Dialogic

Dialogic® Brooktrout® FoIP Configuration Guide for Cisco Products

Volume 1

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Preface

About this Guide

This guide explains how to configure Dialogic® Brooktrout® Fax Server (SR140 and TR1034) to interoperate with Cisco Networks IP equipment.

Manual Conventions

This manual uses the following conventions:

- *Italics* denote the names of variables in the prototype of a function, and file names, directory names, and program names within the general text.
- The **`Courier`** font in bold indicates a command sequence entered by the user at the system prompt, for example:

  `cd /Brooktrout/boston/bfv.api`
- The `Courier` font not bolded indicates system output, for example:

  `C:>Files installed.`
- **Bold** indicates the data type of the prototype of functions, dialog boxes, dialog box controls, windows, and menu items.
- Square brackets [ ] indicate that the information to be typed is optional.
- Angle brackets < > indicate that you must supply a value with the parameter.

The Caution icon is used to indicate an action that could cause harm to the software or hardware.

The Warning icon is used to indicate an action that could cause harm to the user.

Related Documents

Cisco Documents

- How to Configure MGCP with Digital PRI and Cisco CallManager, Document ID 23966

http://www.cisco.com/en/US/tech/tk1077/technologies_configuration_example09186a00801ad22f.shtml

- MGCP with Digital CAS and Cisco CallManager Configuration Example, Document ID 43802

http://www.cisco.com/en/US/tech/tk1077/technologies_configuration_example09186a008022eaa3.shtml

- *Understanding Cisco IOS H.323 Gatekeeper Call Routing* - Document ID 24462.

http://www.cisco.com/en/US/tech/tk1077/technologies_tech_note09186a00800a8928.shtml

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Phone:	North America:	+1 781-433-9600
	Belgium:	+32 2-658-5170
	Japan:	+81 3-3234-2176

1 Introduction

IP Networks

Enterprises are transitioning to all IP networks and as part of that, are migrating business critical fax communicating to the new IP network.

Dialogic® Brooktrout® products are the market leader in intelligent fax platforms and offers the fullest featured and broadest range of fax and fax-over-IP platforms (FoIP) available on the market today. Both Dialogic® Brooktrout® SR140™ and TR1034™ fax platforms support real-time FoIP, providing companies with the ability to integrate fax servers into their VoIP network.

Dialogic has completed extensive interoperability testing in a Cisco IP environment. This document is based on that testing and provides detailed configuration procedures for implementing the Dialogic fax platform in a Cisco IP network.

FoIP providers can use this document to assist with achieving successfully configured installations.

Cisco Unified Communications Manager

The Cisco Unified Communications Manager Version 6.0(1) was called the Cisco CallManager in previous versions. This document refers generically to all versions as the Cisco Unified Communications Manager (CUCM).

Major Elements

This document focuses on configurations with the Dialogic Brooktrout Fax Server (SR140 and TR1034) and the following Cisco IP equipment:

- Cisco Unified Communications Manager (CUCM)
  - SIP, H.323, MGCP
  - Version 4.2(3) within the 4.2.x product line
  - Version 5.0.4(a) within the 5.0.x product line
  - Version 6.0(1) within the 6.0.x product line
- Cisco IOS Gateway Series (those capable of supporting T.38)
  - SIP, H.323, MGCP
  - IOS version 12.3T or later

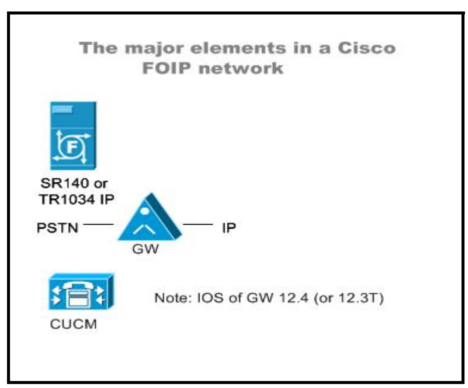

Figure 1. Major Elements in Dialogic Brooktrout - Cisco FoIP Network

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Dialogic Brooktrout Fax and Voice Diagnostic Test Utility

This document refers to Dialogic Brooktrout GUI-based Fax and Voice Diagnostic Test Utility for verifying each configuration. You can download it from the following website at:

http://www.cantata.com/support/productinfo.cfm?frmProduct=TR1034&frmCategory=Download

Under Frequently Requested you find the GUI-based Fax and Voice Diagnostic Test for Windows. Each GUI-based Fax and Voice Diagnostic Test for Windows supports certain Dialogic Brooktrout driver versions and these versions are listed on this website.

In order to find out which Fax and Voice Diagnostic Test matches with your LAN-Fax application, you search for the driver boston.sys on your LAN-fax server and look at the Version Tab of the Properties of this file boston.sys. Instead of looking at the version numbers, you can also look at the time stamps on this website. When your LAN-Fax application is using Dialogic Brooktrout latest software, then you download the GUI-based Fax and Voice Diagnostic Test for Windows with the most recent time stamp.

For instructions on how to use the GUI-based Fax and Voice Diagnostic Test, see the extensive Help file included in the Test tool.

Network Protocol Analyzer

You can use a network protocol packet analyzer such as Wireshark to verify the configuration when using the Fax and Voice Diagnostic Test Utility.

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Configuration Decisions

The following flow diagrams highlight the decisions you will make before configuring your Dialogic Brooktrout /Cisco FoIP network. Refer to *Chapter 2 FoIP Topologies on page 7* for an overview of each topology which are based on these decisions.

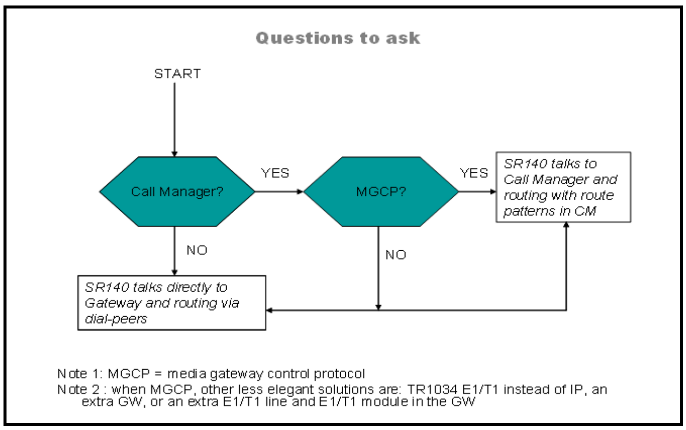

Figure 2. Configuration Decisions part 1

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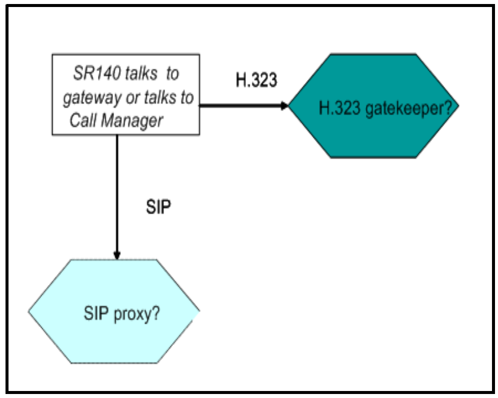

Figure 3. Configuration Decisions part 2

This document does not cover all possible results of this flow diagram. It covers the possible scenarios without a gatekeeper and without a proxy and one scenario with a gatekeeper.

Using this Document

This document guides you through the configuration of their Dialogic Brooktrout /Cisco FoIP solution. It assumes that all hardware/software licenses are installed and cabling is properly connected.

There are several configurations covered in this document. Each configuration is intended to be a standalone module and as such most include:

- Network diagrams that include the actual IP addresses used in the configuration
- Procedures to configure Dialogic Brooktrout Fax Server
- Configuration files
- Procedures to configure CUCM which include detailed screen shots
- Procedures to verify the configuration.

Hyperlinks allow you to access this related information in other sections.

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2
FoIP Topologies

Categories of Topologies

This document provides the following three general categories of FoIP topologies used by the Dialogic Brooktrout Fax Server interoperating with Cisco Networks equipment.

- *Category 1 - FoIP Communication Directly Between the Gateway and Fax Server on page 8*
- *Category 2 - Routing Intelligence in Centralized Gatekeeper on page 9*
- *Category 3 - Cisco Unified Communications Manager Performs all Call Control on page 10*

This chapter provides an overview of each category. Each category has specific variations based on protocols and versions of the Cisco Unified Communications Manager. This document provides configuration procedures for each variation.

Category 1 - FoIP Communication Directly Between the Gateway and Fax Server

In this topology, all fax routing intelligence is in the Fax Server.

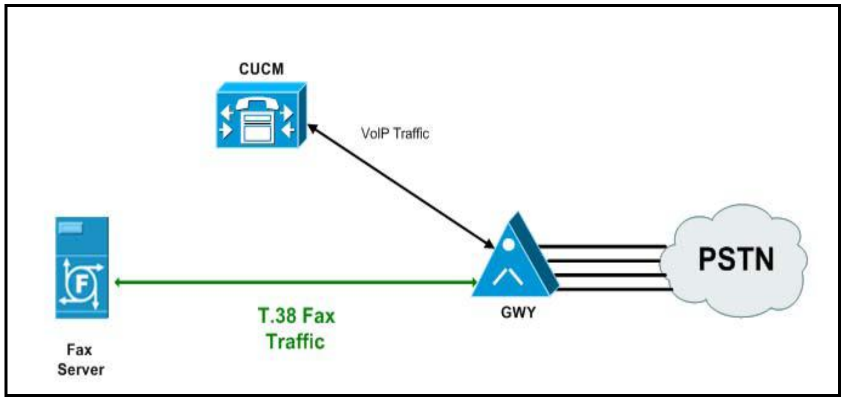

Figure 4. Category 1 Topology

For specific configuration information refer to the chapters below:

- *Chapter 3 Topology: FoIP Direct - H.323 on page 15*
- *Chapter 4 Topology: FoIP Direct - SIP on page 33*

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Category 2 - Routing Intelligence in Centralized Gatekeeper

Both the Fax Server and the Cisco gateway are provisioned to use a Gatekeeper.

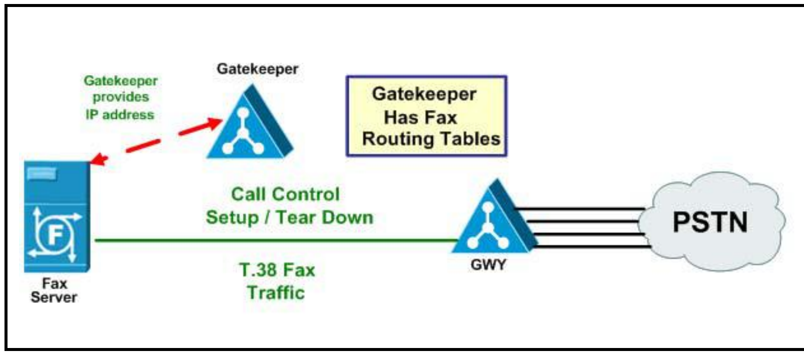

Figure 5. Category 2

For specific configuration information refer to the chapter below:

Chapter 5 Topology: IOS Gatekeeper on page 45

Category 3 - Cisco Unified Communications Manager Performs all Call Control

In the following topology, the Cisco Unified Communications Manager (CUCM) does all the call control. The gateway sends all signaling to the CUCM which forwards it along to the Fax Server. The Fax Server responds to the CUCM and the CUCM forwards all signaling back to the gateway. Once the call is established, the fax traffic flows directly between the gateway and the Fax Server.

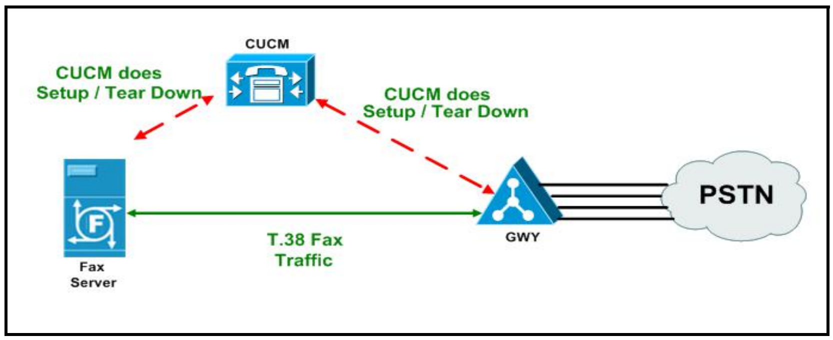

Figure 6. Category 3

CUCM Versions

The following table and diagrams provide the versions of CUCM that work in these topologies.

Note: This document provides configuration information on each scenario below except the two SIP/H.323 protocol scenarios.

Table 1. Network Protocols Supported by CUCM Versions

Protocol Between Fax Server and CUCM Protocol Between CUCM and Cisco Gateway	CUCM Version 4.x Greater Than or Equal to 4.2(3)	CUCM Version 5.x Greater Than or Equal to 5.0(4)	CUCM Version 6.x Greater Than or Equal to 6.0(1)
H.323 H.323	Yes	Yes	Yes
SIP SIP	No	Yes	Yes
SIP H.323	No	Yes	Yes
H.323 SIP	No	Yes	Yes
H.323 MGCP	Yes	No	Yes
SIP MGCP	No	No	Yes

Diagrams

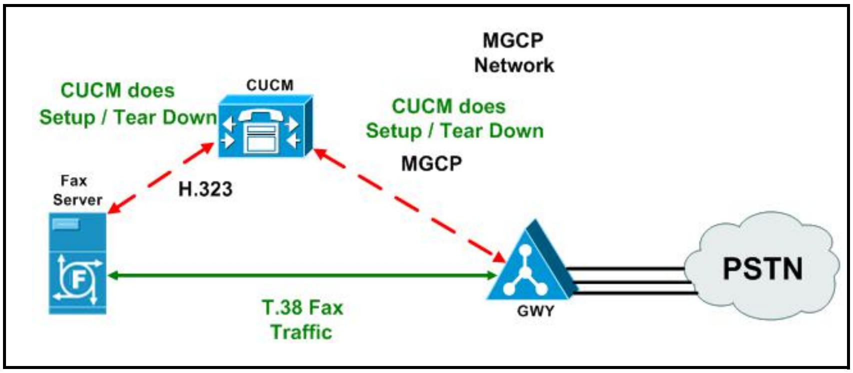

Figure 7. CUCM Versions 4.x greater than or equal to 4.2(3) and 6.x greater than or equal to 6.0(1)

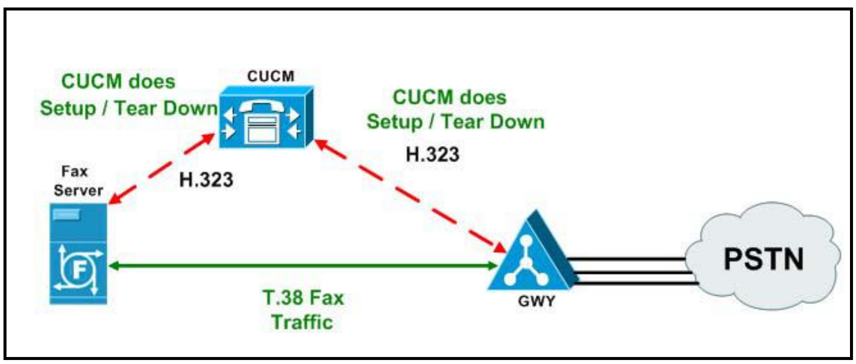

Figure 8. CUCM Versions 4.x greater than or equal to 4.1(3), 5.x, and 6.x

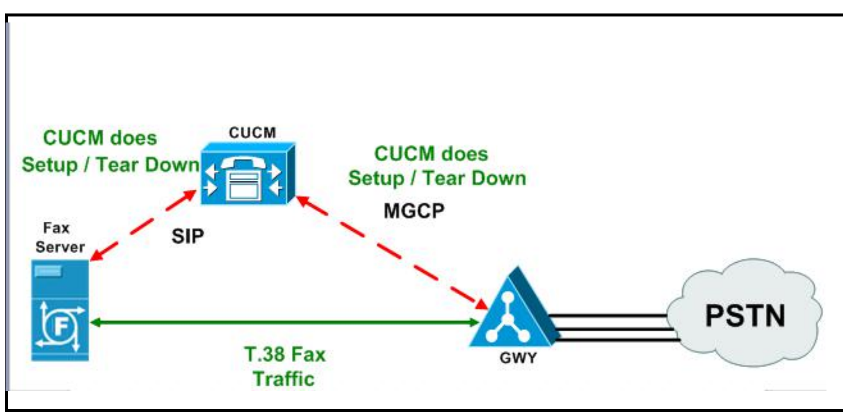

Figure 9. CUCM Versions 6.x greater than or equal to 6.0(1)

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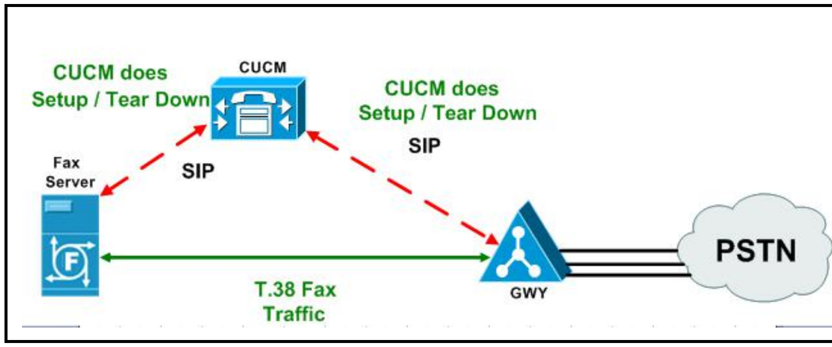

Figure 10. CUCM Versions 5.x greater than or equal to 5.0(4) and 6.x greater than or equal to 6.0(1)

Where to Find

These versions of CUCM have been tested and the configurations are documented in the following chapters.

- *Chapter 6 Topology: H.323 - CUCM 4.2(3) - H.323 on page 73*
- *Chapter 7 Topology: H.323 - CUCM 4.2(3) - MGCP on page 107*
- *Chapter 8 Topology: H.323 - CUCM 5.04 - H.323 on page 147*
- *Chapter 9 Topology: SIP - CUCM 5.04 - SIP on page 195*
- *Chapter 10 Topology: H.323 - CUCM 6.0(1) - H.323 on page 245*
- *Chapter 11 Topology: H.323 - CUCM 6.0(1) - MGCP on page 285*
- *Chapter 12 Topology: SIP - CUCM 6.0(1) - SIP on page 329*
- *Chapter 13 Topology: SIP - CUCM 6.0(1) - MGCP on page 365*

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3
Topology: FoIP Direct - H.323

Introduction

In this topology, all fax routing intelligence is in the Fax Server. H.323 signaling is transmitted between the Cisco Media Gateway and the Fax Server.

Note: The SR140 Software is used as an example Fax Server in this chapter. The TR1034 IP board can also be used as Fax Server.

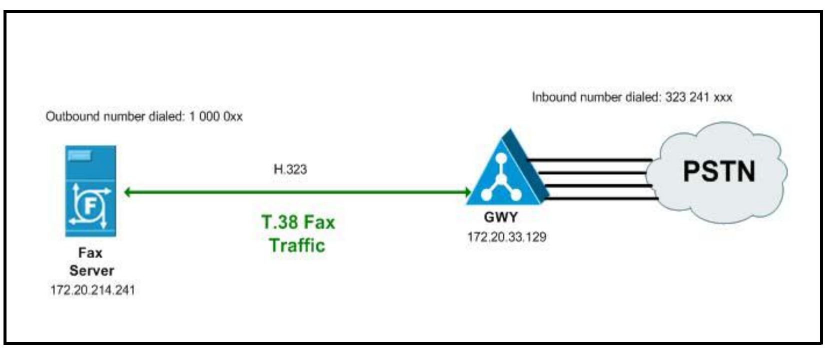

Figure 11. Fax Server Communicates FoIP Directly with the Cisco Media Gateway

Configuration Sequence

Follow the configuration sequence below for this topology:

- *Configuring Dialogic Brooktrout Fax Server on page 17*
- *Configuring the Cisco Media Gateway on page 25*
- *Verifying the Configuration on page 26*

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Configuring Dialogic Brooktrout Fax Server

This section includes steps to configure the Dialogic Brooktrout Fax Server for Faststart and Slowstart configurations.

Note: Faststart is the default configuration.

Faststart Configuration

➢ **Follow the steps below to configure the SR140 Software using the Dialogic Brooktrout Configuration Tool to support this network topology for a faststart configuration.**

1. Open the Dialogic Brooktrout Configuration Tool in Advanced Mode.

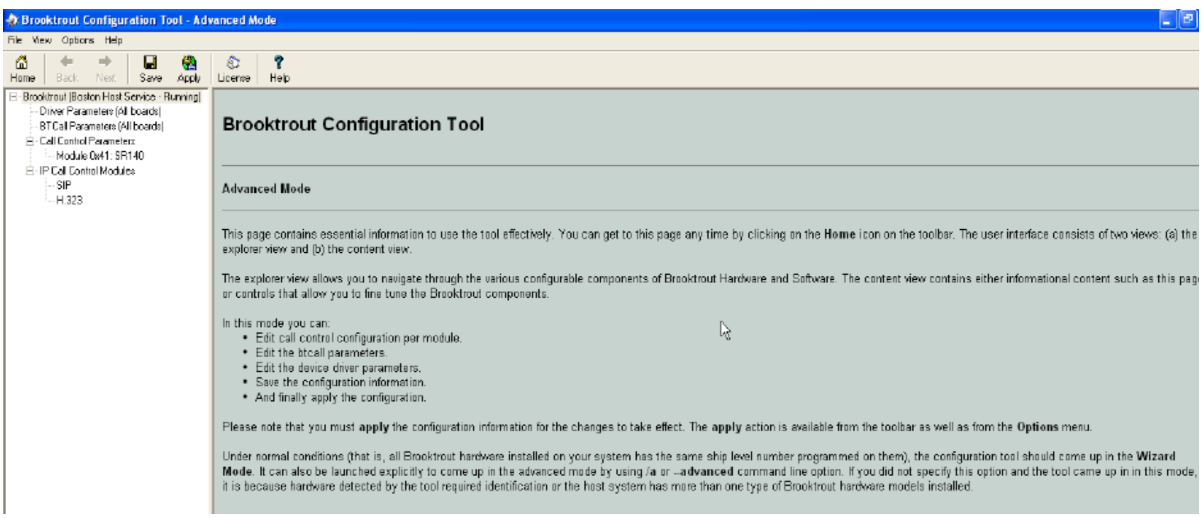

Figure 12. The Dialogic Brooktrout Configuration Tool

2. Configure for the H.323 protocol as follows. Under IP Call Control Modules, click H.323 then click the IP Parameters tab.

The following screen appears.

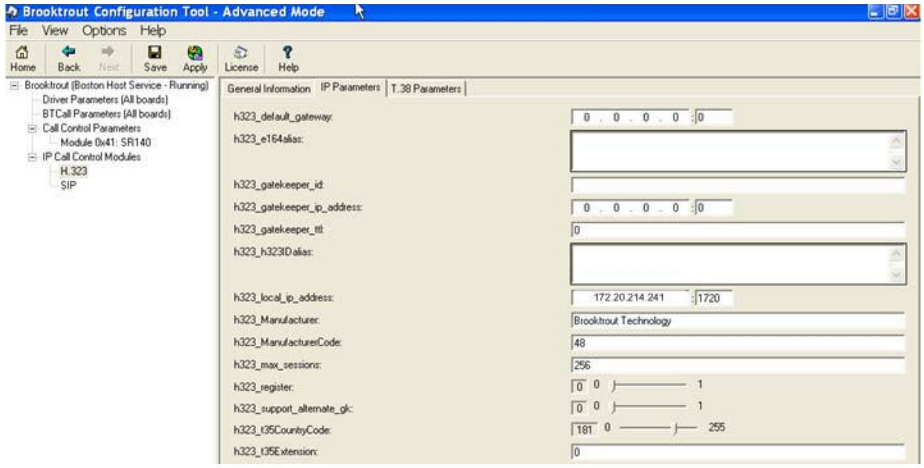

Figure 13. IP Parameters

3. Click Show Advanced. The following screen appears. Complete the fields as indicated below.

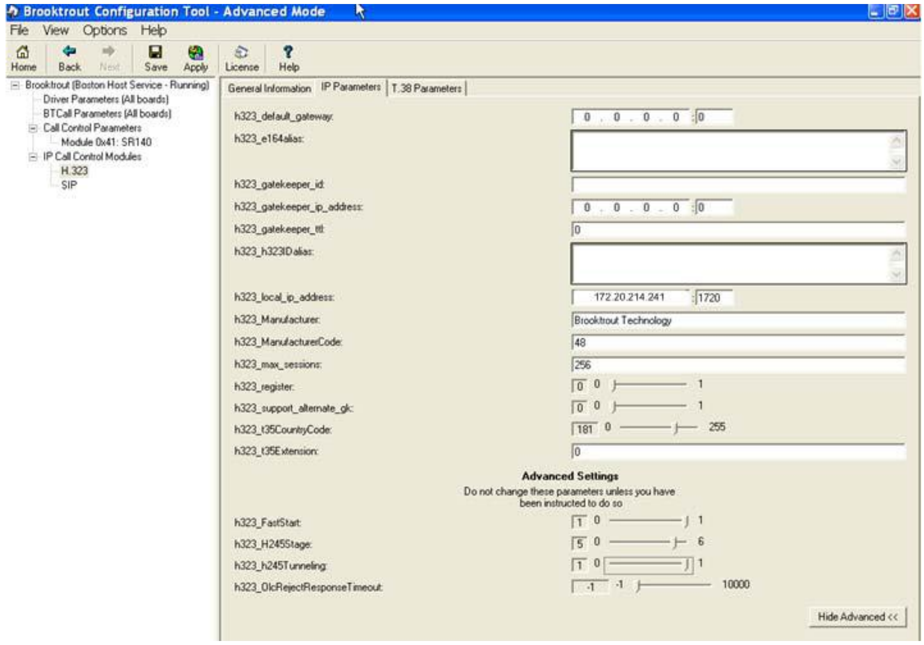

Figure 14. Advanced Settings

Note: When the h323_local_ip_address field is set to the default value (0.0.0.0:0), the system uses the IP address of the first Ethernet module in the system and port number 1720. If there are more than one ethernet modules in the Fax Server then specify the actual IP address of the desired ethernet module that will be used.

