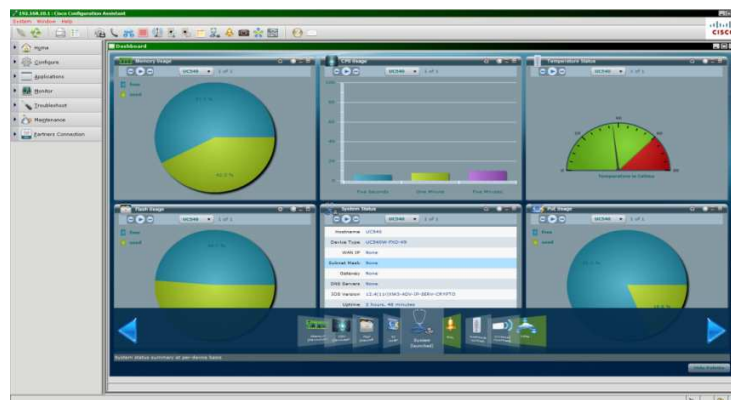
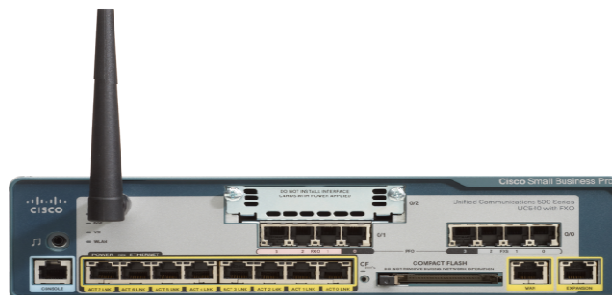


Cisco Small Business Pro

Smart Business Communication System

Technical Enablement Labs



Lab 4

SIP Trunk Configuration

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Introduction

This lab is also something that should be done in a staging environment. It is the opportunity for you to enter configuration data you collected during your site survey/customer questionnaire. You will need a phone and a internet connection which can resolve and ping the SIP Trunk Registrar and Proxy for this lab.

The Sip trunk S.P. should have given you the DIDs associated with the account, the Proxy and registrar server information, access credentials and SBC addresses, which will be used in this lab.

In this lab, you will:

- Create the SIP trunk connection for the UC540
- Assign the DIDs to Extensions you desire

Information Required

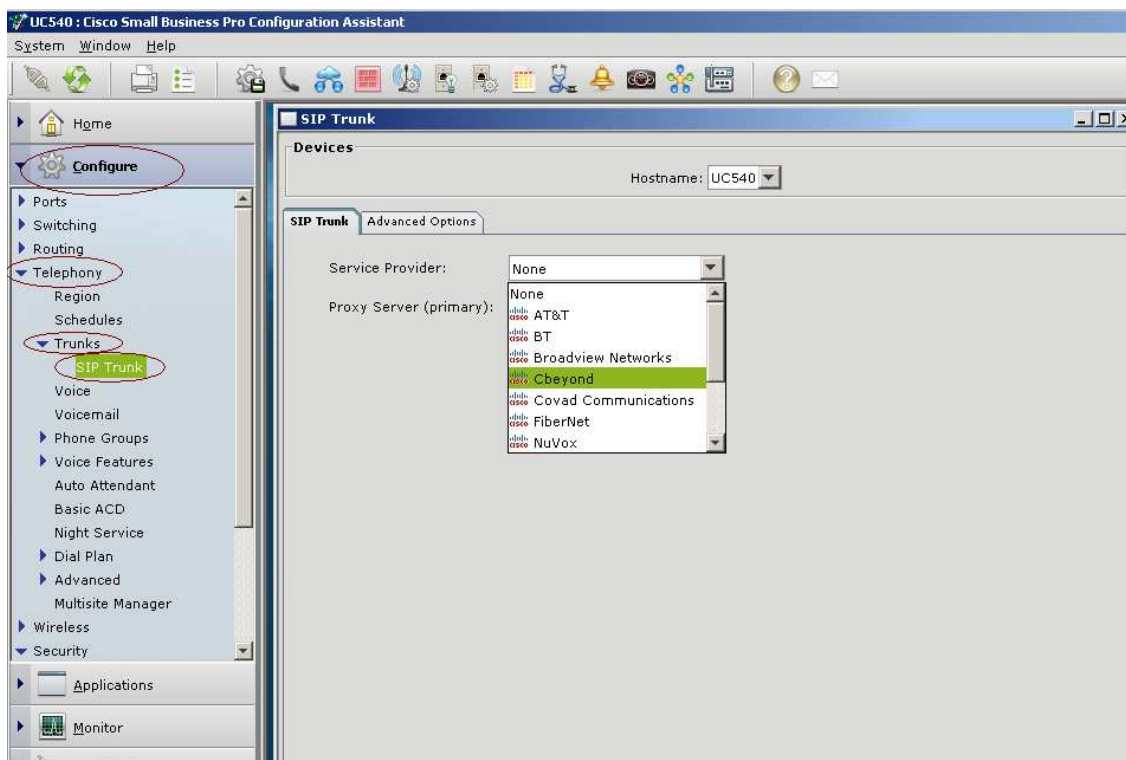
For this configuration you will need to have:

