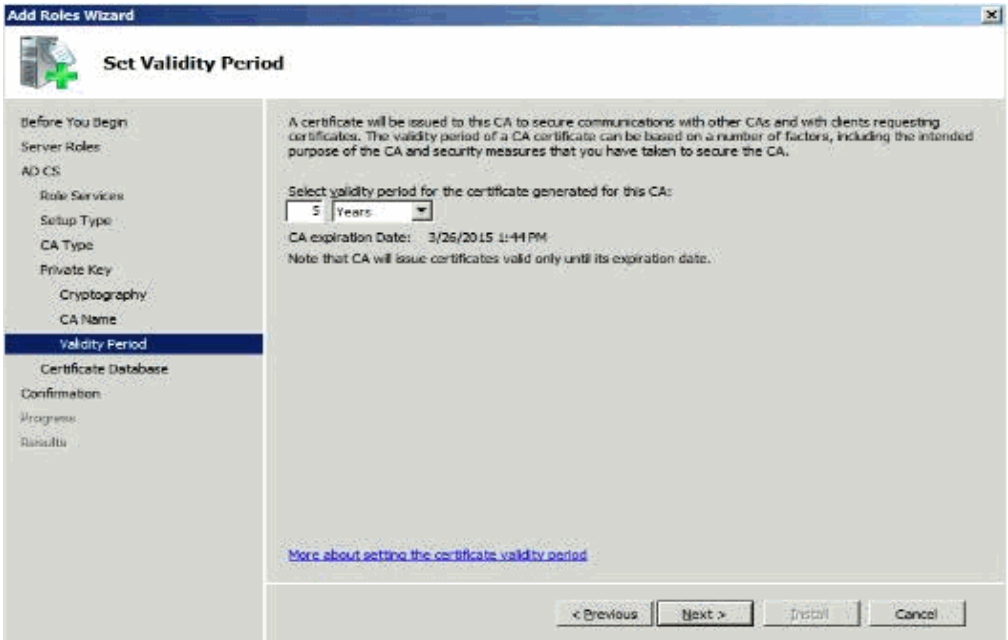




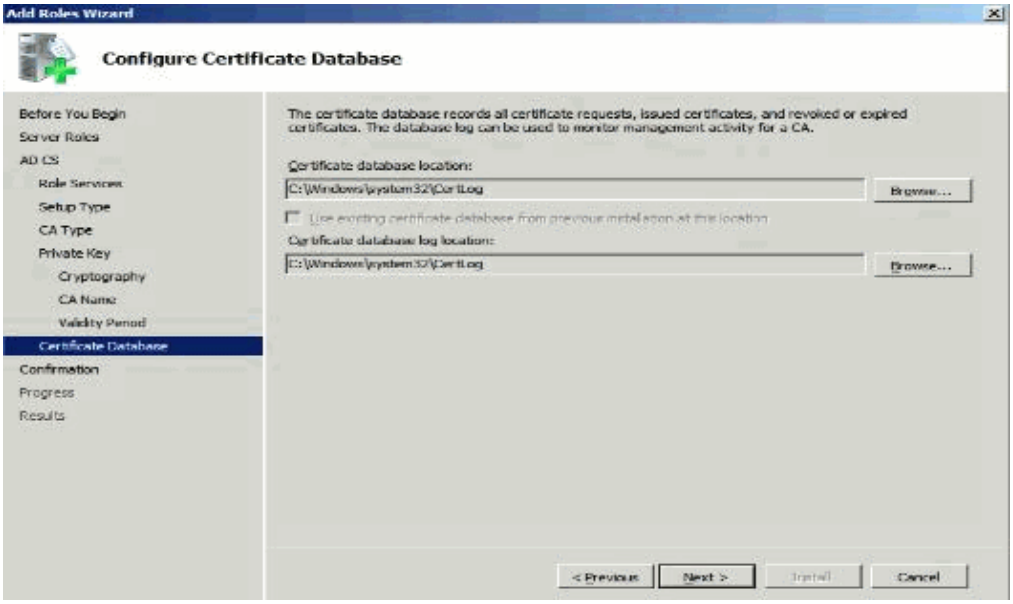
9. In the Common name for this CA box, type the common name for this CA, as **ActiveDirectory**, and then click **Next**.



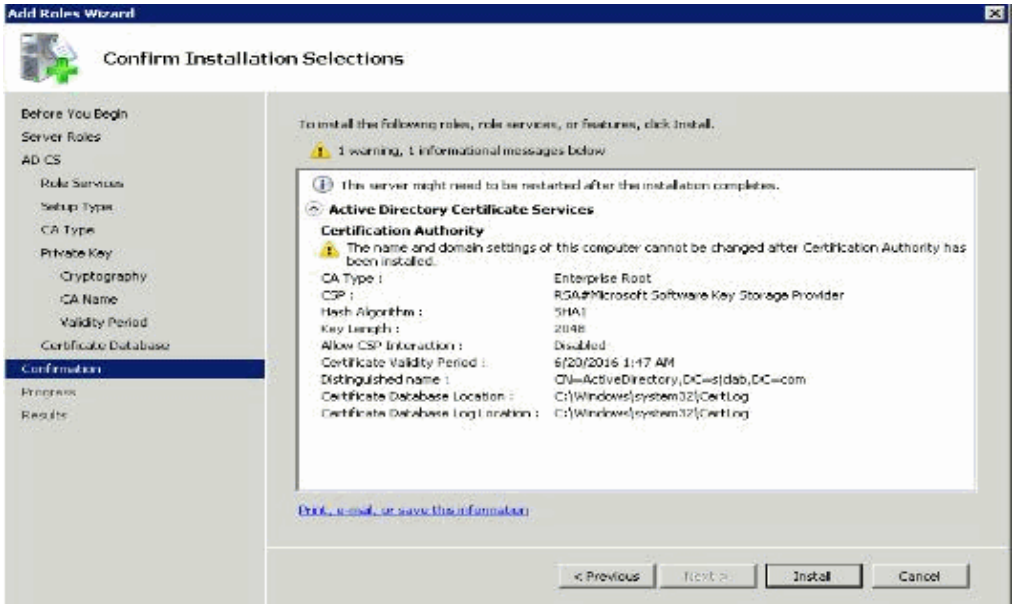
10. On the Set the Certificate Validity Period page, accept the default validity duration for the root CA, and then click **Next**.



11. On the Configure Certificate Database page, accept the default values or specify other storage locations for the certificate database and the certificate database log, and then click **Next**.



12. After the verification of the information on the Confirm Installation Options page, click **Install**.



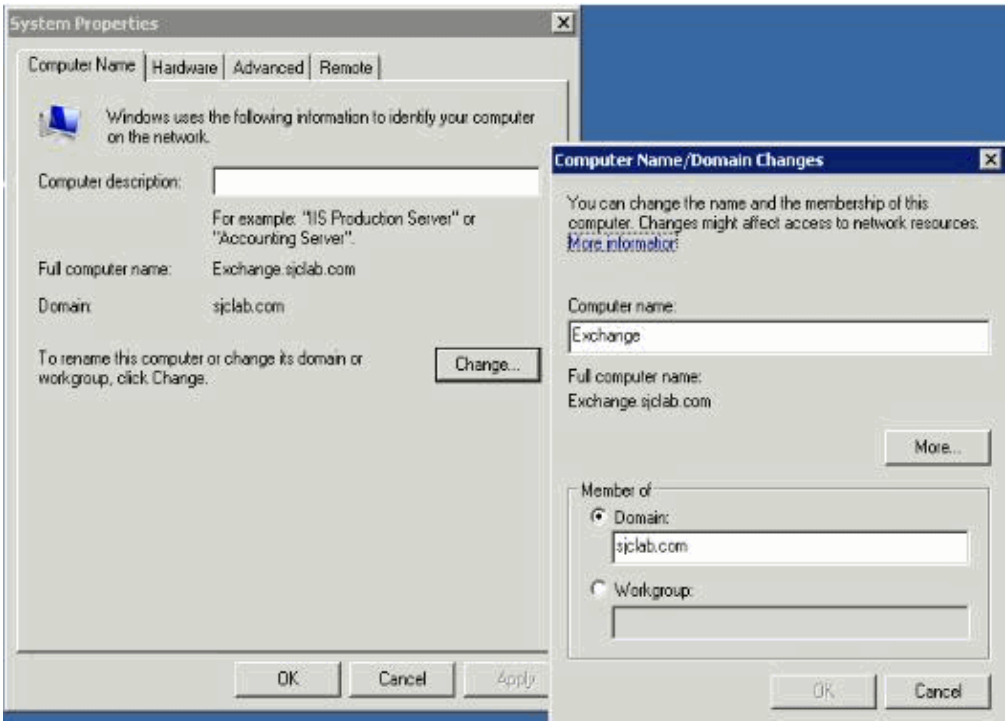
13. Review the information on the confirmation screen in order to verify that the installation was successful.

Install Exchange 2010

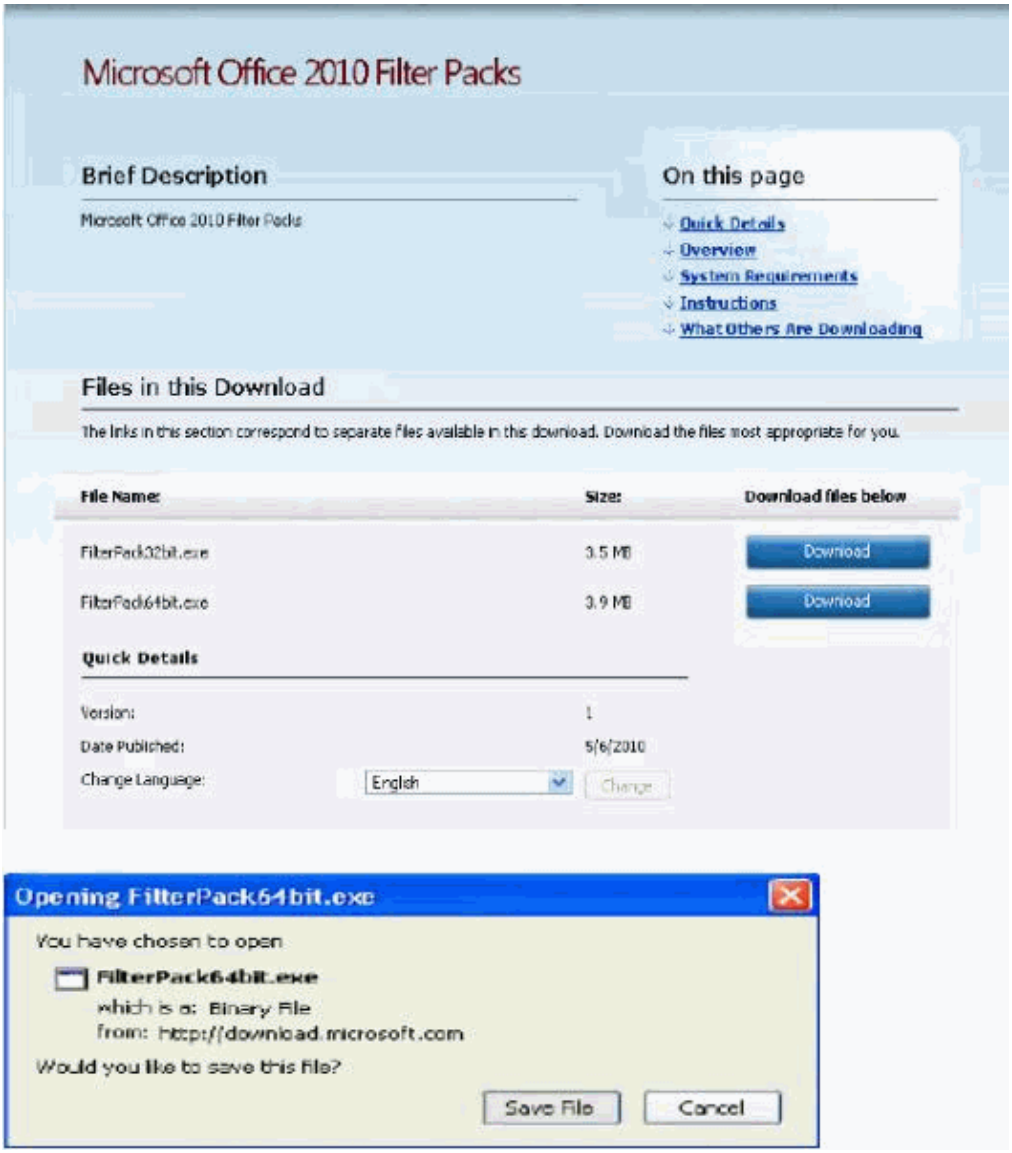
The integration of Lync 2010 and Exchange provides users with features like instant messaging (IM), enhanced presence, telephony, and conferencing capabilities of Lync within the Microsoft Outlook messaging and collaboration client.

Complete these steps in order to install the pre−requisites for exchange 2010:

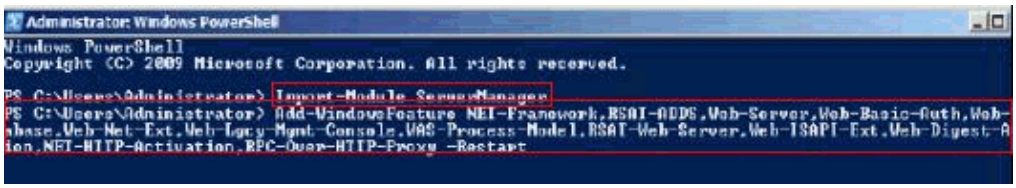
1. Add the exchange server to the domain and verify dns entry.



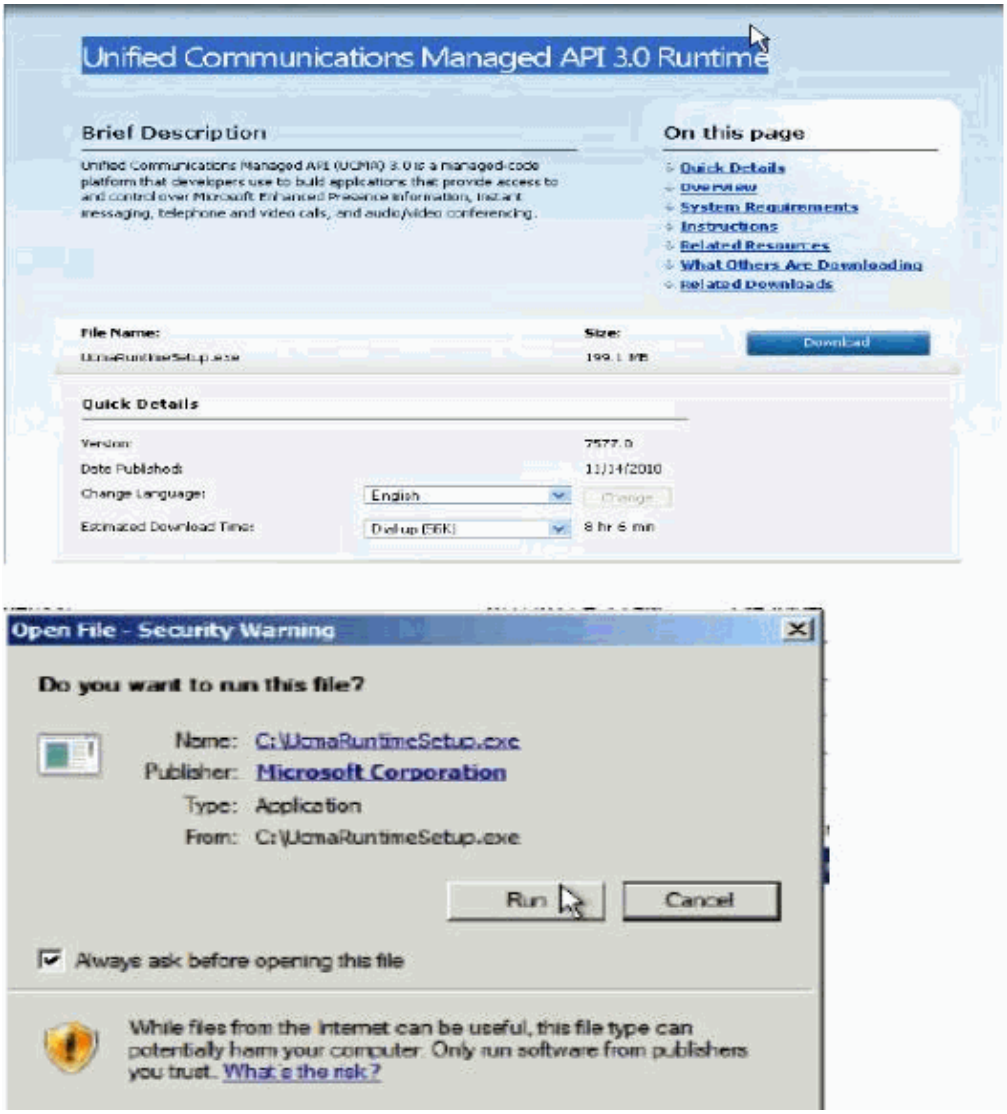
2. On servers that host the Hub Transport or Mailbox server role, install the **Microsoft Filter Pack**.



3. On the Start Menu, choose **All Programs** > **Accessories** > **Windows PowerShell**. Open an elevated Windows PowerShell console, and run the **Import−Module ServerManager** command.
4. Use the **Add−WindowsFeature cmdlet** in order to install the necessary operating system components: For a server that has the typical installation of Client Access, Hub Transport, and the Mailbox role: `Add−WindowsFeature NET−Framework,RSAT−ADDS,Web−Server,Web−Basic−Auth,Web−Windows−Auth,Web−Met −Restart`



5. On servers that have the Client Access Server role installed, after the system has restarted, log on as an administrator, open an elevated Windows PowerShell console, and issue the **Set−Service NetTcpPortSharing −StartupType Automatic** command in order to configure the Net.Tcp Port Sharing Service for Automatic startup.
6. Install Unified Communication Managed API 3.0.

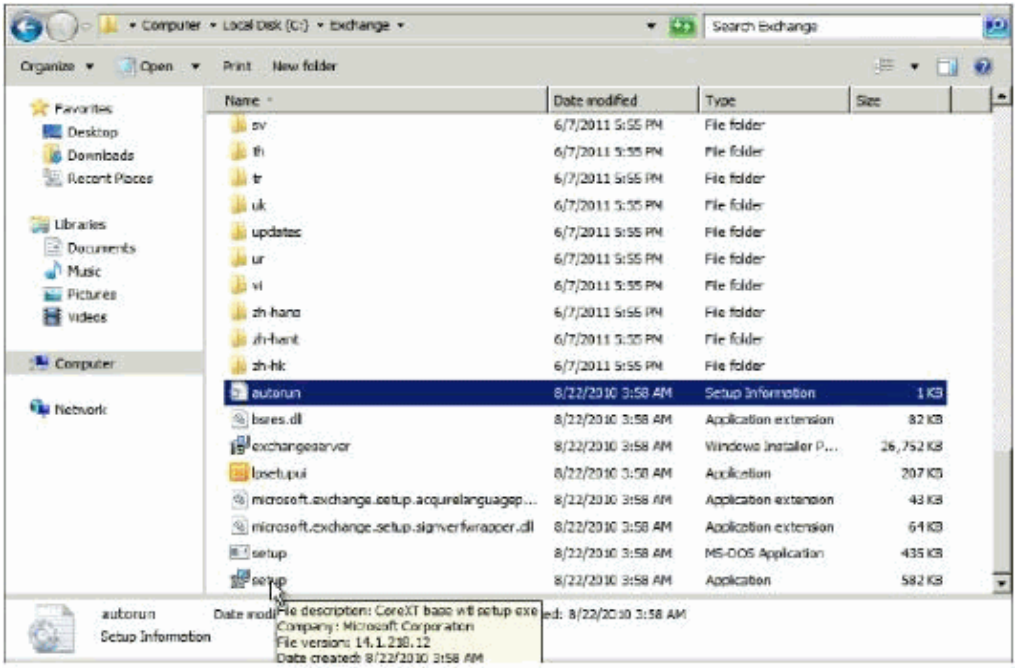


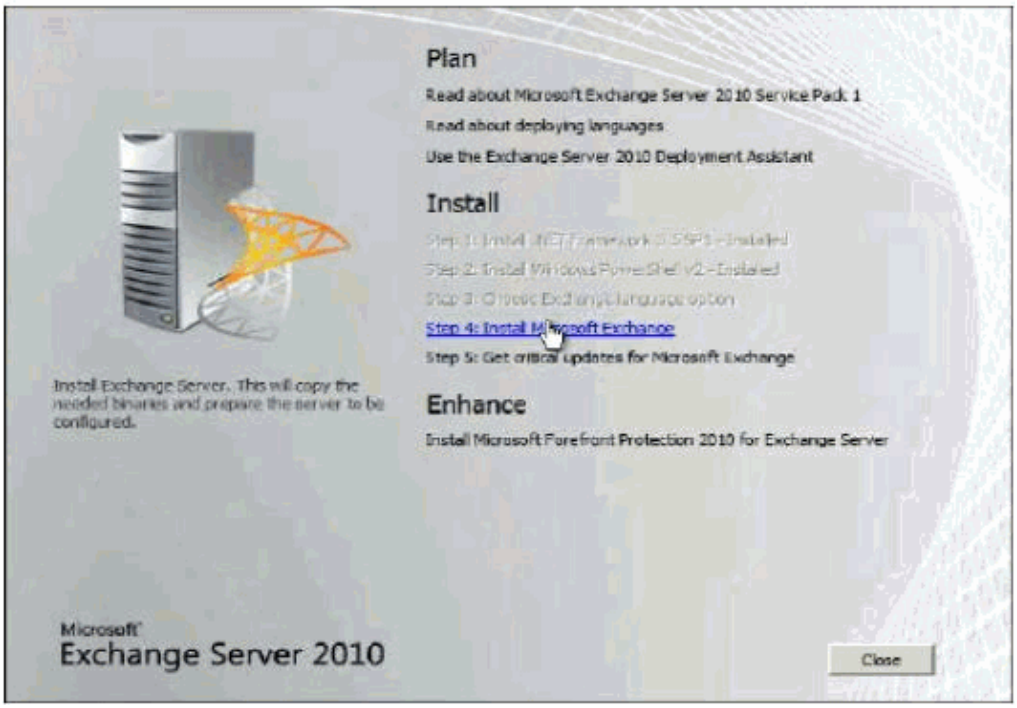
7. Similarly Install **Speech Runtime** and Disable IPv6.

