

Enterprise Session Border Controllers

Multi-Service Business Gateways

VoIP Media Gateways

## Configuration Note

Microsoft® Lync™ Server 2010 and PureIP SIP Trunk  
using AudioCodes Mediant™ MSBG E-SBC Series



Version 6.4

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Document #: LTRT-39170



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## Table of Contents

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<b>1</b>	<b>Introduction .....</b>	<b>11</b>
<b>2</b>	<b>Components Information.....</b>	<b>13</b>
2.1	AudioCodes Gateway Version .....	13
2.2	PureIP SIP Trunking Version.....	13
2.3	Lync Server 2010 Version .....	13
2.4	Topology .....	14
<b>3</b>	<b>Configuring Lync Server 2010 .....</b>	<b>15</b>
3.1	Configuring the E-SBC device as an IP/PSTN Gateway .....	16
3.2	Associating the IP/PSTN Gateway with the Mediation Server.....	20
3.3	Configuring the Route on Lync Server 2010 .....	25
<b>4</b>	<b>Configuring E-SBC Device .....</b>	<b>33</b>
4.1	Step 1: Configuring IP Addresses.....	35
4.1.1	Configuring LAN IP Addresses .....	35
4.1.2	Configuring WAN IP Addresses .....	37
4.2	Step 2: Configuring the TLS Connection.....	38
4.2.1	Step 2-1: Configuring VoIP DNS Settings .....	38
4.2.2	Step 2-2: Configuring NTP Server .....	38
4.2.3	Step 2-3: Configuring Certificates.....	39
4.3	Step 3: Enabling SIP SBC Application Mode .....	44
4.4	Step 4: Configuring SIP General Parameters .....	45
4.5	Step 5: Configuring SIP Media Realm .....	46
4.6	Step 6: Configuring SRD .....	47
4.7	Step 7: Configuring SIP Interfaces.....	48
4.8	Step 8: Configuring Coders .....	49
4.9	Step 9: Configuring Secure Real-Time Transport Protocol .....	50
4.10	Step 10: Configuring IP Group Tables .....	51
4.11	Step 11: Configuring Proxy Sets Tables .....	53
4.12	Step 12: Configuring Routing.....	55
4.13	Step 13: Configuring SBC Transfer Behavior.....	56
4.14	Step 14: Configuring IP Media .....	57
4.15	Step 15: Resetting the Gateway .....	58
<b>A</b>	<b>AudioCodes INI File .....</b>	<b>59</b>

---

## List of Figures

---

Figure 2-1: Topology .....	14
Figure 3-1: Opening the Lync Server Topology Builder .....	16
Figure 3-2: Topology Builder Options .....	17
Figure 3-3: Save Topology .....	17
Figure 3-4: Downloaded Topology.....	18
Figure 3-5: New IP/PSTN Gateway .....	18
Figure 3-6: Define New IP/PSTN Gateway.....	19
Figure 3-7: IP/PSTN Gateway .....	19
Figure 3-8: Associating Mediation Server with IP/PSTN Gateway.....	20
Figure 3-9: Before Associating IP/PSTN Gateway to Mediation Server.....	21
Figure 3-10: After Associating IP/PSTN Gateway to Mediation Server.....	21
Figure 3-11: Media Server PSTN Gateway Association Properties .....	22
Figure 3-12: Publishing Topology .....	22
Figure 3-13: Publish Topology Confirmation .....	23
Figure 3-14: Publish Topology Progress screen .....	23
Figure 3-15: Publish Topology Successfully Completed .....	24
Figure 3-16: Opening the Lync Server Control Panel.....	25
Figure 3-17: Lync Server 2010 Credentials .....	25
Figure 3-18: CSCP Home page.....	26
Figure 3-19: Voice Routing Menu .....	26
Figure 3-20: Route Option .....	27
Figure 3-21: Adding New Voice Route .....	27
Figure 3-22: Adding New E-SBC Gateway.....	28
Figure 3-23: List of Deployed Gateways.....	28
Figure 3-24: Selected E-SBC Gateway .....	29
Figure 3-25: Associating PSTN Usage to E-SBC Gateway.....	29
Figure 3-26: Confirmation of New Voice Route .....	30
Figure 3-27: Committing Voice Routes.....	30
Figure 3-28: Uncommitted Voice Configuration Settings.....	30
Figure 3-29: Voice Routing Configuration Confirmation .....	31
Figure 3-30: Voice Routing Screen Displaying Committed Routes.....	31
Figure 4-1: Web Interface Showing Basic/Full Navigation Tree Display .....	34
Figure 4-2: IP Settings .....	35
Figure 4-3: Connections Page .....	36
Figure 4-4: Defining LAN Data-Routing IP Address .....	36
Figure 4-5: WAN Settings .....	37
Figure 4-6: VoIP DNS Settings .....	38
Figure 4-7: NTP Settings .....	38
Figure 4-8: Certificates Page .....	39
Figure 4-9: Microsoft Certificate Services Web Page.....	40
Figure 4-10: Request a Certificate Page .....	40
Figure 4-11: Advanced Certificate Request Page .....	41
Figure 4-12: Submit a Certificate Request or Renewal Request Page .....	41
Figure 4-13: Download a CA Certificate, Certificate Chain, or CRL Page .....	42
Figure 4-14: Certificates Page .....	43
Figure 4-15: Applications Enabling .....	44
Figure 4-16: General Parameters .....	45
Figure 4-17: Admin Page .....	45
Figure 4-18: SIP LAN Media Realm Table .....	46
Figure 4-19: SIP WAN Media Realm Table .....	46
Figure 4-20: SRD Settings .....	47
Figure 4-21: SRD-ITSP .....	47
Figure 4-22: SIP Interface Table.....	48
Figure 4-23: Coders .....	49
Figure 4-24: Media Security Page .....	50
Figure 4-25: IP Group Table 1 .....	51
Figure 4-26: IP Group Table 2 .....	52

---

Figure 4-27: Proxy Sets Table for Lync Server 2010 .....	53
Figure 4-28: Proxy Sets Table 2 .....	54
Figure 4-29: IP to IP Routing Table .....	55
Figure 4-30: Admin Page .....	56
Figure 4-31: IP Media Settings .....	57
Figure 4-32: Maintenance Actions Page for Resetting Gateway.....	58

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## List of Tables

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Table 1-1: Acronyms.....	9
Table 2-1: AudioCodes Gateway Version.....	13
Table 2-2: PureIP Version .....	13
Table 2-3: Lync Server 2010 Version .....	13

## Notice

This document describes how to connect the Microsoft® Lync™ Server 2010 with PureIP SIP Trunking using the AudioCodes Mediant 1000 MSBG Enterprise Session Border Control (E-SBC) SIP gateway device.

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## Abbreviations and Terminology

Each abbreviation, unless widely used, is spelled out in full when first used.



**Note:** Throughout this manual, unless otherwise specified, the term *E-SBC device* refers to the Mediant 1000 MSBG E-SBC SIP device.



**Note:** AudioCodes users may have additional configuration requirements that are specific to their topologies. These configuration items are not covered in this guide. Please contact your AudioCodes representative if you have any questions on this issue.



**Note:** AudioCodes offers several E-SBC models. This document covers the setup for AudioCodes Mediant 1000 MSBG running Version 6.4. If instructions are needed for other AudioCodes E-SBC models, please contact your AudioCodes representative.

**Table 1-1: Acronyms**

<b>Acronym</b>	<b>Description</b>
Transferee	The party being transferred to the transfer target
Transferor	The party initiating the transfer
Transfer target	The new party being introduced into a call with the transferee
Blind or semi-attended transfer	The transferor having a session in hold state with the transferee and initiating the transfer by a consultation call to the target performs the transfer while the target is in ringing state
Attended transfer or transfer on conversation	The transferor waits to be in conversation state with the target before completing the transfer
CLIP	Calling Line Identification Presentation
CNIP	Calling Name Identification Presentation
CLIR	Calling Line Identification Restriction
CNIR	Calling Name Identification Restriction
COLP	Connected Line Identification Presentation
CONP	Connected Name Identification Presentation
COLR	Connected Line Identification Restriction
CONR	Connected Name Identification Restriction
CRC	Customer Relationship Centre
PG	SIP GW XXX Peripheral Gateway
ICM	SIP GW XXX Intelligent Call Manager
CCM	SIP GW XXX Call Manager
CVP	Customer voice Portal
BC	ALU Business Contact
CTI	Computer Telephony Integration

**Reader's Notes**

# 1 Introduction

This document describes how to setup the E-SBC device to work with Lync Server 2010 and PureIP SIP Trunking.

This configuration note is intended for Installation Engineers or AudioCodes and PureIP Partners who are installing and configuring the Lync Server 2010 and PureIP SIP Trunking to place VoIP calls using the AudioCodes gateway.

The AudioCodes Mediant 1000 MSBG E-SBC device is used to implement this solution.

The Mediant 1000 E-SBC is a networking E-SBC device that combines multiple service functions, such as a Media Gateway, Session Border Controller (SBC), Data Router and Firewall, LAN switch, WAN access, Stand Alone Survivability (SAS) and an integrated general-purpose server. The E-SBC device offers enhanced dialing plans and voice routing capabilities along with SIP-to-SIP mediation, allowing enterprises to implement SIP Trunking services (IP-to-IP call routing) and IP-based Unified Communications, as well as flexible PSTN and legacy PBX connectivity.



**Note:** The scope of this document does not cover security aspects for connecting the SIP Trunk to the Lync Server 2010 environment. Security measures should be implemented in accordance with your organization's security policies. For more information on basic security guidelines, refer the *AudioCodes Security Guidelines* document.

**Reader's Notes**

## 2 Components Information

### 2.1 AudioCodes Gateway Version

Table 2-1: AudioCodes Gateway Version

<b>Gateway Vendor</b>	AudioCodes
<b>Model</b>	Mediant 1000 MSBG E-SBC
<b>Software Version</b>	SIP_6.40A.022.008
<b>Interface Type</b>	SIP/IP
<b>VoIP Protocol</b>	SIP
<b>Additional Notes</b>	None

### 2.2 PureIP SIP Trunking Version

Table 2-2: PureIP Version

<b>Gateway Vendor</b>	PureIP
<b>Models</b>	UX2000
<b>Software Version</b>	2.0.2 Build 120
<b>VoIP Protocol</b>	SIP
<b>Additional Notes</b>	None

### 2.3 Lync Server 2010 Version

Table 2-3: Lync Server 2010 Version

<b>Gateway Vendor</b>	Microsoft
<b>Models</b>	Lync Server 2010
<b>Software Version</b>	RTM: Release 2010 4.0.7577.0
<b>VoIP Protocol</b>	SIP
<b>Additional Notes</b>	None

## 2.4 Topology

The procedures described in this document describe the following example scenario:

- An enterprise has a deployed Lync Server 2010 in its private network for enhanced communication within the company.
- The enterprise decides to offer its employees Enterprise Voice and to connect the company to the PSTN network using the PureIP SIP Trunking service.
- A Session Border Controller (SBC) is used to manage the connection between the Enterprise LAN and the PureIP SIP trunk.

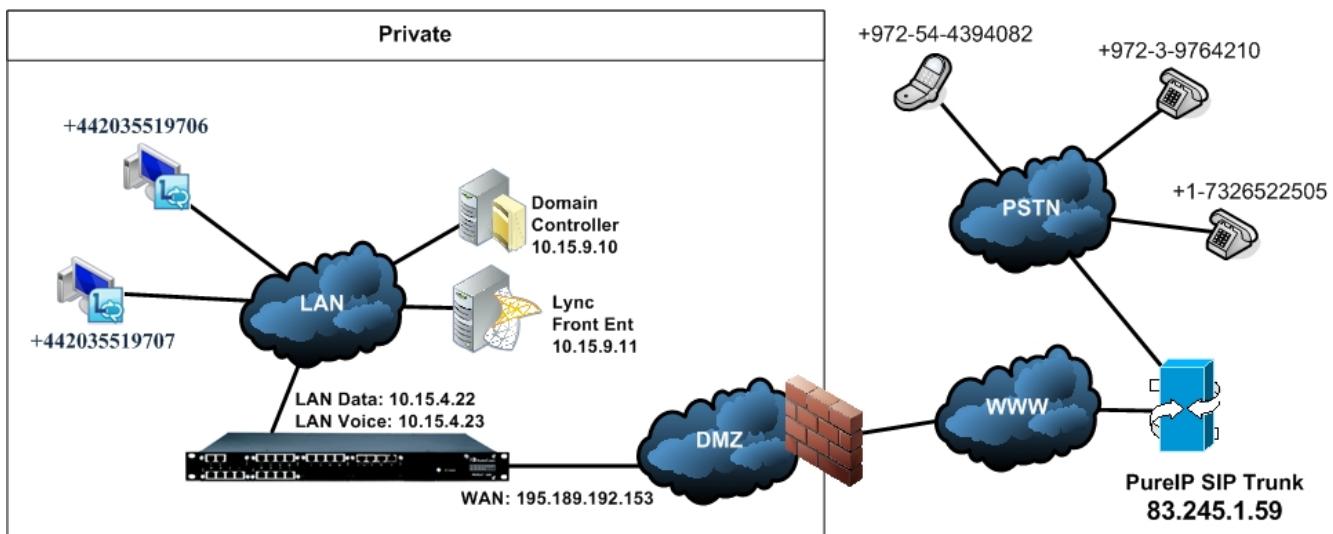
The "session" refers to the real-time voice session using the SIP IP signaling protocol. The "border" refers to the IP-to-IP network border between the Lync network in the Enterprise LAN and the PureIP SIP trunk in the public network.

**Figure 2-1** below illustrates the interoperability topology between the Lync Server 2010 LAN and the PureIP SIP Trunking site.

The setup requirements are defined as follows:

- While the Lync Server 2010 environment is located on the Enterprise's Local Area Network (LAN), the PureIP SIP Trunks are located on the WAN.
- The internal data routing capabilities of the Mediant 1000 MSBG E-SBC device are used. Consequently, a separate WAN interface is configured in the LAN.
- Lync Server 2010 works with the Transport Layer Security (TLS) transport type, while the PureIP SIP trunk works on the SIP over TCP transport type.
- Support for early media handling

**Figure 2-1: Topology**



## 3 Configuring Lync Server 2010

This section describes how to configure the Lync Server 2010 to operate with the E-SBC device. This section describes the following procedures:

- Configuring the E-SBC device as an IP/PSTN Gateway. See Section [3.1](#) on page [16](#).
- Associating the IP/PSTN Gateway with the Mediation Server. See Section [3.2](#) on page [20](#).
- Configuring a Route to utilize the SIP trunk connected to the E-SBC device. See Section [3.3](#) on page [25](#).



**Note:** Dial Plans, Voice Policies, and PSTN usages are also necessary for enterprise voice deployment; however, they are beyond the scope of this document.

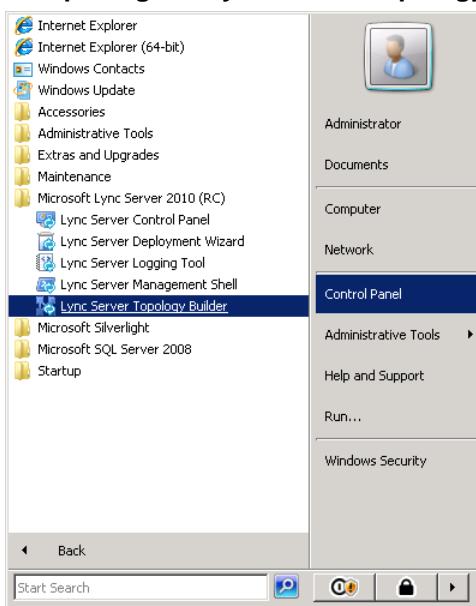
## 3.1 Configuring the E-SBC device as an IP/PSTN Gateway

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

- **To configure the E-SBC device as a IP/PSTN Gateway and associate it with the Mediation Server:**

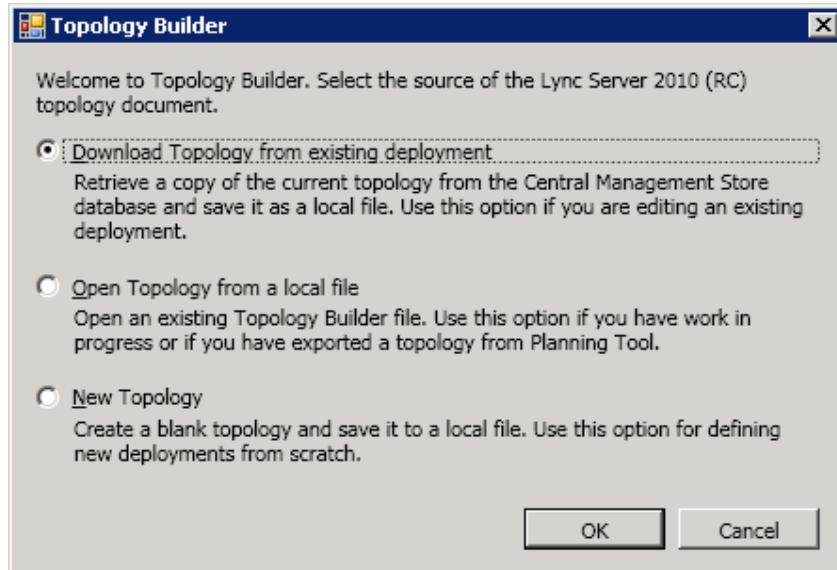
1. On the server where the Topology Builder is located, start the Lync Server 2010 Topology Builder (**Start > All Programs > Lync Server Topology Builder**).