4. Click T.38 Parameter and complete fields as indicated below.

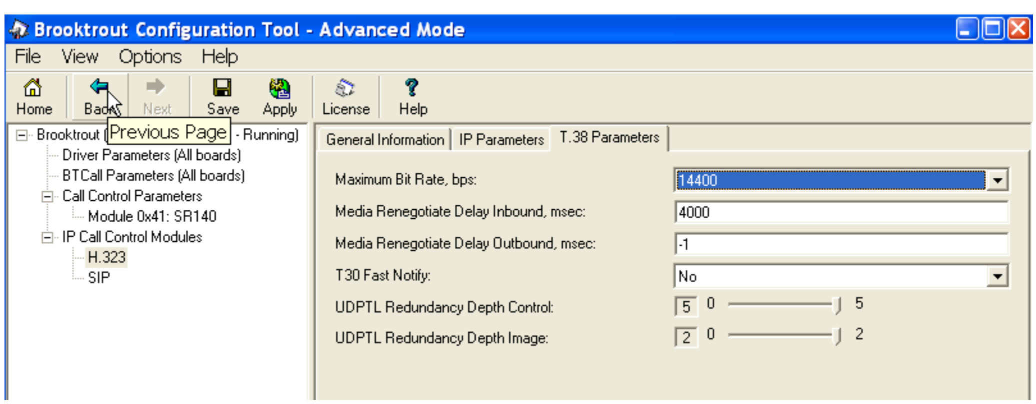

Figure 15. T.38 Parameters

5. Under Call Control Parameters, click Module 0x41: SR140 and select the Parameters tab. Complete the fields as indicated below.

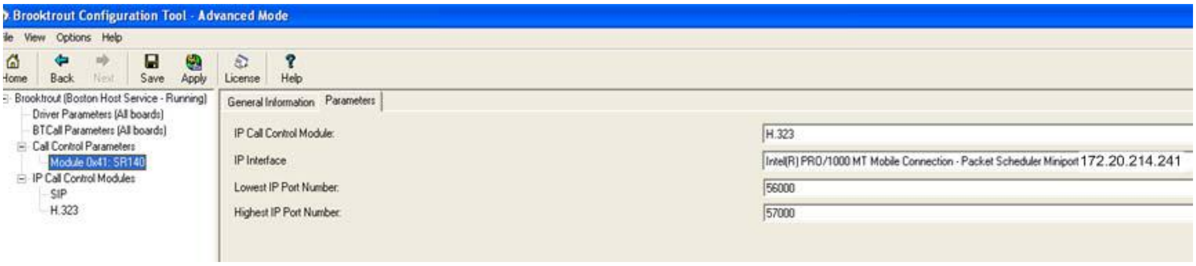

Figure 16. Module 0x41: SR140 Parameters

6. Select the desired network interface controller (NIC) for the IP Interface field.
7. Click Apply.

Slowstart Configuration

➢ **Follow the steps below to configure the SR140 Software using the Dialogic Brooktrout Configuration Tool to support this network topology.**

1. Open the Dialogic Brooktrout Configuration Tool in Advanced Mode.

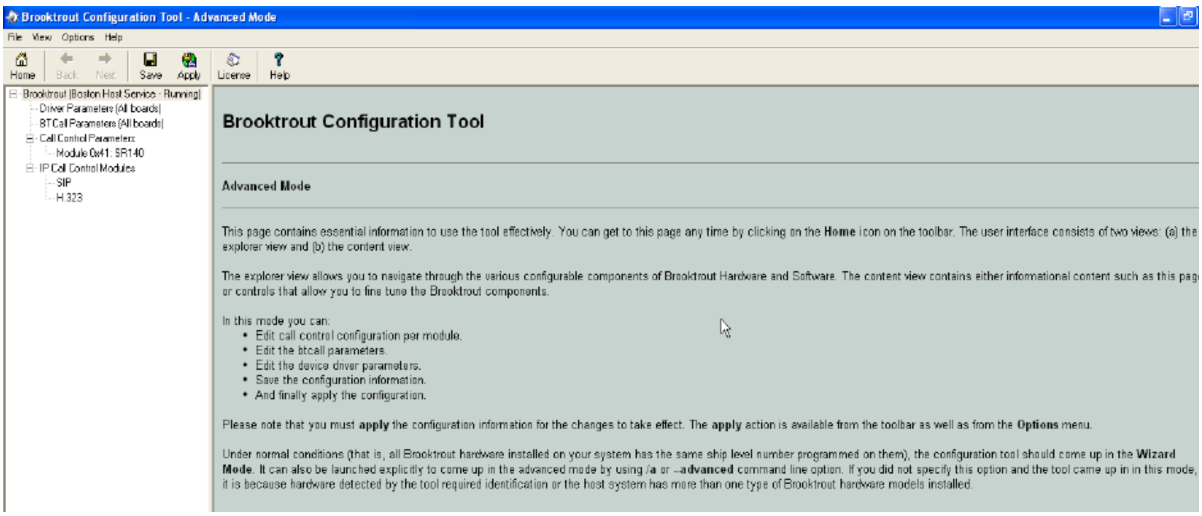

Figure 17. Dialogic Brooktrout Configuration Tool

2. Configure for the H.323 protocol as follows. Under IP Call Control Modules, click H.323 then click the IP Parameters tab.

3. Click Show Advanced. The following screen appears. Complete the fields as indicated below.

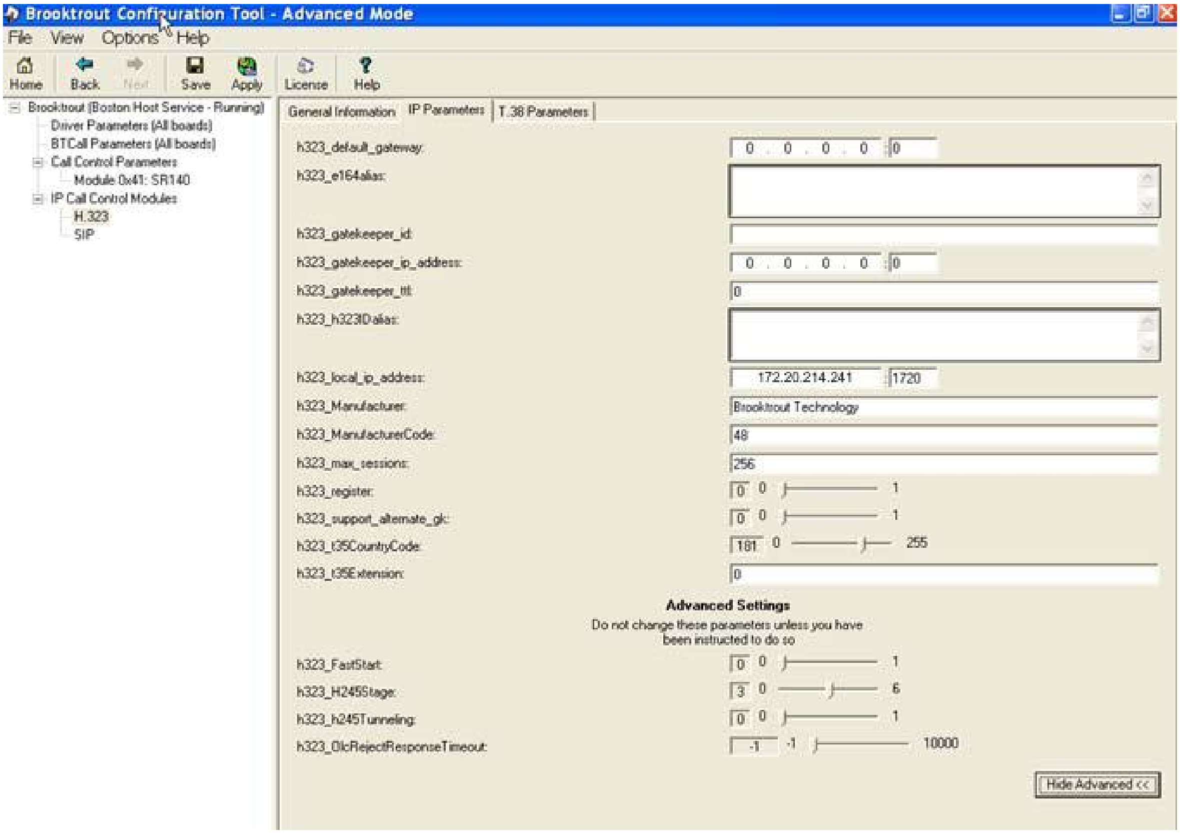

Figure 18. Advanced Settings

Note: When the h323_local_ip_address field is set to the default value (0.0.0.0:0), the system uses the IP address of the first Ethernet module in the system and port number 1720. If there are more than one ethernet modules in the Fax Server and the first module will not be used to process H.323 call control messages, then specify the actual IP address of the desired ethernet module that will be used.

4. Set the fields below as follows to ensure that Cisco interoperability works correctly.

   - h323_FastStart = 0
   - h323_H245Stage = 3
   - h323_h245Tunneling = 0

5. Click T.38 Parameter and complete fields as indicated below.

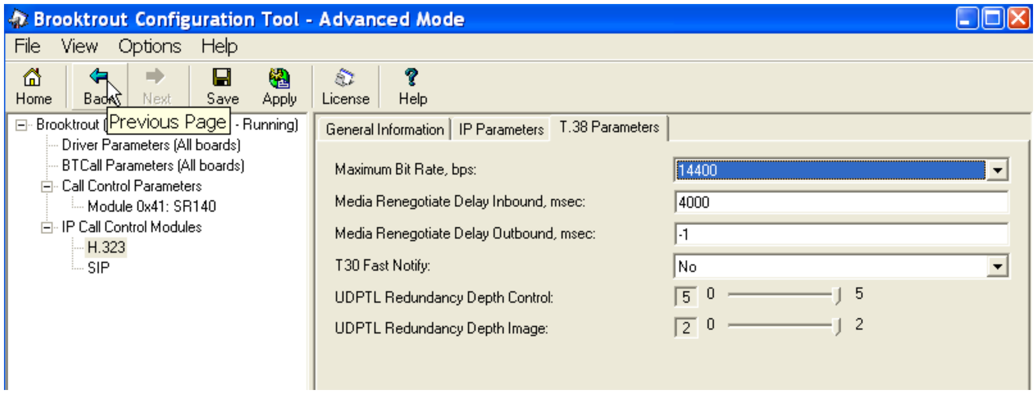

Figure 19. T.38 Parameters

6. Under Call Control Parameters, click Module 0x41: SR140 and select the Parameters tab. Complete the fields as indicated below.

Figure 20. Module 0x41: SR140 Parameters

7. Click Save.

Configuration Files

Use the configuration files in the sections below to help you configure the SR140 Software in faststart and slowstart configurations.

- *Faststart Configuration - SR140 on page 424*
- *Slowstart Configuration - SR140 on page 435*

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Configuring the Cisco Media Gateway

Configuring the Cisco Media Gateway involves the following.

- Enable T.38 support
- Configure line card interface
- Configure Dial-Peers (VoIP and POTS)

Refer to the following configuration file as a guide to configure your Cisco Media Gateway.

- *Appendix B, Faststart Configuration - Cisco Gateway-Config on page 429*
- *Appendix B, Slowstart Configuration - Cisco Gateway-Config on page 440*

Verifying the Configuration

Use the Dialogic Brooktrout Fax and Voice Diagnostic Test utility as follows to test the configuration.

This test verifies the following:

- SR140 Software configuration
- Cisco Media Gateway configuration

Verifying Fax Server Basic Configuration

Before continuing, refer to *Verifying Basic Configuration - Fax Server 172.20.214.241 on page 410* to verify that the Fax Server software is installed correctly.

Outbound Call

➢ **Follow the steps below to test a call outbound from the Fax Server to the Cisco Media Gateway.**

1. Open the Fax and Voice Diagnostic Test utility. The following screen appears. Click the 2.Telephony button (press the Apply button in the Brooktrout Configuration Tool after configuring). Click the 3.Initialize button.

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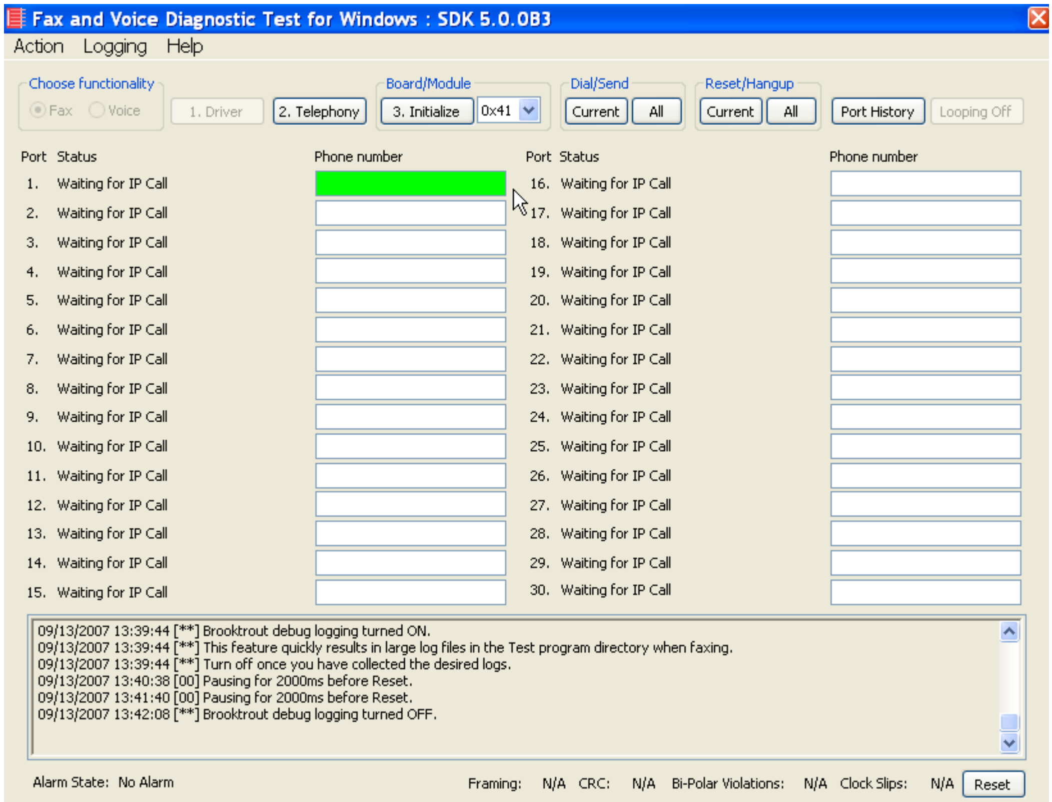

Figure 21. Fax and Diagnostic Test

2. Enter the destination telephony number and the IP address of the Cisco Media Gateway in the Phone Number box for Port 1 - for example.

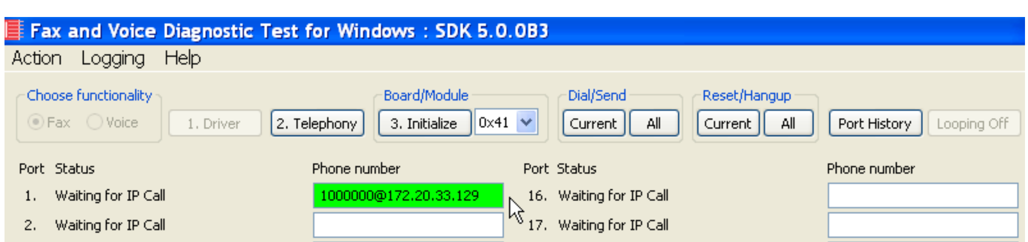

Figure 22. Gateway IP Address

3. Click Current to send the test fax call.

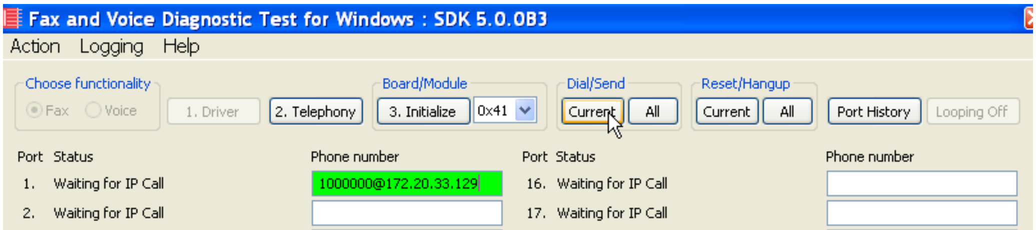

Figure 23. Current

4. Note the status at the bottom of the screen. Port 1 [00] pauses when the call is completed. When the call is completed, Click Port History while the just used Phone Number box is highlighted.

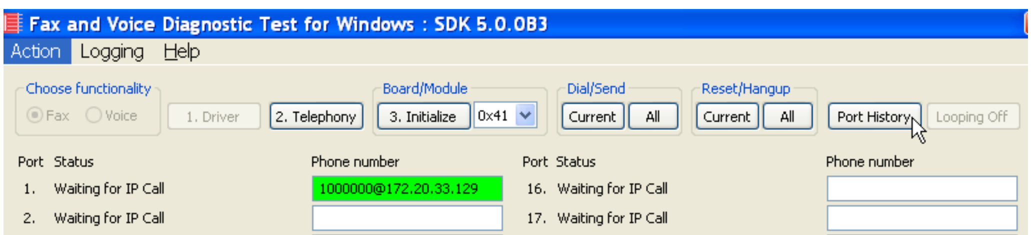

Figure 24. Port History

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5. Verify that the outbound call was successful.

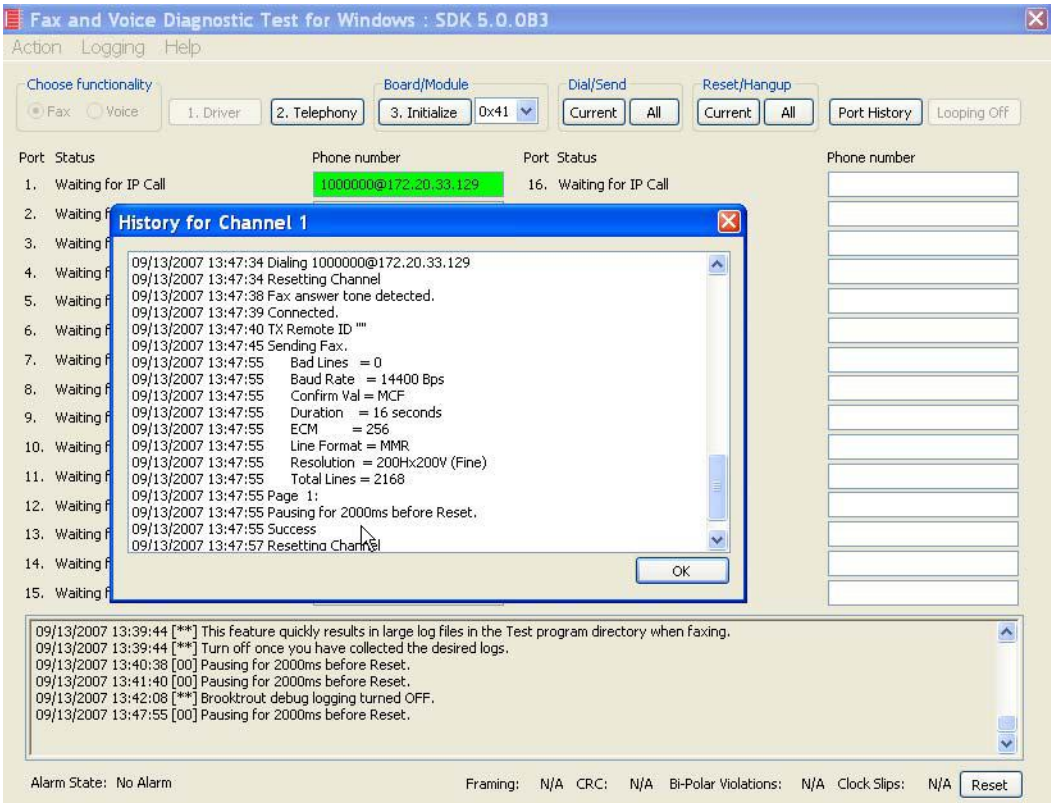

Figure 25. Outbound Call Successful

Inbound Call

➢ **Follow the steps below to test a call inbound to the Fax Server from the Cisco Media Gateway.**

1. Initiate a call from the PSTN using 323241000.
2. Watch all channels because a call should come in on one of the waiting channels.

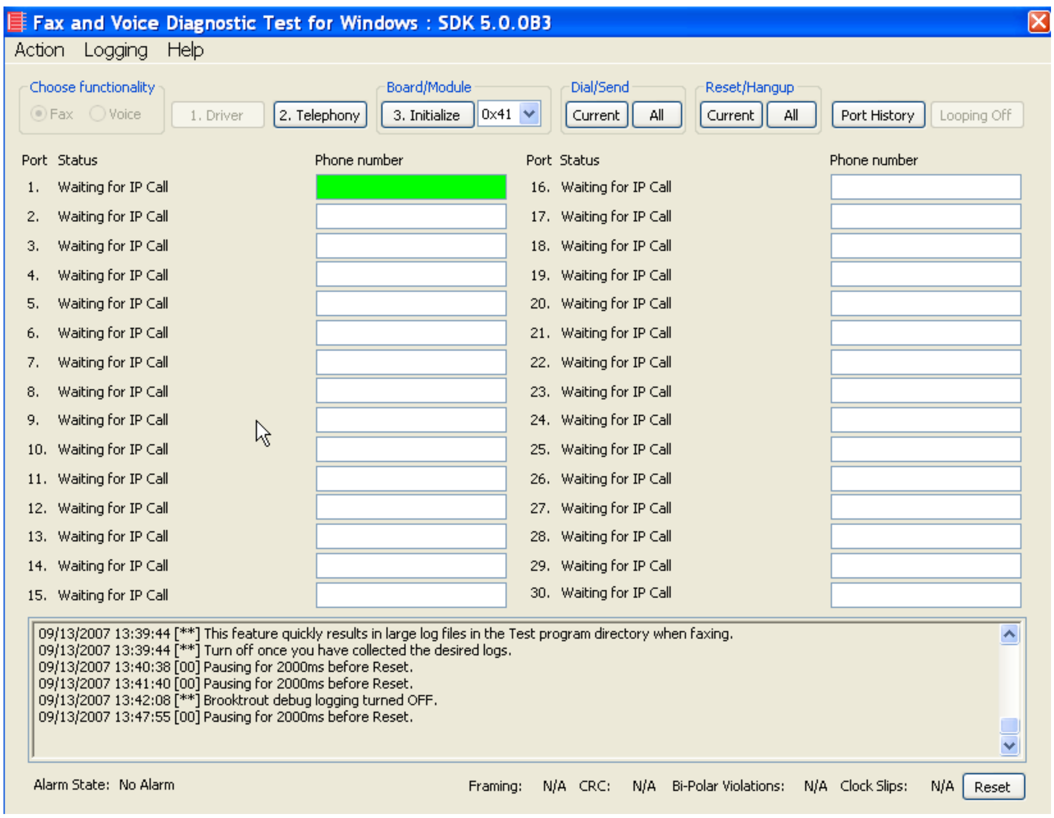

Figure 26. Fax and Voice Diagnostic Test

3. Click the Phone number box on which the call came in and click the Port History button.
4. Verify that the call was successful.

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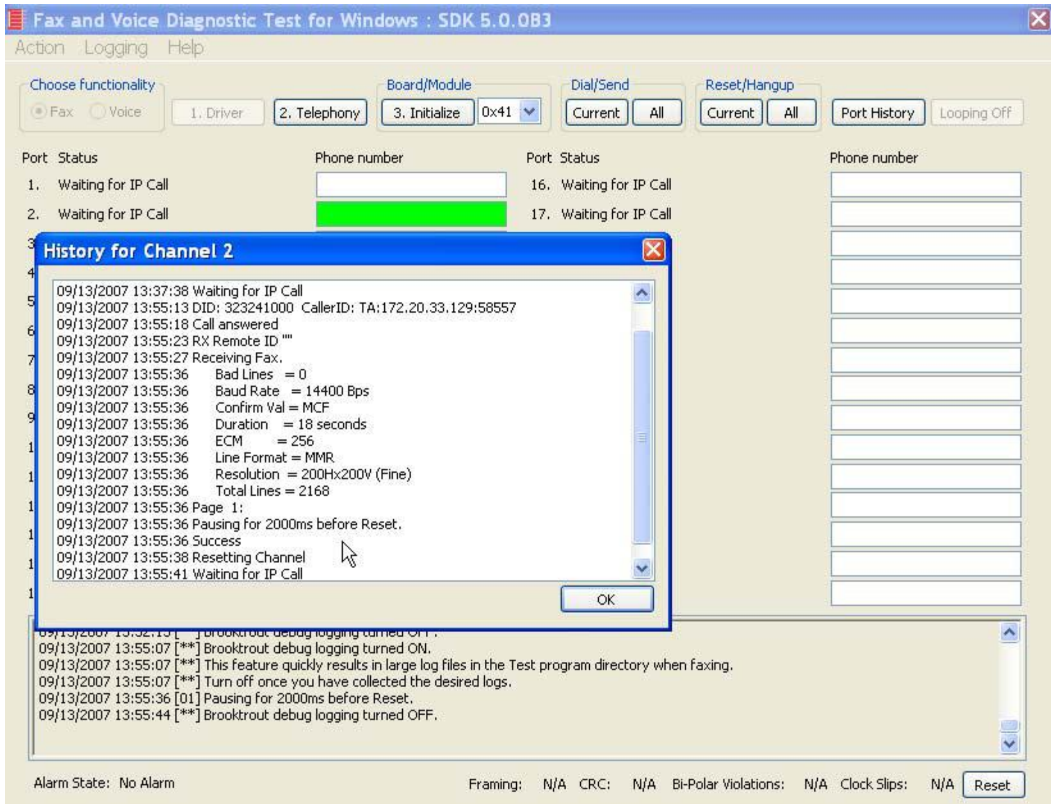

Figure 27. Inbound Call Successful

4
Topology: FoIP Direct - SIP

Introduction

In this topology, all fax routing intelligence is in the Fax Server. SIP signaling is transmitted between the Cisco Media Gateway and the Fax Server.

Note: The SR140 Software is used as an example Fax Server in this chapter. The TR1034 IP board can also be used as Fax Server.