Install Exchange

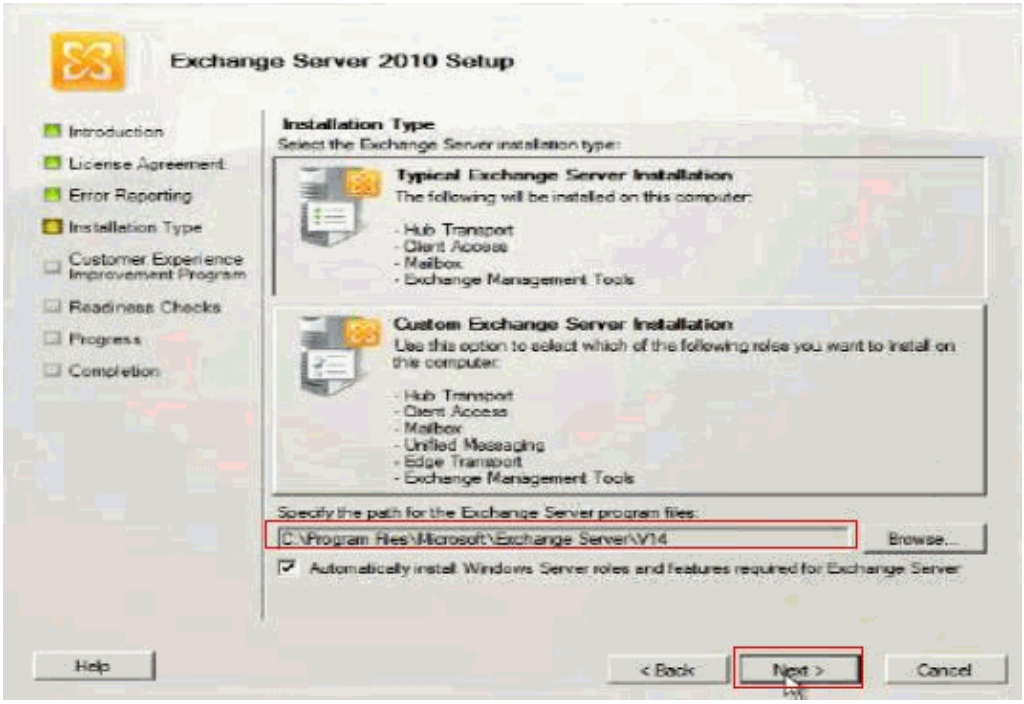
Complete these steps in order to accomplish the task.

1. Install Exchange −run setup from the Exchange DVD.

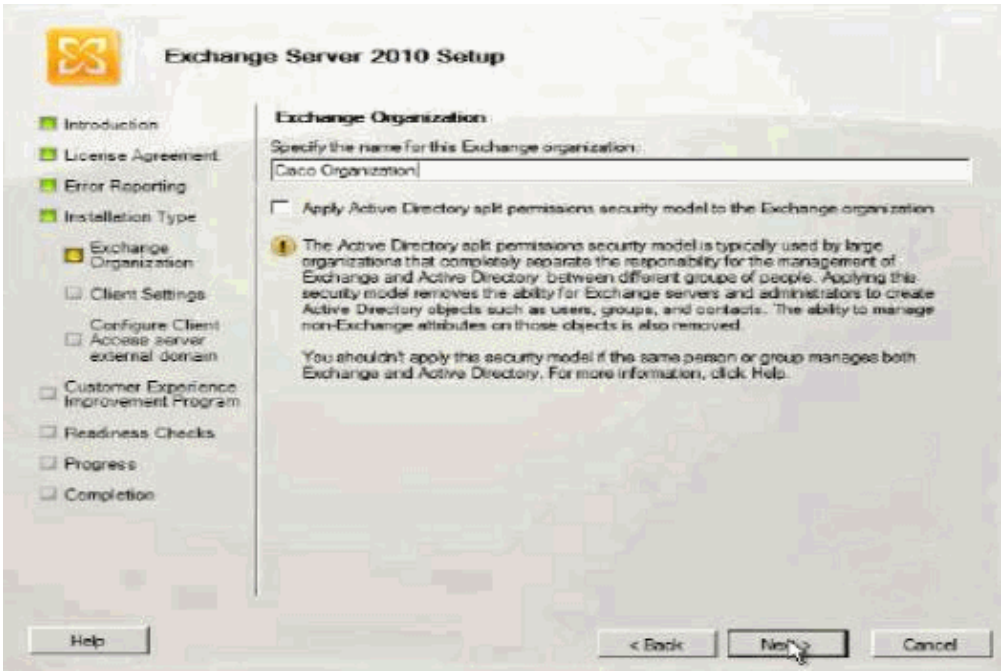




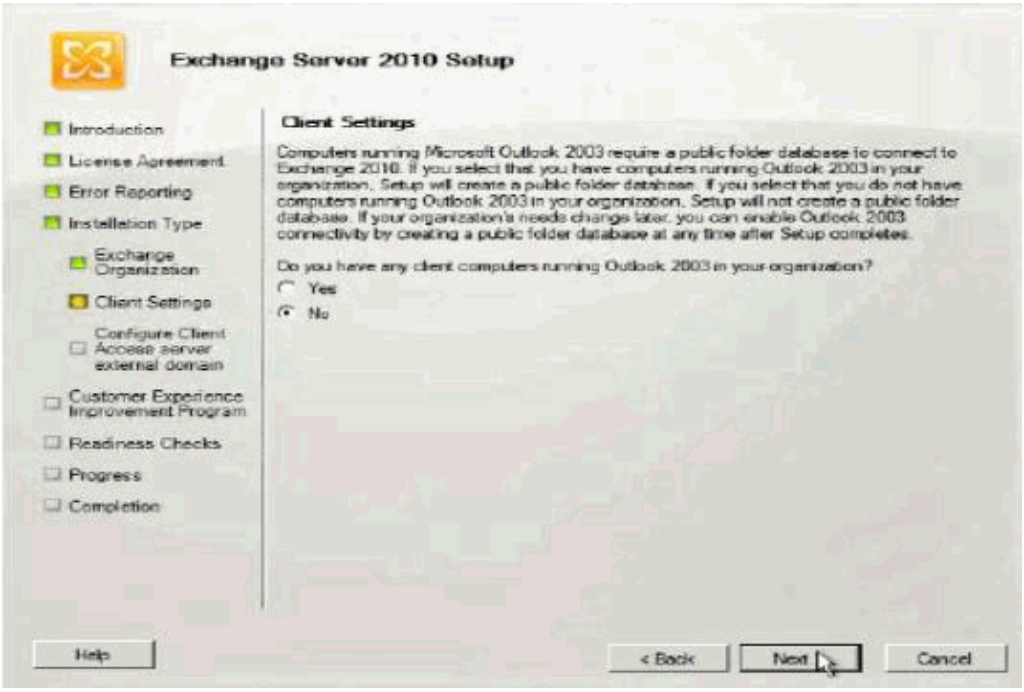
2. Click **I accept Licensing Agreement** and click **Next**.
3. Click **No** for Error Reporting and click **Next**.
4. Choose **Typical Exchange for Server Installation** for this simple deployment, and verify the path for the installation.



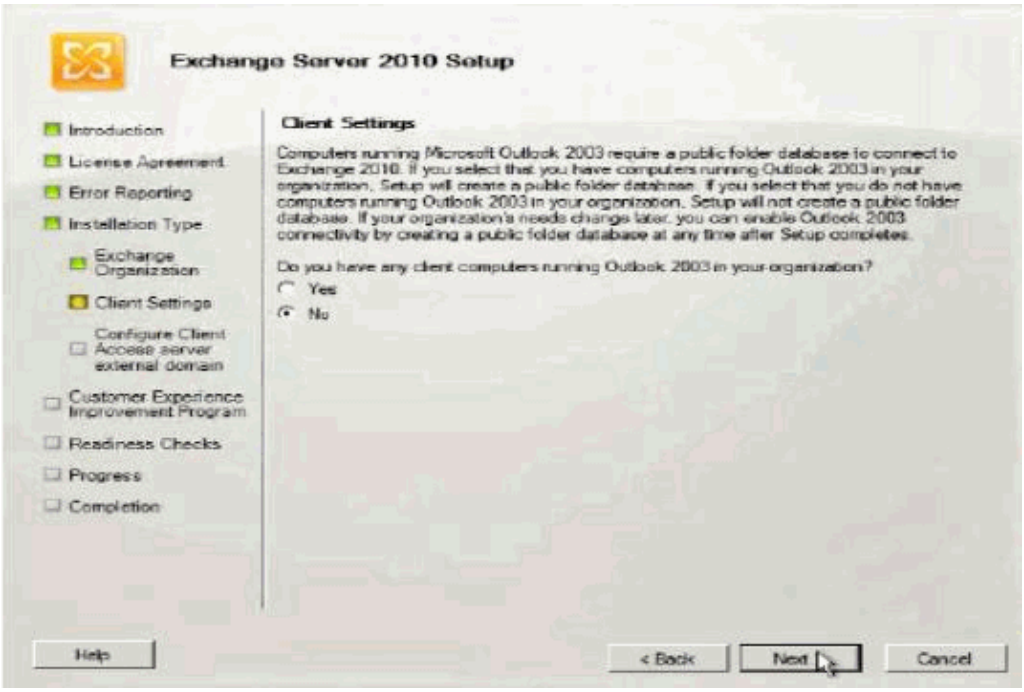
5. Provide the Exchange Organization name, such as **Cisco Organization**.



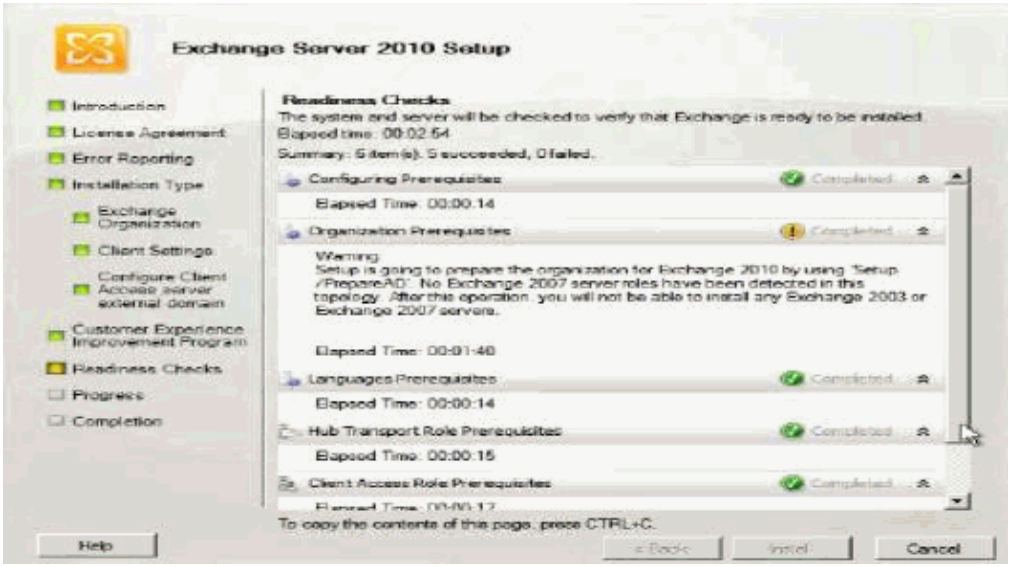
6. No legacy client support is needed in this case. Choose **No** and click **Next**.



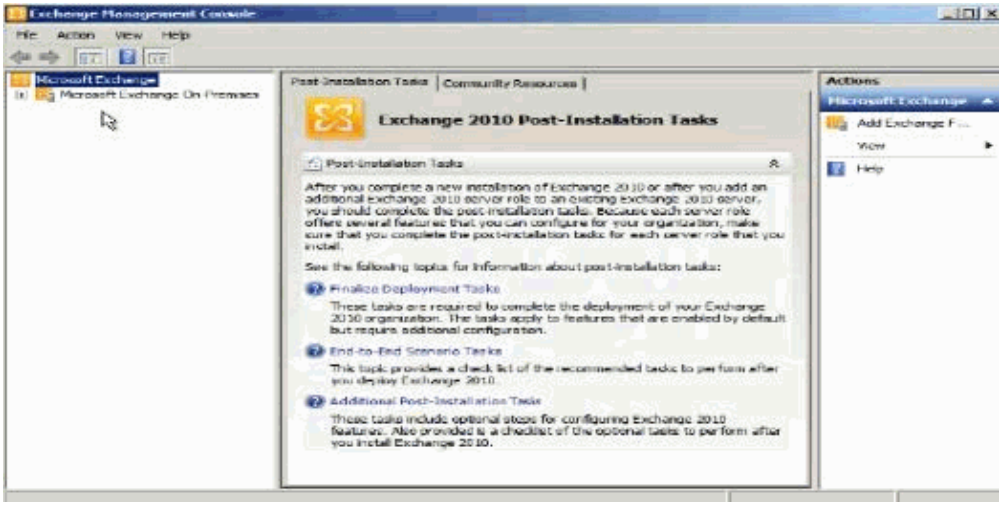
7. Set the Client Access server external domain: **asmail.sjclab.com**



8. After the readiness checks, click **Install**.



9. Restart the server.
10. Launch the **Exchange Management Console** and complete the GUI prompts to install it.

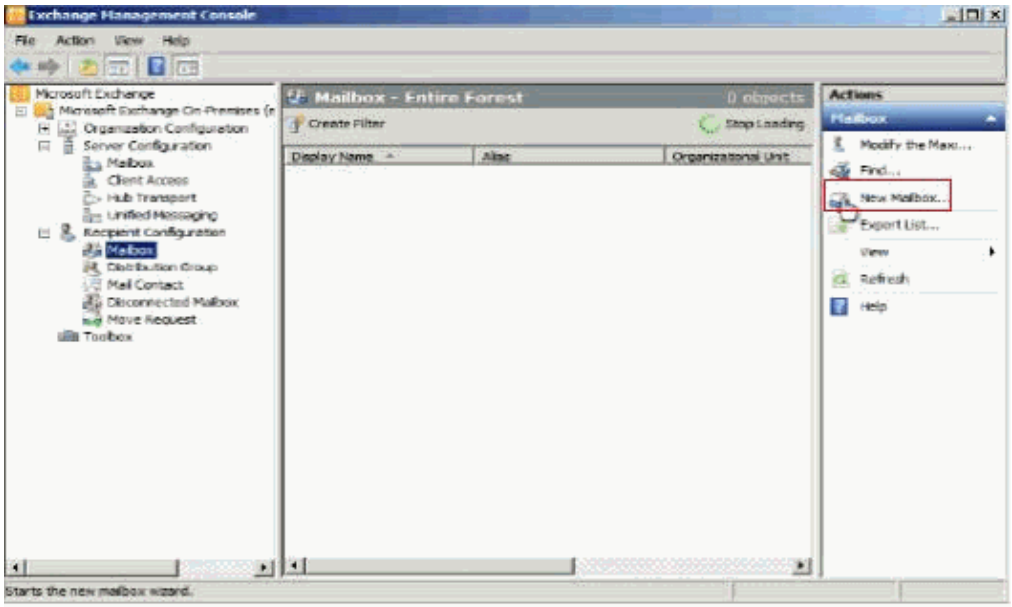


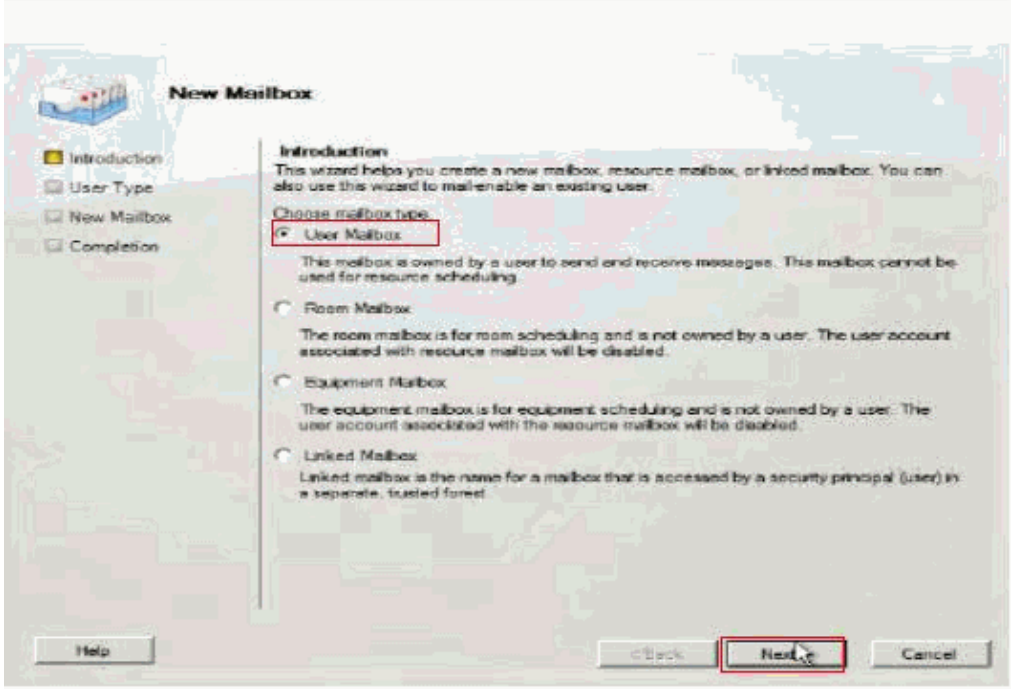
Exchange Certificate Install

When the Exchange Server 2010 Client Access Server role is installed, a self−signed certificate is installed automatically, primarily for testing purposes. But, as soon as the installation is finished, a real certificate should be acquired and installed. Exchange Server 2010 uses a Unified Messaging certificate, which holds besides its Subject Name other names as well, called the Subject Alternative Names (SAN).

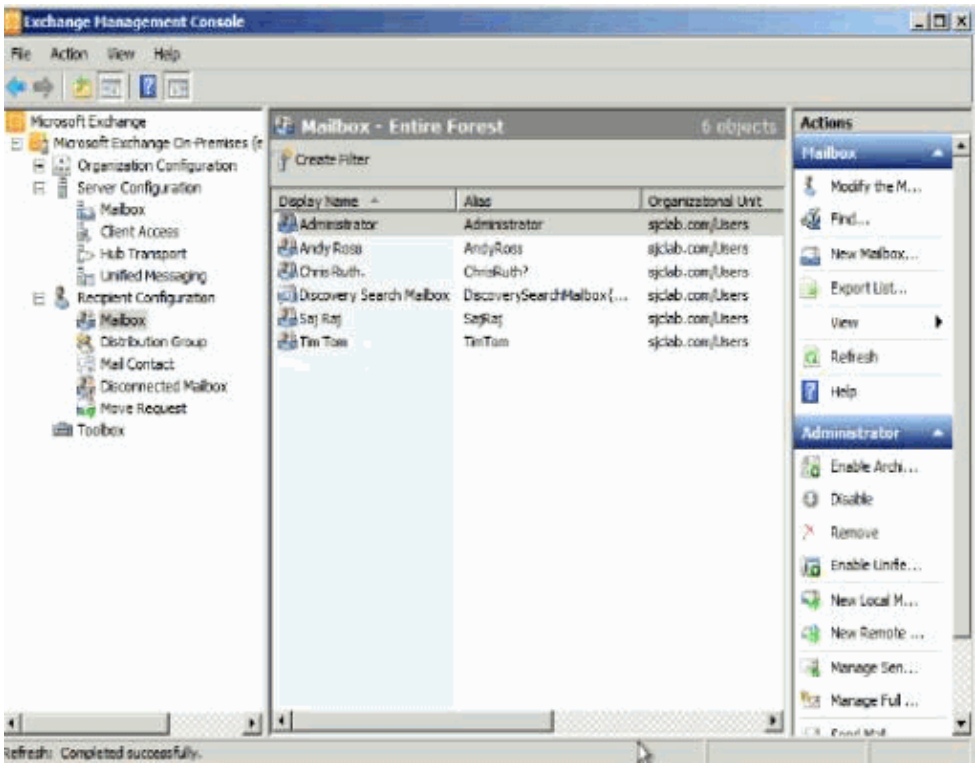
Create Mailbox Users in Exchange

Choose **Recipient Configuration > Mailbox** and choose **New Mailbox**.





