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.

integration integration	00 MT Network Conne	zetion
		Configure
his connection uses t	he following items:	
Internet Proto	a all designed A LTICT ALL	
 ✓ Link-Layer To ✓ Link-Layer To 	pology Discovery Map pology Discovery Res	74) per 1/0: Driver ponder
Install	Discovery Map pology Discovery Res	per 1/0 Driver ponder Properties

♦ 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.

i stevstor E - Januar Storft	Ĩ	Marrie M)(Cetault) M)(DrazveDL0D	REG_SZ REG_SINARY	Data (value not set) 00 01 00 01 15 67 85 07 00 05 29 5
storvst storvsp		BisabledComponents	REG_DWORD	0/271111117 (4294967295)
TR Serena m				
E TAPET				
😟 - 🔔 TTC				
E Topic				
T T-1 Interes				
E Paramatare				
Wissock				
TOPIPOTONNEL				
Dill - Les Perpire eng				
TOPIPE	1			
ER- 📕 TOTOP				
(# - 🔔 Edx				
The second				

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.

exre toubegn	This woard heips you install roles on this server. You determine which roles to install based on the tasks you want this server to perform, such as sharing documents or hosting a Web site.
lanfirmation	Before you continue, verify that:
rogress esuits	The Administrator account has a strong password Network settings, such as static IP addresses, are configured The latest security updates from Windows Update are installed
	If you have to complete any of the preceding steps, cancel the wizard, complete the steps, and then run the wizard again.
	To continue, dick Next.

4. Choose the Active Directory Domain Services Role.

before You begin	Select one or more roles to instal on this server.		
Active Director y Domein Services Confirmation Program Accounts	Active Directory Certificate Services Active Directory Pickerator Services Active Directory Rights Monagement Services Active Service Brain Service Brain Service Brain Address Services Web Server Update Services Windows Server Update Services	R	Artive Directory Dansin Services (A) DS stores information about objects on the activatic and makes this information available to users and network administrators. AD DS uses duration controllers to give network users access to permitted resources anywhere on the network through a single logion process.

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**.

Before You Begin	Introduction to Active Directory Domain Services
Server Roles Active Directory Domain Service Confirmation	Active Directory Donain Services (AD DS) stores information about users, computers, and other devices on the network. AD DS helps administrators accurely manage this information and boiltates resource sharing and collaboration between users. AD DS is also required frond instrumers expensioned applications such as Microsoft Exchange Server and for other Windows Server technologies such as Group Policy.
Privaress.	Things to Note
Repultz	To help ensure that users can still og on to the network in the case of a server cutage, instal a minimum plate domain controllers for a domain.
	 AD DS requires a DNS server to be installed on the network. IF you do not have a DNS server installed, you will be prompted to install the DNS Server role on this server.
	() After you install the AD DS role, use the Active Directory Domain Services Installation Waard (oppromotese) to make the server a fully functional domain controller.
	 Installing AD DS will also install the DFS Namespaces, DFS Replication, and File Replication services which are required by Directory Service.
	Additional Information
	Oversex of AD DS
	Instaling AD 05
	Common Configurations for AD DS

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

tefore You Begin Jerver Rales Active Directory Domain Services	To install the following roles, role services, or	features, didi instal.
Confirmation	(i) This server might need to be restarted	after the installation completes.
Propess	Active Directory Domain Services	
ALERA DE	(i) After you ratal the AD DS role, use (deprore.exe) to make the server a JAET Framework 3.5.1 Features JAET Framework 3.5.1	the Active Directory Doman Services Installation Wizard
	Print, e stall, or save this information	

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

afore You Begin	The following roles, role services, or features are being installed:
nver Roles ctive Directory Domain Sarvices politimation opress coulte	Active Directory Domain Services NET Framework 3.5.1 Features
	C Infeiding instelle for
Roles Witard	
Roles Wixand Installation Resi fore You Begin rver Roles	ults The following roles, role services, or features were installed successfully:
Roles Wizant Installation Reso fore You Begin rver Roles two Directory Domain Services offmacton	ults The following roles, role services, or features were installed successfully:
Roles Wizand Installation Resi fore You Begin river Roles two Chectory Domain Services offmaction agress	ults The following roles, role services, or features were installed successfully:
Roles Wikani Installation Reso fore You Begin rver Roles two Director y Domain Services infrancion opress suits	Interfolowing roles, role services, or features were installed successfully:

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.

	And the second
<u>I</u>	Welcome to the Active Directory Domain Services Installation Wizard This wizerd helps you instal Active Directory Domain Services (AD DS) on this server, making the server an Active Directory domain controller. To continue, click, Next.
	Use advanced mode installation Learn more about the additional options that are
	available in advanced mode instellation
۵. این	More about Active Directory Demain Services
	< Back Next > Cance
	COSX NEX Card
perating System (Improved security affect older version	Compatibility satings in Windows Server 2008 and Windows Server 2008 R2 ns of Windows
Windows Serve new more secure compatible with non-Microsoft. 5 when establish "Windows Serve uperations or as 2008 or "Windo	ar 2008 and "Windows Server 2008 R2" domain controllers have a re default for the security setting named "Allow cryptography algorithms Windows NT 4.0." This setting prevents Microsoft Windows and iMB "clients" from using weaker NT 4.0 style cryptography algorithms ng security channel sessions against Windows Server 2008 or wr 2008 R2" domain controllers. As a result of this new default, splications that require a security channel serviced by Windows Server was Server 2008 R2" domain controllers might fail.
Windows Serve new more secu compatible with non-Microsoft 5 when establishin "Windows Serv operations or as 2008 or "Windo Platforms impac SMB "dirents" is stronger cryptog Windows earlie domain join ope Deployment Ser	er 2008 and "Windows Server 2008 R2" domain controllers have a re default for the security setting named "Allow cryptography algorithms Windows NT 4.0." This aetting prevents Microsoft Windows and IMB "clients" from using weaker NT 4.0 style cryptography algorithms ng security channel seesions against Windows Server 2008 R2" domain controllers. As a result of this new default, pplications that require a security channel serviced by Windows Server was Server 2008 R2" domain controllers might feil. Sted by this change include Windows NT 4.0, as well as non-Microsoft and network-stached storage (NAS) devices that do not support graphy algorithms. Some operations on clients running versions of rithan Windows Vieta with Service Pack 1 are also impacted, including rations performed by the Active Directory Migration Tool or Windows ruices.
Windows Serve new more securic compatible with non-Microsoft S when establishin "Windows Serve operations or ap 2008 or "Window Platforms impace SMB "clients" a stronger cryptog Windows earlied domain join oper Deployment Ser For more information (http://go.microsoft)	er 2008 and "Windows Server 2008 R2" domain controllers have a re default for the security setting named "Alow cryptography algorithms Windows NT 4.0." This setting prevents Microsoft Windows and SNB "dients" from using weaker NT 4.0 attyle cryptography algorithms ng security channel sessions against Windows Server 2008 or rer 2008 R2" domain controllers. As a result of this new default, policitions that require a security channel serviced by Windows Server was Server 2008 R2" domain controllers might fail. ted by this change include Windows NT 4.0, as well as non-Microsoft and network-stiached storage (NAS) devices that do not support graphy algorithms. Some operations on clients running versions of rithan Windows Vieta with Service Pack 1 are also impacted including rations performed by the Active Directory Migration Tool or Windows inclus. ation about this setting, see Knowledge Base article 942564 isoft com/wink/?Link.id=104751}.
 Windows Serve new more secur compatible with non-Microsoft S when establishis "Windows Serve uperations or as 2008 or "Window Platforms impace SMB "dients" is stronger cryptog Windows earlier domain join ope Deployment Ser For more informa (http://go.microsoft) 	er 2008 and "Windows Server 2008 R2" domain controllers have a re default for the security setting named "Alow cryptography algorithms Windows NT 4.0." This setting prevents Microsoft Windows and SNB "dients" from using weaker NT 4.0 style cryptography algorithms ng security channel sessions against Windows Server 2008 or we 2008 R2" domain controllers. As a result of this new default, oplications that require a security channel serviced by Windows Server was Server 2008 R2" domain controllers might fail. ted by this change include Windows NT 4.0, as well as non-Microsoft and network-etitached storage (NAS) devices that do not support graphy algorithms. Some operations on clients running versions of rithan Windows Vieta with Service Pack 1 are also impacted, including stations performed by the Active Directory Migration Tool or Windows nrices. ation about this setting, see Knowledge Base article 942564 isoft com/fwink/71Linkid=104751).

