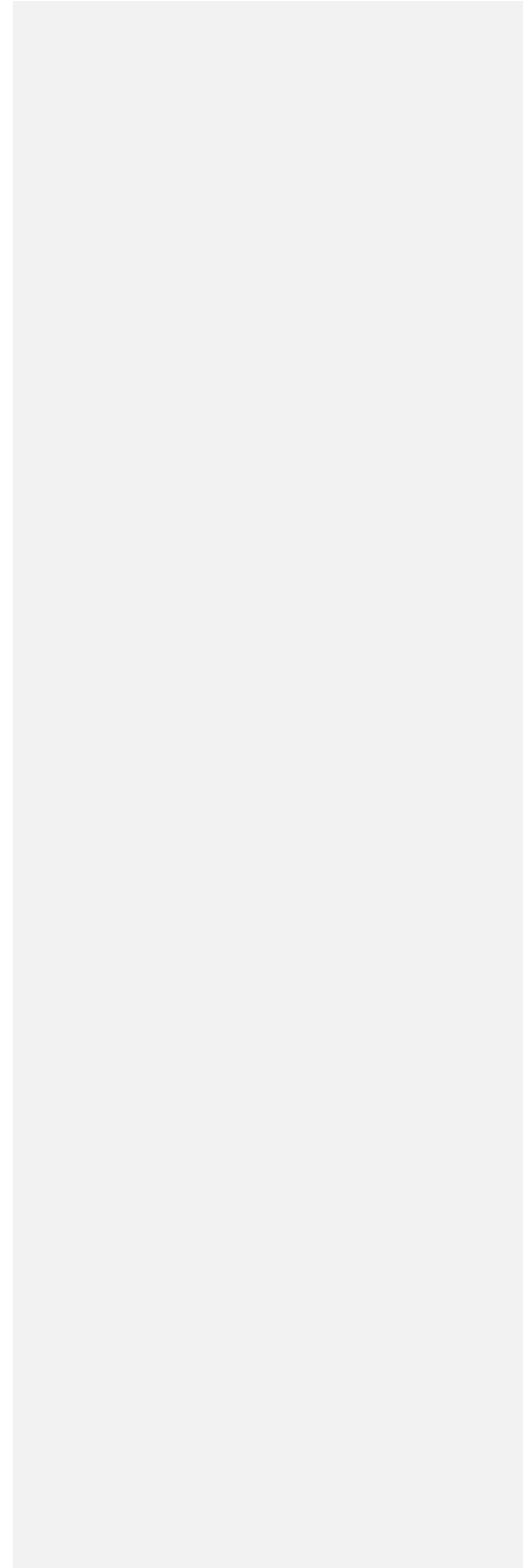


Lync

Deploying Microsoft® Lync® Server 2013



DISCLAIMER

© 2014 Microsoft Corporation. All rights reserved.

Microsoft, Active Directory, Forefront, Hyper-V, Internet Explorer, Lync, SQL Server, Windows, Windows PowerShell, and Windows Server are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. The names of actual companies and products mentioned herein may be the trademarks of their respective owners.

THE CONTENTS OF THIS PACKAGE ARE FOR INFORMATIONAL AND TRAINING PURPOSES ONLY AND ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, WHETHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT.

No part of the text or software included in this training package may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or any information storage and retrieval system, without permission from Microsoft. Because Microsoft must respond to changing market conditions, it should not be interpreted to be a commitment on the part of Microsoft, and Microsoft cannot guarantee the accuracy of any information presented after the date of publication. The names of actual companies and products mentioned herein may be the trademarks of their respective owners.

To obtain authorization for uses other than those specified above, please visit the Microsoft Copyright Permissions Web page at <http://www.microsoft.com/about/legal/permissions>

This content is proprietary and confidential, and is intended only for users described in the content provided in this document. This content and information is provided to you under a Non-Disclosure Agreement and cannot be distributed. Copying, disclosing all or any portion of the content and/or information included in this document is strictly prohibited.

Table of Contents

Lab: Deploying Microsoft Lync Server 2013	1
Exercise 1: Preparing Active Directory Domain Services and Installing the Lync 2013 Topology Builder	2
Exercise 2: Starting the Topology Builder and Defining the Enterprise Edition Front End Pools	5
Exercise 3: Preparing the Environment for Lync Server 2013 and then Publishing the Topology	11
Exercise 4: Deploying Lync Server 2013	14
Exercise 5: Publishing the Lync External Web URLs	20
Exercise 6: Validating the Deployment Using the Lync Server Control Panel	24

Lab: Deploying Microsoft Lync Server 2013

During this lab, you will gain hands-on experience deploying a Microsoft Lync 2013 environment using the Lync 2013 Topology Builder and the server role deployment process.

Estimated time to complete: **120 minutes**

What You Will Learn

After completing the exercises, you will be able to:

- Prepare Microsoft Active Directory® Domain Services (AD DS) for Lync 2013.
- Install and start the Lync 2013 Topology Builder.
- Define an Enterprise Edition Front End topology with multiple sites and pools.
- Publish a Lync 2013 topology.
- Deploy Lync 2013.
- Publish the Lync URLs using TMG 2010.

Scenario

You have decided to deploy Lync Server 2013 to an existing Lync Server 2010 environment. You will first define all of the components of Lync Server 2013, which will include two sites—Redmond and Rome—with their own pools. Redmond will have two Front End Servers and Rome will have one Front End Server.

