Grandstream Networks, Inc.

How to Integrate UCM6XXX with Microsoft Lync® Server

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OVERVIEW

The UCM6XXX and Microsoft Lync® server can be connected using SIP peer trunk to achieve integration for better and more effective enterprise communication. This document introduces how to configure the UCM6XXX and Microsoft Lync® server to implement the integration.

The following equipment and services are required in order to set up the UCM6XXX with Microsoft Lync® as described in this document.

- A properly installed and deployed Microsoft Lync® server
  The configuration presented in this document is based on Microsoft Lync® server 2013. The instruction is similar if the user has Microsoft Lync® 2010 instead. Before starting to peer Microsoft Lync® server with the UCM6XXX, please ensure the Microsoft Lync® server is properly configured and working for all the Lync® clients in the environment to be deployed.

- UCM6XXX with firmware version 1.0.20.17 is up and running
  Before starting to peer Microsoft Lync® server with the UCM6XXX, please ensure the UCM6XXX is upgraded to the latest firmware version. Here is the firmware link:
  http://www.grandstream.com/support/firmware

  The UCM6XXX also needs to be properly configured and working for the registered extensions in the environment to be deployed.

- Functional network environment where the UCM6XXX and Microsoft Lync® server are connected
  Please ensure network connectivity between the two devices and port availability on the devices as well as firewall settings.

  The Microsoft Lync® server and the UCM6XXX can be located on the Internet or corporate Intranet. The configuration presented in this document applies to devices that are located on public network and the SIP trunk is over public Internet connection. Also, TCP is used as transport protocol for SIP signaling using port 5060.

UCM6XXX CONFIGURATION

Step 1: Create SIP Peer Trunk

- Go to web **GUI→Extension Trunk→VoIP Trunks**, click on "Add SIP Trunk".
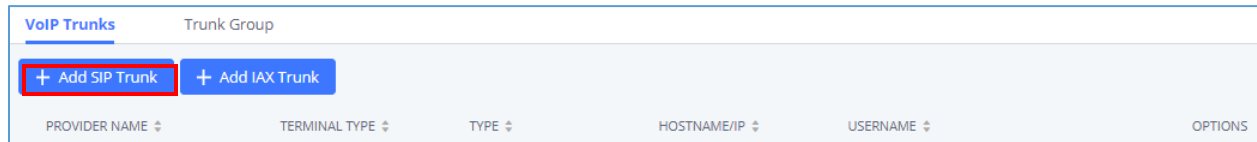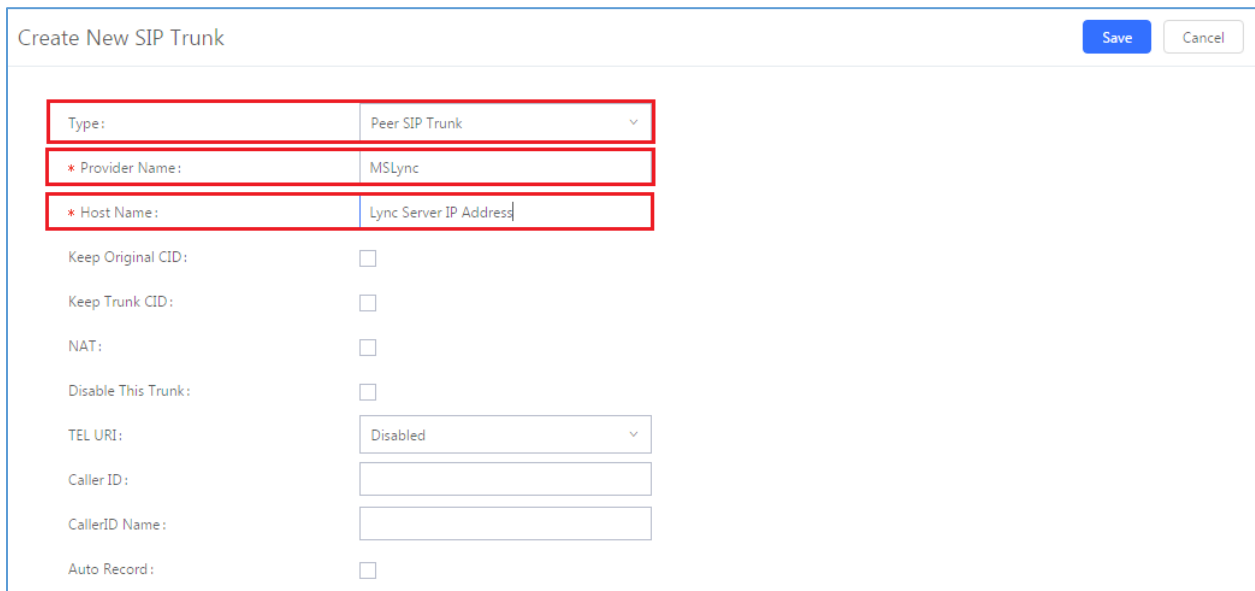

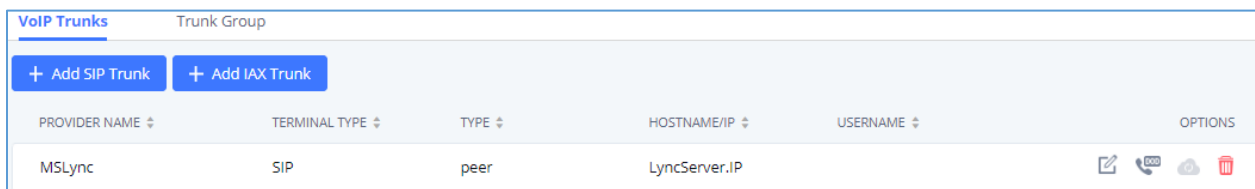**Figure 1: Create New SIP Trunk on the UCM6XXX**

- In the "Create New SIP Trunk" dialog, configure the following:

  ➢ **Type**: Select "**Peer SIP Trunk**"
  ➢ **Provider Name**: Enter a name to identify this SIP trunk in the UCM6XXX
  ➢ **Host Name**: Enter the IP address of the Lync Server to be peered with

Figure 2: Create Peer SIP Trunk

- Click on "Save" to create the peer SIP trunk.

- The newly created SIP trunk will appear in the VoIP trunk web page. Click on icon [edit icon] to further configure the SIP trunk.
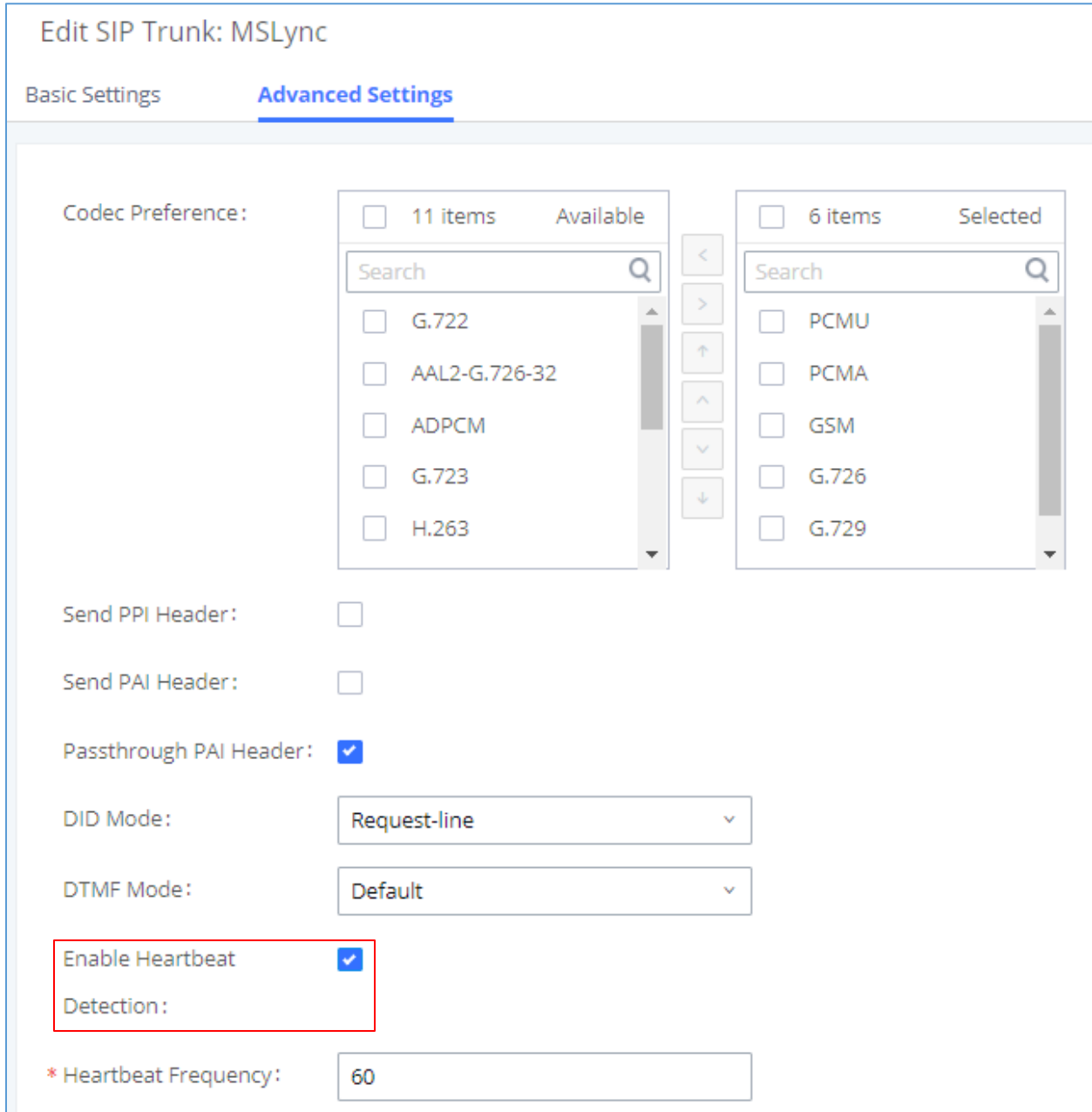
Figure 3: VoIP Trunks Web Page

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- In the dialog to edit the SIP trunk, configure the following:

  ➢ **Enable Heartbeat Detection**: enable this so that the UCM6XXX can monitor the connectivity status with the Microsoft Lync® server in status page.