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

C Existing forest		
C Add o doman co	nitolicr to an existing domain	
Create a new dor This server will be	nsin in an existing fores: come the first domain controller in t	re new domain.
🗘 Create a new domain i	n a new forest	
More about <u>possible deplo</u>	ment configurations	

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

is the forest root domain. Its name is also the name of n name (FQDN) of the new forest root domain. an:
n name (FQDN) of the new forest root domain.
in:
<u> </u>

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

Window	s Server 2003	-
Details:		
- - Any new Window	Linked value replication, which improves the replication of changes to group memberarings. More efficient generation of complex replication topologies by the KCC. Forest trust, which allows organizations to easily share internal resources across multiple forests. domains that are created in this forest will automatically operate at the s Server 2003 domain functional level.	4
Â	You will be able to add only domain controlliers that are running Windows Server 2003 or leter to this forest.	
More ab	sut domain and forest functional levels	

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

Window	a Server 2008 R2	-
Details		-
are avail additiona Any new Window	able in the Windows Server 2008 forest functional level, plus the following I feature Recycle Bin, which, when it is enabled, provides the ability to restore deleted objects in their entirety while Active Directory Domain Services is running, domains that are created in this forest will operate by default at the Server 2008 R2 domain functional level.	le le
4	You will be able to add only domain controllers that are running Windows Server 2008 R2 or later to this forest.	
More abu	ut domain and forest functional levels	

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

Sect additional options for this domain o	porteneller.	
DNS server		
M televal centerog		
E Bensionly domain controller (ECOT)	1	
We recommend that you install the DN controller.	S Server service on the first domein	X
More about additional domain controller	options	

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.

Active	Directory Domain Services Installation Wizard	I
<u>^</u>	A delegation for this DNS server cannot be created because the authoritative parent zone cannot be found or it does not run Windows DNS server. If you are integrating with an existing DNS infrastructure, you should manually create a delegation to this DNS server in the parent zone to ensure reliable name resolution from outside the domain "sidab.com". Otherwise, no action is required.	
	Yes No	

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.

For better performance and recoverability, store the p	database and log files on separate
Detabase folder:	
C:\Windowe\NTDS	Browse
Log files folder:	
C:\Windows\NTDS	Browee
SYSVOL folder:	
C:\Windows\5YSVOL	Browse
Mere about <u>placing Active Directory Domain Service</u>	afiles

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

The Directory Services R Administrator account.	extore Mode Administrator account is different from the doma
Assign a password for the controller is started in Dire choose a strong password	Administrator account that will be used when this domain actory Services Restore Mode. We recommend that you d.
Password:	•••••
Confirm password:	

11. On the Summary Window, click Next.

nmary			101
Review your selections:			
Configure this server as the first Active Directo	ry domain controlle	r in a new forest.	-
The new domain name is "sjolab.com". This is	also the name of t	he new forest.	
The NetBIOS name of the domain is "SJCLAB	r.		
Forest Functional Level: Windows Server 200	8 R2		
Domain Functional Level: Windows Server 20	08 R2		
Site: Default First Site-Name			
Additional Options			-1
To change an option, click Back. To begin the	e operation, click N	iesd.	-
These settings can be experted to an answert other unattended operations. More about using an answer file	fie for use with	Export setting	•

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

Accive Directory Domain S	ervices Installation Wizard
The wizard is configuring Act from a few minutes to several that you selected.	ve Directory Domain Services. This process can take hours, depending on your environment and the options
Waiting for DNS installation to	o finish
Rebot on completion	Cancel
Active Directory Dema	in Services Installation Wiyard
	Completing the Active Directory Domain Services Installation Wizard Active Directory Domain Services is now installed on this a computer for the domain "actab com". This Active Directory domain controller is assigned to the site "Default First Site Name". You can manage sites with the Active Directory Stee and Services administrative tool.
	To close this wizard, click Finish.
	K Back Finish Cancel

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

File Action View Help	- 1 🖬 1 🔯 🗛 Bra 🖙 😁	7		
Active Directory Users and Comput Active Directory Users and Comput Saved Queries Saved Queries Saved Queries Bulkin Bulkin Comput Active Directory Users and Comput Active Directory Comput Active	nistrator RODC Password Replication Group / Ross	Type User Security Group User	Description Built-in account for admini Members in this group can	
Computers Computers	Publishers Ruth dministrator dministrator dministrator spDesk koation Administrator esponse Group Administrator puter text ap	Security Group User Security Group Security Group Security Group Security Group Security Group Security Group Security Group	Members of this group are Members of this group ca Members of this group ca	
Refresh met Export list met Properties Prin Help Use Sha Dom	OrgPerson xdhOynamicDistributionList naging-PSPs 1Q Queue Alias ter rad Folder an Guests ain Guests ain Guests prise Admine	Security Group Security Group Security Group Security Group Security Group Security Group Security Group Security Group	Members in this group can DUS Administrators Group DUS clents who are perm Designated administrators All domain controllers in th All domain guests All domain users Designated administrators	

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

First name:	Craig		Initials:		
Last name:	Whyte				
Full name:	Craig Whyte				
User logon name:					
craigwhyte		@sjclab.com	1	-	
User logon name (pre ^{.)}	Vindows 2000)):			
SJCLAB\		craigwhyte			
0bject - User	[< Back	Next >	Cancel	
Object - User	sjclab.com/L	< Back	Next >	Cancel	
Object - User Create in: Password:	sjclab.com/L	< Back	Next >	Cancel	
Password:	sjclab.com/L	< Back	Next >	Cancel	
Object - User Create in: Password: Confirm password: User must change	sjclab.com/L	< Back	Next >	Cancel	
Create in: Create in: Password: Confirm password: User must change User cannot change User cannot change	sjclab.com/L	< Back	Next >	Cancel	
Object - User Create in: Password: Confirm password: User must change User cannot change Password never ex	siclab.com/L	< Back	Next >	Cancel	
Create in: Create in: Password: Confirm password: User must change User cannot change Password never ex Account is disabled	siclab.com/L	< Back	Next >	Cancel	

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.

Dial-in Ì E	nvironment	Sessions	1 2	Bemote	control
Remote Desktop Se	rvices Profile	Personal Vi	rtual Desk	top]	COM+
General Address A	Account Profile	Telephones	Organia	zation	Member 0
🧏 Craig WI	hyte				
First name:	Craig	lr	nitials:		
Last name:	Whyte				_
Diselau name	Craig White				
Display name.					
Description:					
Office:					
Telephone number:	+15102994675			Other	
E-mail:	craigwhyte@sic	lab.com			
				Others	
web page:	1			Other	

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**.