**Figure 3-1: Opening the Lync Server Topology Builder**



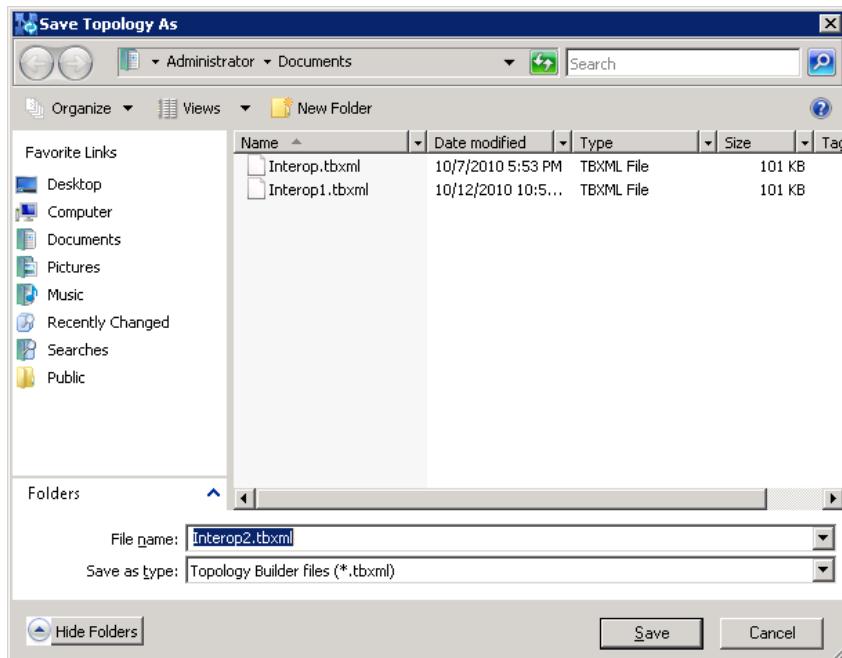
The following screen is displayed:

**Figure 3-2: Topology Builder Options**



2. Click the **Download Topology from the existing deployment** option and then click **OK**; you are prompted to save the Topology which you have downloaded.

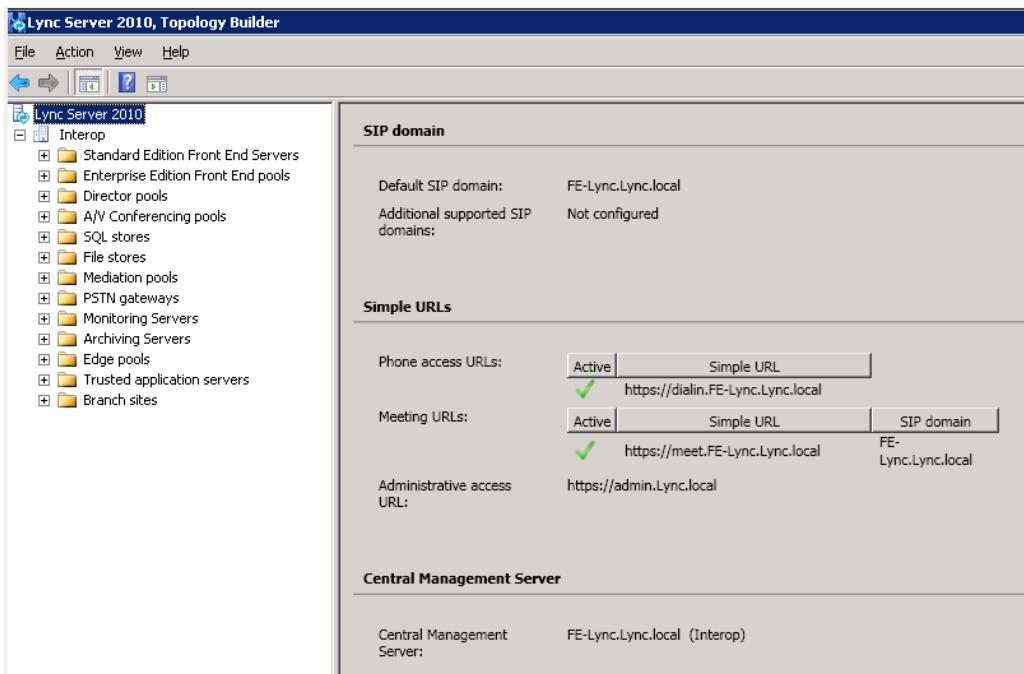
**Figure 3-3: Save Topology**



3. 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.

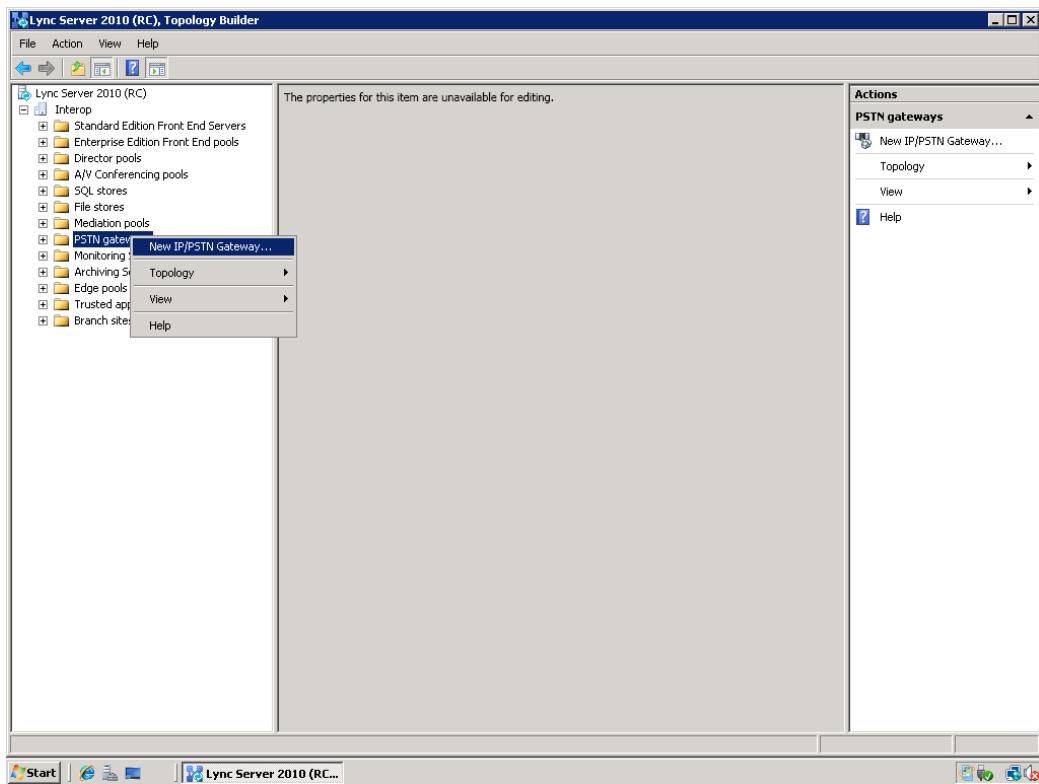
The Topology Builder screen with the topology downloaded is displayed.

**Figure 3-4: Downloaded Topology**



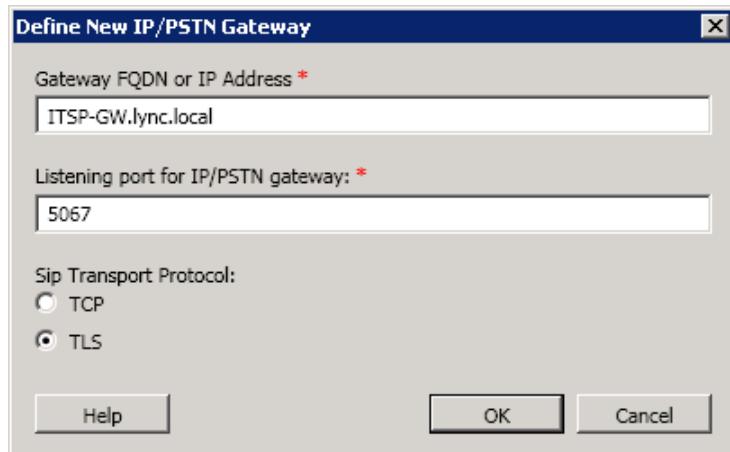
4. Right-click **PSTN Gateway** and from the shortcut menu, choose **New IP/PSTN Gateway**.

**Figure 3-5: New IP/PSTN Gateway**



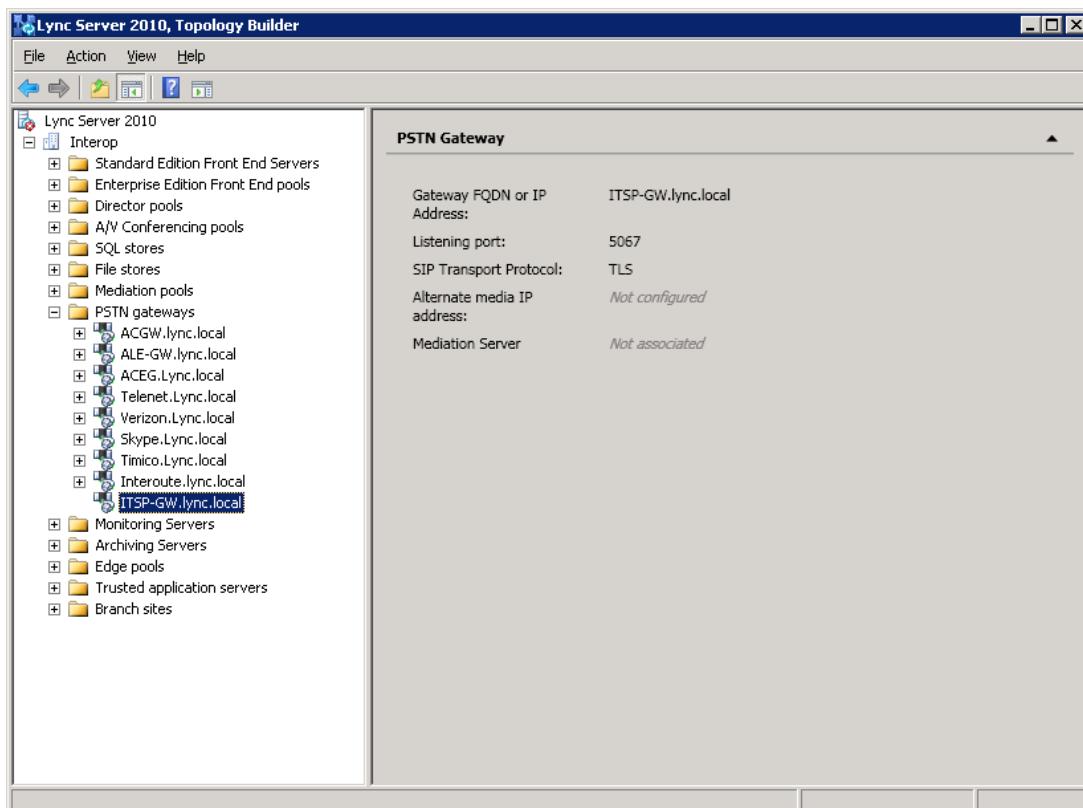
5. In the 'Gateway FQDN or IP Address' field, enter the Fully Qualified Domain Name (FQDN) of the E-SBC (i.e. "ITSP-GW.lync.local").
6. In the 'Listening port for the IP/PSTN gateway' field, enter "5067".
7. Under 'Sip Transport Protocol', click the **TLS** option.

**Figure 3-6: Define New IP/PSTN Gateway**



The E-SBC device is now added as an IP/PSTN Gateway.

**Figure 3-7: IP/PSTN Gateway**



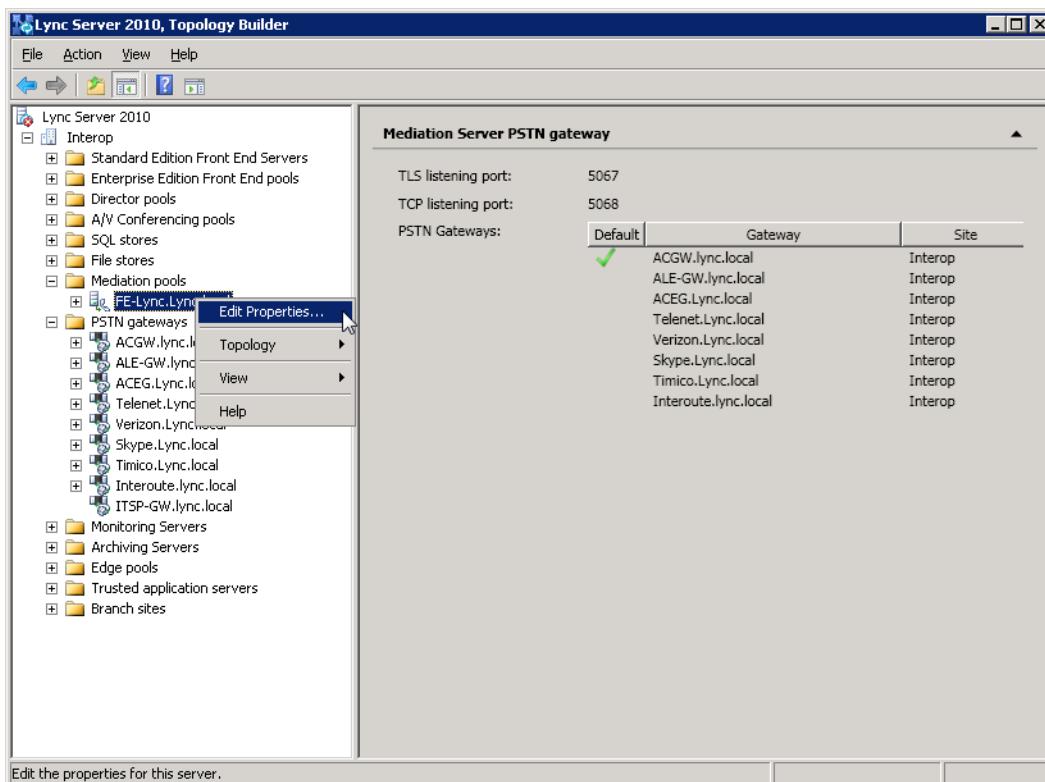
## 3.2 Associating the IP/PSTN Gateway with the Mediation Server

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

➤ **To associate the IP/PSTN Gateway with the Mediation Server:**

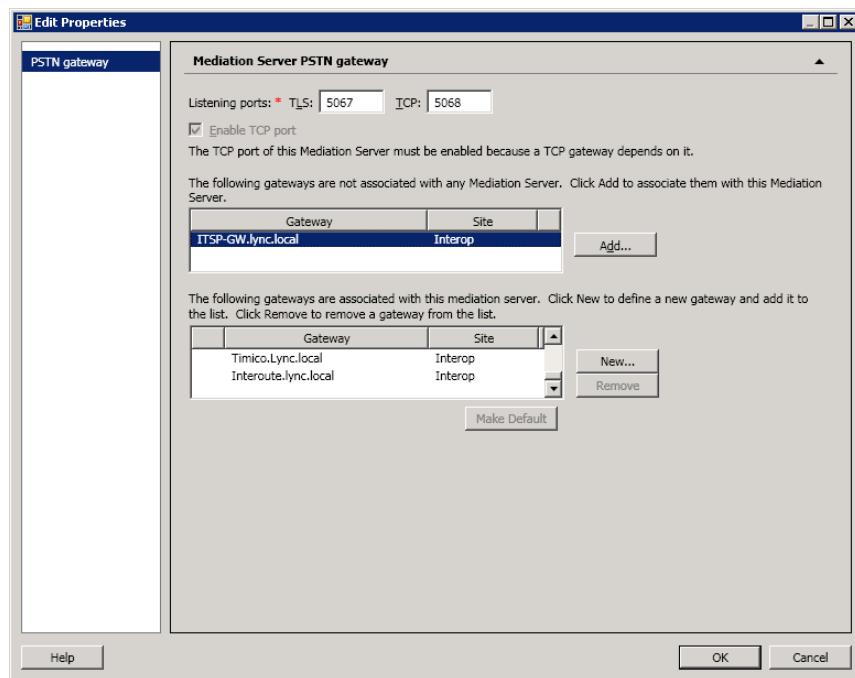
1. Expand the **Mediation pools** folder and then right-click the Mediation server (e.g., **FE-Lync**).
2. From the shortcut menu, choose **Edit Properties**.

**Figure 3-8: Associating Mediation Server with IP/PSTN Gateway**



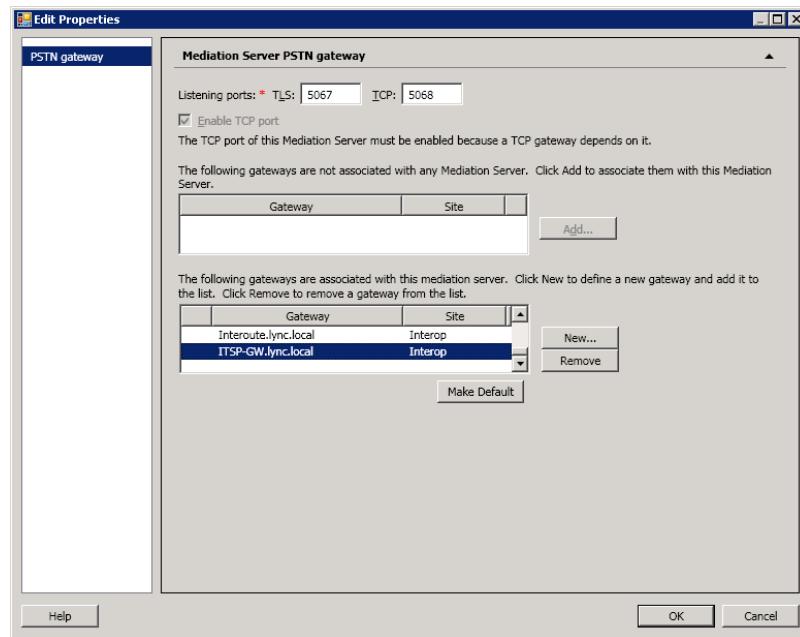
3. In the left pane, choose **PSTN gateway**, as shown in the figure below.