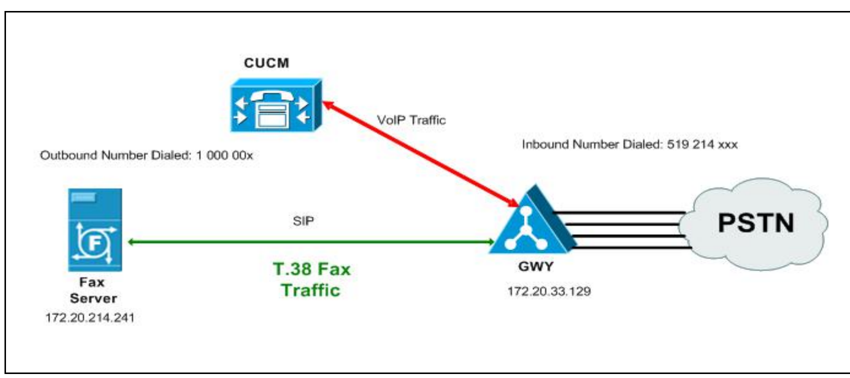

Figure 28. Fax Server Communicates FoIP Directly with the Cisco Media Gateway

Configuration Sequence

Follow the configuration sequence below for this topology:

- *Configuring the Dialogic Brooktrout Fax Server on page 35*
- *Configuring the Cisco Media Gateway on page 38*
- *Verifying the Configuration on page 39*

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Configuring the Dialogic Brooktrout Fax Server

➢ **Follow the steps below to configure the SR140 Software using the Dialogic Brooktrout Configuration Tool to support this network topology.**

1. Open the Dialogic Brooktrout Configuration Tool in Advanced Mode.

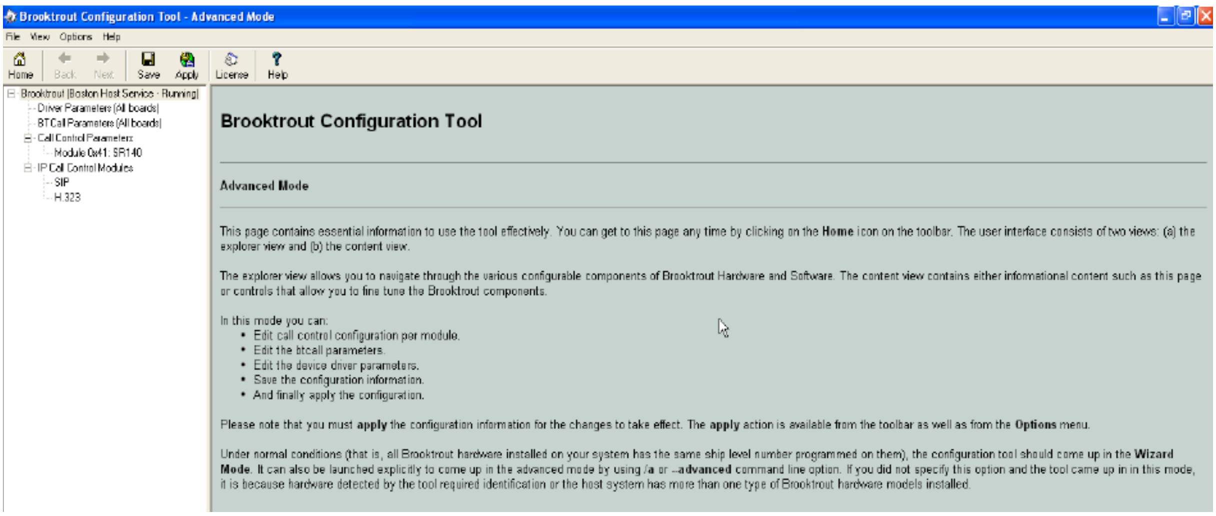

Figure 29. Dialogic Brooktrout Confutation Tool

2. Configure for the SIP protocol as follows. Under IP Call Control Modules, click SIP then click the IP Parameters tab. The following screen appears.

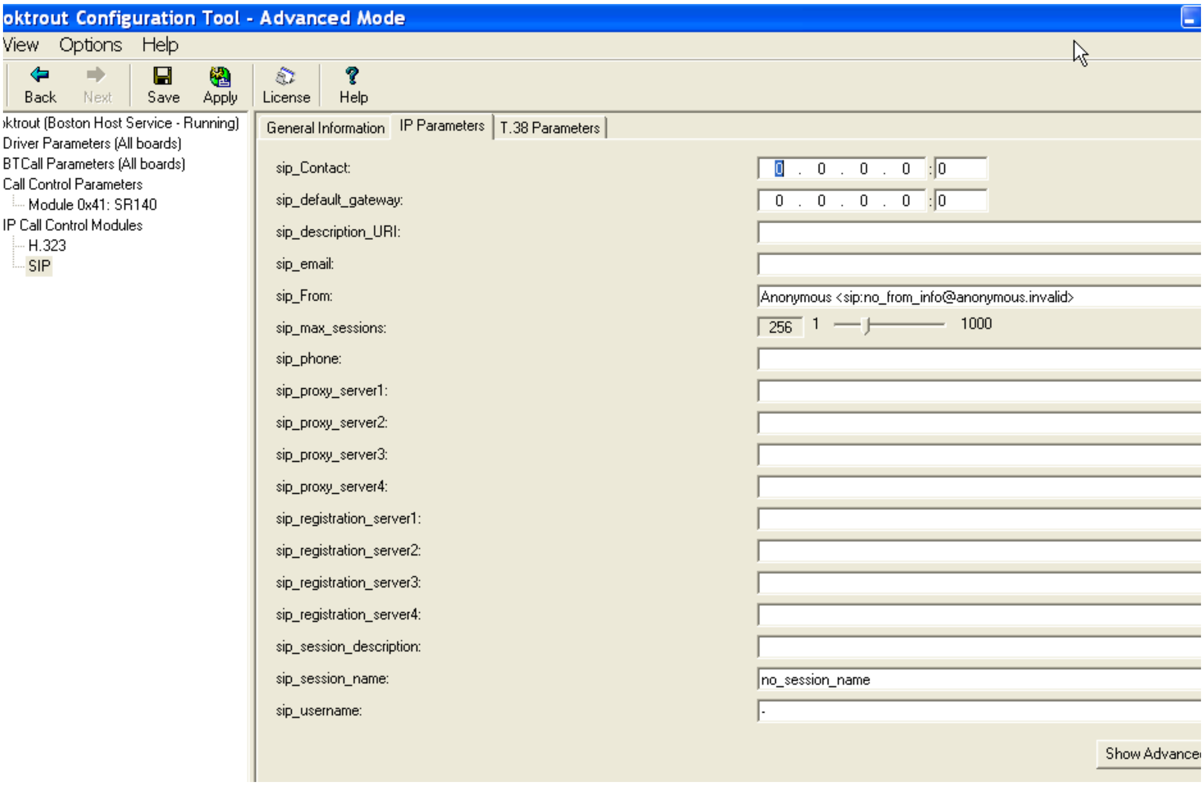

Figure 30. SIP Configuration

Note: When the SIP_Contact is set to the default value (0.0.0.0:0), the system uses the IP address of the first Ethernet module in the system and port number 5060. If there are more than one ethernet modules in the Fax Server then specify the actual IP address and port of the desired ethernet module that will be used.

3. Click T.38 Parameter and complete fields as indicated below.

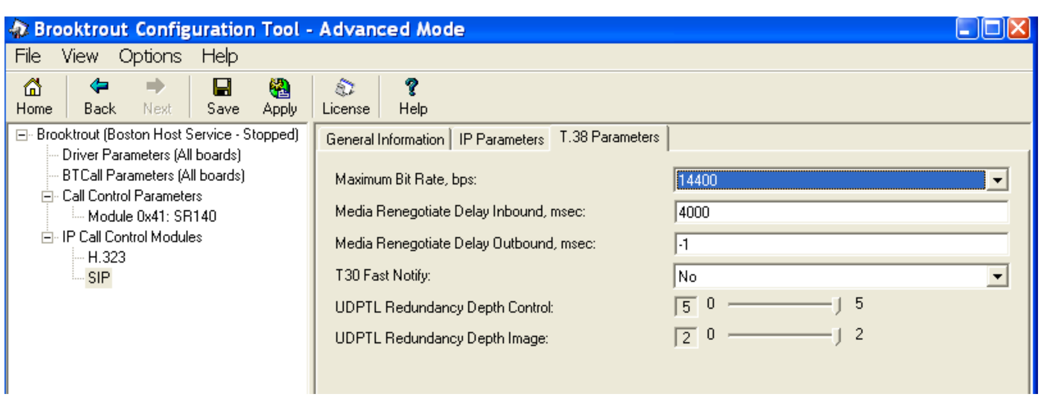

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Figure 31. T.38 Parameters

4. Under Call Control Parameters, click Module 0x41: SR140 and select the Parameters tab. Complete the fields as indicated below.

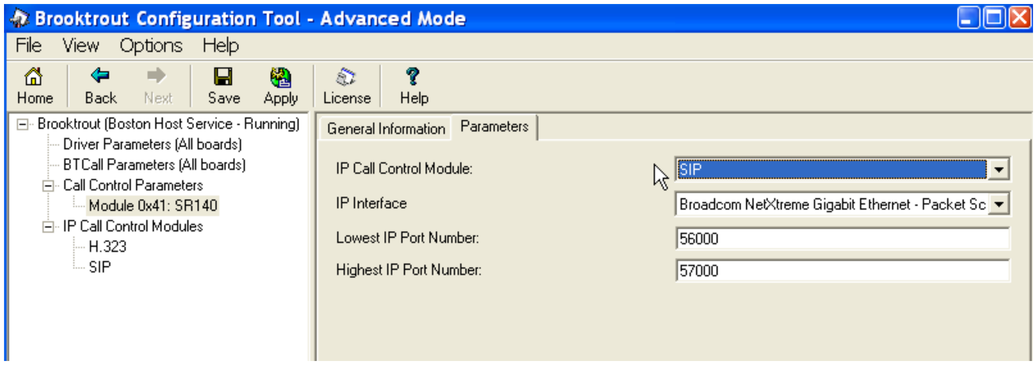

Figure 32. Parameters

5. Select the desired network interface controller (NIC) for the IP Interface field.
6. Click Apply.

Configuration Files

Use the configuration files in the sections below to help you configure the SR140 Software:

Appendix C, SR140 Configuration Files on page 448

Configuring the Cisco Media Gateway

Configuring the Cisco Media Gateway involves the following.

- Enable T.38 support
- Configure line card interface
- Configure Dial-Peers (VoIP and POTS)

Refer to the configuration file in the *Appendix C, Cisco Gateway-Config on page 454* as a guide to configure your Cisco Media Gateway.

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Verifying the Configuration

Use the Dialogic Brooktrout Fax and Voice Diagnostic Test utility as follows to test the configuration for an inbound and outbound call.

This test verifies the following:

- SR140 Software configuration
- Cisco Media Gateway configuration

Verifying Fax Server Basic Configuration

Before continuing, refer to *Verifying Basic Configuration - Fax Server 172.20.214.241 on page 410* to verify that the Fax Server software is installed correctly.

Outbound Call

➢ **Follow the steps below to test a call outbound from the Fax Server to the Cisco Media Gateway.**

1. Open the Fax and Voice Diagnostic Test utility. The following screen appears. Click the 2.Telephony button (press the Apply button in the Brooktrout Configuration Tool after configuring). Click the 3.Initialize button.

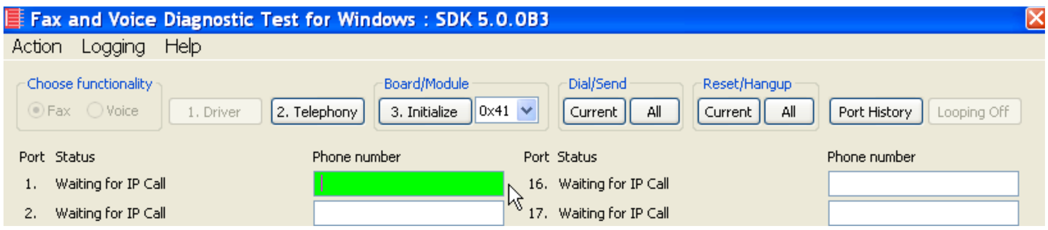

Figure 33. Fax and Diagnostic Test

2. Enter the destination telephone number and the IP address of the Cisco Media Gateway

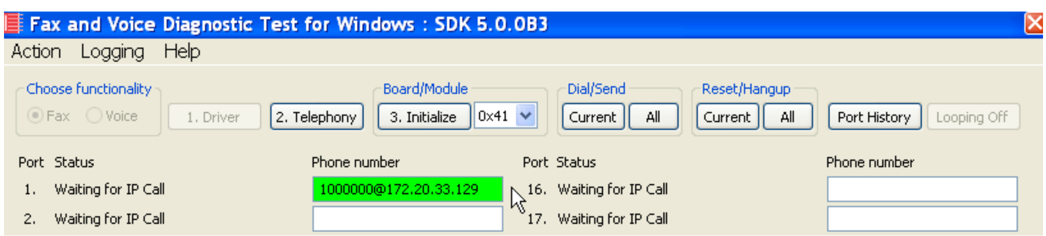

Figure 34. Gateway IP Address

3. Click Current to send the test fax.

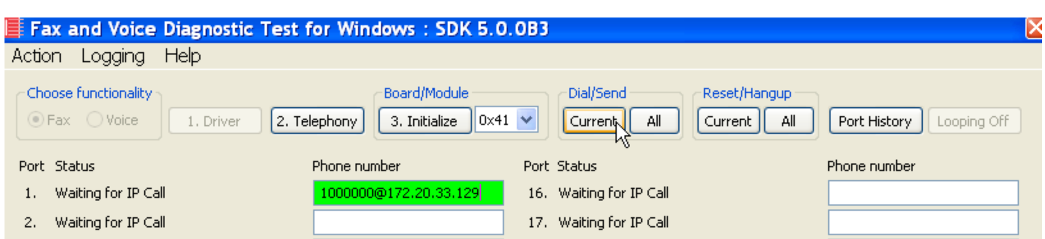

Figure 35. Current

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4. When the call is complete, click Port History while the just used Phone Number box is highlighted.

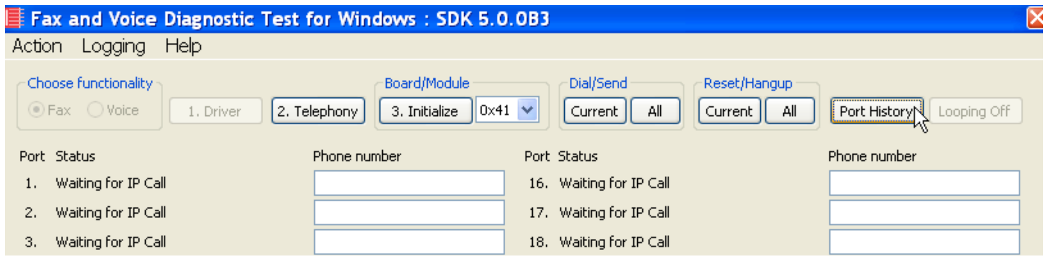

Figure 36. Port History

5. Verify that the outbound call was successful.

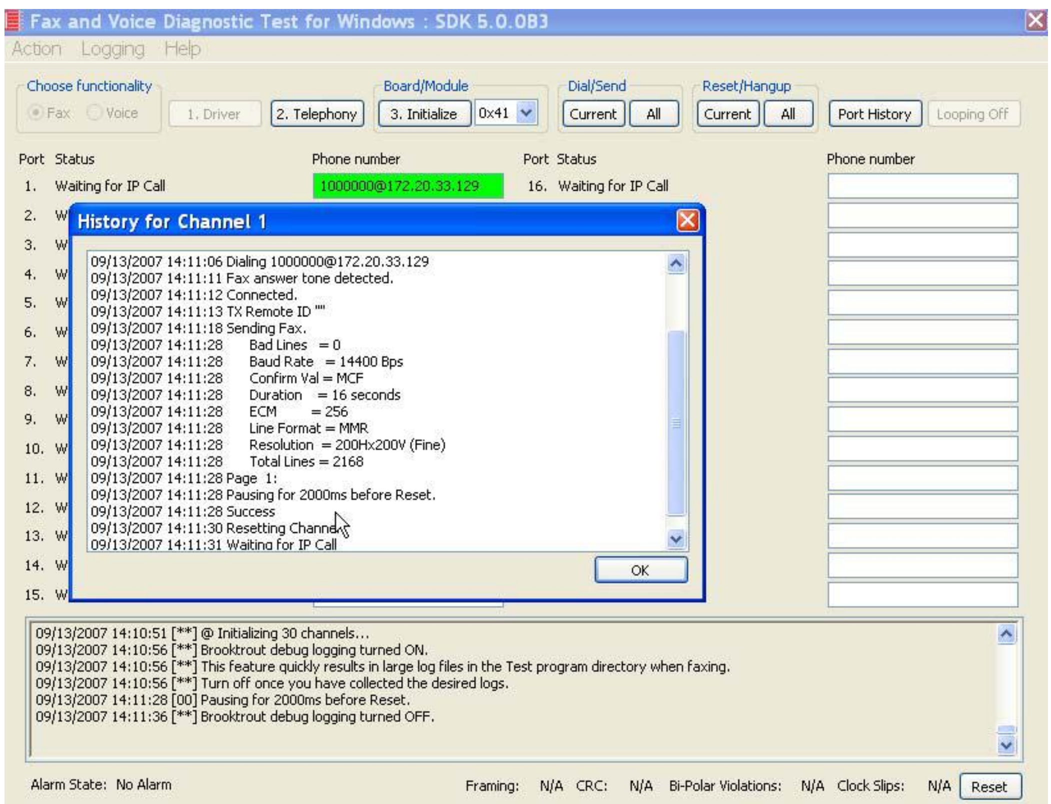

Figure 37. Outbound Call Successful

Inbound Call

➢ **Follow the steps below to test a call inbound to the Fax Server from the Cisco Media Gateway.**

1. Initiate a call from the PSTN using 519241000.
2. Watch all channels because a call should come in on one of the waiting channels.

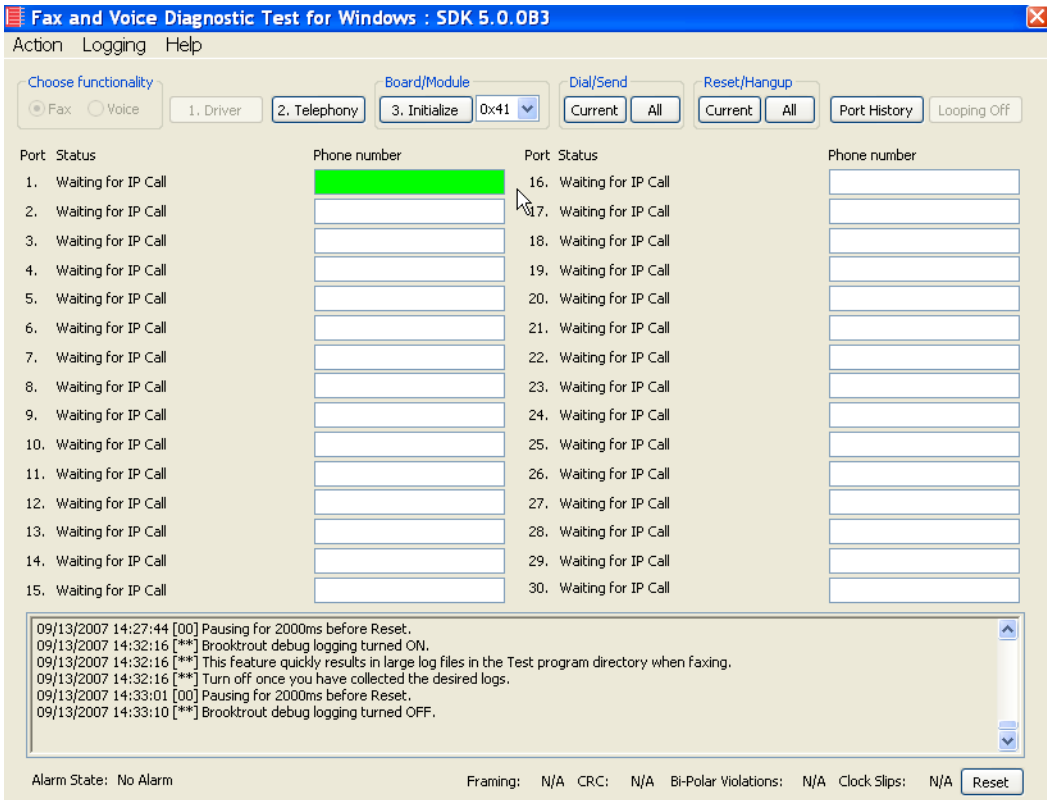

Figure 38. Fax and Voice Diagnostic Test

3. Click the Phone number box on which the call came in and click the Port History button.

.

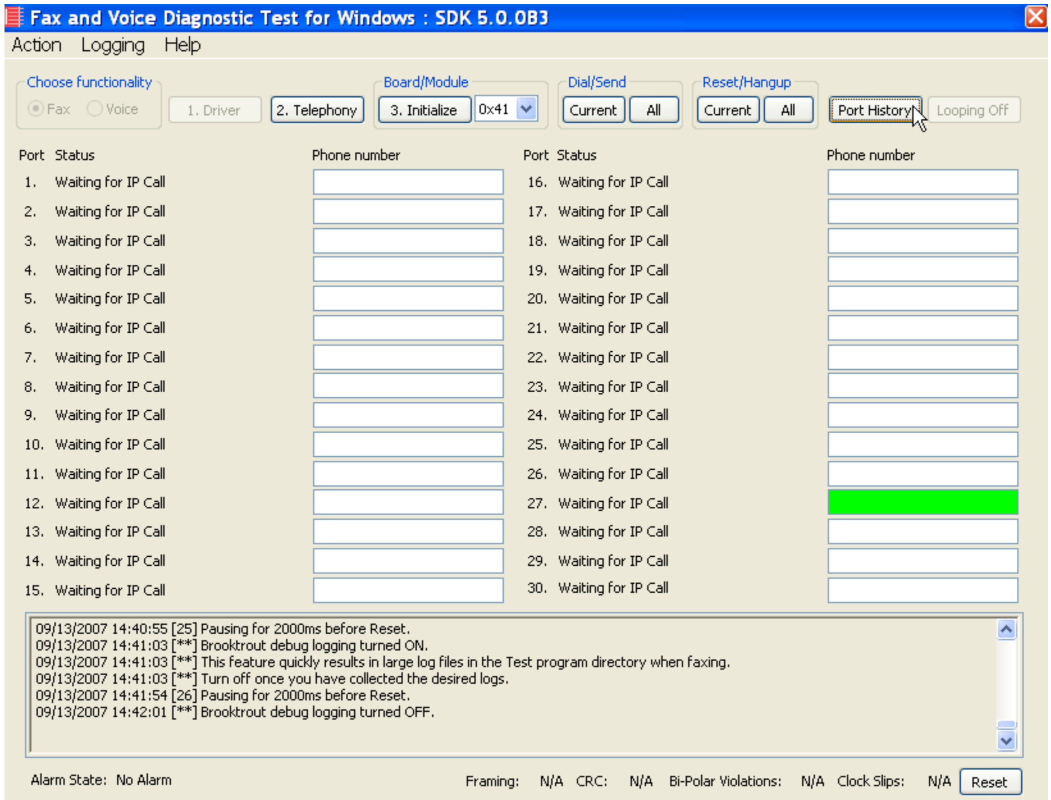

Figure 39. Port History

4. Verify that the inbound call was successful.

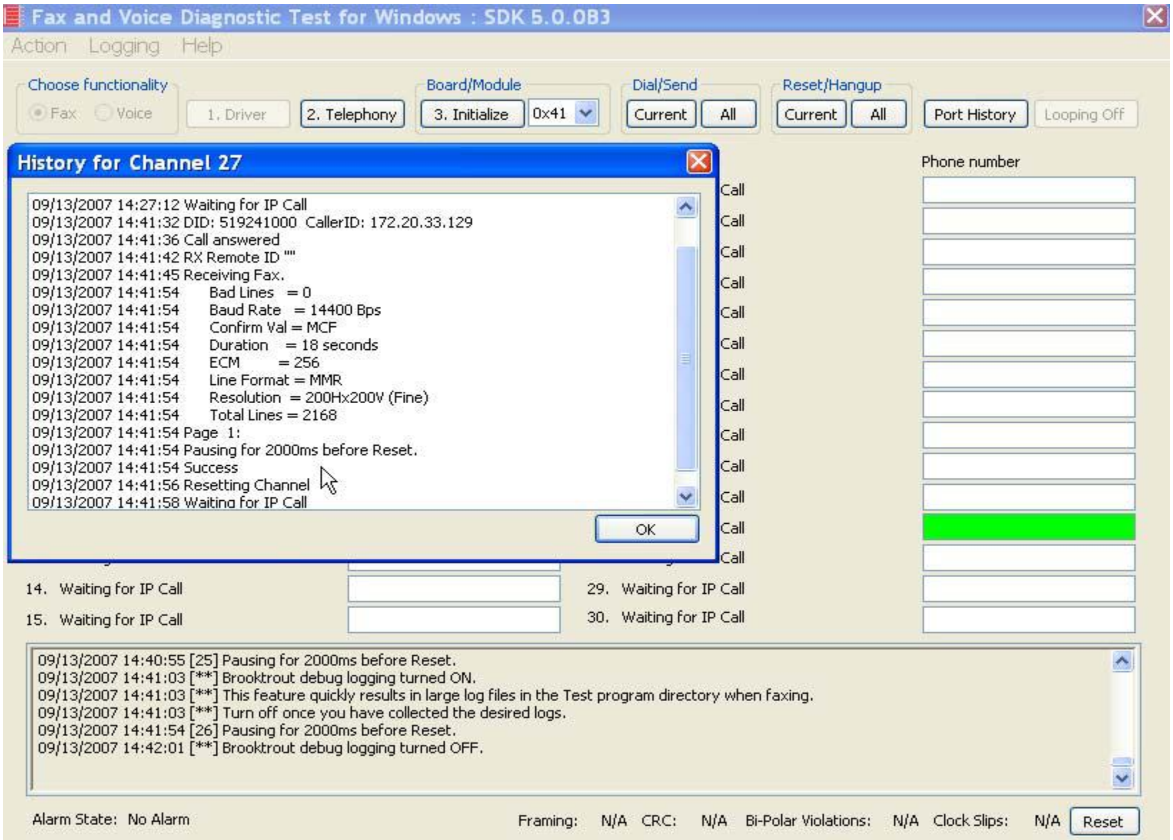

Figure 40. Inbound Call Successful

5
Topology: IOS Gatekeeper

Introduction

In this topology, the Fax Server and Cisco Media Gateway are provisioned to use an H.323 gatekeeper. The gatekeeper provides the IP addresses to the Fax Server and the Gateway. The Fax Server performs the call control via the H.323 protocol.

Note: The TR1034 IP board is used as an example Fax Server for this topology. The SR140 Software can also be used as the Fax Server.