Select how yo	ou want zone data	a replicated:			
To all DNS	servers running	on domain cont	rollers in this fo	rest: sjclab.com	i .
C To all DNS	servers running	on domain cont	rollers in this do	main: sjclab.co	m
C To all don	ain controllers in	this domain (fo	r Windows 2000) compatibility):	sjclab.com
${f C}$ To all dom	ain controllers sp	ecified in the so	ope of this dire	ctory partition;	

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**.

lew Zone Wizard	X
Reverse Lookup Zone Name A reverse lookup zone translates IP ad	dresses into DNS names.
To identify the reverse lookup zone, ty Network ID: 172 .21 .60 The network ID is the portion of the network ID in its normal (not reverse If you use a zero in the network ID network ID 10 would create zone 10 zone 0.10.in-addr.arpa.	pe the network ID or the name of the zone. e IP addresses that belongs to this zone. Enter the ed) order. , it will appear in the zone name. For example, 0.in-addr.arpa, and network ID 10.0 would create
60.21.172.in-addr.arpa	
	< Back Next > Cancel

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

New Zone Wizard	×
Dynamic Update You can specify that this DNS zone accepts secure, nonsecure, or no dynamic updates.	
Dynamic updates enable DNS client computers to register and dynamically upda resource records with a DNS server whenever changes occur.	te their
Select the type of dynamic updates you want to allow:	
 Allow only secure dynamic updates (recommended for Active Directory) This option is available only for Active Directory-integrated zones. 	
 Allow both nonsecure and secure dynamic updates Dynamic updates of resource records are accepted from any dient. This option is a significant security vulnerability because updates can accepted from untrusted sources. 	be
C Do not allow dynamic updates Dynamic updates of resource records are not accepted by this zone. You mu these records manually.	ust update
< Back Next >	Cancel

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

/ Zone Wizard			
Reverse Lookup Zone Name			
A reverse lookup zone translates IP addresses	into DNS name	es.	
Choose whether you want to create a reverse addresses.	lookup zone fo	or IPv4 addresses	or IPv6
IPv4 Reverse Lookup Zone			
C IPv6 Reverse Lookup Zone			
		N	
	Lead [Nevt	Cancel

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

Completing the New Zone Wizard
You have successfully completed the New Zone Wizard. You specified the following settings:
Name: 60.21.172.in-addr.arpa
Type: Active Directory-Integrated Primary
Lookup type: Reverse
v
Note: You should now add records to the zone or ensure that records are updated dynamically. You can then verify name resolution using nslookup.
To close this wizard and create the new zone, 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.

	9 1 10 11 11 10 11			
DNS DNS ACTIVEDIRECTORY Forward Lookup Zones Conditional Conditio	Name Name Name	Type Start of Authority (SOA): Name Server (N5) Host (A) Host (A)	Data [153], actived/rectory.sjdab actived/rectory.sjdab.com. 172.21.51.113 172.21.51.113 172.21.51.125 2002:ab45:64f2:0000:0000 172.21.51.125 172.21.51.125 172.21.51.125 172.21.51.125 172.21.51.125 172.21.51.125 172.21.51.125	static st

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**.

New Host	×
Name (uses parent dor	main name if blank):
Exchange	
Fully qualified domain r	name (FQDN):
Exchange.sjclab.com	•
IP address:	
172.21.51.122	
Create associated	pointer (PTR) record
Allow any authention same owner name	cated user to update DNS records with the
	Add Host Cancel

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.

Select one or more roles to instal on this server. Roles: Active Directory Cerbificate Services Active Directory Foderation Services Active Directory Rights Management Services BHOP Server DHOP Server Bits Services Print and Document Services Windows Deployment Services Windows Server Update Services	Description: Active Directory Certificate Services (AD CS) is used to create certification authorities and related role services the allow you to issue and manage certificates used in a variety of applications.
	Select one or more roles to instal on this server. Boles: Active Directory Certificate Services Active Directory Federation Services Active Directory Fights Management Services Active Directory Rights Management Services Active Directory Rights Management Services Active Directory Rights Management Services Active Directory Rights Management Services DHS Server DHS Server DHS Server File Services Print and Document Services Print and Document Services Print and Document Services Web Server (IIS) Windows Server Update Services Windows Server Update Services

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.

Add Roles Wizard		×
Specify Setu	ир Туре	
Before You Begin Server Roles AD CS Role Services Setue Type CA Type Private Key Dryptography CA Name Validity Period Certificate Database Confirmation Progress Results	Certification Authorities can use data in Active Directory to simplify the issuance and management of certificates. Specify whether you want to set up an Enterprise or Standalone CA.	
	More about the differences between enteronse and standalone setup	
	< Previous Next > Indial Cancel	

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.

Set Up Priva	
	ite Key
Before You Begin Server Roles AD C5 Role Services Setup Type CA Type Private Key CA Type CA Ty	To generate and issue certificates to dients, a CA must have a private key. Specify whether you want to create a new private key or use an existing one. C Create a new private key Let this option if you don't have a private key or wich to create a new private key to enhance security. You will be asked to select a cryptographic service provider and specify a key length for the private key. It take news certificates, you must do us edicat a heat adgridtme. C Let existing private key Let the option to ensure continuity with previously issued certificates when reinstalling a CA. C Science and Let and Let a second let (a second let (a) or other and specify a key length for the private key. Select this option if you have an existing one tificate are the comparison of fying exact to ensure a continuity with previously issued certificates when reinstalling a CA. C Science and Let the applice information (b) associated private key. C solect the option if you have an existing one tificate are the comparison of fying exact to ensure the second let. C Science and Let the option if you have relatered private keys from a previous metallation or ward to use a private key from an alternate source.
	More about public and private bevs < Previous
Configure Cr	yptography for CA
Before You Begin Server Roles AD CS Role Services Setup Type CA Type	To create a new private key, you must first select a <u>cryptographic service provider</u> , <u>bash algorithm</u> , and key length that are appropriate for the intended use of the certificates that you issue. Selecting a higher value for key length will result in stronger security, but increase the time needed to complete signing operations. Select a cryptographic service provider (CSP): RSA #Microsoft Software Key Storage Provider
Before You Begin Server Roles AD CS Role Services Setup Type CA Type Private Key	To create a new private key, you must first select a <u>cryptographic service provider</u> , <u>hash algorithm</u> , and key length that are appropriate for the intended use of the certificates that you issue. Selecting a higher value for key length will result in stronger security, but increase the time needed to complete signing operations. Select a cryptographic service provider (CSP): RSA+Microsoft Software Key Storage Provider
Before You Begin Server Roles AD CS Role Services Setup Type CA Type Private Key CA Name Valdity Period Certificate Database Confirmation Progress	To create a new private key, you must first select a <u>cryptographic service provider</u> , <u>hash algorithm</u> , and key length that are appropriate for the intended use of the certificates that you issue. Selecting a higher value for key length will result in stronger security, but increase the time needed to complete signing operations. Select a cryptographic service provider (CSP): RSA #Microsoft Software Key Storage Provider Select the hash algorithm for signing certificates issued by this CA: SHA256 SHA284 SHA512 Variant Complete Service provider the private key is accessed by the CA.

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

Configure C	A Name
Bofore You Bagin Server Roles AD CS Role Services Setup Type CA Type Privato Key	Type in a common name to identify this CA. This name is added to all certificates issued by the CA. Distinguished name suffix values are automatically generated but can be modified. Common name for this CA: ActiveDirectory Distinguished name suffix: DC=splab,DC=com
Cryptography	Braulay of distinguished name:
Validity Period Certificate Database Confirmation	CN=ActiveDirectory,DC=spileb,DC=com
Progress Results	
	More about configuring a CA name

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

Add Roles Wizard	
Set Validity Po	eriod
Before You Begin Server Roles AD CS Role Services Sotup Type CA Type Private Key Cryptography CA Name Val dito Eerod	A certificate will be issued to this CA to secure communications with other CAs and with clents requesting certificates. The validity period of a CA certificate can be based on a number of factors, including the intended purpose of the CA and security measures that you have taken to secure the CA. Select validity period for the certificate generated for this CA: S Years CA explicitly Date: 3/26/2015 1:44 PM Note that CA will issue certificates valid only until its expiration date.
Certificate Database Confirmation Progress Rassults	More about setting the certificate validity period AgreeNous Best > precipit Cancel

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**.