**Figure 3-9: Before Associating IP/PSTN Gateway to Mediation Server**



4. Under the **Mediation Server PSTN gateway** group, select the E-SBC gateway (i.e. "ITSP-GW.lync.local") and then click **Add** to associate it with this Mediation Server.

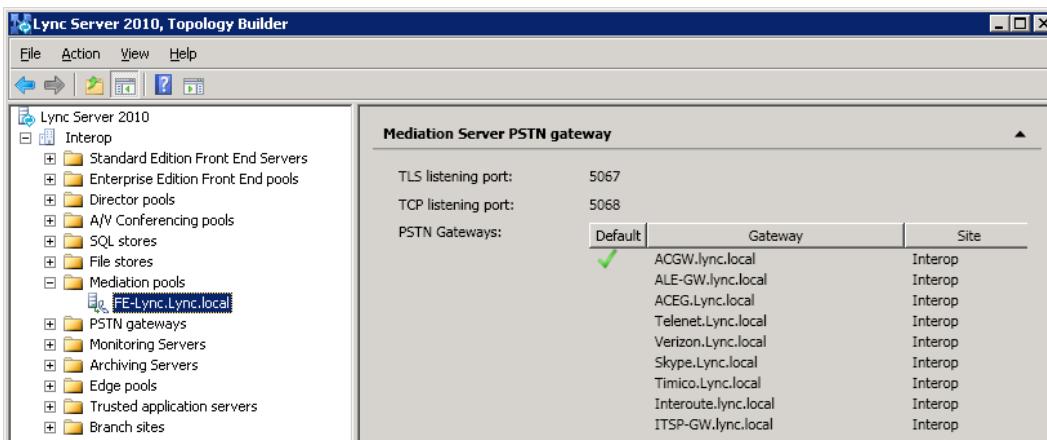
**Figure 3-10: After Associating IP/PSTN Gateway to Mediation Server**



**Note:** There are two tables - one including a list of gateways not associated with the Mediation server and one including a list of gateways associated with the Mediation server.

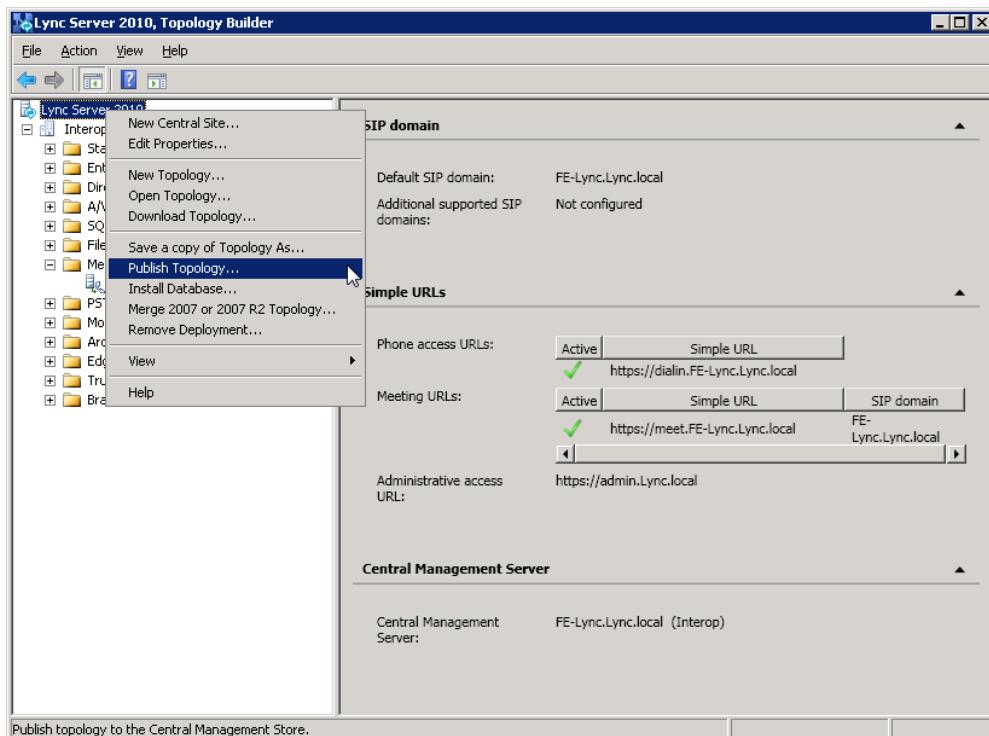
5. Click OK.

**Figure 3-11: Media Server PSTN Gateway Association Properties**



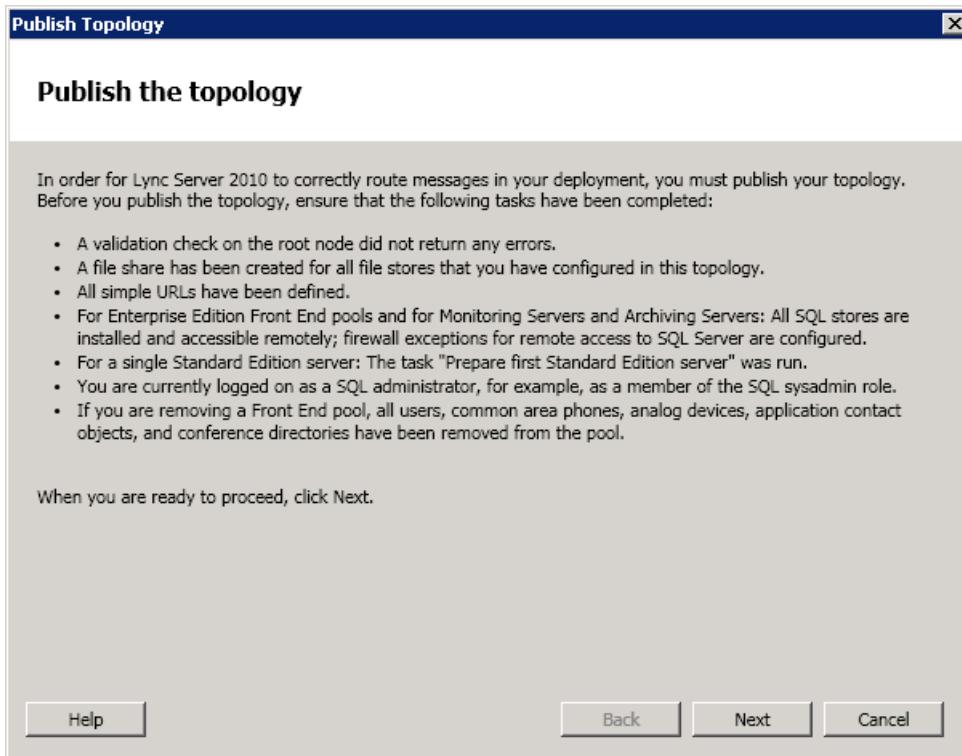
6. Right-click **Lync Server 2010**, and then from the shortcut menu, choose **Publish Topology**.

**Figure 3-12: Publishing Topology**



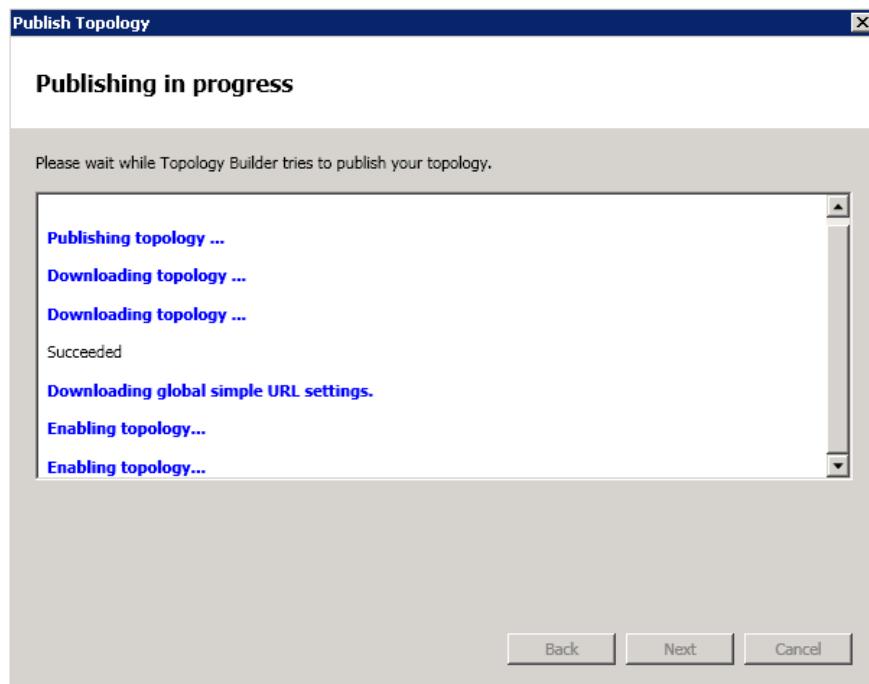
The Publish Topology page is displayed.

**Figure 3-13: Publish Topology Confirmation**

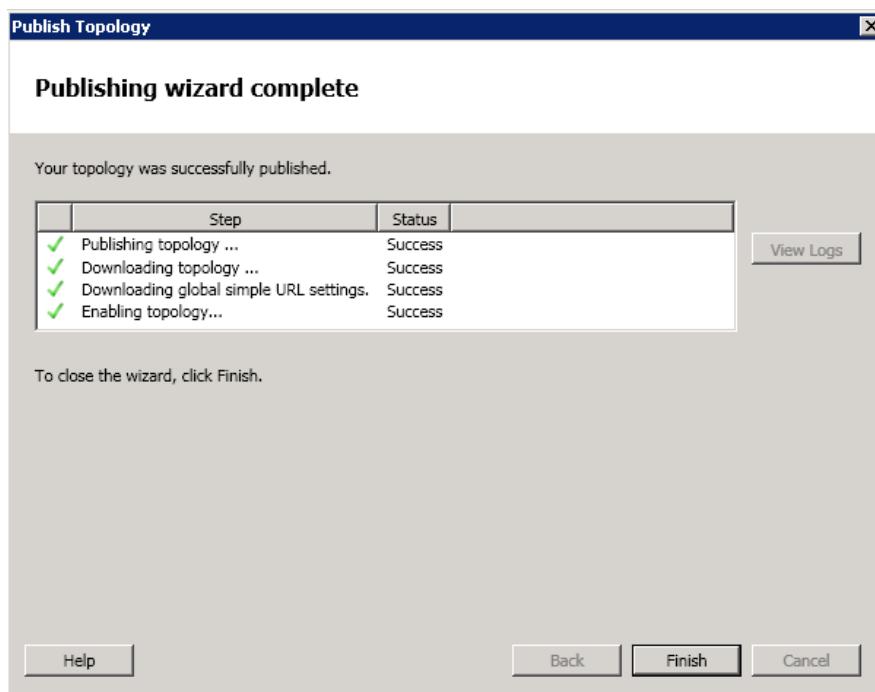


7. Click **Next**; the Topology Builder attempts to publish your topology.

**Figure 3-14: Publish Topology Progress screen**



8. Wait until the Publish Topology process has ended successfully.

**Figure 3-15: Publish Topology Successfully Completed**

- 9. Click Finish.**

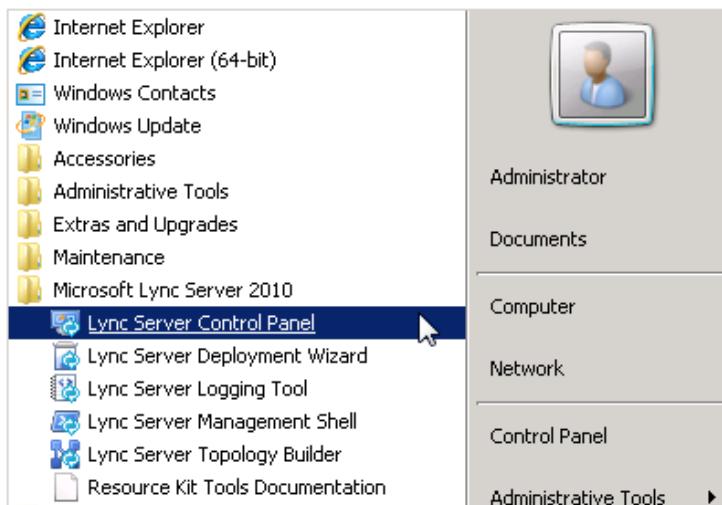
### 3.3 Configuring the Route on Lync Server 2010

This section describes how to configure a Route on Lync Server 2010 and associate it with the E-SBC PSTN gateway.

➤ **To configure the route on Lync Server 2010:**

1. Open the Lync Server Control Panel (**Start > All Programs > Microsoft Lync Server 2010 > Lync Server Control Panel**).

**Figure 3-16: Opening the Lync Server Control Panel**



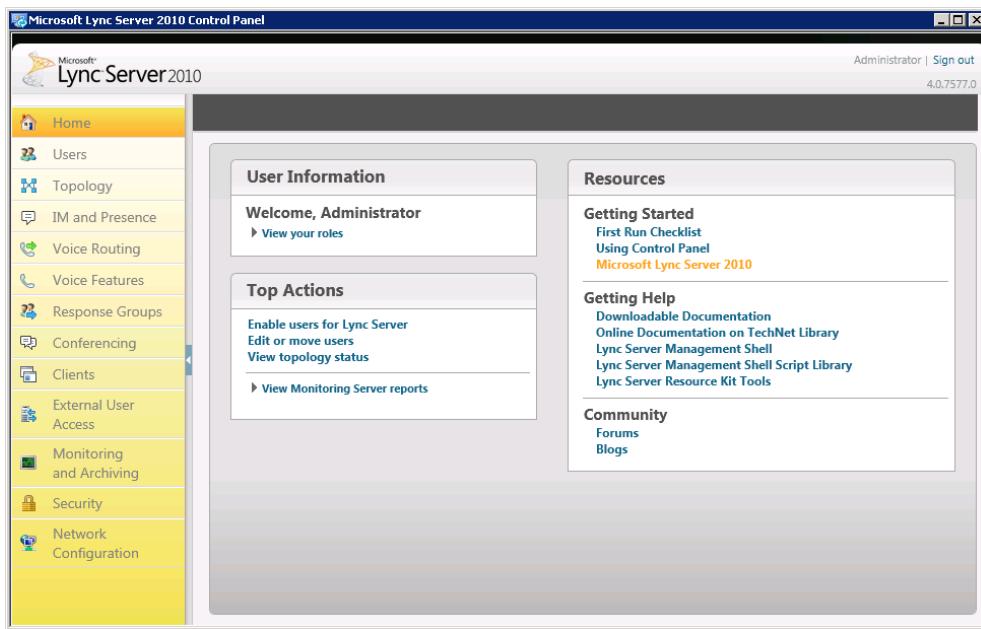
2. You are prompted for credentials; enter your domain username and password and then click **OK**.

**Figure 3-17: Lync Server 2010 Credentials**



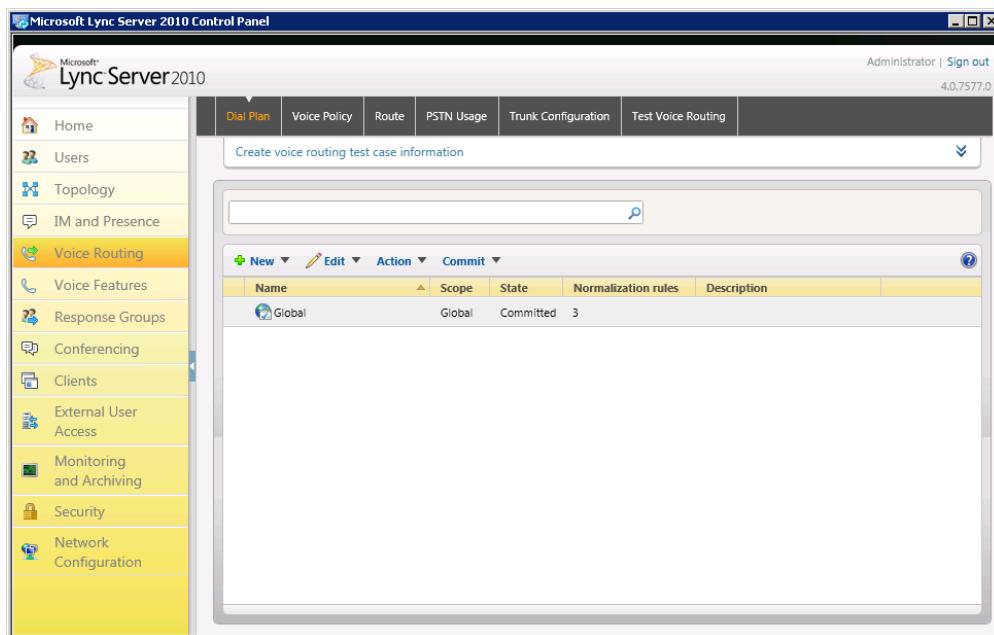
The Lync Server 2010 Home page is displayed.