Figure 4: Edit Peer SIP Trunk

- Click on "Save" on top right of the dialog.
- Click on "Apply Changes" on the upper right of the web UI. Now the SIP peer trunk is successfully configured.

Step 2: Configure Outbound Rule

- Go to web **GUI→Extension Trunk→Outbound Routes**, click on [+ Add].
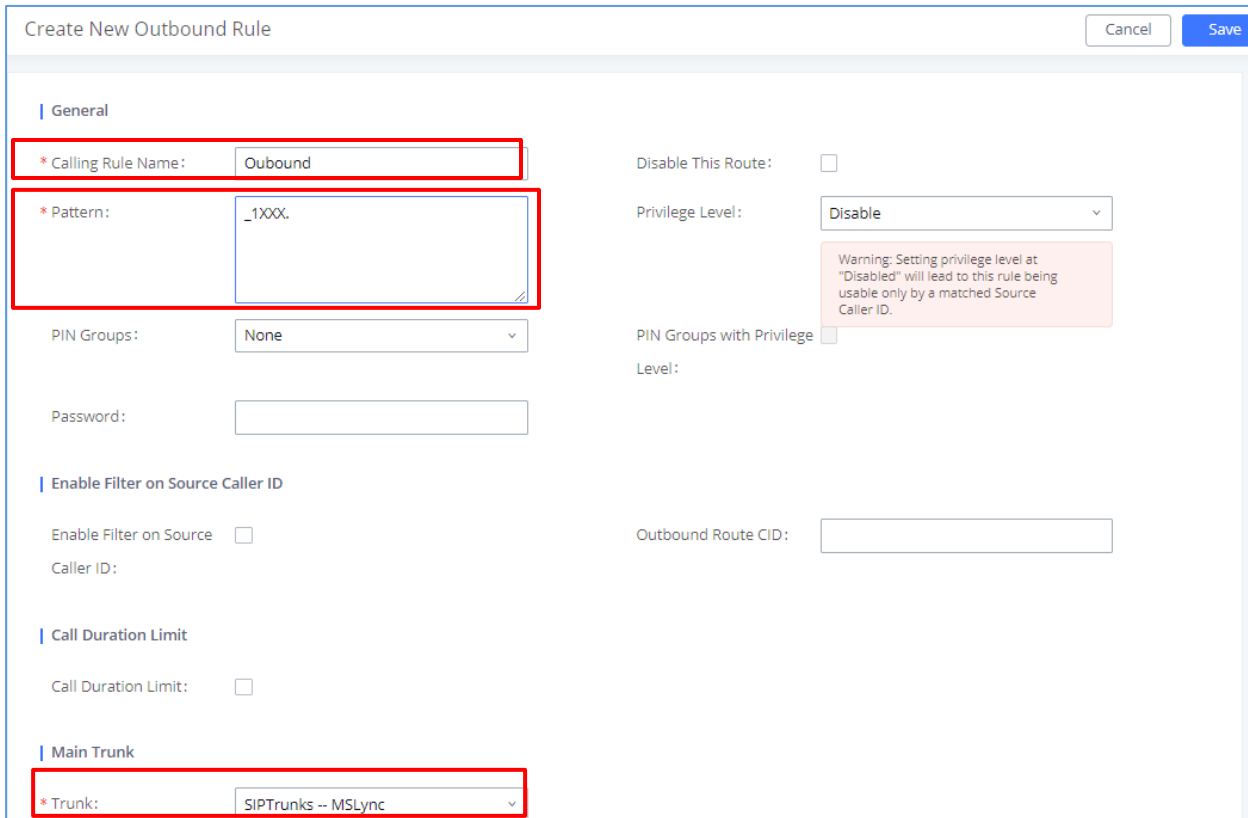- In the dialog to create new outbound rule, configure the following:
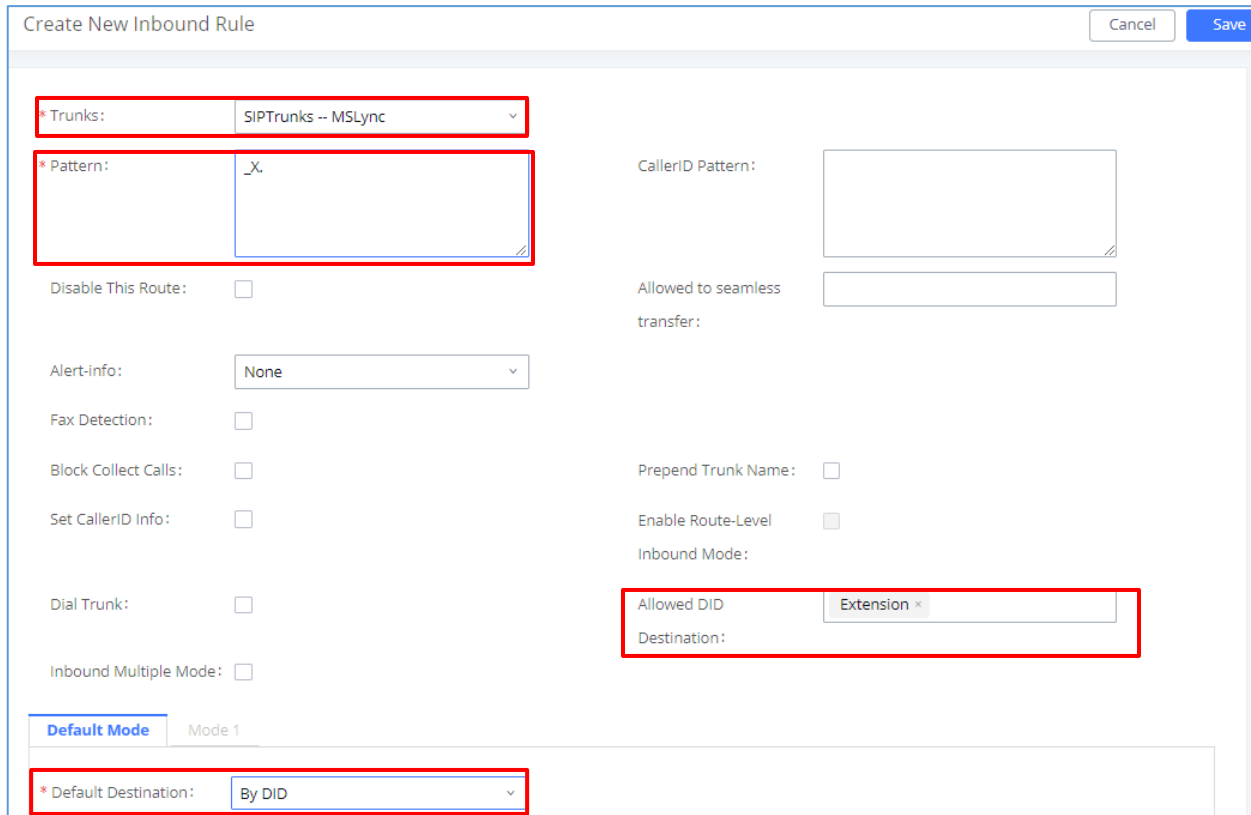
Figure 5: Create New Outbound Rule

➢ **Calling Rule Name**: Enter the outbound rule name to identify it in the UCM6XXX.
➢ **Pattern**: The Microsoft Lync® server already has extensions 1xxx configured. Therefore, configure 1XXX here as the pattern to dial out from the UCM6XXX.
➢ **Trunk**: Select the SIP peer trunk created in step 1 as trunk to be used for the outbound rule.

- Click on "Save" on the bottom of the dialog.

- Click on "Apply Changes" on the upper right of the web UI. Now the outbound rule is successfully configured on the UCM6XXX.

Step 3: Configure Inbound Rule

- Go to web **GUI→Extension / Trunk→Inbound Routes**, select the SIP trunk created in step 1 and click on [+ Add].

- In the dialog to create inbound rule, configure the following:

- ➢ **Trunks**: Make sure the SIP trunk created in the step 1 is selected.
- ➢ **DID Pattern**: Enter "**_X.**" to allow any digit.
- ➢ **Default Destination**: Select "By DID".
- ➢ **DID Destination**: Select "Extension" and other destinations you would like to have the Lync client to reach when calling into the UCM6XXX (Ring Groups, IVR …etc).

Figure 6: Edit Inbound Rule

- • Click on "Save" on top right of the dialog.
- • Click on "Apply Changes" on the upper right of the web UI. Now the inbound rule is successfully configured.