The diagrams below show the following:

- Registration
- Outbound Call Flow
- Inbound Call Flow

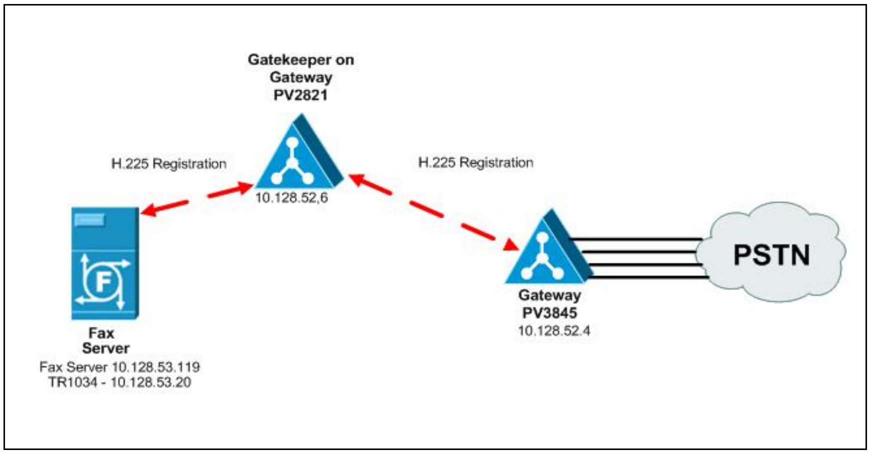

Figure 41. H.225 RAS Registration

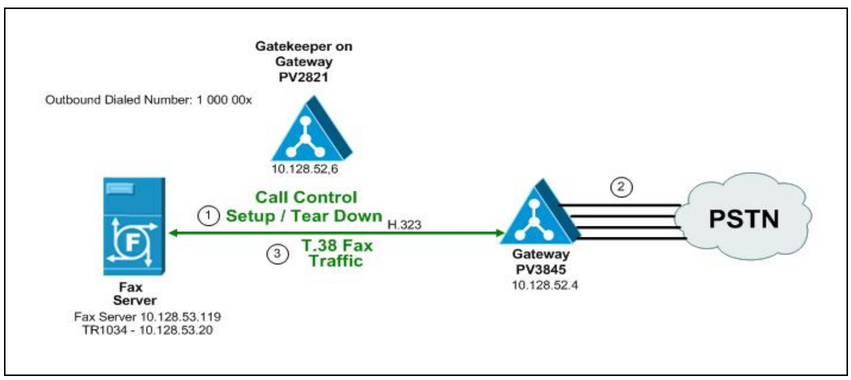

Figure 42. Outbound Call Flow

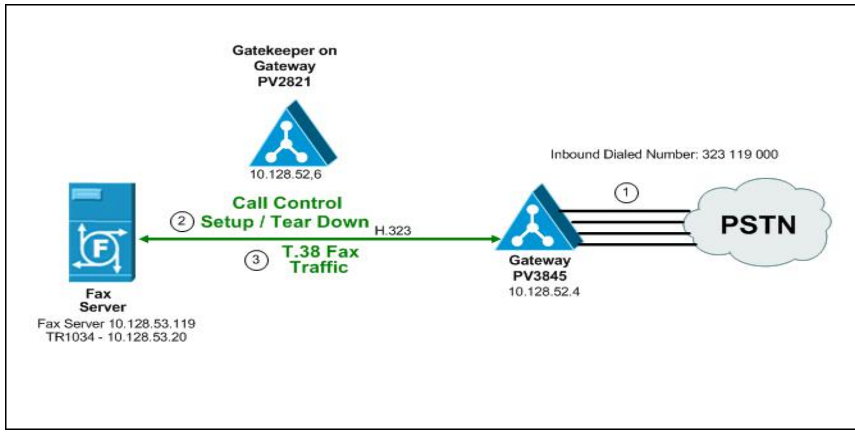

Figure 43. Inbound Call Flow

Configuration Sequence

Follow the sequence below to configure this topology:

- *Configuring the Dialogic Brooktrout Fax Server on page 49*
- *Configuring the Cisco Gatekeeper on page 59*
- *Configuring the Cisco Media Gateway on page 60*
- *Verifying the Configuration on page 61*

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Configuring the Dialogic Brooktrout Fax Server

Note: The TR1034 IP board is used as an example Fax Server for this topology. The SR140 Software can also be used as the Fax Server.

➢ Follow the steps below to configure the TR1034 board using the Dialogic Brooktrout Configuration Tool to support this network topology.

1. Open the Dialogic Brooktrout Configuration Tool in Advanced Mode.

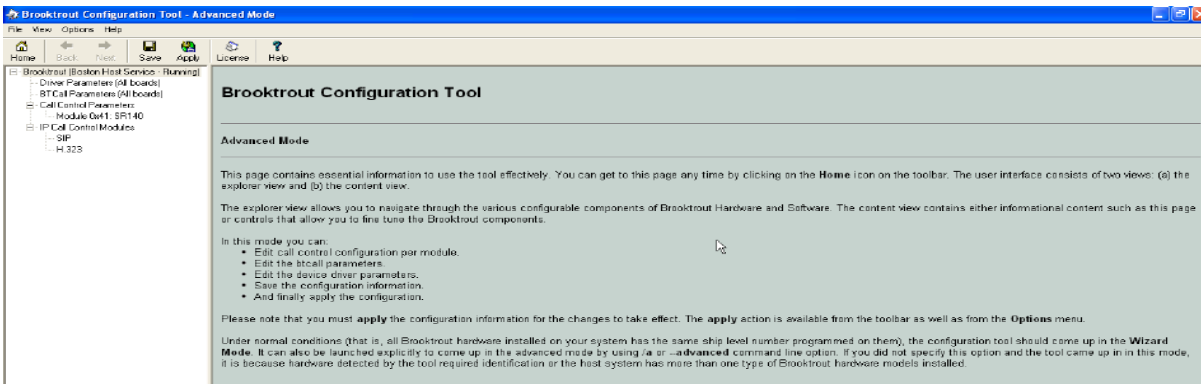

Figure 44. Dialogic Brooktrout Configuration Tool

2. The tool detects an IP module in the system. The following screen appears. Select H.323.

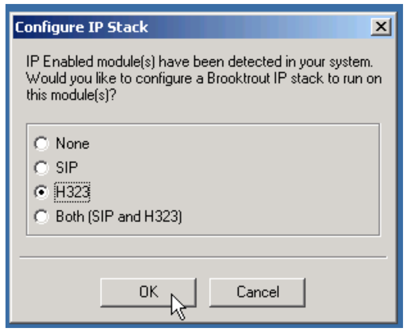

Figure 45. IP Parameters

3. The following screen appears. Select the TR1034 module in the left pane. Then select IP in the Call Control Type box.

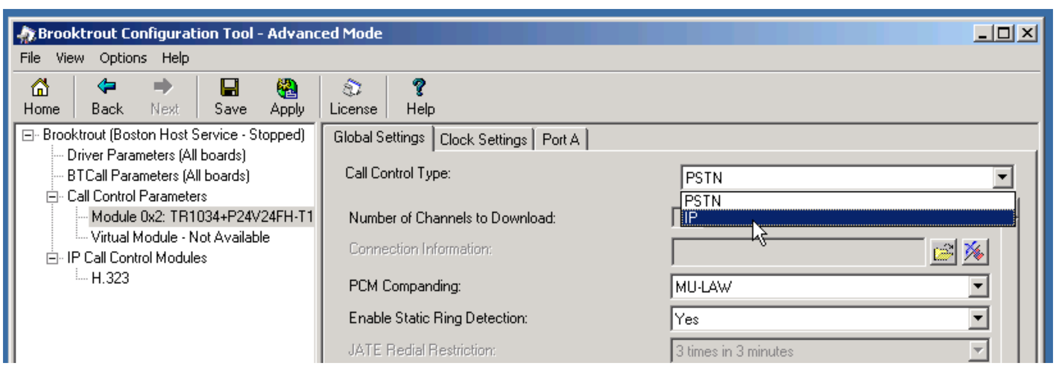

Figure 46. Call Control Type

4. Select the Ethernet/IP Port tab.

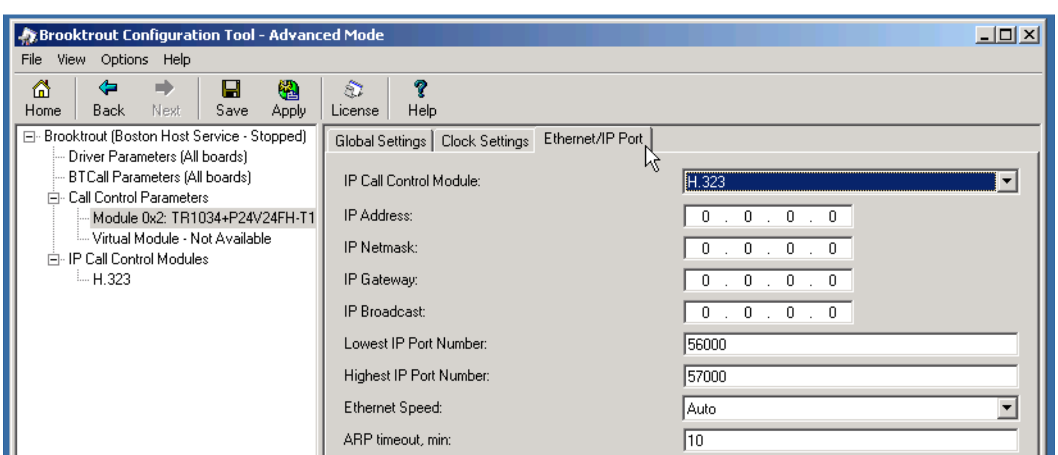

Figure 47. Ethernet/IP Port

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5. Complete the screen as indicated below.

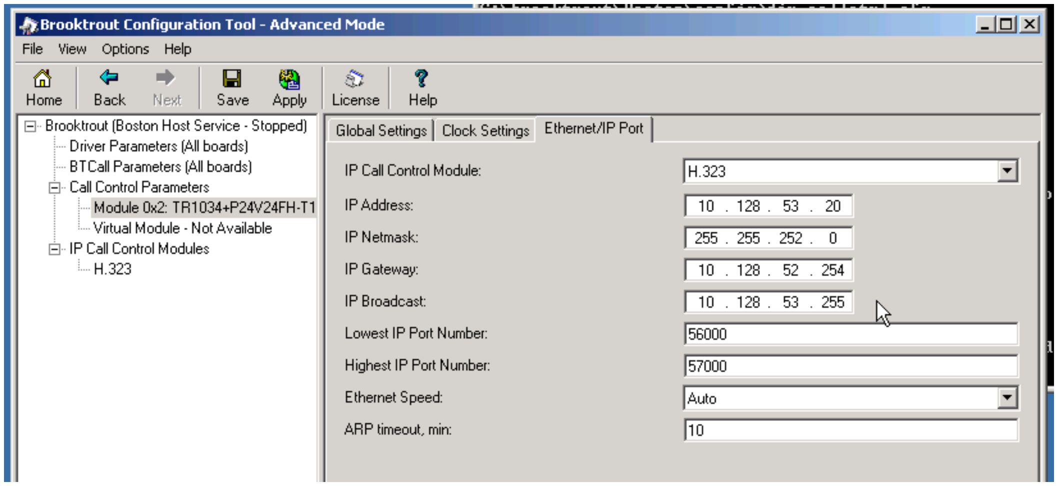

Figure 48. Ethernet/IP Data

6. Select H.323 in the left pane. Click IP Parameters tab.

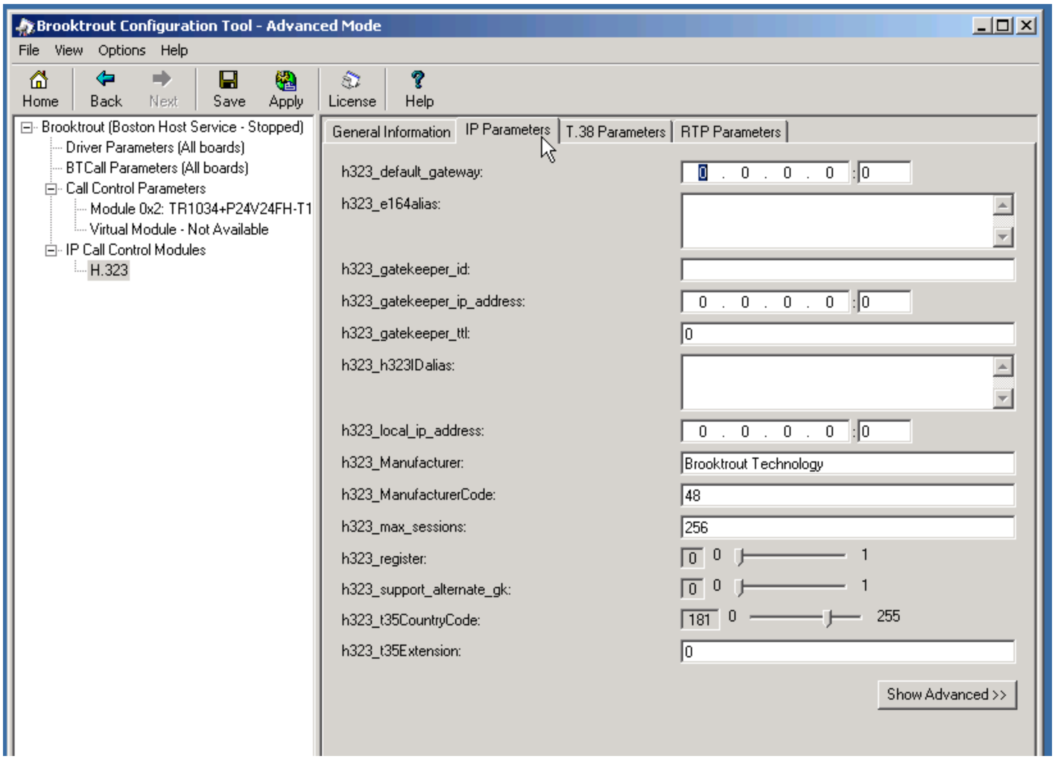

Figure 49. IP Parameters

7. Click Show Advanced.

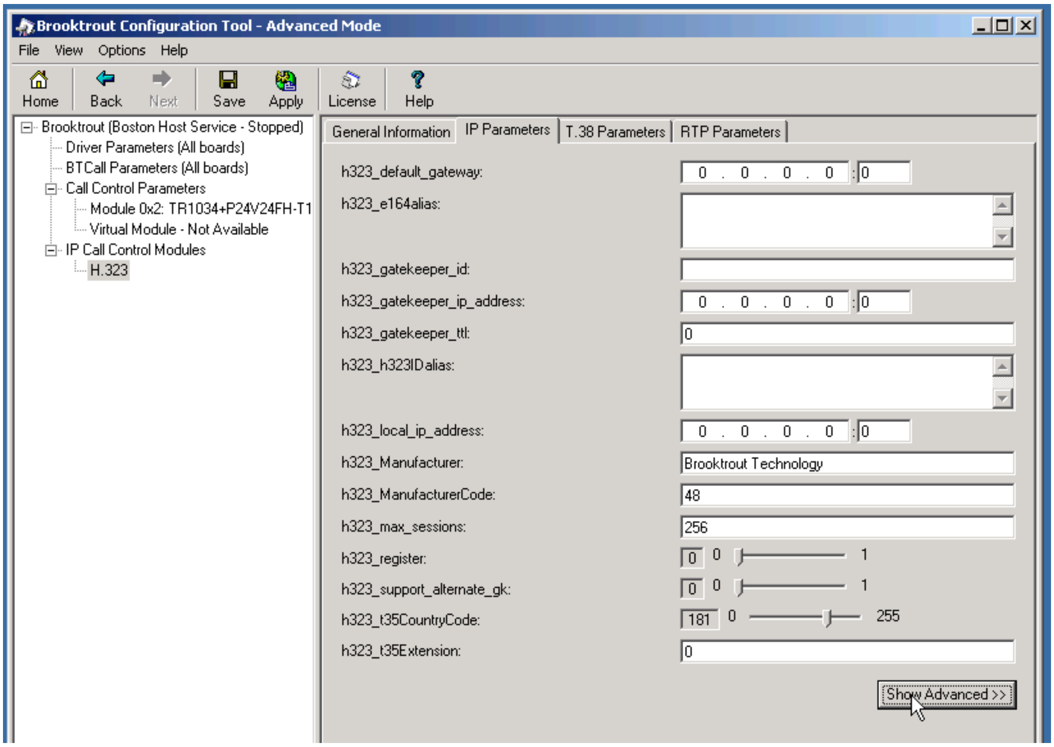

Figure 50. Advanced Settings

8. The following screen appears.

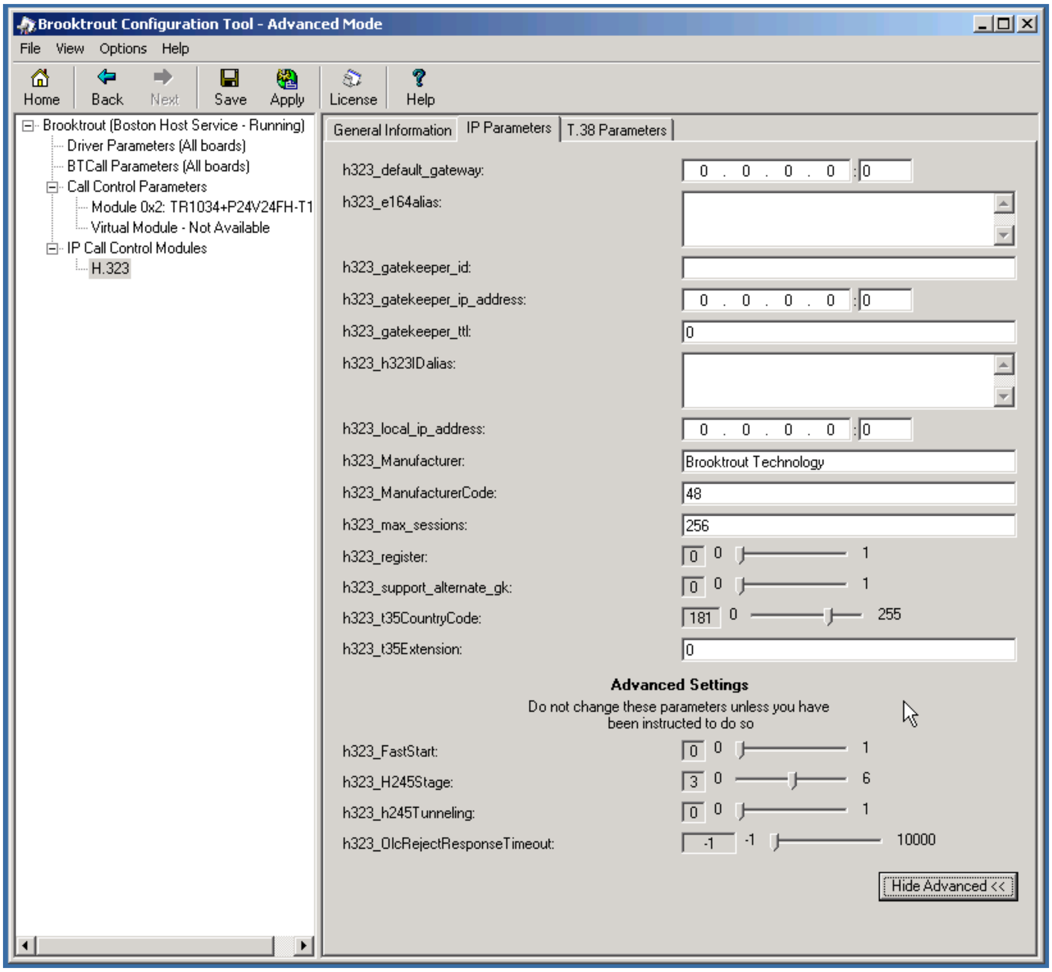

Figure 51. Advanced Settings

9. Complete the screen as indicated below.

This document is not to be distributed to a third party without written permission from Dialogic.

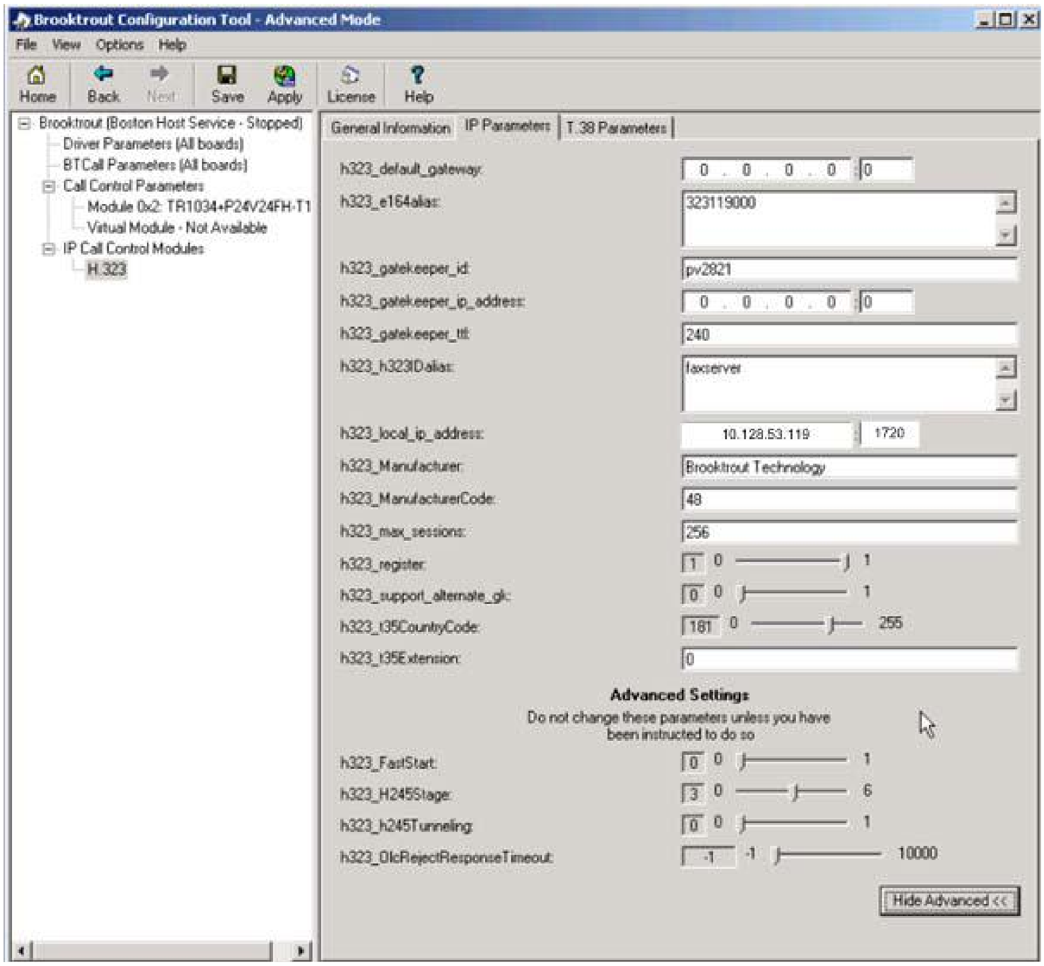

Figure 52. Advanced Settings Data

Note: When the h323_local_ip_address field is set to the default value (0.0.0.0:0), the system uses the IP address of the first Ethernet module in the system and port number 1720. If there are more than one ethernet modules in the Fax Server then specify the actual IP address of the desired ethernet module that will be used.

10. Click T.38 Parameter tab and complete fields as indicated below.

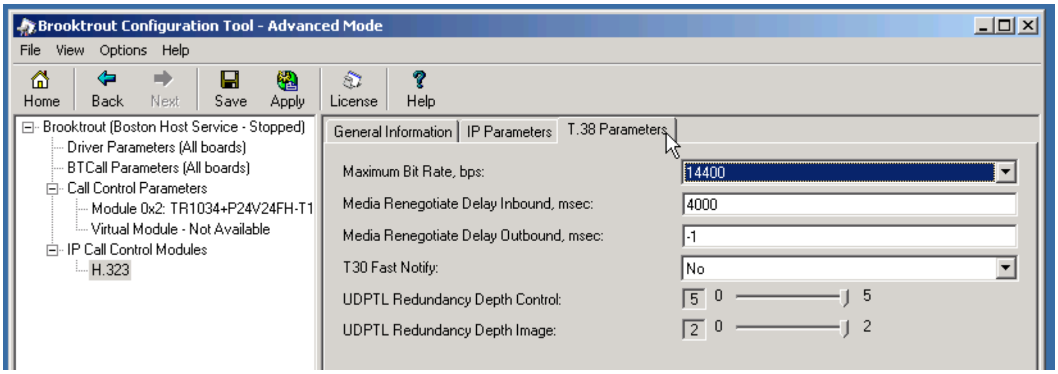

Figure 53. T.38 Parameters

11. Click Apply.

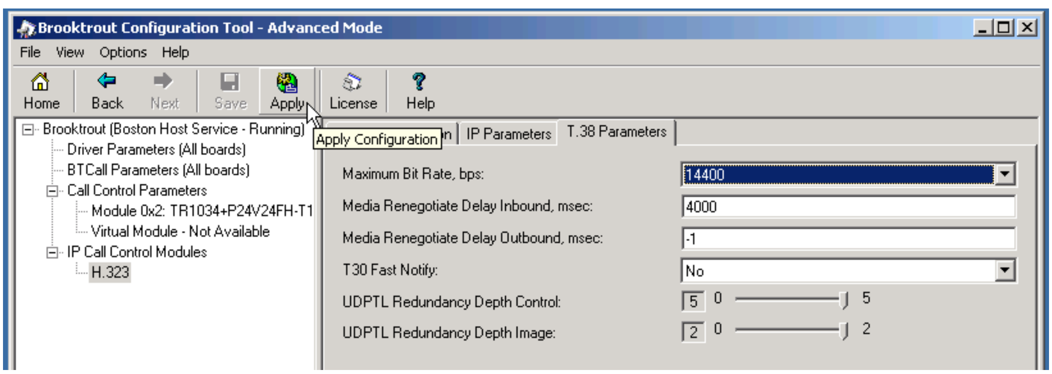

Figure 54. Apply

The following screen appears. When the Host Service is started continue to the next step.

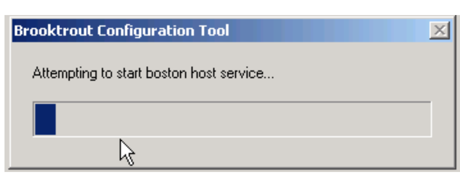

Figure 55. Start Host Service

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12. From the File menu, select Exit.

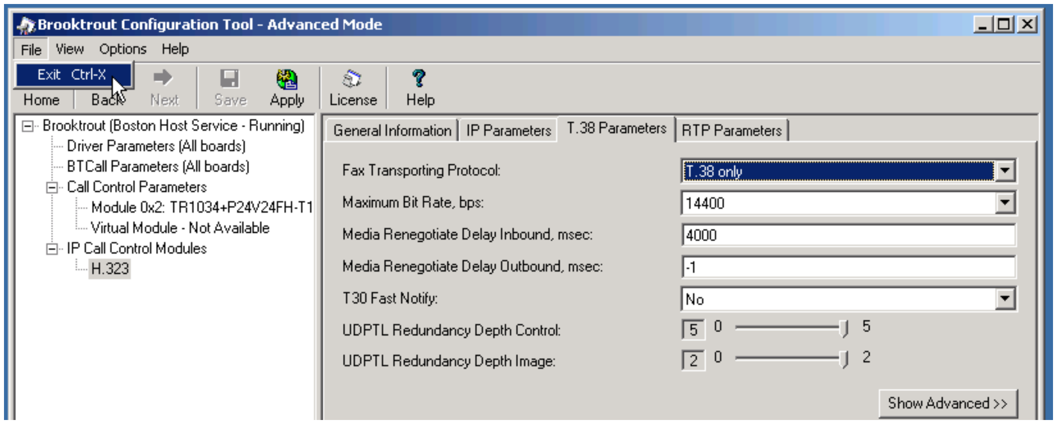

Figure 56. Exit

Configuration Files

Use the configuration files in the section below to help you configure the TR1034 board.

