



Brooktrout SR140 Fax Software with Cisco Unified Communications Manager 12.5

Installation and Configuration Integration Note

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Scope

This document is intended as a general guide for configuring a basic installation of the **Cisco Unified Communications Manager Version 12.5 (CUCM 12.5)** for use with the Brooktrout SR140 Fax over IP (FoIP) software platform. The interoperability includes **SIP** call control and T.38/T.30 media.

The specific version of CUCM tested was 12.5.1.100000-2

For ease of reference, the Brooktrout SR140 Fax Software and Brooktrout TR1034 Fax Boards will sometimes be denoted herein, respectively, as SR140 and TR1034. The Cisco Unified Communications Manager will be denoted herein as CUCM 12.5 or Cisco CUCM 12.5, or some other form thereof. All references to the SDK herein refer to the Brooktrout Fax Products SDK.

This document is not intended to be comprehensive and thus does not replace the manufacturer's detailed configuration documentation. Users of this document should already have a general knowledge of how to install and configure the **CUCM 12.5**.

The sample configuration shown and/or referred in the subsequent sections was used for lab validation testing by Enghouse Interactive/Dialogic. As the lab system did not have an external PSTN or SIP trunk interface the testing was done between two different SR140 systems. Each system was configured with its own SIP trunk interface configured within the CUCM environment. The CUCM was then configured to route calls based on the numbers that were dialed to either of the two systems. Therefore, it is possible and even likely that the example configuration will not match the exact configuration and versions that would be present in a deployed environment. However, the sample configuration provides a possible starting point to work with the equipment vendor for configuring your device. Please consult the appropriate manufacturer's documentation for details on setting up your specific end user configuration.

Prerequisites

No special requirements to note.

Summary of Limitations

No special limitations to note.

Configuration Details

Cisco Unified Communication Manager 12.5 – SIP / SIP Configuration

Vendor	<i>Cisco</i>
Model	<i>Cisco Unified Communication Manager</i>
Software Version	<i>12.5.1.100000-2</i>
Protocol to SR140 (1)	<i>SIP</i>
Protocol to SR140 (2)	<i>SIP</i>

Brooktrout SR140 Fax Software

Vendor	<i>Enghouse Interactive/Dialogic</i>
Model	<i>Brooktrout SR140 Fax Software</i>
Software Version	<i>SDK 6.13</i>
Protocol to CUCM	<i>SIP</i>
callctrl.cfg file	<i>SDK 6.13 – with recommended settings for SIP_From and SIP_Contact</i>

Network System Configuration

The diagram below details the sample configuration used in connection with the Configuration.

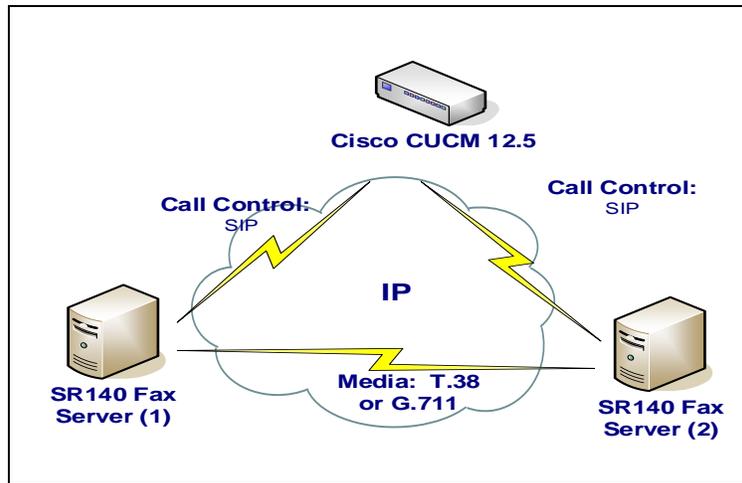


Diagram Notes:

- SR140 Fax Server = Fax Server including Brooktrout SR140 Fax Software and third-party fax application. In this test, two different fax servers were used to route calls between them through the CUCM.

Network Addresses

Device #	Device Make, Model, and Description	Device IP Address
1	Brooktrout SR140 (1)	10.50.50.101
2	Cisco Unified Communication Manager 12.5	10.51.53.175
3	Brooktrout SR140 (2)	10.50.50.102

Dialing Plan Overview

To call the SR140 (1) from SR140 (2), dial 201021XXX, where x is a number between 0 and 9.

To call the SR140 (2) from SR140 (1), dial 201022XXX, where x is a number between 0 and 9.

Brooktrout SR140 Fax Software Setup Notes

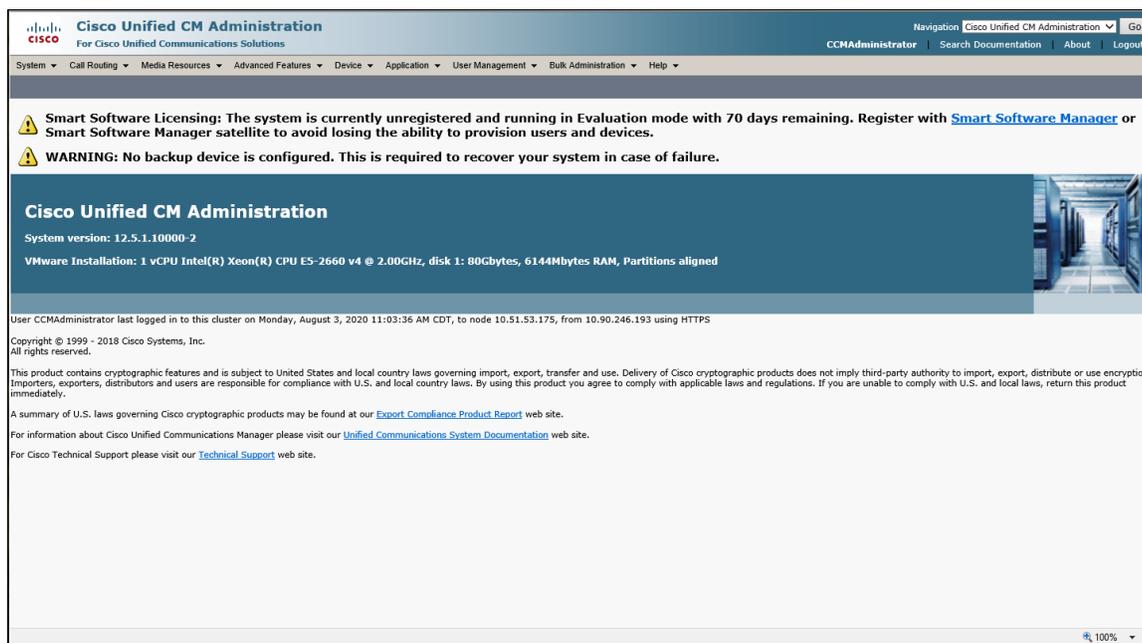
For the sample test configuration, the SR140 was configured using the default values, consult the *Brooktrout Fax Products Installation and Configuration Guide* for details.

