Lync 2013 Configuration Guide
For SIP Trunk Testing
For
XO Communications
April 7th 2014
Preface:

This document is intended to provide guidelines on how to setup a Lync SIP trunk test. The IP addresses or FQDNs mentioned in this guide are intended to provide an idea of the setup using one of the Lync environments here in the lab. Please substitute the IP addresses or FQDNs for trunks/Gateways (public or private) and the termination end point IP address from service provider accordingly.
**Components Information**

**Lync Server 2013 Version**

<table>
<thead>
<tr>
<th>Gateway Vendor</th>
<th>Microsoft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Models</td>
<td>Lync Server 2013</td>
</tr>
<tr>
<td>Software Version</td>
<td>RTM: Release 2013  5.0.8308.556</td>
</tr>
<tr>
<td>VoIP Protocol</td>
<td>SIP</td>
</tr>
<tr>
<td>Additional Notes</td>
<td>None</td>
</tr>
</tbody>
</table>

**Deployment Topology:**

[Diagram of the deployment topology showing PSTN, SBC, Internet, SIP Trunk, Mediation Server 1, Mediation Server 2, and user devices.]

tekVizion PVS, Inc. Confidential
Configuring the E-SBC device as an IP/PSTN Gateway

This section describes how to configure the E-SBC device as an IP/PSTN Gateway.

To configure the E-SBC device as an IP/PSTN Gateway and associate it with the Mediation Server:
On the server where the Topology Builder is located, start the Lync Server 2013 Topology Builder (Start > All Programs > Lync Server Topology Builder).

Figure 1: Opening the Lync Server Topology Builder
The following screen is displayed:

**Figure 2: Topology Builder Options**

- Click the **Download Topology from the existing deployment** option and then click **OK**; you are prompted to save the Topology which you have downloaded.
In the ‘File Name’ field, enter a filename and then click Save. This action enables you to roll back from any changes you make during the installation.
- Right-click **PSTN Gateway** and from the shortcut menu, choose **New IP/PSTN Gateway**.
Adding a New IP/PSTN Gateway

Figure 5: New IP/PSTN Gateway

- In the ‘Gateway FQDN or IP Address’ field, enter the Fully Qualified Domain Name (FQDN) of the E-SBC.
- Here since we need two trunks between the Lync and SBC, we have to add two PSTN gateways.
- In the ‘Listening port for IP/PSTN gateway’ field, enter “5060”.
- Under ‘Sip Transport Protocol’, click the TCP option.
Figure 6: Define New IP/PSTN Gateway

Define the PSTN Gateway FQDN

Define the fully qualified domain name (FQDN) for the PSTN gateway.

FQDN:
SipTrunk1.domain-name.com

Figure 6.1: Define IP address

Define the IP address

Enable IPv4
- Use all configured IP addresses.
- Limit service usage to selected IP addresses.
  PSTN IP address:

Enable IPv6
- Use all configured IP addresses.
- Limit service usage to selected IP addresses.
  PSTN IP address:
- Select IPv4 as shown above for IPv4 addresses.
Associating the IP/PSTN Gateway with the Mediation Server

This section describes how to associate the IP/PSTN Gateway with the Mediation Server.

➢ To associate the IP/PSTN Gateway with the Mediation Server:

- Expand the Mediation pools folder and then right-click the Mediation server.
- From the shortcut menu, choose Edit Properties.
In the left pane, choose **PSTN gateway**, as shown in the figure below.
Under the **Mediation Server PSTN gateway** group, select the E-SBC gateway and then click **Add** to associate it with this Mediation Server.
Figure 10: After Associating IP/PSTN Gateway to Mediation Server
Repeat the above steps to associate the second PSTN gateway with second Mediation server.

Right-click Lync Server 2013, and then from the shortcut menu, choose PublishTopology.
The Publish Topology page is displayed.