**Figure 3-18: CSCP Home page**



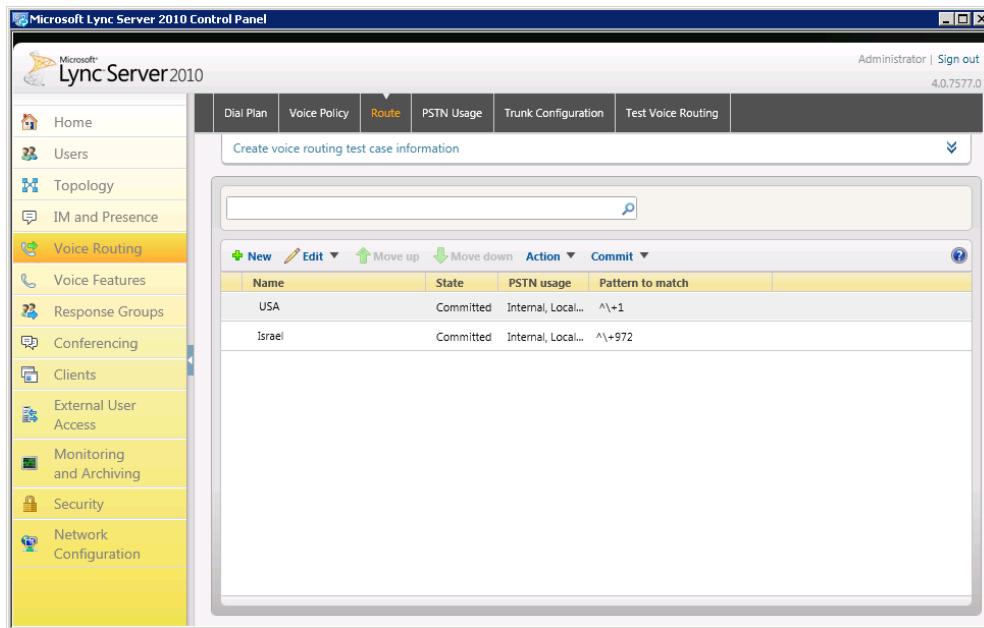
3. In the Navigation pane, select the **Voice Routing** menu.

**Figure 3-19: Voice Routing Menu**



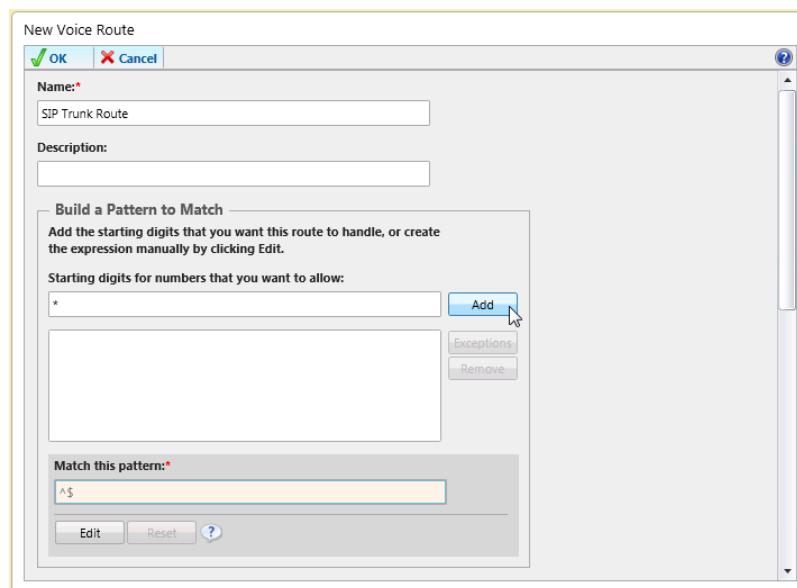
4. In the Voice Routing menu, select the **Route** tab.

**Figure 3-20: Route Option**



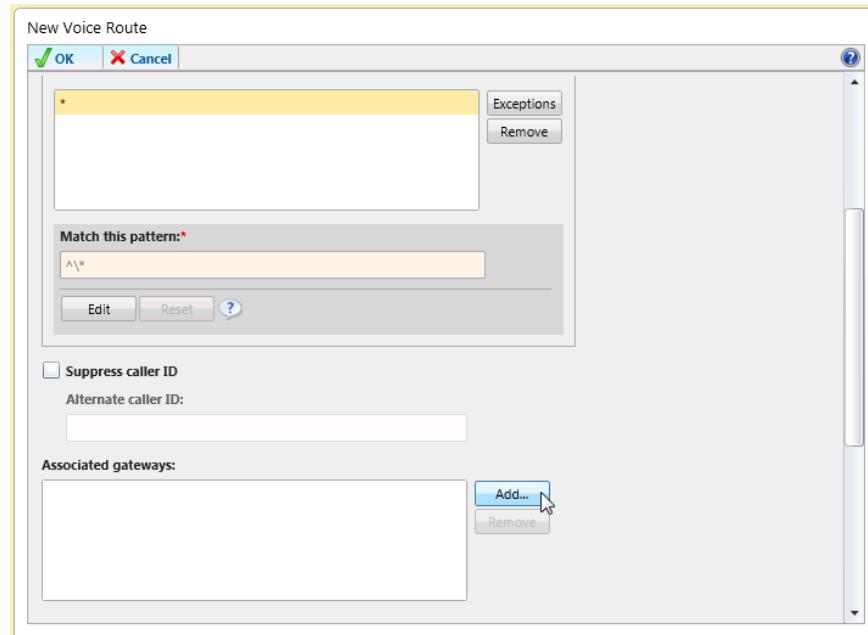
5. In the content area toolbar, click ; a New Voice Route page appears.  
 6. In the 'Name' field, enter a Name for this route (i.e. SIP Trunk Route).  
 7. Under the **Build a Pattern to Match** group, add the starting digits you wish this route to handle, in the 'Match this pattern field'. In this example, the pattern to match is "\*", which means "to match all numbers".  
 8. Click **Add**.

**Figure 3-21: Adding New Voice Route**



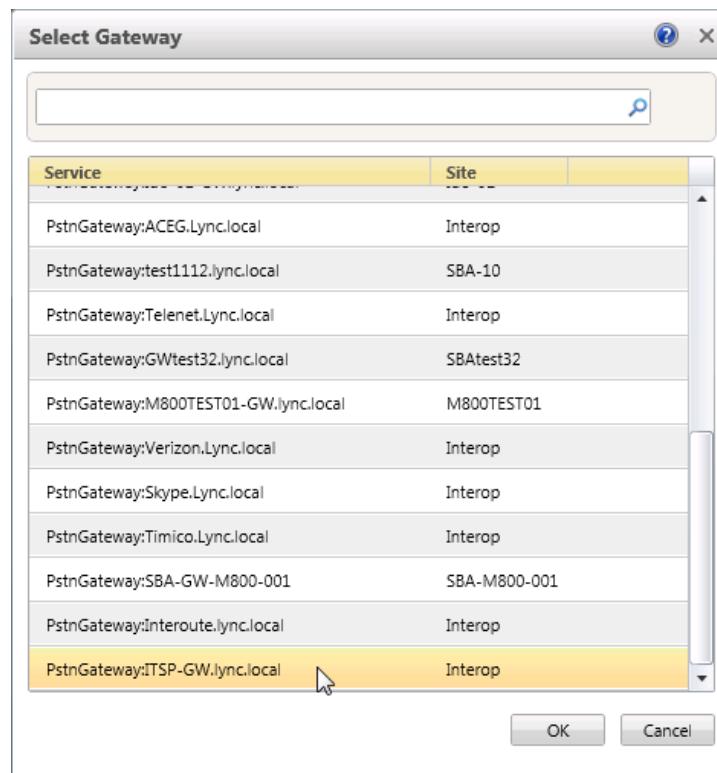
9. Associate the route with the E-SBC IP/PSTN gateway you created above. Scroll down to the Associated Gateways pane and then click **Add**.

**Figure 3-22: Adding New E-SBC Gateway**



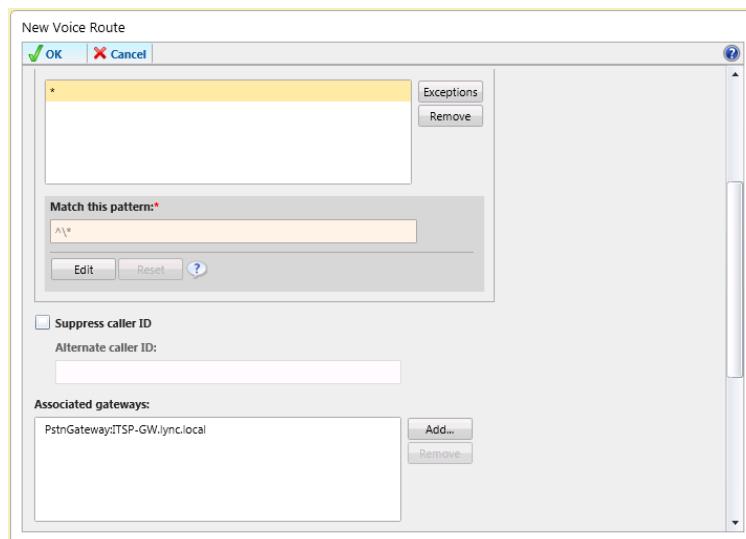
A list of all the deployed Gateways is displayed.

**Figure 3-23: List of Deployed Gateways**



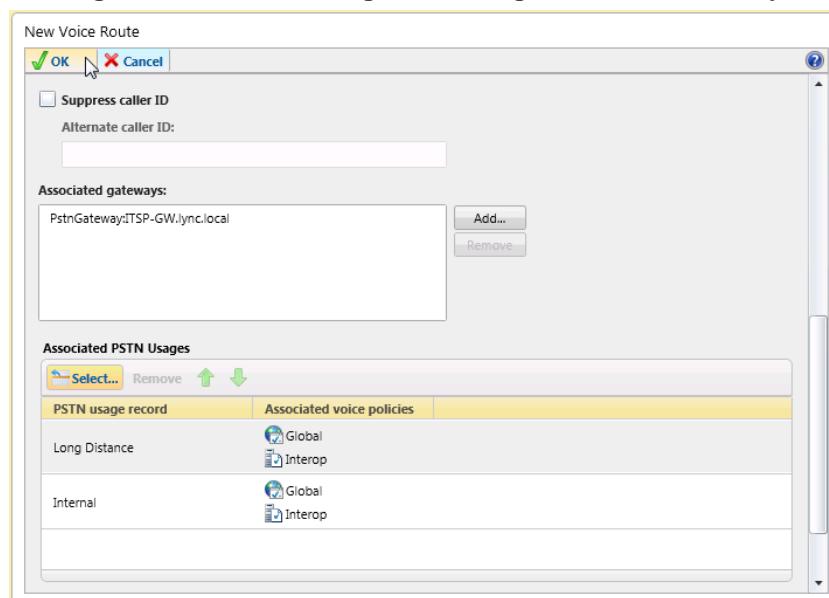
10. Select the E-SBC Gateway you created above and then click **OK**.  
The selected E-SBC gateway appears in the Associated Gateways pane.

**Figure 3-24: Selected E-SBC Gateway**



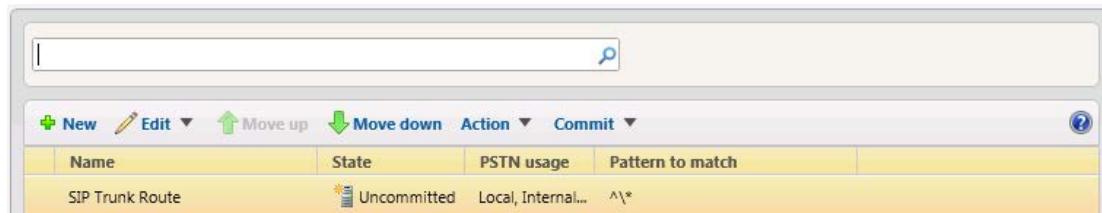
11. Associate a PSTN Usage to this route. In the **Associated PSTN Usages** toolbar, click **Select** and then add the associated PSTN Usage.

**Figure 3-25: Associating PSTN Usage to E-SBC Gateway**



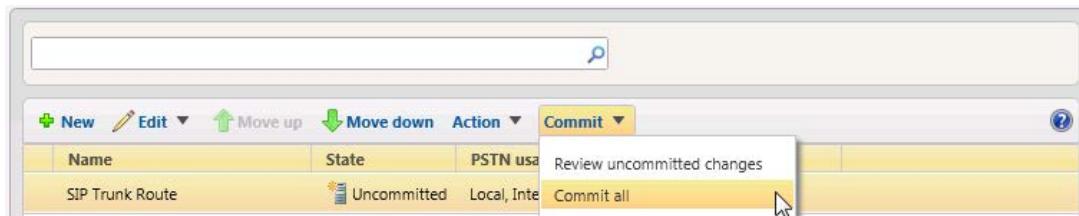
12. In the toolbar at the top of the New Voice Route pane, click **OK**.  
The New Voice Route (with a State 'Uncommitted') is displayed.

**Figure 3-26: Confirmation of New Voice Route**



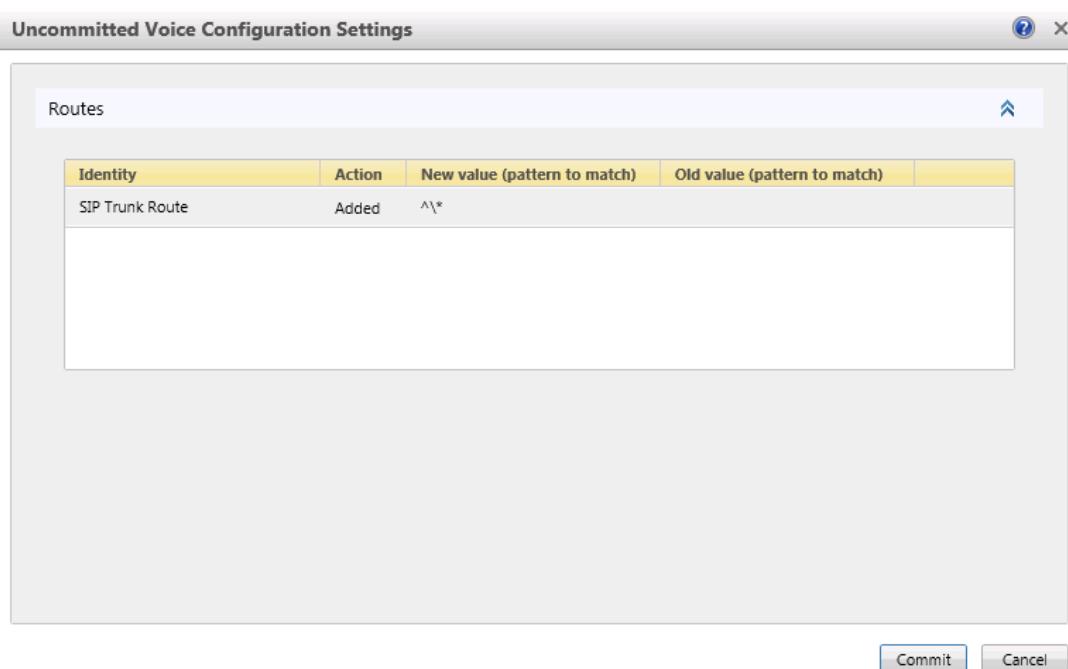
13. In the Content area Toolbar, click on the arrow adjacent to the **Commit** button;
14. From the 'Commit' drop-down list, select **Commit All**.

**Figure 3-27: Committing Voice Routes**



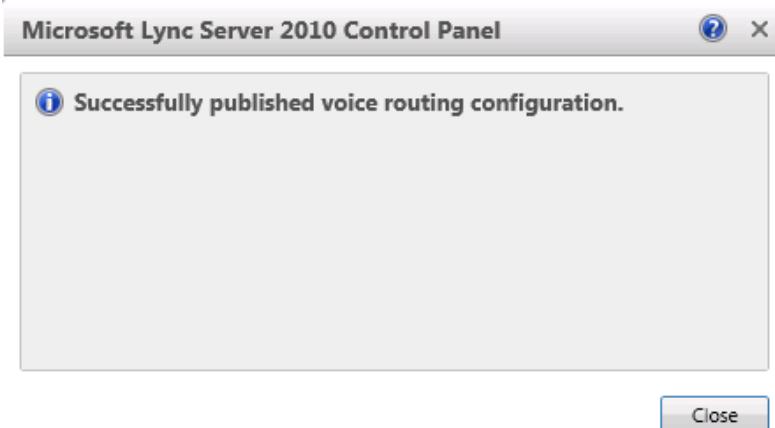
15. In the Uncommitted Voice Configuration Settings window, click **Commit**.

**Figure 3-28: Uncommitted Voice Configuration Settings**



16. A message is displayed, confirming a successful voice routing configuration; in the **Microsoft Lync Server 2010 Control Panel** prompt, click **Close**.

**Figure 3-29: Voice Routing Configuration Confirmation**



The new committed Route is now displayed on the Voice Routing page.

**Figure 3-30: Voice Routing Screen Displaying Committed Routes**

The screenshot shows the "Voice Routing" section of the Microsoft Lync Server 2010 Control Panel. The left sidebar has "Voice Routing" selected. The main area shows a table of committed routes:

Name	State	PSTN usage	Pattern to match
USA	Committed	Internal, Local...	^+1
Israel	Committed	Internal, Local...	^+972
SIP Trunk Route	Committed	Internal, Local...	^\\*

**Reader's Notes**

## 4 Configuring E-SBC Device

This section describes the steps for configuring the E-SBC device in the PureIP SIP Trunking environment.