- SIP trunk Servers, IPs, and Credentials from the SP
- DIDs and where you want them to MAP (AA, Voicemail, Extensions)
- SBC Addresses if used by the SP for ACL configuration

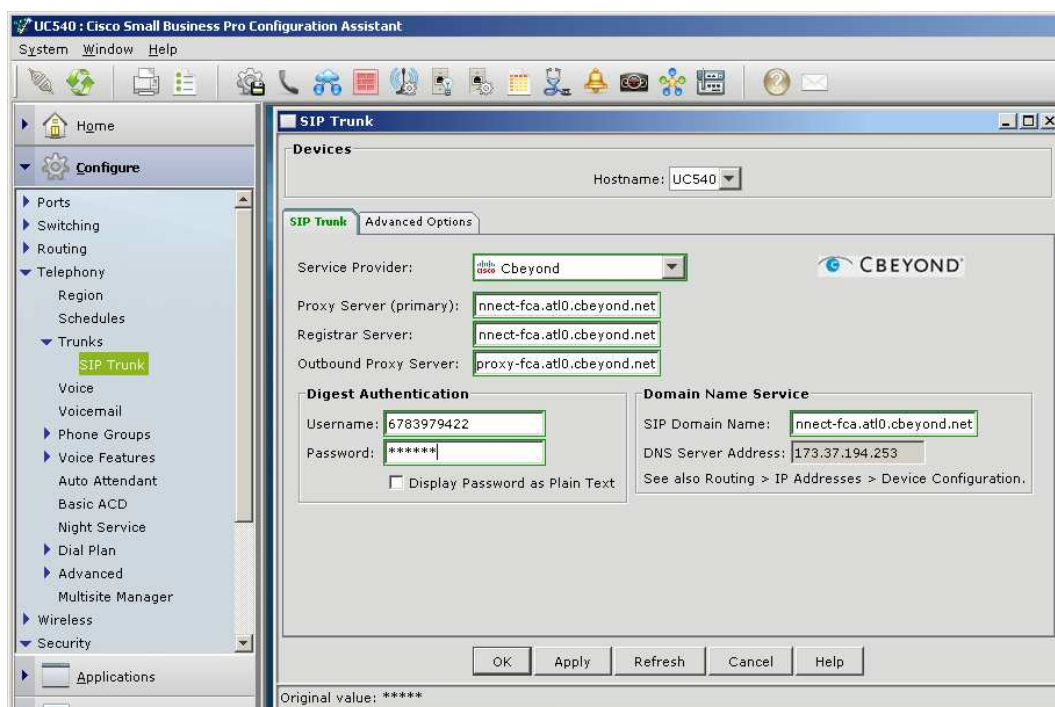
Configuration

SIP Trunk

Designated SIP Trunk service providers are located in the drop down box. Select the one you are using.



Fill in the required parameters you get from Cbeyond, in this case.