The Installation and Configuration Guides are available from the site:

<http://www.dialogic.com/manuals/brooktrout/default.htm>

Note: DHCP cannot be used.

CUCM 12.5 Setup Notes



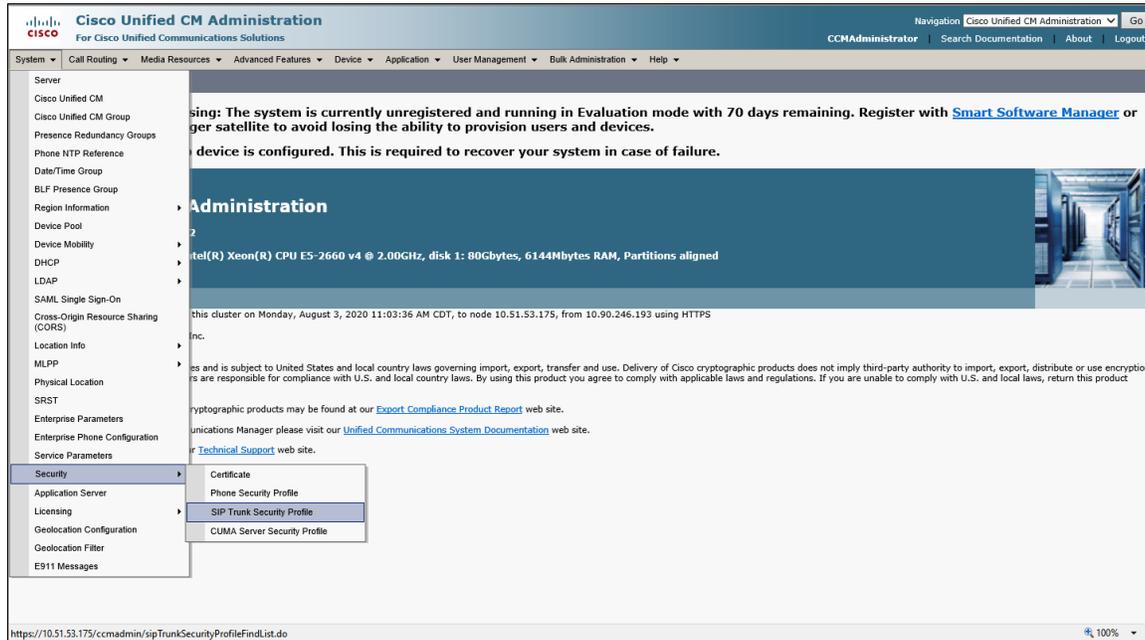
The CUCM 12.5 configuration values that were used in the sample configuration involve configuring the following items:

- Configure SIP Trunk Security Profile
- Configure SR140 (1) Trunk
- Configure SR140 (2) Trunk
- Configure Call Routing

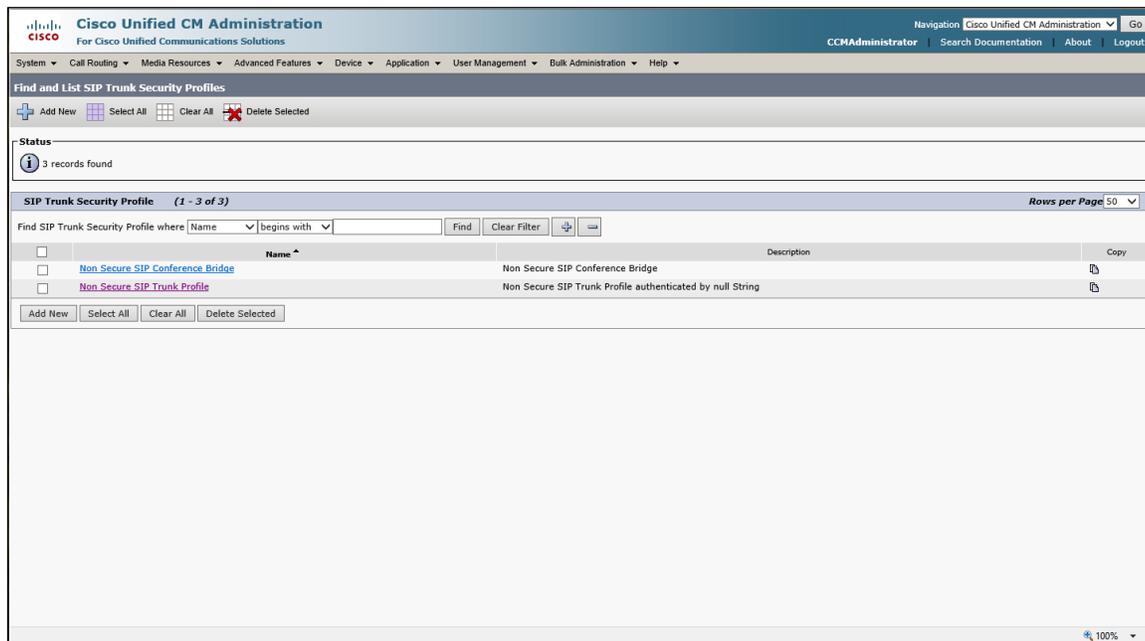
Configure SIP Trunk Security Profile

Using a web browser, log into CUCM 12.5. The following Cisco Unified CM Administration screen appears.

From the menu select System | Security | SIP Trunk Security Profile



Click Add New



Enter a Name: Dialogic Non Secure SIP trunk Profile (for example)
Enter a Description: Dialogic Brooktrout SR140 (for example)
Change Outgoing Transport Type to UDP

The screenshot shows the 'SIP Trunk Security Profile Configuration' page in Cisco Unified CM Administration. The page title is 'SIP Trunk Security Profile Configuration' and it includes a 'Save' button at the top left. The status is 'Ready'. The configuration fields are as follows:

Name*	Dialogic Non Secure SIP Trunk Profile
Description	Dialogic Brooktrout SR140
Device Security Mode	Non Secure
Incoming Transport Type*	TCP+UDP
Outgoing Transport Type	UDP
Enable Digest Authentication	<input type="checkbox"/>
Nonce Validity Time (mins)*	600
Secure Certificate Subject or Subject Alternate Name	
Incoming Port*	5060
Enable Application level authorization	<input type="checkbox"/>
Accept presence subscription	<input type="checkbox"/>
Accept out-of-dialog refer**	<input type="checkbox"/>
Accept unsolicited notification	<input type="checkbox"/>
Accept replaces header	<input type="checkbox"/>
Transmit security status	<input type="checkbox"/>
Allow charging header	<input type="checkbox"/>
SIP V.150 Outbound SDP Offer Filtering*	Use Default Filter