The following describes the steps required to configure the E-SBC device:

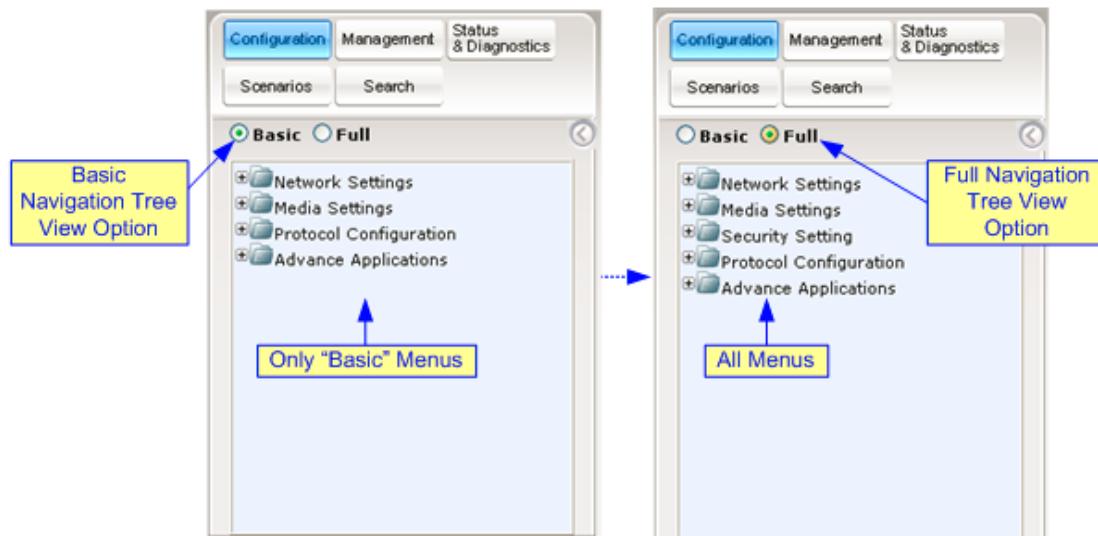
- **Step 1:** Configuring IP Addresses. See Section 4.1 on page 35.
- **Step 2:** Configuring the TLS Connection. See Section 4.2 on page 38.
  - **Step 2-1:** Configuring VoIP DNS Settings. See Section 4.2.1 on page 38.
  - **Step 2-2:** Configuring NTP Server. See Section 4.2.2 on page 38.
  - **Step 2-3:** Configuring Certificates. See Section 4.2.3 on page 39.
- **Step 3:** Enabling SIP SBC Application Mode. See Section 4.3 on page 44.
- **Step 4:** Configuring SIP General Parameters. See Section 4.4 on page 45.
- **Step 5:** Configuring SIP Media Realm. See Section 4.5 on page 46.
- **Step 6:** Configuring SRD. See Section 4.6 on page 47.
- **Step 7:** Configuring SIP Interface. See Section 4.7 on page 48.
- **Step 8:** Configuring Coders. See Section 4.8 on page 49.
- **Step 9:** Configuring Secure Real-Time Transport Protocol. See Section 4.9 on page 50.
- **Step 10:** Configuring IP Group Tables. See Section 4.10 on page 51.
- **Step 11:** Configuring Proxy Sets Tables. See Section 4.11 on page 53.
- **Step 12:** Configuring SBC Routing. See Section 4.12 on page 55.
- **Step 13:** Configuring SBC Transfer Behavior. See Section 4.13 on page 756.
- **Step 14:** Configuring IP Media. See Section 4.14 on page 57.
- **Step 15:** Resetting the Gateway. See Section 4.15 on page 58.



**Note:** To enable the transfer call scenario, the REFER support must be disabled in the Lync 2010 server.

The procedures described in this section are performed using the E-SBC device's Web interface. Before you begin configuring the E-SBC device, ensure that the Web interface's Navigation tree is in Full Menu display mode (i.e., the **Full** option on the Navigation bar is selected) as shown below.

**Figure 4-1: Web Interface Showing Basic/Full Navigation Tree Display**



## 4.1 Step 1: Configuring IP Addresses

This section describes how to configure LAN IP addresses when the internal data-routing capabilities of the E-SBC device are used to connect to the PureIP SIP Trunk. You must configure a separate WAN interface as described in this section.



### Notes:

- The VoIP and Management interface must be in the same subnet as the data-routing interface as shown in the figure below.
- When operating with both VoIP and Data-routing functionalities, it is recommended to define the Default Gateway IP address for the VoIP network interface in the same subnet and with the same VLAN ID as the IP address for the data-routing LAN interface as shown below.

### 4.1.1 Configuring LAN IP Addresses

This section describes how to configure the LAN addresses.

➤ **To configure the LAN IP settings:**

- Open the 'IP Settings' page (**Configuration** tab > **VoIP** menu > **Network** > **IP Settings**).

**Figure 4-2: IP Settings**

Multiple Interface Table									
Note: Select row index to modify the relevant row.									
Index	Application Type	IP Address	Prefix Length	Gateway	VLAN ID	Interface Name	Primary DNS Server IP Address	Secondary DNS Server IP Address	Underlying Interf
0	OA - Media + Control	10.15.4.22	16	10.15.0.1	1	Voice	10.15.9.10		None

- Set the following parameters:
  - IP-Address:** <Gateway IP-Address> (e.g., 10.15.4.22).
  - Prefix Length:** The Subnet Mask in bits (e.g., 16 for 255.255.0.0).
  - Gateway:** <Gateway Default Gateway> (e.g., 10.15.4.23).
- From the 'WAN Interface Name' drop-down list, select **WAN Ethernet**. This is the WAN interface on which your VoIP traffic interfaces with the public network (configured in Section 4.1.2 on page 37).

➤ **To define the E-SBC device's LAN data-routing IP address:**

1. Access the E-SBC device's Web interface with the IP address that you assigned to the VoIP and Management interface.
2. Access the Connections page (**Configuration** tab > **Data** menu > **Data System** > **Connections**).

**Figure 4-3: Connections Page**

Name	Status	Action
LAN switch	1 Ports Connected	
WAN Ethernet	Cable Disconnected	
LAN switch VLAN 1	Connected	
New Connection		

3. Click the  icon corresponding to the **LAN Switch VLAN 1** connection, and then click the **Settings** tab.
4. In the 'IP Address' and 'Subnet Mask' fields, enter the required IP address (e.g., 10.15.7.1) and subnet respectively, and then click **OK**.

**Figure 4-4: Defining LAN Data-Routing IP Address**

General	Settings	Routing	Advanced						
Device Name: Status: Schedule: Network: Connection Type: Physical Address: Underlying Connection:	eth0.1 <b>Connected</b> Always LAN Ethernet 00:90:8f:30:4b:68 LAN switch								
<table border="1"> <tr> <td>Internet Protocol</td> <td>Use the Following IP Address</td> </tr> <tr> <td>IP Address:</td> <td>10 . 15 . 4 . 23</td> </tr> <tr> <td>Subnet Mask:</td> <td>255 . 255 . 0 . 0</td> </tr> </table>				Internet Protocol	Use the Following IP Address	IP Address:	10 . 15 . 4 . 23	Subnet Mask:	255 . 255 . 0 . 0
Internet Protocol	Use the Following IP Address								
IP Address:	10 . 15 . 4 . 23								
Subnet Mask:	255 . 255 . 0 . 0								
<table border="1"> <tr> <td>DNS Server</td> <td>Use the Following DNS Server Addresses</td> </tr> <tr> <td>Primary DNS Server:</td> <td>0 . 0 . 0 . 0</td> </tr> <tr> <td>Secondary DNS Server:</td> <td>0 . 0 . 0 . 0</td> </tr> </table>				DNS Server	Use the Following DNS Server Addresses	Primary DNS Server:	0 . 0 . 0 . 0	Secondary DNS Server:	0 . 0 . 0 . 0
DNS Server	Use the Following DNS Server Addresses								
Primary DNS Server:	0 . 0 . 0 . 0								
Secondary DNS Server:	0 . 0 . 0 . 0								
<input type="button" value="OK"/> <input type="button" value="Apply"/> <input type="button" value="Cancel"/>									

## 4.1.2 Configuring WAN IP Addresses

This section describes how to configure the E-SBC device firewall IP address used to connect to the WAN.

➤ **To configure the WAN IP address:**

1. Cable the E-SBC device to the WAN network (i.e., ADSL or Cable modem), using the WAN port.
2. Open the Settings page (**Configuration** tab > **Data** menu > **WAN Access** > **Settings**).

**Figure 4-5: WAN Settings**

General		Settings	Routing	Advanced
Device Name:	eth1			
Status:	Connected			
Schedule:	Always ▾			
Network:	WAN ▾			
Connection Type:	Ethernet			
Physical Address:	00 : 90 : 8f : 30 : 4b : 69 Clone My MAC Address			
Speed:	Auto ▾			
Duplex:	Auto ▾			
<b>Internet Protocol</b>				
Use the Following IP Address ▾				
IP Address:	195	189	192	150
Subnet Mask:	255	255	255	128
Default Gateway:	195	189	192	129
<b>DNS Server</b>				
Use the Following DNS Server Addresses ▾				
Primary DNS Server:	80	179	52	100
Secondary DNS Server:	80	179	55	100
<input type="button" value="OK"/> <input type="button" value="Apply"/> <input type="button" value="Cancel"/>				

3. Set the following parameters:

- **IP Address:** <WAN IP-Address> (e.g., 195.189.192.150).
- **Subnet Mask:** <Subnet Mask> (e.g., 255.255.255.128).
- **Default Gateway:** <WAN Default GW IP-Address> (e.g., 195.189.192.129).
- **Primary DNS Server:** <First DATA DNS IP-Address> (e.g., 80.179.52.100).
- **Secondary DNS Server:** <Second Data DNS IP-Address> (e.g., 80.179.55.100).

4. A reset with BURN to FLASH is required. See Section 4.15 on page 58.

## 4.2 Step 2: Configuring the TLS Connection

This section describes how to configure AudioCodes gateways for implementing a TLS connection with the Microsoft Lync Mediation server. The procedures described in this section are essential elements for the configuration of a secure SIP TLS connection.

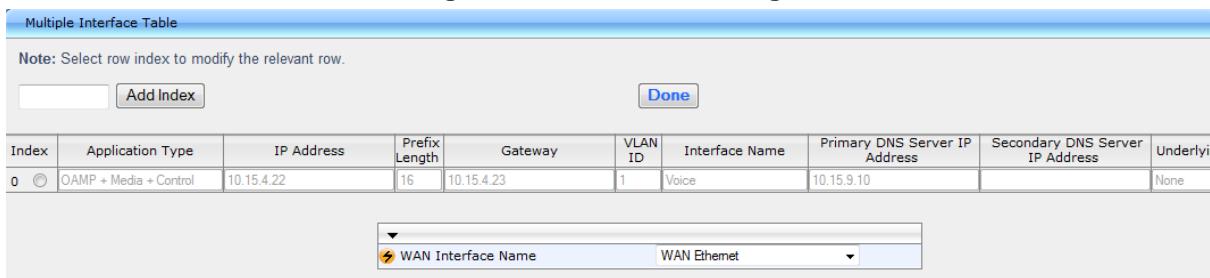
### 4.2.1 Step 2-1: Configuring VoIP DNS Settings

This section describes how to define the VoIP LAN DNS server, which is a necessary action whenever a FQDN is configured.

➤ **To configure the VoIP DNS settings:**

1. Open the 'DNS Settings' page (**Configuration** tab > **VoIP** menu > **Network** > **IP Settings**).

**Figure 4-6: VoIP DNS Settings**



Multiple Interface Table									
Note: Select row index to modify the relevant row.									
		Add Index		Done					
Index	Application Type	IP Address	Prefix Length	Gateway	VLAN ID	Interface Name	Primary DNS Server IP Address	Secondary DNS Server IP Address	Underlyi
0	OAMP + Media + Control	10.15.4.22	16	10.15.4.23	1	Voice	10.15.9.10		None

WAN Interface Name      WAN Ethernet

2. Set the following parameters:

- **DNS Primary Server IP:** <Primary DNS IP-Address> (e.g., 10.15.9.10)
- **DNS Secondary Server IP:** <Secondary DNS IP-Address>

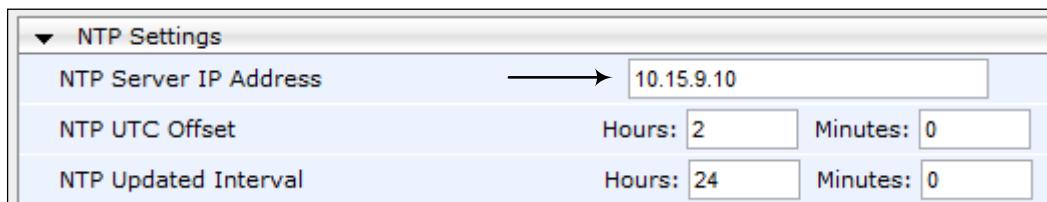
### 4.2.2 Step 2-2: Configuring NTP Server

The procedure below describes how to configure the NTP Server IP address. It is recommended to implement an NTP server (Microsoft NTP server or third-party) so that the SBC receives accurate current date and time. This is necessary for validating remote parties' certificates.

➤ **To configure NTP Settings:**

1. Open the 'Application Settings' page (**Configuration** tab > **System** menu > **Application Settings**).

**Figure 4-7: NTP Settings**



NTP Settings	
NTP Server IP Address	→ 10.15.9.10
NTP UTC Offset	Hours: 2 Minutes: 0
NTP Updated Interval	Hours: 24 Minutes: 0

2. Set the **NTP Server IP Address** to <NTP Server IP-Address> (e.g., 10.15.9.10).

### 4.2.3 Step 2-3: Configuring Certificates

The procedure below describes how to exchange a certificate with the Microsoft Certificate Authority. The certificate is used by the E-SBC device to authenticate the connection with the management computer (the computer used to manage the E-SBC using the Web interface).

➤ **To configure a certificate:**

1. Open the ‘Certificates’ page (**Configuration tab > System menu > Certificates**).

**Figure 4-8: Certificates Page**

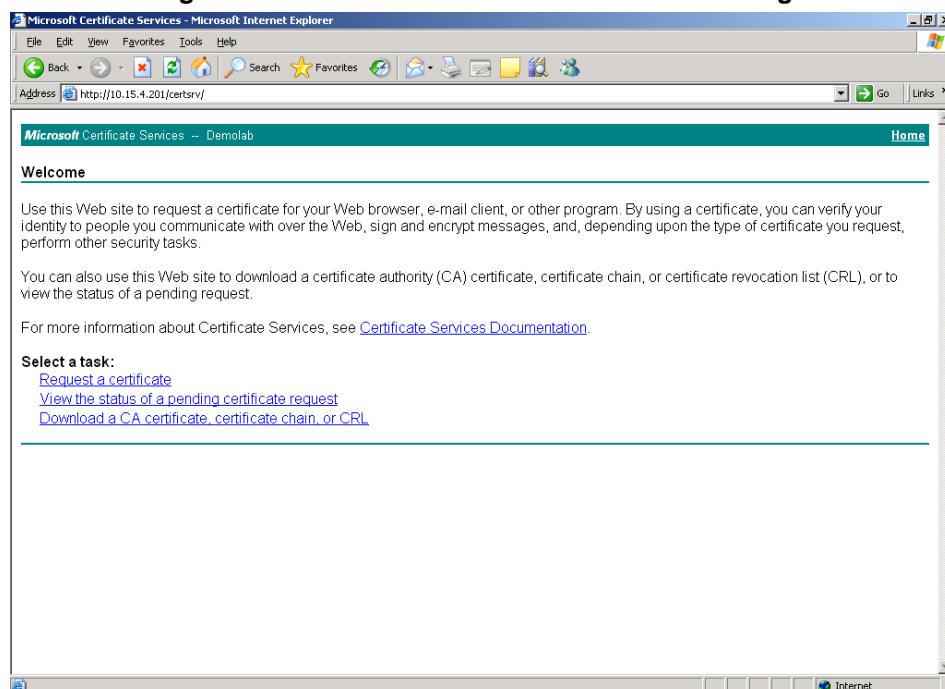
After creating the CSR, copy the text below (including the BEGIN/END lines) and send it to your Certification Authority for signing.

```
-----BEGIN CERTIFICATE REQUEST-----
MIIBVzCCAsgCAQAwfzE0MBkGA1UEAxM3SVTUC1HvY5seW5jLmxvY2FsMRUwEwYD
VQQLEwxIZWFkcXvhcnRlcnNxejAQBgNVBAoTCUNvcnVcmF02TEVMBMGAIUEBxMM
UG91z2hrZWVwc21lMREwDwYDVQIeWh0ZXcgWW9yazELMAkGA1UEBhMCVVWwgZ8w
DQYJKoZihvcNAQEBQADgYAMIGJAGGBANZJXRK/tGQvpWwDwmmlvjvtGuvUAko9
OUprn7CROkw3hbfbnrmZdGM4AubNdc34UCfI8QjgbHow4mc8k1dtKg6dWLSSjjdr
mpgdzi9nYBdgzu0xthRu4k+0i9GVQ/zHg3cvldt3/3pqvsK22qbacf4Ddoedqrf
PfLz6/bzCtnRpMBarGgADANBkgkhkiG9w0BAQQFAOBgQDKo3rIKfcqzMqTz/uY
aYUDsDN2FphQjiIk609scb13GVox71JAj0x+DxCGWKwR7EqrvFvv08V++ztQAYht
yZv1lGENcttm3gRXxaCCN02ipAKGU5FirXj4WuNdy6i1RfyegdPN6cabB4BpxdG
stUvodFmLDeERE024UPbgg/tSA==
-----END CERTIFICATE REQUEST-----
```

2. In the ‘Subject Name’ field, enter the Media Gateway name i.e. **ITSP-GW.lync.local** and then click **Generate CSR**; a Certificate request is generated.
3. Copy the CSR (from the line “----BEGIN CERTIFICATE” to “END CERTIFICATE REQUEST----”) to a text file (such as Notepad), and then save it to a folder on your computer as *certreq.txt*.