Appendix D, TR1034 Configuration Files on page 462

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Configuring the Cisco Gatekeeper

See the configuration file in *Appendix D, Startup-Config (Gatekeeper PV2821) on page 467* as a guide to configure your Cisco Gatekeeper.

Cisco Documents

For more information on how to configure your Cisco IOS-based H.323 Gatekeeper refer to the following documents from Cisco Systems.

- *Understanding Cisco IOS H.323 Gatekeeper Call Routing* - Document ID 2446

http://www.cisco.com/en/US/tech/tk1077/technologies_tech_note09186a00800a8928.shtml

- *Understanding H.323 Gatekeepers – Document ID 5244*

http://www.cisco.com/warp/public/788/voip/understand-gatekeepers.html

- *Basic Two Zone Cisco Gateway-to-Gatekeeper Configuration – Document ID 21063*

http://www.cisco.com/en/US/tech/tk1077/technologies_configuration_example09186a00800a9a56.shtml

Configuring the Cisco Media Gateway

Configuring the Cisco Media Gateway involves the following:

- Enable T.38 support
- Configure line card interface
- Configure Dial-Peers (VoIP and POTS)
- Configure H.323 Gatekeeper support

See the configuration file in *Appendix D, Startup-Config (Gateway PV3845) on page 472* as a guide to configure your Cisco Media Gateway.

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Verifying the Configuration

Use the Dialogic Brooktrout Fax and Voice Diagnostic Test utility as follows to test the configuration for an inbound and outbound call.

This test verifies the following:

- SR140 Software configuration
- Cisco Media Gateway configuration

Verifying the Fax Server Basic Configuration

Before continuing, refer to *Appendix A, Verifying Basic Configuration - Fax Server 172.20.231.122 on page 414* to verify that the Fax Server software is installed correctly. Be sure to replace the IP address 172.20.231.122 with 10.128.53.119 to perform the basic test for this particular example from this topology.

Inbound Call

➢ **Follow the steps below to test a call inbound to the Fax Server from the PSTN.**

1. Open the Fax and Voice Diagnostic Test utility.

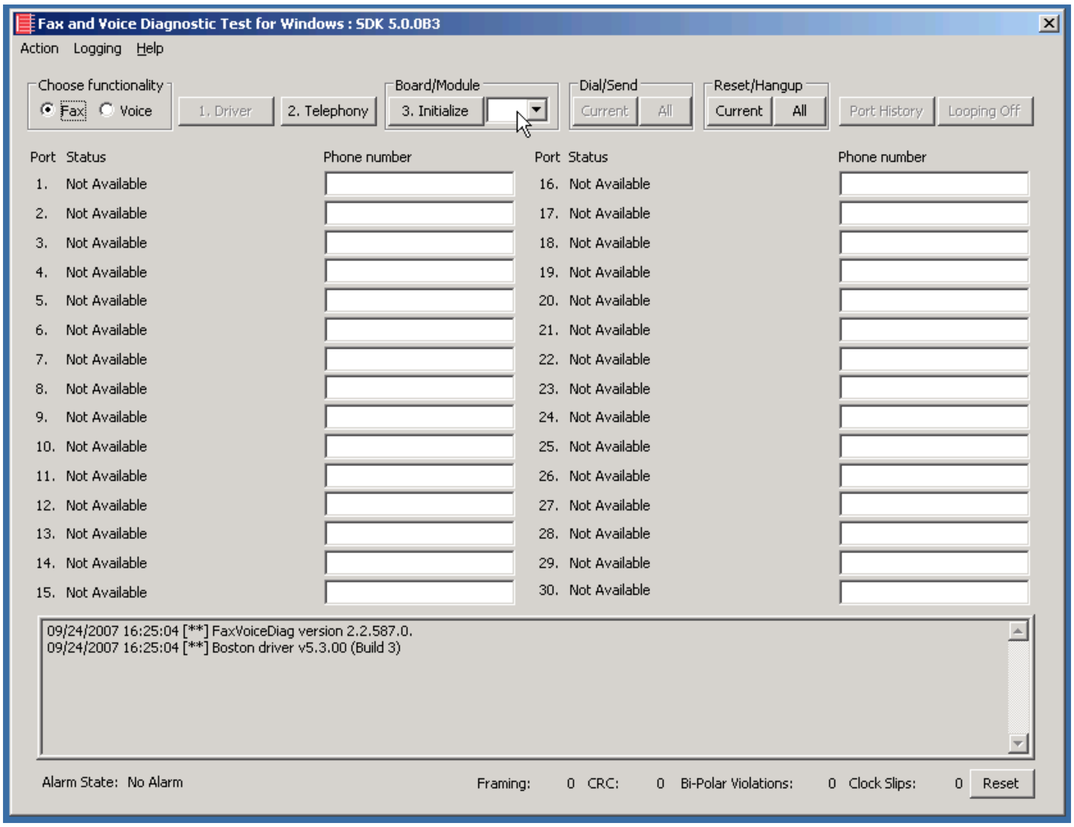

Figure 57. Fax Diagnostic Tool

2. Select the module number. In this example, the module is 0x02 for the TR1034 board

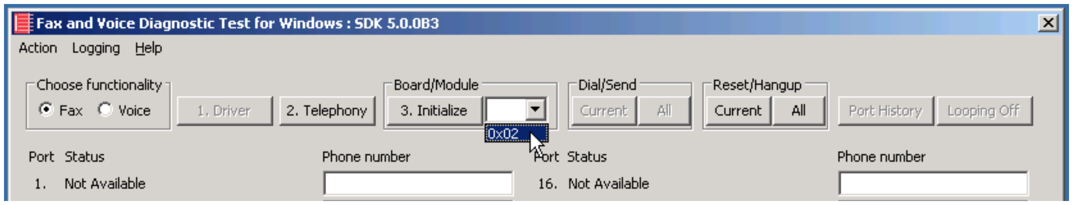

Figure 58. Board/Module

3. Click Initialize to initialize the TR1034 board.

Figure 59. Initialize Board

4. See the bottom of the screen for the indication that the initialization is complete.

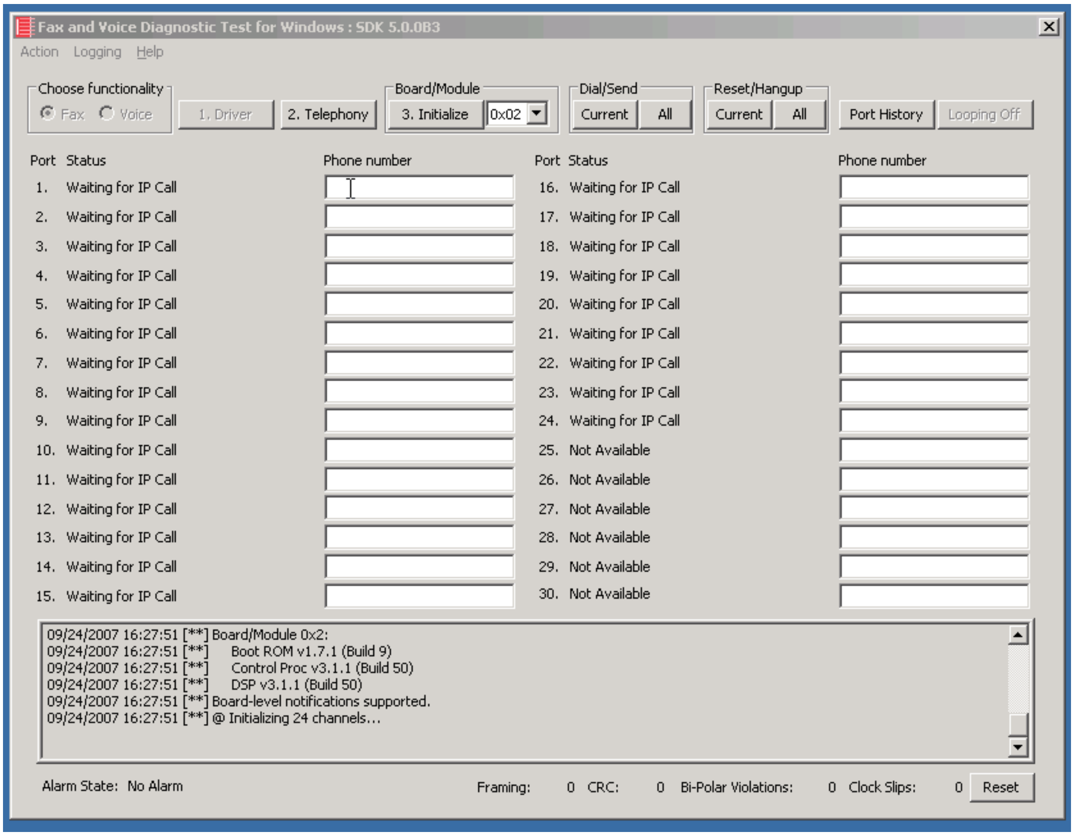

Figure 60. Initialization Complete

5. Call the following number from the PSTN: 323119000. Watch all the channels because a call should come in on one of the waiting channels.

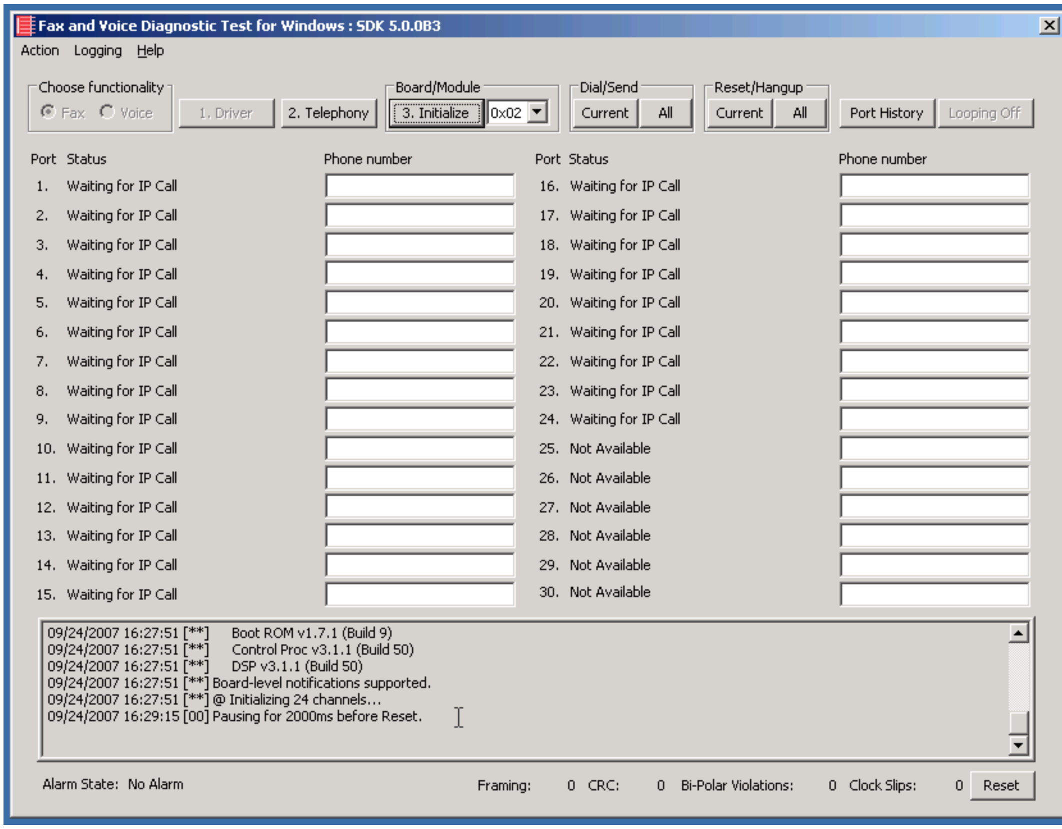

Figure 61. Call Complete

6. Select the Phone number box for from the channel on which the call came in.

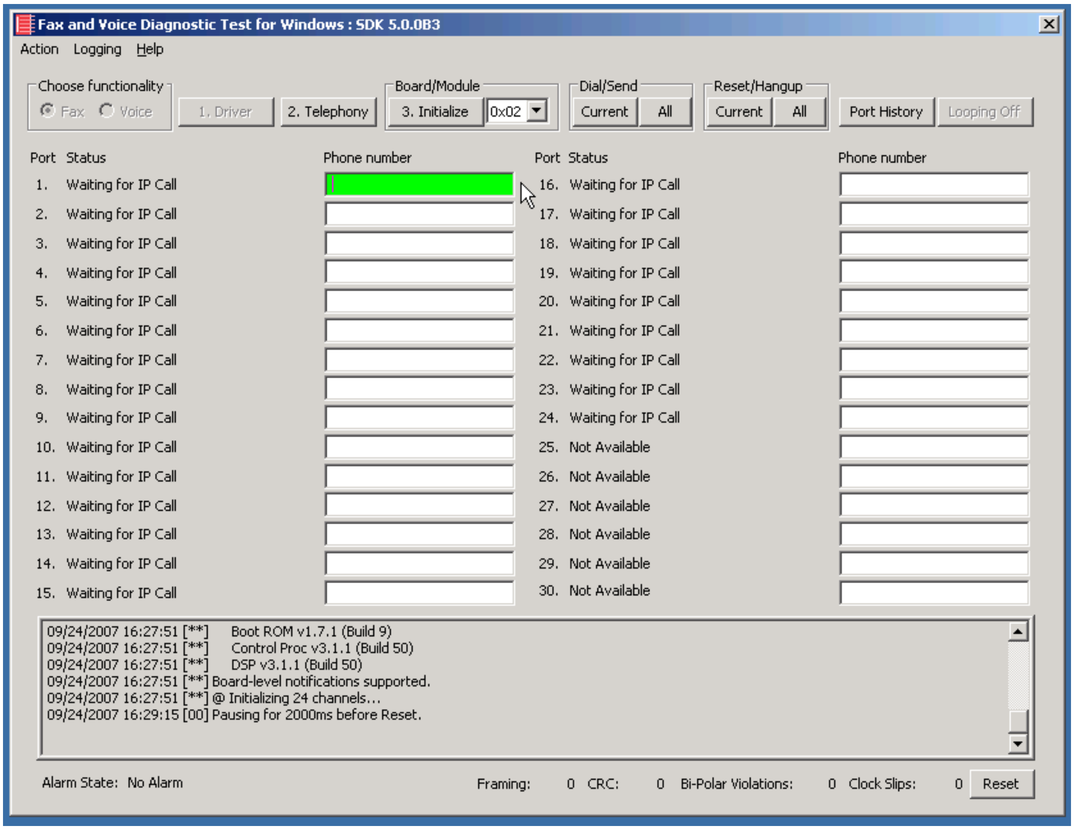

Figure 62. Select Phone Number Box for Call

7. Click Port History.

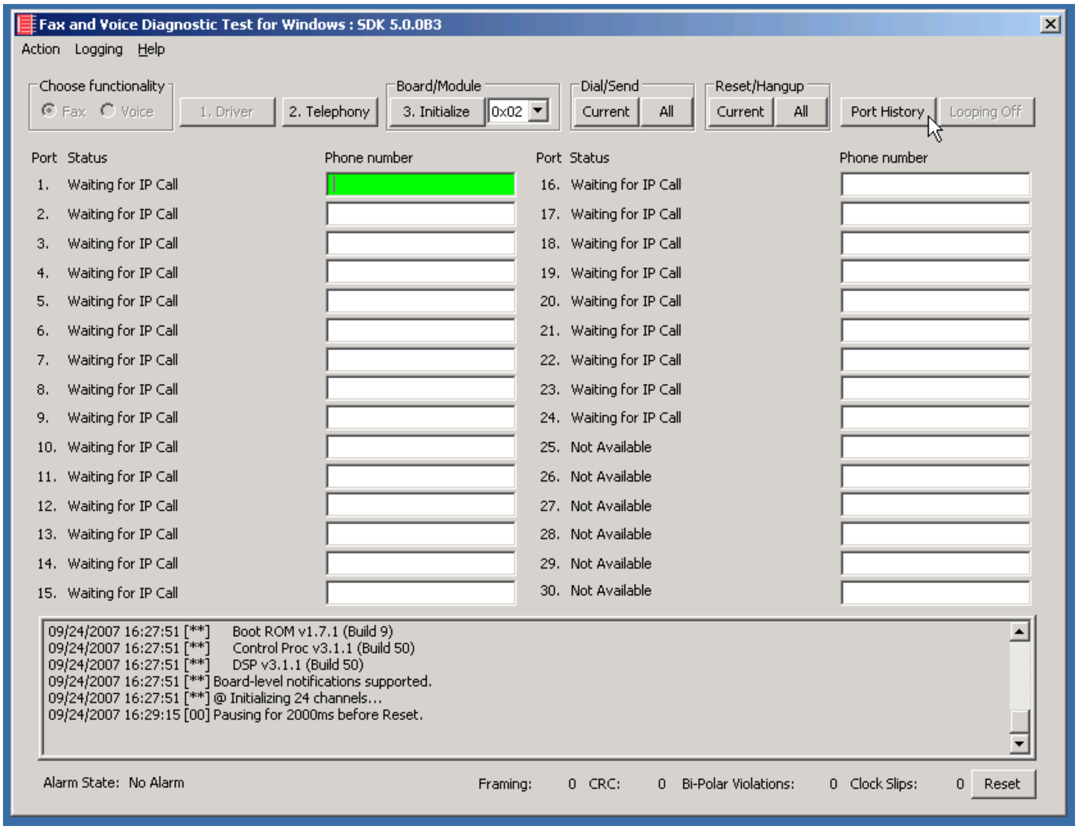

Figure 63. Port History

8. Verify that the inbound call was successful.

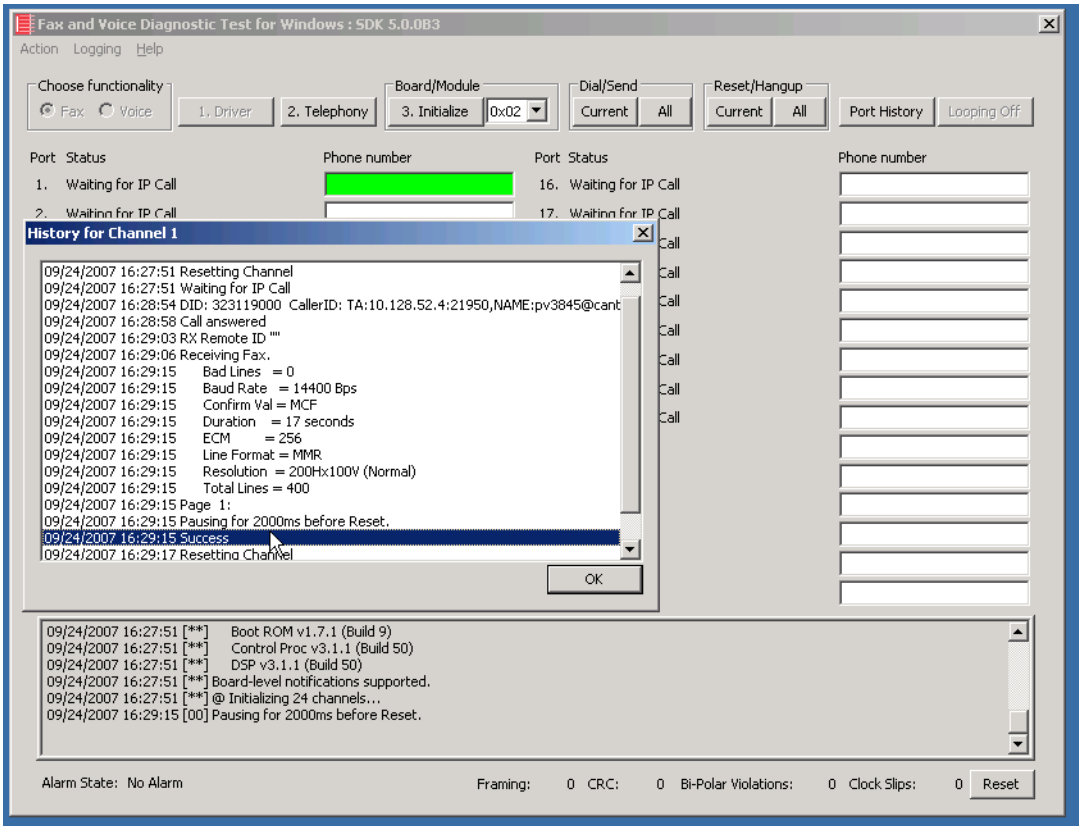

Figure 64. Successful Call

9. Click OK.

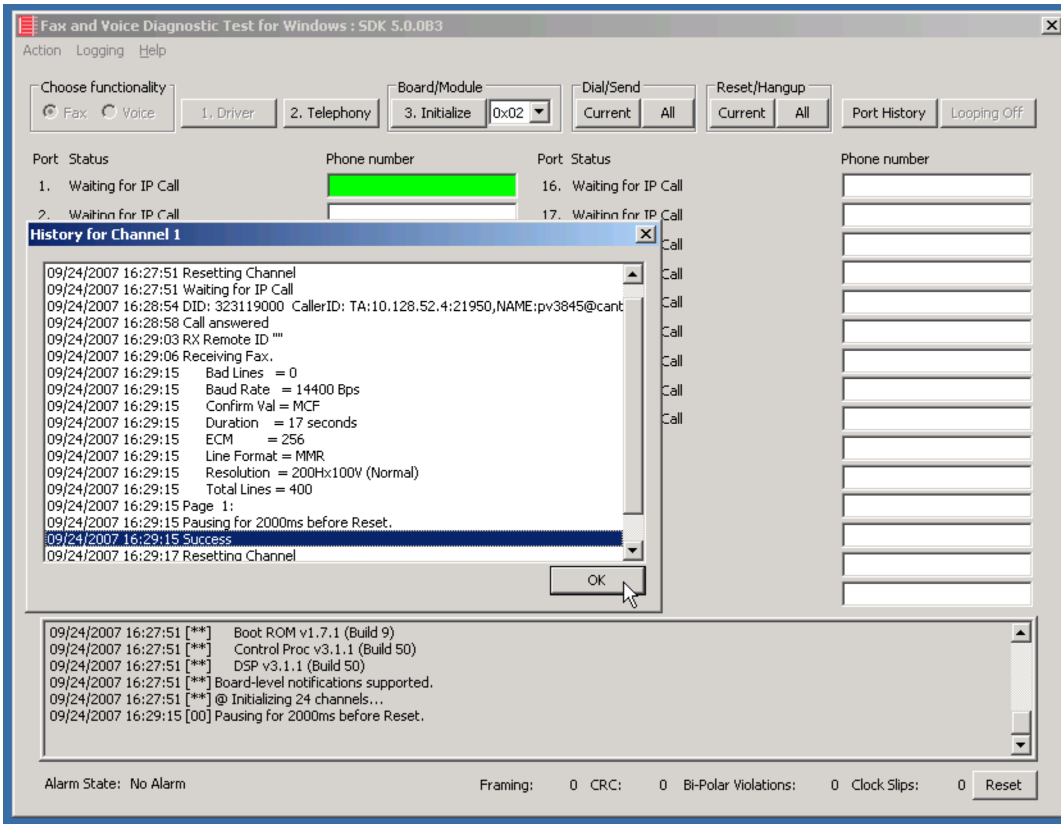

Figure 65. OK

Outbound Call

➢ **Follow the steps below to verify outbound fax traffic from the Fax Server to the PSTN.**

1. Select the Phone Number box for port 1.

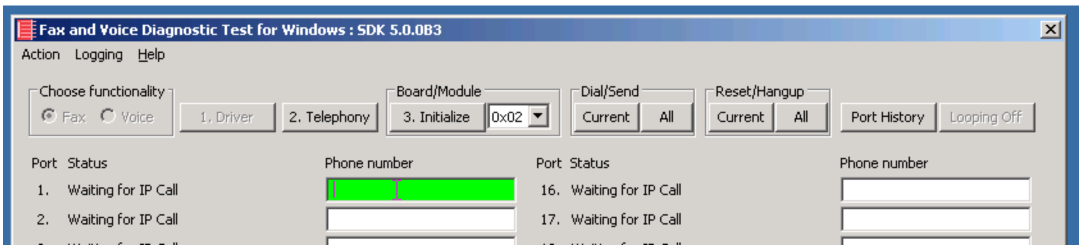

Figure 66. Phone Number Box

2. Enter the phone number as follows: NAME:PV3845,1000000

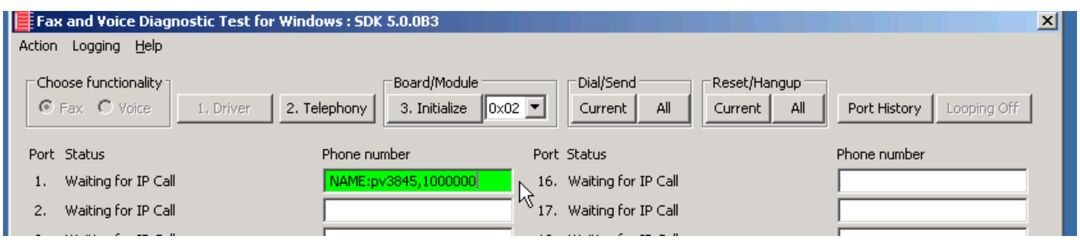

Figure 67. Gateway Phone Number

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3. Click Current to send the call.

