CCS-UC-1

Crestron Mercury™ Tabletop Conference System with Microsoft® Skype® for Business

Configuration Guide

Crestron Electronics, Inc.

This document was written by the Technical Publications department at Crestron.

Contents

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Introduction

This configuration guide describes the necessary procedure to configure the Crestron Mercury™ devices to register to Microsoft® Skype® for Business (SfB) as a basic SIP endpoint.

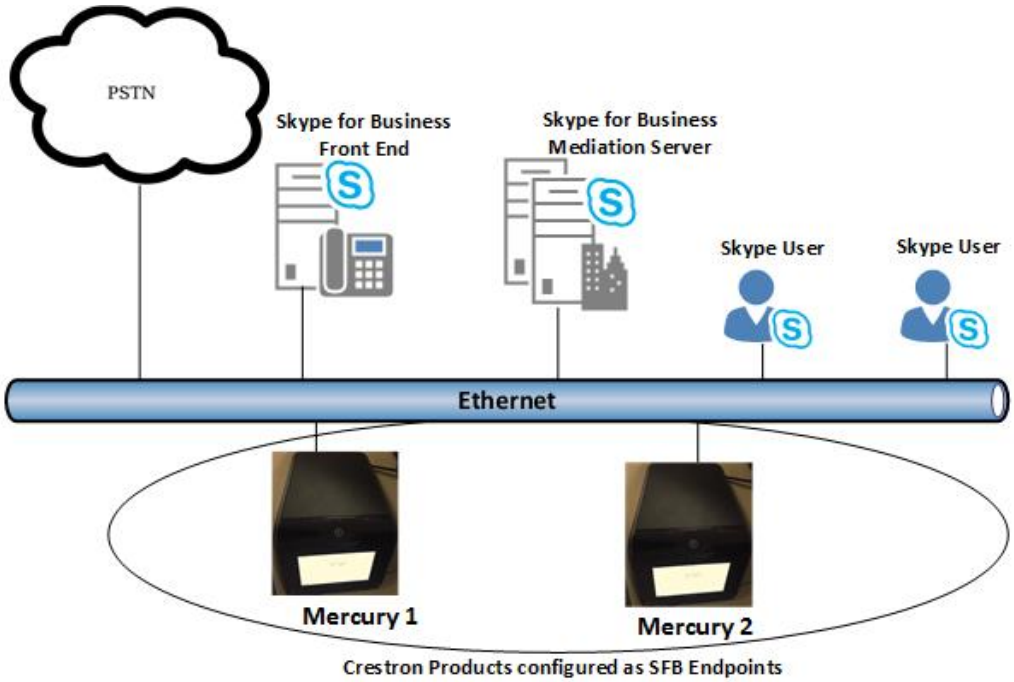
Audience

This document is intended for users attempting to configure and use the Crestron Mercury devices as SIP Endpoints registering to SfB.

Topology

The network topology for the Crestron Mercury endpoint to interop with SfB is as shown below.

SIP Endpoint Integration with SfB - Reference Network



The lab network consists of the following components:

- SfB cluster for voice features
- Skype desktop clients
- Crestron Mercury as the SfB Endpoints

Software Requirements

- Skype for Business 6.0.9319.259
- Mercury devices v 1.3553.14230.002

Hardware Requirements

- Windows Server with SfB
- Cisco 3845 as PSTN Gateway
- SfB desktop client 15.0.4885.1000
- Crestron Mercury devices (2)

Product Description

The Crestron Mercury device is a complete solution for conference rooms. It acts as an all-in-one touch screen, speakerphone, and AirMedia® product for conference rooms that provide microphones and speakers integrated into the user interface at the table.

Crestron Toolbox™ software is used to discover and control all Crestron devices on the network.

The Crestron Mercury web interface is used to control the Crestron Mercury devices on the network.

Summary

The Crestron Mercury devices were configured on SfB as SIP endpoints. The devices successfully registered to SfB with digest authentication.

With critical failures on basic calls originating from Mercury, this topology is recommended for field deployments.

Features Supported

- Registration with digest authentication
- Basic calls with G711u and G711a codecs
- Caller ID
- DTMF support
- Early media support
- Retrieval of a parked call
- Conference participant
- Call hold and resume
- Call waiting

Features Not Supported

- Caller ID presentation with name and number display
- Call forwarding on the device
- Conference
- Initiating attended call transfer
- Initiating semi-attended call transfer
- Initiating Blind Call Transfer
- Configuration of Shared Line on device
- Initiating Call Park

Known Issues and Limitations

- The Crestron Mercury device fails to register with SfB when the internal server or external server is configured on the device.
- The Crestron Mercury device handles a transfer with two-way audio, but after the transfer is complete, it drops the call.
- An attempt to add a PBX endpoint to a conference when the Crestron Mercury device is already in a call with PSTN fails with an error informing that the PBX endpoint is either unavailable or offline.
- The Crestron Mercury device does not play appropriate tones when it receives an error code.
- The Crestron Mercury device is able to retrieve the call parked by the Skype desktop client and there is two-way audio. However, after retrieving the parked call, the call control options disappear from the Crestron Mercury device's display.
- A hunt group call fails when the Crestron Mercury device answers the call (the hunt group call succeeds when the SfB desktop client answers).
- No music on hold is heard on the PBX endpoint when the Crestron Mercury device places the call on hold.
- The Crestron Mercury device handles call waiting, but it does not provide an option to put the current call on hold to answer a second incoming call. The Crestron Mercury device has to hang-up the ongoing first call to answer the second call, or it can reject the incoming second call.
- When media bypass is enabled on the PBX, media is not being anchored on the Crestron Mercury device. Instead, the mediation server anchors the media.

Crestron Mercury Configuration

Setup

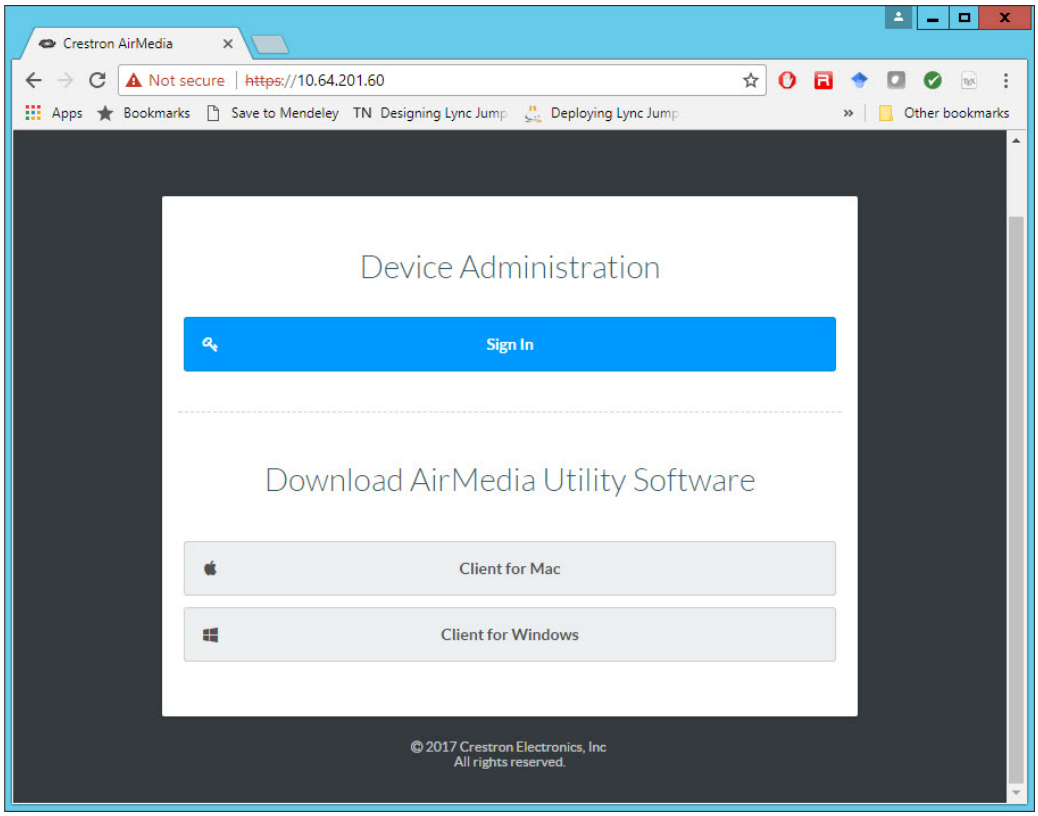
The LAN port of the Crestron Mercury device needs to be connected to one POE+ port to power it up and be connected to the network for reachability to SfB. The PoE+ switch that is used should have the LLDP functionality enabled for the device to power up and be completely functional. By default, the “poeplus” configuration is set to Off on the device.