Advanced Options

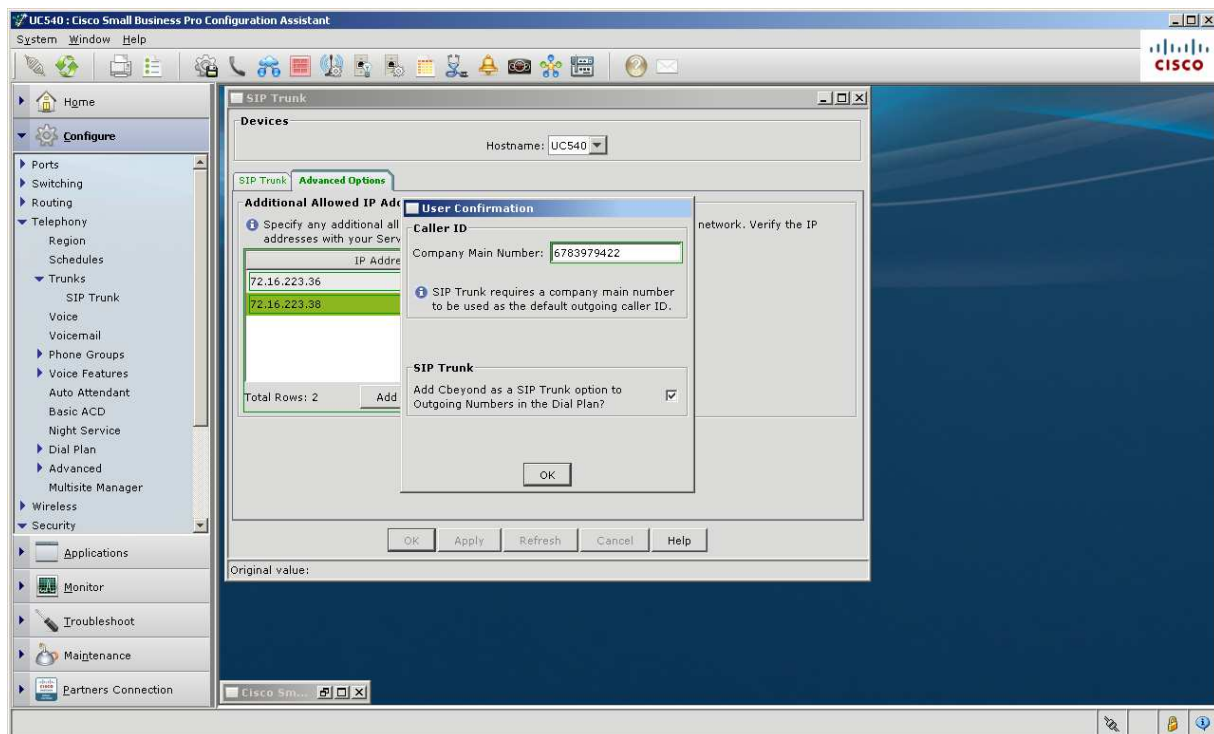
In this case, Cbeyond uses Session Border Controllers in front of their SIP Elements so you would need to allow the IP addresses of both the outbound proxy as well as the registrar/proxy Server. I got the IPs using NSLOOKUP, but you can get this from the Service Provider as well.

NOTE: I suggest that the UC540 is connected to the Internet and the DNS can resolve the proxy and registrar names before hitting APPLY. If you cant, there is a chance that the ACLs will not be recreated correctly. As a safe guard, save the running config before doing this step, and don't save until you are sure the existing ACL for FE 0/0 gets put back with the additional addresses added here.



Apply

When you hit apply, you will be asked for the DID to use for CLID for outgoing calls. Use the number you want to have calls back on (perhaps the AA number for the Small Business). It will also ask if you want the SIP trunk to be populated in the Outgoing dial plan. Of course we do!!!