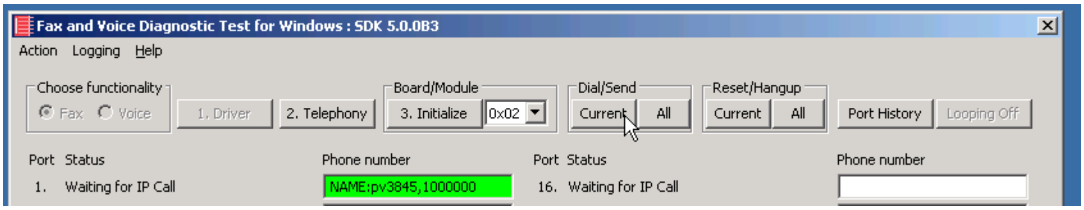

Figure 68. Current

4. Note the status at the bottom of the screen. Port 1 [00] pauses when the call is completed.

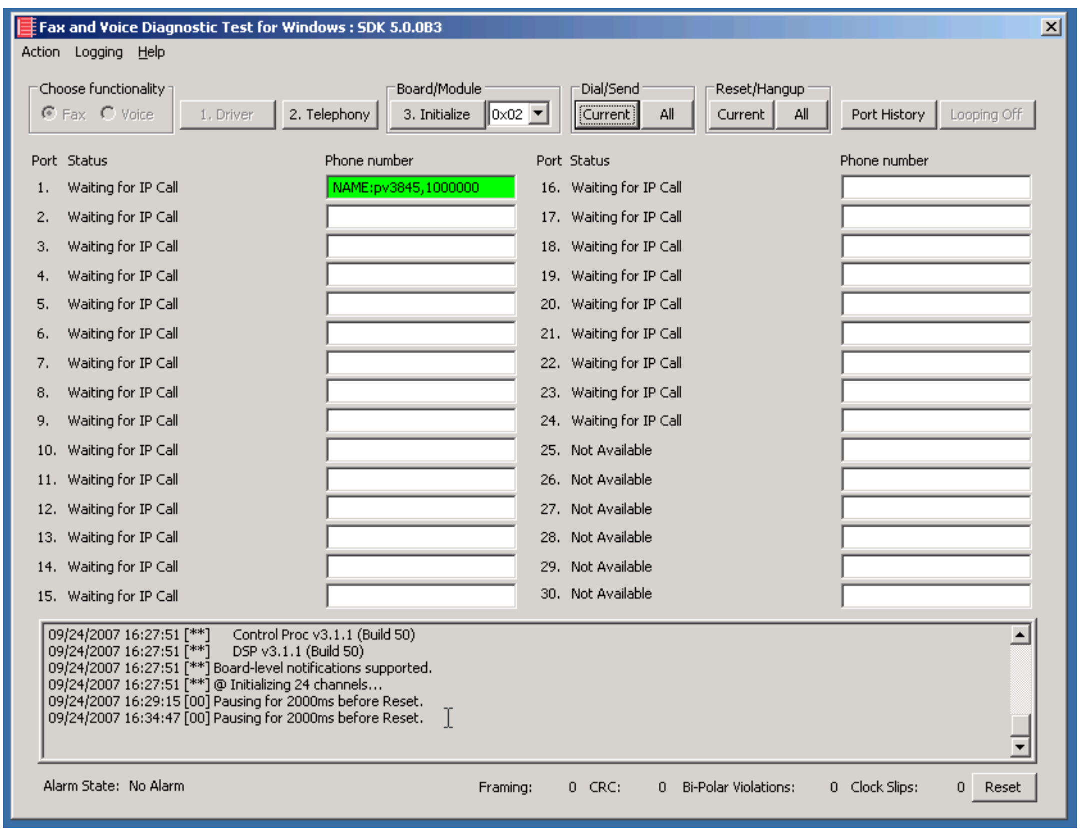

Figure 69. Call Complete

5. Click Port History while having the Phone Number box for Port 1 highlighted.

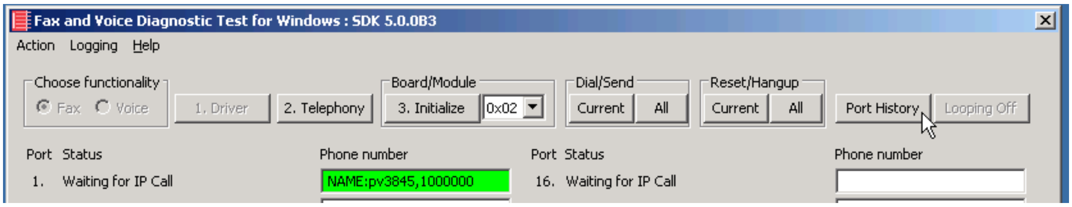

Figure 70. Port History

6. Verify that the call was successful then click OK.

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6
Topology: H.323 - CUCM 4.2(3) - H.323

Introduction

In this topology, the CUCM (Version 4.2.3) does all the call control. The gateway sends all signaling (H.323) to the CUCM which forwards it along to the Fax Server. The Fax Server responds to the CUCM and the CUCM forwards all signaling back to the gateway. Once the call is established, the fax traffic flows directly between the gateway and the Fax Server.

Note: The SR140 Software is used as an example Fax Server in this chapter. The TR1034 IP board can also be used as Fax Server.

The diagrams below show the IP addresses of the hardware which are also included in the procedure and configuration files referenced in this chapter.

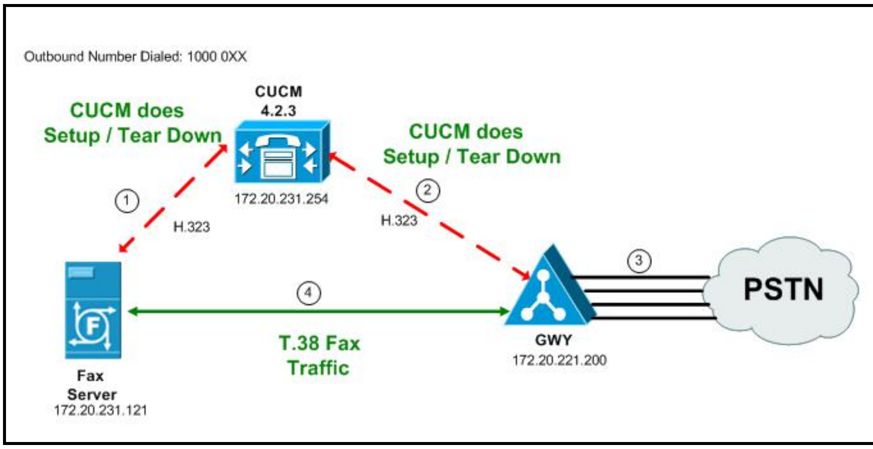

Figure 71. Outbound Call - CUCM Does Call Control - H.323 - CUCM 4.2(3) - H.323 Topology

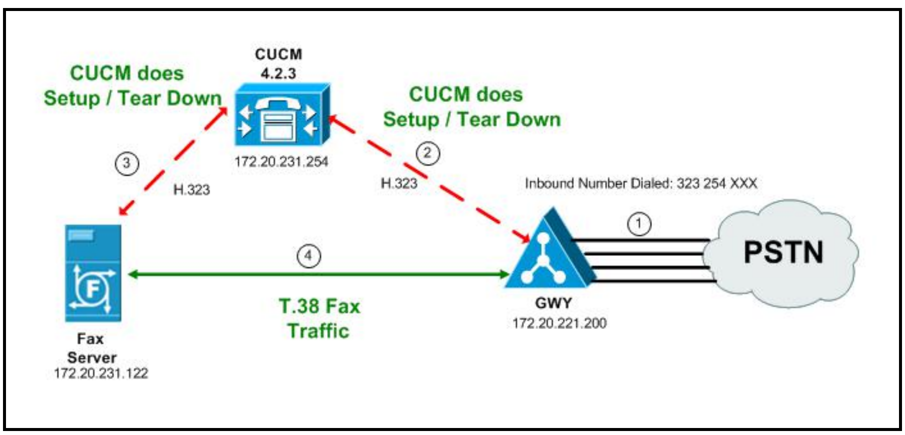

Figure 72. Inbound Call - CUCM Does Call Control - H.323 - CUCM 4.2(3) - H.323 Topology

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Configuration Sequence

Follow the configuration sequence below for this topology:

- *Configuring the Dialogic Brooktrout Fax Server on page 76*
- *Configuring the Cisco Media Gateway with IOS Commands on page 80*
- *Configuring the Cisco Unified Communications Manager on page 81*
  - *Configuring the Trunk Between the CUCM and the Cisco Media Gateway on page 82*
  - *Configuring a Route Pattern for a Trunk to the Cisco Media Gateway on page 93*
  - *Configuring a Route Pattern for a Trunk to the Fax Server on page 97*
- *Verifying the Configuration on page 101*

Configuring the Dialogic Brooktrout Fax Server

➢ **Follow the steps below to configure the SR140 Software using the Dialogic Brooktrout Configuration Tool to support this network topology**

1. Open the Dialogic Brooktrout Configuration Tool in Advanced Mode.

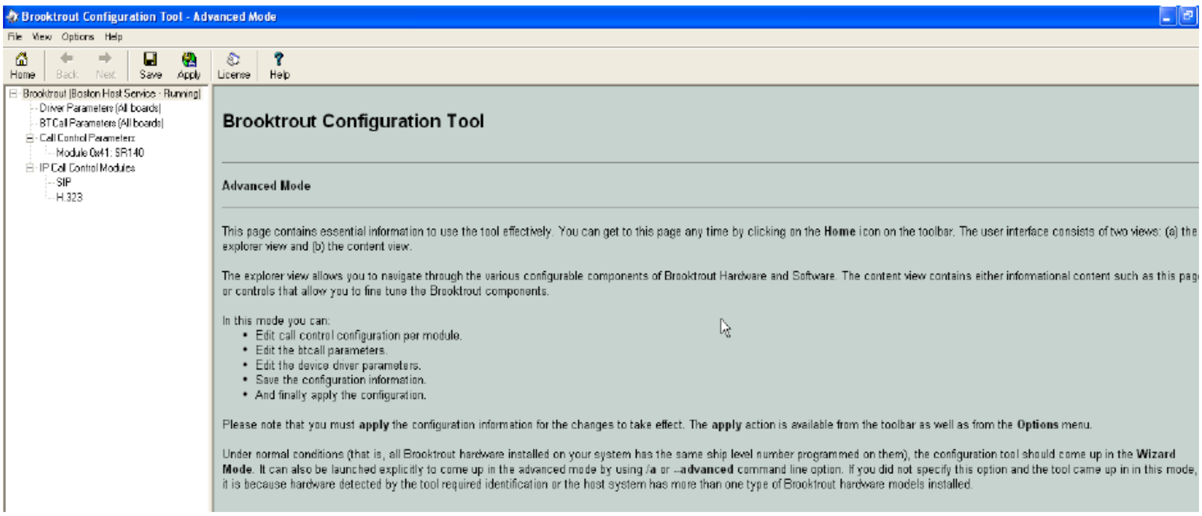

Figure 73. Dialogic Brooktrout Configuration Tool

2. Configure for the H.323 protocol as follows. Under IP Call Control Modules, click H.323 then click the IP Parameters tab.

The following screen appears.

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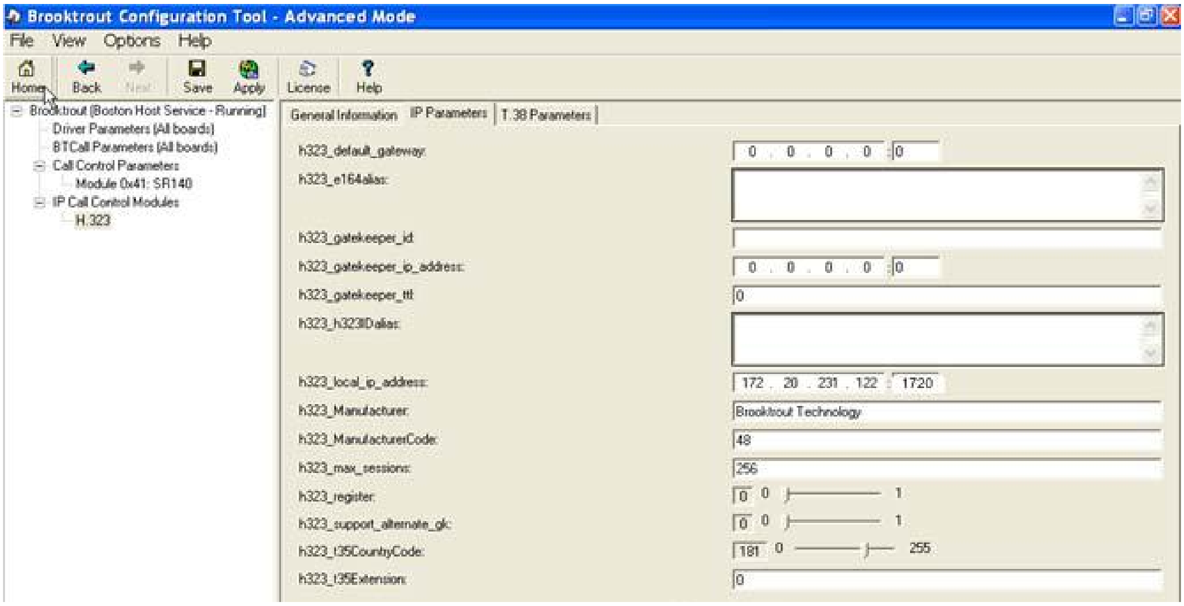

Figure 74. IP Parameters

3. Click Show Advanced. The following screen appears. Complete the fields as indicated below.

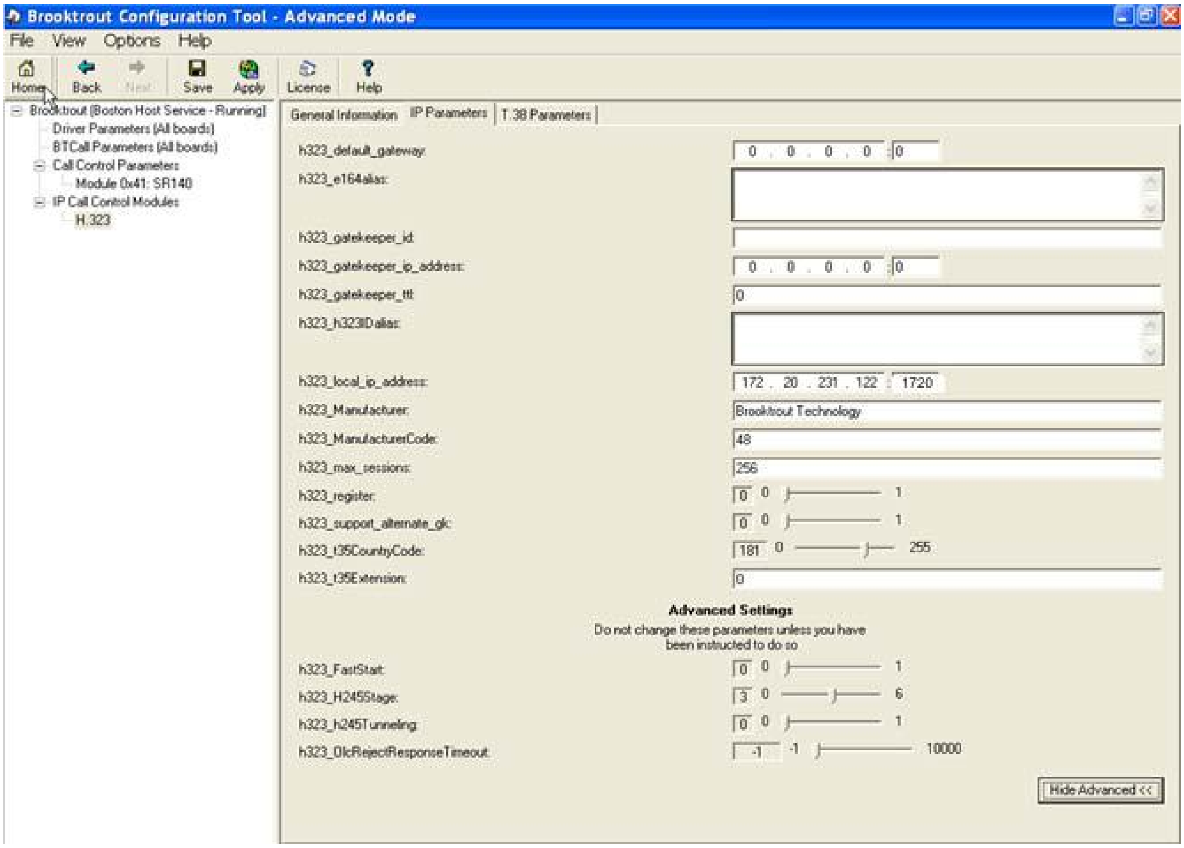

Figure 75. Advanced Settings

Note: When the h323_local_ip_address field is set to the default value (0.0.0.0:0), the system uses the IP address of the first Ethernet module in the system and port number 1720. If there are more than one ethernet modules in the Fax Server then specify the actual IP address of the desired ethernet module that will be used.

4. Set the fields below as follows to ensure that Cisco interoperability works correctly.

   - h323_FastStart = 0
   - h323_H245Stage = 3
   - h323_h245Tunneling = 0

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5. Click T.38 Parameter and complete fields as indicated below.

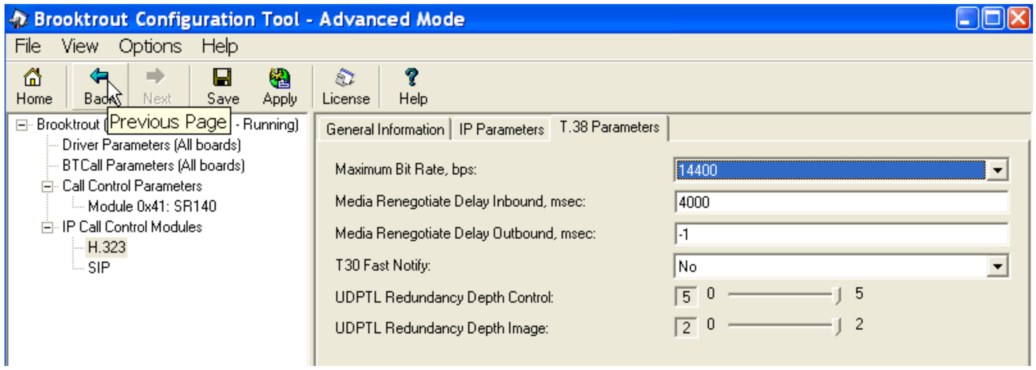

Figure 76. T.38 Parameters

6. Under Call Control Parameters, click Module 0x41: SR140 and select the Parameters tab. Complete the fields as indicated below.

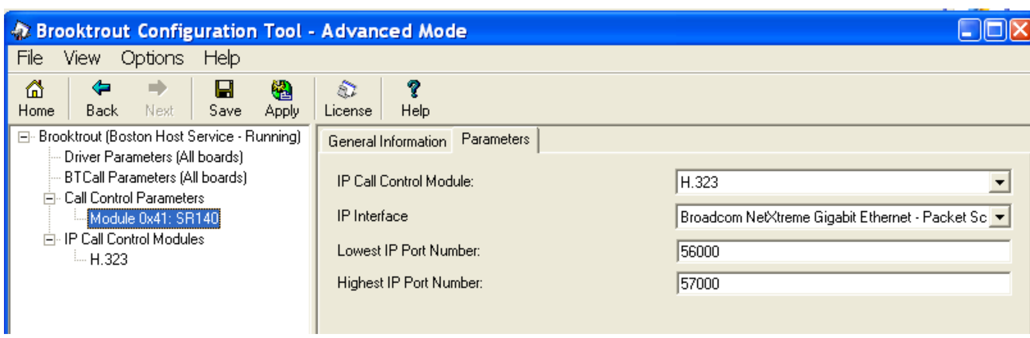

Figure 77. Module 0x41: SR140 Parameters

7. Select the desired network interface controller (NIC) for the IP Interface field.
8. Click Apply.

Configuration Files

Use the configuration files in the sections below to help you configure the SR140 Software:

Appendix E, SR140 Configuration Files on page 480

Configuring the Cisco Media Gateway with IOS Commands

Configuring the Cisco Media Gateway involves the following.

- Enable T.38 support
- Configure line card interface
- Configure Dial-Peers (VoIP and POTS)

See the configuration files in *Appendix E, Cisco Gateway-Config on page 485* as a guide to configure your Cisco Media Gateway with IOS commands.

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Configuring the Cisco Unified Communications Manager

The procedure includes the following:

- *Appendix M, Configuring Service Activation on page 604* (if not completed already)
- *Appendix M, Configuring Service Parameters on page 609* (if not completed already)
- *Configuring the Trunk Between the CUCM and the Cisco Media Gateway on page 82*
- *Configuring the Trunk Between CUCM and the Fax Server on page 87*
- *Configuring a Route Pattern for a Trunk to the Cisco Media Gateway on page 93*
- *Configuring a Route Pattern for a Trunk to the Fax Server on page 97*

Configuring the Trunk Between the CUCM and the Cisco Media Gateway

The following steps explain a configuration where the Cisco Media Gateway is added to the CUCM as a H.323 trunk. However, adding this as an H.323 gateway is also correct and is recommended by Cisco. There are however no screens of this configuration but the steps are similar to the following steps.

➢ **Follow the steps below.**

1. From the screen below, click Add New Trunk.

Figure 78. Add New Trunk

2. The following screen appears. Click Next.

Figure 79. Trunk Configuration

3. Select Intercluster Trunk (Non-Gatekeeper Controlled) for the Trunk Type.

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Figure 80. Trunk Type

4. The Device Protocol defaults to Inter-Cluster Trunk. Click Next.

Figure 81. Inter-Cluster Trunk Device Protocol

The following screen appears.

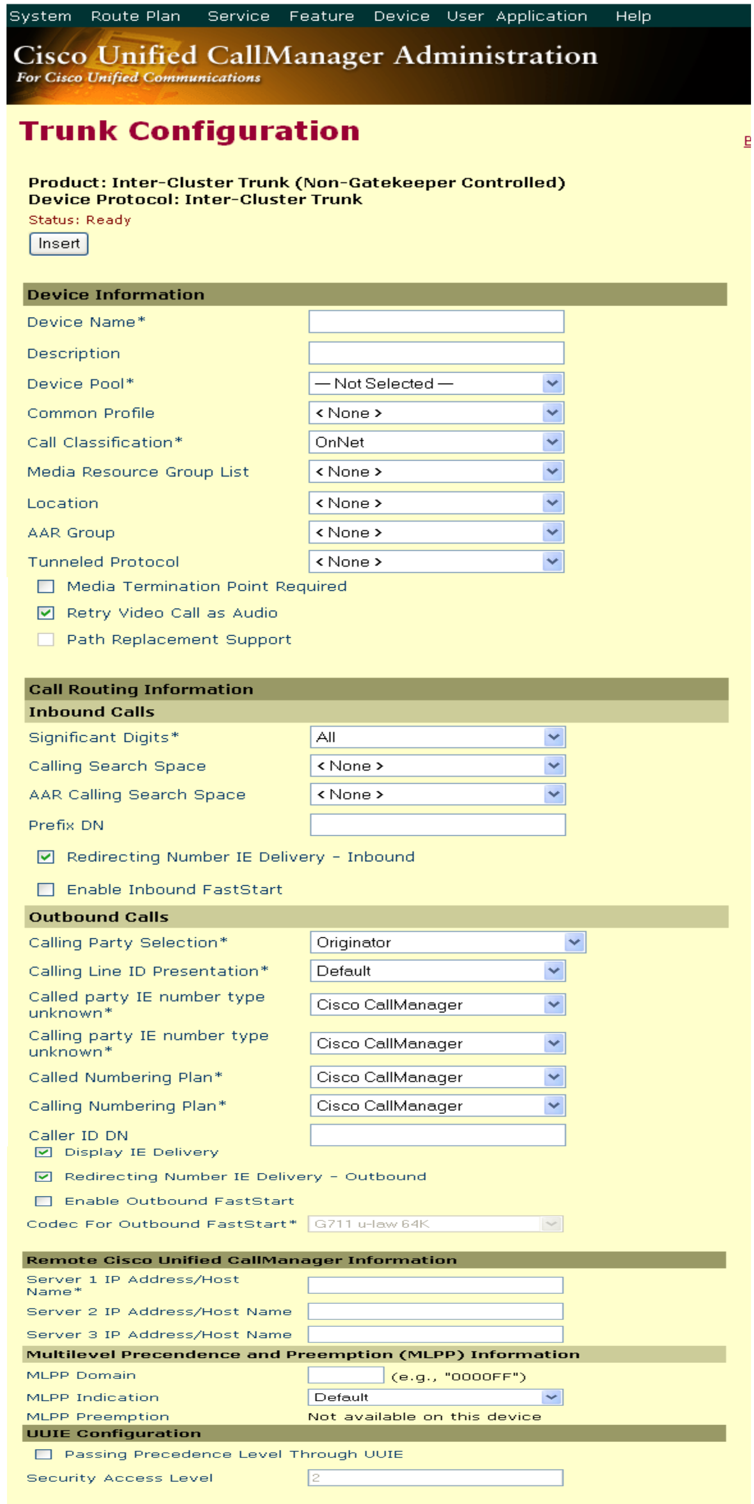

Figure 82. Trunk Configuration

This document is not to be distributed to a third party without written permission from Dialogic.

5. Complete the screen as indicated below.

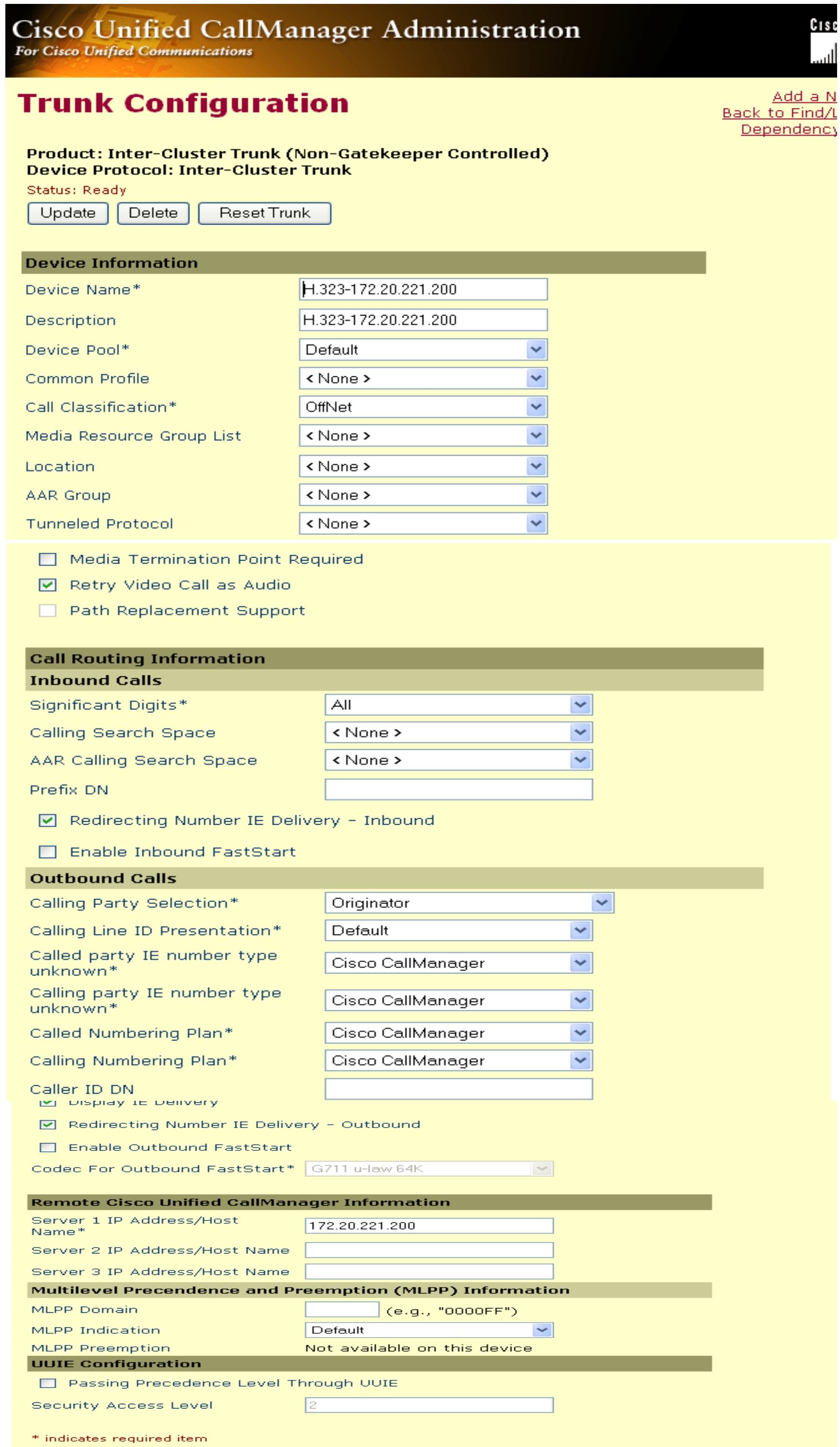

Figure 83. Trunk Configuration Data

6. Click Update.

Figure 84. Update

7. Click Back to Find/List Trunk. The following screen appears with the new trunk.

Figure 85. New Trunk

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Configuring the Trunk Between CUCM and the Fax Server

The following steps explain a configuration where the Fax Server is added to the CUCM as a H.323 trunk. However, adding this as a H.323 gateway is also correct and is recommended by Cisco. There are however no screens of this configuration but the steps are similar to the following steps.