You will deploy three server roles in this lab, the Front End Server roles on LSFE01, LSFE02, and LSFE03. You will use this environment for the rest of the labs for this course, adding features and configuring as you do each lab.

Exercise 1: Preparing Active Directory Domain Services and Installing the Lync 2013 Topology Builder

In this exercise, you will prepare Active Directory Domain Services (AD DS) for Lync Server 2013 and then install the Lync Server 2013 Topology Builder. A number of prerequisites have been pre-staged for you in the interest of saving time.

The following prerequisites have already been installed:

- Microsoft Internet Information Services (IIS) 7.0 Rewrite package
- Microsoft SQL Server® 2012 Native Client
- Microsoft Silverlight®
- Microsoft .NET Framework 4.5
- Microsoft Visual C++® 2012 Redistributable Package
- Windows Identity Foundation
- Windows Management Framework CTP1, Microsoft Windows PowerShell™ 3.0
- Windows Fabric
- SQL Express 2012

The following features have also been preinstalled:

- Message Queuing, with Directory Service Integration
- Internet Information Services (IIS) 7.0
- AD DS Tools
- Desktop Experience

Tasks

1. Prepare the schema.

As with previous versions of Lync Server, you perform the following steps to extend the schema.

- a. On LSFE01, on the Start screen, click **Computer**.
- b. In File Explorer, browse to C:\LabFiles\Lync 2013\Setup\amd64 and double-click **Setup.exe**.
Wait while setup starts.
- c. At the Microsoft Lync Server 2013 dialog box, click **Install**.
- d. On the License Agreement page, select the **I accept the terms in the license agreement** check box and then click **OK**.
- e. On the Lync Server 2013 - Deployment Wizard page, click **Prepare Active Directory**.
- f. On the Prepare Active Directory for Lync Server page, next to **Step 1: Prepare Schema**, click **Run**.
- g. On the Prepare Schema page, click **Next**.
Wait while the wizard executes the commands to prepare the schema.
- h. When the **Task Status** shows as **Completed**, click **Finish**.

2. Prepare the current forest.

This step creates the necessary global settings and objects as well as the universal service and administration groups.

- a. On LSFE01, on the Prepare Active Directory for Lync Server page, next to **Step 3: Prepare Current Forest**, click **Run**.
- b. On the Prepare Forest page, click **Next**.
- c. On the Universal Group Location page, verify that **Local domain** is selected, and then click **Next**.
- d. When the **Task Status** shows as **Completed**, click **Finish**.

3. Prepare the current domain.

This step creates the necessary access control entries (ACEs) on the domain root.

- a. On LSFE01, on the Prepare Active Directory for Lync Server page, next to **Step 5: Prepare Current Domain**, click **Run**.
- b. On the Prepare Domain page, click **Next**.
- c. When the **Task Status** shows as **Completed**, click **Finish**.

- d. On the Prepare Active Directory for Lync Server page, click **Back**.

4. Install the Topology Builder.

The Topology Builder and administrative tools are not installed by default. This step will install Lync Server Control Panel and Lync Server Topology Builder.

- a. On LSFE01, in the Lync Server 2013 – Deployment Wizard, click **Install Administrative Tools**.

Wait while the Lync Server 2013 Administrative Tools are installed.
Leave the Lync Server 2013 – Deployment Wizard running.

- b. Close File Explorer.

Exercise 2: Starting the Topology Builder and Defining the Enterprise Edition Front End Pools

In this exercise, you will start the Lync Server Topology Builder and download the existing legacy topology.

You will use the Lync Server Topology Builder to add the Rome site and then define two Enterprise Edition Front End Pools, one in each site. You will also define two Front End Servers in the Redmond pool and one in the Rome pool, as well as the other components and configurations for these pools.

Tasks

1. Start the Topology Builder.

- a. On LSFE01, move the mouse pointer to the lower-left corner to bring up the Start button.
- b. Click **Start**, and then, on the Start screen, click **Lync Server Topology Builder**.
- c. In the Topology Builder wizard, on the Welcome to Topology Builder page, select **Download Topology from existing deployment**, and then click **OK**.
- d. In the Save Topology As window, browse to C:\LabFiles and save the topology as **OnPremTopology.tbxml**

2. Remove the previous SIP domain.

The preexisting SIP domain onprem.local is still in the topology. You will remove this from the environment. This is for this lab environment only and would not typically have to be done in a regular deployment.

- a. On LSFE01, in the Topology Builder, in the navigation pane, right-click **Lync Server** and then click **Edit Properties**.
- b. On the Edit Properties page, in the Additional supported SIP domains window, click **onprem.local**, click **Remove**, and then click **OK**.

3. Define the Enterprise Edition Front End Pool for Onprem.

In this step, you will create a Lync Server 2013 Enterprise Edition Pool, with two Front End Servers in the Onprem site, and configure the necessary components.

- a. On LSFE01, in the Topology Builder, expand **Lync Server**, expand **Onprem**, and then expand **Lync Server 2013**.
- b. Right-click **Enterprise Edition Front End pools** and then click **New Front End Pool**.