Assign DIDs

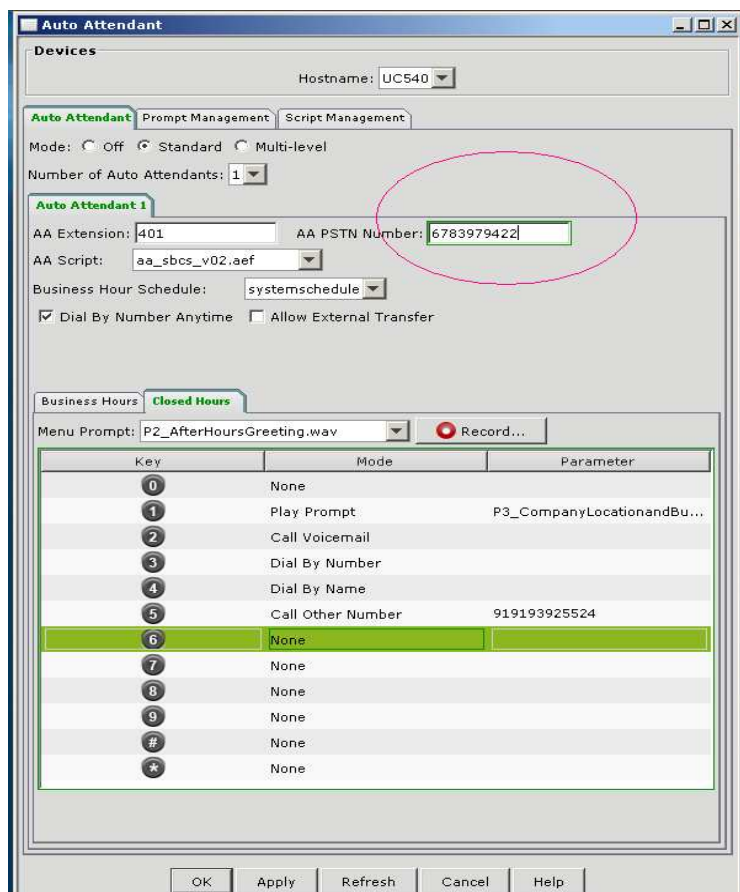
This is up to you and the customer to decide. You can support as many calls as your bandwidth supports. Even with 1 DID, If you had a T1, you can have 24 G711 calls on it. Of course, you need to Engineer some bandwidth for data too ;-). And many customers want more DIDs.

Perhaps assign one to the Auto Attendant (the companies main listed DN), one to remote access to voicemail, and a few assigned to phone extensions so they may receive calls directly from the outside world.

Remember the beauty of SIP Trunk is it is like a trunk (I,e, shared) so ALL Phones (as long as they are not otherwise restricted by you) can dial 9+ and use the SIP Trunk (a single DID) to place calls.

AA

Here I will show how to assign a DID to the AA using CCA Configure → Telephony → AA page.



Auto Attendant

Devices: Hostname: UC540

Auto Attendant | Prompt Management | Script Management

Mode: ☐ Off ☒ Standard ☐ Multi-level

Number of Auto Attendants: 1

Auto Attendant 1

AA Extension: 401 AA PSTN Number: 6783979422

AA Script: aa_sbcs_v02.aef

Business Hour Schedule: systemschedule

☒ Dial By Number Anytime ☐ Allow External Transfer

Business Hours: **Closed Hours**

Menu Prompt: P2_AfterHoursGreeting.wav Record...

Key	Mode	Parameter
0	None	
1	Play Prompt	P3_CompanyLocationandBu...
2	Call Voicemail	
3	Dial By Number	
4	Dial By Name	
5	Call Other Number	919193925524
6	None	
7	None	
8	None	
9	None	
#	None	
*	None	

OK Apply Refresh Cancel Help

Remote Access to Voice Mail

Using CCA Configure → Telephony → Voicemail screen:

Voicemail

Devices Hostname: UC540

Setup Mailboxes

Voicemail

Voicemail Access Extension: 400

Voicemail Access PSTN Number: 6783979423

Voicemail Configuration

☒ VoiceView Express

☐ Live Reply

Direct Transfer to Voicemail

☒ Enable Direct Transfer to Voicemail

Voicemail Transfer Prefix: 6

Note: Prefix is used by autoattendant and phones without softkeys to transfer calls to voicemail. Prefix must be a digit 1-9.