➢ **Follow the steps below:**

1. Open the Cisco Unified Communications Manager Administration Version 4.2.3. The following screen appears.

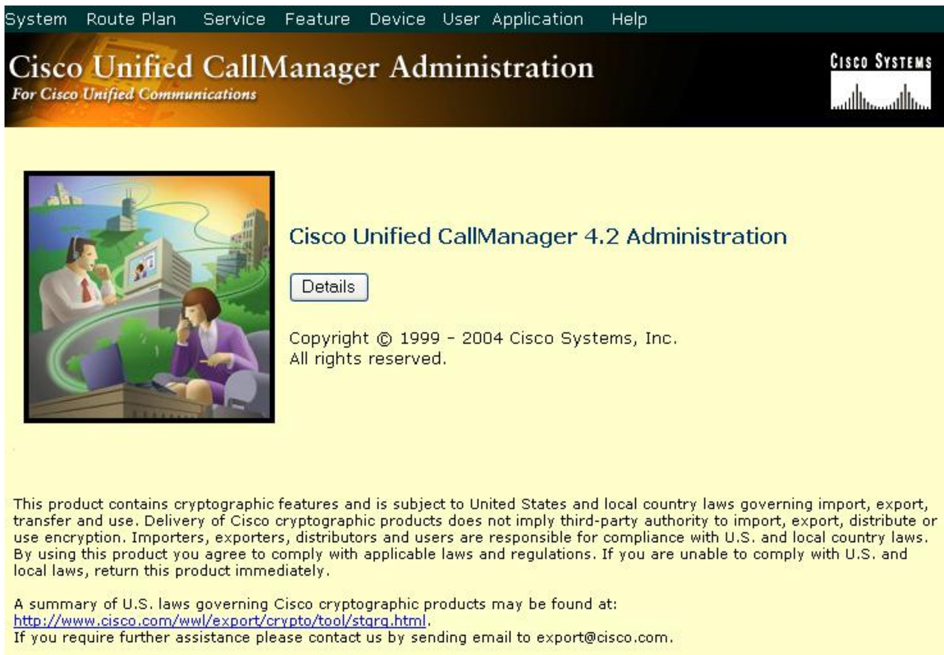

Figure 86. CUCM

2. Click Details to verify the version of CUCM.

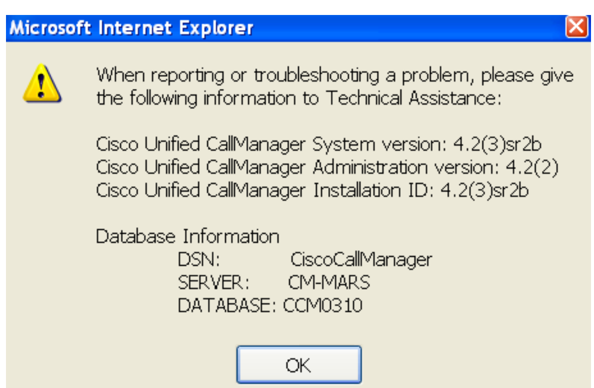

Figure 87. Details

3. From the Device menu, select Trunk.

Figure 88. Trunk

The following screen appears.

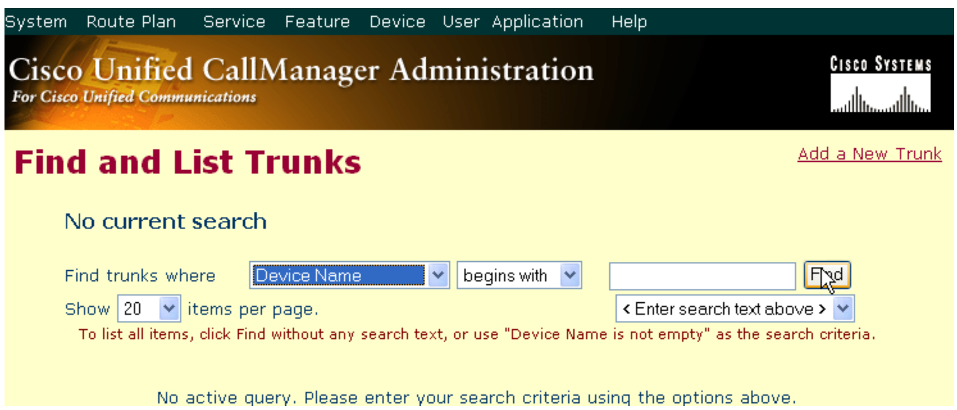

Figure 89. Trunks

4. Click Add New Trunk.

Figure 90. Add New Trunk

This document is not to be distributed to a third party without written permission from Dialogic.

5. The following screen appears. Select Intercluster Trunk (Non-Gatekeeper Controlled) for the Trunk Type.

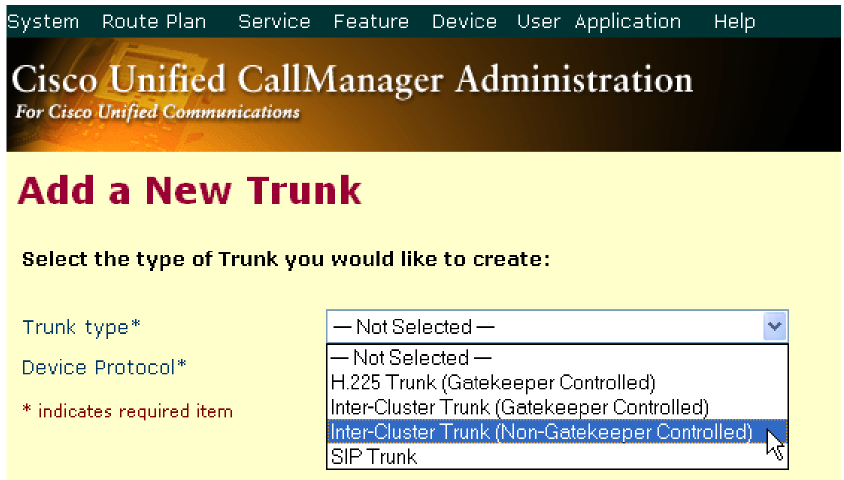

Figure 91. Trunk Type

6. The Device Protocol defaults to Inter-Cluster Trunk. Click Next.

Figure 92. Inter-Cluster Trunk Device Protocol

The following screen appears.

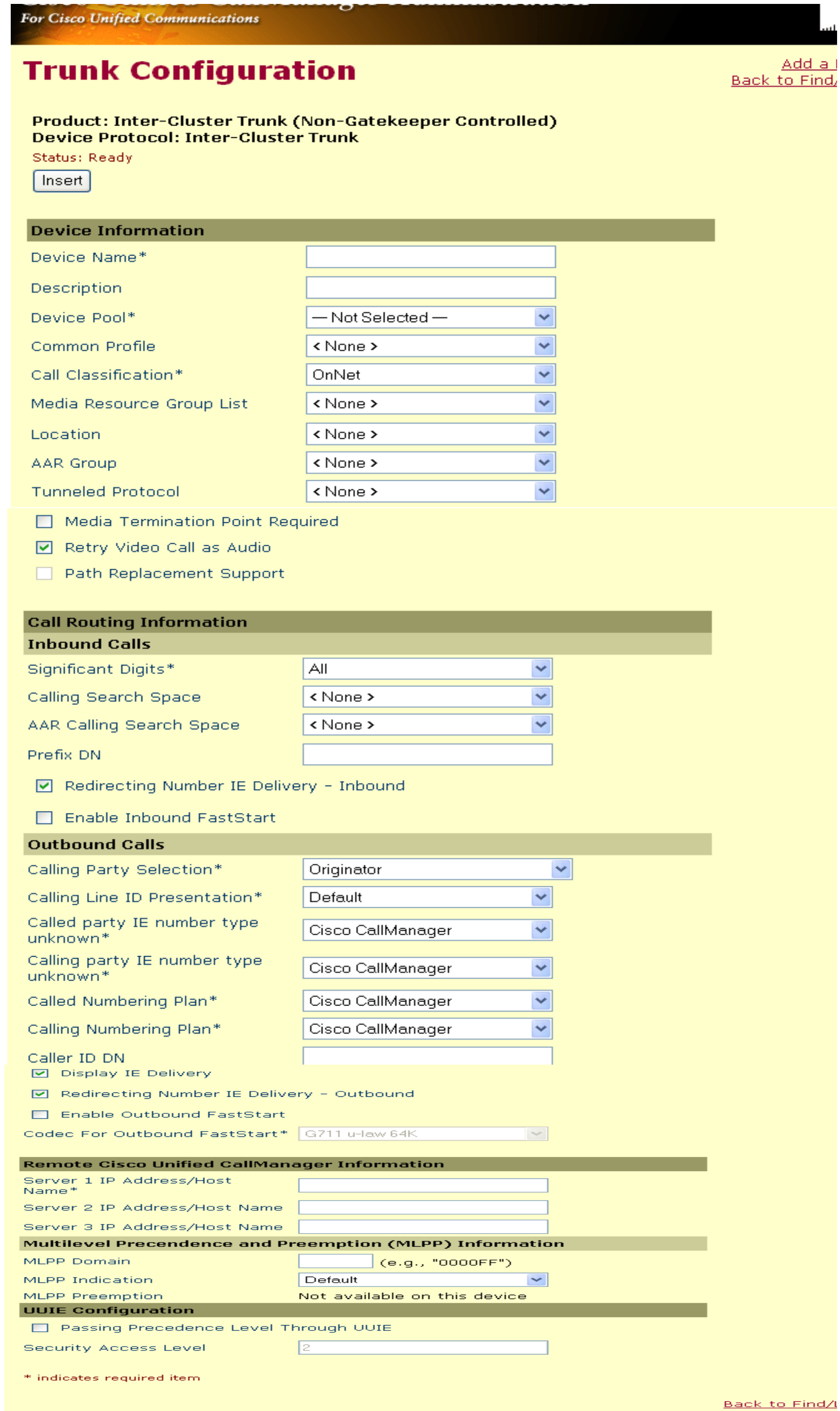

Figure 93. Trunk Configuration

7. Complete the screen as indicated below.

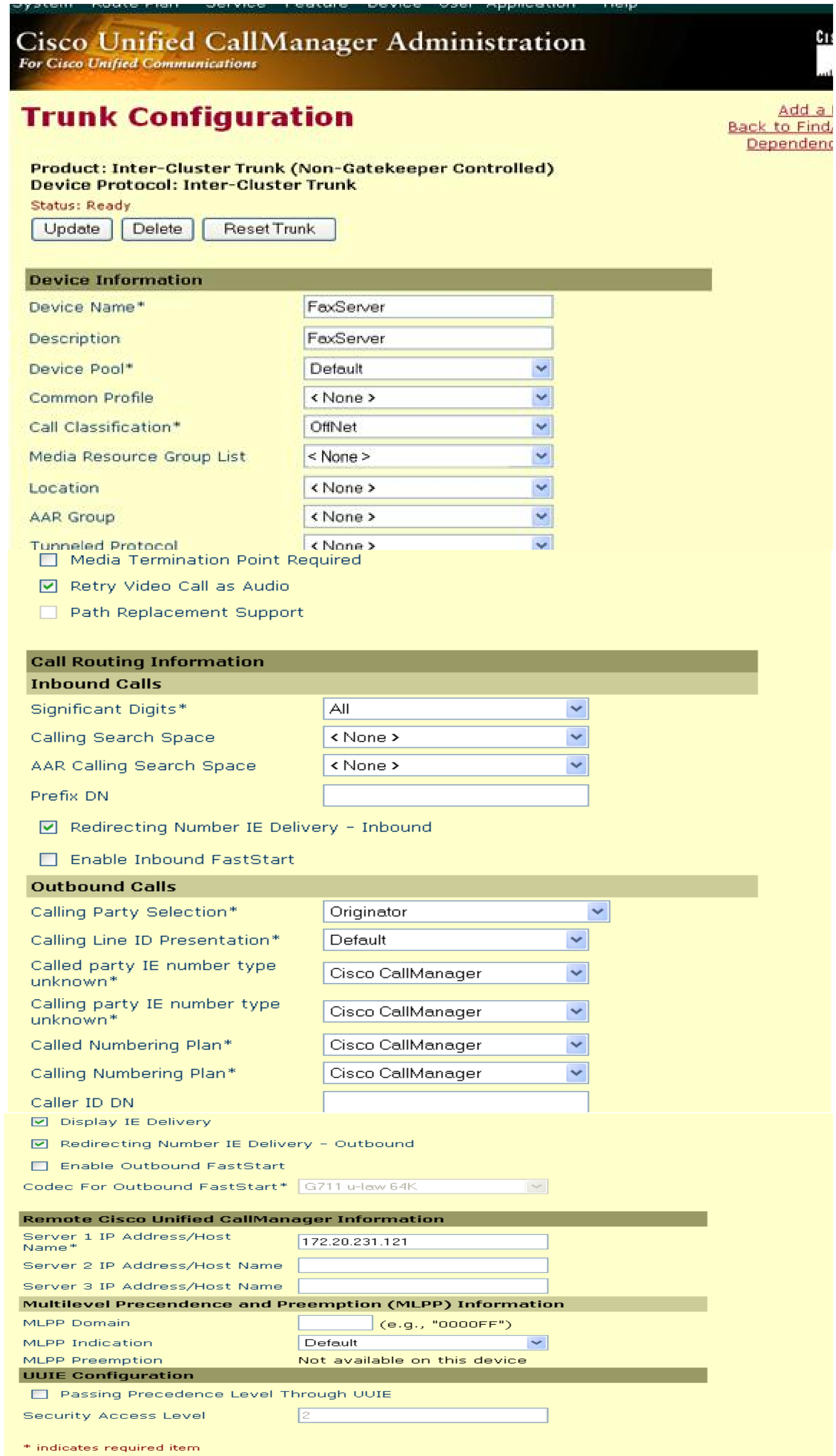

Figure 94. Trunk Configuration Data

8. Click Update.

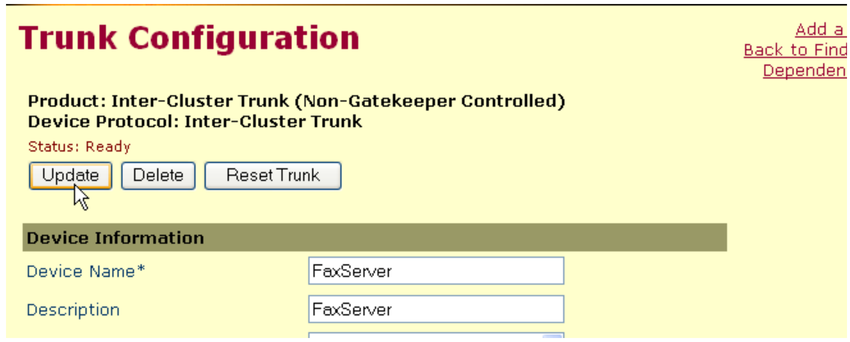

Figure 95. Update

9. Click Back to Find/List Trunk. The following screen appears with the new trunk.

Figure 96. New Trunk

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Configuring a Route Pattern for a Trunk to the Cisco Media Gateway

➢ **Follow the steps below to configure a route pattern for the trunk.**

1. From the Route Plan menu, click Route/Hunt, Route Pattern.

Figure 97. Route Pattern

2. The following screen appears. Click Add a New Route Pattern.

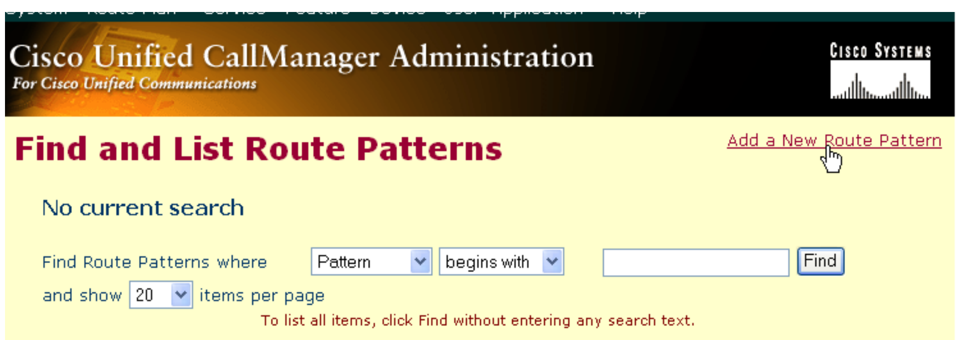

Figure 98. Add Route Patterns

The following screen appears.

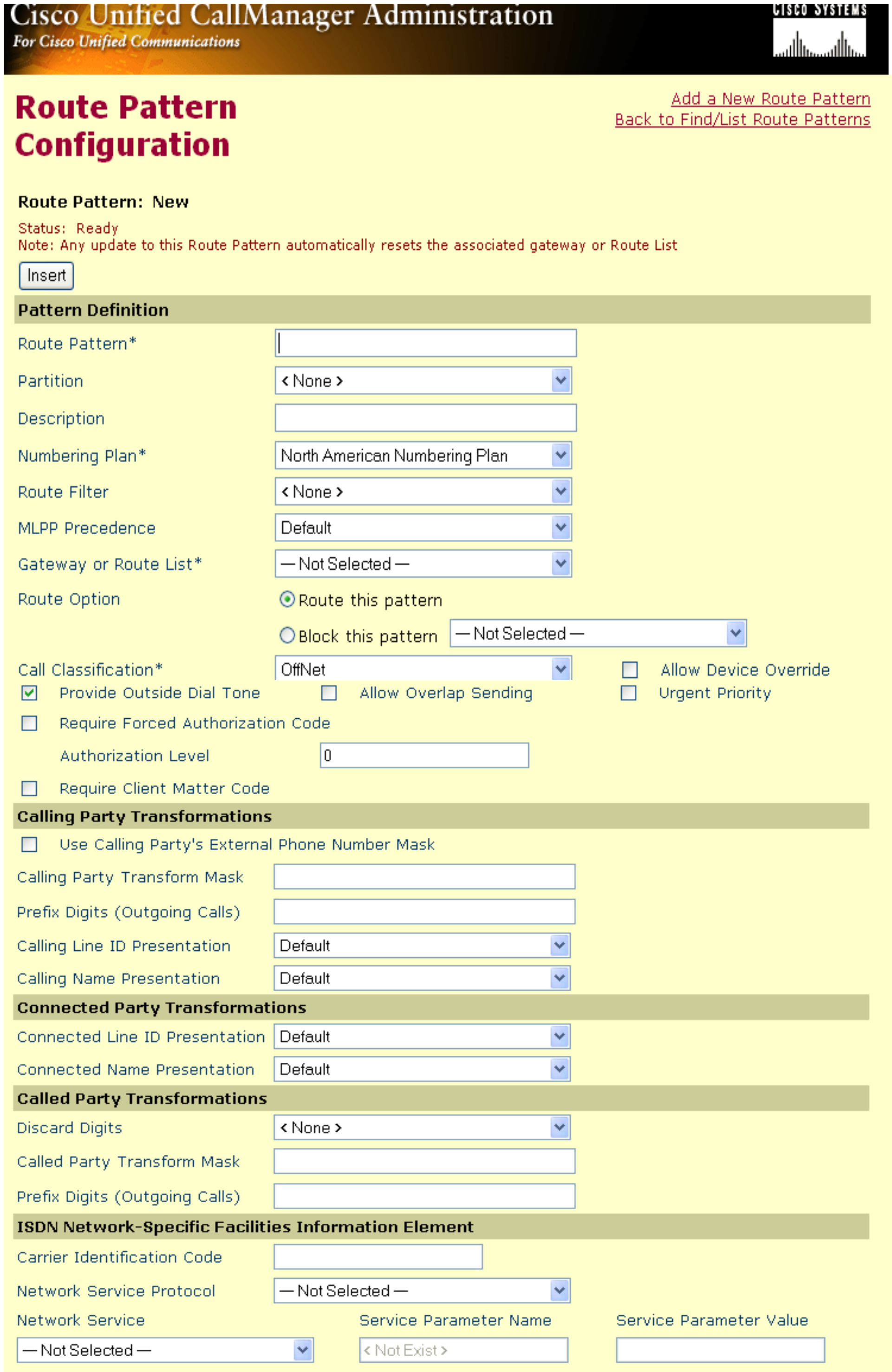

Figure 99. Route Pattern Configuration

Complete the screen as indicated below.

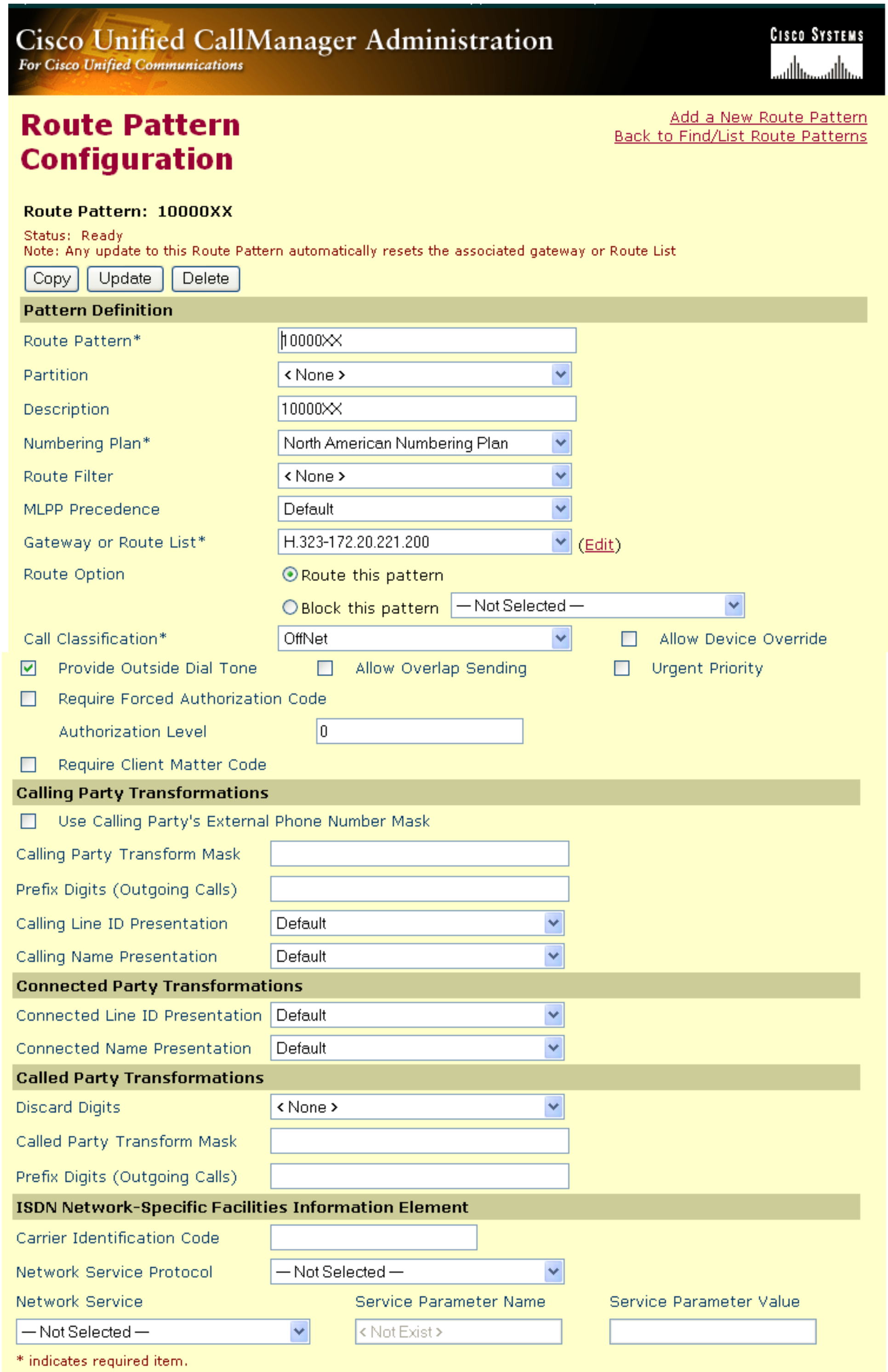

Figure 100. Route Pattern Configuration Data

3. Click Update.

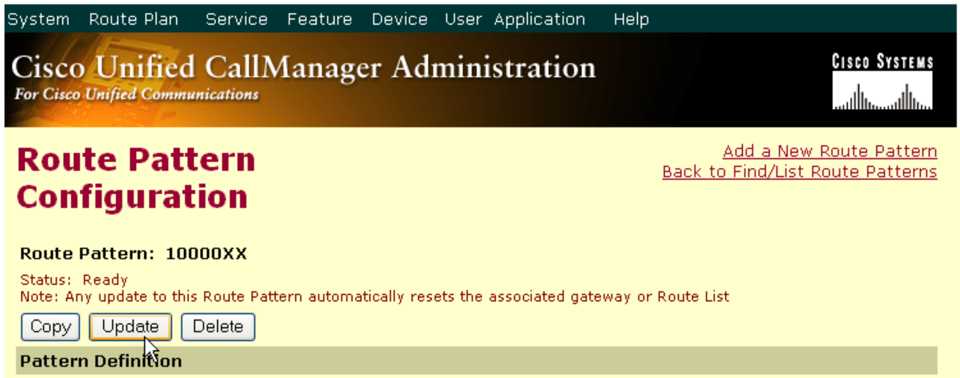

Figure 101. Update

4. Click Back to List/Find Route Patterns. The following screen appears with the new Route Pattern listed.

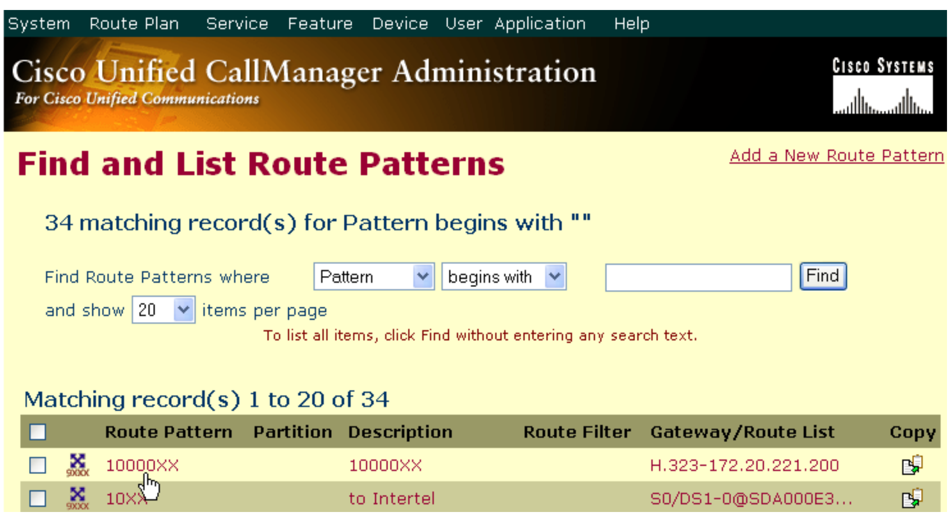

Figure 102. New Route Pattern

Configuring a Route Pattern for a Trunk to the Fax Server

➢ **Follow the steps below:**

1. From the screen below, click Add a New Route Pattern.

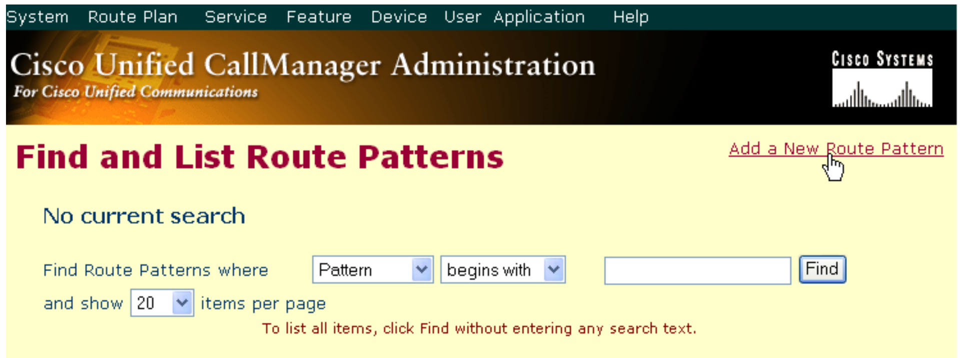

Figure 103. Add a New Route Pattern

The following screen appears.