- c. In the Define New Front End Pool wizard, on the Define the New Front End pool page, notice the information the wizard asks you to collect, and then click **Next**.
- d. On the Define the Front End pool FQDN page, in the **Pool FQDN** box, type **redpool.onprem.local** and then click **Next**.
- e. On the Define the computers in this pool page, in the **Computer FQDN** box, type **lsfe01.onprem.local** and then click **Add**.
- f. In the **Computer FQDN** box, type **lsfe02.onprem.local** and then click **Add**. Click **Next**.
- g. On the Select Features page, select the **Conferencing (includes audio, video and application sharing)**, **Dial-in (PSTN) conferencing**, and **Enterprise Voice** check boxes, and then click **Next**.
- h. On the Select collocated server roles page, verify that the **Collocate Mediation Server** check box is selected, and then click **Next**.
- i. On the Associate server roles with this Front End pool page, leave the check box clear and then click **Next**.
You will add an Edge Server to the environment in a later lab.
- j. On the Define the SQL Server store page, click **New**.
- k. In the Define New SQL Server Store window, in the **SQL Server FQDN** box, type **sql01.onprem.local**
- l. Select **Named instance**, and then in the **Named Instance** box, type **RTC**



Note:

The instance name must be uppercase to match the name in SQL Server.

- m. Clear the **This SQL instance is in mirroring relation** check box and then click **OK**.
- n. Back on the Define the SQL Server store page, click **Next**.
- o. On the Define the file store page, select **Define a new file store**, and then in the **File server FQDN** box, type **sql01.onprem.local**
- p. In the **File Share** box, type **LyncShare** and then click **Next**.



Note:

The FileShare shared folder has already been created.

- q. On the Specify the Web Services URL page, verify that the **Override internal Web Service pool FQDN** check box is clear.
- r. In the **External Base URL** box, type **redext123.lyncignite.biz** and then click **Next**.
- s. On the Select an Office Web Apps Server page, click **New**.
- t. On the Define New Office Web Apps Server page, in the **Office Web Apps Server FQDN** box, type **wac01.onprem.local**
The Office Web Apps Server discovery URL will be automatically populated; leave the rest as their defaults and then click **OK**.
- u. Back on the Select an Office Web Apps Server page, click **Finish**.
You will deploy the Microsoft Office Web Apps server in a later lab.

4. Define the Enterprise Edition Front End Pool for Rome.

You will now create a new Central Site for Rome and add an Enterprise Edition Pool with one Front End Server.

- a. On LSFE01, in the Topology Builder, right-click **Lync Server**, and then click **New Central Site**.
- b. On the Identify the site page, in the **Name** box, type **Rome** and then in the **Description** box, type **Rome Data Center** and click **Next**.
- c. On the Specify site details page, in the **City** box, type **Rome**
- d. In the **State/Province** box, type **Italy**
- e. In the **Country/Region Code** box, type **39** and then click **Next**.
- f. On the Central site was successfully defined page, verify that **Open the New Front End Wizard when this wizard closes** is selected, and then click **Finish**.
- g. On the Define New Front End Pool wizard, on the Define the New Front End pool page, click **Next**.
- h. On the Define the Front End pool FQDN page, in the **Pool FQDN** box, type **romepool.onprem.local** and verify that **Enterprise Edition Front End Pool** is selected, and then click **Next**.
- i. On the Define the computers in this Pool page, in the **Computer FQDN** box, type **lsfe03.onprem.local** and click **Add**, and then click **Next**.
- j. On the Select Features page, select the **Conferencing (includes audio, video and application sharing)**, **Dial-in (PSTN) conferencing**, and **Enterprise Voice** check boxes, and then click **Next**.
- k. On the Select collocated server roles page, verify that the **Collocate Mediation Server** check box is selected, and then click **Next**.

- l. On the Associate server roles with this Front End pool page, verify that the check box is clear, and then click **Next**.
- m. On the Define the SQL Server store page, click **New**.
- n. In the Define New SQL Server Store window, in the **SQL Server FQDN** box, type **sql03.onprem.local**
- o. Select **Named Instance**, and then in the **Named instance** box, type **RTC**
- p. Clear the **This SQL instance is in mirroring relation** check box and then click **OK**.



Note:

The instance name must be uppercase to match the name in SQL Server.

- q. Back on the Define the SQL Server store page, click **Next**.
- r. On the Define the file store page, select **Define the new file store**, and then in the **File server FQDN** box, type **sql03.onprem.local**
- s. In the **File Share** box, type **LyncShare** and then click **Next**.



Note:

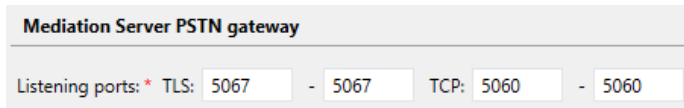
The LyncShare shared folder has already been created.

- t. On the Specify the Web Services URL page, in the **External Base URL** box, type **romeext123.lyncignite.biz** and then click **Next**.
- u. On the Select an Office Web Apps Server page, verify that **wac01.onprem.local Onprem** shows in the drop-down list and then click **Finish**.

5. Edit the Onprem Mediation Pool default settings.

You will now edit the default settings of the Mediation Pool to use port 5060.