Before You Begin Server Roles AD CS	The certificate database records all certificate requests, issued certificates, and revoke certificates. The database log can be used to monitor management activity for a CA. Certificate database location:	d or expired
Role Services	C:\Windows\zystem32\CartLog	Brgwaw
CA Type		
Private Key	Car blicate database log location:	
Cryptography	C: Windows/system32/CertLog	Browse
CA Name		
Validity Penod		
Certificate Database		
Certificate Database Confirmation		
Certificate Database Confirmation Togress		
Certificate Database onfirmation rogress coults		
Certificate Distabase onfirmation rogress coults		
Certificate Database Ionfirmation Yogress Iceuitis		
Certificate Database Confirmation Progress Results		
Certificate Database Confirmation Progress Results		
Certificate Database Confirmation Progress Results		

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

Before You Begin Server Roles AD CS	To install the following roles, role servic $\underline{A}_{\mathbf{L}}$ 1 warning, 1 informational messa	as, or features, click Instal. ges Dolow
Role Services	(i) this server might need to be need	tarted after the installation completes.
Setup Type	Active Directory Certificate Services	
CA Type Private Key	Certification Authority () The name and domain settings (of this computer cannot be changed after Certification Authority has
Cryptography	CA Type 1	Enterprise Root
CA Name	CP :	RSA#Microsoft Software Key Storage Provider
Validity Period	Hest Algorithm : Key Length :	2048
Certificate Database	Allow CSP Interaction :	Disabled
Confirmation	Certificate Validity Period :	6(20/2016 1:17 AM
Program	Certificate Database Location :	C:\Windows\system32\CeitLog
Regults	Cartificate Database LogLocation :	C:\Windows\system32\CertLog
	First, u-mail, or save this information	

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.

System Properties		X	
Computer Name Hardw	are Advanced Remote Advanced Remote	1	
Computer description: Full computer name: Domain: To rename this compute workgroup, click Chang	IK. For example: "IIS Production Server" or "Accounting Server". Exchange sjolab.com sjolab.com er or change its domain or Change e.	Computer Name/Domain Changes You can change the name and the membr computer. Changes might affect access to More information Computer name: Exchange Full computer name: Exchange sicials com	rship of this network resources.
	OKCancelApply	Member of © Domain: siclab.com © Workgroup: OK	Cancel

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

Brief Description		On	this page
Microsoft Office 2010 Filter Peo	ks	+ 0u + 0v - 5y - 1n + W	ick Details erview stem Requirements structions nat Others Are Downloading
Files in this Downlo	pad		
The links in this section correspondences	ond to separate files available i	n this download. Download the	files most appropriate for you.
File Name:		Size:	Download files below
FilterPack32bit.exe		3.5 MB	Download
FiterPack64bit.exe		3.9 MB	Download
Quick Details			
Version:		1	
Date Published:		5/6/2010	
Change Language:	English	M (Change)	
ing FitterPack64	bit.exe		
have chosen to open			
] FilterPack64bit.e	xe Ile		

- 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.

Sherboschpden				On the	s page
Unified Communications Planaged A platform that developers use to but and control over Maccadit Erihanse messaging, telephone and video ca	VE (UCMA) 3:016 a managed- id applications that provide ac differentiate information, list a dis, and audio/video conference dis, and audio/video conference	code cessito rit ling.		 Ouick I Overvit System Instruct Related What O Related 	Details au 1 Requirements dons d Resources d Resources d Devaloads
File Name:			Size:		Downland
UchaRundhieSetup.exe			199.1 MB		
Quick Details					
Yerston:			7577.0		
Date Published:			11/14/2010	5	
Change Language:	English	~	Chenge		
Estimated Download Time:	Diel-up (56K)	×	8 hr 6 min		
The seconcy warmin					
you want to run this Nome: C:\Uo Publisher: Micro Type: Applic From: C:\Uo	file? maRuntimeSetup.exe soft Corporation ation maRuntimeSetup.exe	e Buro D		Cancel	

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.

🔊 🕕 - Computer	* Local Disk (C:) * Exchange *		+ 120	Search Exchange				
ganize 🔹 📑 Open 👻	Print New folder				# • D			
Preventer	Name -		Date modified	Туре	Size			
E Desktop	🔒 sv		6/7/2011 5:55 PM	File folder				
Downloads	🔒 th		6/7/2011 5:55 PM	Pie folder				
🖳 Recent Places	🔔 👳		6/7/2011 5:55 PM	File folder				
	🅌 uk		6/7/2011 5:55 PN	File folder				
🚆 Libraries	🎳 updates		6/7/2011 5:55 PM	File folder				
Documents	🎍 ur		6/7/2011 5:55 PM	File folder				
Bithree	👪 wi		6/7/2011 5:55 PM	File folder				
Videos	🗼 zh-hano		6/7/2011 StS5 PM	File folder				
	🍺 zh-hant		6/7/2011 5.55 PM	File folder				
Computer	🔒 zh-hk		6/7/2011 5:55 PM	File folder				
and the state	🛃 autorun		8/22/2010 3:58 AM	Setup Information	1.65			
Network	🚳 bsres.dl		8/22/2010 3:58 AM	Application extension	82 KB			
	() exchangeserver		8/22/2010 3:58 AM	Windows Installer P	26,752 KB			
	📴 losetupui		8/22/2010 3:58 AM	Accilication	207 KB			
	incrosoft.exchange.cetup	acquirelanguagep	8/22/2010 3:58 AM	Application extension	43 KB			
	inicrosoft.exchange.setup	signverfwrapper.dl	8/22/2010 3:58 AM	Application extension	64K3			
	etup		8/22/2010 3:58 AM	MS-DOS Application	435 KB			
	1 setup		8/22/2010 3:58 AM	Application	582 KB			
	Date created: 8/22/2	010 3158 AM	2.20		NO 10	1		
		Plan						
		Read about Micr	osoft Exchange Ser	er 2010 Service Pad	1			
		Read about dep	loying languages					
	1.0	Use the Exchan	ge Server 2010 Depl	yment Assistant				
=	4	Install						
1		Step 1: Justiel -	CTT ATTACK SS	Pi-Indah-J				
	A DA	Step 2. Instal Windows Porre Sher v2 - Installed						
1	Card I	Stop 3. Citoesc	Exclusive languages	option				
		Step 4: Instal N	Ageoft Exchance					
	Martin Contraction of Contraction	Step 5: Get gligg updates for Nicrosoft Exchange						
		Step 5: Get arit	cal updates for Micro	soft Exchange				
Instal Exchange Ser	ver. This will copy the propose the period	Step S: Get and	cal updates for Micro	soft Exchange				
Instal Exchange Ser needed binaries and configured.	ver. This will copy the propose the nerver to be	Step St Get one	cal updates for Micro	soft Exchange	<u>.</u>			

Microsoft Exchange Server 2010

- 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.