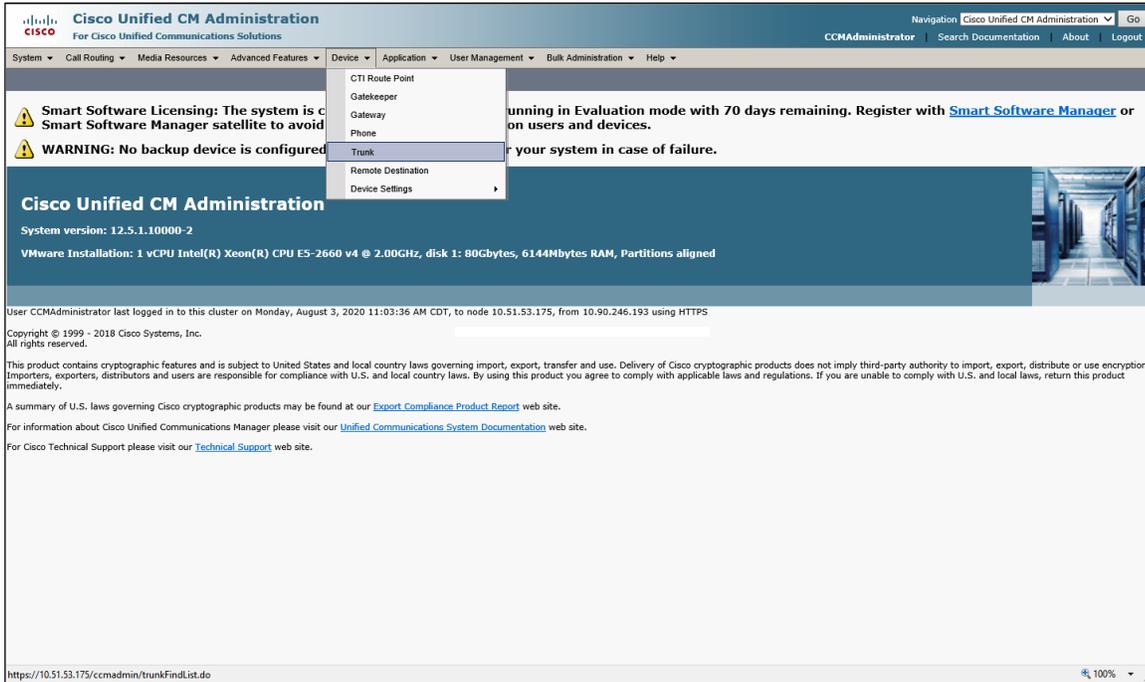
At the bottom of the configuration area, there is a 'Save' button.

Click Save

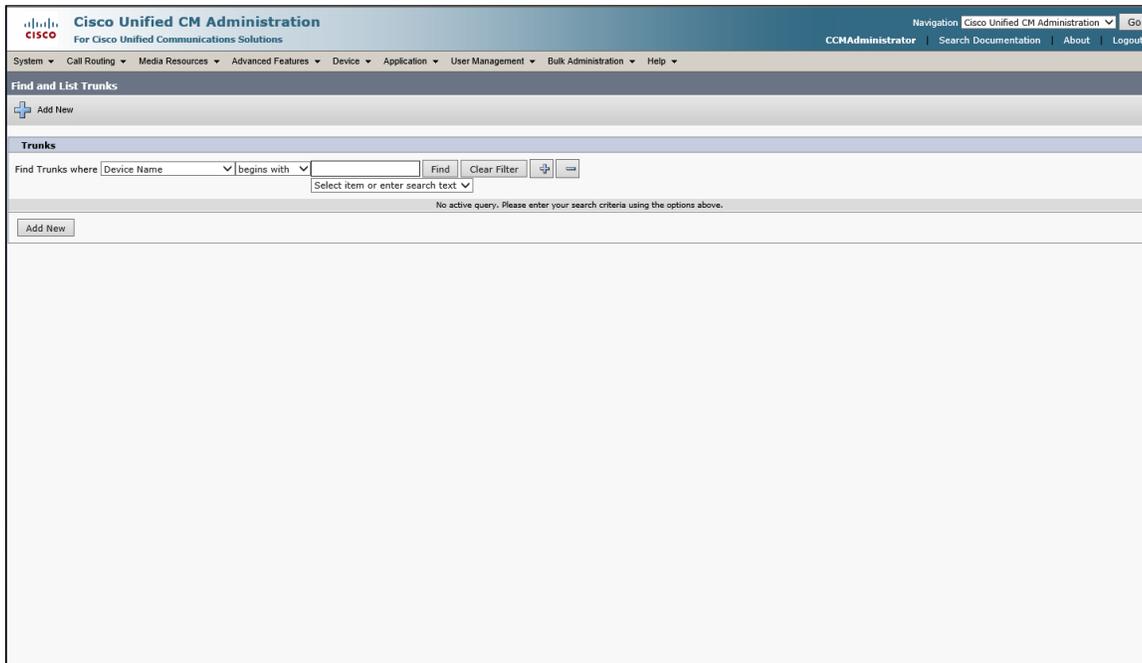
The screenshot shows the same 'SIP Trunk Security Profile Configuration' page, but now with additional action buttons at the top left: 'Save', 'Delete', 'Copy', 'Reset', 'Apply Config', and 'Add New'. The configuration fields remain the same as in the previous screenshot.

Configure SR140 (1) Trunk

Using a web browser, log into the Cisco Unified CM Administration screen
From the menu select Device | Trunk



The following screen will appear. Press Add New to add a new SIP Trunk



Select SIP Trunk for the Trunk Type. Click Next

Cisco Unified CM Administration
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Navigation: Cisco Unified CM Administration Go
CCMAdministrator Search Documentation About Logout

System Call Routing Media Resources Advanced Features Device Application User Management Bulk Administration Help

Trunk Configuration Related Links: Back To Find/List Go

Next

Status
Status: Ready

Trunk Information

Trunk Type*	-- Not Selected --
Device Protocol*	H.225 Trunk (Gatekeeper Controlled)
	Inter-Cluster Trunk (Gatekeeper Controlled)
	Inter-Cluster Trunk (Non-Gatekeeper Controlled)
	SIP Trunk

Next

* - indicates required item.

Accept the default Trunk Service Type. Click Next

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Trunk Configuration Related Links: Back To Find/List Go

Next

Status
Status: Ready

Trunk Information

Trunk Type*	SIP Trunk
Device Protocol*	SIP
Trunk Service Type*	None(Default)

Next

* - indicates required item.

Select SIP for the Device Protocol and press Next.