- a. On LSFE01, in the Topology Builder, under **Onprem**, expand **Lync Server 2013**, expand **Mediation pools**, right-click **redpool.onprem.local**, and then click **Edit Properties**.
- b. In the Edit Properties window, scroll down and select the **Enable TCP port** check box.
- c. Next to **Listening ports**, in the **TCP** range boxes, type **5060** in both boxes, as shown in the following image, and then click **OK**.



Mediation Server PSTN gateway

Listening ports: * TLS: 5067 - 5067 TCP: 5060 - 5060

6. Add the Onprem second PSTN Gateway.

You will configure a PSTN Gateway for the Redmond pool that will resolve to the PSTN emulator on DC01, and then configure its listening ports.

- a. On LSFE01, in the Topology Builder, expand **Onprem**, expand **Shared Components**, right-click **PSTN gateways**, and then click **New IP/PSTN Gateway**.
- b. On the Define the PSTN Gateway FQDN page, in the **FQDN** box, type **redgw2.onprem.local** and then click **Next**.
- c. On the Define the IP address page, leave the default settings and then click **Next**.
- d. On the Define the root trunk page, in the **Listening port for IP/PSTN gateway** box, type **5060**
- e. Click the **Sip Transport Protocol** menu, and then click **TCP**.
- f. In the **Associate Mediation Server** menu, verify that **redpool.onprem.local Onprem** is selected.
- g. In the **Associated Mediation Server port** box, verify that **5060** is entered and then click **Finish**.

7. Edit the Rome Mediation Pool default settings.

You will now edit the default settings of the Mediation pool to use port 5060.

- a. On LSFE01, in the Topology Builder, under **Rome**, expand **Lync Server 2013**, expand **Mediation pools**, right-click **romepool.onprem.local**, and then click **Edit Properties**.
- b. In the Edit Properties window, select the **Enable TCP port** check box.
- c. Next to **Listening ports**, in the **TCP** range boxes, type **5060** in both boxes, as shown in the following image, and then click **OK**.



Mediation Server PSTN gateway

Listening ports: * TLS: 5067 - 5067 TCP: 5060 - 5060

8. Add the Rome PSTN Gateway.

You will now configure a PSTN Gateway for the Rome pool that will resolve to the PSTN emulator on DC01, and then configure its listening ports.

Deploying Microsoft Lync Server 2013

- a. On LSFE01, in the Topology Builder, expand **Rome**, expand **Lync Server 2013**, expand **Shared Components**, right-click **PSTN gateways**, and then click **New IP/PSTN Gateway**.
- b. On the Define the PSTN Gateway FQDN page, in the **FQDN** box, type **romegw.onprem.local** and then click **Next**.
- c. On the Define the IP address page, click **Next**.
- d. On the Define the root trunk page, in the **Listening port for IP/PSTN gateway** box, type **5060**
- e. Click the **Sip Transport Protocol**, and then click **TCP**.
- f. Click the **Associate Mediation Server** menu, and then click **romepool.onprem.local Rome**.
- g. In the **Associated Mediation Server port** box, verify that **5060** is entered and then click **Finish**.

Exercise 3: Preparing the Environment for Lync Server 2013 and then Publishing the Topology

In this exercise, you will prepare the topology for Lync Server 2013 by creating the necessary Domain Name System (DNS) records. You must create these records before publishing the topology.

You will then publish the topology, which includes installing the databases, setting the configuration store location, and then publishing and enabling the Lync Server 2013 topology.

Tasks

1. Create the DNS A records for SIP in your Assigned Child Domain DNS zone.

You will first create the SIP1 and SIP2 DNS records that are required for DNS load balancing.



Note:

Hardware load balancing is still required for client-to-server HTTPS traffic.

- a. On DC01, on the Taskbar, click **DNS**.
 - b. In the DNS Manager, expand **DC01**, expand **Forward Lookup Zones**, and then click the **onprem123.lyncignite.biz** DNS zone.
 - c. Right-click the **onprem123.lyncignite.biz** DNS zone and then click **New Host (A or AAAA)**.
 - d. In the New Host window, in the **Name** box, type **sip1**
 - e. In the **IP Address** box, type **10.0.0.50** and then click **Add Host**.
 - f. At the DNS prompt, click **OK**.
 - g. Repeat steps d through f, creating the following A records:
 - i. **Sip1 resolving to 10.0.0.60**
 - ii. **Sip2 resolving to 20.0.0.50**
 - h. Click **Done** when finished.
- 2. Create the DNS A records for the Lyncignite.biz DNS zone.**
- a. On DC01, in the DNS Manager, click the **lyncignite.biz** DNS zone.
 - b. Right-click **lyncignite.biz**, and then click **New Host (A or AAAA)**.
 - c. In the New Host window, in the **Name** box, type **meet123**
 - d. In the **IP Address** box, type **10.0.0.50** and then click **Add Host**.
 - e. At the DNS prompt, click **OK**.

- f. Repeat steps b through e to create the following A record:

Dialin123 resolving to 10.0.0.50

- g. Click **Done** when finished.

3. Edit and create the DNS records for onprem.local.

You now need to create the Redmond and Rome pool DNS records.