Configure the Device

To configure the Crestron Mercury device, follow this procedure:

1. Access the web GUI for the device by using an http session with the device’s IP address. The device IP address used in this example was 10.64.201.60

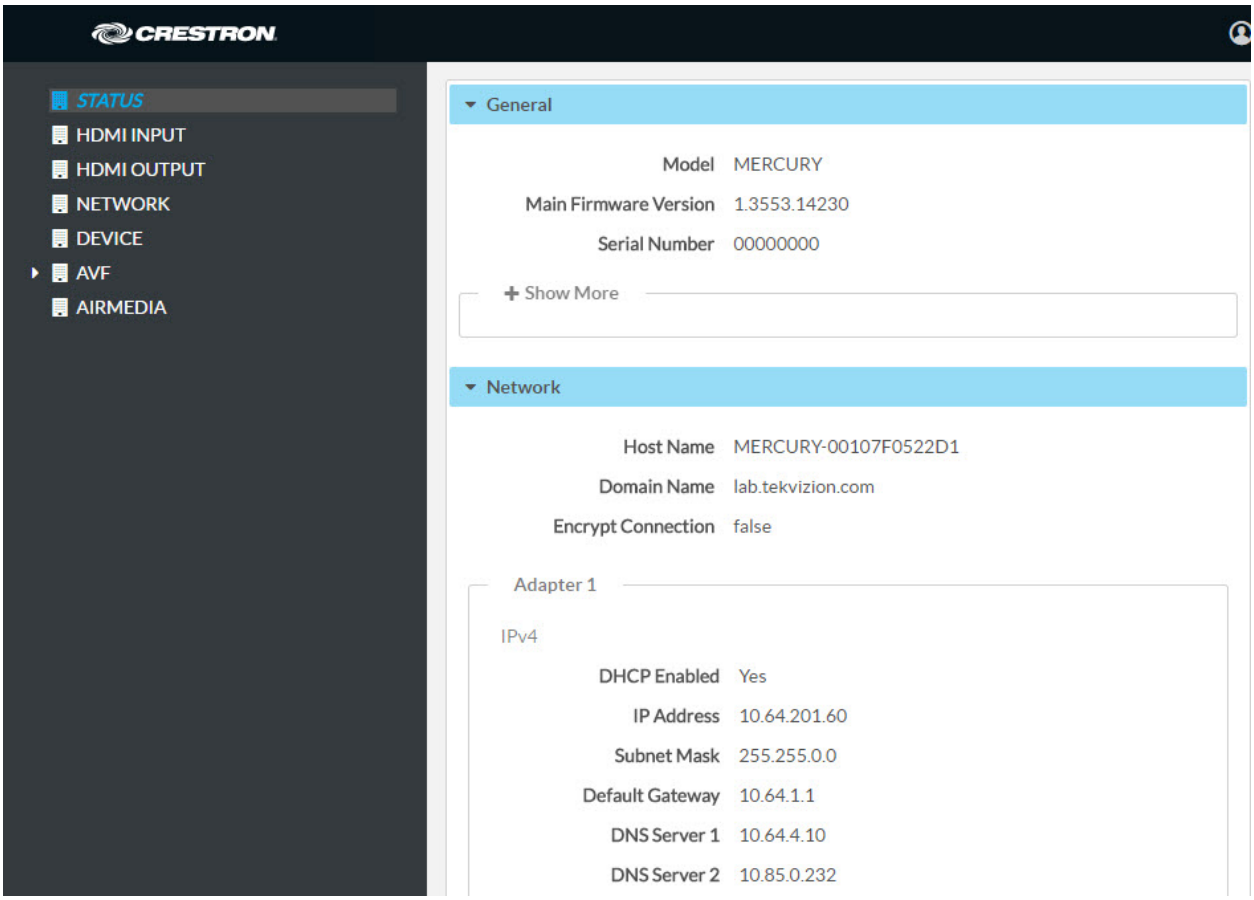
Crestron Mercury: Login to Web GUI



2. Click **Sign In and** log in to the device. For information on device administration, refer to the CCS-UC-1 Supplemental Guide (Doc. 7844) at www.crestron.com/manuals.

The Status screen that appears displays basic information on the device.

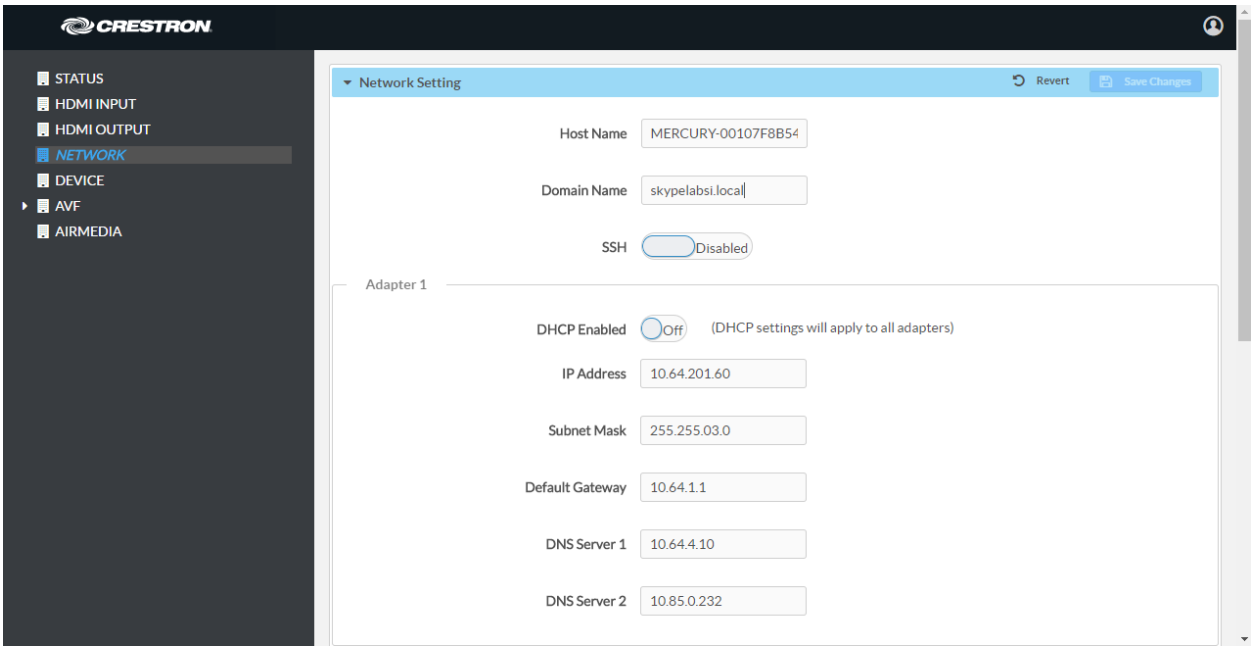
Crestron Mercury: Status



The device can be configured from the **Network** page.

3. On the web GUI, navigate to **Network**.

Crestron Mercury Configuration: Network Setting: DHCP Off: Static IP Configured



4. Enter the following parameters in the **Adapter 1** section to configure the Crestron Mercury device.
   - **Domain Name**: *skypelabsj.local* was used in this example
   - **DHCP Enabled**: Choose either of the following:
     - Obtain an IP address automatically (**On**)
     - Use the following IP address (**Off**)

       For the example, a dynamic IP was configured.

       NOTE: The DNS Server 1 entry should be the DNS server where all the SfB and Crestron Mercury A & SRV records are configured. In this example, the DNS server on the domain controller is used: *10.64.1.3* was used in this example.
5. Click **Save Changes**.