Set the following:

- Device Name: SR140-SIP (for example)
- Device Description: SR140-SIP (for example)
- Device Pool: Default
- Call Classification: OffNet
- Destination Address: 10.50.50.101 (Use the IP address of your SR140 server)
- SIP Trunk Security Profile: Dialogic Non Secure SIP Trunk Profile (for example)
- SIP Profile: Standard SIP Profile

Trunk Configuration

Status: Ready

Device Information

Product: SIP Trunk
 Device Protocol: SIP
 Trunk Service Type: None(Default)
 Device Name*: SR140-SIP
 Description: SR140-SIP
 Device Pool*: Default
 Common Device Configuration: < None >
 Call Classification*: OffNet
 Media Resource Group List: < None >
 Location*: Hub_None
 AAR Group: < None >
 Tunnelled Protocol*: None
 QSIG Variant*: No Changes
 ASN.1 ROSE OID Encoding*: No Changes
 Packet Capture Mode*: None
 Packet Capture Duration: 0
 Media Termination Point Required
 Retry Video Call as Audio

SIP Information

Destination Address is an SRV

Destination Address	Destination Address IPv6	Destination Port	Status	Status Reason	Duration
1* 10.50.50.101		5060	N/A	N/A	N/A

MTP Preferred Originating Codec*: 711ulaw
 BLF Presence Group*: Standard Presence group
 SIP Trunk Security Profile*: Dialogic Non Secure SIP Trunk Profile
 Rerouting Calling Search Space: < None >
 Out-Of-Dialog Refer Calling Search Space: < None >
 SUBSCRIBE Calling Search Space: < None >
 SIP Profile*: Standard SIP Profile [View Details](#)
 DTMF Signaling Method*: No Preference

Normalization Script

Normalization Script: < None >
 Enable Trace

Parameter Name	Parameter Value
1	

Recording Information

None
 This trunk connects to a recording-enabled gateway
 This trunk connects to other clusters with recording-enabled gateways

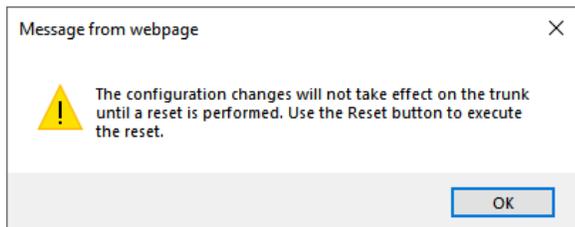
Geolocation Configuration

Geolocation: < None >
 Geolocation Filter: < None >
 Send Geolocation Information

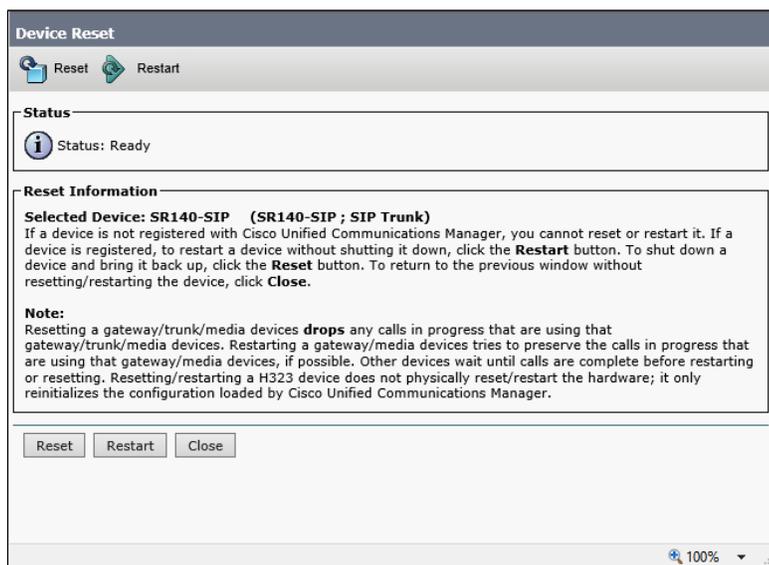
Save

Click Save

A reset message will appear, Click OK.



Press Reset, then click Close

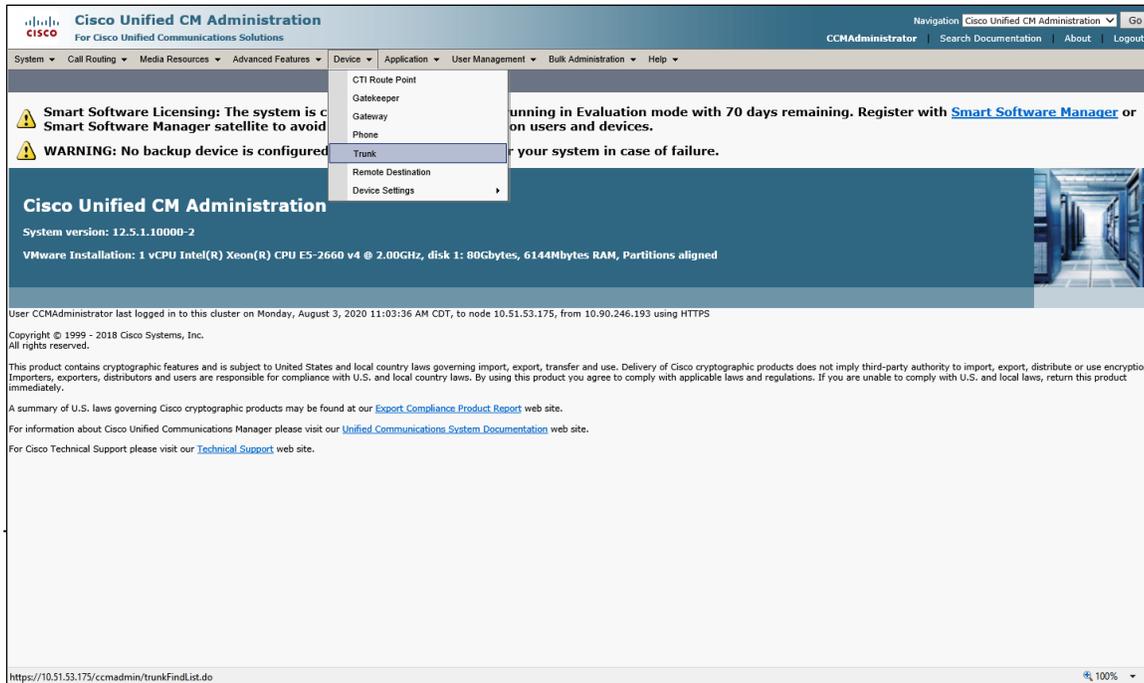
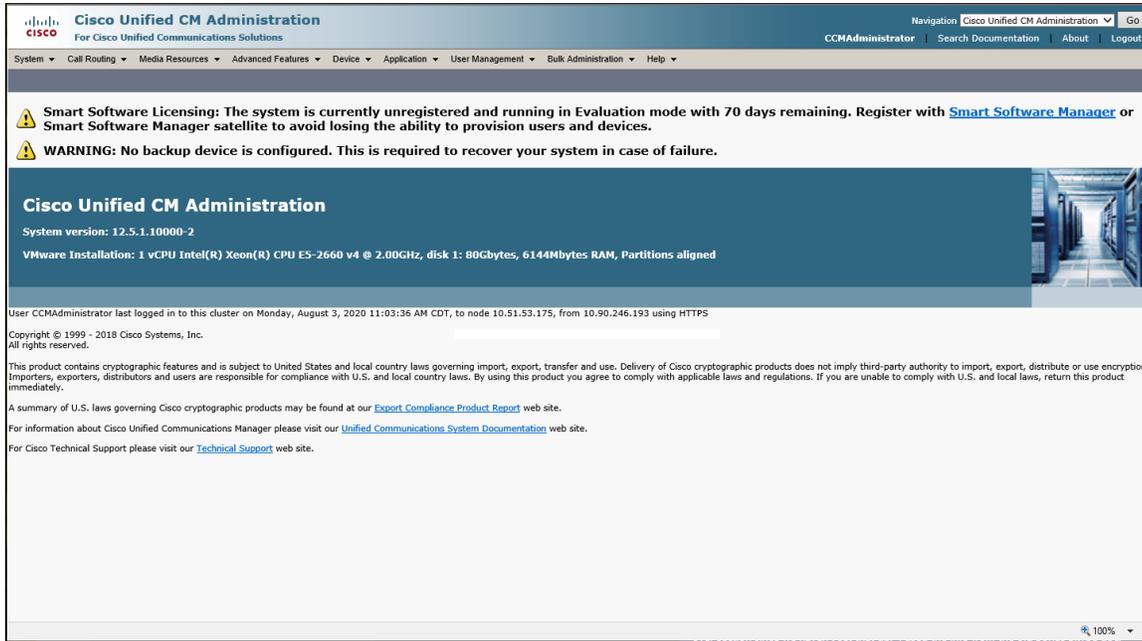