Introduction	Installation Type Select the Exchange Server:	nataliation type:		
License Agreement Error Reporting Instellation Type Customer Experience Improvement Program Readinese Checks Progress Completion	Typical Exc The following Hub Transpo Olarit Access Maibox Bochange M Custom Exc Use this option this computer Hub Transpo Bochange M Custom Exc Use this option this computer Hub Transpo Bochange M Custom Exc United Mass Bochange M	hange Server Installation will be installed on this compo- st anagement. Tools hange Server Installation in to select which of the follow st aging out	her: Ing roles you want to	instal on
	Specify the path for the Exch	ange Server program files.	40 <u>-</u>	
	C.\Program Files\Microsoft\s	Exchange Server/V14		Browse
	Automatically install Wind	lows Server roles and features	required for Exchan	ge Se

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

Introduction	Exchange Organization
License Americant	Specify the name for this Exchange organization
Course Recording	Ciaco Organization
Installation Type	Apply Active Directory split permissions security model to the Exchange organization
Exchange Organization	The Active Directory ack permissions security model is typically used by large organizations that completely separate the responsibility for the management of
Client Settings	Exchange and Active Directory between different gloupe of people. Applying the security model removes the ability for Exchange servers and administrators to create
Configure Client	Active Directory objects such as users, groups, and contacts. The ability to manage non-Exchange attributes on those objects is also removed.
Access server	You shouldn't mark the and the model of the same science or show a second ball
externel contain	Exchange and Active Directory. For more information, click Help.
Improvement Program	
Readiness Checks	
Progress	
Completion	

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

Introduction	Client Settings
License Agreement. Error Reporting Instellation Type Exchange Organization Client Settinge Configure Client Access server external domain Customer Experience Improvement Program Readiness Checks Progress Completion	Computers running Microsoft Outlook 2003 require a public folder database to connect to Exchange 2010. If you select that you have computers running Outlook 2003 in your enginismion. Setup will create a public folder database. If your organization database. If your organization is needs change later, you can enable Outlook 2003 connectivity by creating a public folder database at any time after Setup completes. Do you have any clerit computers running Outlook 2003 in your organization? Yes Image: Setup Viceo Completes running Outlook 2003 in your organization?

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

Introduction	Client Settings
License Agreement Error Raporting Instellation Type Exchange Organization Client Settinge Configure Client Configure Client Client Configure Client Configure Client Client Configure Client	Computers running Microsoft Outlook 2003 require a public folder database to connect to Exchange 2016. If you select that you have computers running Outlook 2003 in your organization, Setup will reserve a public folder database at you select that you do not have computers running Outlook 2003 in your organization. Setup will not create a public folder database. If your organization's needs change later, you can enable outlook 2003 in connectivity by creating a public folder database at any fine after Setup completes. Do you have any client computers running Outlook 2003 in your organization? Yes No

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

DNS	Name	Type	Data	Timestamp
ACTIVEDIRECTORY ACTIVEDIRECTORY Big Global Logs Forward Lookup Zones G msdcs.sjdab.com E gigdab.com E gigdab.com E gigdab.com E G Gonditional Forwarders	Hew Host Name (uses parents meet Pully qualified doma meet.sjdab.com. IP address: 172.21.51.125 IP Create associate Allow any authe same owner name	domain name if blank): in name (FQCIN): ad pointer (PTR) record nticated user to update DNG records with the re Add Host Cancel	X , activedirectory.sjdab vedirectory.sjdab.com. .21.51.113 .21.51.113 .21.51.122 .21.51.125	staðc static 6/9/2011 1 static static