Query for Active directory users and Add users. Once you finish adding, the users added appear:



LYNC SERVER 2010 INSTALL

Microsoft Lync Server 2010 communications software and its client software, such as Microsoft Lync 2010, enable users to connect in new ways and to stay connected, regardless of their physical location. Lync 2010 and Lync Server 2010 bring together the different ways that people communicate in a single client interface, are deployed as a unified platform, and are administered through a single management infrastructure.

Deployment of Microsoft Lync Server 2010, Standard Edition requires the use of Topology Builder in order to define your topology and the components you want to deploy, preparing your environment for deployment of the Lync Server 2010 components, importing and publishing your topology design on the Standard Edition server, and then installing and configuring Lync Server 2010 software for the components for your deployment.

While the IM and presence features are automatically installed in every Lync Server deployment, you can choose whether to deploy conferencing, Enterprise Voice, and remote user access. In this example, other features are not enabled since Enterprise Voice using Cisco Unified Communications is enabled.

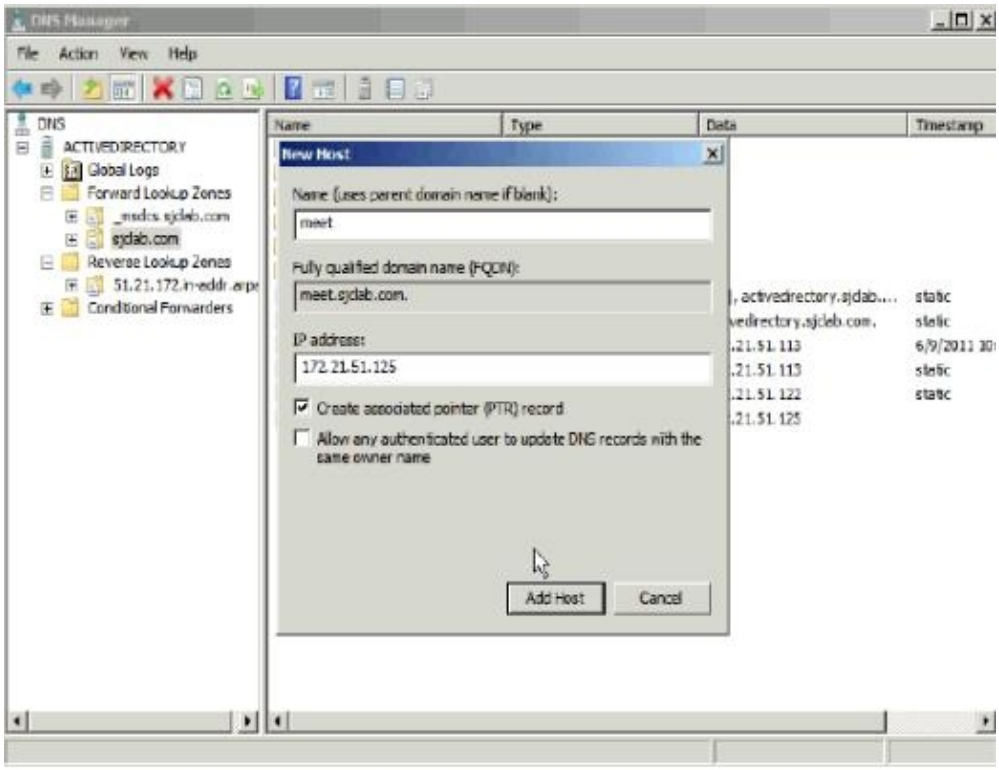
Install Lync Pre−Requisites

Complete these steps in order to accomplish the task.

1. Add lync server to the domain and verify dns entry.
2. Disable IPv6.
3. On the Start Menu, choose **All Programs−> Accessories> Windows PowerShell**. Open an elevated Windows PowerShell console, and run the **Import−Module ServerManager** command.
4. Use the Add−WindowsFeature cmdlet in order to install the necessary operating system components:
   ```
   Add−WindowsFeature
   NET−Framework,RSAT−ADDS,Web−Server,Web−Static−Content,Web−Default−Doc,Web−
   −Restart
   ```
5. Install Microsoft Silverlight, which s needed to run the Lync Server 2010 installation GUI. Refer to Microsoft Silverlight for more information.

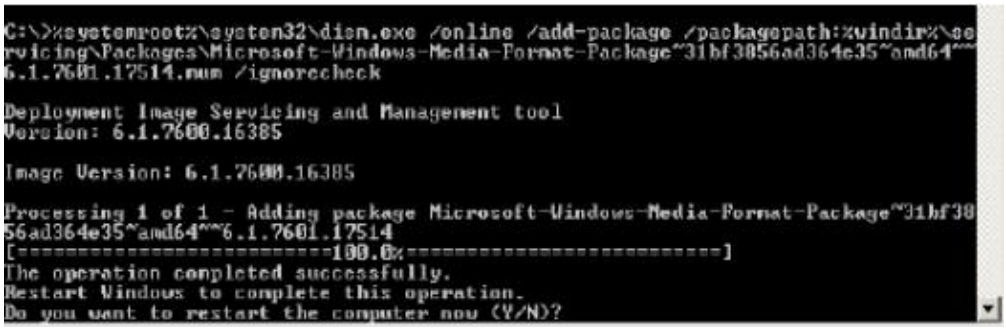
6. Create a shared file with name **LyncShare** with appropriate rights such that everyone has Full Control on the Lync server 2010. You can create the share in any location with any name.
7. Create these DNS entries

    - dialin.sjclab.com
    - meet.sjclab.com
    - admin.sjclab.com



8. Install Windows Media Format (WMF) runtime before you run the Lync Server 2010 setup and then restart the server. If you issue this command, this requires permissions equivalent to the Windows server−based computers Local Administrator account.

```
Here's the cmdline to install on Windows Server 2008 R2 SP1:
 %systemroot%system32dism.exe /online /add−package
/packagepath:%windir
%servicingPackagesMicrosoft−Windows−Media−Format−Package~31bf3856ad364e35~amd64~~6.1
/ignorecheck
```



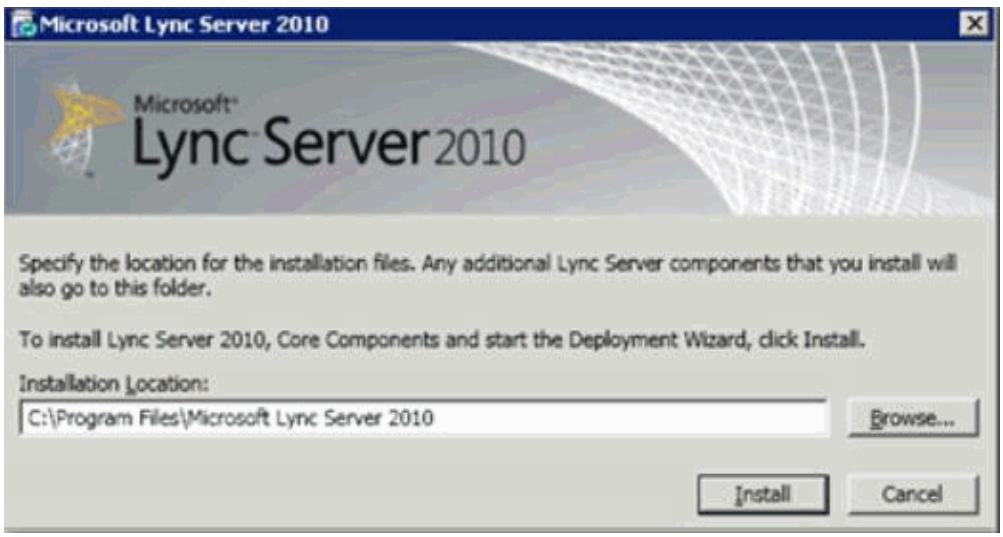
After Windows Media Format Runtime is installed and the system is rebooted, proceed with the typical Lync Server 2010 setup in order to complete the installation.

Install Lync 2010 Server

Complete these steps in order to accomplish the task.

1. Insert your Lync Server 2010, DVD.If AutoPlay does not start, navigate to your drive Setupamd64 and execute **setup.exe**. The first thing you need to do is to install Microsoft Visual C++ 2008 Redistributable Package, and then click **Yes** in order to proceed.

2. When Microsoft Visual C++ 2008 Redistributable Package is installed you need to choose the installation directory. The default location is fine, or you can change the location to match your preferences and then click **Install**.

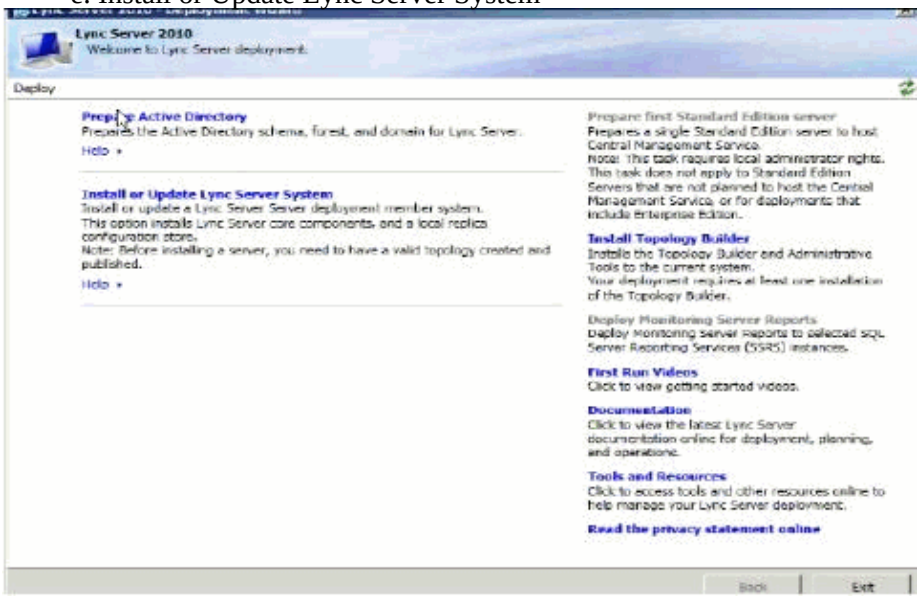


3. Next you need to accept the license agreement. Check **I accept the terms in the license agreement** and then click **OK**.

4. Now the Deployment Wizard launches and you have these choices.

   Complete these steps in this order:

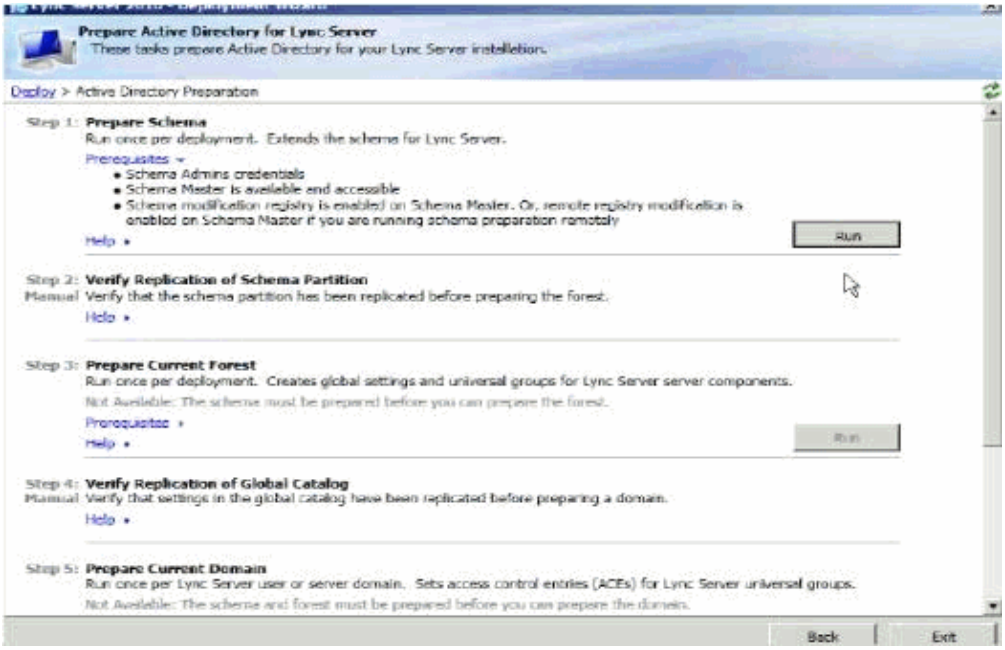
   a. Prepare Active Directory
   b. Prepare First Standard Edition Server.
   c. Install Topology Builde
   d. Launch Topology Builder & Publish Topology
   e. Install or Update Lync Server System



Prepare Active Directory

Complete these steps:

1. First step is Prepare Schema wizard. Click **Run** in order to start the wizard.



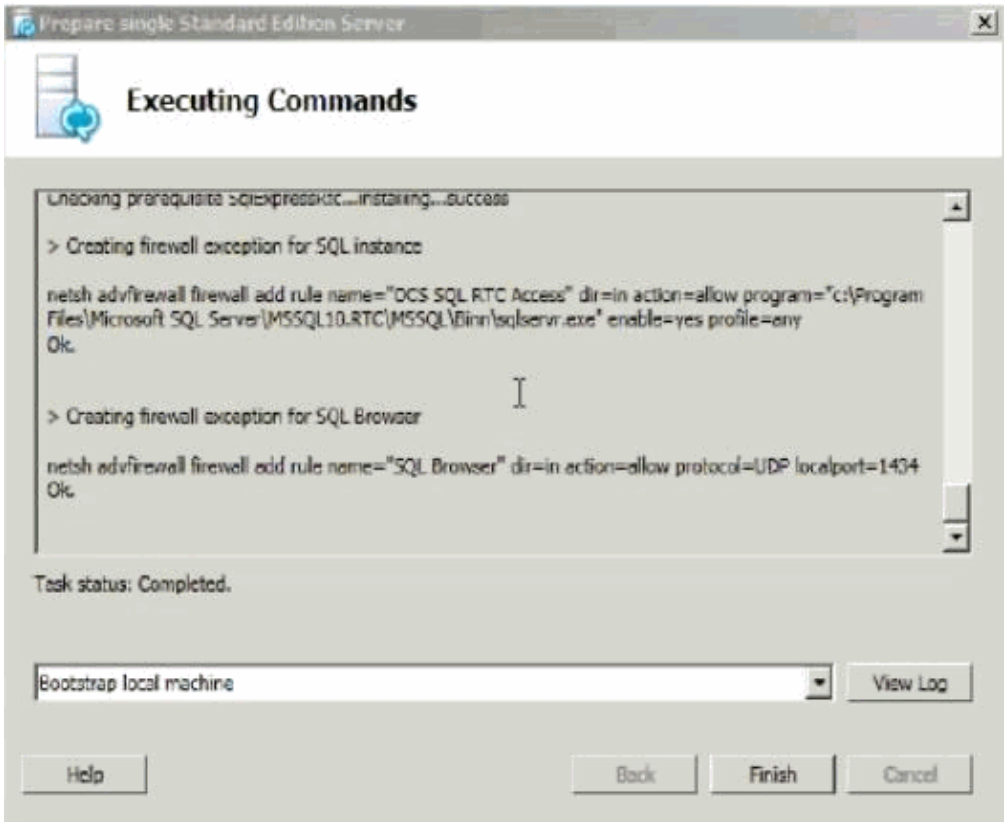
2. The next step is to Prepare **Current Forest**. Click **Run** to start the wizard.
3. The last preparation wizard you need to run is **Prepare Current Domain** and then click **Run** to start the wizard.
4. Now grant access to the Microsoft Lync Server 2010 Control Panel. Complete these steps in order to accomplish the task.

    - Log on as a member of the Domain Admins group into Active Directory Server.
    - Open **Active Directory Users and Computers**, expand your domain, right−click the Users container, and then click **Properties.**
    - In **Domain Admin** Properties, click the**Member Of** Tab.
    - On the Members tab, click Add. In Select Users, Contacts, Computers, Service Accounts, or Groups dialog, locate the Enter the object names to select. Type the user name(s) or group name(s) to add to the group CSAdministrators. Click **OK**.
    - On the Members tab, confirm that the users or groups that you selected are present. Click **OK.**

    After the completion of these steps, click on **Back** in order to return to the Deployment Wizard.

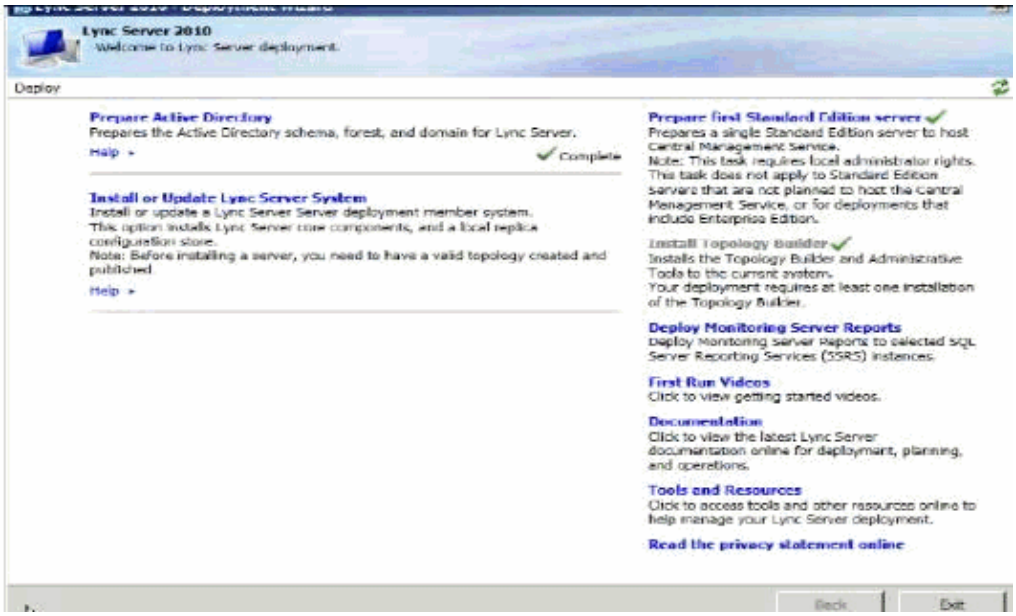
Prepare the First Standard Edition Server

Choose the option to Prepare first Standard Edition Server (top right hand option). This installs a copy of SQL 2008 Express, Lync Server core installation files and creates an RTC database.



Install Topology Builder

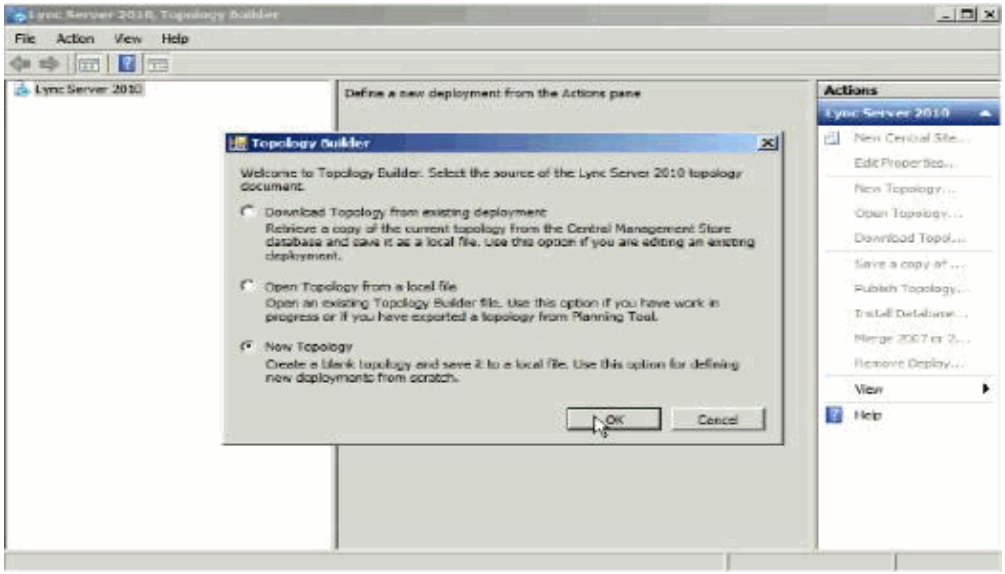
Install the Topology Builder via the main deployment screen. When this completes, you gain a green tick in order to signify a successful install.



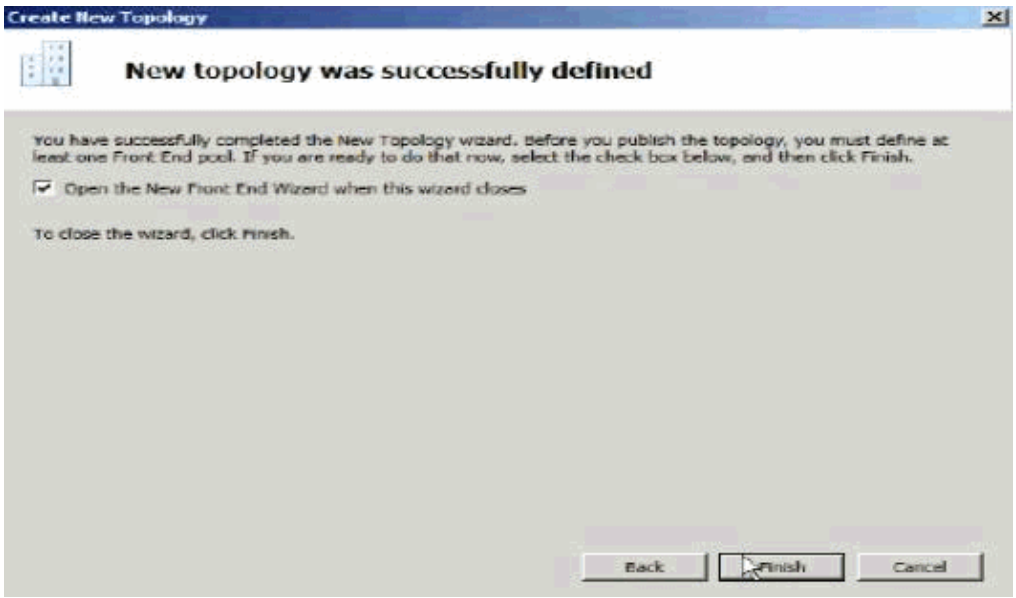
Launch the Topology Builder and Publish Topology

Complete these steps in order to accomplish the task.