Configure the SfB Parameters

To configure the SfB parameters, follow this procedure:

1. On the web GUI, navigate to **Device** > **SIP Calling**.
2. Set **Enable SIP** to **Off**, and click **Save Changes**.
3. On the web GUI, navigate to **Device** > **Skype for Business**.
4. Set **Enable** to **Enabled**.
5. Configure the **Username**: Enter the SIP URI of the Skype for Business user.
6. Configure the **Password**: Enter the password of the SFB user.

7. Configure the **SIP Address:** Enter the SIP URI of the Skype for Business user.
8. Click **Save Changes**.

When SfB is enabled, the Crestron Mercury device displays a Skype logo on its **Make a Call** screen. The logo is greyed out until the device registers with SfB.

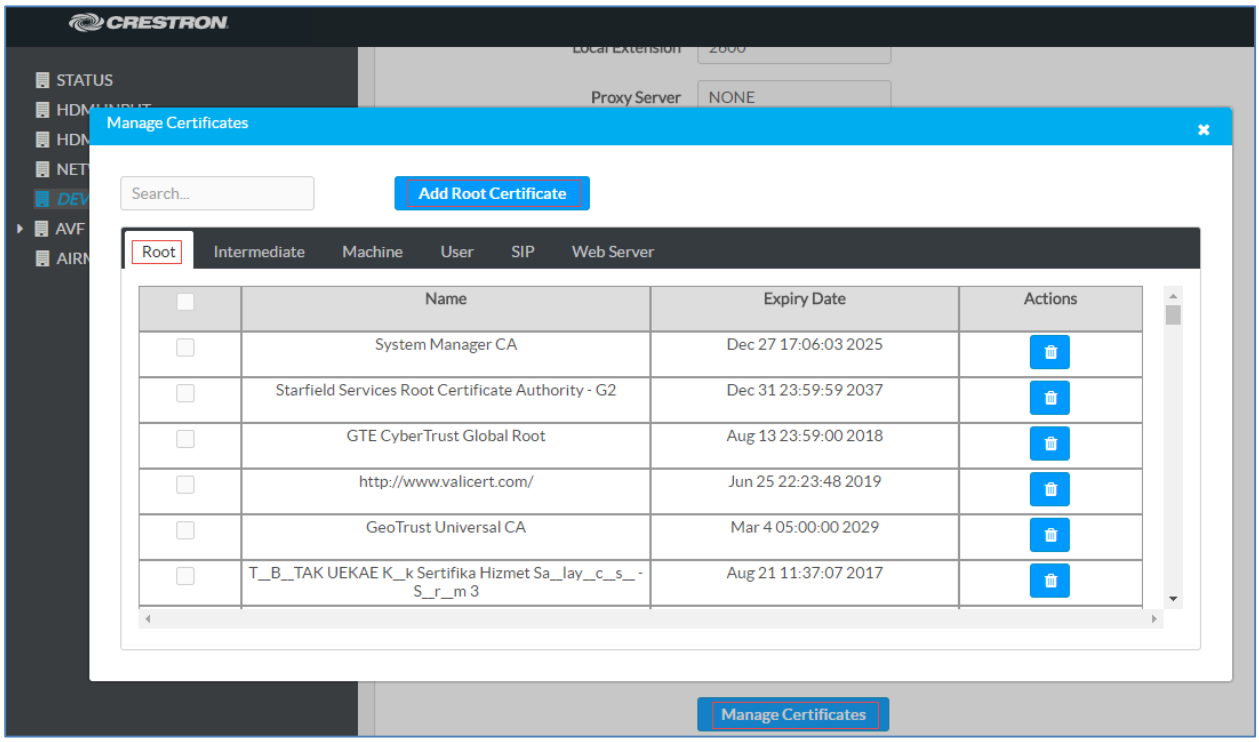
Add Certificates

For a successful TLS handshake between the Crestron Mercury device and SfB, a root certificate needs to be added to the Crestron Mercury device. This can be downloaded from the certificate authority that serves SfB.

To upload certificates to the Crestron Mercury device, follow this procedure:

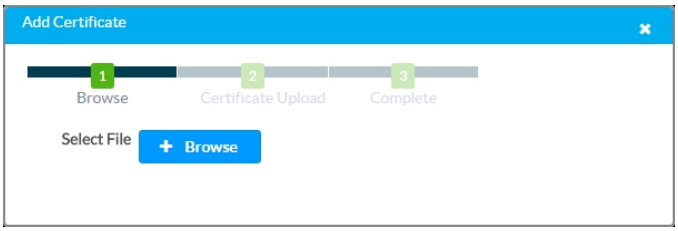
1. Navigate to **Device** > **Skype for Business**.
2. Click **Manage Certificates**.

Mercury: UI: Manage Certificates Screen: Add Root Certificate



3. Click **Add Root Certificate**. The **Add Certificate** screen is displayed.
   a. Click  to delete a certificate from the list of certificates.
   b. Click **Add Root Certificate**. The Add Certificate screen is displayed.

Add Certificate Screen



c. Click **Browse**, select the root_cer.cer file to be loaded, and click **Open**.

d. Click **Load** to upload the certificate to the CCS-UC-1. A message confirming the upload is displayed.

e. Click **OK** to close the **Add Certificate** screen. The certificate authority from where the root-cer certificate was downloaded appears in the list of trusted certificate authorities.

f. Navigate to **SIP Calling** > **Select Trusted Certificate Authorities** and select the certificate authority (from where the root_cer.cer certificate was downloaded) from the list of certificate authorities.

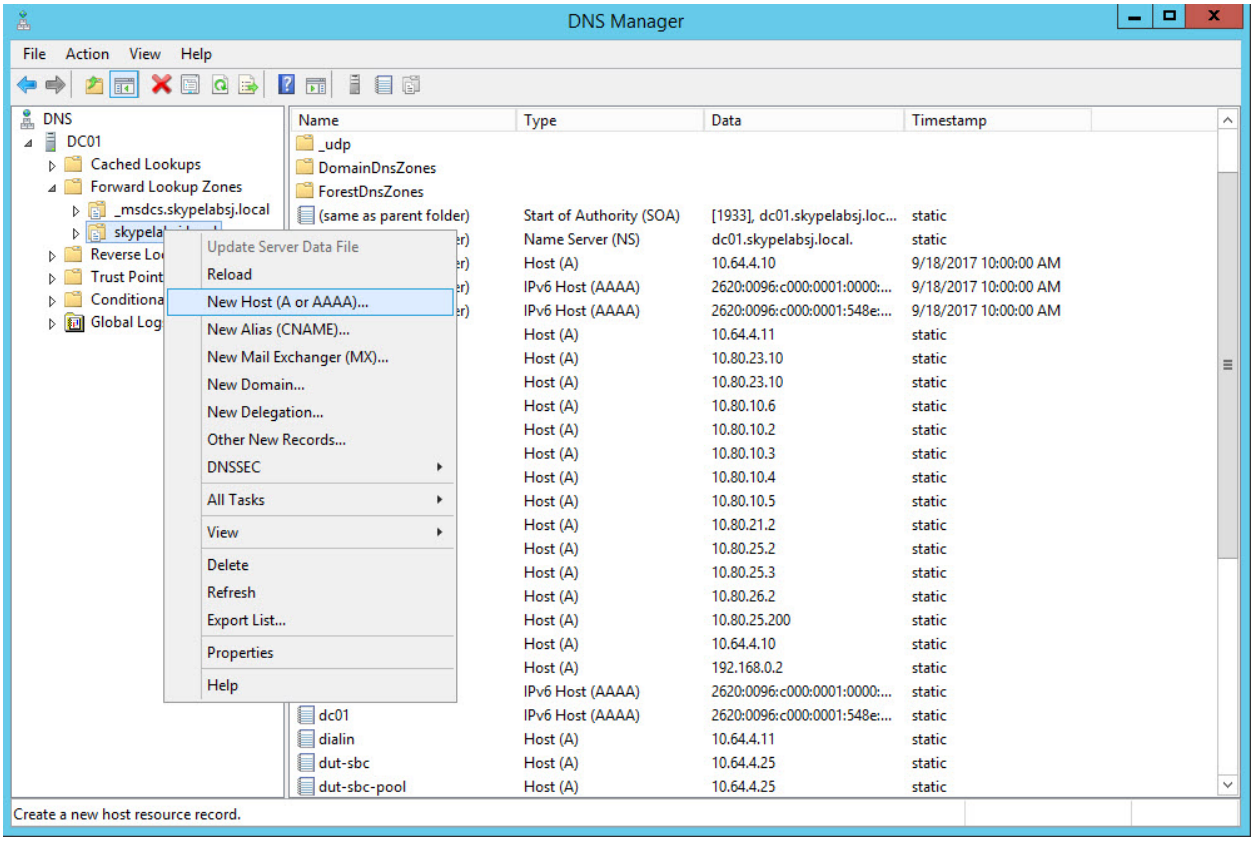
Skype for Business Configuration

This section describes the SFB configuration necessary to integrate the Crestron device as a SFB Endpoint. It is assumed that the general installation and basic SFB configuration has already been administered.