- a. In DNS Manager, click **onprem.local**.
- b. Right-click the **admin** DNS record, and then click **Properties**.
- c. In the admin Properties window, in the **IP Address** box, type **10.0.0.50** and then click **OK**.
- d. Right-click **onprem.local** and then click **New Host (A or AAAA)**.
- e. In the New Host window, in the **Name** box, type **redpool**
- f. In the **IP Address** box, type **10.0.0.50** and then click **Add Host**.
- g. At the DNS prompt, click **OK**.
- h. Repeat steps d through g to create the following A records:
 - i. **redpool resolving to 10.0.0.60**
 - ii. **romepool resolving to 20.0.0.50**
- i. Click **Done** when finished.

4. Create the necessary SRV records.

You will now create the SRV records necessary for automatic client sign-in.

- a. On DC01, in DNS Manager, click the **onprem123.lyncignite.biz** DNS zone.
- b. Right-click your **onprem123.lyncignite.biz** DNS zone and then click **Other New Records**.
- c. In the Resource Record Type window, scroll down, click **Service Location (SRV)**, and then click **Create Record**.
- d. In the New Resource Record window, in the **Service** box, type **_sipinternaltls**
- e. In the **Protocol** box, type **_tcp**
- f. In the **Priority** box, type **10**
- g. In the **Weight** box, type **0**
- h. In the **Port number** box, type **5061**
- i. In the **Host offering this service** box, type **sip1.onprem123.lyncignite.biz** and then click **OK**.
- j. Repeat steps c through i to create the following SRV record.

Service	Protocol	Priority	Weight	Port number	Host
_sipinternaltls	_tcp	20	0	5061	sip2.onprem123.lyncignite.biz

- k. Click **Done** when finished.
- l. Close the DNS Manager.

5. Publish the topology.

Each time that you use Topology Builder to build or edit your topology, you must publish the topology to a database in the Central Management Store (CMS).

- a. On LSFE01, switch to the Topology Builder.
- b. At the top of the navigation pane, right-click **Lync Server**, and then click **Publish Topology**.
It might take a moment for the Publish Topology wizard to appear.
- c. On the Publish the topology page, review the tasks that should be completed, and then click **Next**.
- d. On the Create databases page, verify that the **sql01.onprem.local** and **sql03.onprem.local** check boxes are selected and then click **Next**.
Wait while the topology is published. This will take about two minutes.
- e. On the Publishing wizard complete page, verify that all steps show as **Success**.
You might see **Completed with warnings** for the creation of the databases. This can be ignored safely.
- f. Under **Next steps**, click the link to open the to-do list.
- g. Review the **NextSteps.txt** file that opens and the instructions to run local setup on each server in the list, and then close Notepad.
- h. Back on the Publishing wizard complete page, click **Finish**.
- i. Close the Lync 2013 Topology Builder.

Exercise 4: Deploying Lync Server 2013

In this exercise, you will deploy Lync Server 2013 on LSFE01, LSFE02, and LSFE03. Deploying all three at the same time is allowed and will save you significant time. You will use the Lync Server Deployment Wizard to walk through the steps, which include installing the Local Configuration Store, setting up the Lync Server 2013 components, requesting and assigning the necessary certificates, and then starting the services.

Tasks

1. **Use the Lync Server Deployment Wizard to install the Local Configuration Store on LSFE01.**

The procedure for installing server roles is the same for all roles. In this task, you will see the first step, which will install the Local Configuration Store from the CMS.

- a. On LSFE01, on the Lync Server 2013 – Deployment Wizard page, click **Install or Update Lync Server System**.
- b. On the Lync Server 2013 page, next to **Step 1: Install Local Configuration Store**, click **Run**.
- c. On the Configure Local Replica of Central Management Store page, verify that **Retrieve directly from the Central Management store** is selected, and then click **Next**.

This step will take about two to three minutes. You can move to the next procedure while this step completes.
- d. On the Executing Commands page, when the **Task Status** shows as **Completed**, click **Finish**.

2. **Start the Lync Server Deployment Wizard and install the Local Configuration Store.**

This step can be run on both servers at the same time.

- a. On LSFE02 and LSFE03, on the Start screen, click **Computer**.
- b. In File Explorer, browse to C:\LabFiles\Lync 2013\Setup\amd64 and double-click **Setup.exe**.

There will be a brief delay while setup starts.
- c. On the Lync Server 2013 – Deployment Wizard page, click **Install or Update Lync Server System**.
- d. On the Lync Server 2013 page, next to **Step 1: Install Local Configuration Store**, click **Run**.

- e. On the Configure Local Replica of Central Management Store page, verify that **Retrieve directly from the Central Management Store** is selected, and then click **Next**.

This step will take two to three minutes.

- f. On the Executing Commands page, when the **Task Status** shows as **Completed**, click **Finish**.

3. Update Lync Server 2010 components.

This step is required because the initial SIP domain was removed. It would not typically be required.

- a. On LS2010, click **Start**, and then click **Lync Server Deployment Wizard**.
- b. In the Lync Server Deployment Wizard, click **Install or Update Lync Server System**.
- c. On the Lync Server 2010 page, next to **Step 2: Setup or Remove Lync Server Components**, click **Run**.
- d. On the Setup Lync Server components page, click **Next**.

This will take about two to four minutes.

- e. On the Executing Commands page, when the **Task Status** shows as **Completed**, click **Finish**.
- f. Close the Deployment Wizard.

4. Set up Lync Server 2013 components.

This step will install the server components for the roles to be installed on all three Front End Servers and can be done at the same time.