MICROSOFT LYNC® CONFIGURATION

Step 1: Create New PSTN Gateway

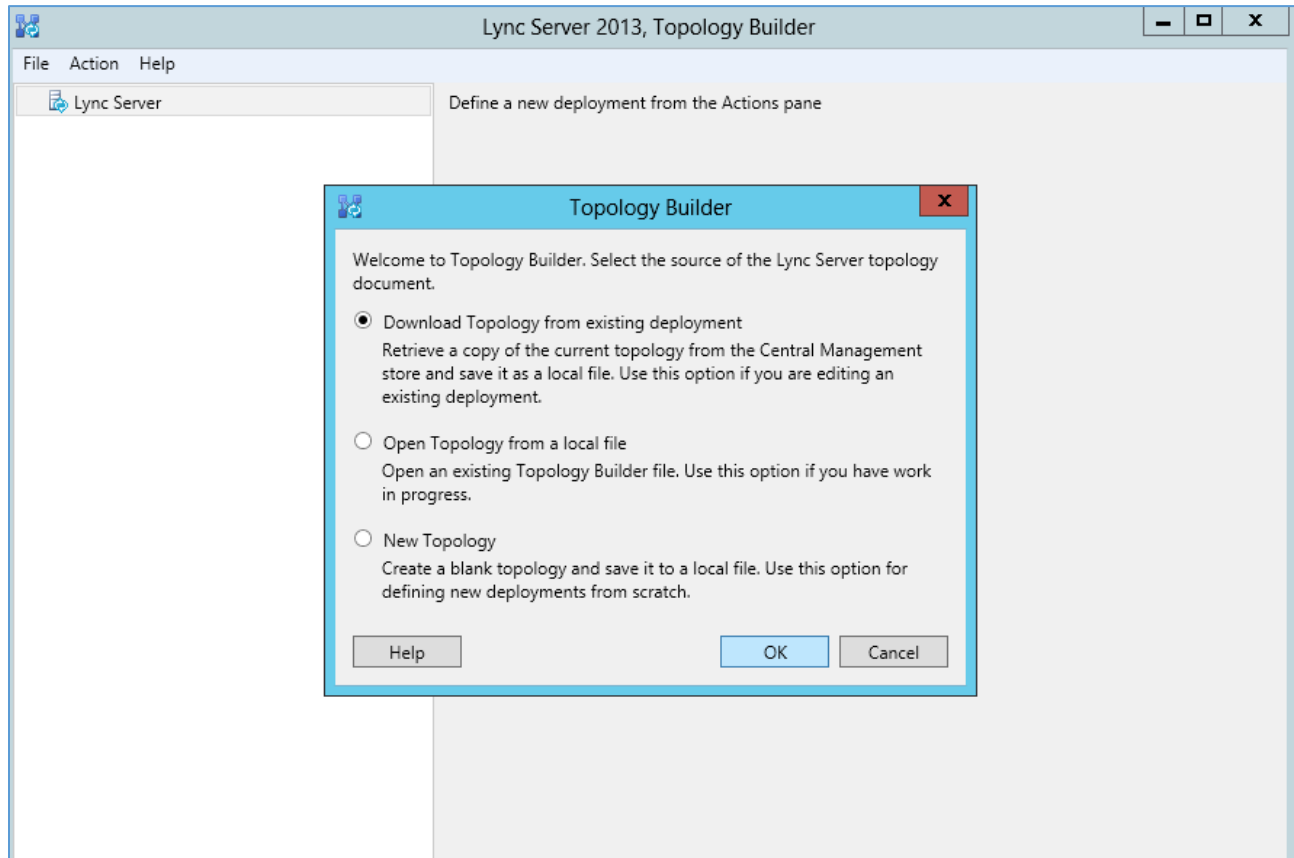- Open Microsoft Lync® 2013 Topology Builder. Download or open a topology.

Figure 7: Open Microsoft Lync® 2013 Topology Builder

- Find the folder "PSTN Gateway" under Lync Server directory "Shared Components".
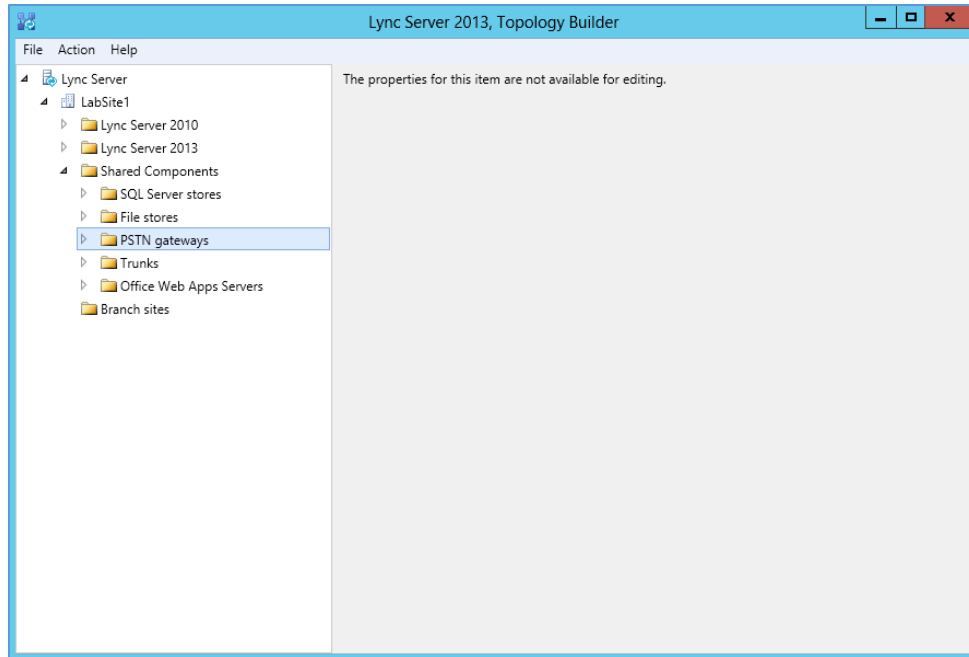
Figure 8: PSTN Gateway under Lync Server

- Right click on "PSTN gateways" and select "New IP/PSTN gateway…" to create a new IP/PSTN gateway.
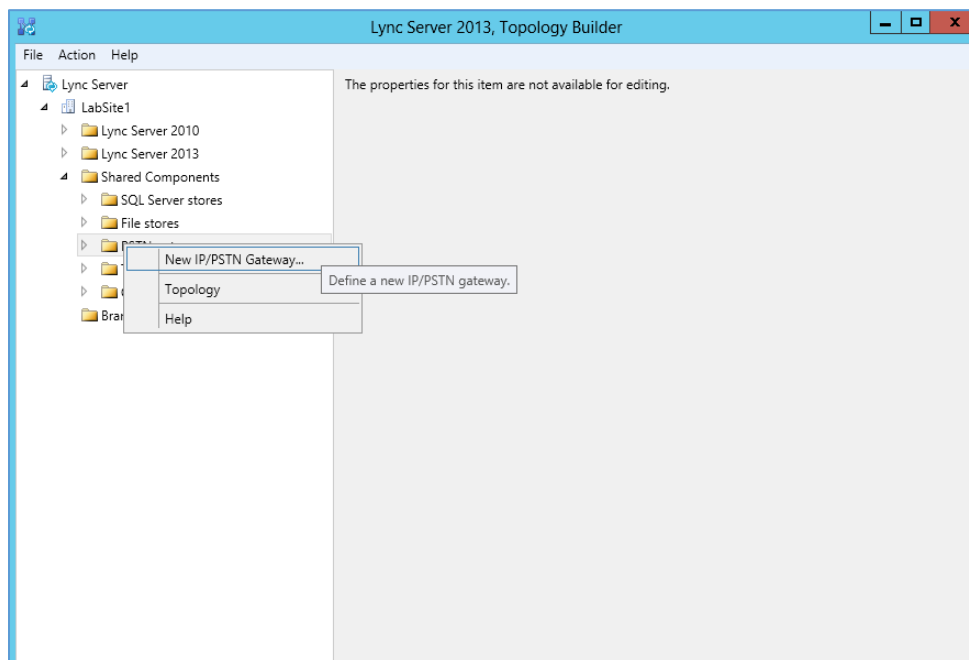

Figure 9: Create New IP/PSTN Gateway

- The setup wizard for the IP/PSTN Gateway will guide you to configure it step by step. Firstly, configure the FQDN as the UCM6XXX IP address or the domain name. Then click on "Next".
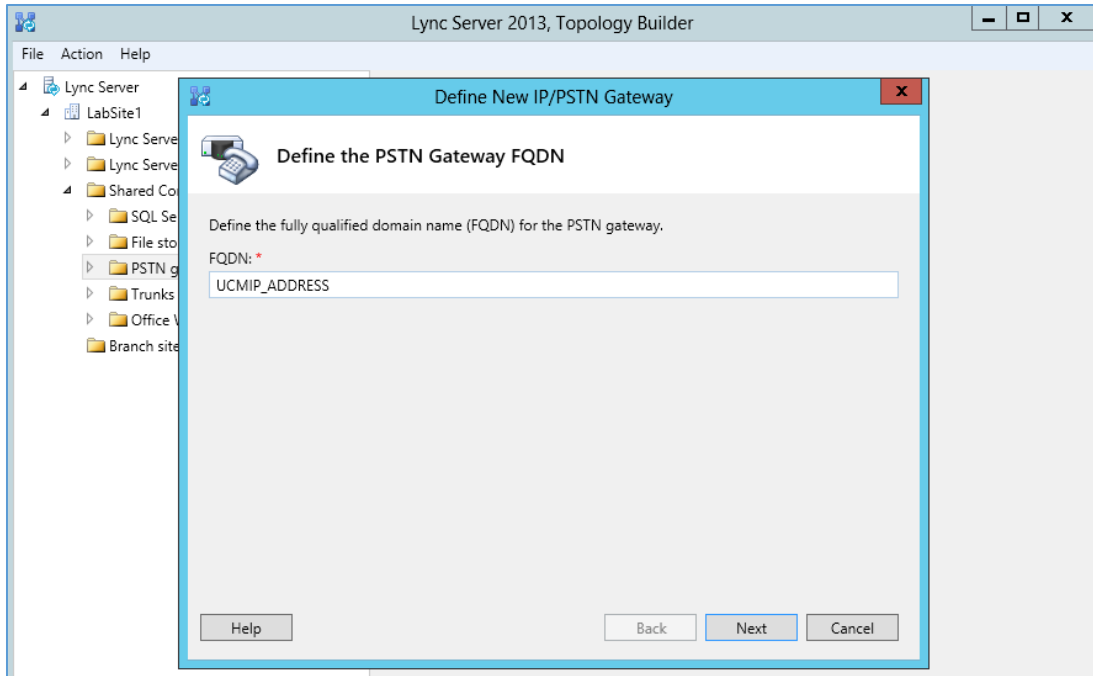
Figure 10: Define the PSTN Gateway FQDN