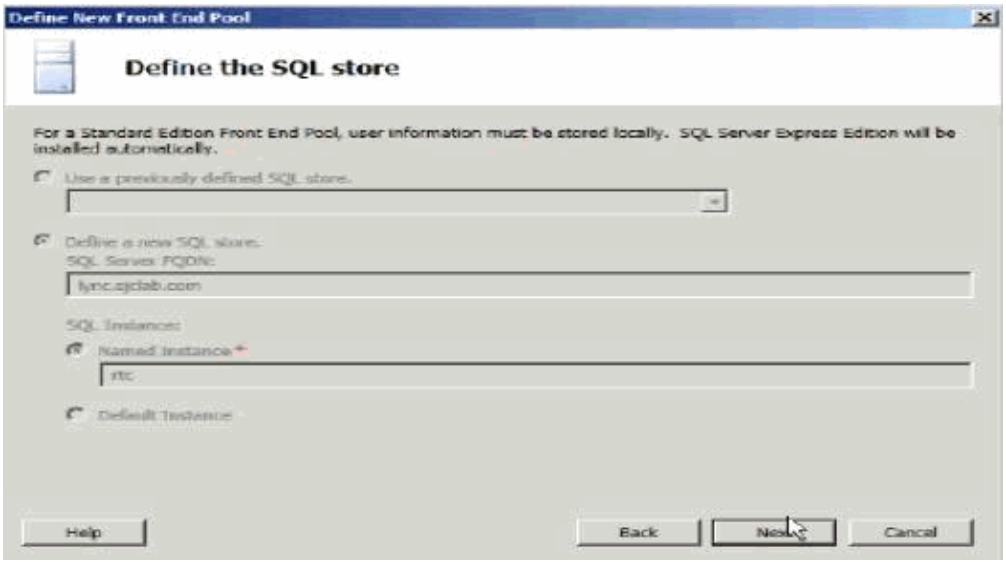
1. Launch the topology builder through the start menu.
2. Choose **New Topology** and click **OK**.



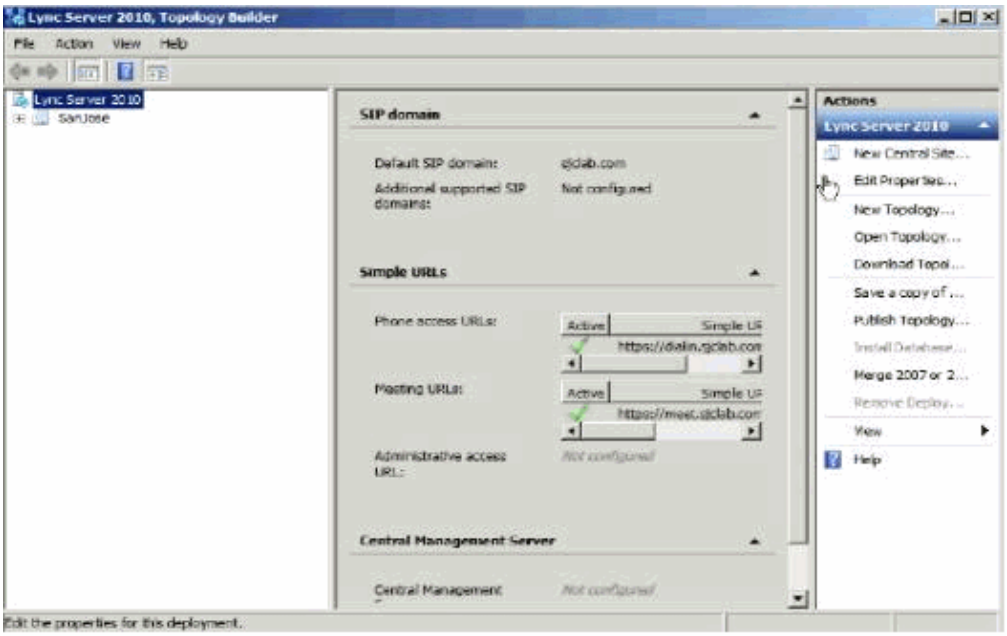
3. Choose where to save your topology files. For example, C:\Lync Server 2010 Topology Builder and call it MyTopology.tbxml. When you are finished choosing name ad location click **Save.**
4. Then enter a SIP domain that matches company preferences, **sjclab.com**. This is the internal domain name in AD family domain and works well for the purpose of this installation, click **Next** to continue.
5. Enter a name of the default site, then click **Next** to continue.
6. Here you need not add any additional SIP domains at this point, click **Next** to continue.
7. Enter your City, State and Country and click **Next** to continue.
8. Continue to configure a front end pool so click **Finish**. When the New Front End Pool wizard starts click **Next** to continue.

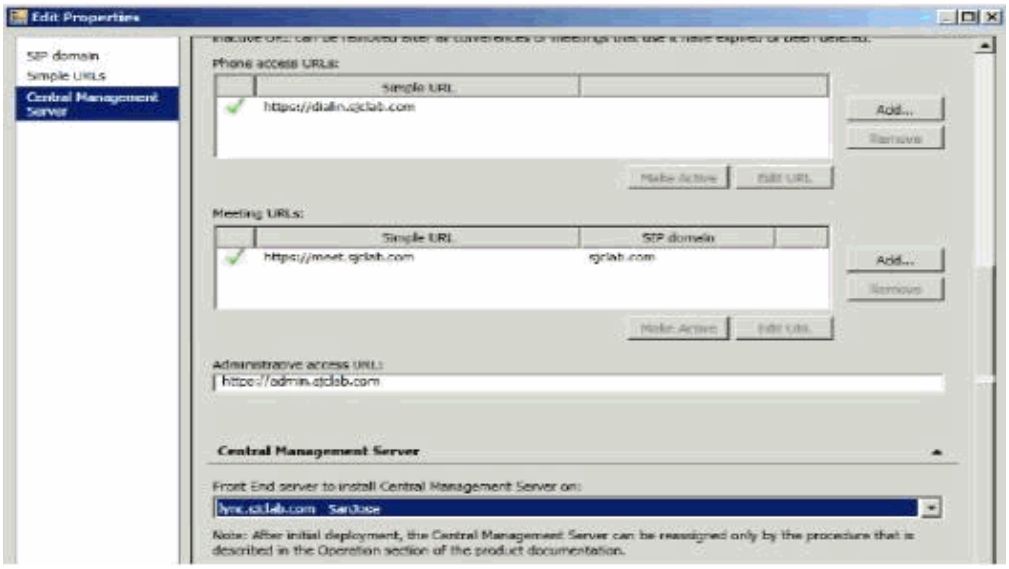


9. Now define a FQDN for our Front End Pool. Since this is a simple single server installation use the servers FQDN **sjclab.com** and choose **Standard Edition Server** and click **Next** to continue.
10. Lync Server Installation enables **Presence and IM** by default.
11. In order to collocate the mediation server, check **Collocate Mediation Server role** and then click **Next**.
12. Choose any other roles to enable more components; if not click **Next** to continue.
13. SQL server has already been installed on the Lync Server 2010 server and the wizard finds it automatically. Click on **Next** to continue.
14. Now enter the share folder name, which was created in the Pre−Requisites section. Enter public File Server FQDN: **lync.sjclab.com** and share folder name **LyncShare**and click **Next** to continue.

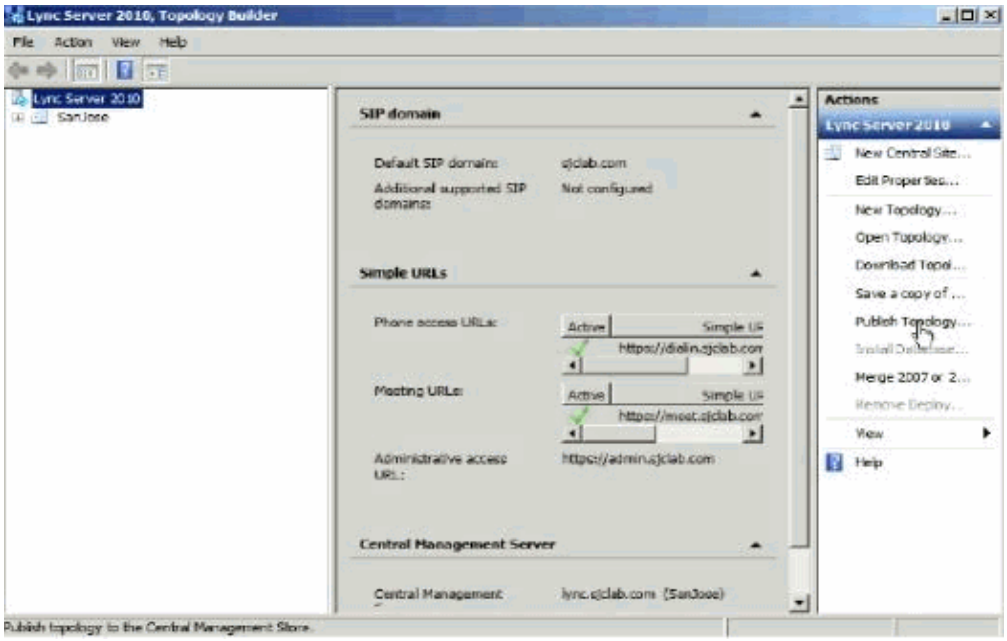


15. Skip adding a gateway at this moment and specify the External Base URL: **lync.sjclab.com**, which can be same as your internal or can be different. Click **Finish** to complete defining Front End Pool wizard.
16. When the wizard closes you arepresented with the Topology builder. Take a moment to go through the configuration, then go back to the original screen and click on **Edit Topology**.
17. In the left pane, choose **Simple URL**s, in the main pane, enter a URL in the field **Administrative access URL**. Here this is **https://admin.sjclab.com**, then choose the Front end server to install Central Management Server on. If all is well you should only have one choice here, click **Ok** when done.

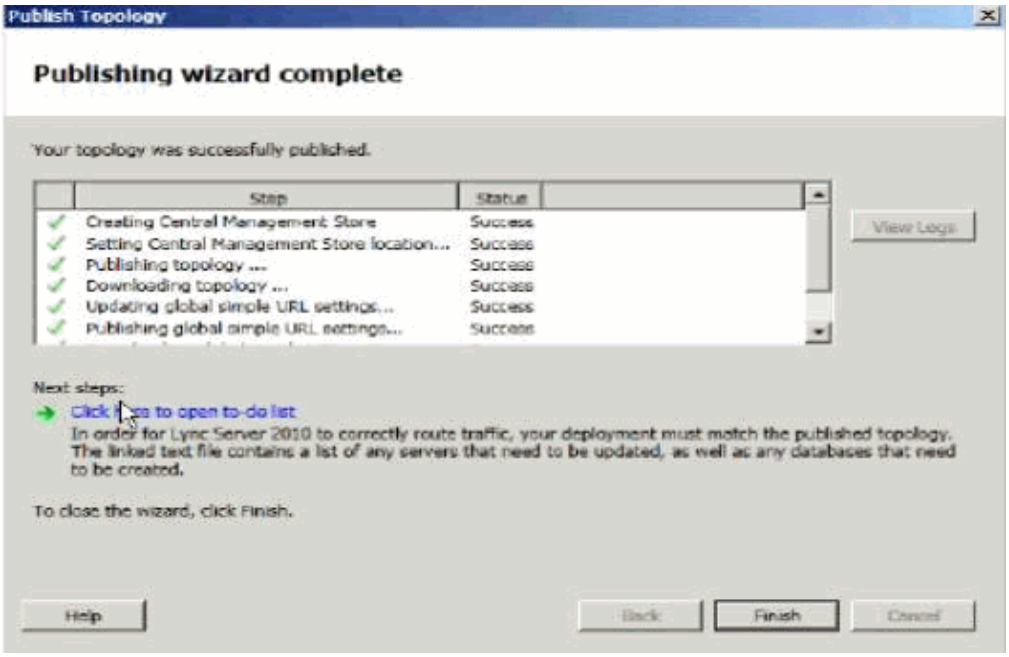




18. Now it is time to publish the topology that was built to the management server. Back in the topology builder, click on **Publish Topology** in the Actions Pane.

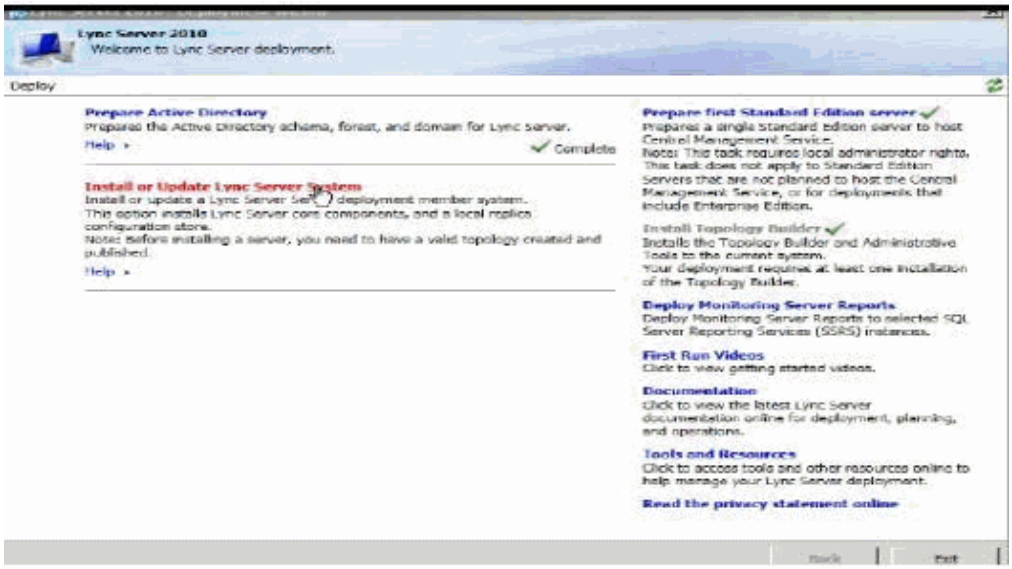


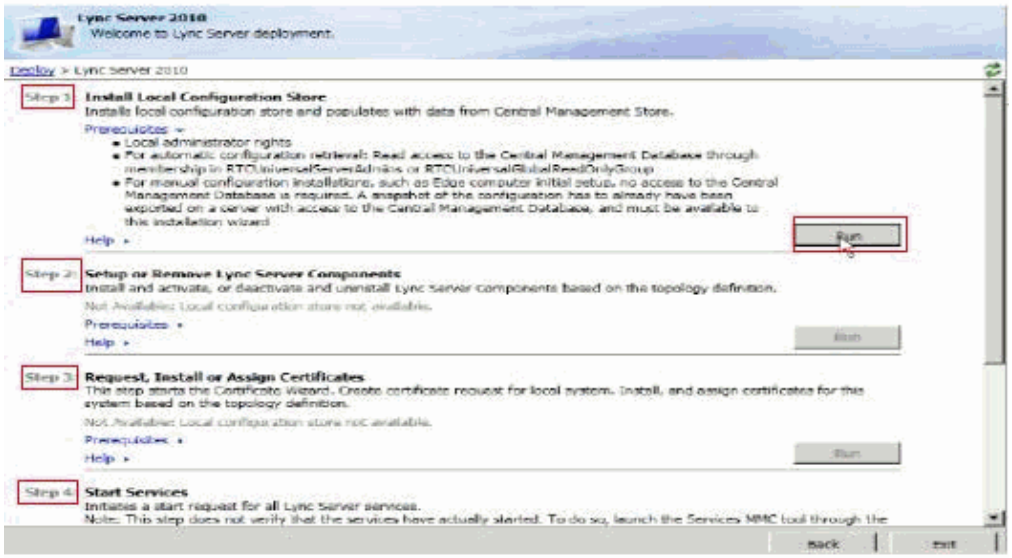
19. When the wizard has loaded, click on **Next** to start the publishing.
20. You should only have one Central Management Server, make sure it is selected in the drop−down list and then click **Next**.
21. When the wizard completes, make sure that all steps are successful and then click. **Finish**.



Install/Update Lync Server System

In order to finish Lync server installation, go to initial Lync Server Deployment Wizard, which is accessible now through the start menu. Choose **Install or Update Lync Server System** to continue.

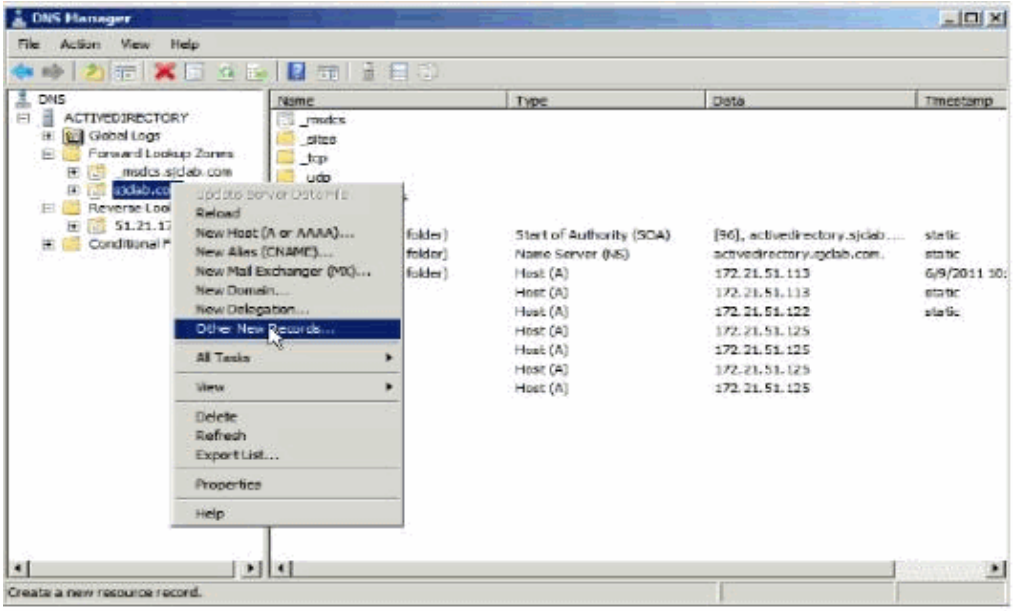


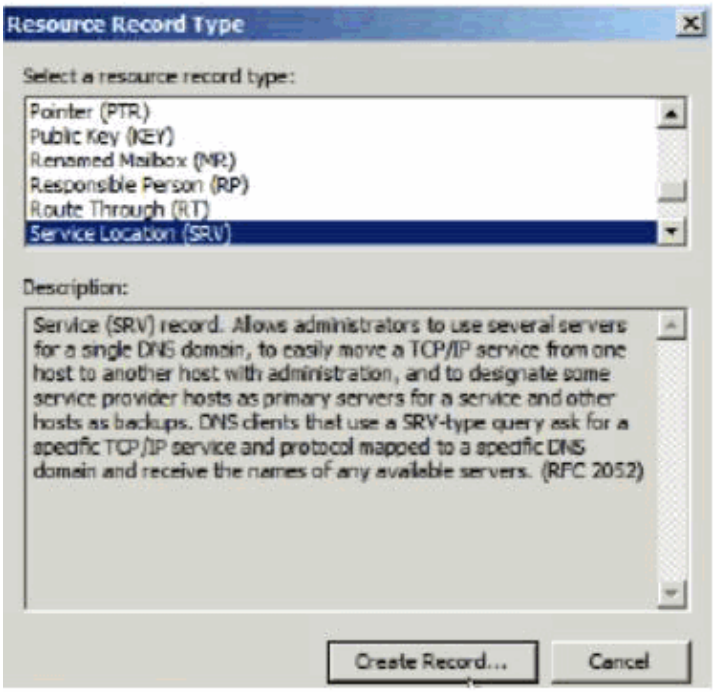


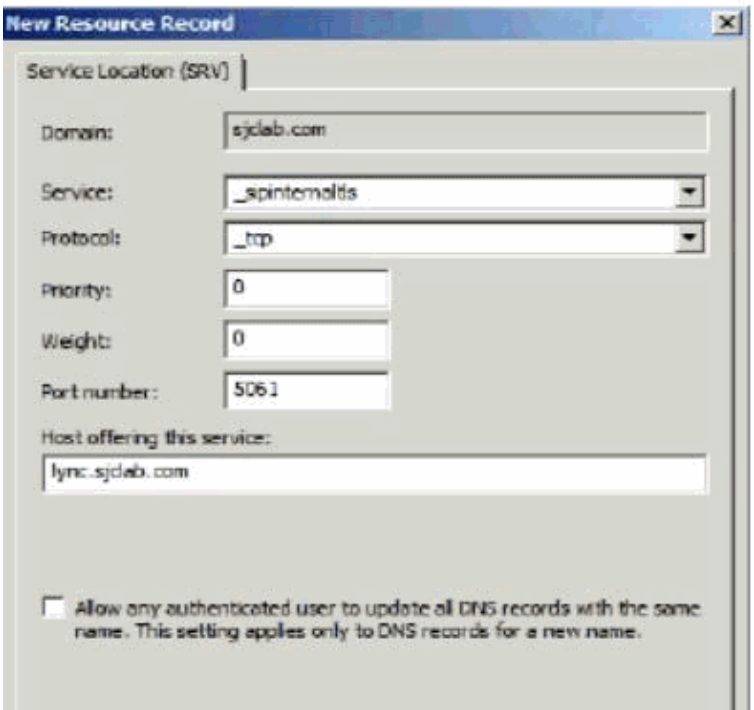
Here you need to click Run Button corresponding to each steps.