OK Apply Refresh Cancel Help

Original value:

Extension

MAP a DID to an Extension using CCA Configure → Telephony – Dial Plan → Incoming

UC540: Cisco Small Business Pro Configuration Assistant

System Window Help

Cisco Small Business Pro Configuration Assistant: Dashboard

Memory Usage CPU Usage Flash Usage

UC540 1 of 1 ESW-520-24P 1 of 2 UC540 1 of 1

Incoming Dial Plan

Devices Hostname: UC540

Incoming FXO Calls Direct Dialing

Direct Dial to Internal User Extensions

Description	DID Range Start	DID Range End	Internal Number Start	Internal Number End	Trunks
Total Rows: 0					

Direct Dial to Auto-Attendant, Groups, Operator

Description	DID Range Start
Total Rows: 0	

Direct Dial to Internal User Extensions

Set up translations for a range of incoming PSTN numbers to corresponding internal user extensions.

Description: DID_to_EXT

Incoming Trunk: SIP Trunk

PSTN Numbers

PSTN Range Start Number: 6783979426

PSTN Range End Number: 6783979426

Internal Extensions

Internal Extension Start Number: 214

Internal Extension End Number: 214

OK Cancel Help

Original value:

Then Apply...

Incoming Dial Plan

Devices: Hostname: UC540

Incoming FXO Calls: **Direct Dialing**

Direct Dial to Internal User Extensions

Description:	DID Range Start	DID Range End	Internal Number Start	Internal Number End	Trunks
DID_to_EXT	6783979426	6783979426	214	214	SIP Trunk

Total Rows: 1

Add Modify Delete

Direct Dial to Auto-Attendant, Groups, Operator

Description:	DID Range Start	DID Range End	Destination Type	Destination	Trunks
--------------	-----------------	---------------	------------------	-------------	--------

Total Rows: 0

Add Modify Delete

OK **Apply** Refresh Cancel Help

Verify

Troubleshooting: Telephony Diagnostic: Dial Plan Test

The UC540 will register with the S.P. without any phones plugged in as shown here. You can also open the troubleshooting drawer and execute a dial plan test to see that the calls will route to the SIP Trunk as a priority, and FXO second.

Dialplan Test

Devices

Hostname:

UC540

Outbound

Inbound

Enter a destination number to verify its dial plan details. The number should include all necessary access codes. For example, a preceeding 91 may be needed for a long distance call

Outgoing Call

User/Shared Extension:

205 (Five Twofive)

Destination Number:

919193925524

Get Dial Plan Details

Dial Plan

Result:

Found matching Dial Plan

Number forwarded: 919193925524

Call is allowed

Interfaces

Interface	Preference
SIP Server (sipconnect-fca.atl0.cbeyond.net)	1
ALL_FXO (Trunk Group)	5