- Leave the configuration as default in "Define the IP Address" dialog. Click on "Next".
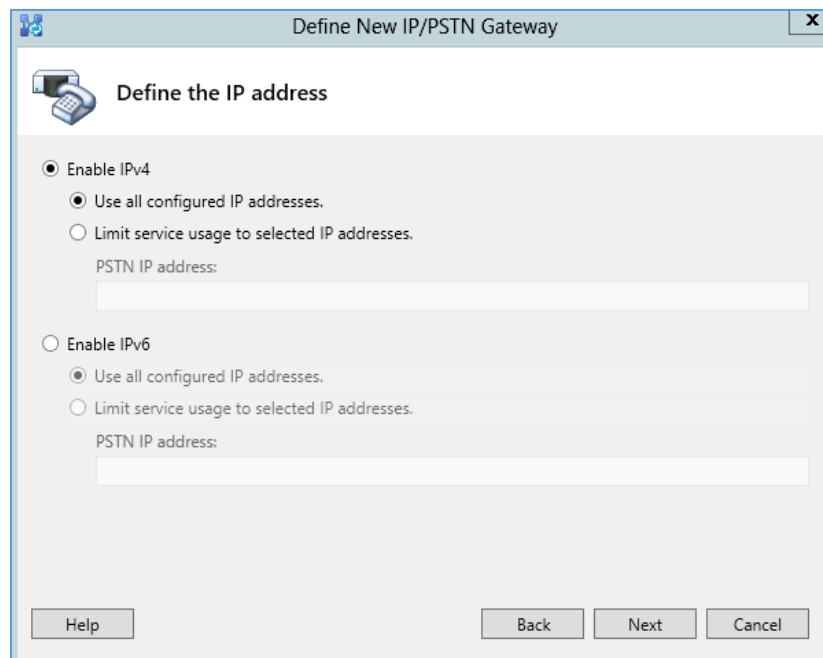

Figure 11: Define the IP Address

- Define the root trunk. Configure the trunk as followings:

  ➢ **Listening port for IP/PSTN gateway**: 5060
  ➢ **SIP Transport Protocol**: TCP
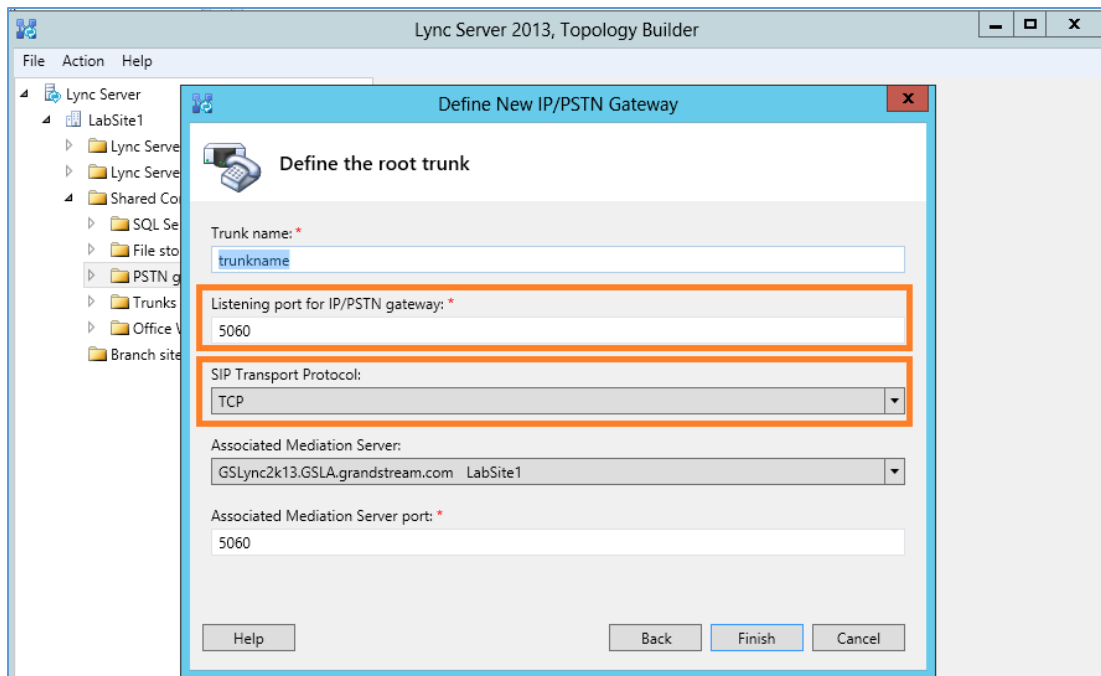
Figure 12: Define the Root Trunk

- Click on "Finish".

- Now, right click on "Lync Server" and select "Publish Topology…" to update the existing topology with the new PSTN gateway configurations.
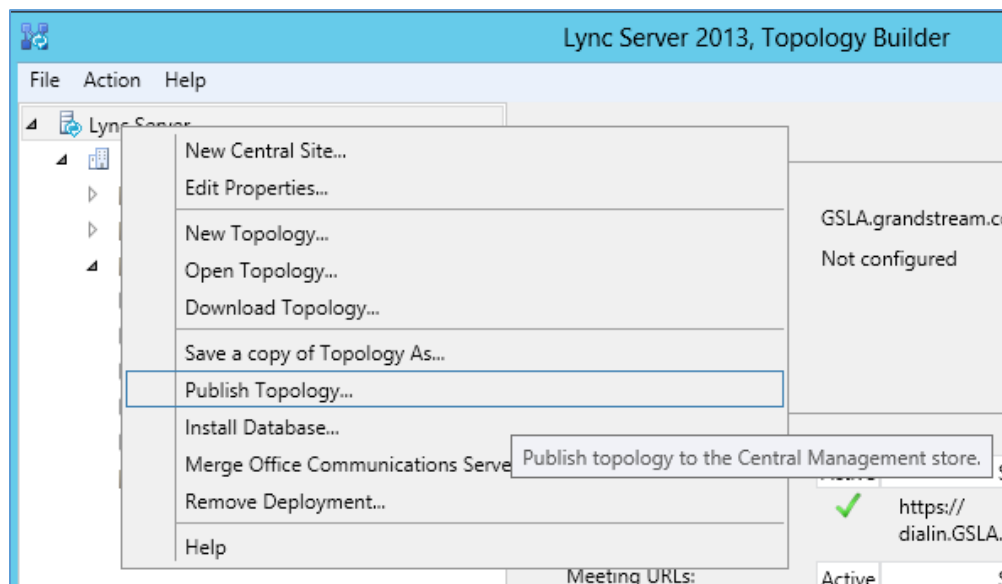