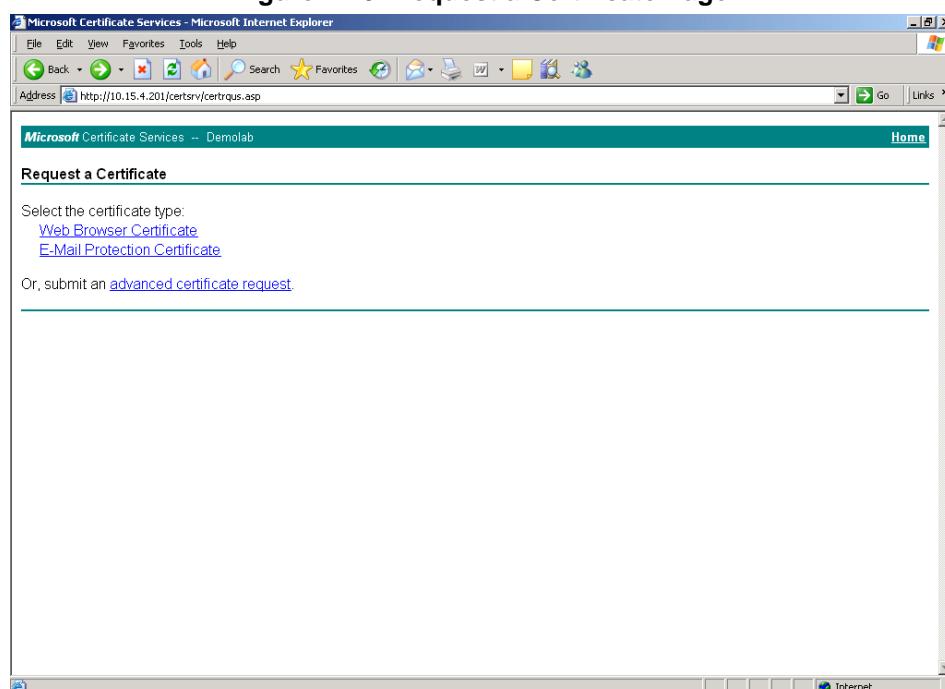
4. Navigate to the certificate 'Server http://<Certificate Server>/CertSrv'.
5. Click the **Request a Certificate** link.

**Figure 4-9: Microsoft Certificate Services Web Page**



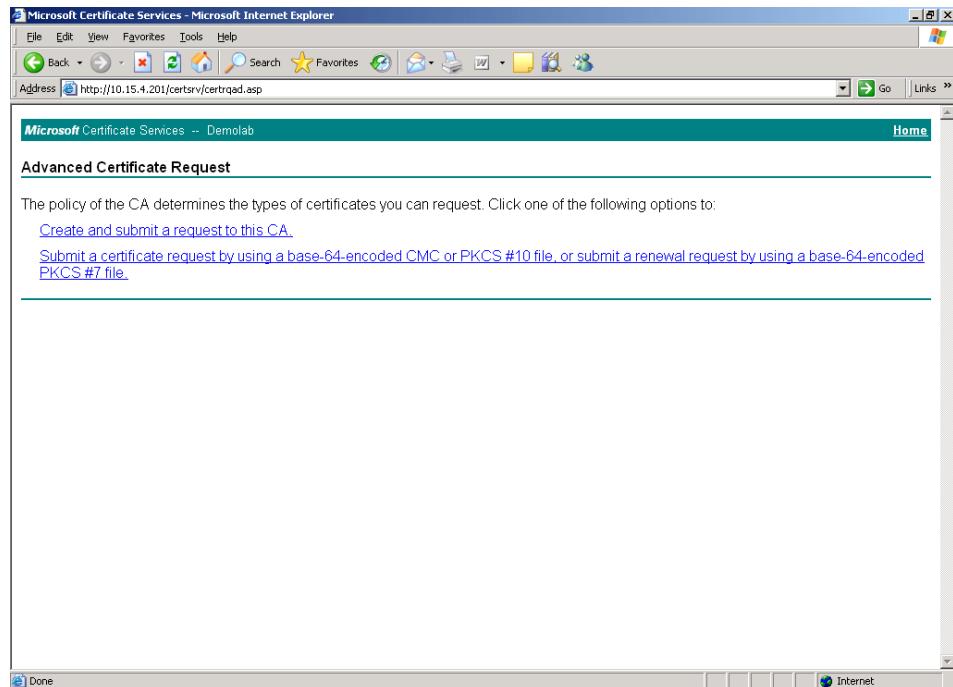
The Request a Certificate page appears.

**Figure 4-10: Request a Certificate Page**



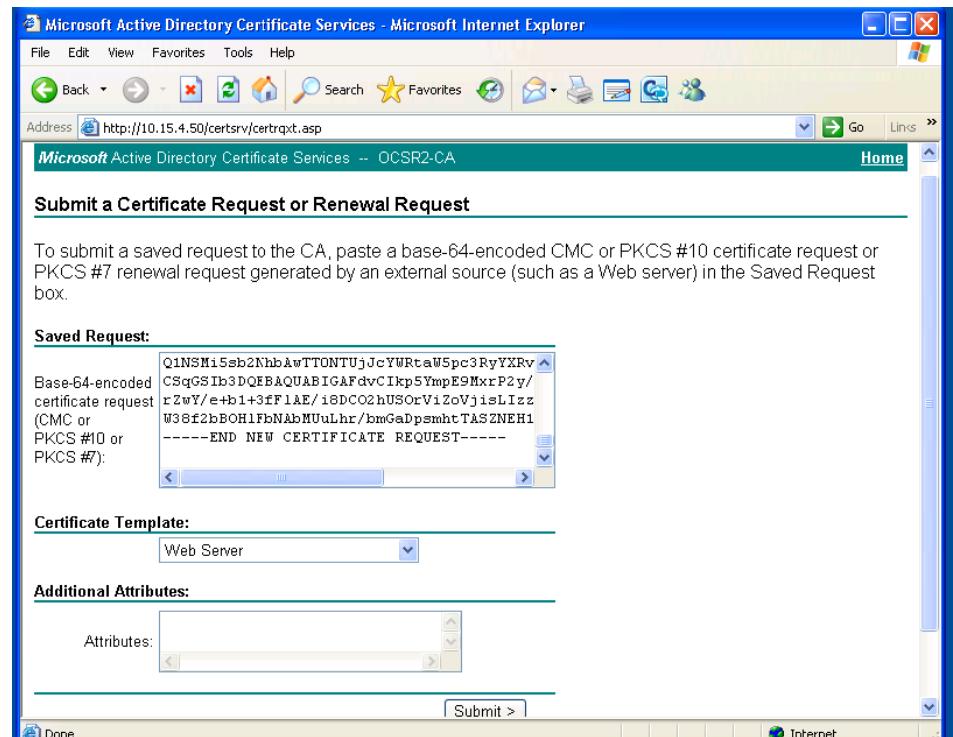
6. Click the link **Advanced Certificate Request**, and then click **Next**.

**Figure 4-11: Advanced Certificate Request Page**



7. Click the **Submit a Certificate request by using base64 encoded...** link, and then click **Next**.

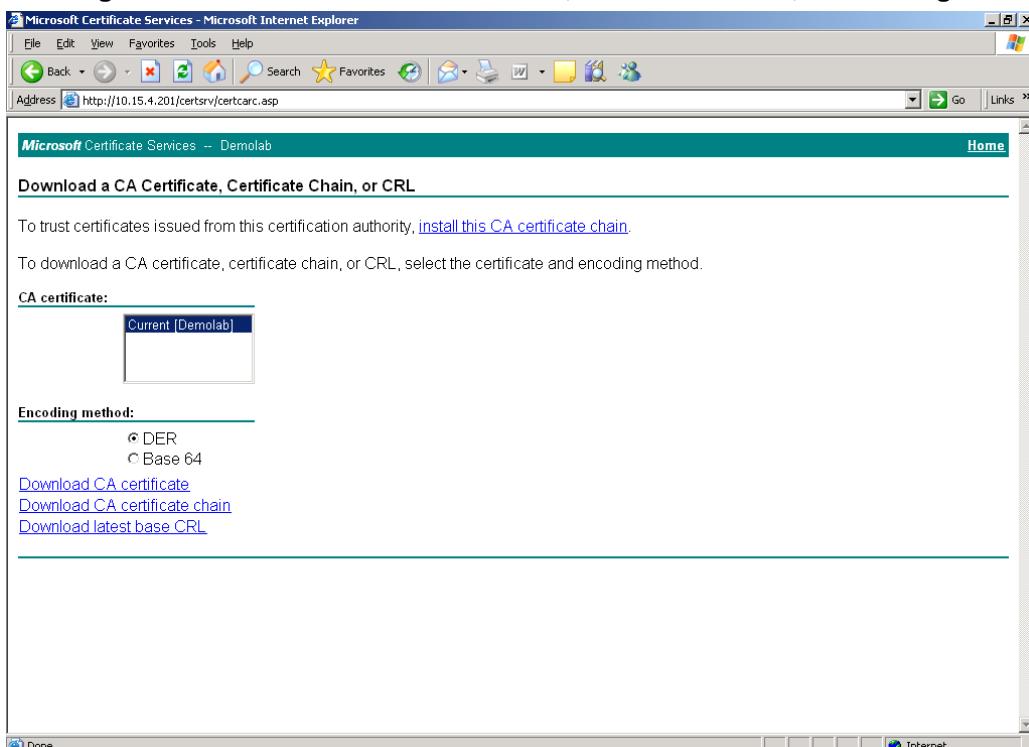
**Figure 4-12: Submit a Certificate Request or Renewal Request Page**



8. Open the *certreq.txt* file that you created and saved (see Step 3), and then copy its contents to the 'Base64 Encoded Certificate Request' text box.
9. From the 'Certificate Template' drop-down list, select **Web Server**.

- 10.** Click **Submit**.
- 11.** Click the **Base 64 encoding** option, and then click the **Download CA certificate** link.
- 12.** Save the file as 'gateway.cer' in a folder on your computer.
- 13.** Navigate to the certificate Server <http://<Certificate Server>/CertSrv>.
- 14.** Click the **Download a CA Certificate, Certificate Chain or CRL** link.

**Figure 4-13: Download a CA Certificate, Certificate Chain, or CRL Page**



- 15.** Under the Encoding method group, perform the following:
  - a.** Click the **Base 64** option
  - b.** Click the Download CA certificate link
- 16.** Save the file as 'certroot.cer' in a folder on your computer.
- 17.** Navigate back to the Gateway Certificates page.
- 18.** In the 'Send Device Certificate file from your computer....' field, click **Browse** and select the 'Gateway.cer' certificate file that you saved on your local disk (see Step **12**), and then click **Send File** to upload the certificate.

19. In the 'Certificates' page, in the 'Send Trusted Root Certificate Store file....' field, click **Browse** and select the 'Certroot.cer' certificate file that you saved on your local disk (see Step 16), and then click **Send File** to upload the certificate.

**Figure 4-14: Certificates Page**



20. Save (burn) the Media Gateway configuration and reset the Media Gateway, using the Web interface's 'Maintenance Actions' page (On the Navigation bar, click the **Management** tab, and then in the Navigation tree, select the **Management Configuration** menu, and then choose the **Maintenance Actions**).

## 4.3 Step 3: Enabling SIP SBC Application Mode

This section describes how to enable the SIP SBC application mode.

➤ **To enable the SIP SBC application mode:**

1. Open the Applications Enabling page (**Configuration** tab > **VoIP** menu > **Applications Enabling** > **Applications Enabling**).

**Figure 4-15: Applications Enabling**

Enable SAS	Disable
Enable SBC Application	→ Enable
Enable IP2IP Application	Disable

2. From the 'Enable SBC Application' drop-down list, select **Enable**.



**Notes:**

- To enable the SBC capabilities on the AudioCodes gateway, your gateway must be loaded with the feature key that includes the SBC feature.
- The E-SBC device must be running SIP Version 6.4 or later.
- A reset with BURN to FLASH is required.

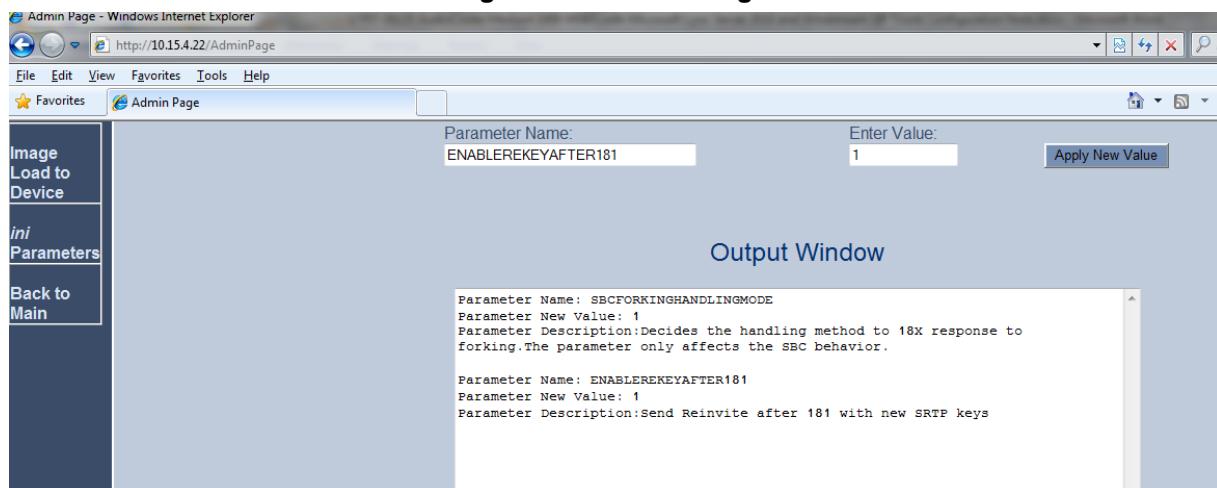
## 4.4 Step 4: Configuring SIP General Parameters

**Figure 4-16: General Parameters**

Source Number Preference	<input type="text"/>
Forking Handling Mode	Sequential handling
Enable Comfort Tone	Disable
Add Trunk Group ID as Prefix to Source	No
Fake Retry After	60
Enable Reason Header	Enable

1. In the 'Fake Retry After' field, enter "60".
2. Open the Admin page, by appending the case-sensitive suffix 'AdminPage' to the Media gateway's IP address in your Web browser's URL field (e.g., <http://10.15.4.22/AdminPage>).
3. On the left pane, click **ini Parameters**.

**Figure 4-17: Admin Page**



4. In the 'Parameter Name' field, enter "**SBCFORKINGHANDLINGMODE**".
5. In the 'Enter Value' field, enter **1** and **Apply New Value**.
6. In the 'Parameter Name' field, enter "**ENABLEREKEYAFTER181**".
7. In the 'Enter Value' field, enter **1** and **Apply New Value**.

## 4.5 Step 5: Configuring SIP Media Realm

A Media Realm is a range of UDP ports that is associated with a media IP interface/IP address (defined in the Multiple Interface table). Media Realms allow you to divide a media (RTP traffic) IP interface into several realms, where each realm is specified by a UDP port range. The pool of media interfaces (i.e., Media Realms) are defined in the SIP Media Realm table (*CpMediaRealm* parameter). Once created, the Media Realm can be assigned to other entities for routing (e.g., to an IP Group in the 'IP Group' table and to an SRD in the 'SRD' table). In this configuration, you create one Media Realm for the Microsoft Lync LAN ('MediaLan') and another entry for the PureIP SIP Trunking service 'MediaWan' (see the figures below).

- **To configure SIP Media Realm:**
- Open the Media Realm Configuration page (**Configuration** tab > **VoIP** menu > **Media** submenu > **Media Realm Configuration**) and configure the Media Realm table for both LAN and WAN, as shown in the figures below.

**Figure 4-18: SIP LAN Media Realm Table**

Media Realm Table			
Add	Edit	Delete	View/Unview
Index	Media Realm Name	IPv4 Interface Name	IPv6 Interface Name
1	MediaLan	Voice	None
2	MediaWan	WAN	None
Page 1 of 1   10			
<b>Media Realm #1 Additional Configuration</b>			
<a href="#">Quality Of Experience</a>			
<b>Details of Media Realm #1</b>			
Media Realm Name = MediaLan	IPv4 Interface Name = Voice		
IPv6 Interface Name = None	Port Range Start = 7000		
Number Of Media Session Legs = 20	Port Range End = 7190		
Trans Rate Ratio = 0	Is Default = Yes		

**Figure 4-19: SIP WAN Media Realm Table**

Media Realm Table			
Add	Edit	Delete	View/Unview
Index	Media Realm Name	IPv4 Interface Name	IPv6 Interface Name
1	MediaLan	Voice	None
2	MediaWan	WAN	None
Page 1 of 1   10			
<b>Media Realm #2 Additional Configuration</b>			
<a href="#">Quality Of Experience</a>			
<b>Details of Media Realm #2</b>			
Media Realm Name = MediaWan	IPv4 Interface Name = WAN		
IPv6 Interface Name = None	Port Range Start = 7500		
Number Of Media Session Legs = 20	Port Range End = 7690		
Trans Rate Ratio = 0	Is Default = No		

## 4.6 Step 6: Configuring SRD

An SRD is a set of definitions of IP interfaces, device resources, SIP behaviors and other definitions that together create (from the IP user's perspective) from one physical device, multiple virtual multi-service gateways. In this configuration, you create an SRD entry for the Microsoft Lync LAN 'LanSRD' and another entry for the PureIP SIP Trunking service 'WanSRD'.