- a. On LSFE01, LSFE02 and LSFE03, on the Lync Server 2013 - Deployment Wizard page, next to **Step 2: Setup or Remove Lync Server Components**, click **Run**.
- b. On the Set Up Lync Server components page, click **Next**.

This will take about seven to ten minutes.

- c. On the Executing Commands page, when the **Task Status** shows as **Completed**, click **Finish**.

5. Publish an up-to-date Certificate Revocation List

[Because the virtual machines have started from a saved state, it is necessary to publish an up to date certificate revocation list in order to perform the next steps.](#)

- a. [On DC01, open the **Windows PowerShell** window from the taskbar.](#)
- b. [At the **Windows PowerShell** prompt, type **certutil -crl** and press ENTER.](#)

Formatted: Font: Bold

Formatted: Granular steps

5.6. Request and assign an OAuth TokenIssuer certificate.

You will now request the certificate for the OAuth TokenIssuer usage. This only has to be done on one server. You will request and assign this certificate first so that it has time to replicate to the other servers.

- a. On LSFE01 only, on the Lync Server 2013 - Deployment Wizard page, next to **Step 3: Request, Install or Assign Certificates**, click **Run**.
- b. In the Certificate Wizard window, click **OAuthTokenIssuer** and then click **Request**.
- c. On the Certificate Request page, click **Next**.
- d. On the Delayed or Immediate Requests page, verify that **Send the request immediately to an online certificate authority** is selected and then click **Next**.
- e. On the Choose a Certification Authority (CA) page, verify that **DC01.onprem.local\onprem-DC01-CA** is listed and then click **Next**.
- f. On the Certificate Authority Account page, leave the box blank, and then click **Next**.
- g. On the Specify Alternate Certificate Template page, leave the box blank, and then click **Next**.
- h. On the Name and Security Settings page, in the **Friendly Name** box, type **OAuth TokenIssuer Certificate** and then click **Next**.
- i. On the Organization Information page, in the **Organization** box, type **OnPrem**
- j. In the **Organizational Unit** box, type **IT** and then click **Next**.
- k. On the Geographical Information page, click the **Country/Region** menu, scroll down, and then click **United States**.
- l. In the **State/Province** box, type **Washington**
- m. In the **City/Locality** box, type **Redmond** and then click **Next**.
- n. On the Subject Name/Subject Alternate Names page, click **Next**.
- o. On the Configure Additional Subject Alternate Names page, leave the boxes blank and then click **Next**.
- p. On the Certificate Request Summary page, click **Next**.
- q. On the Executing Commands page, when the **Task Status** shows as **Completed**, click **Next**.
- r. On the Online Certificate Request Status page, verify that the **Assign this certificate to Lync Server certificate usages** check box is selected, and then click **Finish**.



Note:

If the certificate request fails, restart the Active Directory Certificate Services service on DC01 and repeat these steps. You can click Back one step in the Lync Deployment Wizard and then retry the operation.

- s. On the Certificate Assignment page, click **Next**.
- t. On the Certificate Assignment Summary page, click **Next**.
- u. On the Executing Commands page, when the **Task Status** shows as **Completed**, click **Finish**.

Notice that the Location of this certificate shows as Global.

OAuthTokenIssuer	✓ OAUTH TokenIssuer Certificate	8/8/2014 11:11:49 AM	Global
------------------	---------------------------------	----------------------	--------

6.7. Request and assign the default certificate.

You will now request the certificates for the Front End Servers This can be done at the same time on each server.

- a. On LSFE02 and LSFE03 only, on the Lync Server 2013 page, next to **Step 3: Request, Install or Assign Certificates**, click **Run**.
- b. On LSFE01, LSFE02, and LSFE03, in the Certificate Wizard window, click **Default Certificate**, and then click **Request**.
- c. On the Certificate Request page, click **Next**.
- d. On the Delayed or Immediate Requests page, verify that **Send the request immediately to an online certification authority** is selected, and then click **Next**.
- e. On the Choose a Certification Authority (CA) page, verify that **DC01.onprem.local\onprem-DC01-CA** is listed and then click **Next**.
- f. On the Certificate Authority Account page, leave the box clear and then click **Next**.
- g. On the Specify Alternate Certificate Template page, leave the box clear and then click **Next**.
- h. On the Name and Security Settings page, in the **Friendly Name** box, type **Default Certificate** and then click **Next**.
- i. On the Organization Information page, in the **Organization** box, type **OnPrem**
- j. In the **Organizational Unit** box, type **IT** and then click **Next**.
- k. For LSFE01 and LSFE02, in the Geographical Information page, click the **Country/Region** menu, scroll down, and then click **United States**. For LSFE03, click **Italy**.