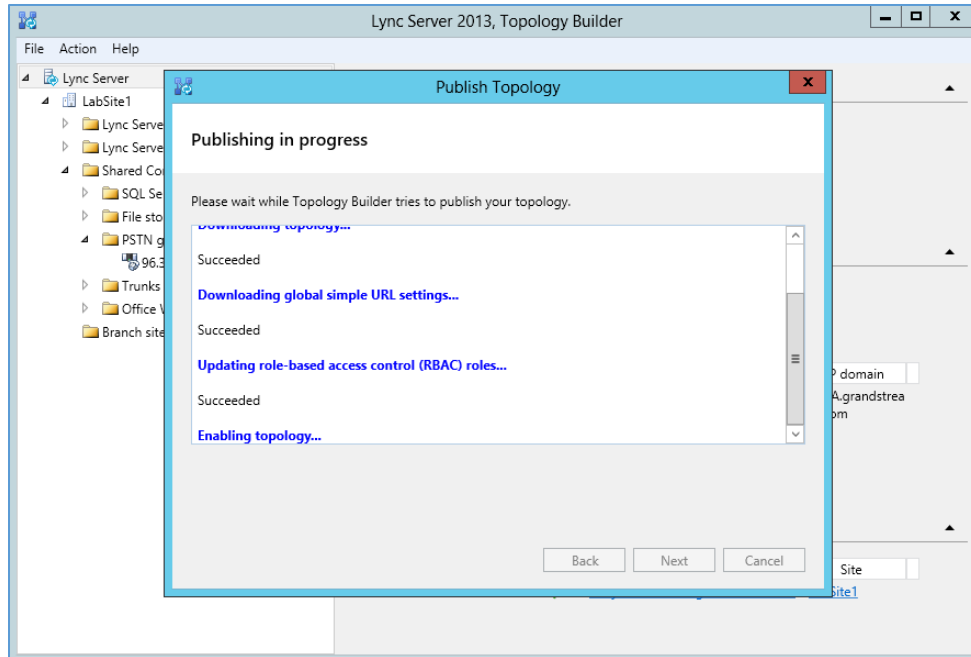**Figure 13: Select Publish Topology**

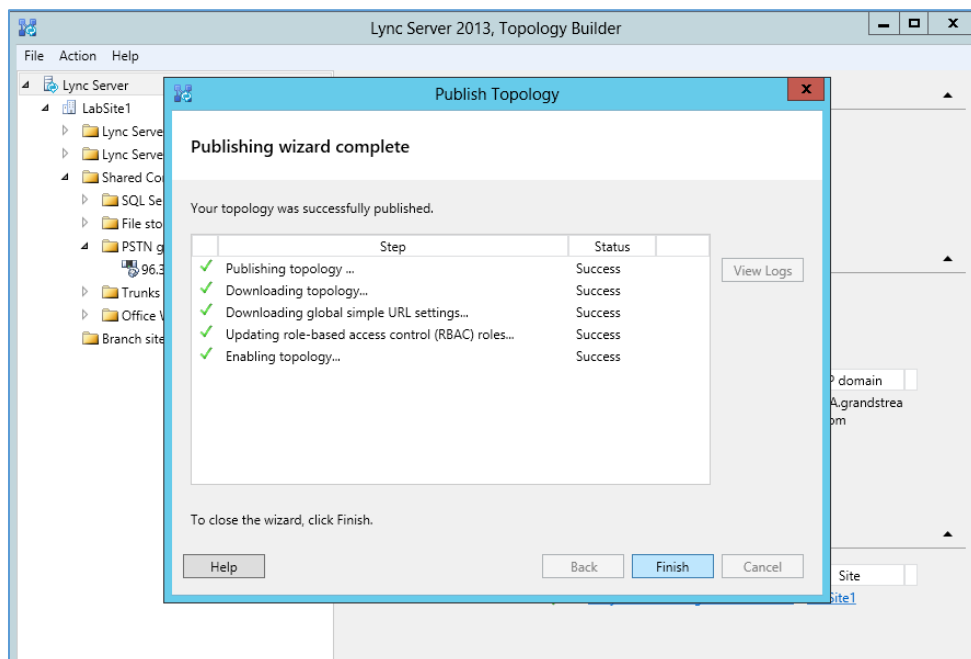**Figure 14: Publish Topology Process**

Figure 15: Publish Topology Finished

Step 2: Configure Dial Plan On Microsoft Lync® Server

- Open the Microsoft Lync® 2013 control panel. Select "Voice Routing"->"Dial Plan". Double click on "Global" to edit Dial Plan - Global.
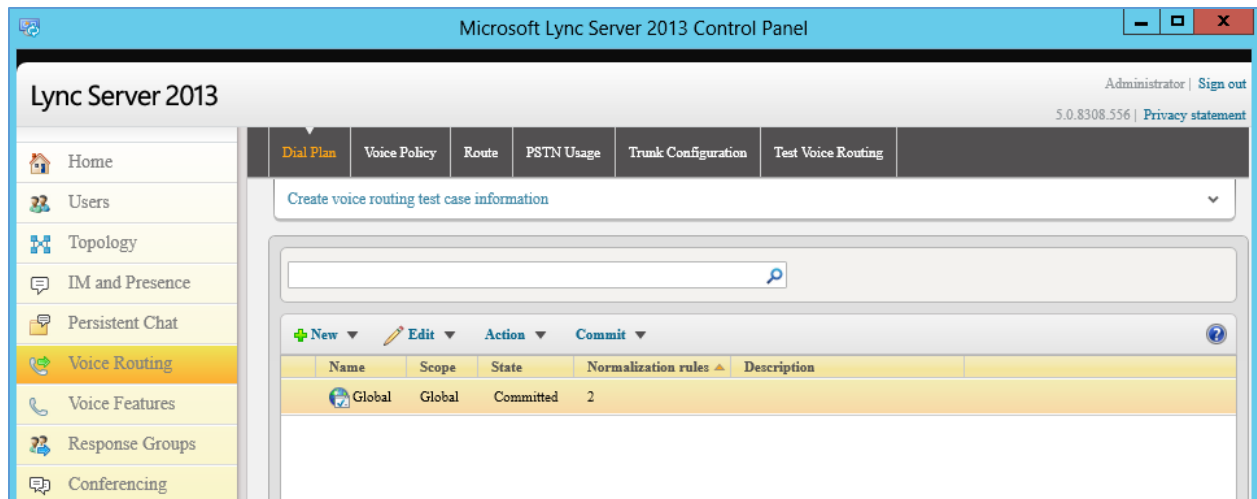
Figure 16: Voice Routing→Dial Plan

- In "Edit Dial Plan - Global" dialog, select "New" under "Associated Normalization Rules".
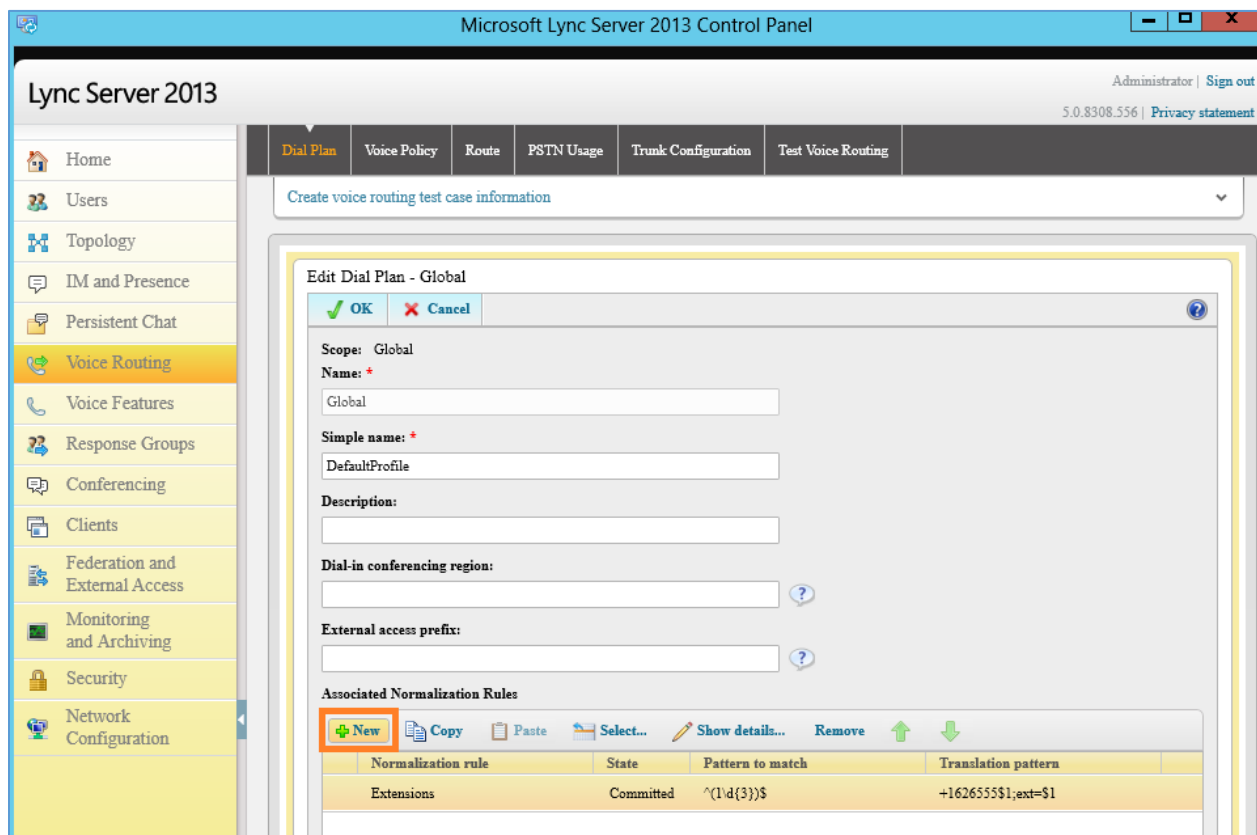

Figure 17: Edit Dial Plan – Global

- In our sample, the UCM6XXX has extensions 3xxx. Therefore, configure the following in the dial plan:
  - ➢ **Starting digits**: 3
  - ➢ **Length**: exactly 4
  - ➢ **Digits to remove**: 0

➢ **Digits to add**: none. By default, it's "+". We removed the "+" here since we just use 3xxx for the extensions to be dialed.
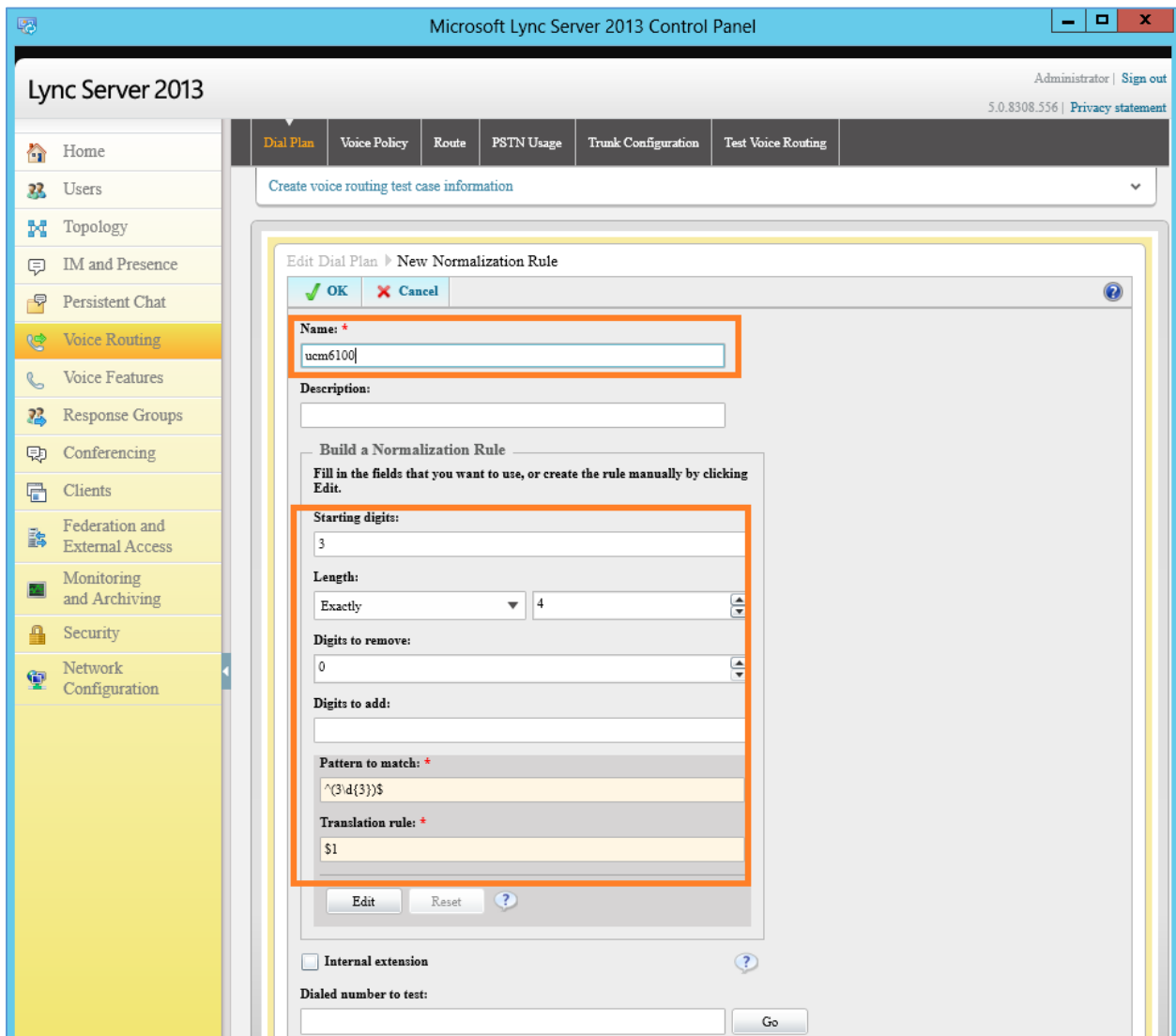

Figure 18: Create New Normalization Rule

• Click on OK.