**Figure 13: Publish Topology Confirmation**

**Publish the topology**

In order for Lync Server 2010 to correctly route messages in your deployment, you must publish your topology. Before you publish the topology, ensure that the following tasks have been completed:

- A validation check on the root node did not return any errors.
- A file share has been created for all file stores that you have configured in this topology.
- All simple URLs have been defined.
- For Enterprise Edition Front End pools and for Monitoring Servers and Archiving Servers: All SQL stores are installed and accessible remotely; firewall exceptions for remote access to SQL Server are configured.
- For a single Standard Edition server: The task “Prepare first Standard Edition server” was run.
- You are currently logged on as a SQL administrator, for example, as a member of the SQL sysadmin role.
- If you are removing a Front End pool, all users, common area phones, analog devices, application contact objects, and conference directories have been removed from the pool.

When you are ready to proceed, click Next.
• Click **Next**; the Topology Builder attempts to publish your topology.

**Figure 14: Publish Topology Progress screen**

![Publishing in progress]

- Wait until the Publish Topology process has ended successfully.

**Figure 15: Publish Topology Successfully Completed**

![Publishing wizard complete]

- Click **Finish**.
Configuring the “Voice Routing” on Lync Server 2013

Adding a Route:

This section describes how to configure a Route on Lync Server 2013 and associate it with the E-SBC PSTN gateway.

➢ **To configure the route on Lync Server 2013:**
  - Open the Lync Server Control Panel (Start > All Programs > Microsoft Lync Server 2013 > Lync Server Control Panel).

Figure 16: Opening the Lync Server Control Panel

- You are prompted for credentials; enter your domain username and password and then click OK.
Figure 17: Lync Server 2013 Credentials

- The Lync Server 2013 Home page is displayed.

Figure 18: CSCP Home page
• In the Navigation pane, select the **Voice Routing** menu.

**Figure 19: Voice Routing Menu**

• In the Voice Routing menu, select the **Route** tab.
In the content click New; a New Voice Route page appears.

In the ‘Name’ field, enter a Name for this route (i.e. SIP Trunk Route).

Under the **Build a Pattern to Match** group, add the starting digits you wish this route to handle, in the ‘Match this pattern field’. In this example, the pattern to match is ‘*’, which means “to match all numbers”.

Click **Add**.
Figure 21: Adding New Voice Route

- Associate the route with the E-SBC IP/PSTN gateway you created above. Scroll down to the Associated trunks pane and then click **Add**.

Figure 22: Adding New trunk

- A list of all the deployed trunks is displayed.
Select the E-SBC Gateway you created above and then click **OK**.

The selected E-SBC gateway appears in the Associated Gateways pane.

**Figure 24: Selected E-SBC Gateway**

* In the toolbar at the top of the New Voice Route pane, click **OK**.
* The New Voice Route (with a State ‘Uncommitted’) is displayed.
In the Content area Toolbar, click on the arrow adjacent to the **Commit** button;
From the ‘Commit’ drop-down list, select **Commit All**.

In the Uncommitted Voice Configuration Settings window, click **Commit**.
A message is displayed, confirming a successful voice routing configuration; in the Microsoft Lync Server 2013 Control Panel prompt, click Close.

The new committed Route is now displayed on the Voice Routing page.
Repeat the above steps to add the new second route associating with the second gateway.

**Adding a Voice Policy and a PSTN Usage:**

- Click on “Voice Routing” in the Lync Server 2013 control panel and select the “Voice Policy” tab. You will see the below screen.
• Please click on ‘New’ and select “User Policy” to add a new Voice Policy.
Figure 31: Adding a New Voice Policy

- Fill the name field with the “Voice Policy Name” and description (optional).
- Enable the needed feature and scroll down to “Associated PSTN Usages”.