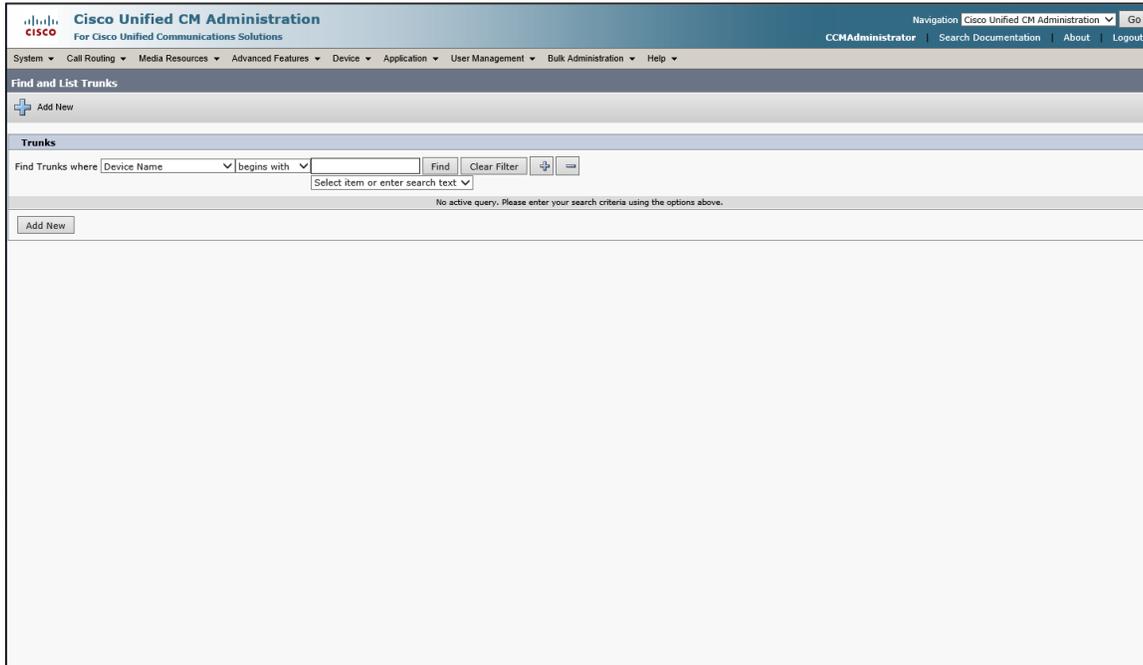
Configure SR140 (2) Trunk

Under normal deployments the second trunk will be used to bring in a PSTN connection either through a SIP trunk using an SBC like the Cisco CUBE, or through a PRI through a Cisco voice router. In most cases this will already be configured for your voice usage. You will want to confirm that the following settings are set to support fax.

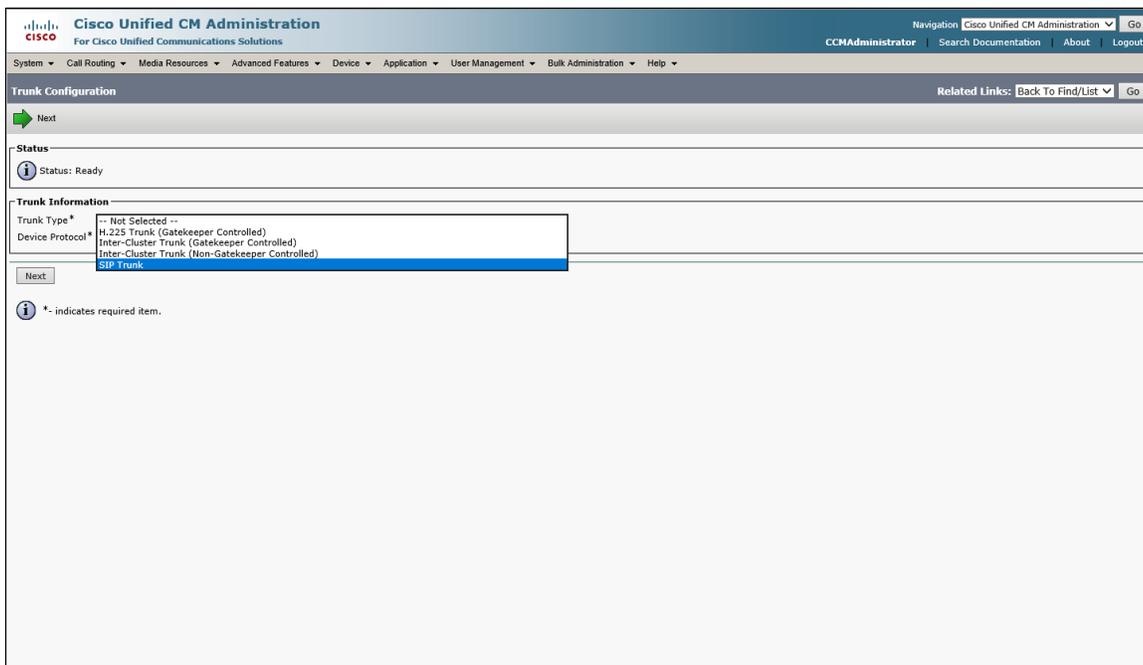
The following section describes how the second trunk was configured for this testing. It is similar to the previous trunk configuration but with a different IP address and a different route pattern that will be configured to route to this trunk versus the first one.

Using a web browser, log into the Cisco Unified CM Administration screen.





Select SIP Trunk for the Trunk Type. Click Next



Accept the default Trunk Service Type. Click Next

Cisco Unified CM Administration
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Navigation: Cisco Unified CM Administration | Go
CCMAdministrator | Search Documentation | About | Logout

System | Call Routing | Media Resources | Advanced Features | Device | Application | User Management | Bulk Administration | Help

Trunk Configuration Related Links: Back To Find/List | Go

Next

Status
Status: Ready

Trunk Information

Trunk Type* SIP Trunk
Device Protocol* SIP
Trunk Service Type* None(Default)

Next

* - indicates required item.