- l. For LSFE01 and LSFE02, in the **State/Province** box, type **Washington** and then for LSFE03, type **Lazio**
- m. For LSFE01 and LSFE02, in the **City/Locality** box, type **Redmond** and then for LSFE03, type **Rome** and then click **Next**.
- n. On the Subject Name/Subject Alternate Names page, review the **Subject Name** and **Subject Alternate Names** that are automatically populated, and then click **Next**.
- o. On the SIP Domain setting on Subject Alternate Names (SANs) page, read the qualifications, leave the box clear, and then click **Next**.
- p. On LSFE01 and LSFE02, on the Configure Additional Subject Alternate Names page, in the **Specify any additional subject alternate name to be added to the existing list of subject alternate names** box, type **sip1.onprem123.lyncignite.biz** and then click **Add**. Click **Next**.
- q. On LSFE03, on the Configure Additional Subject Alternate Names page, in the **Specify any additional subject alternate name to be added to the existing list of subject alternate names** box, type **sip2.onprem123.lyncignite.biz** and then click **Add**. Click **Next**.
- r. On the Certificate Request Summary page, click **Next**.
- s. On the Executing Commands page, when the **Task Status** shows as **Completed**, click **Next**.
- t. On the Online Certificate Request Status page, verify that the **Assign this certificate to Lync Server certificate usages** check box is selected. and then click **Finish**.



Note:

If the certificate request fails, restart the Active Directory Certificate Services service on DC01 and repeat these steps.

- u. On the Certificate Assignment page, click **Next**.
- v. On the Certificate Assignment Summary page, click **Next**.
- w. On the Executing Commands page, when the **Task Status** shows as **Completed**, click **Finish**.
- x. Back in the Certificate Wizard, click **Close**.
- y. On LSFE02 and LSFE03, notice Step 4 is grayed out. The OAUTH certificate has not replicated to these servers and will not until the services are started.

7-8. Start the services on LSFE01.


Now that installation is complete, you will start the services.

Deploying Microsoft Lync Server 2013

- a. On LSFE01, on the Lync Server 2013 – Deployment Wizard page, next to **Step 4: Start Services**, click **Run**.
- b. On the Start Services page, click **Next**.
Wait a few minutes for the services to start.
- c. On the Executing Commands page, when the **Task Status** shows as **Completed**, click **Finish**.
- d. Next to **Service Status (Optional)**, click **Run**.
- e. In the Services console that opens, verify that all of the Lync Server services have started, and then close the Services console.
- f. Close the Lync Server 2013 – Deployment Wizard.

8.9. Start the services on LSFE02 and LSFE03.

Now that installation is complete, you will start the services.

- a. On LSFE02 and LSFE03, on the Taskbar, right-click **Windows PowerShell** and then click **Run as Administrator**.
- b. At the PowerShell prompt, type **Start-CsWindowsService** and then press Enter.
Wait as the services are started.
- c. Close the PowerShell window.
- d. Switch back to the Lync Server 2013 – Deployment Wizard and then click the **Refresh**  icon in the upper-right corner.
- e. Verify that **Run** next to **Step 4** is no longer grayed out.
It may take some time to replicate. Continue on with the lab.
- f. Next to **Service Status (Optional)**, click **Run**.
- g. In the Services console that opens, verify that all of the Lync Server services have started, and then close the Services console.
- h. Close the Lync Server 2013 – Deployment Wizard and then close File Explorer.

Exercise 5: Publishing the Lync External Web URLs

During this exercise, you will publish the External Lync Web URLs using TMG 2010 on the TMG01 virtual machine.

Tasks

1. **Create the Lync Web URLs publishing rule.**
 - a. On TMG01, click **Start**, and then click **Forefront TMG Management**.
 - b. In Forefront TMG, right-click **Firewall Policy**, point to **New**, and then click **Web Site Publishing Rule**.
 - c. On the Welcome to the New Web Publishing Rule Wizard page, in the **Web publishing rule name** box, type **Redmond Lync Web Services** and then click **Next**.
 - d. On the Select Rule Action page, verify that **Allow** is selected, and then click **Next**.
 - e. On the Publishing Type page, verify that **Publish a single Web site or load balancer** is selected, and then click **Next**.
 - f. On the Server Connection Security page, verify that **Use SSL to connect to the published Web server or server farm** is selected, and then click **Next**.
 - g. On the Internal Publishing Details page, in the **Internal site name** box, type **redext123.lyncignite.biz**
 - h. Select the **Use a computer name or IP address to connect to the published server** check box.
 - i. In the **Computer name or IP address** box, type **10.0.0.50** and then click **Next**.
 - j. On the Internal Publishing Details page, in the **Path** box, type **/***
 - k. Select the **Forward the original host header instead of the actual one specified in the Internal site name field on the previous page** check box, and then click **Next**.
 - l. On the Public Name Details page, in the **Public name** box, type **redext123.lyncignite.biz** and then click **Next**.
 - m. On the Select Web Listener page, click **New**.
 - n. On the Welcome page, in the **Web listener name** box, type **Wildcard Listener** and then click **Next**.
 - o. On the Client Connection Security page, verify that **Require SSL secured** is selected and then click **Next**.
 - p. On the Web Listener IP Addresses page, select the **External** check box and then click **Next**.

- q. On the Listener SSL Certificate page, click **Select Certificate**.
- r. Click ***.lyncignite.biz**, and then click **Select**.
- s. Back on the Listener SSL Certificates page, click **Next**.
- t. On the Authentication Settings page, click the **Select how clients will provide credentials to Forefront TMG** menu, click **No Authentication**, and then click **Next**.
- u. On the Single Sign On Settings page, click **Next**.
- v. On the Completion page, click **Finish**.
- w. Back on the Select Web Listener page, click **Next**.
- x. On the Authentication Delegation page, click the **Select how clients will provide credentials to Forefront TMG** menu, click **No delegation but client may authenticate directly**, and then click **Next**.
- y. On the User Sets page, verify that **All Users** is listed, click **Next**, and then click **Finish**.