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~~6.7
/ignorecheck
```

C:\>xsystemrootX\system32\disn.exe /online /add-package /packagepath:zvindirX\se rvicing\Packages\Microsoft-Windows-Media-Format-Package~31bf3856ad364e35~amd64~~ 6.1.7681.17514.num /ignorecheck	
Deployment Image Servicing and Management tool Version: 6.1.7600.16385	
Image Version: 6.1.7600.16385	
Processing 1 of 1 - Adding package Microsoft-Windows-Media-Format-Package~31bf38 56ad364e35~amd64~~6.1.7601.17514 	
The operation completed successfully. Restart Vindows to complete this operation. Do you want to restart the computer now (Y/N)?	•

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.

Propare single Standard Edition Serv	ver			×
Executing Commar	nds			
Unacking prerequisite squexpression-ins	stakingsuccess			
 Creating firewall exception for SQL instruction for SQL instruction adv/irewall firewall add rule name: Files/Microsoft SQL Server/MSSQL10.RTC Ok. 	tance ="DCS SQL RTC Acce C\MSSQL\Binn\aqlaan	ss" dir=in action=allow vr.exe" enable=γes profi	program="c:\Progra le=any	m
> Creating firewall exception for SQL Bro	owser			
netsh advfirewall firewall add rule name- Ok	="SQL Browser" dir=i	in action—allow protocol	=UDP localport=143	, Ţ
Task status: Completed.				<u> </u>
Bootstrap local machine			• View	Log
Help		Back	Finish Car	cel

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.

Create N	ew Topology	×
	New topology was successfully defined	
You ha	we successfully completed the New Topology wizard, Before you publish the topology, you must define at ne Front End pool. If you are ready to do that now, select the check box below, and then click Finish.	
IP Op	en the New Front End Wizerd when this wizerd doses	
To clos	e the wizard, click Finish.	
	Eack Cancel	1

- 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 LyncShareand click Next to continue.

Defin	e New Front End Pool	×
	Define the SQL store	
Fo	r a Standard Edition Front End Pool, user information must be stored locally. SQL Server Express Edition will be tailed automatically.	
C	Use a previously defined SQL store.	
F	Define a new SQL store. SQL Server PQDN:	
	lync.ajclab.com	1
	SQL Instance:	
	f Named Instance +	
	rttc.	Î.
	C Default Instance	
J.	Help Back Next Cancel	1

- 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 are presented 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 URLs**, 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.

and the second s		
erver 2010	SIP domain	Actions
nuose		Lync Server 2010
	Default SIP domain: sidab.com	i New Central Sr
	Additional supported SIP Not configure	d Edit Properties
	domains:	New Topology
		Open Topology
	Simple URLs	Download Tops
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	V http	st//dalm.sciab.com Install.Detabas
	<u> </u>	Merge 2007 or
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	Administrative access Ref configure	er Help
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	Central Management Alth confusion	<i>d</i>
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noperties nain URLS Messgement	z cen uz remoteu exer er sunterente or meteringi una. de URXat Sangle URI. pst//dialin.cjclub.com	
roperties nain UNLS Management	z can be remoted aver an convertance of metor unit. as URLs: Sanglis URL pot//dulin.cjclab.com	Add., Renove Nate Active fait U.R.
ripperties nam Unus Management Management	2 Carr Le Ibinolet duer le curverences of meetings unit 16 URLs: Simple URL pol//dialin.giclab.com	Add., Renove Rube Active State URL
ripperties nam URLS Management Meeting UR	2 Car Le Ibinuez alter er currenelektes of meton ys uns 168 URL: 58 glis URL pol//dulin.giclub.com	Add., Renove Stream
ripperties nam URLS Management Meeting UR	2 Cerr Le (Dinosed alter et converences or meter us une es URLs: Single URL pol//daln.sjclab.com	Add., Renove SPA domein m Add., Renove SPA domein m Add., Renove
reperties nain URLS Management Meeting UR	s can us remoted and as current and a metan ga und as URLs: set//dialm.spciab.com %s: Single URL ps://meet.gristh.com	Add StP domela Table Active Add Remove Add Remove Pathe Active Add Remove
reperties nain URLS Management Meeting UR Meeting UR	s can us remoted and as current and a metan ga una as URLs: sergia URL pol/dialm.sclab.com	Add StP domein StP domein Table Active Edit URL
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reperties nain URLS Management Meeting UR Meeting UR Administrat Tittee-//oc	as Cerr de Texnologue aver ne convertexces or meteorings una- as URLa: Single URL Es: Single URL por/most.gdob.com yes access unit: hms.gdob.com	Nale in time experies or centrume.mp. Add Rate incluse StP domein m Add Remove Pathe Active Rdf USA
reperties nam URLS Management Meeting UR Meeting UR Meeting UR Meeting UR Meeting UR Meeting UR Meeting UR Meeting UR Meeting UR	Connection over an convertences or meetings under set URLs: pot//dialm.cjclab.com ss: Single URL jour/meet.grbsh.com syclab.com we access URL: mms.cjclab.com lanagement Server	Add SPE domelo m Note Armes Add Remove SP domelo m Add Remove Add Remove
reperties nam URLS Management Meeting UR Meeting UR Meeting UR Administra Frige Free Front End :		Add.,. Remove SP2 domeio m Add.,. Remove SP2 domeio m Add.,. Remove SP2 domeio m Add.,. Remove

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.

Lync Server 2010	fundamente de	* Actions
SanJose	Sil' donsen	Lync Server 2010
	Default SIP domains sideb.com	New Central Site
	Additional supported SIP Not configured	Edit Properties
	domaines	New Topology
		Open Topology
	Simple URLs	Lownbad Tepei
		Save a copy of
	Phone access URLa: Active	Simple US Publich Topology
	4	Mana 2007 or 2
	Meating URLe: Active	Simple US Kenthe Declar
	http://mo	et.siclab.cov +1 Vew
	Administrative access https://admin.ajclab URL:	.com
	Central Hanagement Server	

- 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.

	res successions poursered.		
il 1	Step	Statue	-
Creating	Central Management Store	Success	View Logs
 Setting C Publishio 	antrai management Store location. a topploay	Success	
/ Downloa	ding topology	Succase	
/ Updating	global simple URL settings	Success	
Publishin	g global simple URL settings	Success	-
at steps: Click (to In order fo The linked	to open to-dollist. r Lync Server 2010 to correctly rou text file contains a list of any serve ed.	te traffic, your deployment m rs that need to be updated, a	ust match the published topology. as well ac any databases that need

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:

L DNS Hanager					
Tile Action View H	ep E a sul Dia				
DNS	[Name	10 T # 165 159	Type	Deta	Timestam
ACTIVEDIRECTOR C C Gobel Logs Forward Look C modes s F C modes s F C modes s F C modes s	Y Some Sover Date ap Zones Sover Date apdate sover Date Relead	ados os p Prífiz e) 196	1.00M	1 childs, and
E Conditional F	New Host (A or AAA	A) folder)	Start of Authority (SCA)	[96], activedirectory.sjdab.	static
	New Mail Exchanger	(MDC) folder)	Host (A)	activedirectory.gclab.com. 172.21.51.113	static 6/9/2011
	New Domain New Delegation	1999 (J.	Host (A) Heat (A)	172.21.51.113	etatic static
	Other New Records		Host (A)	172, 21, 51, 125	
	All Tauko	•	Host (A)	1/2.21.51.125	
	Delete		Host (A)	172.21.51.125	
	Refresh				
	Properties				
	Help				
					÷
eate a new resource rec	ad.				een vilovi
esource Record	Туре			x	
Calant a carron ora	second hopes			-	
Pointer (PTR)	record type:				
Public Key (KEY)			1		
Renamed Mailbox	x (MR)				
Route Through (RT)		-		
Service Location	(SRV)				
Description:					
Contra (co) ()					
domen and rece	we the names o	r any available se	rvers. (Krc. 2052)		
				1	
		Create Record	d Cancel	1	
ew Resource R	ecord			×	
Service Location	(SRV)			- 1	
Domain:	sjdab.com	1			
Service:	_spintern	olts			
Protocol:	_tap				
Priority:	0				
Weight:	0				
Port number:	5061	_			
How) offering th	in maridear.				
host onering a	is service.				
lync.sjdwb.com					
	uthenticated use	er to update all D	V5 records with the se	me	
name. This	setting applies o	nly to DNS record	s 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.

Lync Server 201	0	
tome		
22 Upers	User Information	Resources
Topology Topology	Welcome, Administrator	Getting Started
Voice Routing	View your roles	First Run Checklist Using Control Panel
C. Voice Features	Top Actions	Getting Help
Response Groups	Enable users for Lynic Server	Downloadable Documentation
Conferencing	Edit or move users View topology status	Lync Server Management Shell
Clients	View Monitoring Server reports	Lync Server Resource Kit Tools
Access		Community
Monitoring and Archiving		Blogs
Security		

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.

🔀 Microsoft Lync Server 2010 (control Panel	
Eync Server 201	0	
Home	(Aver Search)	
22 Upers		
M Topology	Scarch CLEAP search	
M and Presence	Type on Colum entression to senior for users.	× me 3 m M
Voice Routing	-	
C Voice Features	Mj.Enable users * Edit * Action *	
23 Response Groups	Unspray name - Endowes - Sur address	segurar pool a recpriony
Conferencing		
Clients		
External User Access		
Monitoring and Archiving		
Security		

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.

Lync Server 2010	
Home	User Searce
2 Upers	
Copology	New Lync Server User
IM and Presence	👺 Enable 🔀 Cancel
🔮 Voice Routing 🔡	Users:*
- Voice Features	Display name Status Add
Response Groups	0000000
Conferencing	
Clients	Assign users to a pool:"