After you complete the **Start Services** task, if Lync Deployment Wizard does not show the task as completed, then go to **msservices.exe** to make sure that all the Lync services are started.

Finally you need to create a SRV DNS record for your new Lync Server. Without this record, your Lync client is unable to locate the server location. In order to create one, access your DNS manager and right−click the **Forward Lookup Zone** for your SIP FQDN. Then click **Other New Records** and **Service Location (SRV)**. Complete with the server settings as in this example:


DNS Manager
File Action View Help
DNS
ACTIVEDIRECTORY
Global Logs
Forward Lookup Zones
_msdcs.sjclab.com
sjclab.com
Reverse Lookup Zones
51.21.172.in-addr.arpa
Conditional Forwarders
Name
Type
Data
Timestamp
_msdcs
_sites
_tcp
_udp
Update Server Data Files
Reload
New Host (A or AAAA)...
New Alias (CNAME)...
New Mail Exchanger (MX)...
New Domain...
New Delegation...
Other New Records...
All Tasks
View
Delete
Refresh
Export List...
Properties
Help
folder)
folder)
folder)
Start of Authority (SOA)
Name Server (NS)
Host (A)
Host (A)
Host (A)
Host (A)
Host (A)
Host (A)
Host (A)
[96], activedirectory.sjclab....
activedirectory.sjclab.com.
172.21.51.113
172.21.51.118
172.21.51.122
172.21.51.125
172.21.51.125
172.21.51.125
172.21.51.125
static
static
6/9/2011 10:
static
static
Create a new resource record.

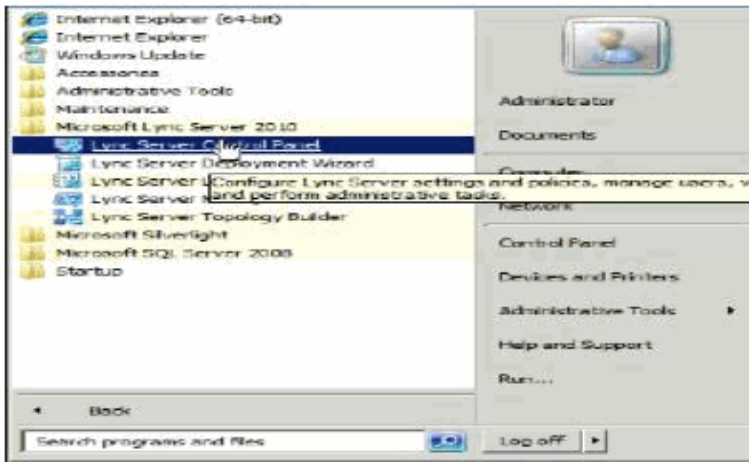

Resource Record Type
Select a resource record type:
Pointer (PTR)
Public Key (KEY)
Renamed Mailbox (MR)
Responsible Person (RP)
Route Through (RT)
Service Location (SRV)
Description:
Service (SRV) record. Allows administrators to use several servers for a single DNS domain, to easily move a TCP/IP service from one host to another host with administration, and to designate some service provider hosts as primary servers for a service and other hosts as backups. DNS clients that use a SRV-type query ask for a specific TCP/IP service and protocol mapped to a specific DNS domain and receive the names of any available servers. (RFC 2052)
Create Record...
Cancel


New Resource Record
Service Location (SRV)
Domain:
sjclab.com
Service:
_sipinternaltls
Protocol:
_tcp
Priority:
0
Weight:
0
Port number:
5061
Host offering this service:
lync.sjclab.com
Allow any authenticated user to update all DNS records with the same name. This setting applies only to DNS records for a new name.

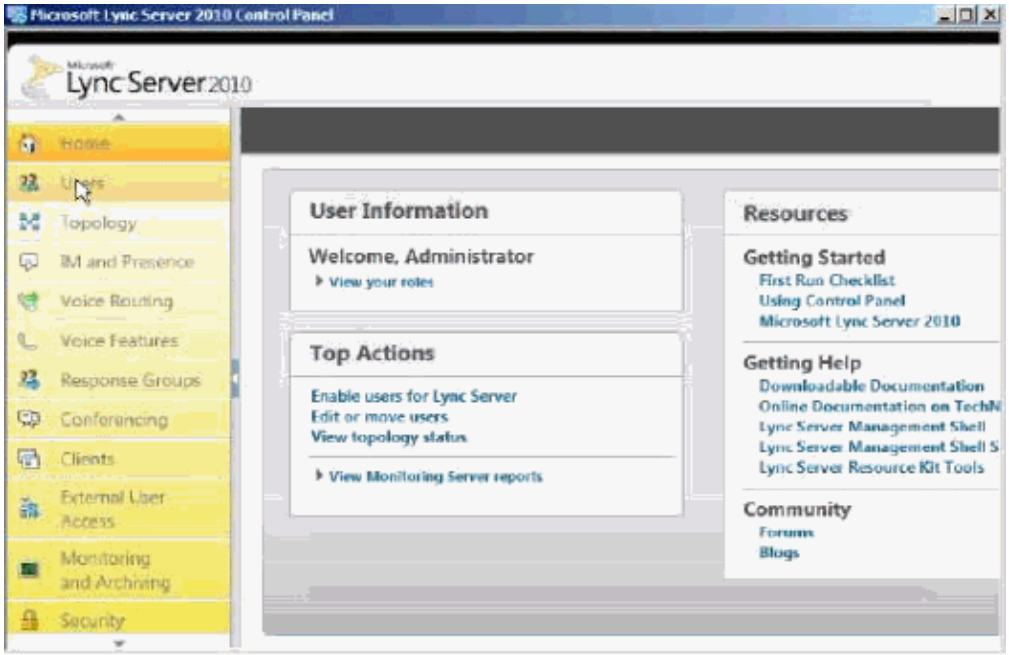
Add Users in Lync

Complete these steps in order to add users in Lync.

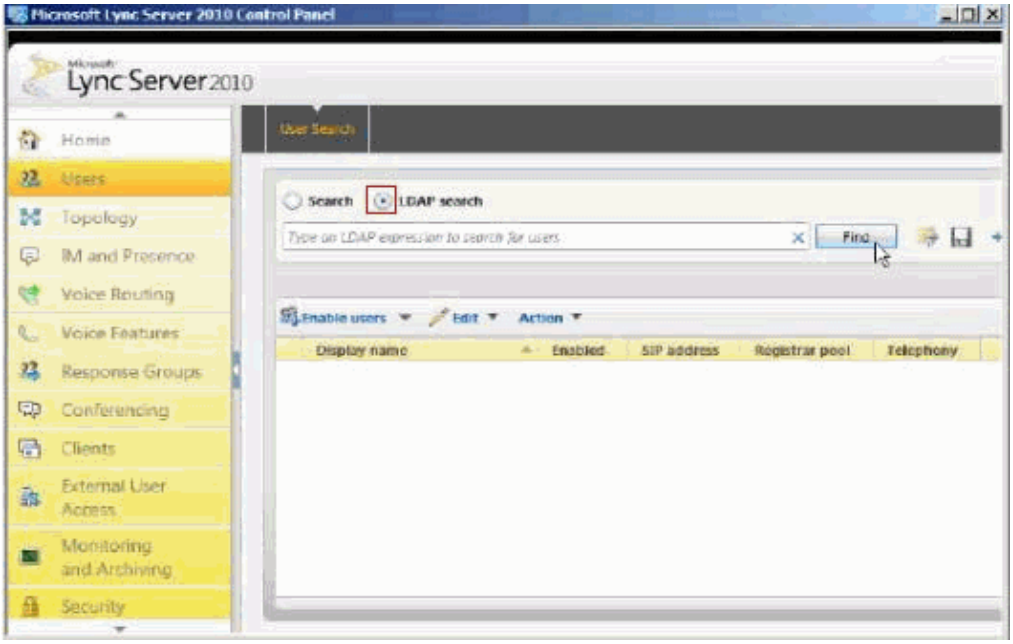
1. Choose **Start > All Programs > Microsoft Lync Server 2010 > Lync Server Control Panel**.



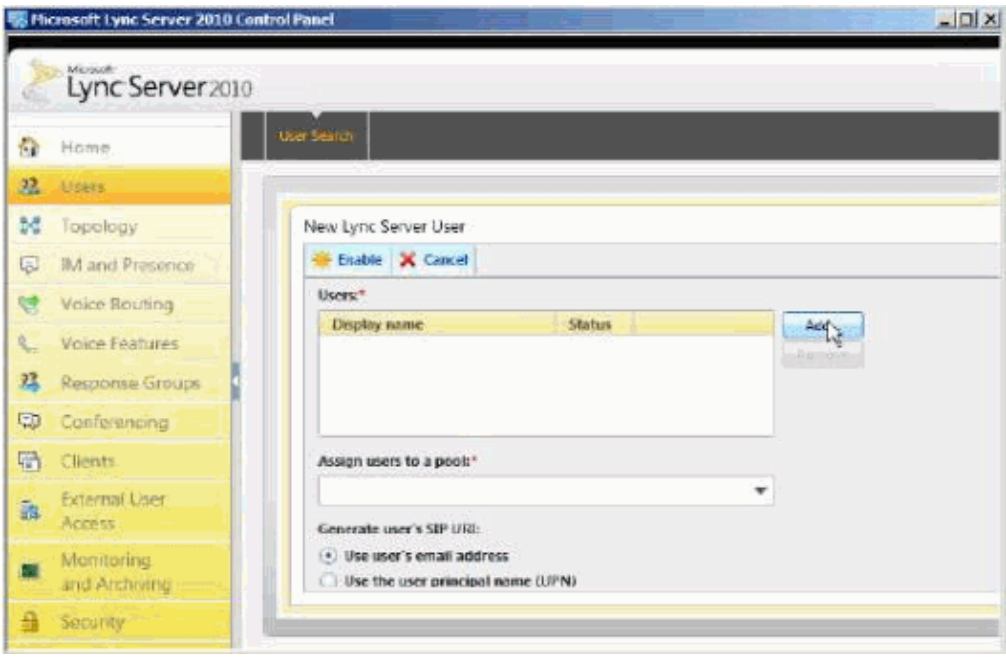
2. Once you login with your Lync credentials into the Lync Server Control Panel, it opens the Control Panel window.



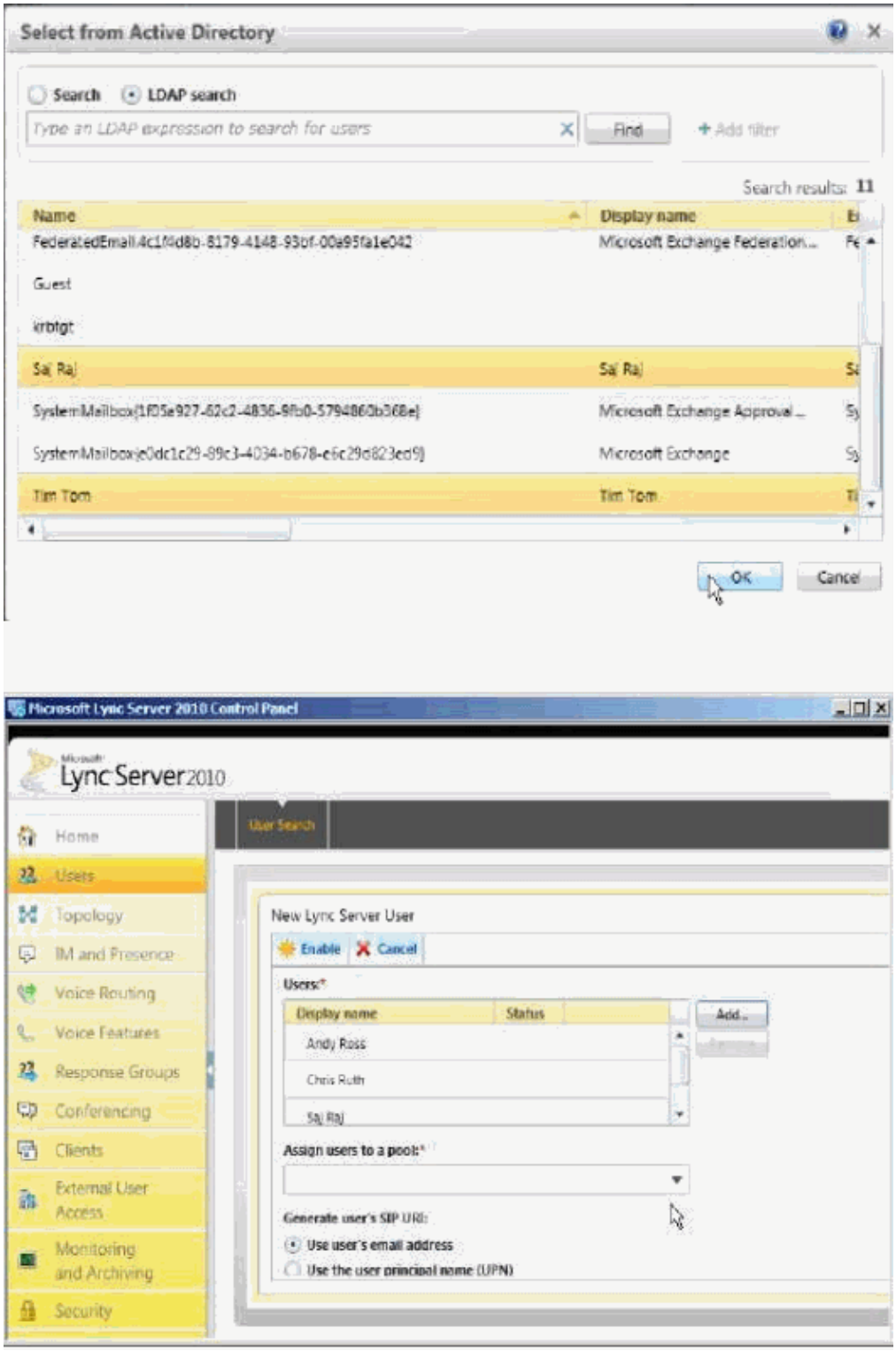
3. You can add users. Choose **LDAP search**, and click **Find**. Here in this example the query does not list any users even though LDAP users are present so you can see none of those users are enabled.



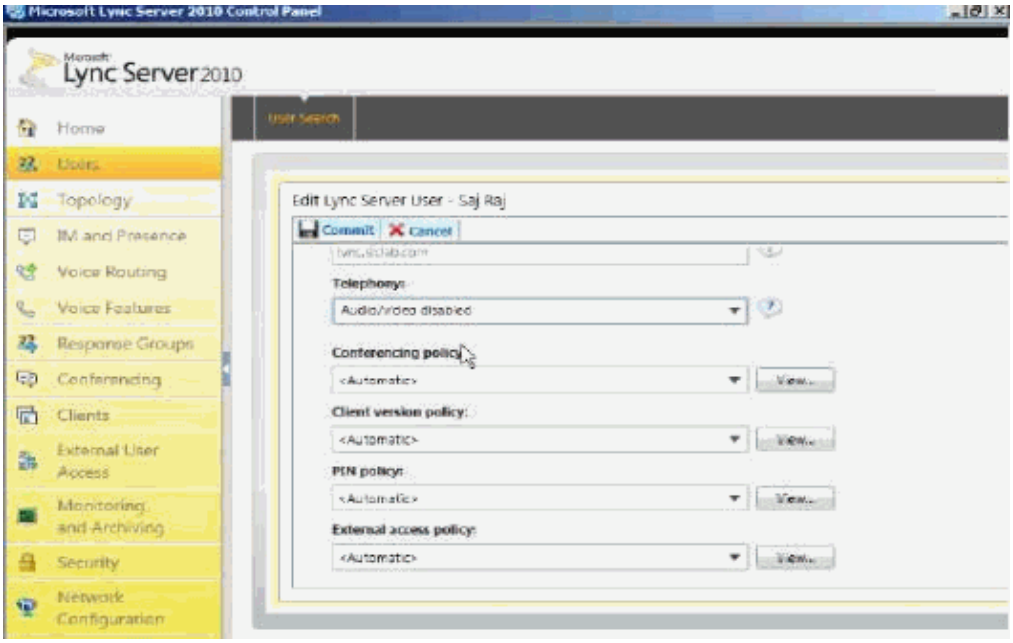
4. Enable LDAP users using Enables users. Once you click on Enable users, it brings up New Lync Server Users window where you can Add LDAP users.



5. Do an **LDAP search**, which returns all the users in LDAP. Select all the users you want to add and click **Ok**.



6. Edit all the users to change **Telephony** settings to **Audio/Video disabled** (Recommended) and Commit the changes.



7. Try to log into **Client Lync** with one of the above user credentials to make sure that login works fine.

   Note: It is recommended not to select the following telephony options for users:

   - Enable Remote call control
   - Enable Enterprise Voice

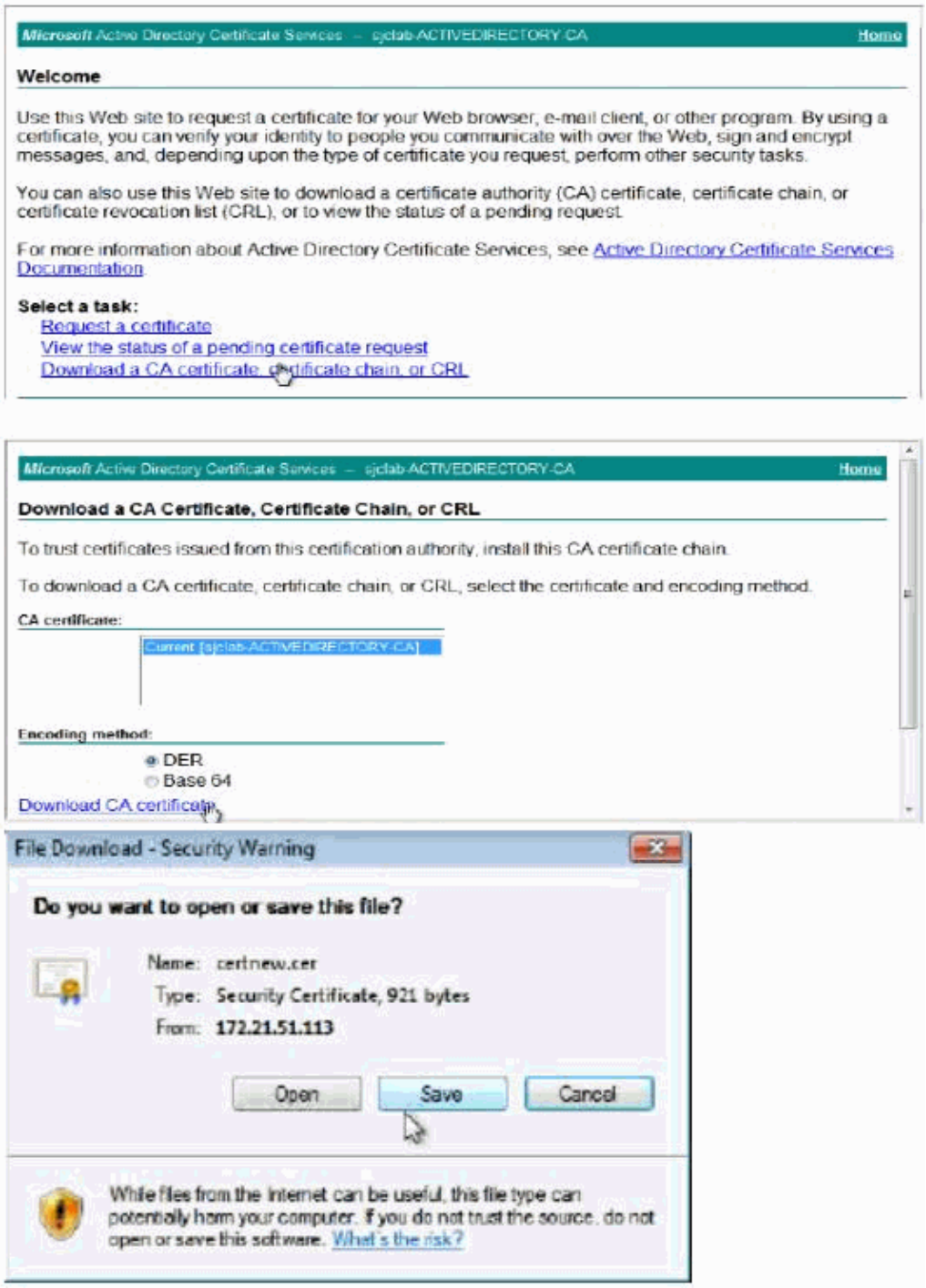
Install Lync on Client PC

Lync 2010 delivers easy and engaging access to multiple communication modes through a single, simplified interface. Users can connect and collaborate from any location that has Internet connectivity. Before proceed to install ensure the following:

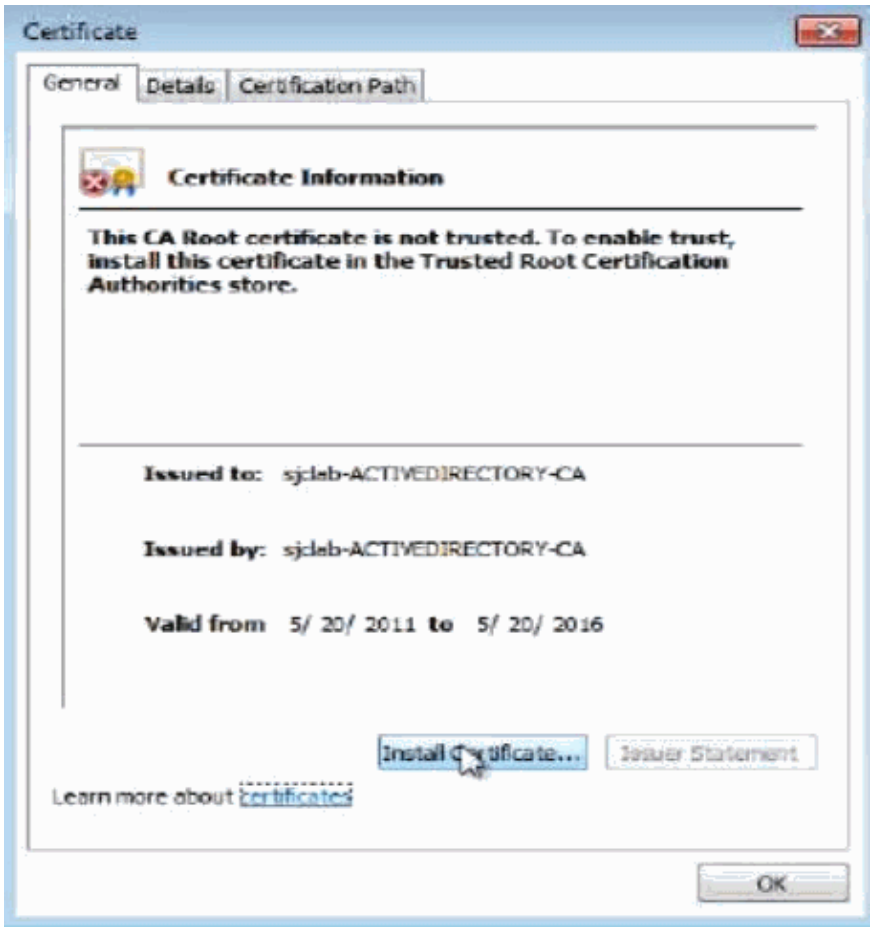
1. Client PC needs an entry in DNS and also needs to be part of the Domain
2. Ensure that root certificate on client is installed so that client trusts certificate from Lync.