Step 3: Configure Voice Policy On Microsoft Lync® Server

• In the Microsoft Lync® 2013 control panel, select "Voice Routing"➔"Voice Policy". Double click on "Global" to edit "Voice Policy - Global".
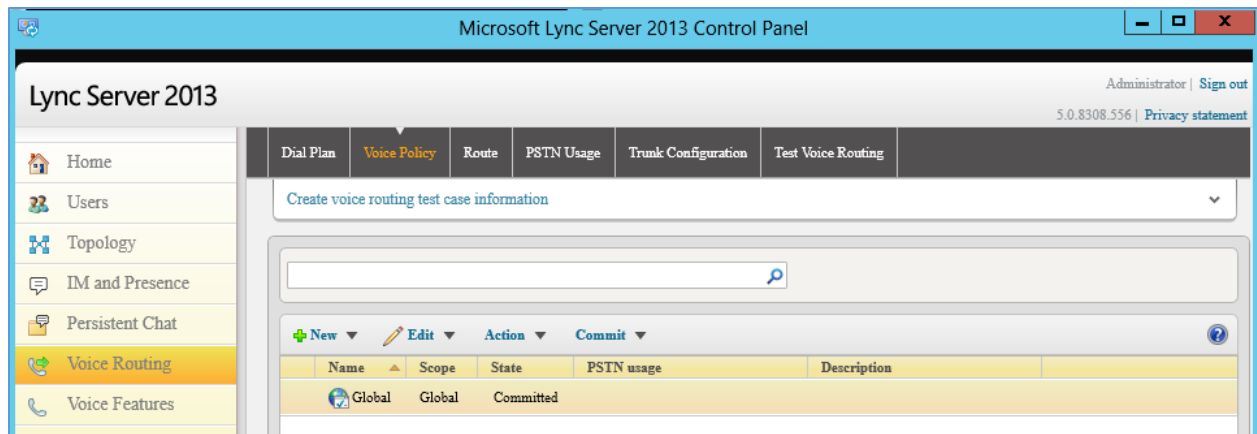
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Figure 19: Voice Routing→Voice Policy
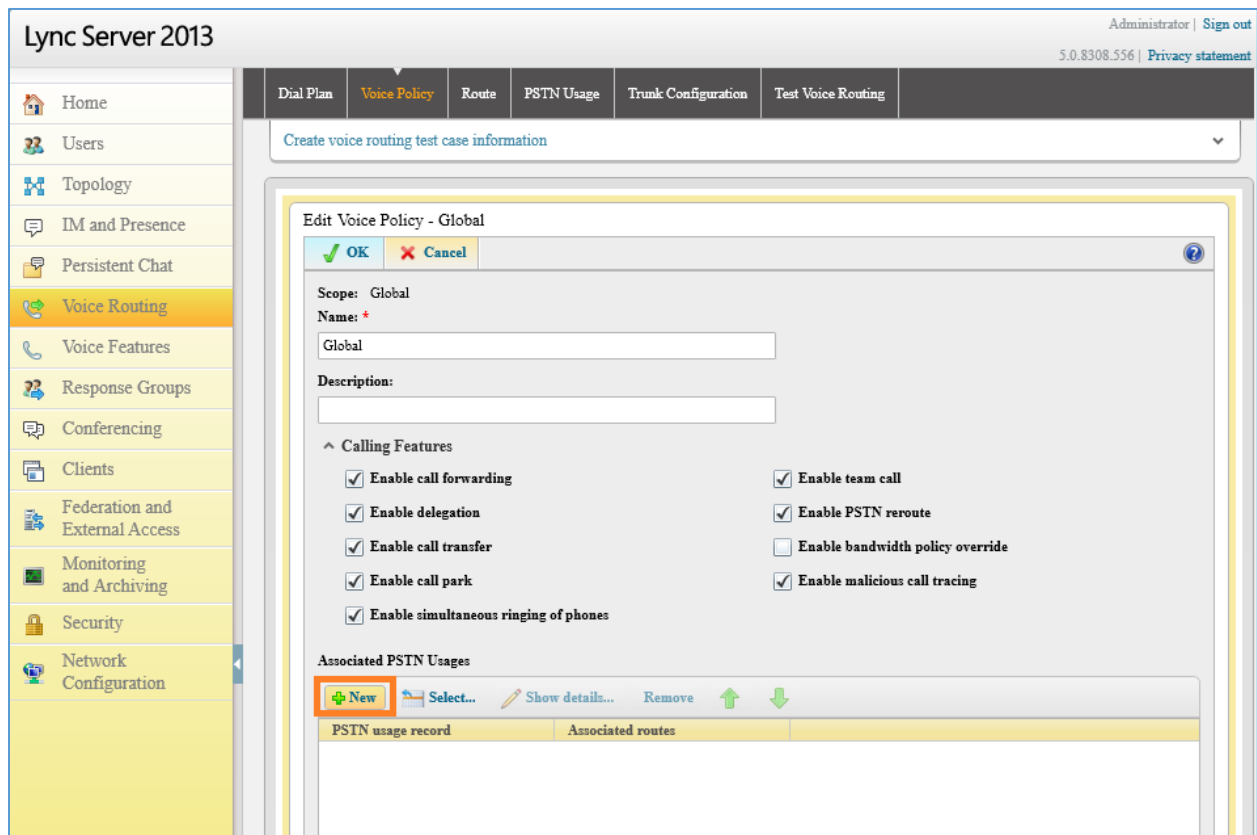
- Under associated PSTN usage, click on "New".

Figure 20: Edit Voice Policy - Global

- In the dialog "Edit Voice Policy→New PSTN Usage Record", click on "New" under Associated Routes.

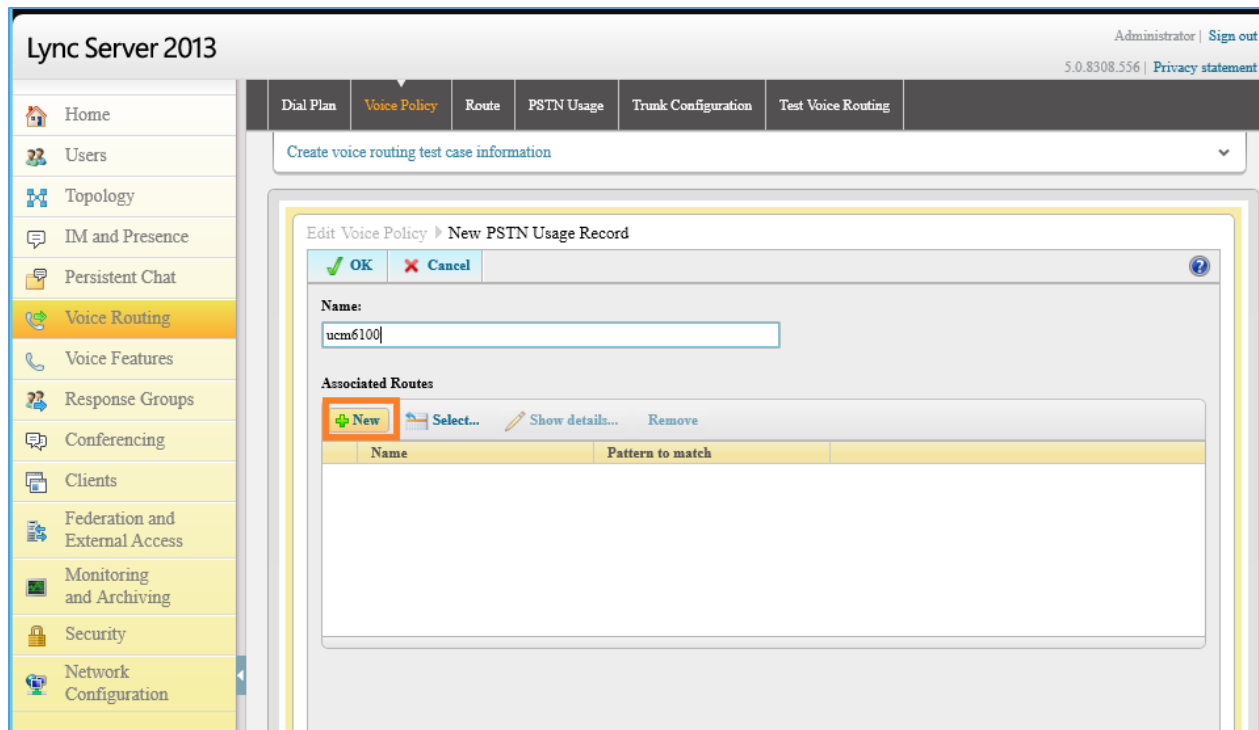How to Integrate UCM6XXX with Microsoft Lync® Server

Figure 21: Edit Voice Policy - Global

- Create a new voice route.

  ➢ **Name:** Enter the name for the voice route to identify it in the Lync server

  ➢ **Build a pattern to match**: Enter 3 and click on "Add". This will create a pattern starting from digit 3 to reach the 3xxx extensions in the UCM6XXX.

  ➢ **Associated Trunk:** Click on "Add" under "Associated Trunk" and select the UCM6XXX trunk created in the Topology Builder.