External User	•
Access	Generate user's SIP URI:
Monitoring and Archoing	Use user's email address
Security	A.

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

Search (P 1040			
Dime an LDAP search	ha manah for umm	V Dia	
(706: 31) COMP. BADI COSMIT	o search foil leasts		
		Search res	ults:
Name Ferierater/Email & (MdRh: 817)	0.41.48 03.01 00.005/s1.0.01	Display name Microsoft Exchange Extension	5
Guest			
arbtgt.			
sai Raj		Saj Raj	s
SystemMeilbox(1f05e927-62c2	2-4836-9fb0-5794860b368e)	Microsoft Exchange Approval	5
iystemMailboxje0dc1c29-89ci	3-4034-b678-e6c29d823ed9)	Microsoft Exchange	5
lim Tom		Tim Tom	T
1)		
Skansoft Lynk Server 2010 Con	itrol Panel		
Nicrosoft Lynic Server 2018 Con Microsoft Lync Server 2010	itrol Panel		
Hicrosoft Lync Server 2010 Con Microsoft Lync Server 2010 Home	Itrol Panel		
Home	Itrol Panel		
Home Home Topology	throl Panel Uker Search New Lync Server User		
Horasoft Lynic Server 2010 Con Lync Server 2010 Home Usets Topology IM and Presence	Itrol Panel		
Home Users Topology Mand Presence Voice Routing	Itrol Panel		
Increase It Lynic Server 2010 Com Lync Server 2010 Home Users Topology IM and Presence Voice Routing Voice Features	Itrol Panel	rtus Add.	
Home Usets Yoice Routing Voice Features Response Groups	Itrol Panel Iter Seatch New Lync Server User Enable X Cancel Users* Desplay name. Sta Andy Ross Chris Ruth	this Add.	
Icrosoft Lysic Server 2010 Con Lync Server 2010 Home Usets Topology IM and Presence Voice Reuting Voice Features Response Groups Conferencing	Itrol Panel		
Increase of Lynic Server 2010 Con Lync Server 2010 Home Users Users Topology M and Presence Voice Routing Voice Features Response Groups Conferencing Clients	Itrol Panel New Lync Server User Enable X Cancel Users* Desplay name Andy Ross Chris Ruth Sq. Raj Assign users to a pool;* '		
Increase of Lynic Server 2010 Con Lynic Server 2010 Home Users Topology IM and Presence Voice Routing Voice Features Response Groups Conferencing Clients External User Access	Itrol Panel New Lync Server User Enable X Cancel Users* Desplay name Sta Andy Ross Chris Ruth Saj Baj Assign users to a pool;* * Generate user is SEP 1105;		
Hicrosoft Lynic Server 2010 Con Microsoft Lynic Server 2010 Home Users Topology M and Presence Voice Routing Voice Features Response Groups Conferencing Clients External User Access Moentoring	Itrol Panel IVer Search New Lync Server User Enable X Cancel Users* Deploy name Su Andy Ross Chris Ruth Su Baj Assign users to a pool:* Generate user's SIP URb: Users ' Use user's email address		

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

o UserServer logy Edit Lync Server User - Saj Raj ind Presence Edit Lync Server User - Saj Raj ind Presence Edit Lync Server User - Saj Raj ind Presence Edit Lync Server User - Saj Raj ind Presence Edit Lync Server User - Saj Raj ind Presence Edit Lync Server User - Saj Raj ind Presence Edit Commit & Coment ind Routing Commit & Coment ind Liter Conterencing policy is Center version policy: is Center version policy: is Version policy: is Version policy: is Automatics Version PIN policy: Version is Automatics Version is Automatics Version	Lync Server 2010		
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nd Presence	Topology	Edit Lync Server User - Saj Raj	
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the set of	Mentoring.	<automatic></automatic>	· Ven.
The second secon	and Archiving	Extensel access policy	-
	Access Maniforming and Archiving Security	PSN policy:	• Ven

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.

ertificate, you ca ertificate, you ca nessages, and, (to request a certificate for your Web browser, e-mail client, or other program. By us n venfy your identity to people you communicate with over the Web, sign and encryp lepending upon the type of certificate you request, perform other security tasks.	ing t
ou can also use ertificate revoca	this Web site to download a certificate authority (CA) certificate, certificate chain, or tion list (CRL), or to view the status of a pending request.	
or more informa ocumentation	tion about Active Directory Certificate Services, see Active Directory Certificate Ser	MC
elect a task:	the star	
View the statu	s of a pending certificate request	
Download a C	A certificate chain, or CRL	
Microsoft Active Die	ectory Certificate Services - sideb ACTIVEDIRECTORY-CA	lome
ownload a CA	Certificate, Certificate Chain, or CRL	
o trust certificate	s issued from this certification authority install this CA certificate chain	
o a doc custoristatio	subject non this connection addressly, instanting or connectionate	
a download a C	codificate codificate chain or CDL relact the continents and encoding method	
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o download a C A certificate:	A certificate, certificate chain, or CRL, select the certificate and encoding method.	
o download a C. A certificate:	A certificate, certificate chain, or CRL, select the certificate and encoding method.	
o download a C. A certificate: acoding method: Oownload CA ce	A certificate, certificate chain, or CRL, select the certificate and encoding method.	
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o download a C A certificare:	A certificate, certificate chain, or CRL, select the certificate and encoding method.	
o download a C A certificate:	A certificate, certificate chain, or CRL, select the certificate and encoding method.	

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

Certificate
General Details Certification Path
Certificate Information
This CA Root certificate is not trusted. To enable trust, install this certificate in the Trusted Root Certification Authorities store.
Issued to: sjdab-ACTIVEDIRECTORY-CA
Issued by: sjdab-ACTIVEDIRECTORY-CA
Valid from 5/ 20/ 2011 to 5/ 20/ 2016
Install Cathore about certificates
OK

c. Certificate Import Wizard is launched.



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

tontate unport within	L
elect Certificate Store	s are kept.
Personal Trusted Root Certification Authorities Enterprise Trust Intermediate Certification Authorities Active Directory User Object Trusted Publishers Enterprise Trust Trusted Publishers	or you can specify a location for I on the type of certificate Erowse
Cancel	
Learn more about <u>certificate stores</u>	
	(Beck Next > Cencel
stificate Import Wizard	Beck Cancel
stificate Import Wizerd Certificate Store Certificate stores are system areas where certific	Beck Next > Cancel
etificate Import Wizerd Certificate Store Certificate Store Certificate stores are system areas where certific Windows can automatically select a certificate store the certificate. © Automatically select the certificate store by @ Place all certificates in the following store	Cencel
etificate Import Wizard Certificate Store Certificate Store Certificate stores are system areas where certific Windows can automatically select a certificate store the certificate. Automatically select the certificate store by Place all certificates in the following store Certificate store: Trusted Root Certification Authorities	Cencel
etificate Import Wizard Certificate Store Certificate Store Certificate stores are system areas where certificate Windows can automatically select a certificate store by Certificate. Automatically select the certificate store by Place all certificates in the following store Certificate store: Trusted Root Certification Authorities Learn more about certificate stores	Cencel

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



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

A	You are about to install a certificate from a certification authority (CA) claiming to represent:
	sjclab-ACTIVEDIRECTORY-CA
	Windows cannot validate that the certificate is actually from "sjclab-ACTIVEDIRECTORY-CA". You should confirm its origin by contacting "sjclab-ACTIVEDIRECTORY-CA". The following number will assist you in this process:
	Thumbprint (sha1): 6E99D14C 7E902901 C0764DED C4418BS1 557E6FEA
	Warning: If you install this root certificate, Windows will automatically trust any certificate issued by this EA. Installing a Writificate with an unconfirmed thumbprint is a security risk. If you click "Yes" you acknowledge this risk.
	Do you want to install this certificate?

g. Successfully imported the CA root certificate.

eroficate General Datals Cartification Path	(<u>83</u>)
Certificate Information	
This CA Root certificate is not trusted. To install this certificate in the Trusted Root Authoritics store.	enable trust, t Certification
	Certificate Import Wizard
Issued by: sjdab-ACTIVEDIRECTORY	The import was successful.
Valid from 5/ 20/ 2011 to 5/ 20/	OK.
Install Certificates	. Sesuer Statement
	OK

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

Console Root	Name	Actions
Læ	There are no items to show in this view,	Console Root More Act

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

File Action	View Favorites	Window	Help	- 5
New		Ctrl+N		
Open		Ctrl+O		Actions
Save		Ctrl+5	1	Console Root
Save As.			ms to show in this view.	More Act
Add/Ref	nove Snap-in	Ctrl+M		
Options				
Pacant C	-			
Pieceni, r	RC .			
Exit				
ables you to ad	d snap-îns to or rem	ove them fr	om the snap-in cor	
ables you to ad	d snap-ins to or rem	ove them fr	om the snap-in cor	