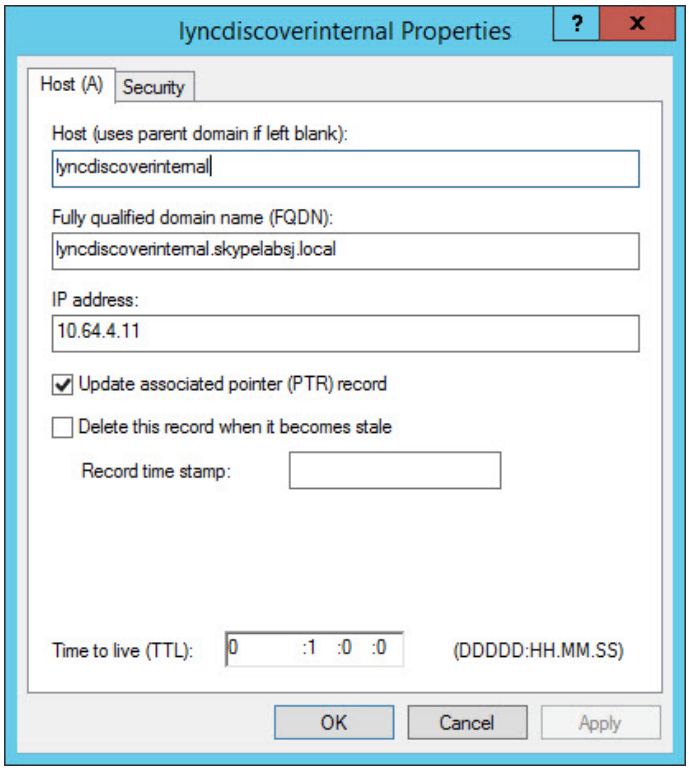
Configure Host A Record

Configure an A record in the DNS server for “lyncdiscoverinternal.<domain>.com” that points to the front end server’s IP Address.

Configure Host A Record



Lyncdiscoverinternal Properties Window

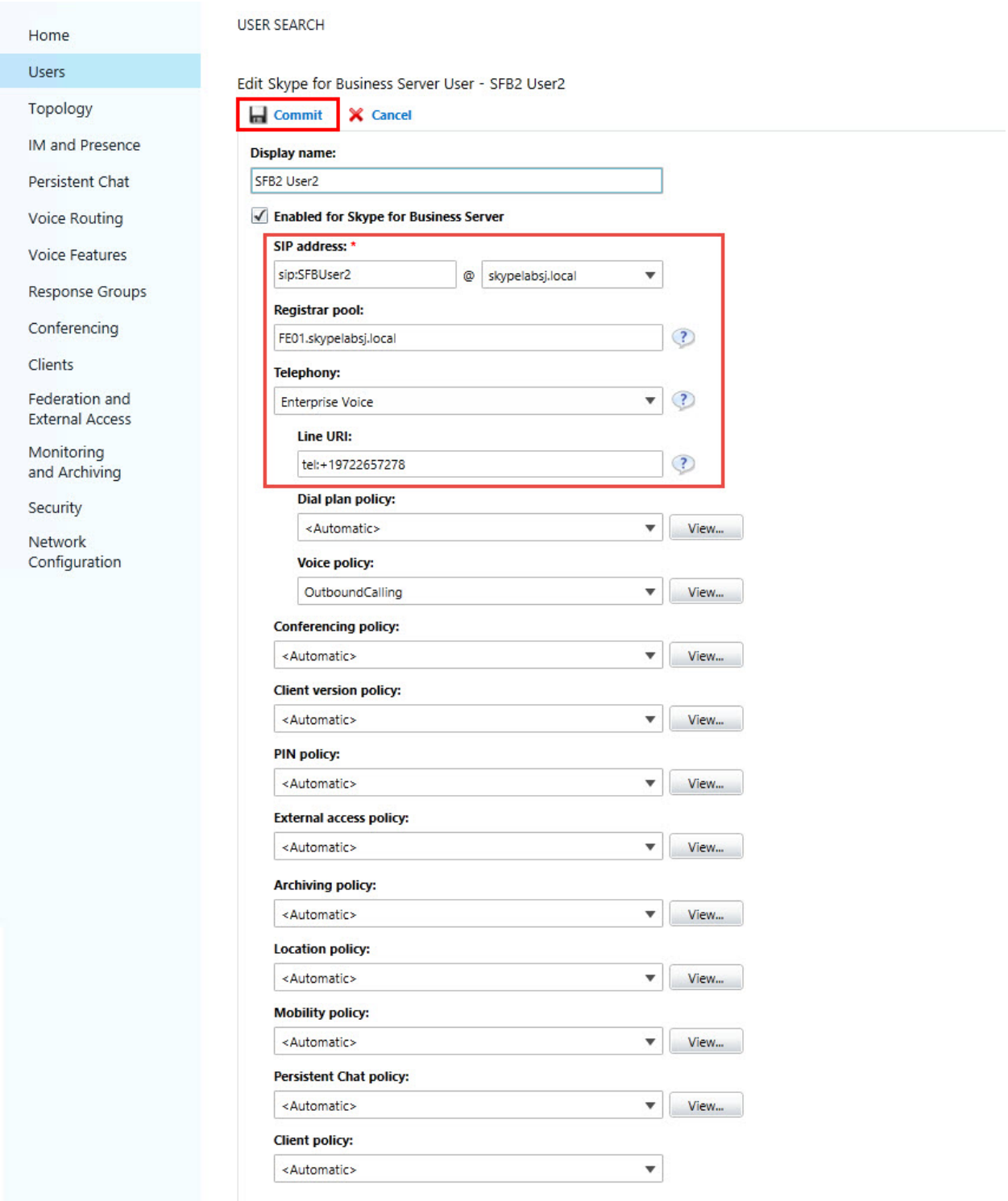


Configure a Crestron Mercury SfB User

Configure a user in the SfB Control Panel.

NOTE: A user has to be configured in the Active Directory prior to this configuration.