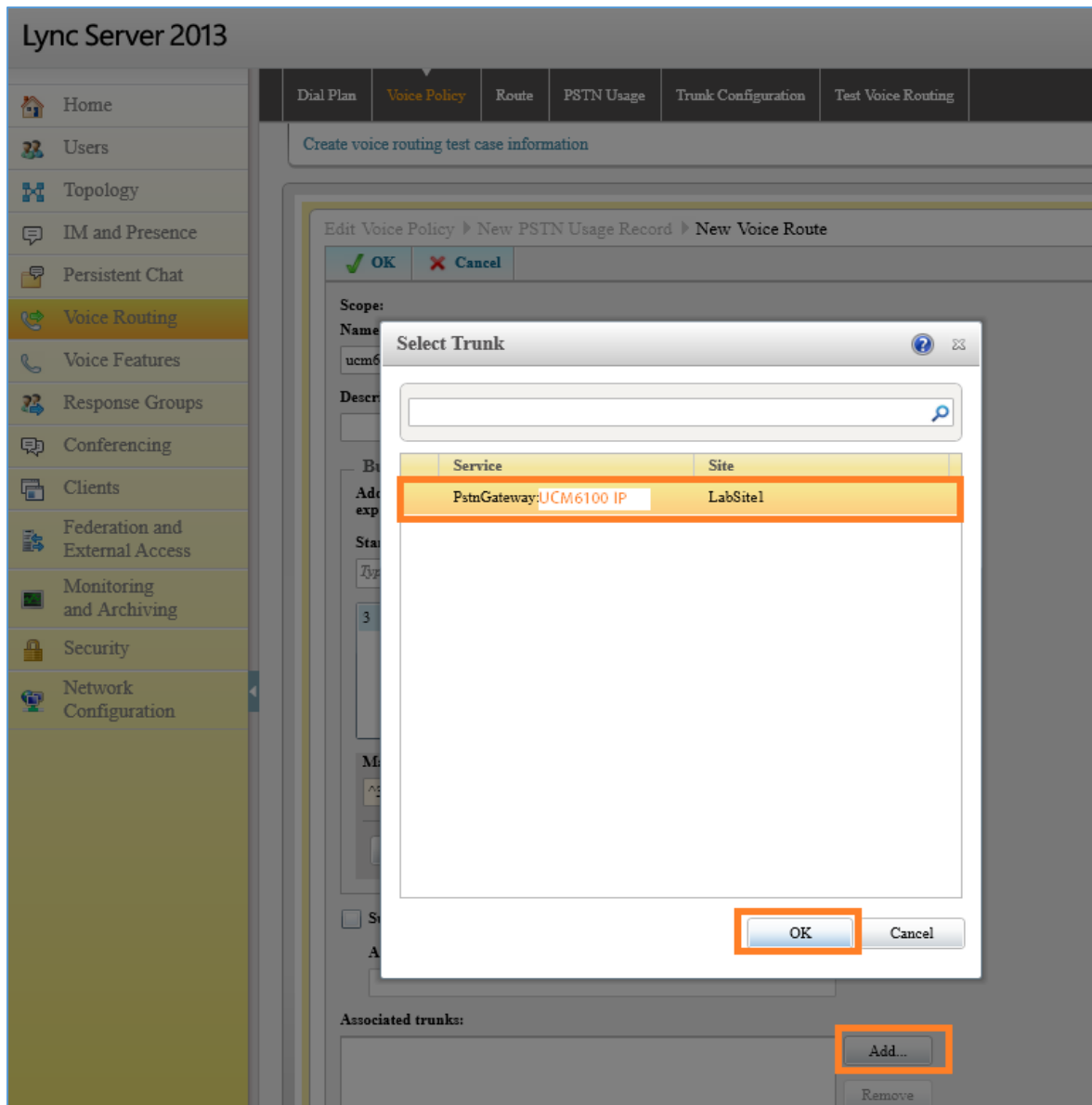**Figure 22: Create a New Voice Route**

Figure 23: Select the UCM6XXX Trunk as the Associated Trunk

Figure 24: Associated Trunk Added

- Click on OK multiple time until all the way back to the main voice policy interface. Then commit all configurations.

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Figure 25: Commit All Configurations
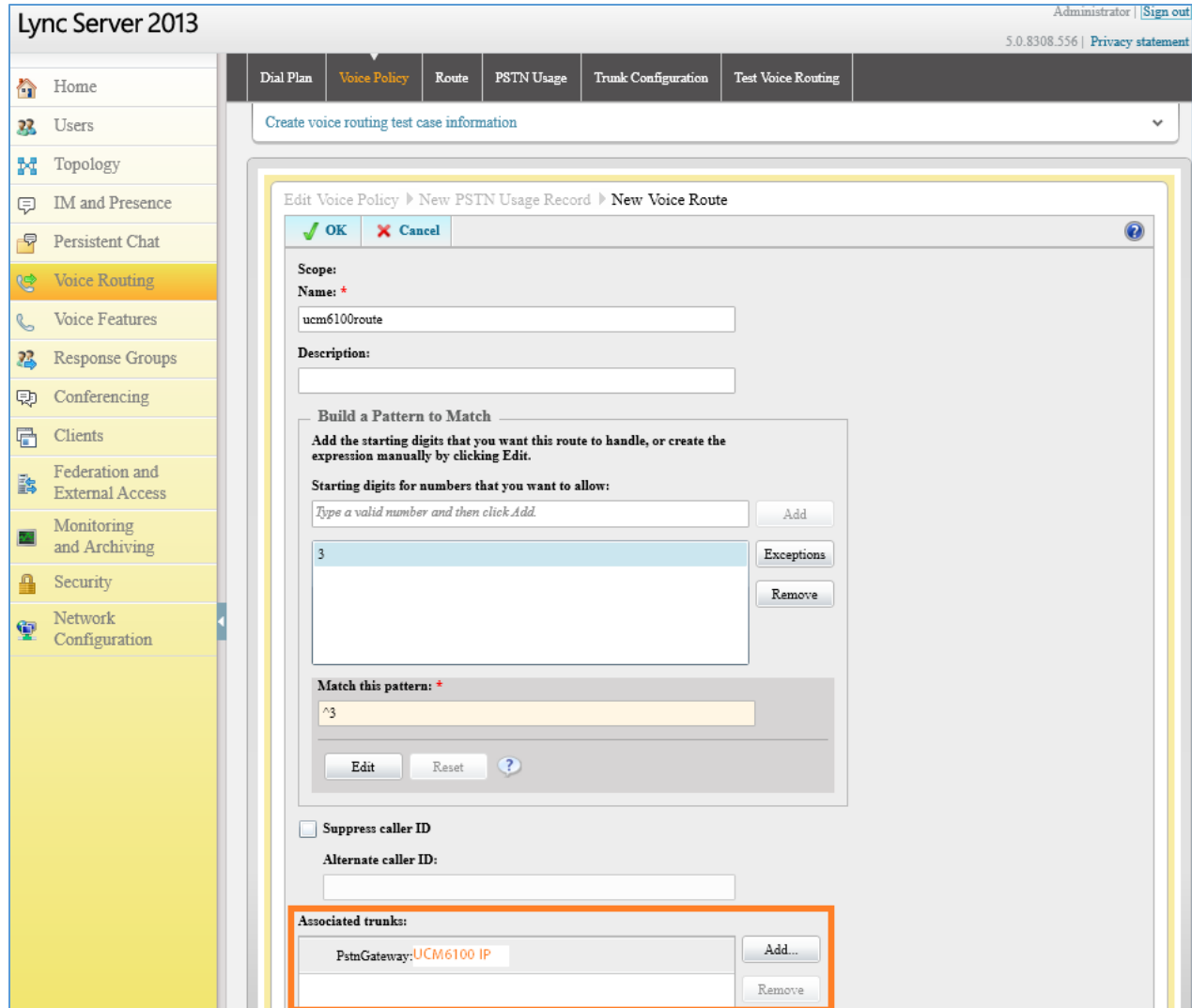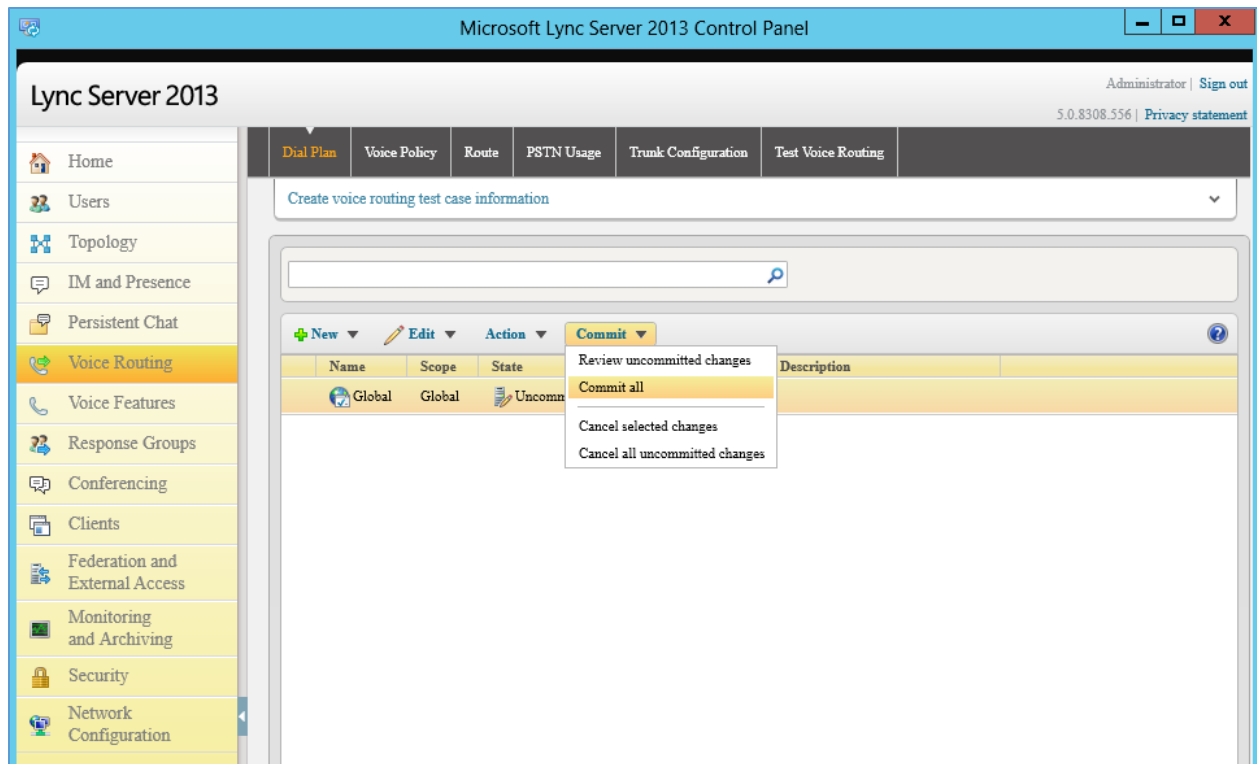
- Click on OK multiple time until all the way back to the main voice policy interface. Then commit all configurations.