Figure 32: Associated PSTN Usages:

- Click on “New” in the Associated PSTN Usage box.
Figure 33: New PSTN Usage:

- Fill in the name of the PSTN Usage
- And in the “Associated Routes” box, please click on select.
Double click on the appropriate route (or) Click “OK” after selecting a route.
The route selected will be listed as below.
• Click on “OK” to apply the newly created PSTN Usage.
• This will take you back to the “Voice Policy” page with the PSTN Usage and Route added.
• Click on OK to apply the Voice Policy settings.
• Now the “Voice Policy” page will be shown with the newly added voice policy “uncommitted” as shown below.
Click on “Commit” and select the “Commit All” menu to commit the changes made.
Figure 38: Un-committed voice configuration Settings:

- Above is the confirmation page for the list of changes made.
- This will list the Newly added “Voice Policy”, “PSTN Usage” and the selected “Route”.
- Click on OK to commit the changes.

Figure 39: Successful Voice Routing changes:

- After the successful creation of the “Voice Policy”, the newly added voice policy will be shown in the list as ‘committed’.
Repeat the Voice policy creating steps to create a second voice policy with the second PSTN usage and second Route.

Adding a Trunk

In “Voice Routing” Control Panel, please click on “Trunk configuration”. The Trunk list is shown as below.
Click on New and select “Pool trunk” to add a new trunk.
Figure 42: Adding New trunk:

- Selecting a new trunk from the List as shown below.
Figure 43: Selecting a New trunk from the List:

- A new trunk configuration window will appear as shown below.
Figure 44: New trunk Configuration:

Figure 45: New trunk Configuration - Continued:
• Please click on “Select” under the Associated PSTN Usages to see the list of available PSTN Usages.

**Figure 46: Select PSTN Usage:**

<table>
<thead>
<tr>
<th>PSTN usage record name</th>
<th>Associated routes</th>
<th>Associated voice policies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long Distance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CustomerPSTNUsage1</td>
<td>SipTrunkRoute</td>
<td>CustomerVoicePolicy1</td>
</tr>
<tr>
<td>CustomerPSTNUsage2</td>
<td>SipTrunkRoute2</td>
<td>CustomerVoicePolicy2</td>
</tr>
</tbody>
</table>
- Select the appropriate PSTN usage for the Trunk and Click OK.
- The selected trunk will be listed and then click OK in the Trunk Configuration window as shown below.

**Figure 47: Finalizing the Trunk Configuration:**

- Once the Trunk Configuration Setting are applied, the list of trunk will be shown as below with the new trunk “un-committed”.

tekVizion PVS, Inc. Confidential
Figure 48: Committing the Trunk Configuration:

- Commit the newly created trunk by selecting “Commit” and “Commit all”.
- A confirmation window will appear as shown below.
Figure 49: Committing the Trunk Configuration:

Uncommitted Voice Configuration Settings

<table>
<thead>
<tr>
<th>Identity</th>
<th>Action</th>
<th>New value (enable bypass)</th>
<th>Old value (enable bypass)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PstnGatewaySipTrunk1.domai...</td>
<td>Added</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Select OK to confirm the Commit action.

Figure 50: Successfully published the Trunk:
Configuring the Lync Users

Adding a New User:

- In Lync 2013 Control Panel, click on the “USERS”. The following screen will appear.

![Lync Users window](image)

- Click on “Enable Users”. 

**Figure 51: Lync Users window:**
Click on “Add” and then Click on “Find”. 
Select the appropriate use and then Click “OK”
Fill the details of the user with the user’s pool and the SIP URL as shown below.
Figure 55: New Lync Server User Window – User Telephony configuration:

- Fill in the DID of the Lync User given by the providers.
- Select the Enterprise voice for the user.
- Select the Voice policy for the user.
- Once completed click on “Enable”.
- Repeat for all other users.
Logging in to the Lync Server:

- In the Client PC open the Lync Client 2013.
- Click on the options button (highlighted in the below screen).
• Lync Options window opens as shown below.
• Click on the “Personal” tab in the left side on the window.
• Click on the “Advanced” and fill in the details as below and click OK.

Figure 59: Lync Client “Advanced Connection Settings”
• Please type the password for the Lync client if prompted.

Figure 60: Lync Client “Signed In”