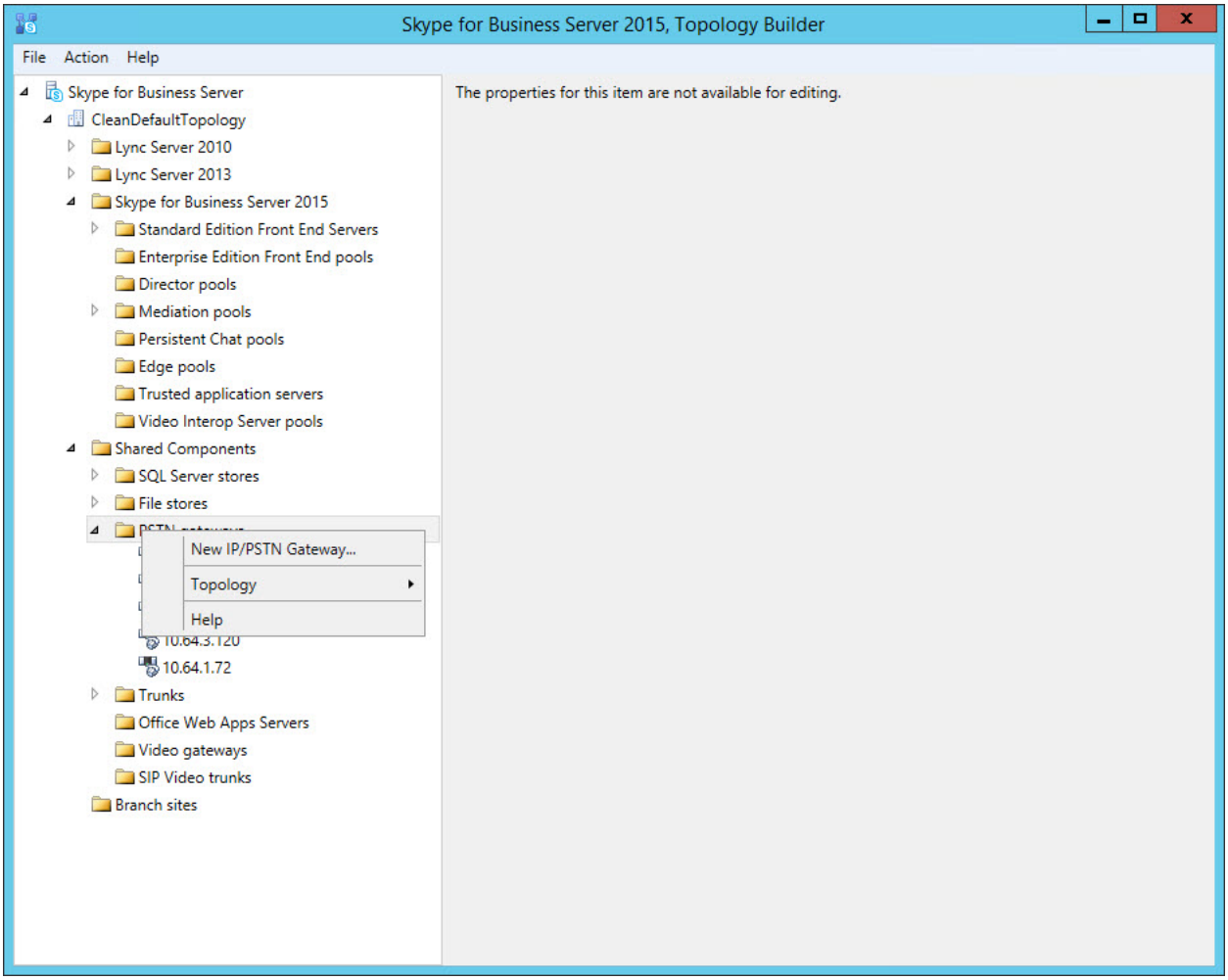
Skype for Business, User Configuration



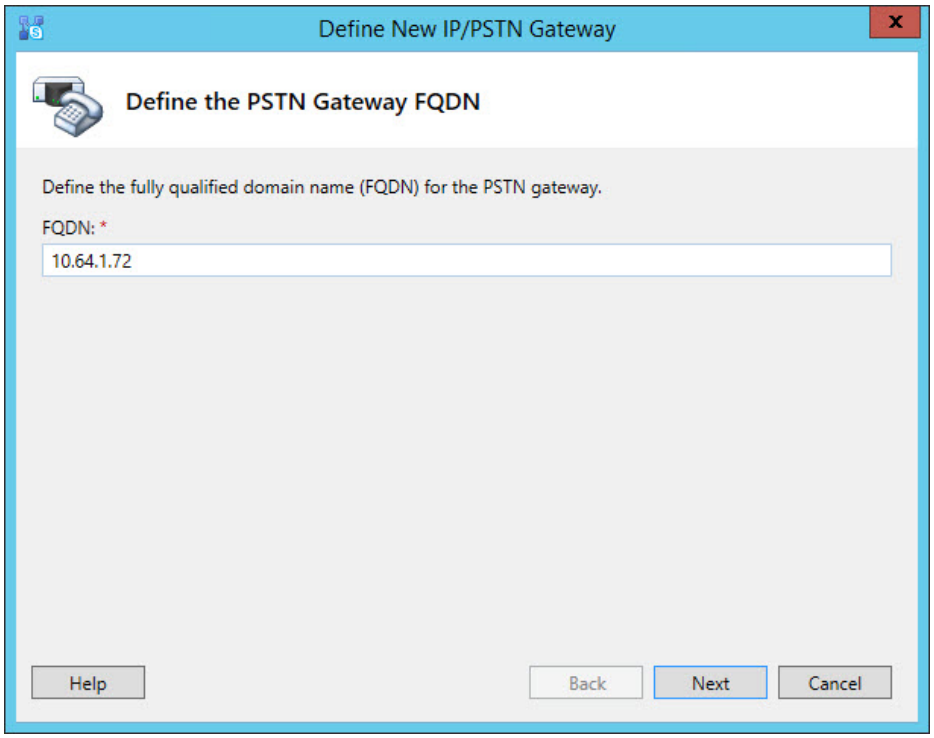
Configure the PSTN Gateway

Configure a PSTN Gateway on Skype for Business for PSTN calls.

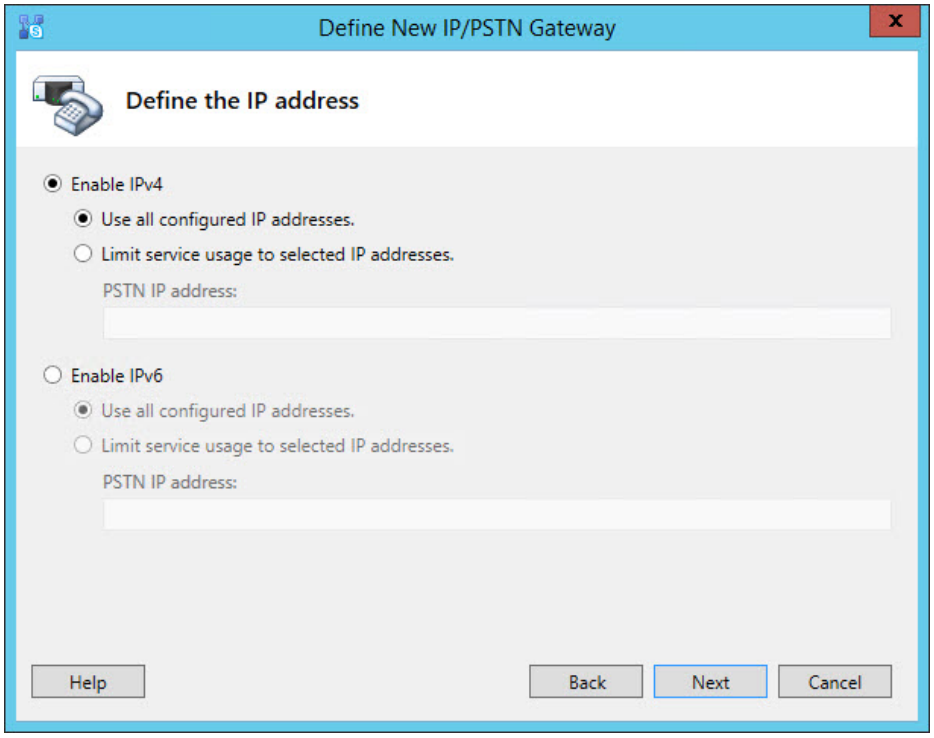
Skype for Business Server 2015, Topology Builder



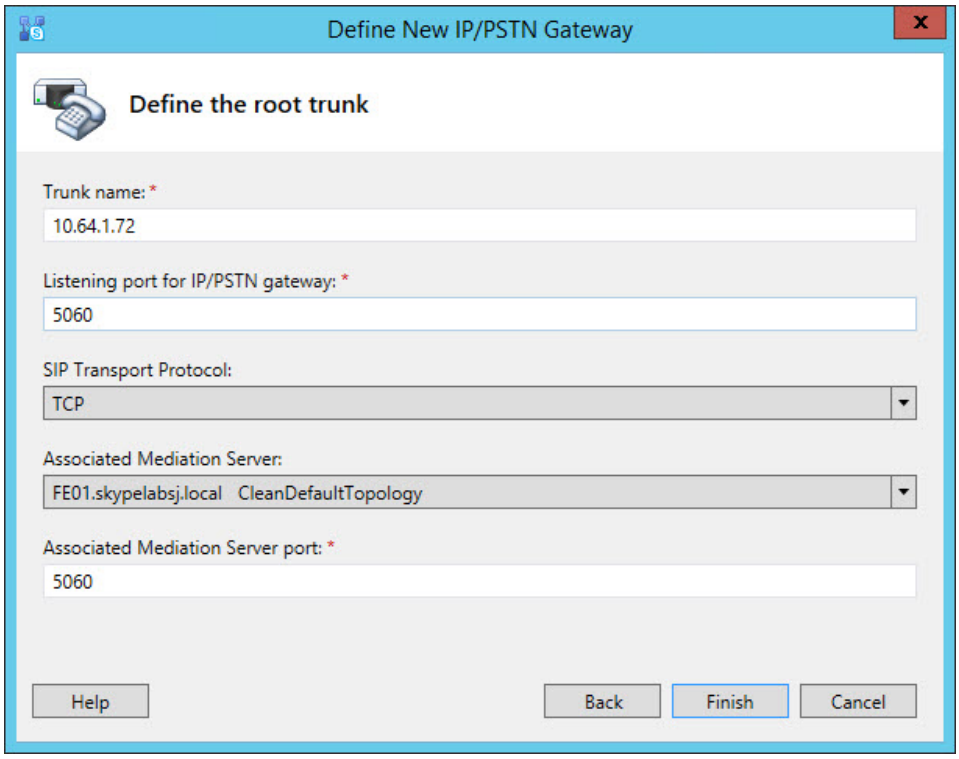
Define New IP/PSTN Gateway, Define the PSTN Gateway FQDN