- **To configure the SRD table:**
- Open the SRD Table page (**Configuration** tab > **VoIP** menu > **Control Network** submenu > **SRD Table**) and configure the SRD table as shown below:

**Figure 4-20: SRD Settings**

SRD Index	1 - LanSRD
Common Parameters	
SRD Name	LanSRD
Media Realm	MediaLAN
SBC Parameters	
IP Group Status Table	Proxy Sets Status Table

Buttons: Remove, Submit

**Figure 4-21: SRD-ITSP**

SRD Index	2 - WanSRD
Common Parameters	
SRD Name	WanSRD
Media Realm	MediaWAN
SBC Parameters	
IP Group Status Table	Proxy Sets Status Table

Buttons: Remove, Submit



**Note:** The Media realm field should correspond to the configured entry in the previous step (case sensitive).

## 4.7 Step 7: Configuring SIP Interfaces

A SIP interface represents a SIP signaling interface (IPv4), which is a combination of ports (UDP, TCP, and TLS) associated with a specific IP address and an SRD ID. SIP Interfaces allow you to use different SIP signaling interfaces for each of the two SBC legs. Each SIP user agent communicates with a specific SRD row index:

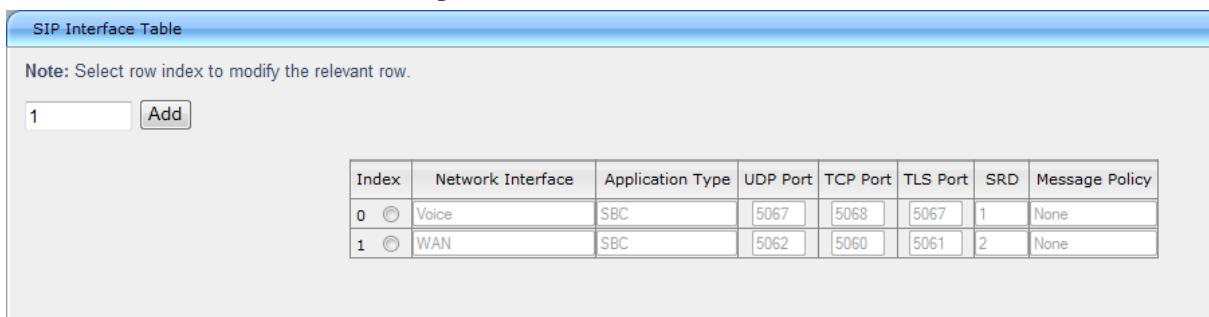
- Index 1 for Microsoft Lync Server 2010
- Index 2 for PureIP SIP Trunk

In addition, a separate voice interface is required for Voice Mail/SMS.

➤ **To configure an IP Interface:**

1. Open the 'SIP Interface Table' page (**Configuration** tab > **VoIP** menu > **Control Network** submenu > **SIP Interface Table**) and configure the SIP Interface table as shown below:

**Figure 4-22: SIP Interface Table**



Index	Network Interface	Application Type	UDP Port	TCP Port	TLS Port	SRD	Message Policy
0	Voice	SBC	5067	5068	5067	1	None
1	WAN	SBC	5062	5060	5061	2	None

2. In the 'TLS port' field for SIP Interface 1, enter "5067". This is the E-SBC listening port as configured on Lync Server 2010.
3. In the 'TCP port' field for SIP Interface 2, enter "5060". This is the PureIP SIP Trunk transmitting port.

## 4.8 Step 8: Configuring Coders

This section describes how to configure the SIP coders. Since the Mediation Server supports only G.711A-law and G.711U-law voice coders, while the ITSP SIP trunk additionally supports the G.729 coder, you need to configure for the entries shown in the screen below.

➤ **To configure Coders:**

1. Open the Coders Table page (**Configuration** tab > **VoIP** menu > **Coders and Profiles** > **Coders**).

**Figure 4-23: Coders**

The screenshot shows a software interface titled 'Coders Table'. It contains a table with five columns: 'Coder Name', 'Packetization Time', 'Rate', 'Payload Type', and 'Silence Suppression'. There are 10 rows in the table. The first two rows have their 'Coder Name' set to 'G.711A-law' and 'G.711U-law' respectively, and their 'Silence Suppression' dropdown is set to 'Enable'. All other fields in these rows are also filled out. The remaining eight rows are empty, with all fields being dropdown menus or empty input fields.

Coder Name	Packetization Time	Rate	Payload Type	Silence Suppression
G.711A-law	20	64	8	Enable
G.711U-law	20	64	0	Enable

2. From the 'Coder Name' drop-down list, select **G.711U-law**, **G.711A-law**, for the first two coders in the table.
3. From the 'Silence Suppression' drop-down list, select **Enable** for the two coders.

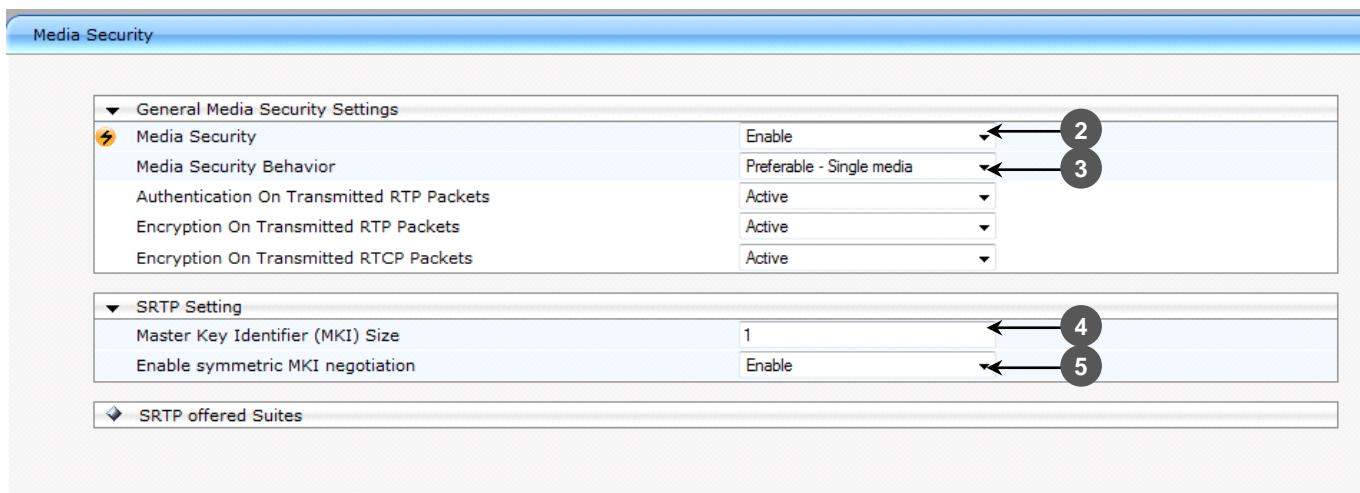
## 4.9 Step 9: Configuring Secure Real-Time Transport Protocol

This section describes how to configure the Secure Real-Time Transport Protocol (SRTP).

➤ **To configure SRTP:**

1. Open the Media Security page (**Configuration** tab > **VoIP** menu > **Media** sub-menu > **Media Security**).

**Figure 4-24: Media Security Page**



2. From the 'Media Security' drop-down list, select **Enable** to enable SRTP.
3. From the 'Media Security Behavior' drop-down list, select **Preferable - Single media**.
4. In the 'Master Key Identifier (MKI) Size' field, enter "1". This configures the size (in bytes) of the MKI in SRTP Tx packets.
5. From the 'Enable symmetric MKI negotiation' drop-down list, select **Enable**.
6. Click **Submit** to apply your changes.
7. On the toolbar, click **Burn** to save the changes to the Enhanced gateway flash memory.
8. On the toolbar, from the **Device Actions** drop-down list, select **Reset**, and then on the Maintenance Actions page, click the **Reset** button; the Enhanced gateway resets and your settings are saved to the flash memory.
9. From the 'Profile ID' drop-down list, select **2** for the IP Profile identification
10. From the 'Enable Early Media' drop-down list, select **Enable**.
11. From the 'Media Security Behavior' (under the SBC section) drop-down list, select **SRTP**.
12. Click **Submit**.
13. From the 'Profile ID' drop-down list, select **1** for the IP Profile identification
14. From the 'Enable Early Media' drop-down list, select **Enable**.
15. From the 'Media Security Behavior' (under the SBC section) drop-down list, select **RTP**.
16. Click **Submit**.

## 4.10 Step 10: Configuring IP Group Tables

This section describes how to configure the IP group tables. You define an IP group for Lync Server 2010 and an IP group for the PureIP SIP trunk.

➤ **To configure IP Group Table 1:**

1. Open the 'IP Group Table' page (**Configuration** tab > **VoIP** menu > **Control Network> IP Group Table**).

**Figure 4-25: IP Group Table 1**

The screenshot shows the 'IP Group Table' configuration page with the following details:

- Common Parameters:**
  - Type: SERVER (Step 2)
  - Description: Lync (Step 3)
  - Proxy Set ID: 1 (Step 3)
  - SIP Group Name: pureip.lync.local (Step 4)
  - Contact User: (empty)
  - SRD: 0 (Step 5)
  - Media Realm: MediaLan (Step 5)
  - IP Profile ID: 0 (Step 5)
- Gateway Parameters:**
  - Always Use Route Table: No
  - Routing Mode: Not Configured
  - SIP Re-Routing Mode: Standard
- SBC Parameters:**
  - Classify By Proxy Set: Enable
  - Max Number Of Registered Users: -1
  - Inbound Message Manipulation Set: -1
  - Outbound Message Manipulation Set: -1

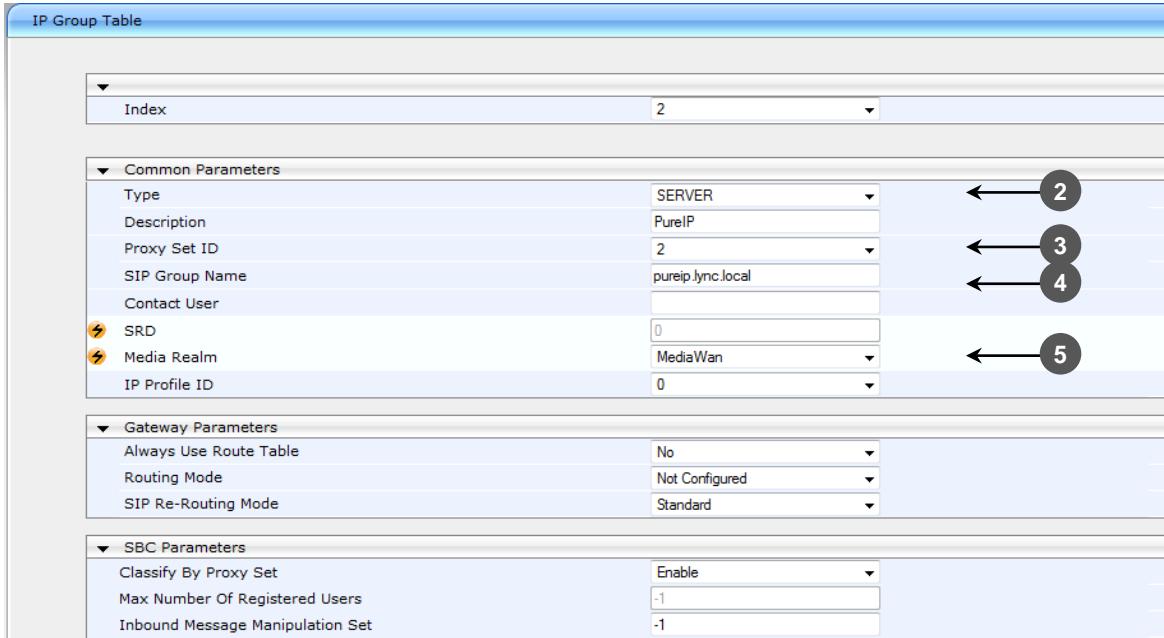
Five numbered arrows point to specific fields: 2 points to the Type dropdown, 3 points to the Proxy Set ID dropdown, 4 points to the SIP Group Name field, and 5 points to both the SRD and Media Realm dropdowns.

2. From the 'Type' drop-down list, select **SERVER**.
3. From the 'Proxy Set ID' drop-down list, select **1**.
4. In the 'SIP Group Name' field, enter "PureIP.Lync.Local".
5. From the 'Media Realm' drop-down list, select **MediaLan**.

➤ **To configure IP Group Table 2:**

1. Open the IP Group Table page (**Configuration** tab > **VoIP** menu > **Control Network**> **IP Group Table**).

**Figure 4-26: IP Group Table 2**



IP Group Table	
Index	2
<b>Common Parameters</b>	
Type	SERVER 2
Description	PureIP
Proxy Set ID	2
SIP Group Name	pureip.lync.local 4
Contact User	
SRD	0
Media Realm	MediaWan 5
IP Profile ID	0
<b>Gateway Parameters</b>	
Always Use Route Table	No
Routing Mode	Not Configured
SIP Re-Routing Mode	Standard
<b>SBC Parameters</b>	
Classify By Proxy Set	Enable
Max Number Of Registered Users	-1
Inbound Message Manipulation Set	-1

2. From the ‘Type’ drop-down list, select **SERVER**.
3. From the ‘Proxy Set ID’ drop-down list, select **2**.
4. In the ‘SIP Group Name’ field, enter “PureIP.Lync.local”.
5. From the ‘Media Realm’ drop-down list, select **MediaWan**.

## 4.11 Step 11: Configuring Proxy Sets Tables

This section describes how to configure the proxy set tables. You need to configure two proxy sets, one for the SIP trunk and the other for the Lync Server 2010.

➤ **To configure Proxy Sets Table 1 for Lync Server 2010:**

1. Open the Proxy Sets Table page (**Configuration** tab > **VoIP** menu > **Control Network** > **Proxy Sets Table**).

**Figure 4-27: Proxy Sets Table for Lync Server 2010**

Proxy Address	Transport Type
1 fe-lync.lync.local:5067	TLS
2	
3	
4	
5	

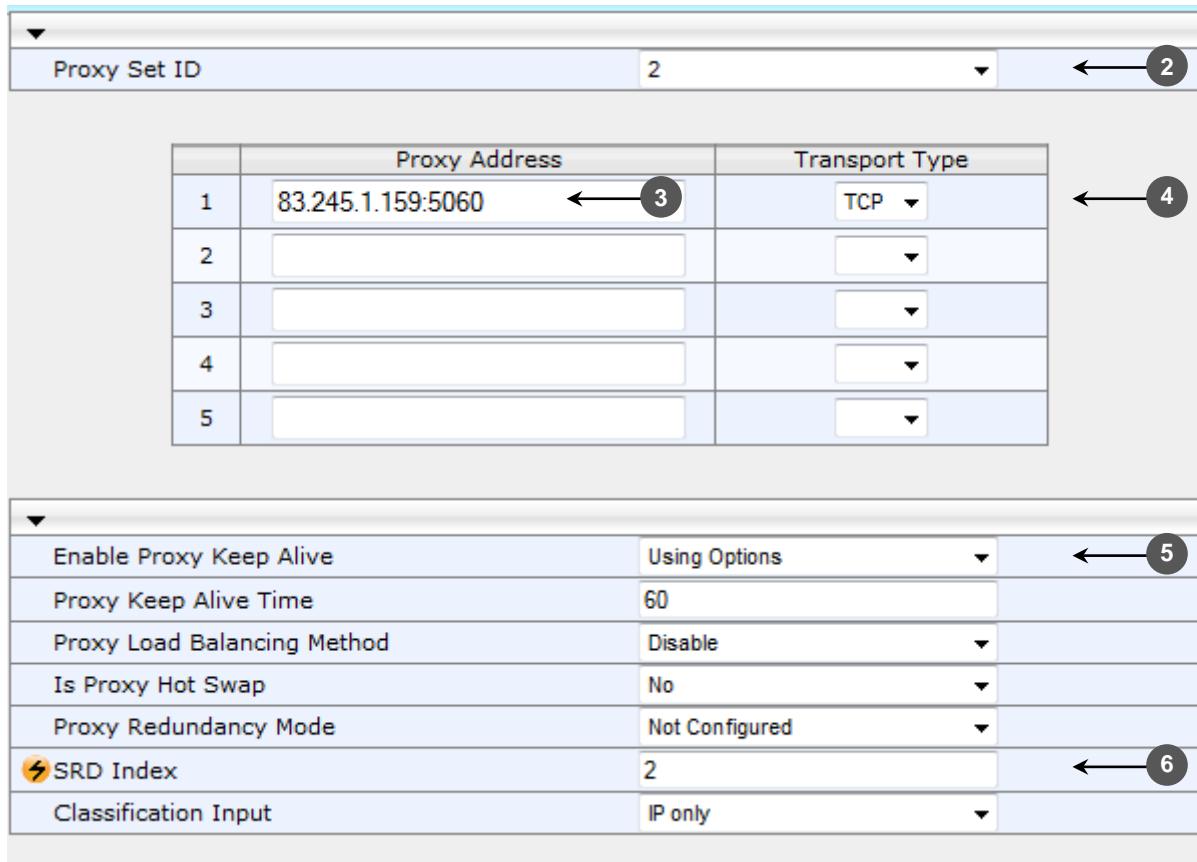
Enable Proxy Keep Alive	Using Options
Proxy Keep Alive Time	60
Proxy Load Balancing Method	Round Robin
Is Proxy Hot Swap	Yes
Proxy Redundancy Mode	Not Configured
SRD Index	1
Classification Input	IP only

2. From the 'Proxy Set ID' drop-down list, select **1**.
3. In the 'Proxy Address' field, enter the IP address (or FQDN) and destination port of the Microsoft Mediation Server (e.g., **fe-lync.lync.local:5067**).
4. From the 'Transport Type' drop-down list, select **TLS**.
5. From the 'Enable Proxy Keep Alive' drop-down list, select **Using Options**.
6. From the 'Proxy Load Balancing Method' drop-down list, select **Round Robin**.
7. From the 'Is Proxy Hot Swap' drop-down list, select **Yes**.
8. In the 'SRD Index' field, enter "1".