Set the following:

- Device Name: SR140-SIP-2 (for example)
- Device Description: SR140-SIP-2 (for example)
- Device Pool: Default
- Call Classification: OffNet
- Destination Address: 10.50.50.102 (Use the IP address of your SR140 server)
- SIP Trunk Security Profile: Dialogic Non Secure SIP Trunk Profile (for example)
- SIP Profile: Standard SIP Profile

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Trunk Configuration Related Links: Back To Find/List | Go

Save

Status
Status: Ready

Device Information

Product: SIP Trunk
Device Protocol: SIP
Trunk Service Type: None(Default)
Device Name*: SR140-SIP-2
Description: SR140-SIP-2
Device Pool*: Default
Common Device Configuration: < None >
Call Classification*: OffNet
Media Resource Group List: < None >
Location*: Hub_None
AAR Group: < None >
Tunneled Protocol*: None
QSIG Variant*: No Changes
ASN.1 ROSE OID Encoding*: No Changes
Packet Capture Mode*: None
Packet Capture Duration: 0

Media Termination Point Required
 Retry Video Call as Audio

SIP Information

Destination Address is an SRV

Destination Address	Destination Address IPv6	Destination Port	Status	Status Reason	Duration
1* 10.50.50.102		5060	N/A	N/A	N/A

MTP Preferred Originating Codec* 711ulaw

BLF Presence Group* Standard Presence group

SIP Trunk Security Profile* Dialogic Non Secure SIP Trunk Profile

Rerouting Calling Search Space < None >

Out-Of-Dialog Refer Calling Search Space < None >

SUBSCRIBE Calling Search Space < None >

SIP Profile* Standard SIP Profile [View Details](#)

DTMF Signaling Method* No Preference

Normalization Script

Normalization Script < None >

Enable Trace

Parameter Name	Parameter Value
1	

Recording Information

None

This trunk connects to a recording-enabled gateway

This trunk connects to other clusters with recording-enabled gateways

Geolocation Configuration

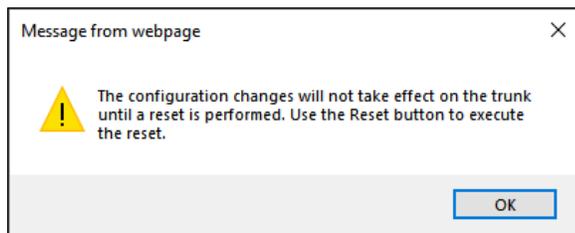
Geolocation < None >

Geolocation Filter < None >

Send Geolocation Information

Click Save

A reset message will appear, Click OK.



Press Reset, then click Close

Device Reset

Status

Status: Ready

Reset Information

Selected Device: SR140-SIP-2 (SR140-SIP-2; SIP Trunk)

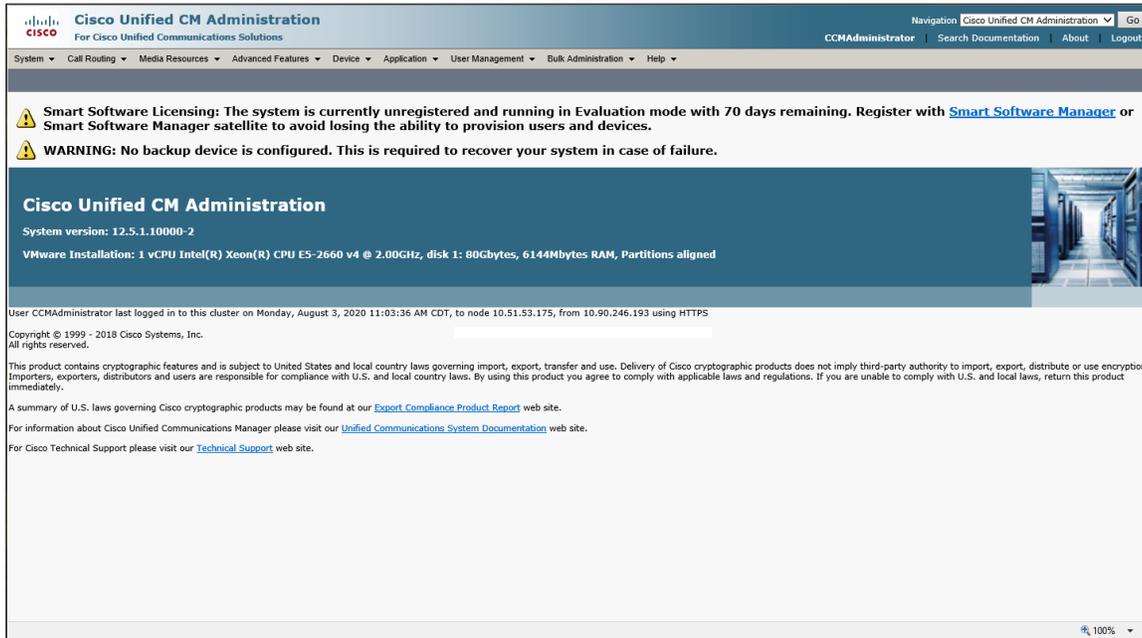
If a device is not registered with Cisco Unified Communications Manager, you cannot reset or restart it. If a device is registered, to restart a device without shutting it down, click the **Restart** button. To shut down a device and bring it back up, click the **Reset** button. To return to the previous window without resetting/restarting the device, click **Close**.

Note:
 Resetting a gateway/trunk/media devices **drops** any calls in progress that are using that gateway/trunk/media devices. Restarting a gateway/media devices tries to preserve the calls in progress that are using that gateway/media devices, if possible. Other devices wait until calls are complete before restarting or resetting. Resetting/restarting a H323 device does not physically reset/restart the hardware; it only reinitializes the configuration loaded by Cisco Unified Communications Manager.