Define New IP/PSTN Gateway, Define the IP Address



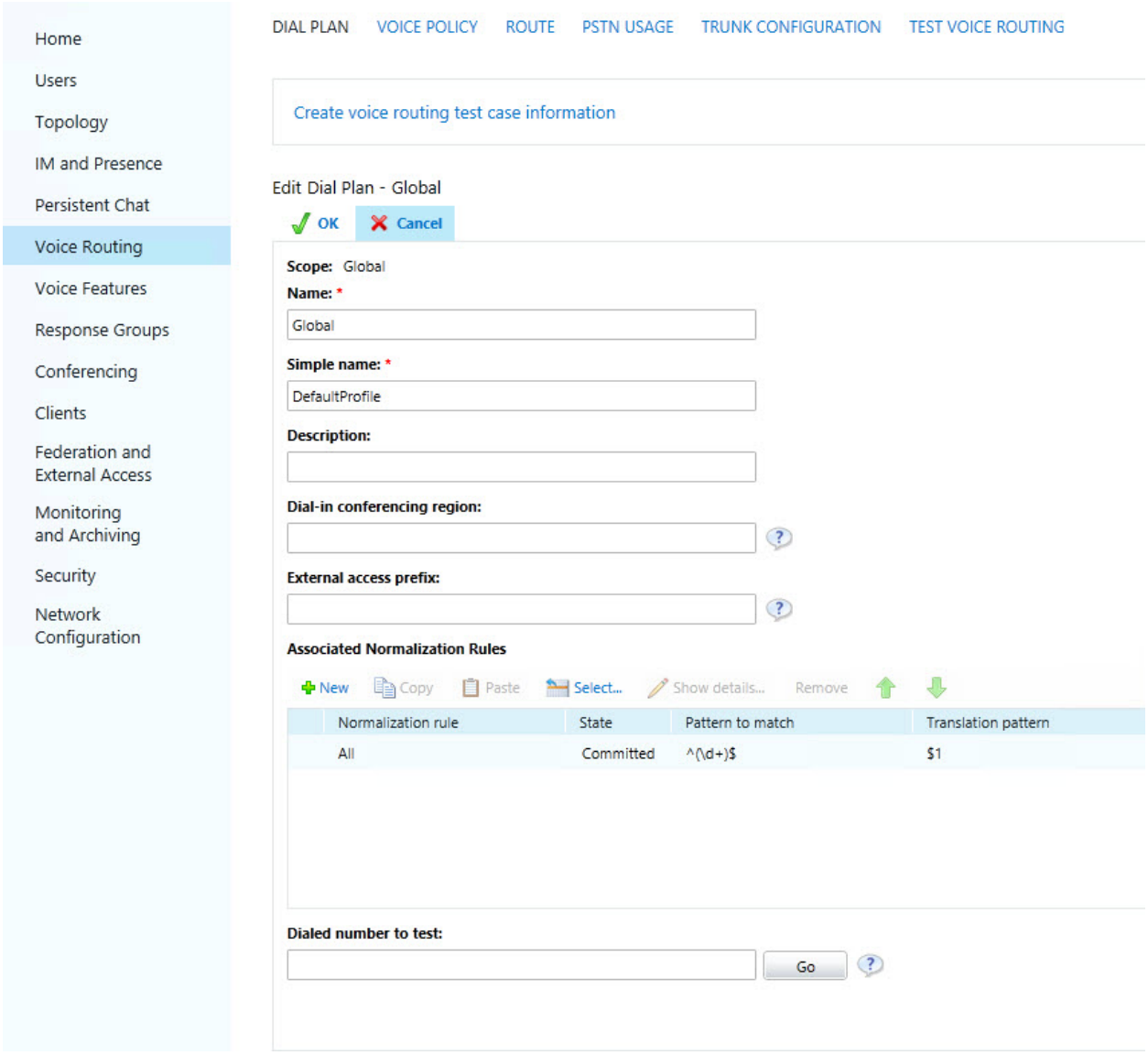
Define New IP/PSTN Gateway, Define the Root Trunk



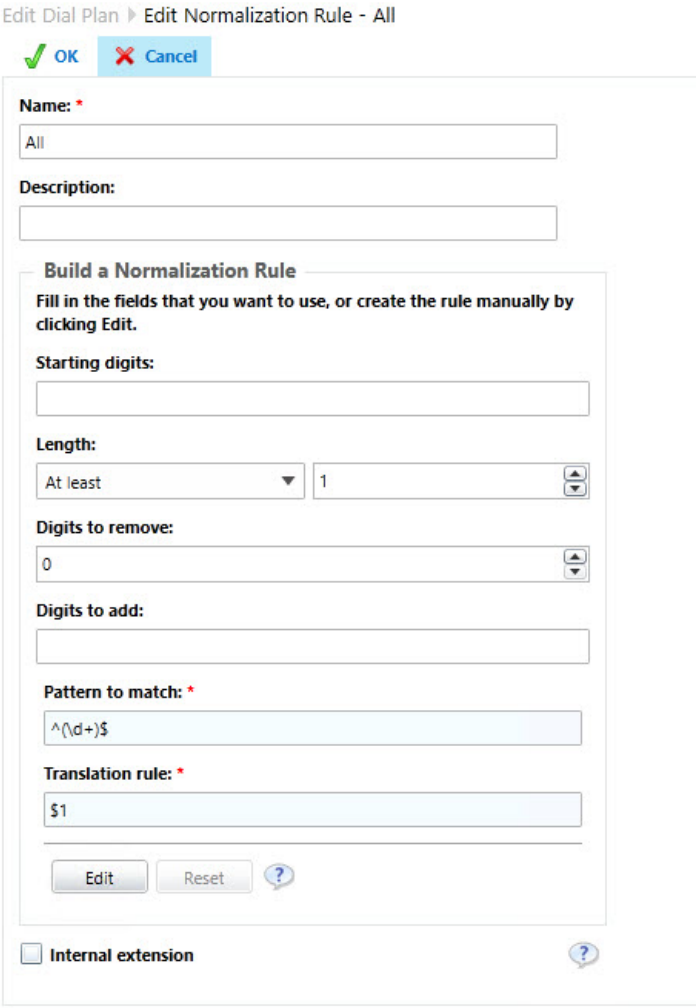
Configure the Dial Plan

Configure dial plan and normalization rules for number translation.