   Complete these steps in order to install the Root Certificate on to the client machine.

   a. Login into CA Server from **https://<CA Server>/certSrv** and download the CA Certificate, with the name **certnew.cer**.

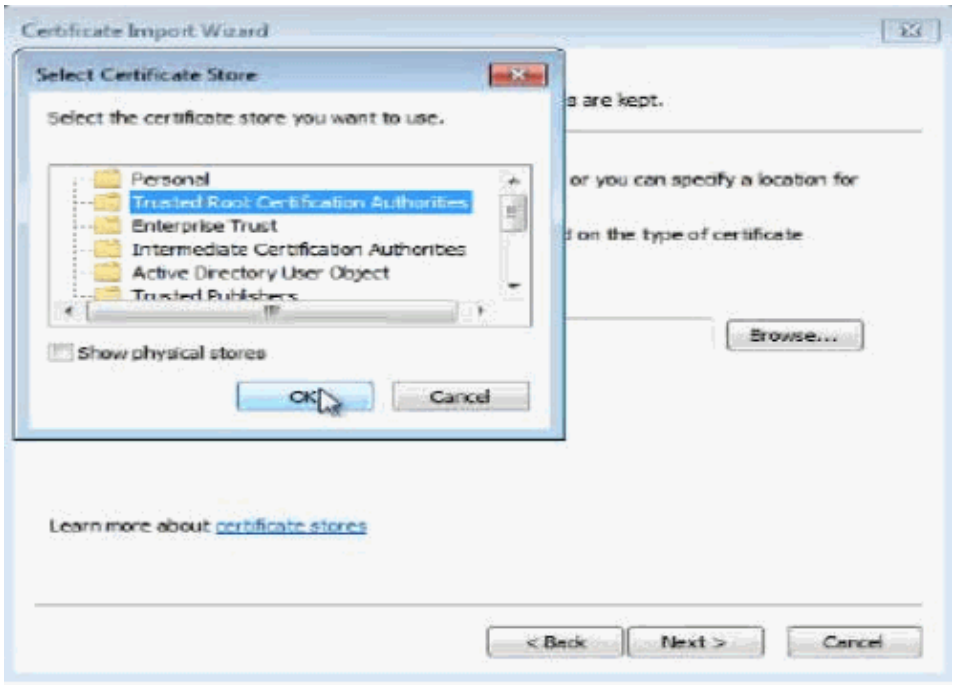


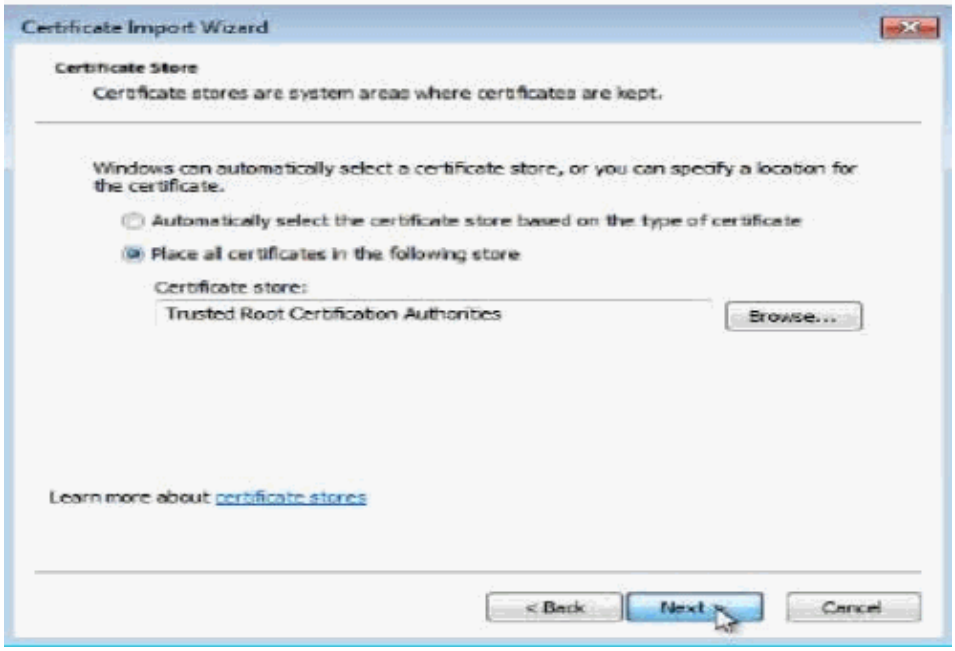
b. View and install the CA Root Certificate on to the client machines.



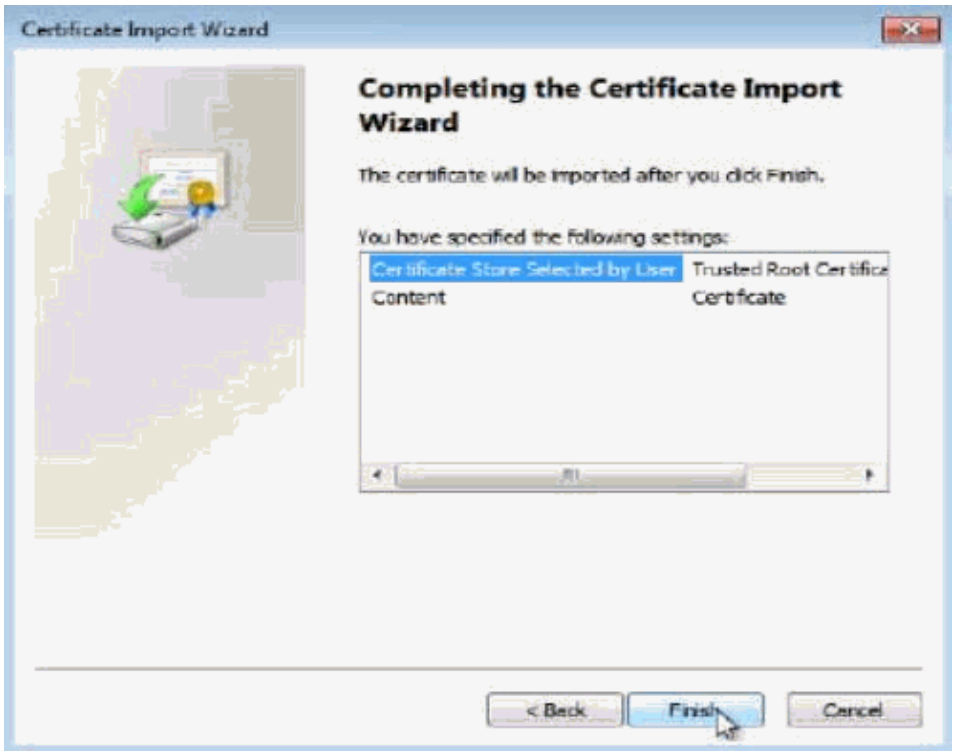
c. Certificate Import Wizard is launched.

d. Browse the certificate store where you want to place the certificates.

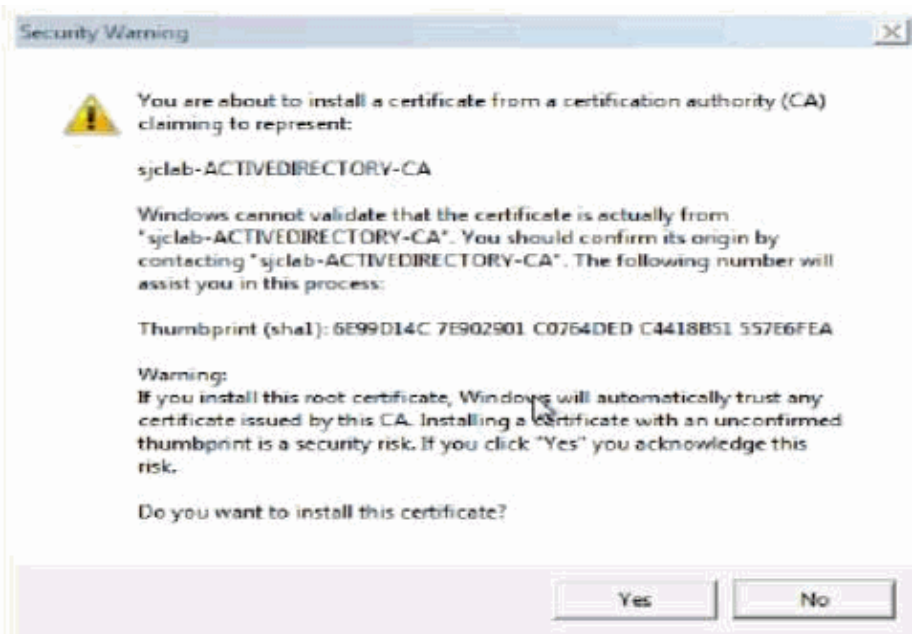




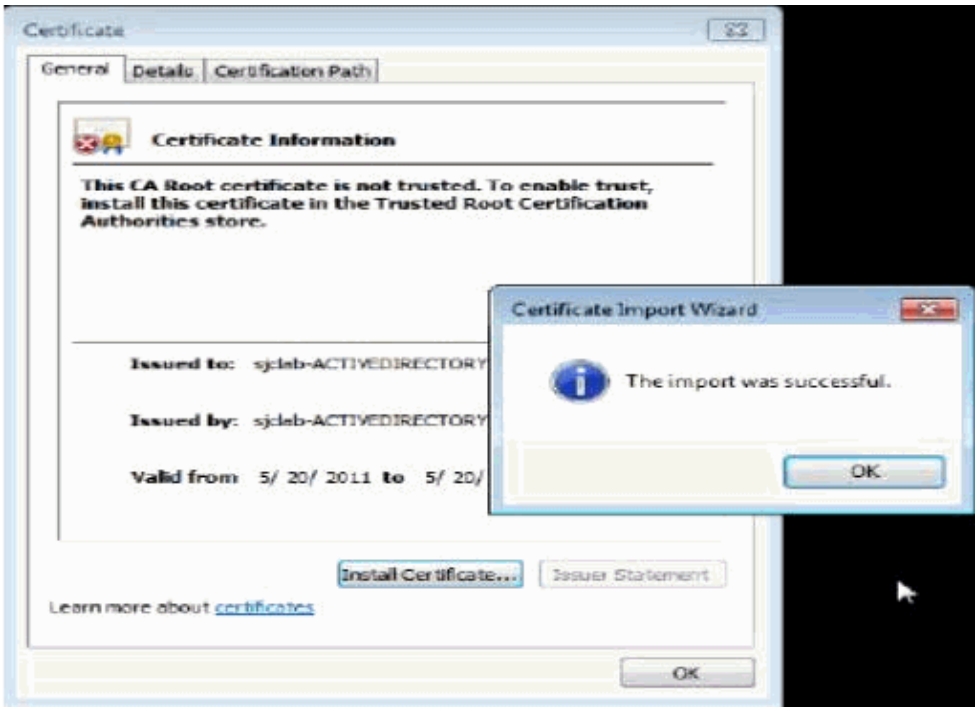
e. Click on **Finish** to complete the Certificate Import.



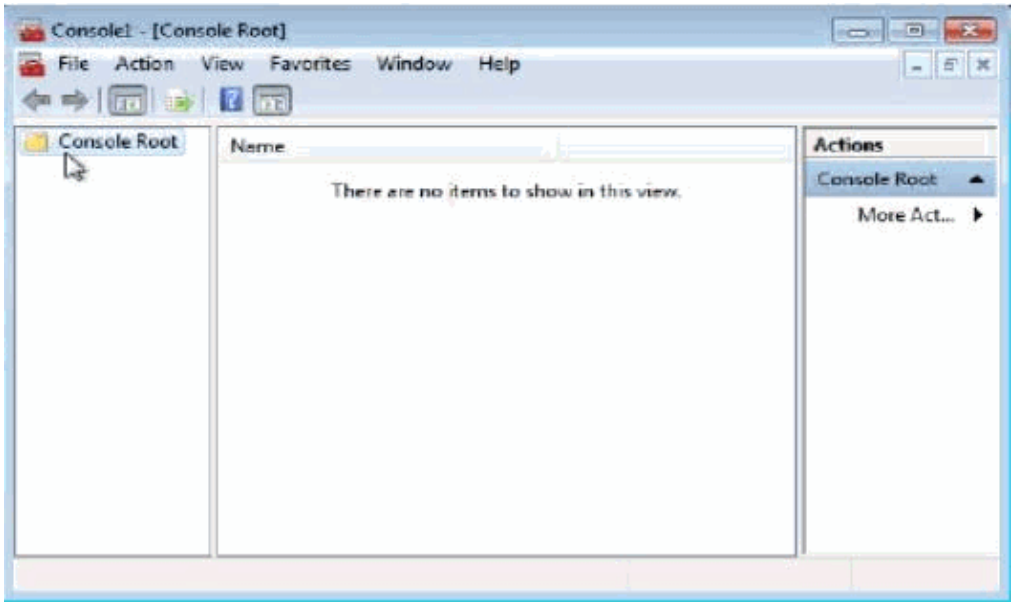
f. Click **Yes** on the security warning.



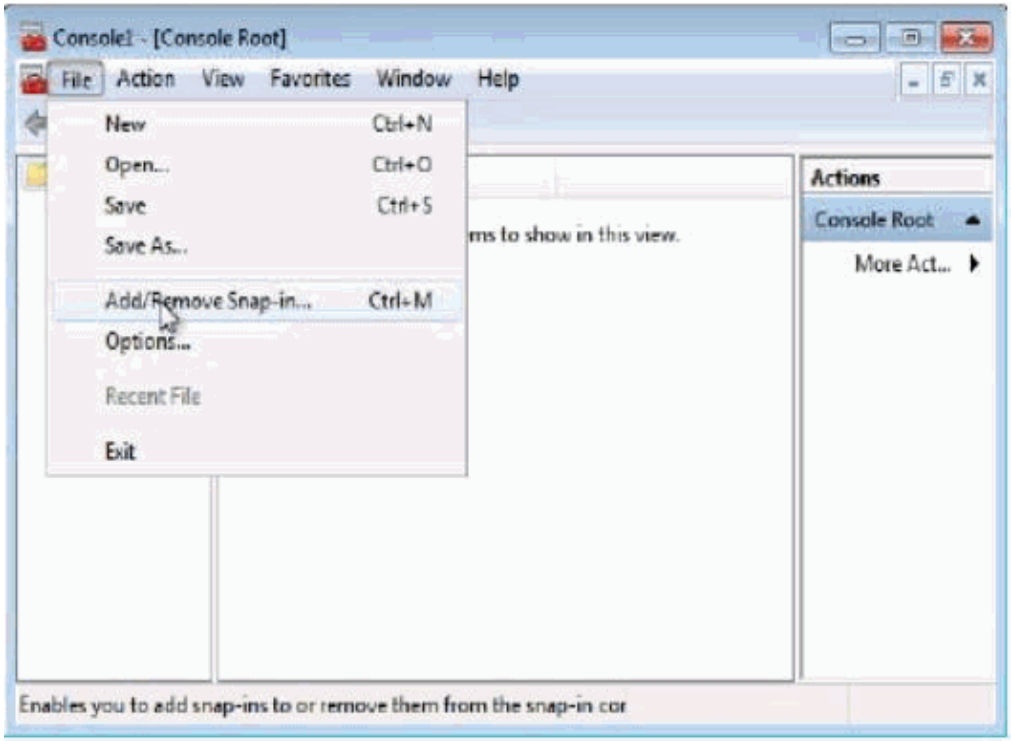
g. Successfully imported the CA root certificate.

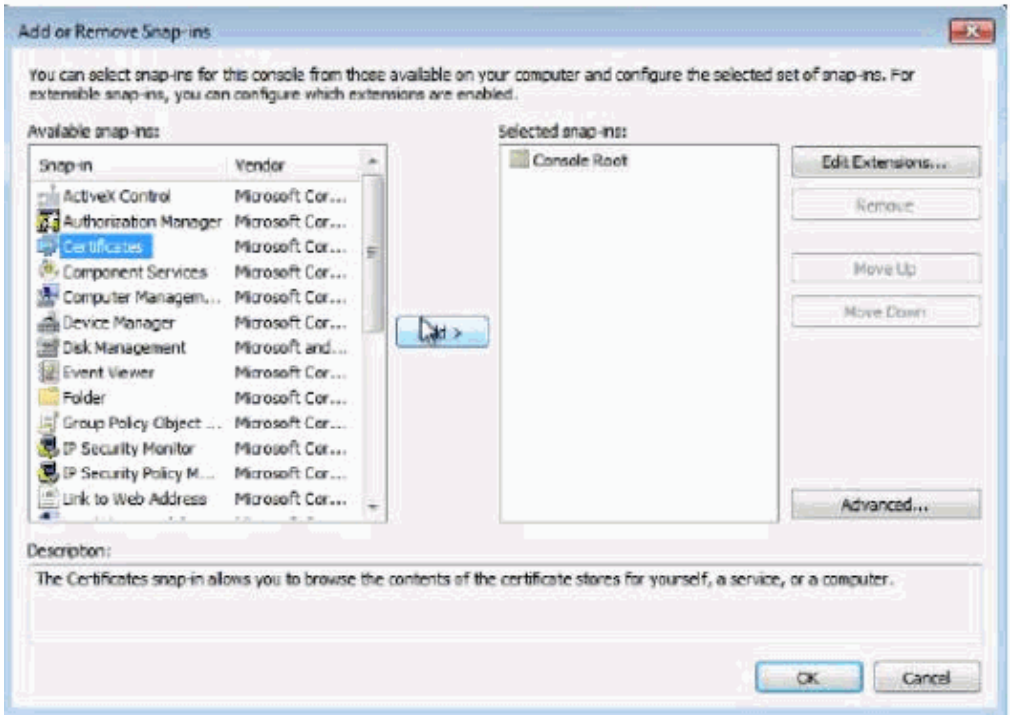


h. In order to verify if the certificate is loaded to the Trusted Root Certificates, choose **Start > Run > mmc (Microsoft Management Console)**.