ables you to ad d or Remove Snap ou can select snap-	d snap-ins to or rem	hove them fr	om the snap-in cor on your computer and configure the sele enabled.	ected set of grap-ins. For
ables you to ad d or Remove Snap ou can select snap-inc temple snap-inc	d snap-ins to or rem -ins -ins re for this console from the rear configure which o	ove them fr	om the snap-in cor on your computer and configure the sele enabled. Selected anap-ins:	ected set of prap-ins. For
ables you to ad d or Remove Snap ou can select snap-ins, y ralable anap-ins: Snap-in	d snap-ins to or rem -ins rs for this console from the row can configure which r Vendor	nove them fr	om the snap-in cor on your computer and configure the sele enabled. Selected anap-ns: Consele Root	ected set of prop-ins. For Edit Extensions
ables you to ad d or Remove Snap ou can select snap-ins temible snap-ins: Snap-ins ActiveX Control	-ins -ins -ins -ins -ins -ins -ins -ins	nove them fr	om the snap-in cor on your computer and configure the sele enabled. Selected snap-ins: Consele Root	ected set of anap-ins. For Edit Extensions Remove
ables you to ad d or Remove Snap ou can select snap- valable snap-ins; Snap-in Activex Control Activex Control Activex Control	-ins ins for this console from the cau can configure which r Vendor Microsoft Cor Microsoft Cor	nove them fr	om the snap-in cor on your computer and configure the sele enabled. Selected anap-ins: Console Root	ected set of prop-ins. For Edit Extensions Remove

 You can select onap-ins for this console from those available on your computer and configure the selected set of prap-ins. For instantiable snap-ins, you can configure which extensions are enabled.

 Available snap-ins:
 Selected anap-ins:

 Stap-in
 Yendor

 ActiveX Control
 Microsoft Cor...

 Authorization Manager
 Microsoft Cor...

 Computer Managem.
 Microsoft Cor...

 Computer Managem.
 Microsoft Cor...

 Disk Management
 Microsoft Cor...

 Fielder
 Microsoft Cor...

 Disk to Web Address
 Microsoft Cor...

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



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

The map in will always manage certific.	step for
Muser account	Namental Altano U
Service account	
 Computer account 	
	< Back: Next > Cancel
elect Computer	×
elect Computer Select the computer you want this snap	Hin to manage.
elect Computer Select the computer you want this snap This snap-in will always manage:	Hin to manage.
elect Computer Select the computer you want this snap This snap-in will always manage:	Hin to manage.
elect Computer Select the computer you want this snap This snap-in will always manage: Q Local computer: the computer the C Another computer:	Hin to manage.
Select Computer Select the computer you want this snap This anap-in will always manage: Local computer, the computer the Another computer. Alow the selected computer to b only applies if you save the consult.	Hin to manage.
Select Computer Select the computer you want this snap This anap-in will always manage: Local computer: Another computer: Alow the selected computer to b only applies if you save the conse	Hin to manage. The console is running on) Browse e changed when launching from the command line. This ole.
Select Computer Select the computer you want this snap This anap-in will always manage: Local computer: the computer the Another computer: Allow the selected computer to be only applies if you save the conse	Hin to manage.
Select Computer Select the computer you want this snap This snap-in will always manage: Local computer: the computer the Another computer: Another computer: Allow the selected computer to be only applies if you save the comp	His to manage. The console is running on) Browse e changed when launching from the command line. This old.
Select Computer Select the computer you want this snap This anap-in will always manage: Local computer: the computer the Another computer: Allow the selected computer to be only applies if you save the conse	Hin to manage.
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Select Computer Select the computer you want this snap This anap-in will always manage: Computer: the computer the computer the computer: Another computer: Allow the selected computer to be only applies if you save the computer to be only applies if you save the computer to be	Hin to manage.
Select Computer Select the computer you want this snap This anap-in will always manage: Local computer: the computer the Another computer: Allow the selected computer to be only applies if you save the conse	Hin to manage.

1. Now the **Add/Remove Snap–in** page looks like this.

	12	1	Conside Root	Edit Editoria
hap-in	vendor	1	Contification - Current I	COIL Extensions.
ActiveX Control	Microsoft Cor		Certificates flocal Com	Remove
Authorization Manager	Microsoft Cor		-gr cer a realize (cocar cent	
Certificates	Microsoft Cor	F		i contrata da sera
Component Services	Microsoft Cor			Move Up
Computer Managem	Microsoft Cor			Minue Drawn
Device Manager	Microsoft Cor	L.U	Add >	PROVER EADER
Disk Management	Microsoft and			
Event Viewer	Microsoft Cor			
Folder	Microsoft Cor			
Group Policy Object	Microsoft Cor			
IP Security Manitor	Microsoft Cor			
IP Security Policy M	Microsoft Cor			
Link to Web Address	Microsoft Cor	÷		Advanced
cription:				

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.

Do you	want to ru	n this hie?
-	Name:	Users\Administrator\Desktop\LyncSetupEval.eze
	Publisher	Microsoft Corporation
	Type:	Application
	From:	C:\Users\Administrator\Desktop\LyncSetupEval.e
		Run Cancel
🗸 Alwa	ys ask before	opening this file
		and the group of the second state of the secon

Microsoft Lync 2010 Setup

By clicking Install, you accept the Software L	icense Terms.
Click here to read the Software License Terr	10
C: 'Program Files (x86) 'Microsoft Lync	Browse
	Les anno a that an an
Help improve the quality and reliability of Information about how I use Lync (subject	Lync by allowing Microsoft to collect t to administrator policy)
Help improve the quality and reliability of Information about how I use Lync (subject	Lync by allowing Microsoft to collect t to administrator policy)

2. The Install succeeded message appears:

icrosoft Lync 2010 Setup	
Instal Microsoft Lync 2010	
C. 10	
Install succeeded	troyise
Stort Lync	
View Bulliney, Stationent	Class

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

Microsoft L	ync	
		@ -
Microsoft*	-2010	
Lync	. 2010	
Sign-in add	ressi	Change
tintom@s	iclab.com	
ilcer name		
al cla bi di mid		
Sprid D (rinni	Val	
Francias	domain/username	
Constitution	someone@example.com	
Password:		

Save m Sign in as:	iy pəssword 💌 Available 🔻	
Sign	In Car	
BaOffic	ē	
Copyright @	Microsoft, All rights reserved.	

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 Services and Services a



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.

	Device Name(Line) *	Description	Device Pool	Extension
	CSFTimTom(1)	CSF Client for Tim Tom	US_DP	<u>\+15102994673</u>
	SEP0050600357D2(1)	SEP0050600357D2	US_DP	<u>\+15102994673</u>

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

Users	Associated with Line		
Manual	Full Norths	Unior 30	Permission
8	Tom, Tim	Britom	ø
	(Associate find Users) [Select All] (Dear All) (Dearte Selected)		

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

	nan ya mananana sa kanana ang sa kananan karanan karanan kananan kananan kananan kananan kananan kanana kanana	
DAP Sync Status	Active	
Jser ID*	andyross	
PEN		(Edit Credential)
Confirm PIN		
Last name*	Ross	
Middle name		
first name	Andy	
felephone Number	+15102294672	
fail ID	AndyRoss@sjclab.com	
Manager User ID		
Department		
lser Locale	< None >	
Associated PC		
Digest Credentials		
Confirm Digest Credentials	•••••	
Device Information		
	2021 - 1 B	

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



5. Assign End Users to User Groups.

Groups	Standard CCM End Users		
	Standard CTI Allow Control of All Devices		Add to User Group
	Standard CTI Allow Control of Phones supporting Con Standard CTI Allow Control of Phones supporting Roll Standard CTI Seabled	1	Remove from User Group
Roles	Standard CCM End Users Standard CCMUSER Administration Standard CTI Allow Control of All Devices Standard CTI Allow Control of Phones supporting Con- Standard CTI Allow Control of Phones supporting Roll	View Details	

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

0		Device Name(Line)*	Description	Javitz Red	Edension	Briter	Javia Proxis	Satus	P Adress	Copy	Super Copy
Ū		(SFTmTon(1)	CSF Client for Tim Tom	<u>US 2</u> P	<u>\+15102994673</u>	<u>USinPet</u>	9	Registered with 172 21.60.62	171.69.100.242	0	0
٥	8	SEP005060035702(1)	SEP105060035702	US_OP	\+15162994673	USINPut	SCCP	Registered with 172.21.50.62	10.17.555.192	Q.	1

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

0		Device Name(Line) *	Deciptor	Covae Posi	Bransier	Pertilian	Device Protection	Status	PAttes	Сару	Super Capy
۵	ġ.	(SFTmbn(I)	CSF Client for Tim Tom	<u>15 Di</u>	1415(1296457)	<u>JStar</u>	519	Unregistered	171.59.101.342	6	0
8	9	\$EP019060135702(1)	SEP085060035702	15.00	(415)(299457)	<u>Kitlar</u>	502	Registered with 172.21.60.62	10.17.166.192	ß	8

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.

- **CemcipServer** 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.
- **CemcipServerValidation** 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

Contacts & Feedback $|\, Help\,|\, Site\, Map$

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