Skype for Business, Voice Routing, Dial Plan Configuration



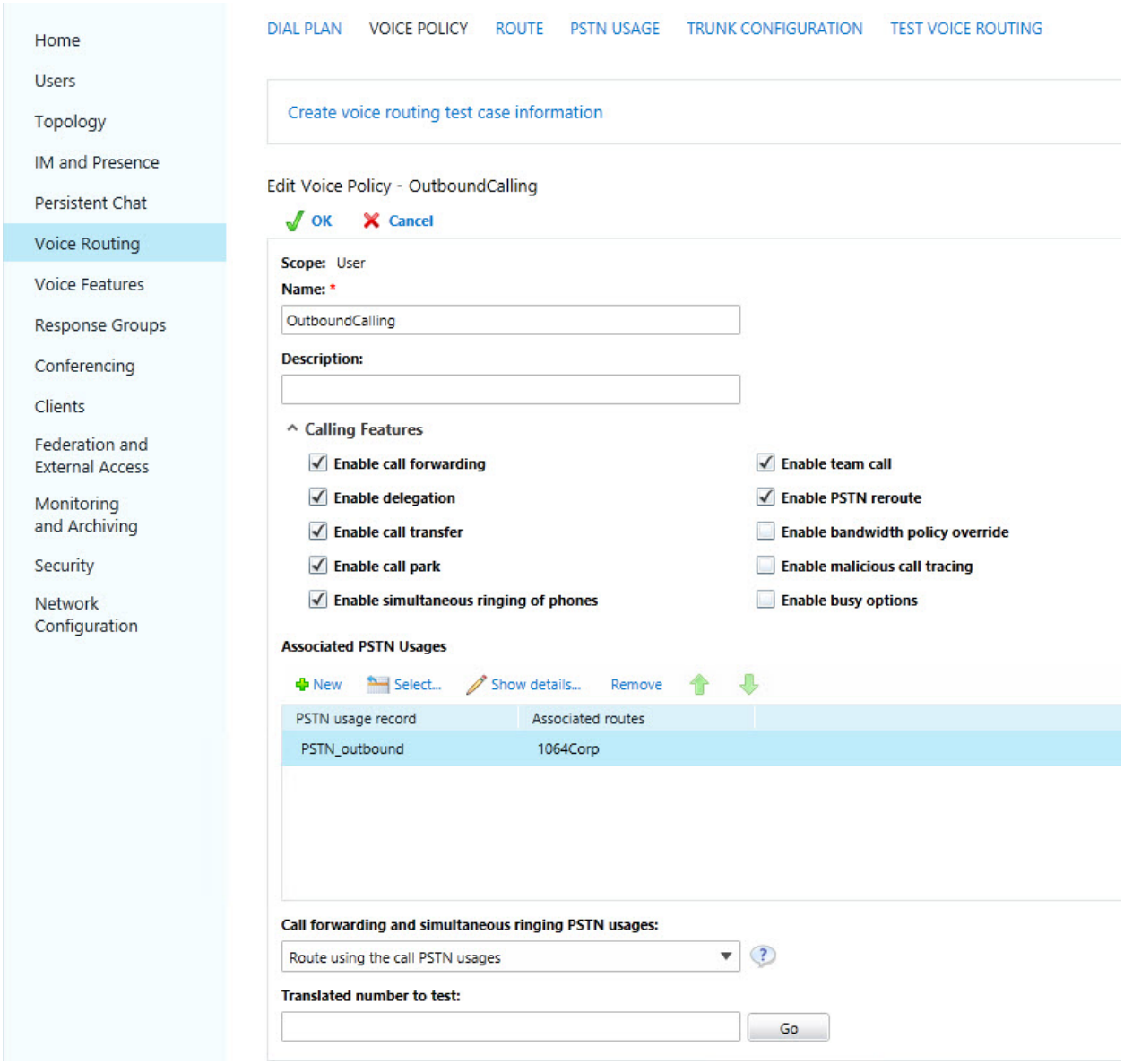
Dial Plan Configuration, Edit Normalization Rule



Configure Voice Policy

Configure voice policy with required calling features. This voice policy has to be assigned to the user manually if it is a user scoped voice policy.

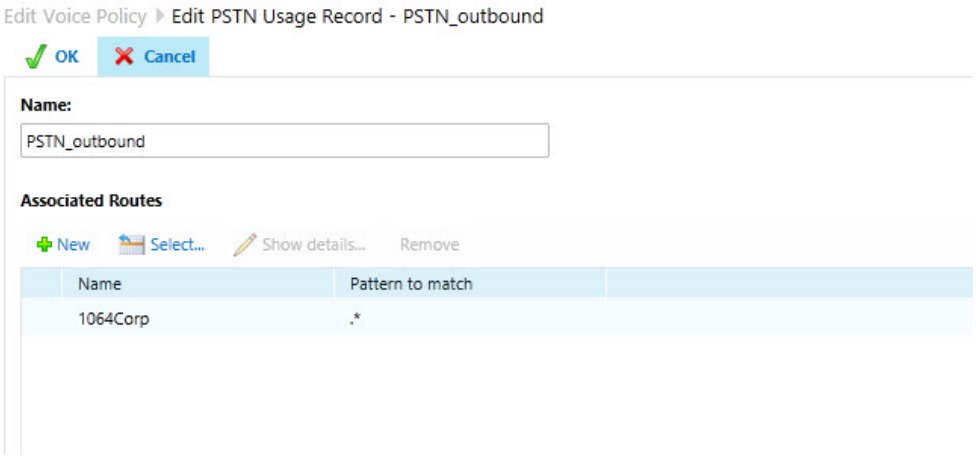
Skype for Business, Voice Routing, Voice Policy Configuration



Configure PSTN Usage

A PSTN usage is configured to the above voice policy. This configuration dictates if a user can have access to outbound PSTN calls.

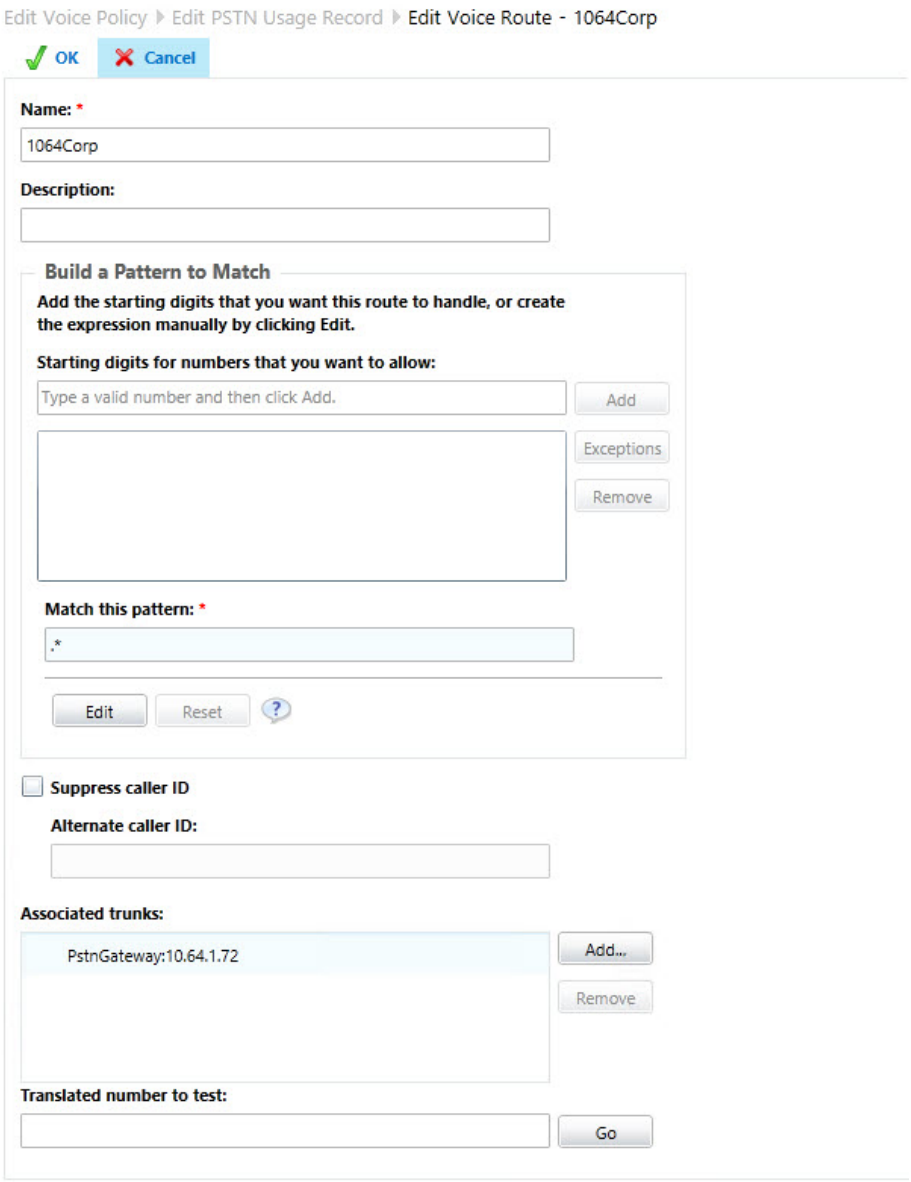
Configure a PSTN Usage



Configure a Route

A route is configured for the above configured PSTN usage. This route configuration is associated with the PSTN trunks and number patterns to allow. The below example allows all numbers on the associated trunk.