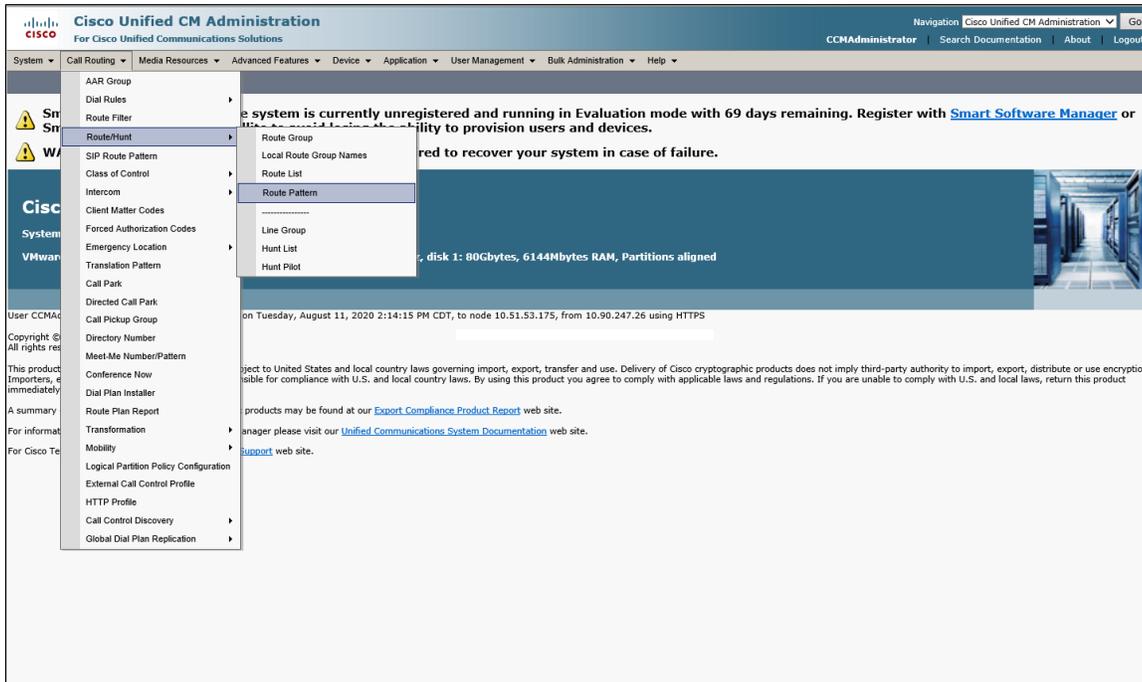
100%

Configure Call Routing

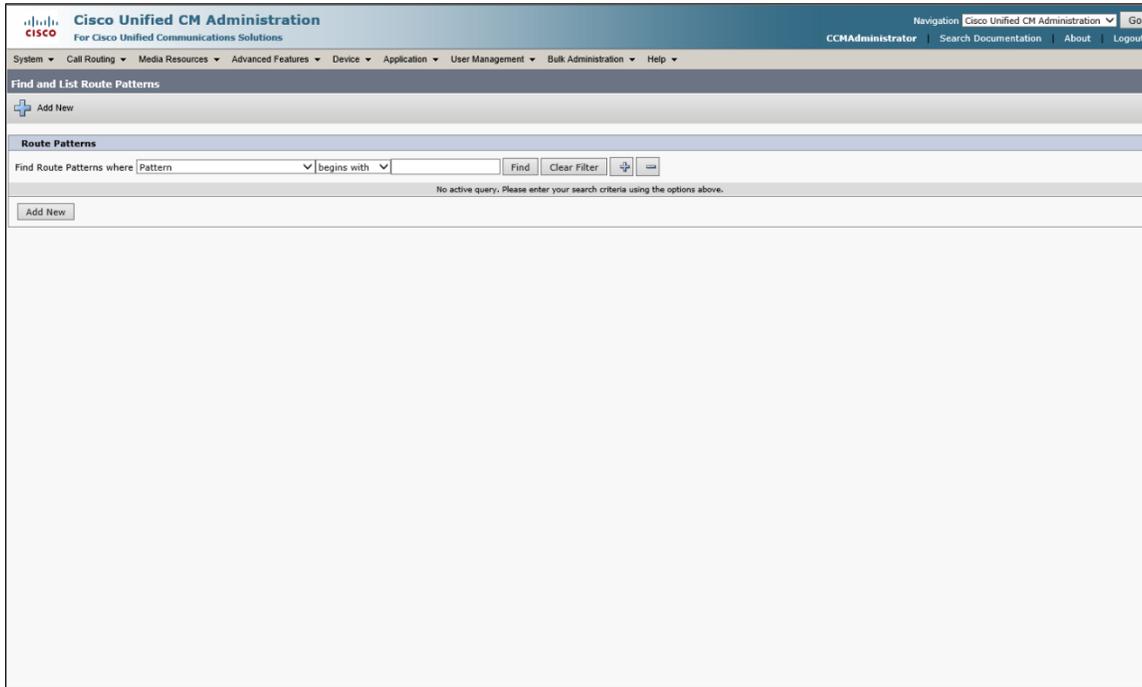
Using a web browser, log into the Cisco Unified CM Administration screen.



From the menu select Call Routing | Route / Hunt | Route Pattern.

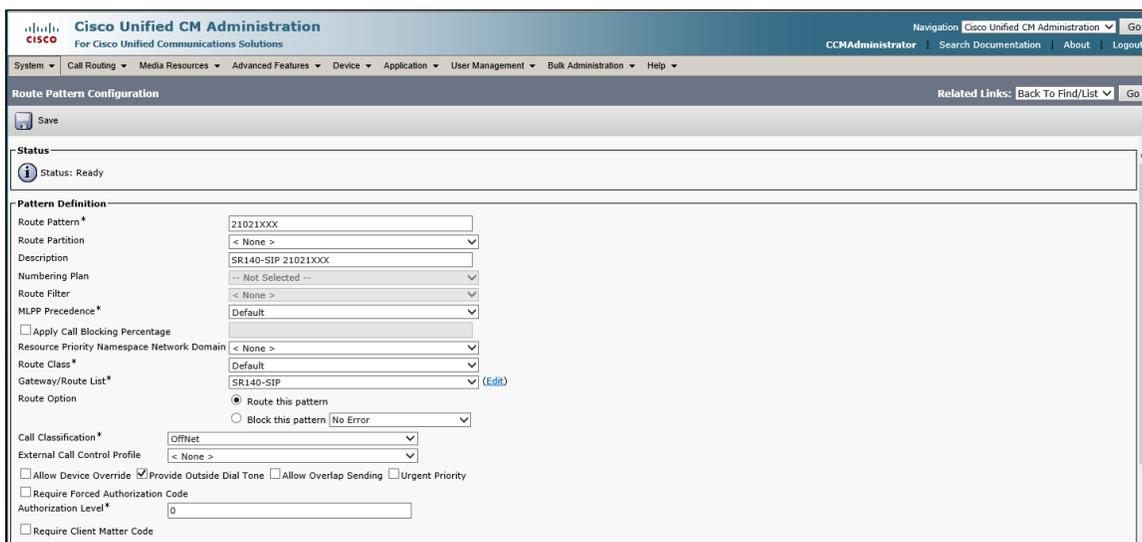


The following screen will appear. Click Add New

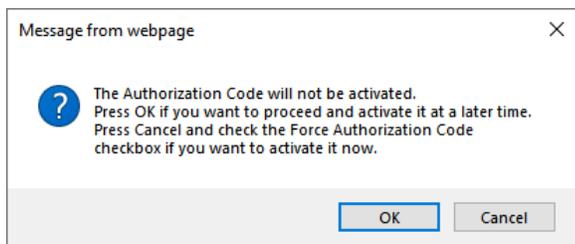


Set the following:

- Route Pattern: 21021XXX
- Description: SR140-SIP 21021XXX
- Gateway/Route List: SR140-SIP
- Call Classification: OffNet