➤ To configure Proxy Sets Table 2 for PureIP SIP Trunk:

1. Open the 'Proxy Sets Table' page (**Configuration** tab > **VoIP** menu > **Control Network> Proxy Sets Table**).

**Figure 4-28: Proxy Sets Table 2**



	Proxy Address	Transport Type
1	83.245.1.159:5060	TCP
2		
3		
4		
5		

Enable Proxy Keep Alive	Using Options	5
Proxy Keep Alive Time	60	
Proxy Load Balancing Method	Disable	
Is Proxy Hot Swap	No	
Proxy Redundancy Mode	Not Configured	
SRD Index	2	6
Classification Input	IP only	

2. From the 'Proxy Set ID' drop-down list, select 2.
3. In the 'Proxy Address' field, enter the IP address (or FQDN) and destination port of the PureIP SIP Trunk (e.g., "83.245.1.59:5060").
4. From the 'Transport Type' drop-down list, select **TCP**.
5. From the 'Enable Proxy Keep Alive' drop-down list, select **Using Options**.
6. In the 'SRD Index' field, enter "2".

## 4.12 Step 12: Configuring Routing

This section describes how to configure the SBC IP-to-IP routing table.

The device IP-to-IP routing rules are configured in the IP-to-IP Routing table. This table provides enhanced IP-to-IP call routing capabilities for routing received SIP messages, such as INVITE messages to a destination IP address. The routing rule must match one of the following input characteristics: Source IP Group, Source Phone Prefix, Source Host Prefix, Destination Username Prefix, and/or Destination Host.

It is crucial that you adhere to the following guidelines when configuring your IP-to-IP routing rules:

- Ensure that your routing rules are accurate and correctly defined.
- Ensure that your routing rules from **Source IP Group** to **Destination IP Group** are accurately defined to be eligible for the desired call routing outcome.
- Avoid (if possible) using the asterisk (\*) symbol to indicate "any" for a specific parameter in your routing rules. This constitutes a weak routing rule. For strong routing rules, enter specific letter or numeric character values.

➤ **To configure IP to IP Routing Table:**

1. Open the 'IP to IP Routing Table' page (**Configuration** tab > **VoIP** menu > **SBC** > **Routing SBC** > **IP to IP Routing Table**).
2. Configure the IP to IP Routing Table as follows:

**Figure 4-29: IP to IP Routing Table**



The screenshot shows a table titled 'IP2IP Routing Table'. The table has a header row with columns: Index, Source IP Group ID, Destination Username Prefix, Destination Host, Request Type, Destination Type, Destination IP Group ID, Destination SRD ID, Destination Address, Destination Port, and Alternative Route Options. There are two data rows:

Index	Source IP Group ID	Destination Username Prefix	Destination Host	Request Type	Destination Type	Destination IP Group ID	Destination SRD ID	Destination Address	Destination Port	Alternative Route Options
1	1	*	*	All	IP Group	2	None		0	Route Row
2	2	*	*	All	IP Group	1	None		0	Route Row

At the bottom of the table, there is a navigation bar with buttons for first, previous, next, last, and search, followed by 'Page 1 of 1' and a dropdown for '10'. To the right, it says 'View 1 - 2 of 2'.

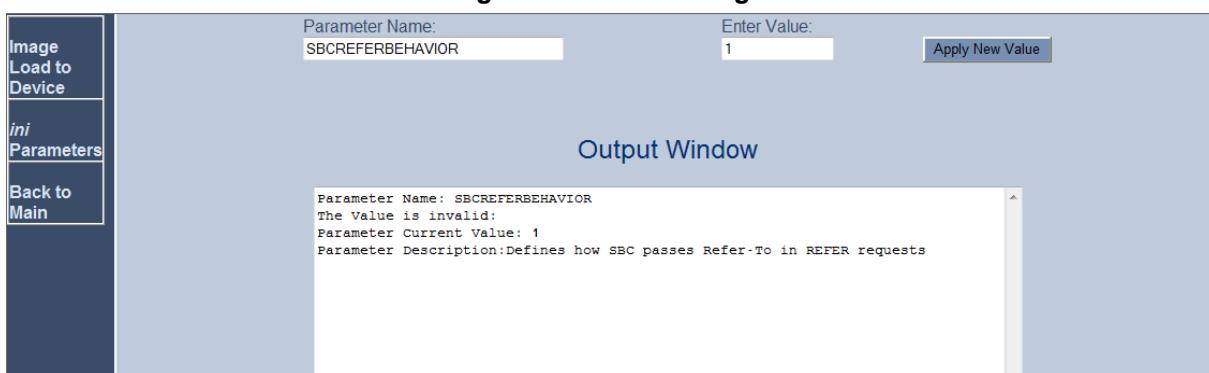
## 4.13 Step 13: Configuring SBC Transfer Behavior

This step describes how to configure the E-SBC for the correct behavior when transferring from the Lync Server 2010 side.

➤ **To configure SBC Refer Behavior parameter:**

1. Open the Admin page, by appending the case-sensitive suffix ‘AdminPage’ to the Media gateway’s IP address in your Web browser’s URL field (e.g., <http://10.15.4.22/AdminPage>).
2. On the left pane, click **ini Parameters**.

**Figure 4-30: Admin Page**



3. In the 'Parameter Name' field, enter “SBCReferBehavior”.
4. In the 'Enter Value' field, enter **1**.

## 4.14 Step 14: Configuring IP Media

This section describes how to configure the number of media channels for the IP media. In this configuration, 120 channels are configured.



**Note:** This step required only if you perform Media Transcoding.

➤ **To configure IP Media Settings:**

1. Open the IP Media Settings page (**Configuration** tab > **VoIP** menu > **IP Media** > **IP Media Settings**).
2. In the ‘Number of Media Channels’ field, enter “120”.

**Figure 4-31: IP Media Settings**

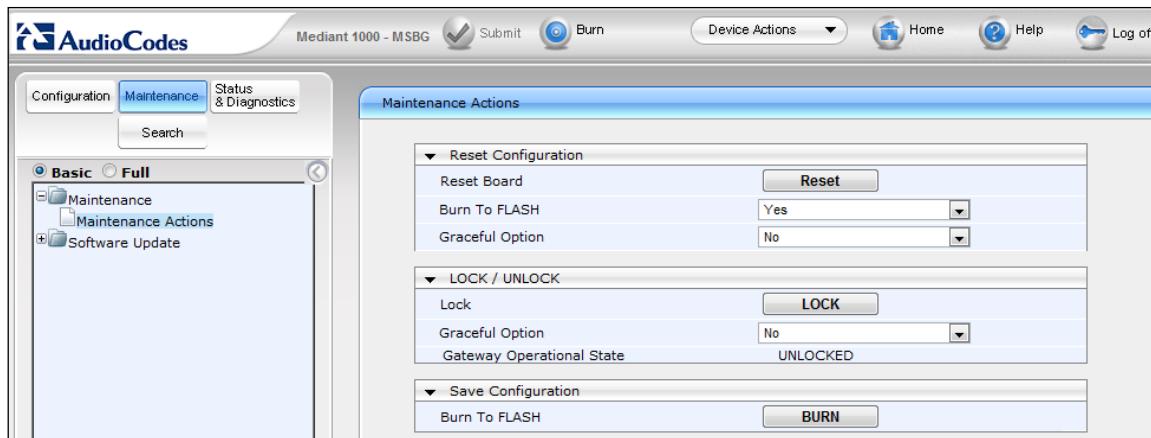
⚡ Number of Media Channels	120
⚡ Voice Streaming	Disable
NetAnn Announcement ID	annnc
MSCML ID	ivr
Transcoding ID	trans
▼ Conference	
Conference ID	conf
Beep on Conference	Enable
Enable Conference DTMF Clamping	Enable
Enable Conference DTMF Reporting	Disable

## 4.15 Step 15: Resetting the Gateway

After you have completed the gateway configuration as described in the steps above, you need to **save** ("burn") the configuration to the gateway's flash memory and then **reset** the gateway.

1. On the toolbar, from the 'Device Actions' drop-down list, choose **Reset**; the Maintenance Actions page appears.

**Figure 4-32: Maintenance Actions Page for Resetting Gateway**



2. Under the Reset Configuration group, click **Reset**. By default, the gateway burns the configuration to flash, before resetting the gateway.

## A AudioCodes INI File

This section shows the E-SBC device INI file. This file reflects the configuration described in Section 4 on page 33.

```

;*****
;** Ini File **
;*****


;Board: Mediant 1000 - MSBG
;Serial Number: 3165031
;Slot Number: 1
;Software Version: 6.40A.022.001
;DSP Software Version: 624AE3 => 640.02
;Board IP Address: 10.15.4.22
;Board Subnet Mask: 255.255.0.0
;Board Default Gateway: 10.15.0.1
;Ram size: 512M   Flash size: 64M
;Num of DSP Cores: 8  Num DSP Channels: 40
;Profile: NONE
;Key features:;Board Type: Mediant 1000 - MSBG ;Security: IPSEC
MediaEncryption StrongEncryption EncryptControlProtocol ;IP Media: Conf
;Coders: G723 G729 G728 NETCODER GSM-FR GSM-EFR AMR EVRC-QCELP G727 ILBC
EVRC-B AMR-WB G722 EG711 MS_RTA_NB MS_RTA_WB SILK_NB SILK_WB ;DATA
features: Routing FireWall&VPN WAN BGP Advanced-Routing ;DSP Voice
features: IpmDetector AMRPolicyManagement ;Channel Type: RTP DspCh=240
IPMediaDspCh=240 ;E1Trunks=4 ;T1Trunks=4 ;Control Protocols: MGCP SIP
SASurvivability SBC=60 MSFT TRANSCODING=60 ;Default features:;Coders:
G711 G726;

;----- Mediant-1000 HW components -----
;
; Slot # : Module type : # of ports : # of DSPs
;-----
;      1 : FALC56      :          1 :          2
;      2 : Empty
;      3 : Empty
;      4 : Empty
;      5 : Empty
;      6 : Empty
;-----


[ SYSTEM Params ]

SyslogServerIP = 10.15.2.8
EnableSyslog = 1
NTPServerIP = 10.15.9.10
NTPServerUTCOffset = 7200
PM_VEDSPUtil = '1,43,48,15'

```

[BSP Params]

```
PCMLawSelect = 3
RoutingTableDestinationsColumn = 10.13.0.0
RoutingTableDestinationPrefixLensColumn = 16
RoutingTableGatewaysColumn = 10.15.0.1
WanInterfaceName = 'GigabitEthernet 0/0'
```

ControlProtocols Params]

```
AdminStateLockControl = 0
```

[Voice Engine Params]

```
ENABLEMEDIASECURITY = 1
SRPTPTxPacketMKISize = 1
```

[WEB Params]

```
LogoWidth = '145'
HTTPSCipherString = 'RC4:EXP'
```

[SIP Params]

```
MEDIACHANNELS = 120
GWDEBUGLEVEL = 5
SIPGATEWAYNAME = 'pureip.lync.local'
MEDIASECURITYBEHAVIOUR = 3
ENABLESBCAPPLICATION = 1
FAKERETRYAFTER = 60
SBCREFERBEHAVIOR = 1
ENABLEREKEYAFTER181 = 1
ENABLESYMMETRICMKI = 1
SBCFORKINGHANDLINGMODE = 1
```

[ ProxyIp ]

```
FORMAT ProxyIp_Index = ProxyIp_IpAddress, ProxyIp_TransportType,
ProxyIp_ProxySetId;
ProxyIp 0 = 10.15.9.11:5067, 2, 1;
ProxyIp 1 = 83.245.1.159:5060, 1, 2;
```

[ \ProxyIp ]

[ ProxySet ]

```

FORMAT ProxySet_Index = ProxySet_EnableProxyKeepAlive,
ProxySet_ProxyKeepAliveTime, ProxySet_ProxyLoadBalancingMethod,
ProxySet_IsProxyHotSwap, ProxySet_SRD, ProxySet_ClassificationInput,
ProxySet_ProxyRedundancyMode;
ProxySet 0 = 0, 60, 0, 0, 0, 0, -1;
ProxySet 1 = 1, 60, 0, 0, 1, 0, -1;
ProxySet 2 = 1, 60, 0, 0, 2, 0, -1;

[ \ProxySet ]

[ IPGroup ]

FORMAT IPGroup_Index = IPGroup_Type, IPGroup_Description,
IPGroup_ProxySetId, IPGroup_SIPGroupName, IPGroup_ContactUser,
IPGroup_EnableSurvivability, IPGroup_ServingIPGroup,
IPGroup_SipReRoutingMode, IPGroup_AlwaysUseRouteTable,
IPGroup_RoutingMode, IPGroup_SRD, IPGroup_MediaRealm,
IPGroup_ClassifyByProxySet, IPGroup_ProfileId, IPGroup_MaxNumOfRegUsers,
IPGroup_InboundManSet, IPGroup_OutboundManSet, IPGroup_RegistrationMode,
IPGroup_AuthenticationMode, IPGroup_MethodList,
IPGroup_EnableSBCClientForking, IPGroup_ContactName;
IPGroup 1 = 0, Lync, 1, pureip.lync.local, , 0, -1, 0, 0, -1, 1,
MediaLan, 1, 0, -1, -1, 0, 0, , 0, ;
IPGroup 2 = 0, PureIP, 2, pureip.lync.local, , 0, -1, 0, 0, -1, 2,
MediaWan, 1, 0, -1, -1, 0, 0, , 0, ;

[ \IPGroup ]

[ SRD ]

FORMAT SRD_Index = SRD_Name, SRD_MediaRealm, SRD_IntraSRDMediaAnchoring,
SRD_BlockUnRegUsers, SRD_MaxNumOfRegUsers,
SRD_EnableUnAuthenticatedRegistrations;
SRD 1 = LanSRD, MediaLan, 0, 0, -1, 1;
SRD 2 = WanSRD, MediaWan, 0, 0, -1, 1;

[ \SRD ]

[ IP2IPRouting ]

FORMAT IP2IPRouting_Index = IP2IPRouting_SrcIPGroupID,
IP2IPRouting_SrcUsernamePrefix, IP2IPRouting_SrcHost,
IP2IPRouting_DestUsernamePrefix, IP2IPRouting_DestHost,
IP2IPRouting_RequestType, IP2IPRouting_MessageCondition,
IP2IPRouting_DestType, IP2IPRouting_DestIPGroupID,
IP2IPRouting_DestSRDID, IP2IPRouting_DestAddress, IP2IPRouting_DestPort,
IP2IPRouting_DestTransportType, IP2IPRouting_AltRouteOptions,
IP2IPRouting_CostGroup;
IP2IPRouting 1 = 1, *, *, *, *, 0, , 0, 2, , , 0, -1, 0, ;

```

```
IP2IPRouting 2 = 2, *, *, *, *, 0, , 0, 1, , , 0, -1, 0, ;  
[ \IP2IPRouting ]  
  
[ SIPInterface ]  
  
FORMAT SIPInterface_Index = SIPInterface_NetworkInterface,  
SIPInterface_ApplicationType, SIPInterface_UDPPort, SIPInterface_TCPPort,  
SIPInterface_TLSPort, SIPInterface_SRD, SIPInterface_MessagePolicy;  
SIPInterface 0 = Voice, 2, 5067, 5068, 5067, 1, ;  
SIPInterface 1 = WAN, 2, 5062, 5060, 5061, 2, ;  
  
[ \SIPInterface ]  
  
[ CodersGroup0 ]  
  
FORMAT CodersGroup0_Index = CodersGroup0_Name, CodersGroup0_pTime,  
CodersGroup0_rate, CodersGroup0_PayloadType, CodersGroup0_Sce;  
CodersGroup0 0 = g711Alaw64k, 20, 0, -1, 0;  
CodersGroup0 1 = g711Ulaw64k, 20, 0, -1, 0;  
  
[ \CodersGroup0 ]  
  
[ RoutingRuleGroups ]  
  
FORMAT RoutingRuleGroups_Index = RoutingRuleGroups_LCREnable,  
RoutingRuleGroups_LCRAverageCallLength, RoutingRuleGroups_LCRDefaultCost;  
RoutingRuleGroups 0 = 0, 0, 1;  
  
[ \RoutingRuleGroups ]  
  
[ InterfaceTable ]  
  
FORMAT InterfaceTable_Index = InterfaceTable_ApplicationTypes,  
InterfaceTable_InterfaceMode, InterfaceTable_IPAddress,  
InterfaceTable_PrefixLength, InterfaceTable_Gateway,  
InterfaceTable_VlanID, InterfaceTable_InterfaceName,  
InterfaceTable_PrimaryDNSServerIPAddress,  
InterfaceTable_SecondaryDNSServerIPAddress,  
InterfaceTable_UnderlyingInterface;  
InterfaceTable 0 = 6, 10, 10.15.4.22, 16, 10.15.0.1, 1, Voice,  
10.15.9.10, , ;  
  
[ \InterfaceTable ]  
  
[ CpMediaRealm ]
```

```
FORMAT CpMediaRealm_Index = CpMediaRealm_MediaRealmName,
CpMediaRealm_IPv4IF, CpMediaRealm_IPv6IF, CpMediaRealm_PortRangeStart,
CpMediaRealm_MediaSessionLeg, CpMediaRealm_PortRangeEnd,
CpMediaRealm_TransRateRatio, CpMediaRealm_IsDefault;
CpMediaRealm 1 = MediaLan, Voice, , 7000, 20, 7190, 0, 1;
CpMediaRealm 2 = MediaWan, WAN, , 7500, 20, 7690, 0, 0;

[ \CpMediaRealm ]
```



## Configuration Note