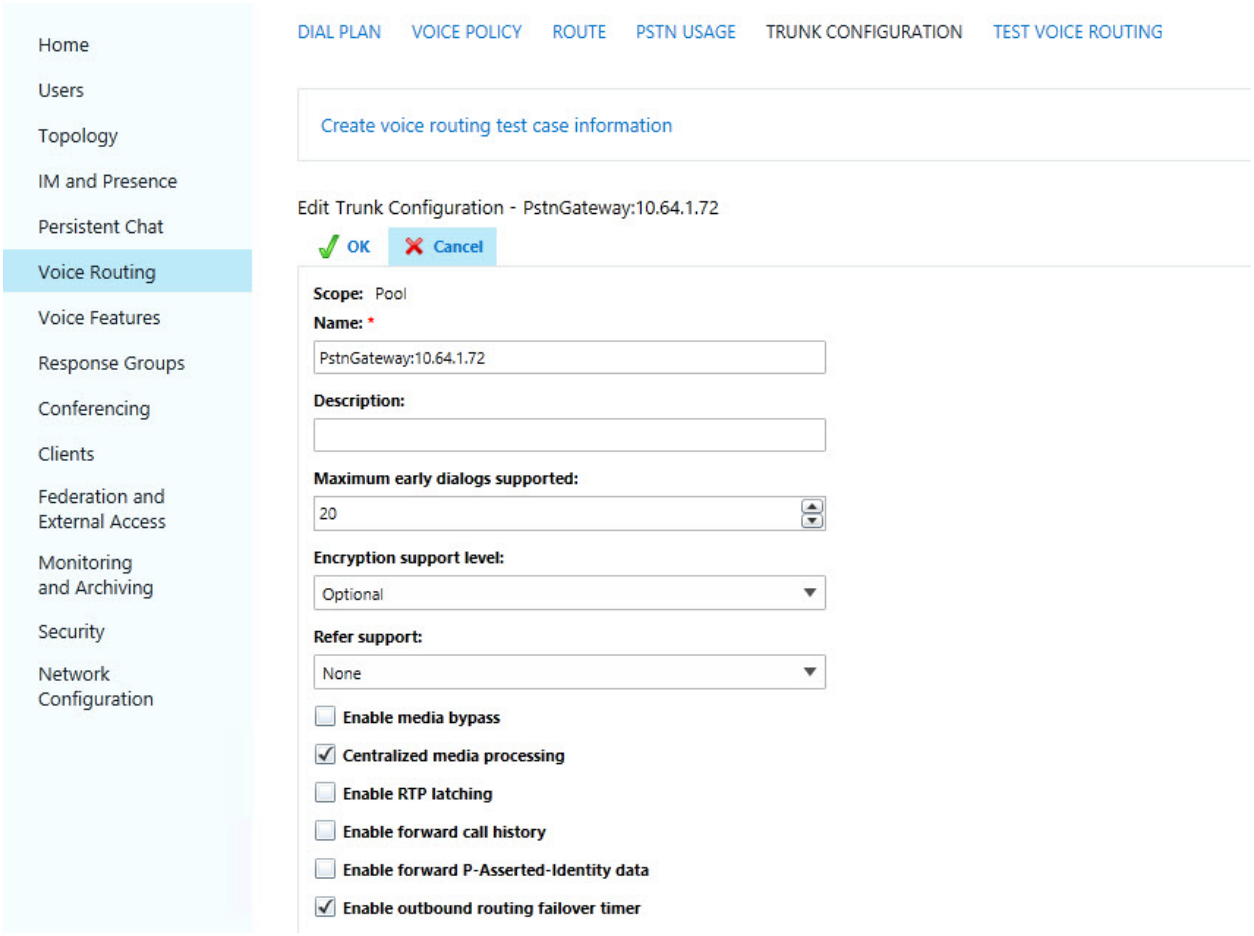
Configure Voice Route



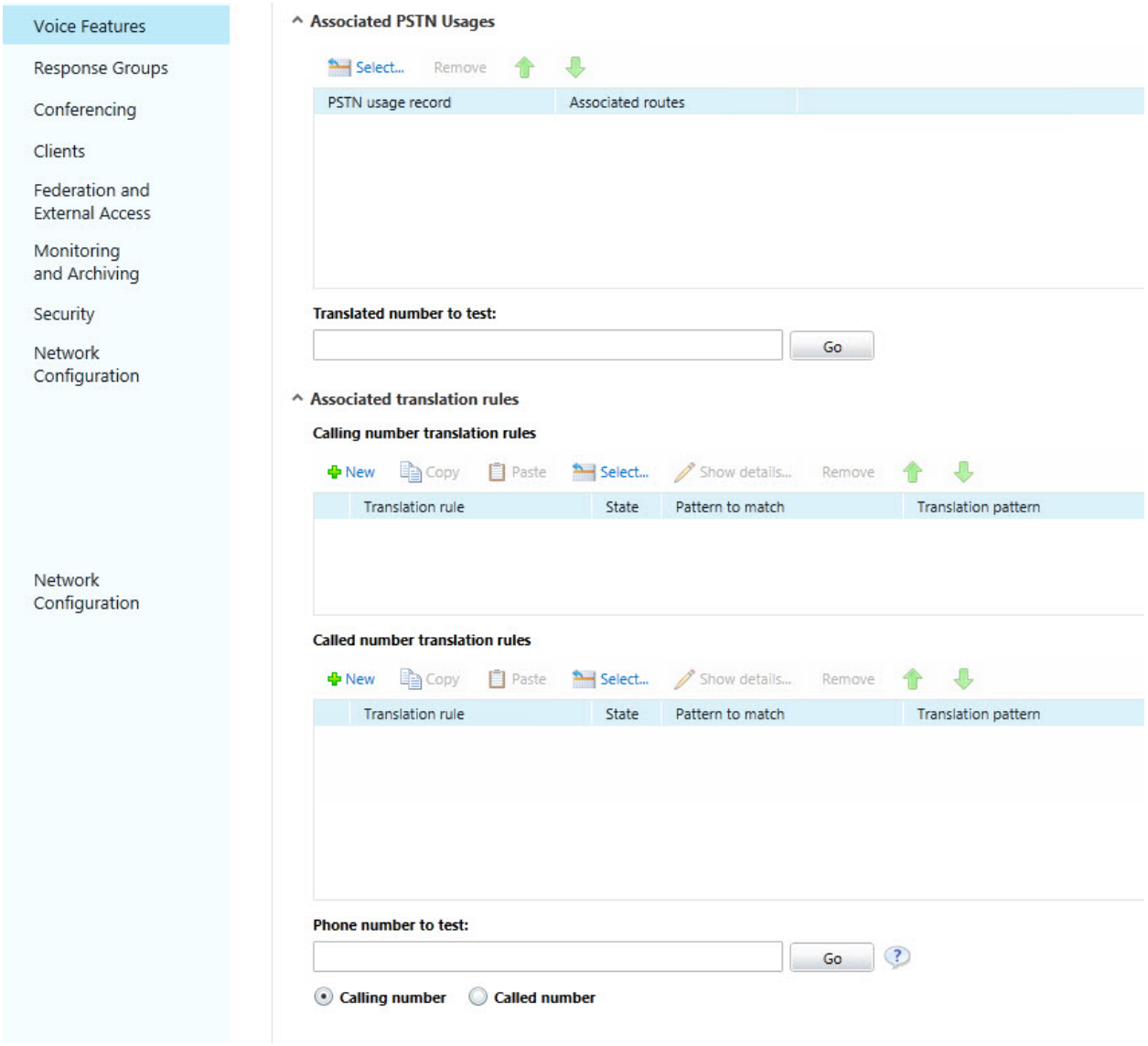
Configure a Trunk

Configure the trunk to PSTN gateway. In this configuration REFER is turned off and media bypass is disabled.

Skype for Business, Voice Routing, Trunk Configuration



Trunk Configuration, Details



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Configuration Guide – DOC. 8256A
(2050540)
12.17
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