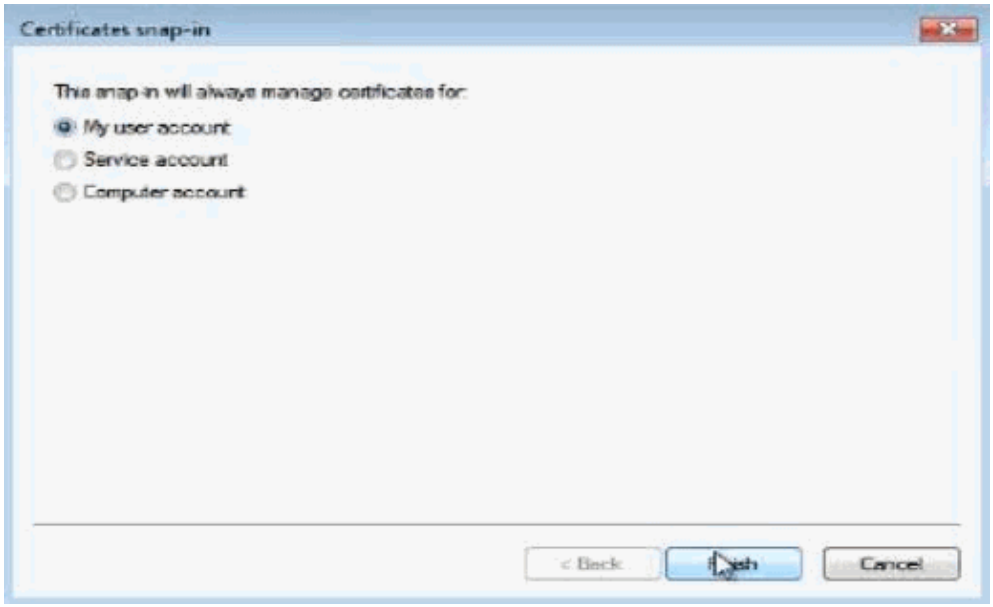


i. Choose **File > Add/Remove Snap−in**, and add **Certificates** Snap−in under Selected snap−ins. Click **Ok**

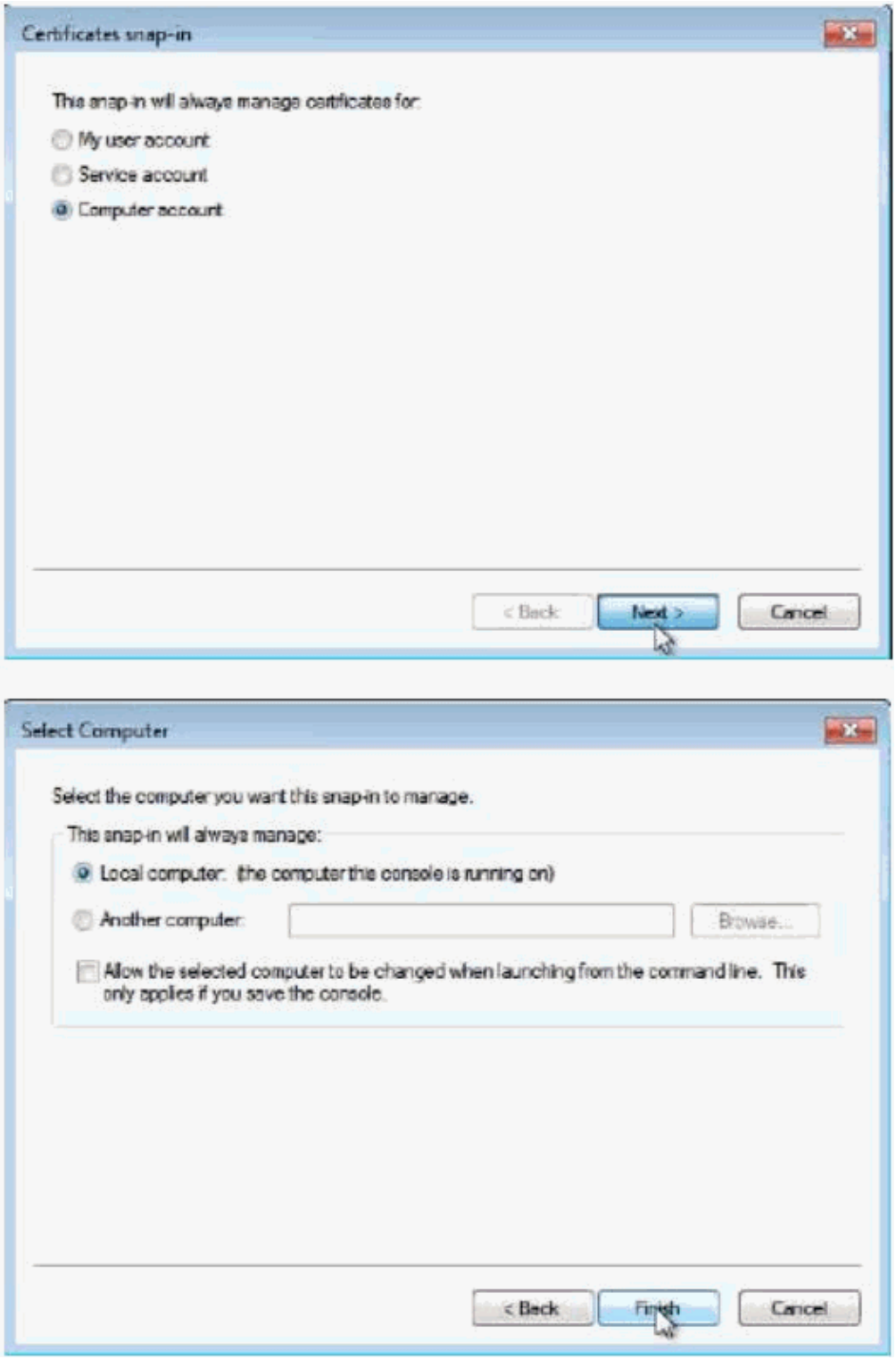




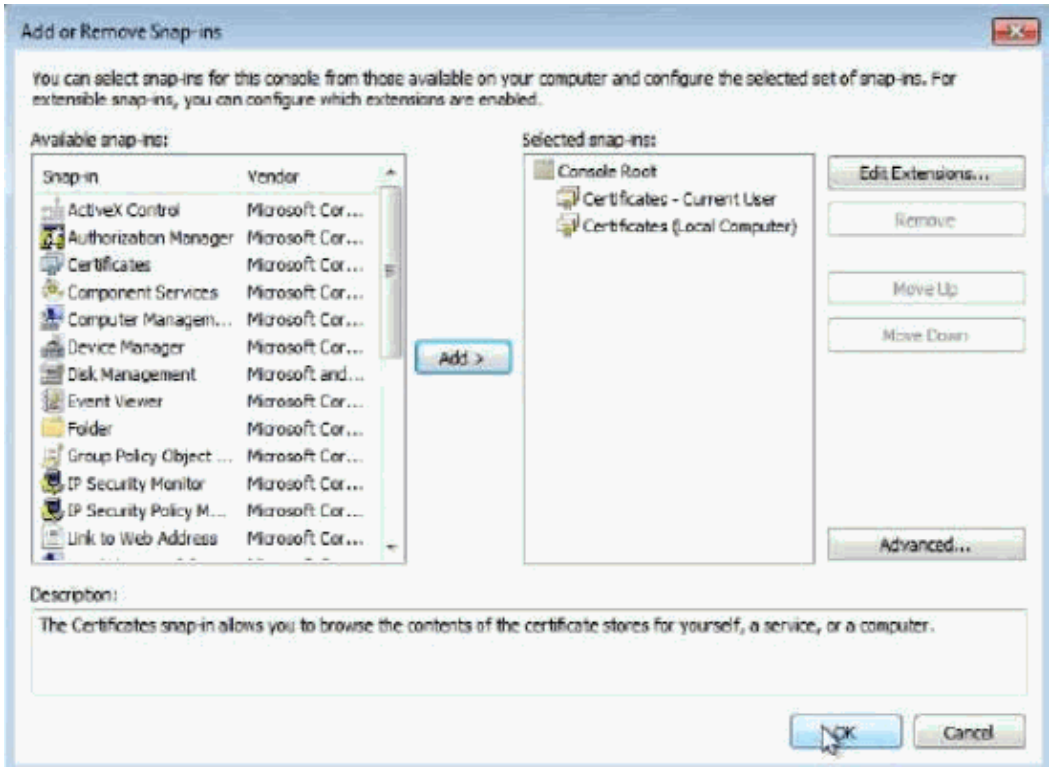
j. Add **My User Account** Certificate snap−in: and click **Finish**



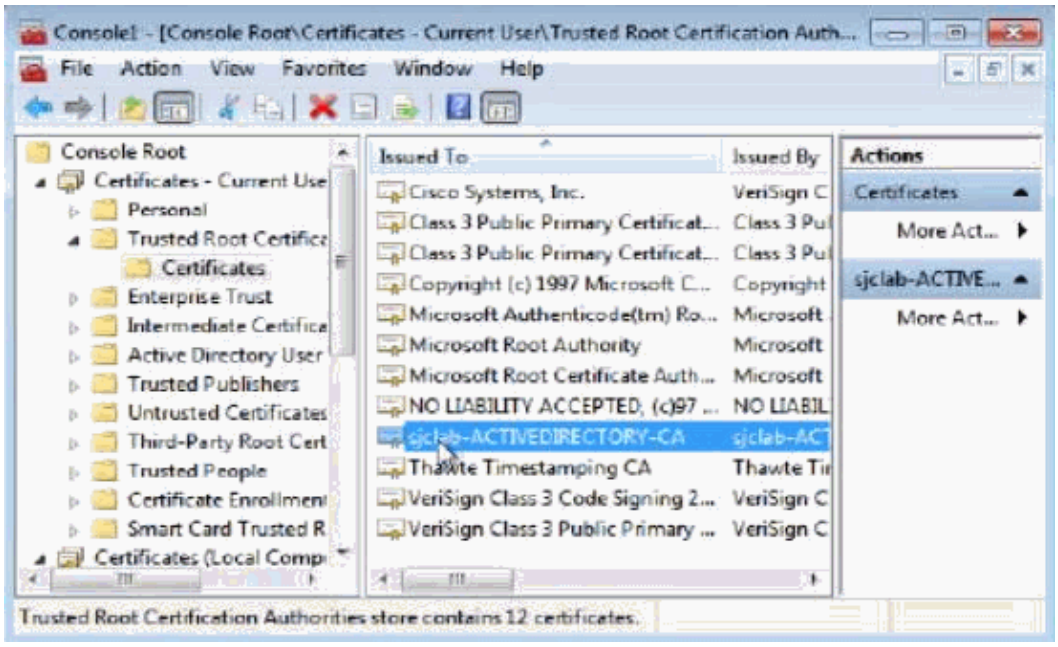
k. Similarly repeat **step i** and Add **Computer account** for certificates snap−in.



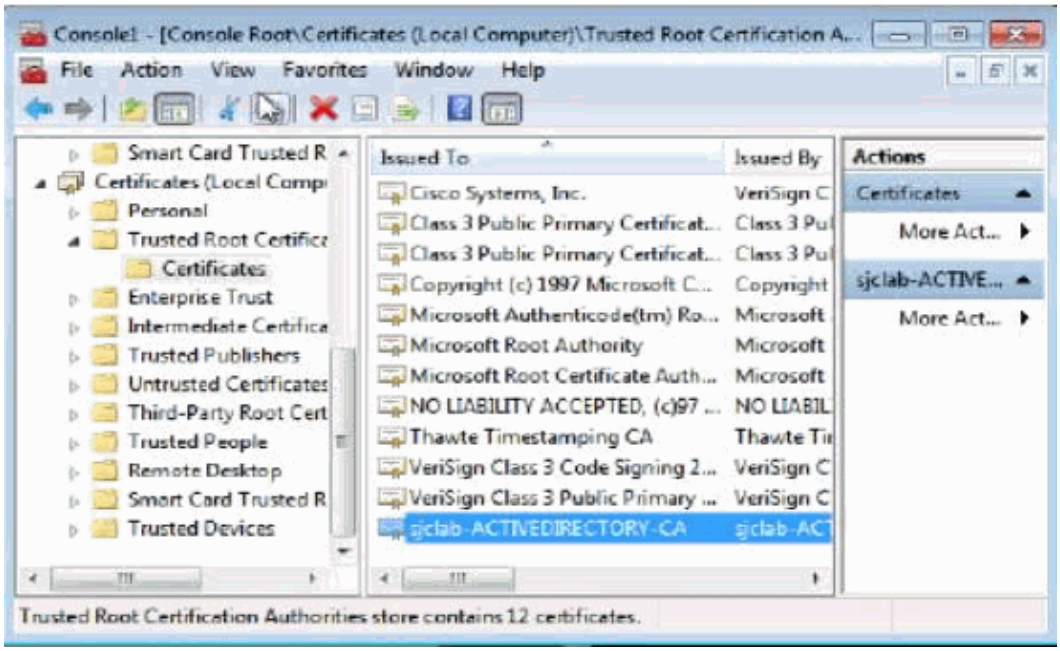
l. Now the **Add/Remove Snap−in** page looks like this.



m. On the mmc page, choose **Certificates − Current User > Trusted Root Certificates > Certificates**, and verify if you noticed the certificate that you installed earlier exists or not.



n. Now copy this certificate and save it in **Certificates (Local Computer) −> Trusted Root Certificates −> Certificates**.

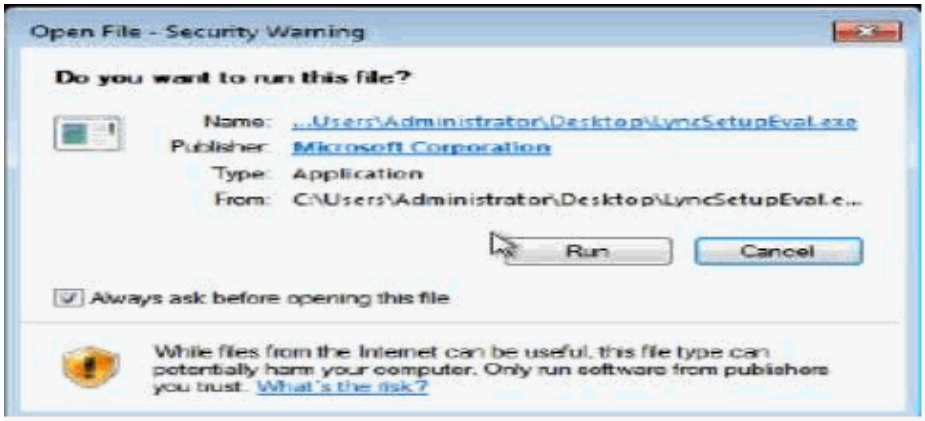


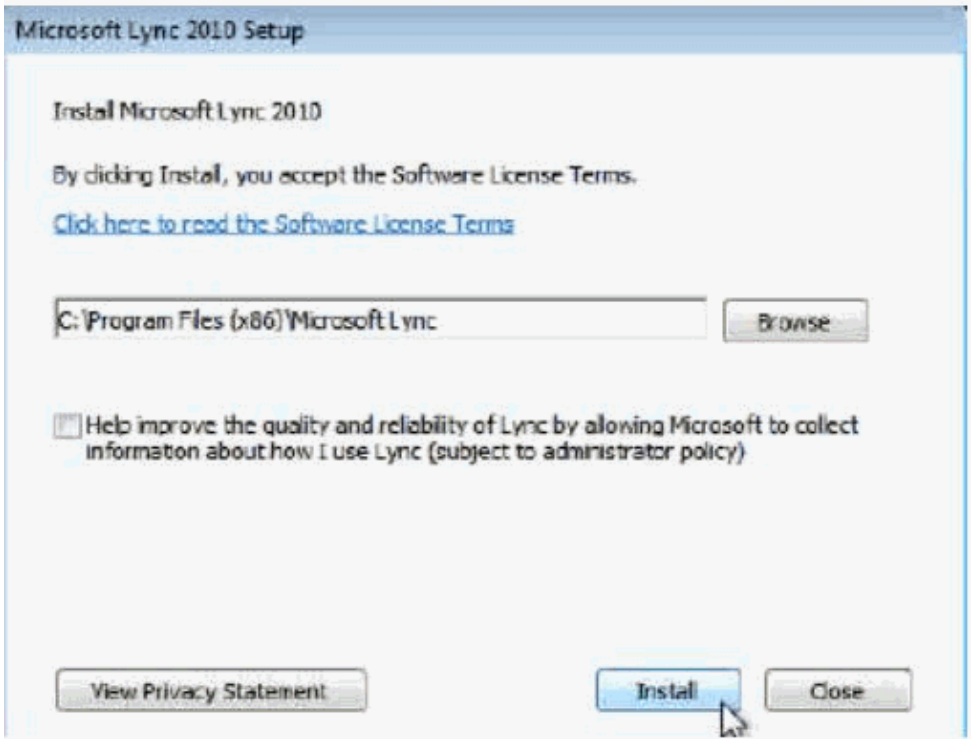
o. Save the console changes if needed and Close MMC.

Install Lync 2010 Client

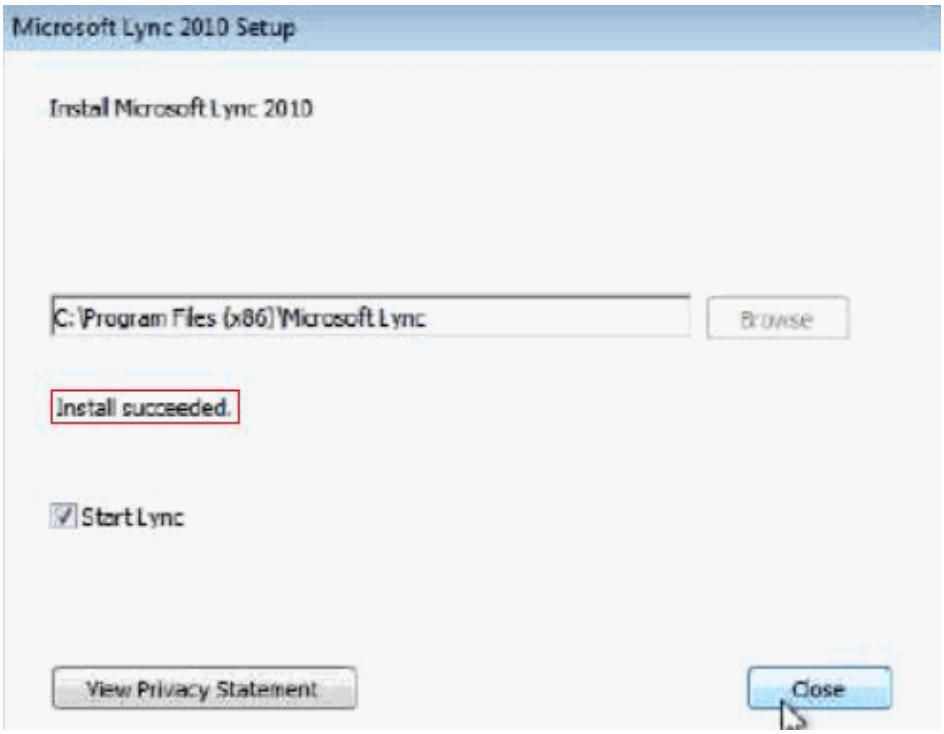
Complete the steps in order to install Lync 2010 client.

1. Run the LyncSetup.exe file to install Lync 2010 client on user PC.





2. The `Install succeeded` message appears:



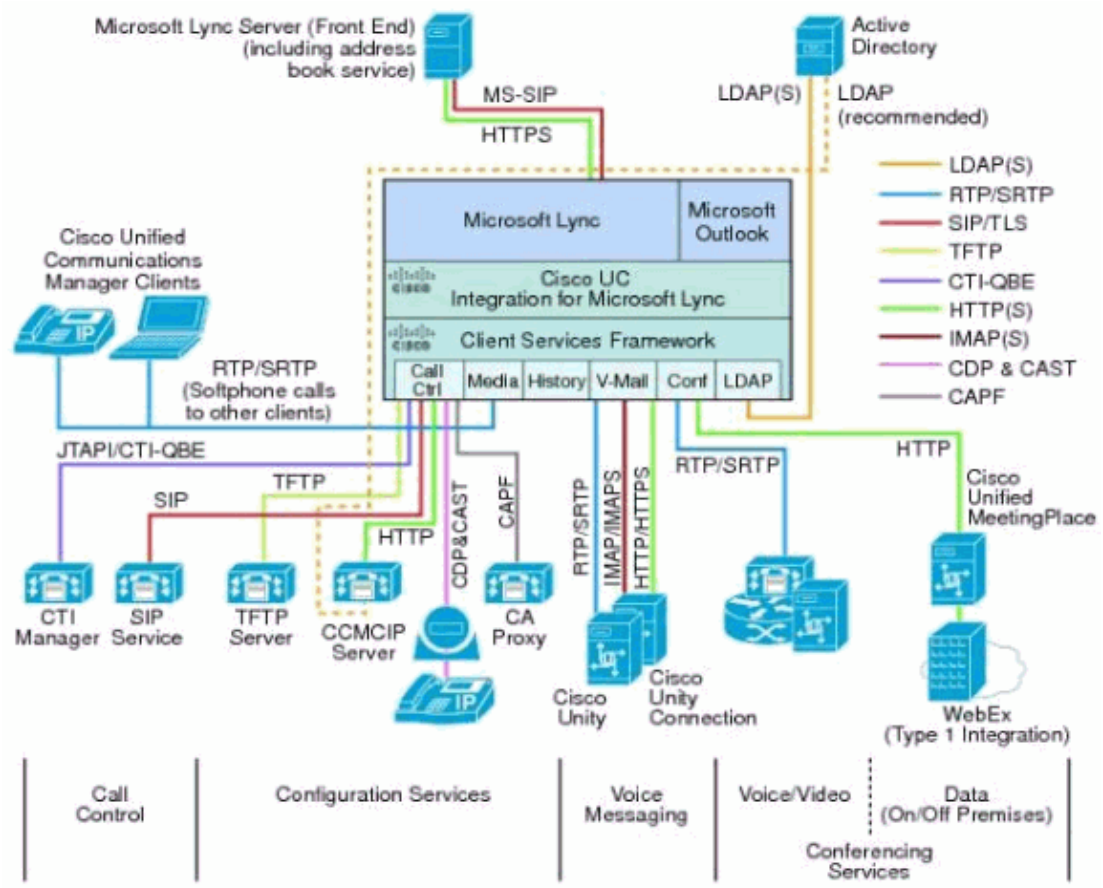
3. First time login or changing the Sign−in Address prompts for the username and password.