2. Edit the Redmond Lync Web Services rule.

- a. On TMG01, right-click the new **Redmond Lync Web Services** rule and then click **Properties**.
- b. Click the **Public Name** tab.
- c. Under **Web sites and IP addresses**, click **Add**.
- d. In the Public Name window, in the **Public domain name or IP address** box, type **dialin123.lyncignite.biz** and then click **OK**.
- e. Repeat steps c and d to add the following Web site:
meet123.lyncignite.biz
When finished, you should have three Web Sites listed.
- f. Click the **Bridging** tab.
- g. In the **Redirect requests to SSL port** box, change it to **4443**.
- h. Click the **Link Translation** tab.
- i. Clear the **Apply Link translation to this rule** check box and then click **Apply**.
- j. Click **Test Rule**.
- k. Verify the test completes successfully, click **Close**, and then **OK**.
If it does not succeed, verify your settings and that all services are running and try again.

3. Create the Rome Lync Web Services rule.

- a. On TMG01, in Forefront TMG, right-click **Firewall Policy**, point to **New**, and then click **Web Site Publishing Rule**.
- b. On the Welcome to the New Web Publishing Rule Wizard page, in the **Web publishing rule name** box, type **Rome Lync Web Services** and then click **Next**.
- c. On the Select Rule Action page, verify that **Allow** is selected and then click **Next**.
- d. On the Publishing Type page, verify that **Publish a single Web site or load balancer** is selected, and then click **Next**.
- e. On the Server Connection Security page, verify that **Use SSL to connect to the published Web Server or server farm** is selected, and then click **Next**.
- f. On the Internal Publishing Details page, in the **Internal site name** box, type **romeext123.lyncignite.biz**
- g. Select the **Use a computer name or IP address to connect to the published server** check box.
- h. In the **Computer name or IP address** box, type **20.0.0.50** and then click **Next**.
- i. On the Internal Publishing Details page, in the **Path** box, type **/***
- j. Select the **Forward the original host header instead of the actual one specified in the Internal site name field on the previous page** check box, and then click **Next**.
- k. On Public Name Details page, in the **Public name** box, type **romeext123.lyncignite.biz** and then click **Next**.
- l. On the Select Web Listener page, click the **Web listener** menu, click **Wildcard Listener** and then click **Next**.
- m. On the Authentication Delegation page, click the **Select how clients will provide credentials to Forefront TMG** menu, click **No delegation but client may authenticate directly**, and then click **Next**.
- n. On the User Sets page, verify that **All Users** is listed, click **Next**, and then click **Finish**.

4. Edit the Rome Lync Web Services rule.

- a. On TMG01, right-click the new **Rome Lync Web Services** rule and then click **Properties**.
- b. Click the **Bridging** tab.
- c. In the **Redirect requests to SSL port** box, change it to **4443**.
- d. Click the **Link Translation** tab.
- e. Clear the **Apply Link translation to this rule** check box, and then click **Apply**.

Deploying Microsoft Lync Server 2013

- f. Click **Test Rule**.
- g. Verify the test completes successfully, click **Close**, and then **OK**.
If it does not succeed, verify your settings and that all services are running and try again.
- h. In Forefront TMG, in the Details pane, click **Apply**.
- i. On the Configuration Change Description page, click **Apply**.
- j. On the Saving Configuration Changes page, click **OK**.
- k. Close Forefront TMG.



Note:

The external DNS records for Dialin123, Meet123, RedExt123, and RomeExt123 have already been created host file entries on TMG01, EDGE01, and CLIENT03.

Exercise 6: Validating the Deployment Using the Lync Server Control Panel

During this exercise, you will validate your deployment by using the Lync Server Control Panel and will then view some of the features and information displayed in the Topology Viewer.

You will use all of these tools and more in the following labs.

Tasks

1. Start and log on to the Lync Server Control Panel.

- a. On LSFE01, hover the mouse pointer in the bottom left corner to bring up the Start button.
- b. Click **Start**, and then, on the Start screen, click **Lync Server Control Panel**.
- c. In the Select URL window, click **https://redpool.onprem.local/Cscp** and then click **OK**.
- d. At the Windows Security prompt, in the **User name** box, type **Administrator**
- e. In the **Password** box, type **Lync!gnit3** and then click **OK**.
- f. Verify that the Lync Server Control Panel opens successfully and that the version number in the upper-right corner shows **5.0.8308.0**.
- g. In the Lync Server Control Panel, click **Topology**.
- h. On the **Status** tab, verify that Lync Server 2010 and the three new Lync Server 2013 servers show with green status marks, as shown in the following image.

Computer	Pool	Site	Status	Replication	Version
ls2010.onprem.local	Standard Edition	Onprem	Retrieving	✓	Lync Server 2010
lsfe01.onprem.local	redpool.onprem.local...	Onprem		✓	Lync Server 2013
lsfe02.onprem.local	redpool.onprem.local...	Onprem		✓	Lync Server 2013
lsfe03.onprem.local	romepool.onprem.local...	Rome		✓	Lync Server 2013

- i. Browse the Lync Server Control Panel and close when finished.
Lync Server 2013 has been successfully deployed.