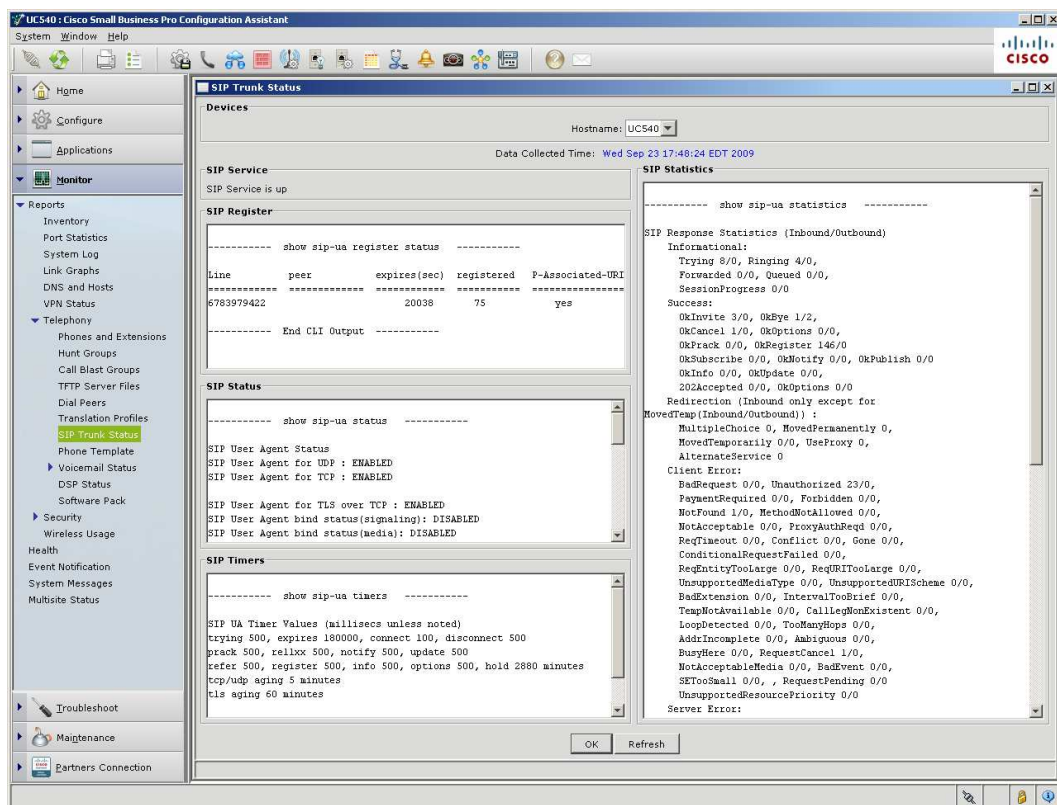
Total Rows: 2

OK

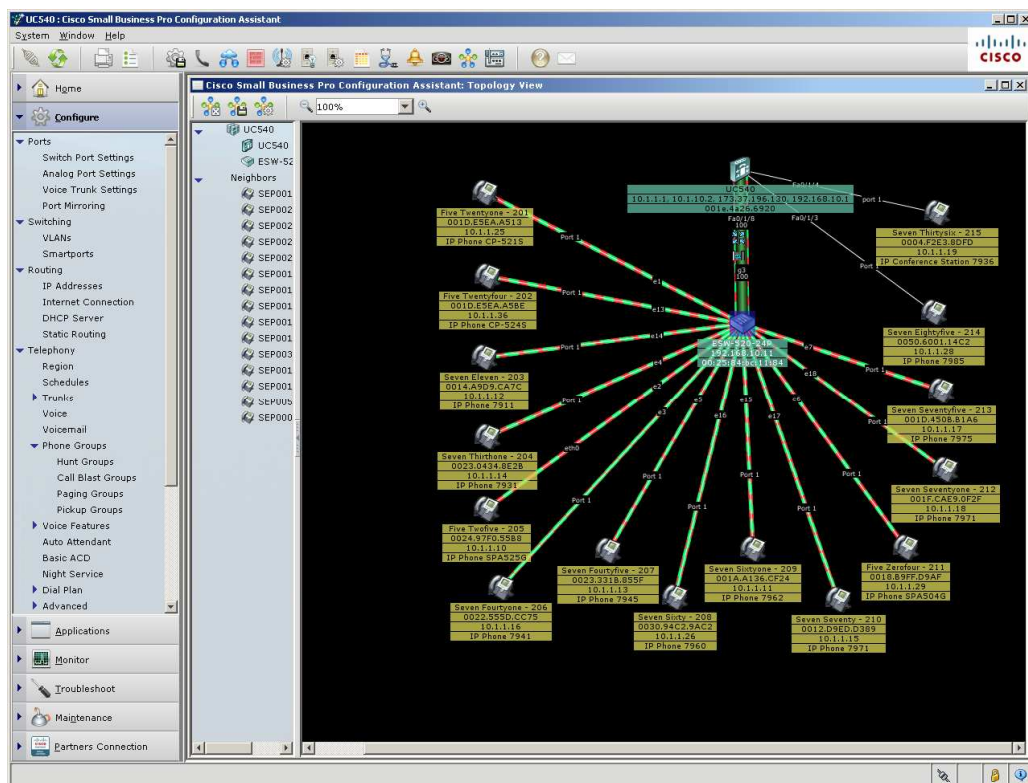
Help

Monitor: SIP Trunk Status

Open the Monitor Drawer and check SIP Trunk Status...



But this would be a good time to plug in a few phones and see that you can use the SIP trunk to place and receive calls.



Go off hook on any phone and dial 9+10 digits (North America Dial Plan). Remember we previously instructed CCA to add the SIP trunk to the Outgoing dial plan.

Then from an outside line dial the three DIDs we mapped above. All should work.

You are done.