Click Save



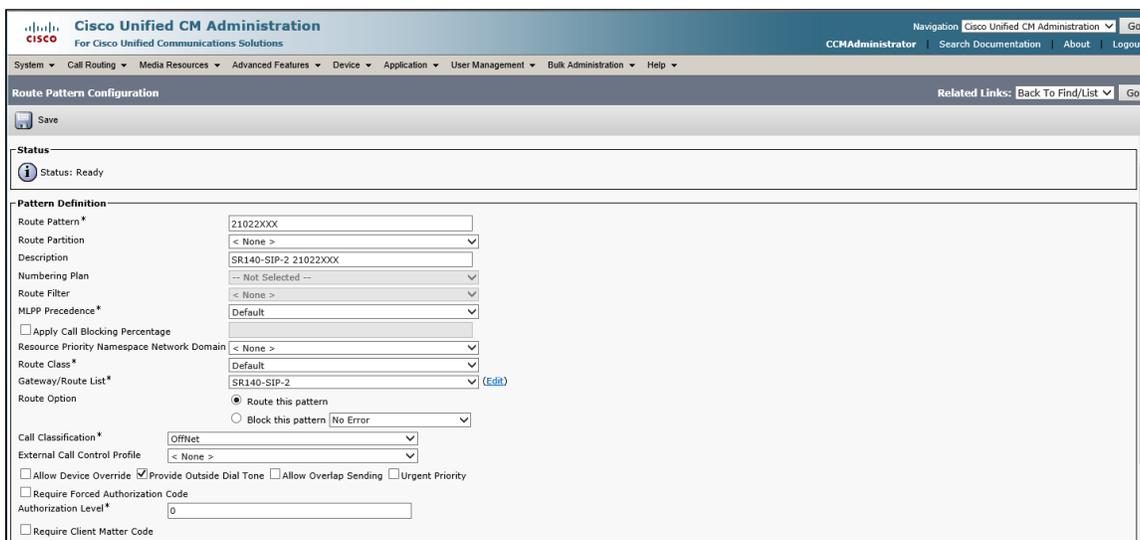
Press OK.



Press OK.

Repeat the same steps and set the following to route to the SR140-2:

- Route Pattern: 21022XXX
- Description: SR140-SIP-2 21022XXX
- Gateway/Route List: SR140-SIP-2
- Call Classification: OffNet



Click Save

References

- Brooktrout Fax Products Installation and Configuration Guide
<http://www.dialogic.com/manuals/brooktrout/default.htm>
- CUCM Documentation Roadmaps
http://www.cisco.com/en/US/products/sw/voicesw/ps556/products_documentation_roadmaps_list.html

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Each party acknowledges that, in the course of performing its duties under this Agreement, it may obtain information relating to the other party, which is of a confidential and proprietary nature ("Confidential Information"). Such Confidential Information may include, but is not limited to, this Agreement, pricing and proposals, computer software, trade secrets, know-how, inventions, techniques, processes, programs, schematics, data, customer lists, financial information and sales and marketing plans. Each party shall at all times maintain in the strictest confidence and trust all such Confidential Information, which shall not be less than those measures employed by each party in protecting its own Confidential Information of equivalent value. Customer and its employees agree not to disclose such information to any third party.

5. GENERAL

5.1 Injunctive Relief: Customer acknowledges that remedies at law may be inadequate to provide Enghouse with full compensation in the event of Customer's material breach of any: (i) license grant hereunder, (ii) confidentiality and nondisclosure obligations herein, or (iii) intellectual property rights of Enghouse, and that Enghouse shall therefore be entitled, without bond or other security obligation, to seek injunctive relief in the event of any such material breach.

5.2 Verification: At the request of Enghouse, Customer shall furnish Enghouse with a signed statement that the Software is being used pursuant to the terms and conditions of this Agreement. If Enghouse has reason to believe that the Software is not being used in accordance with the terms and conditions of this Agreement, Customer shall permit Enghouse to review your relevant records and inspect your facilities to verify compliance with this Agreement. In the event such inspection results in fees due to Enghouse, Customer shall immediately pay those fees to Enghouse, and any reasonable inspection costs.

5.3 Exports: This Agreement is expressly made subject to applicable laws, regulations, orders or other restrictions on the export of the Software or information about such Software which may be imposed from time to time. Customer shall not export the Software, documentation or information about the Software and documentation without complying with such laws, regulations orders or other restrictions. Customer agrees to indemnify Enghouse and its licensors against all claims, losses, damages, liabilities, costs and expenses, including reasonable legal fees, to the extent such claims arise out of any breach of this section.

5.4 Termination: Upon termination, Customer agrees to destroy or return all copies of the Software and documentation and to certify in writing that all known copies, including archived copies, have been destroyed. All provisions relating to confidentiality, proprietary rights and limitation of liability shall survive the termination of this Agreement.

5.5 Installation Services: Customer may purchase installation services from Enghouse for any Products and/or Services ordered. As conditions to such installation, Customer will permit Enghouse reasonable access to the installation site, will prepare the installation site in accordance with Enghouse's site preparation specifications and will store the delivered Products at the site until the installation date.

5.6 Customer Responsibility: Customer may assign a knowledgeable representative to act as project manager to provide information, answer questions and make decisions on behalf of Customer. Customer is responsible for the acquisition of all peripheral equipment such as NT1s, PCs and printers and is also responsible for the initial and recurring costs of network services. Customer is responsible for installation of any local area network, host computer and telephone system connectivity required to support the Installation. Prior to Installation, Customer is responsible for providing: (i) a completed and accurate site preparation checklist; and (ii) a stable operating environment (network, host computer, servers, telephone system, etc.). In no event shall Enghouse be liable for any failure or delay caused by events beyond its control, including, without limitation, the failure of Customer to furnish the necessary information to Enghouse to fulfill this Agreement and/or a completed site preparation checklist or failures or substitutions of Customer's Existing System.

5.7 Training: If Customer purchases any training classes and/or consulting services, Customer has up to six (6) months from the date of the OF to schedule and complete the Services. In the event Customer fails to do so due to no fault of Enghouse, all fees paid toward such classes shall not be refunded. Customer shall be responsible for all expenses incurred by its employees in connection with this training, including course fees and potential travel expenses.

5.8 Maintenance and Support: Customer is obligated to purchase Maintenance and Support Services in order to use the license(s). If applicable, Software releases will be delivered on a load and leave or electronically transferred basis.

5.9 Force Majeure: Enghouse shall not be liable for any failure or delay caused by events beyond its control, including, without limitation, sabotage, failures or delays in transportation or communications, labor disputes, accidents, shortages of labor, fuel, raw materials or equipment, or terrorist act. If Enghouse should fail to make any delivery provided for herein as a result of any such event or circumstance beyond its own direct control, Enghouse shall have the right to make delivery within a reasonable time after the cause of such delay has been removed, and Customer shall be obligated to accept deferred Delivery.

5.10 Entire Agreement: This Agreement is the entire agreement of the parties regarding the subject matter hereof, and supersedes and terminates any prior agreements, understandings or representations, written or oral, except with respect to any trade indebtedness owing between the parties. This order, the definition of terms used, performance hereunder, and the interpretation of this order shall be governed by and construed in accordance with the laws, other than the conflicts of laws rules, of the State of Delaware.