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MAKING CALLS ON UCM6XXX AND MICROSOFT LYNC® SERVER

Once SIP trunk has been set up between the UCM6XXX and the Microsoft Lync® server, users can manipulate the deployment for different call flows and scenarios.
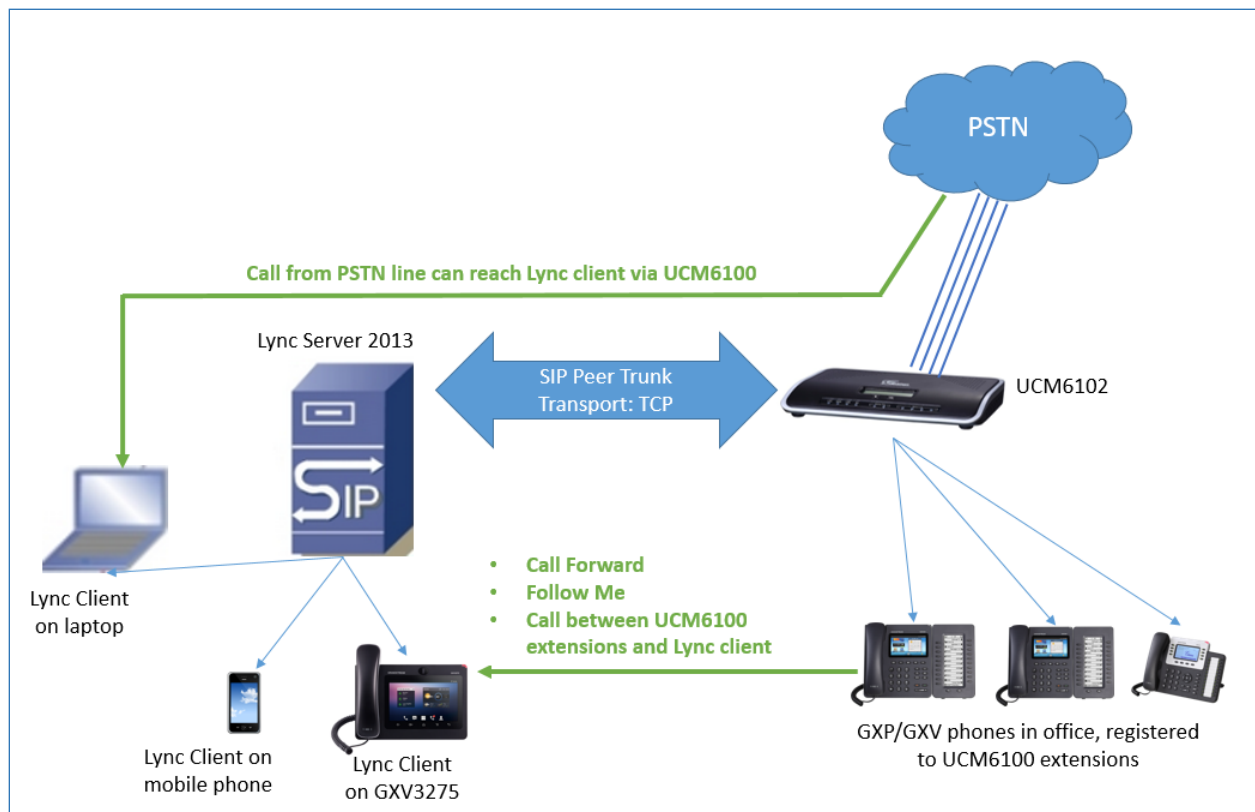

Figure 26: UCM6XXX Integration with Microsoft Lync® Server 2013

Assuming the following has been set up:

- A UCM6XXX extension 3000 is registered on the GXP2140 desk phone.

- A Lync client with extension 1002 has successfully logged in the Lync App on a mobile phone or the GXV3275.

- The UCM6XXX has an analog trunk and inbound/outbound routes configured to reach outside PSTN lines. The inbound route destination is set to IVR that allows users to dial UCM6XXX extensions and dial trunk.

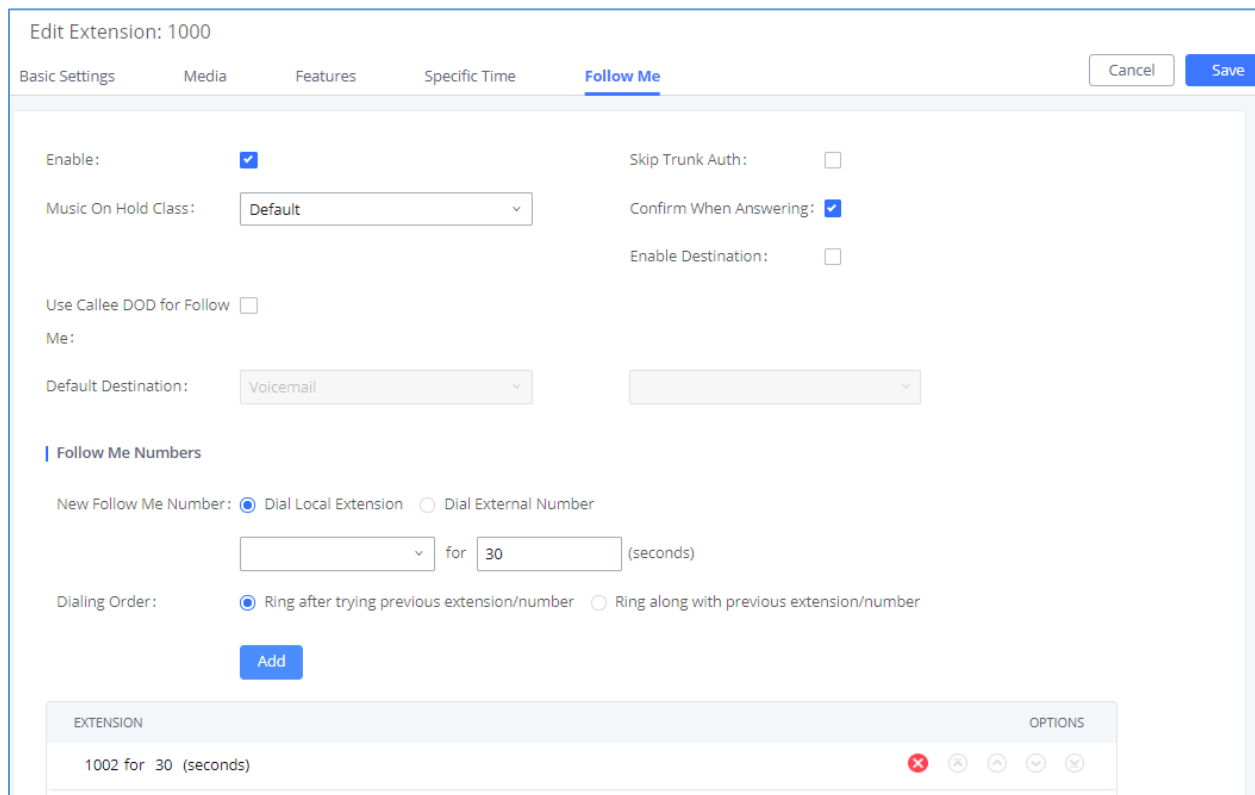## Case 1: Call Between UCM6XXX Extension and Lync Client

- On the GXP2140, dial 1002 to reach the Lync client directly. After the call is answered, two-way audio can be successfully established.

- On the Lync client, dial 3000 to reach the registered on GXP2140 directly. After the call is answered, two-way audio can be successfully established.

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Case 2: Call Forwarding to Lync Client from UCM6XXX Extension

- Configure Call Forward Unconditional for the extension 3000 on the UCM6XXX.

- Make a call from cell phone to the UCM6XXX PSTN line number. Enter 3000 after hearing the IVR. The call will be forwarded to the Lync client (extension 1002). Users can then answer the call on the Lync client. This can be used for out of office call forwarding if the user has Lync client set up on mobile phone.

Case 3: Follow Me to Lync Client from UCM6XXX Extension

- Configure **Follow Me** on the UCM6XXX under web UI→**Extension/Trunks**→**Extensions**. Edit extension 3000 and Enter the Lync client extension number 1002 as the follow me number for UCM6XXX extension 3000 under follow me tab

Figure 27: Follow Me Configuration on UCM6XXX

- Make a call from cell phone to the UCM6XXX PSTN line number. Enter 3000 after hearing the IVR. Extension 3000 will start to ring. If the call is rejected or not answered on the extension 3000, Lync client 1002 will start to ring. On the Lync client. enter 1 to accept the call.

Case 4: Dial to Lync Client from UCM6XXX Analog Trunk

- Make sure the IVR for the analog trunk has "Dial Trunk" enabled.

Figure 28: IVR Configuration on UCM6XXX

- Make a call from cell phone to the UCM6XXX PSTN line number. Then enter Lync client extension 1002 after hearing the IVR. The Lync client will start to ring. Users can then answer the call on the Lync client.

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