CUCI−LYNC configuration

The Cisco UC Integration for Microsoft Lync works with these applications:

- Microsoft Lync
- Microsoft Office Communicator

Cisco UC Integration for Microsoft Lync uses Cisco Unified Client Services Framework. Cisco Unified Client Services Framework provides Cisco telephony services and next−generation media services for Cisco UC Integration for Microsoft Lync. The integration works in the same way with each of these applications. The Cisco UC Integration for Microsoft Lync adds a Cisco UC pane at the bottom of the Microsoft Lync or Microsoft Office Communicator window. The picture shows the topology for Cisco UC Integration for Microsoft Lync Interactions with Network Servers.



Integration Notes

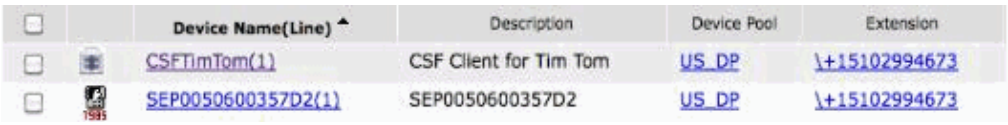
1. Active Directory provides Phone Numbers for CUCILYNC.
2. Lync server expects the phone numbers to be in E.164 format, and rejects any numbers that are not in this format.
3. If the numbers in Active Directory are not in +E.164 format, then configure normalization rules to ensure that Lync client downloads +E.164−formatted numbers from the Lync server.
4. Lync server creates an address book, which is downloaded by Lync Client
5. Ensure that the user IDs, devices, and directory numbers match in AD, Lync and CUCM.
6. Configure users so that each user has a phone number that can be correctly dialed within the context of your CUCM configuration.
7. When you place a call to a contact in Lync, the phone number is passed to CUCILYNC; CUCILYNC uses the number to call the contact through CUCM.

8. CUCILYNC also uses LDAP directly to search for contact information.
9. When you display a CUCILYNC contact card, the full name and organization information comes from an LDAP search of Active Directory.
10. When you receive a call, the LDAP connection to Active Directory is used to search for caller information to match the incoming number.
11. CSF client can use either Enhanced Directory Integration (EDI) or Basic Directory Integration (BDI) mechanisms to retrieve contact information from Active Directory.
12. EDI is recommended since it uses native Windows APIs and you might not need to do any further configuration and also provides significant advantages over BDI.

CUCM Configuration

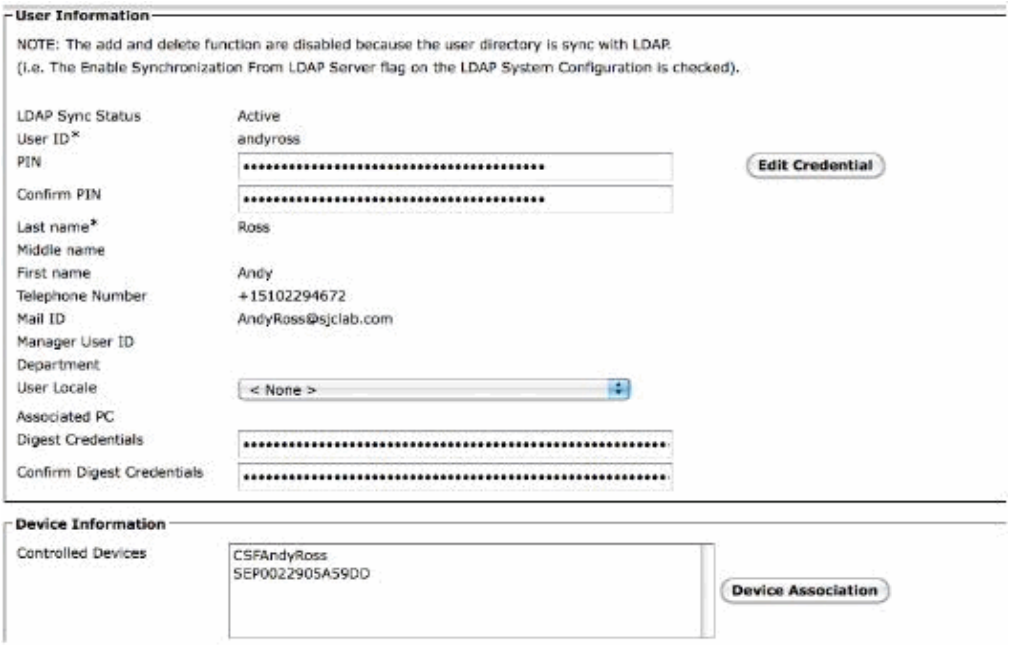
In order to accomplish this task you need to create **Client Service Framework (CSF)** Device in CUCM, which gets registered when the Call Control is connected to Lync 2010 and operates in Softphone mode. The Directory Number DN of this CSF device needs to be shared with the Actual Device of the user.

1. Configure CSF Device with the same Directory Number (DN) as Physical SEP Device.

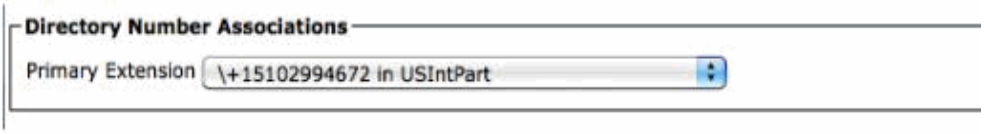


2. Associate End user to the Shared Line DN from the CSF and SEP Device DN Configuration page.

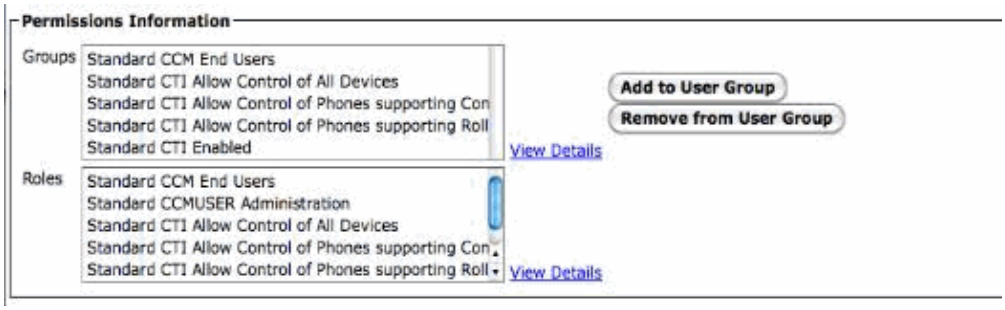
3. Associate CSF Device and SEP Device to the end user **Controlled Device** list.



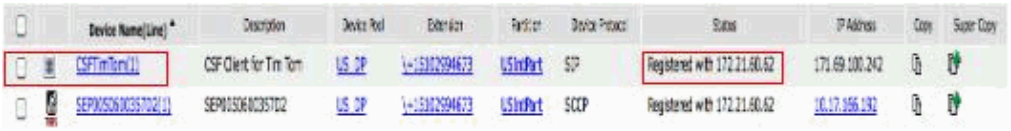
4. Configure **Primary Extension** on the End User page.



5. Assign **End Users** to **User Groups**.



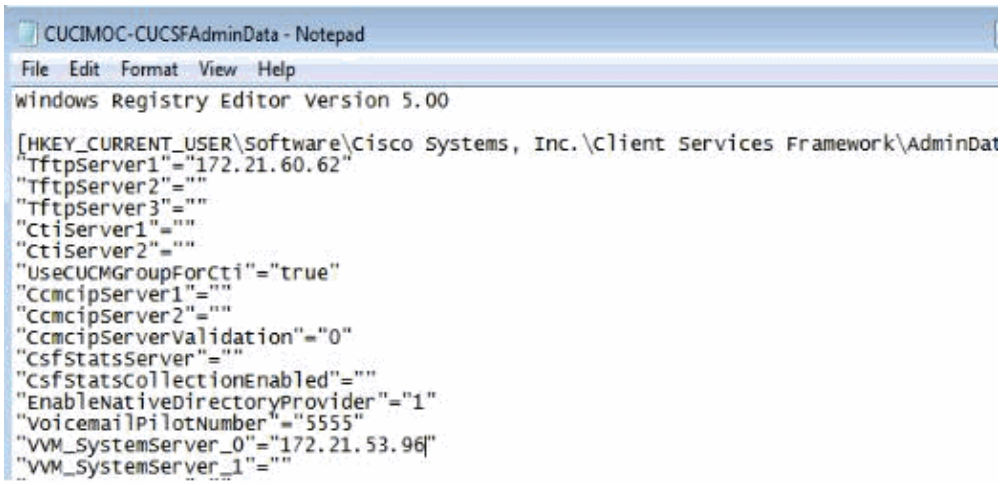
6. When CUCILYNC is in SoftPhone Mode, you notice that the CSF Device is registered.



7. When CUCILYNC is in Deskphone Mode, CSF device is unregistered.

UC Integration for Microsoft Lync Installation

Configure Registry Keys for CSF Client Integration Use the Registry file in CUCI−Lync−Admin zip folder that you download from CCO for the configuration of the Registry Settings for the CSF Client Integration.



The explanation for each field is given here:

- **TFTPServer Address** Enter the IP address or fully qualified domain name of the primary TFTP server in your Cisco Unified Communications system, and any other TFTP servers. If you are using certificates, the certificate common name must match the network identifier used to access to host, that is, the IP address or the hostname.

  Note: This is where CSF Device downloads its configuration file.
- **CTI Server** Enter the IP address or fully−qualified domain name of the primary CTIManager server in your Cisco Unified Communications system, and the secondary CTIManager server, if present. If you are using certificates, the certificate common name must match the network identifier used to access to host, that is, the IP address or the hostname.

Note: Leave it blank, cause you want CUCM to determince the CTI server group.

- **UseCUCMGroupForCti** Set this value to True if you want to use the relevant Cisco Unified Communications Manager group information on the Cisco Unified Communications Manager server to determine which CTI Servers to use instead of the CtiServer1 and CtiServer2 registry subkey names.

  Note: True: You want CUCM Group to determine the CTI Server Group.
- **CcmcipServer** Enter the IP address or fully−qualified domain name of the primary CCMCIP server in your Cisco Unified Communications system, and the secondary CCMCIP server, if present. If you are using certificates, the certificate common name must match the network identifier used to access to host, that is, the IP address or the hostname.
- **CcmcipServerValidation** Enter the type of security certificate validation for Client Services Framework to use with HTTPS to sign in to Cisco Unified Communications Manager to retrieve the device list. Enter one of the following values:

  ♦ Client Services Framework accepts all certificates.
  ♦ Client Services Framework accepts certificates that are defined in the keystore and self−signed certificates.
  ♦ Client Services Framework only accepts certificates that are defined in the keystore.

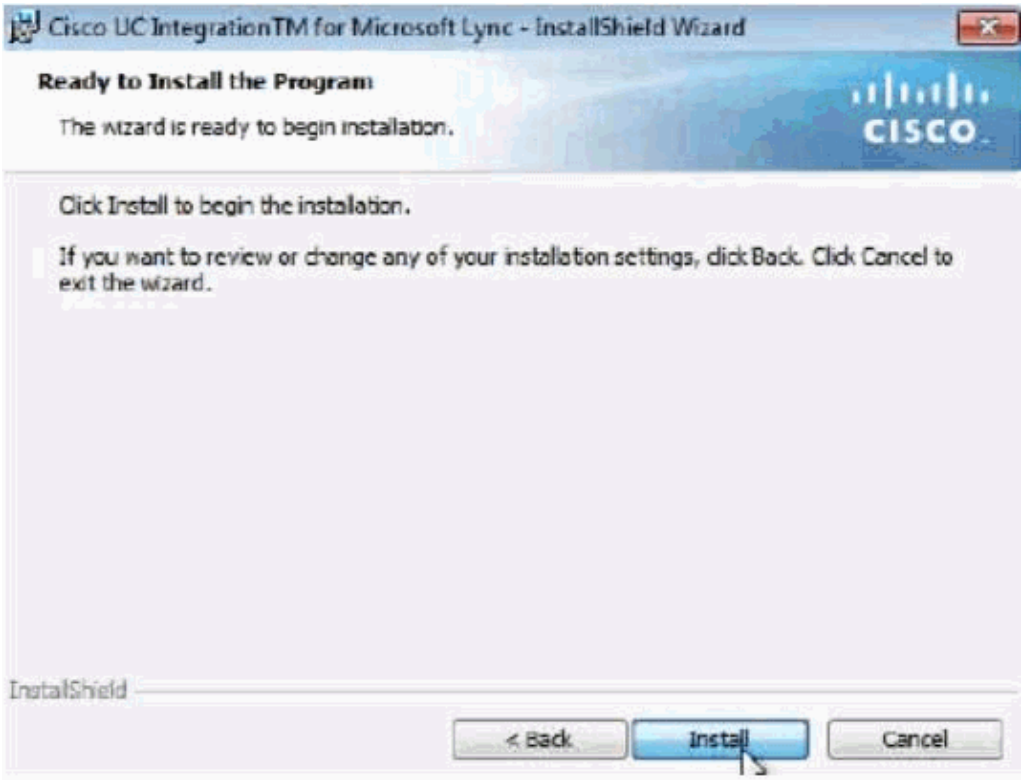
  Note: Client Services Framework uses this certificate to verify the Cisco Unified Communications Manager server. When the certificate is accepted, Client Services Framework must use the credentials of the user to sign in to Cisco Unified Communications Manager.
- **EnableNativeDirectoryProvider** Specify whether to use Enhanced or Basic Directory Integration to get contact information from Active Directory. Enter one of the following values:

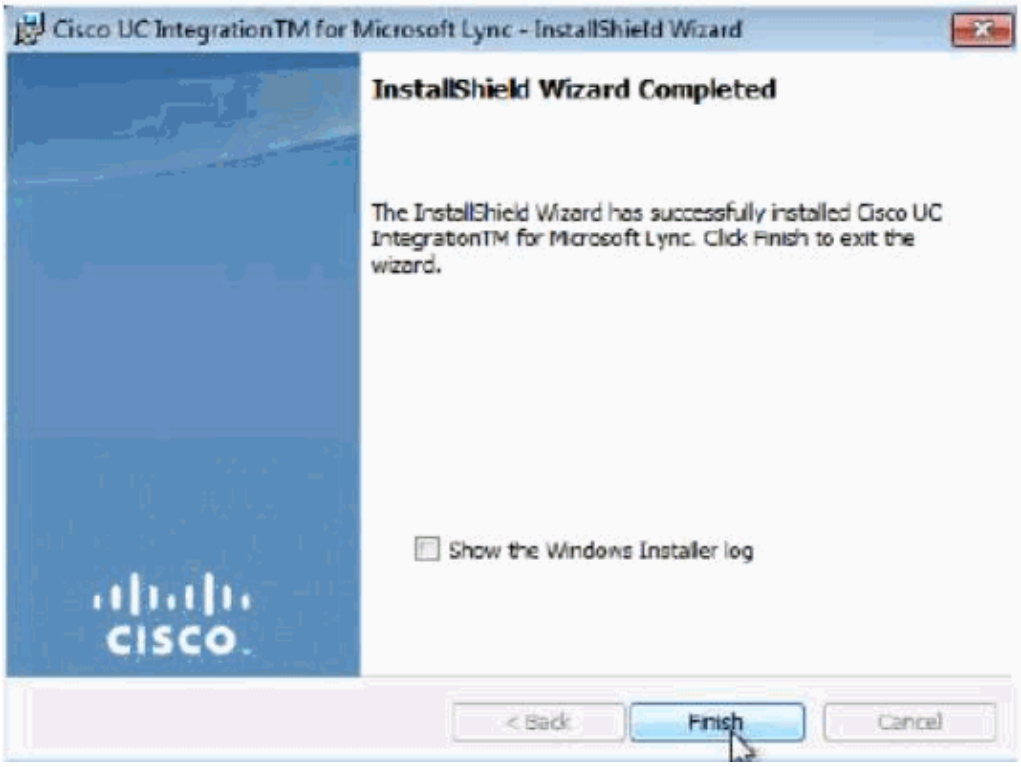
  ♦ Use Basic Directory Integration. This is the default value.
  ♦ Use Enhanced Directory Integration. Data type: REG_SZ
- **VoicemailPilotNumber** Enter the number of the voice message service in your Cisco Unified Communications system. This value only relates to when users use the desk phone to access their voice messages. If users are using the phone on their computer to access voicemail, the pilot number comes from the voicemail pilot number associated with the voicemail profile configured on the Client Services Framework device.
- **VVM_SystemServer_X** Enter the IP address or fully−qualified hostname of the Cisco Unity or Cisco Unity Connection voicemail server.

  Note: X : 0 for Primary Unity or Unity Connection Server and X : 1 for Secondary Unity or Unity Connection Server

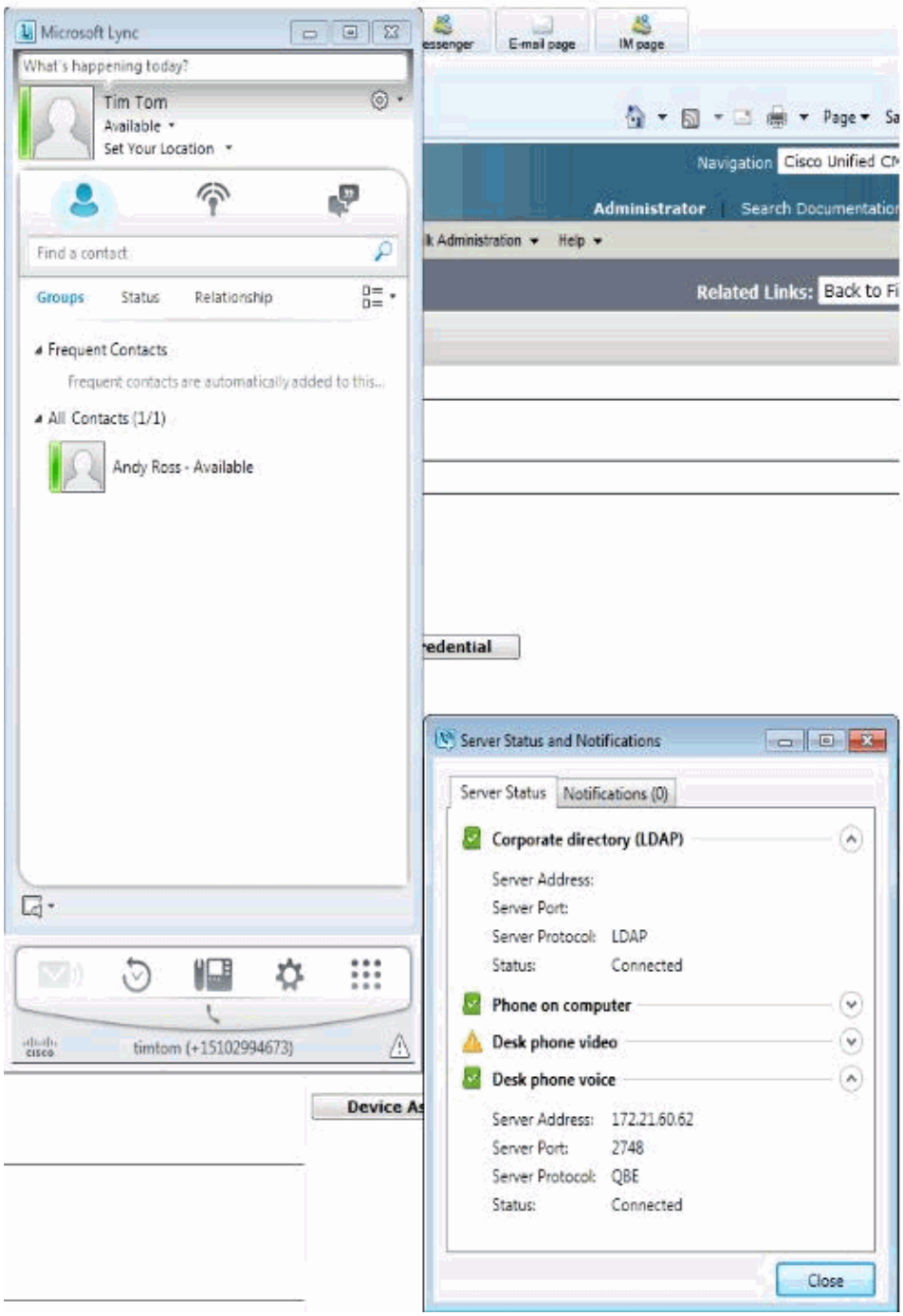
Install Cisco UC Integration TM for Microsoft Lync

Complete these steps to install CUCILYNC. Click **Next** on the wizard as shown in the screen shot.





Now you can login into CUCILYNC as shown in this screen shot and get the call control.



Related Information

- **Release Notes for Cisco UC Integration for Microsoft Lync Release 8.5**
- **Installation Guide for Cisco UC Integration for Microsoft Lync Release 8.5**
- **Technical Support & Documentation − Cisco Systems**

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