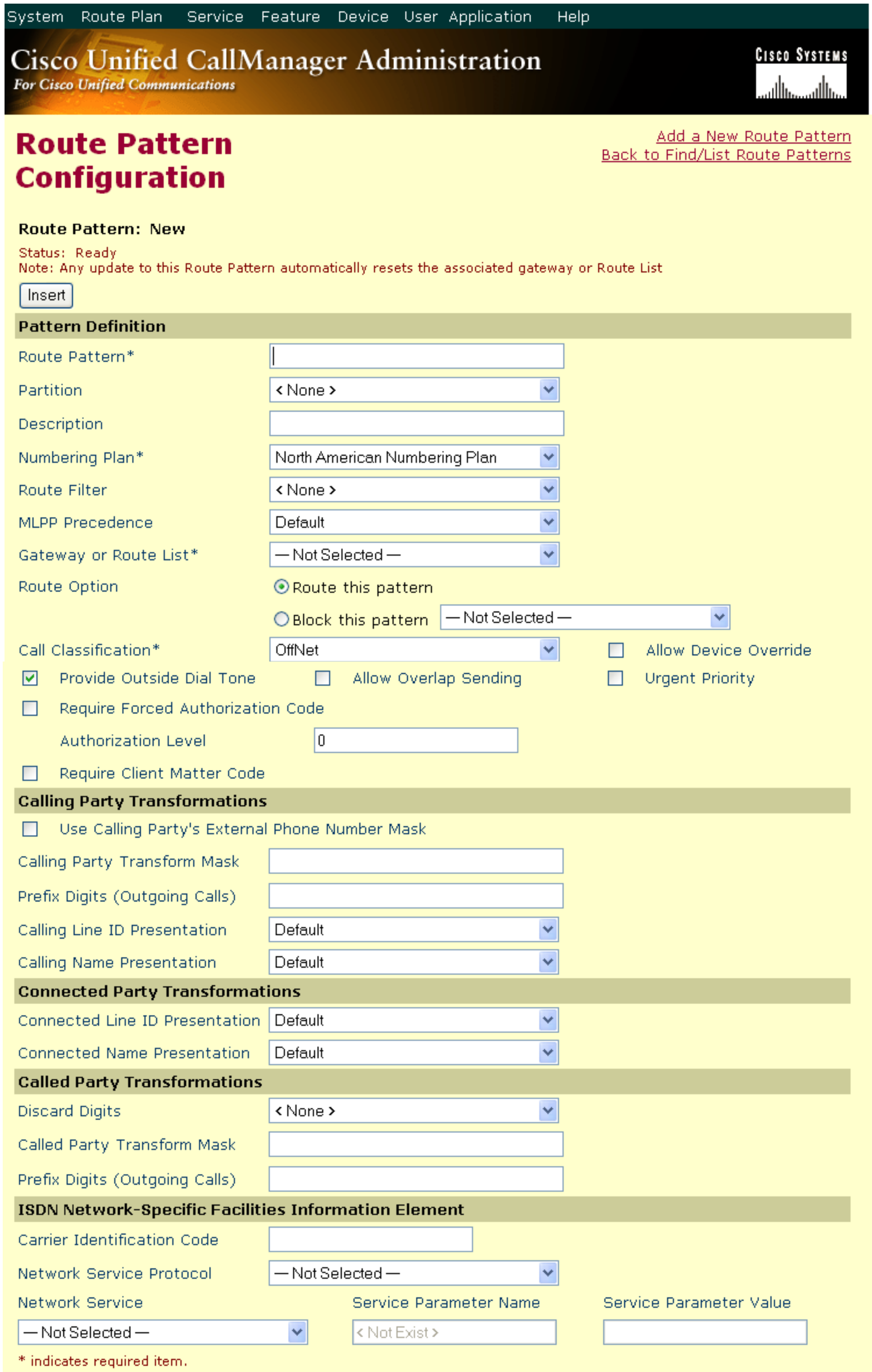

Figure 104. Route Pattern Configuration

2. Complete the screen as indicated below.

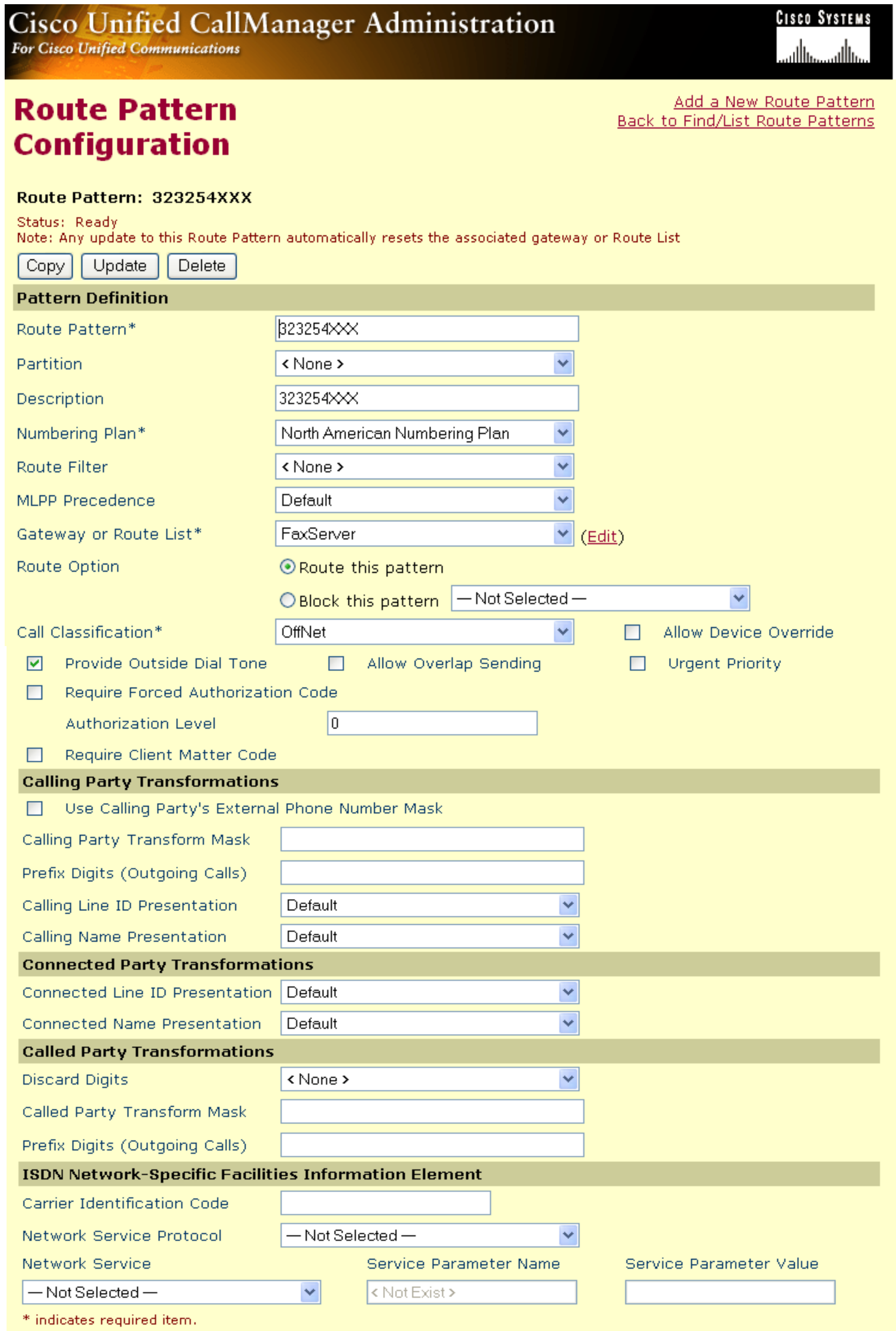

Figure 105. Route Pattern Configuration Data

3. Click **Update**.

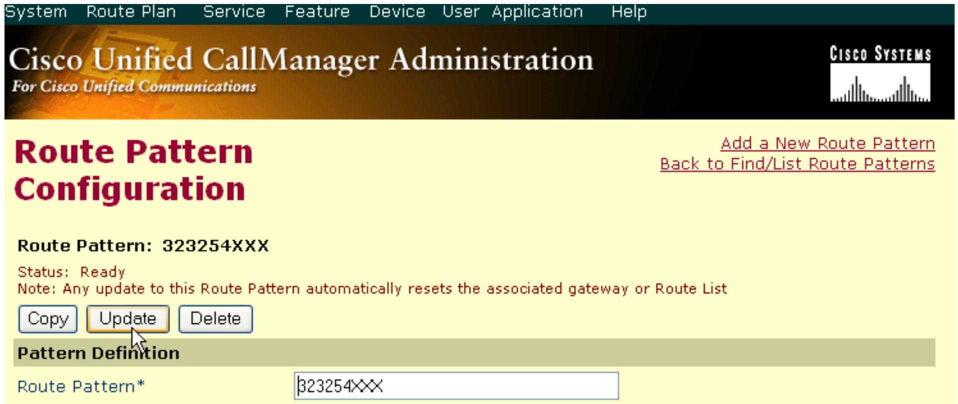

Figure 106. Update

4. Select **Back To Find/List** and click **Go**. The following screen appears with the new Route Pattern.

Figure 107. Go to List

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Verifying the Configuration

The Dialogic Brooktrout Fax and Voice Diagnostic Test utility allows you to test the configuration you completed. You can download the utility and instructions from the technical support site.

http://www.cantata.com/support/lanfax/fax_testing_diagnostic.cfm

This test verifies the following:

- SR140 Software configuration
- Cisco Media Gateway configuration
- Trunks and Route Patterns on the CUCM

Verifying the Fax Server Basic Configuration

Before continuing, refer to *Appendix A, Verifying Basic Configuration - Fax Server 172.20.231.122 on page 414* to verify that the Fax Server software is installed correctly.

Outbound Call

➢ **Follow the steps below to verify outbound fax traffic from the CUCM to the gateway.**

1. Open the Fax and Voice Diagnostic Test utility. The following screen appears. Click the 2.Telephony button (press the Apply button in the Brooktrout Configuration Tool after configuring). Click the 3.Initialize button.

2. Click in the Phone Number box for Port 1.

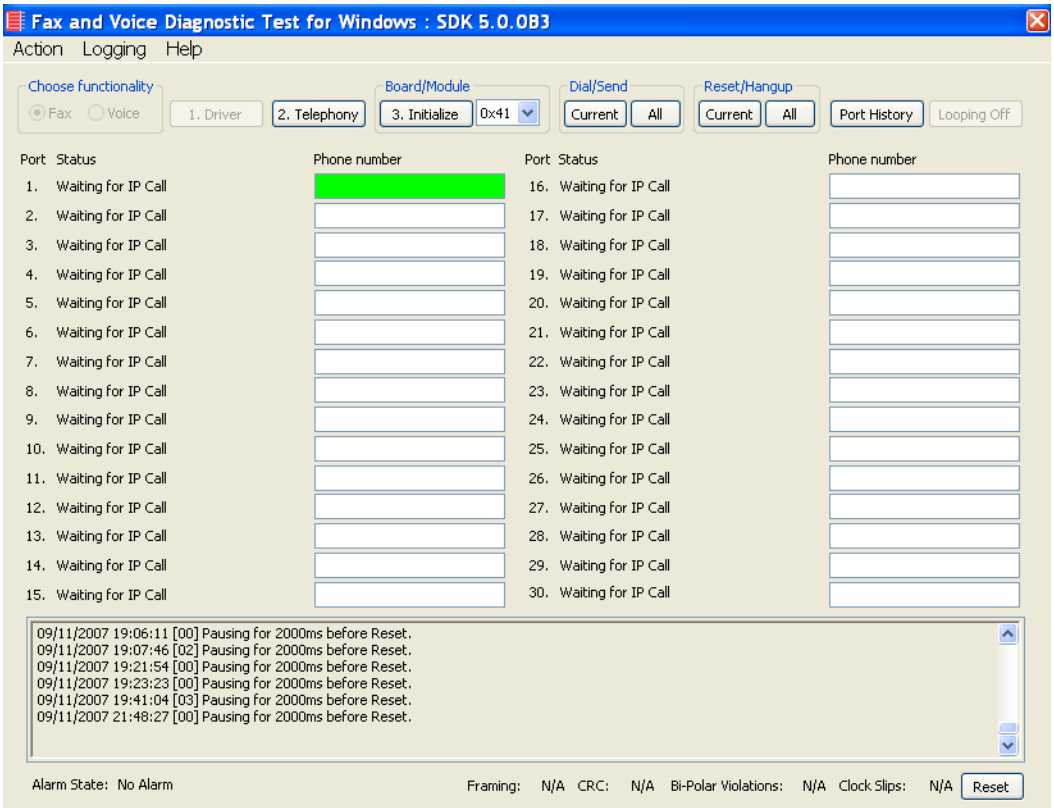

Figure 108. Fax Diagnostic Test

3. Enter the destination phone number and the IP address of CUCM as shown below.

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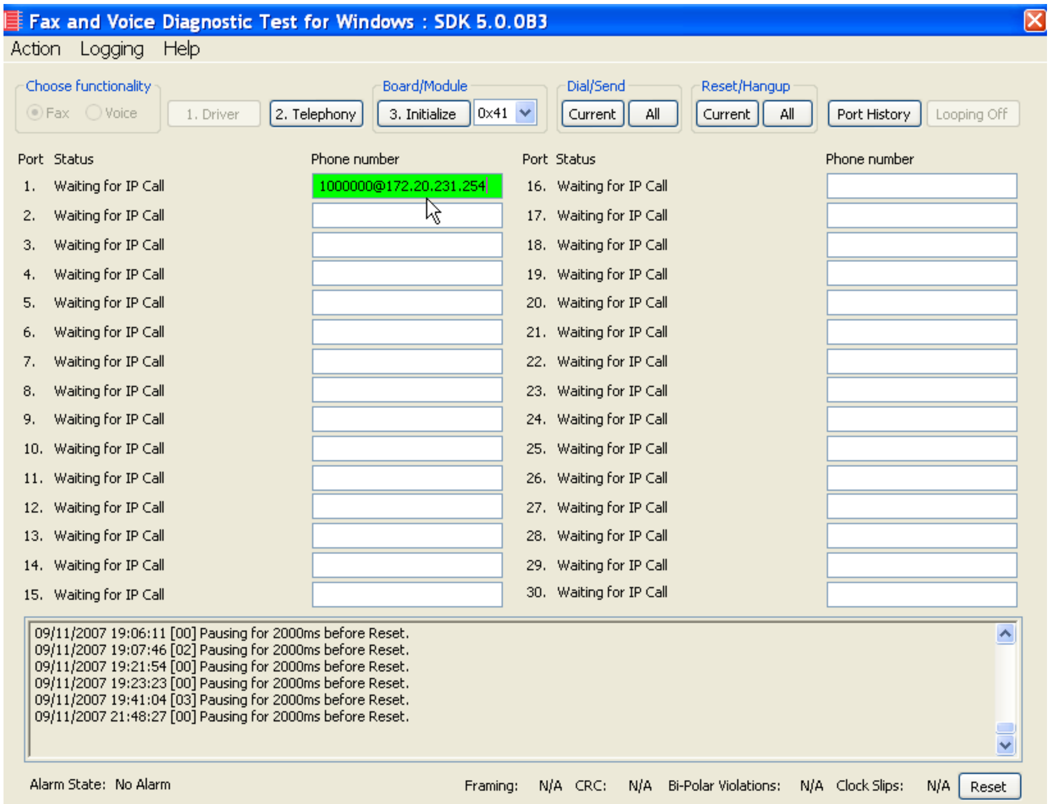

Figure 109. IP Address

4. Click Current to send the test fax.

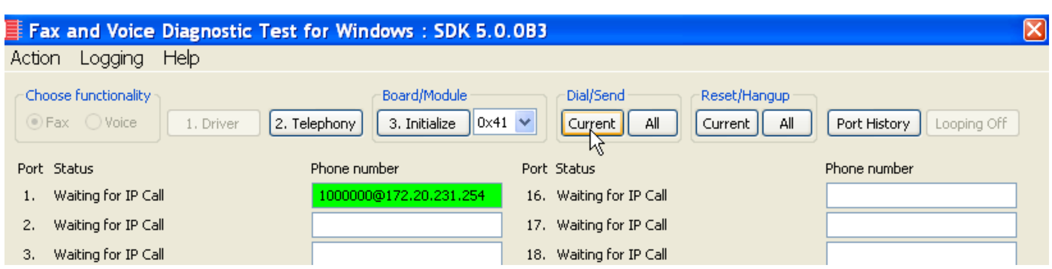

Figure 110. Current

5. Click Port History with Port 1 highlighted.

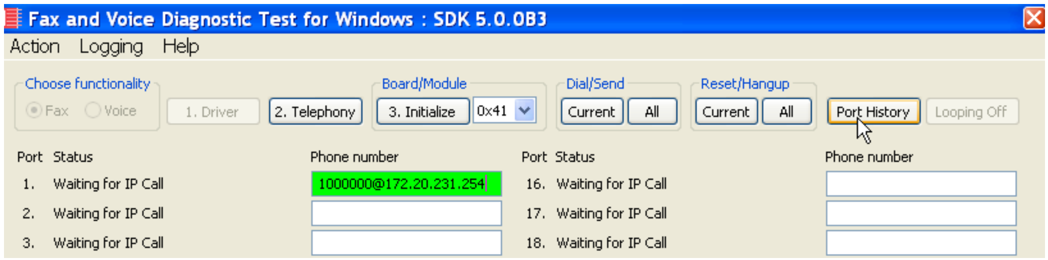

Figure 111. Port History

6. The following screen appears. Verify that the outbound call was successful.

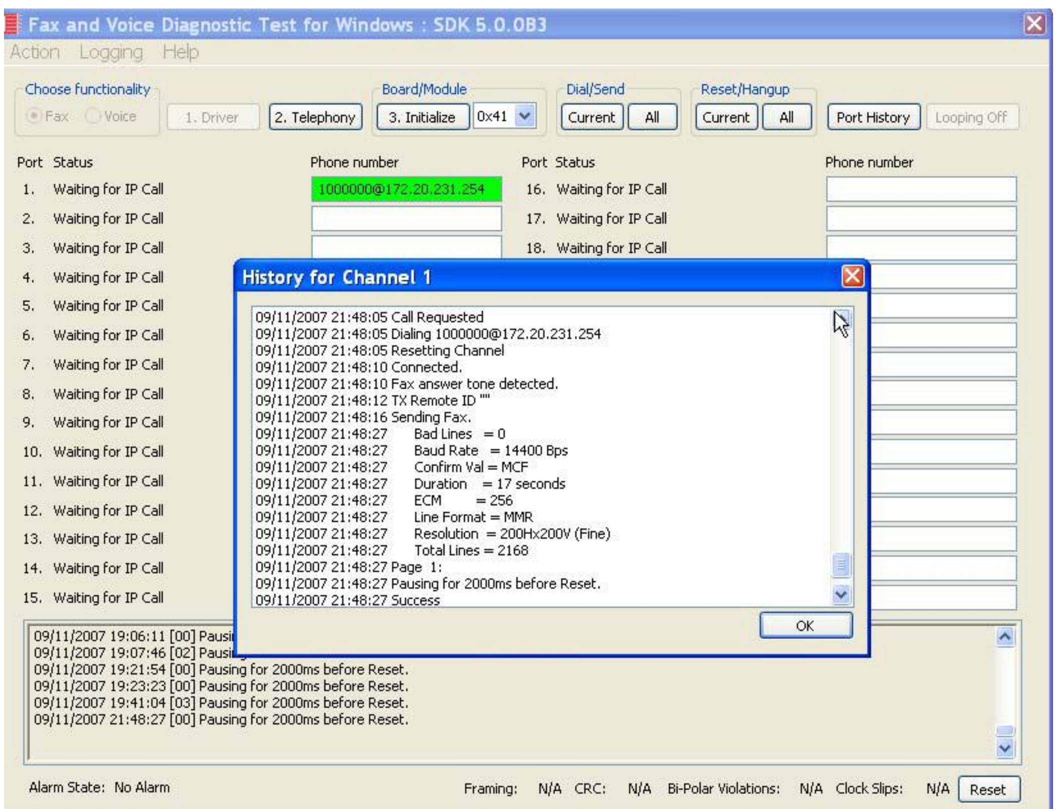

Figure 112. Outbound Call Successful

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Inbound Call

➢ **Follow the steps below to verify the inbound fax traffic from the gateway to the CUCM.**

1. Initiate a call from the PSTN using 323254000.
2. Watch all channels because a call should come in on one of the waiting channels.

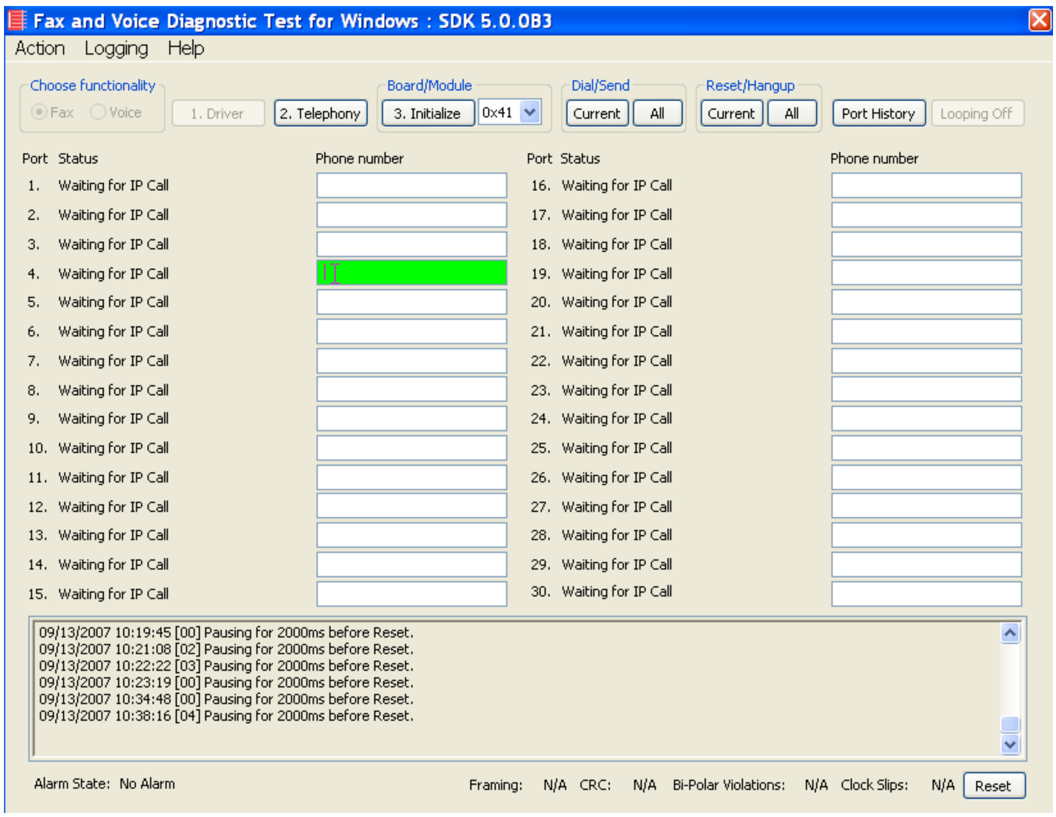

Figure 113. Fax Diagnostic Test

3. Click the Phone number box on which the call came in and click the Port History button.

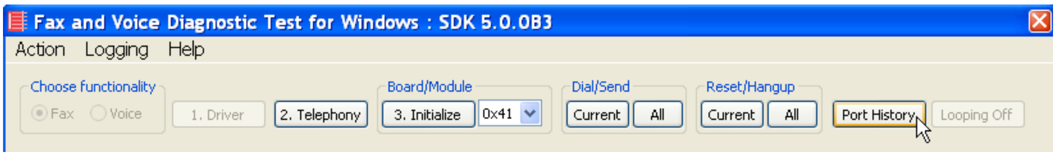

Figure 114. Port History

4. The following screen appears. Ensure that the inbound call is successful.

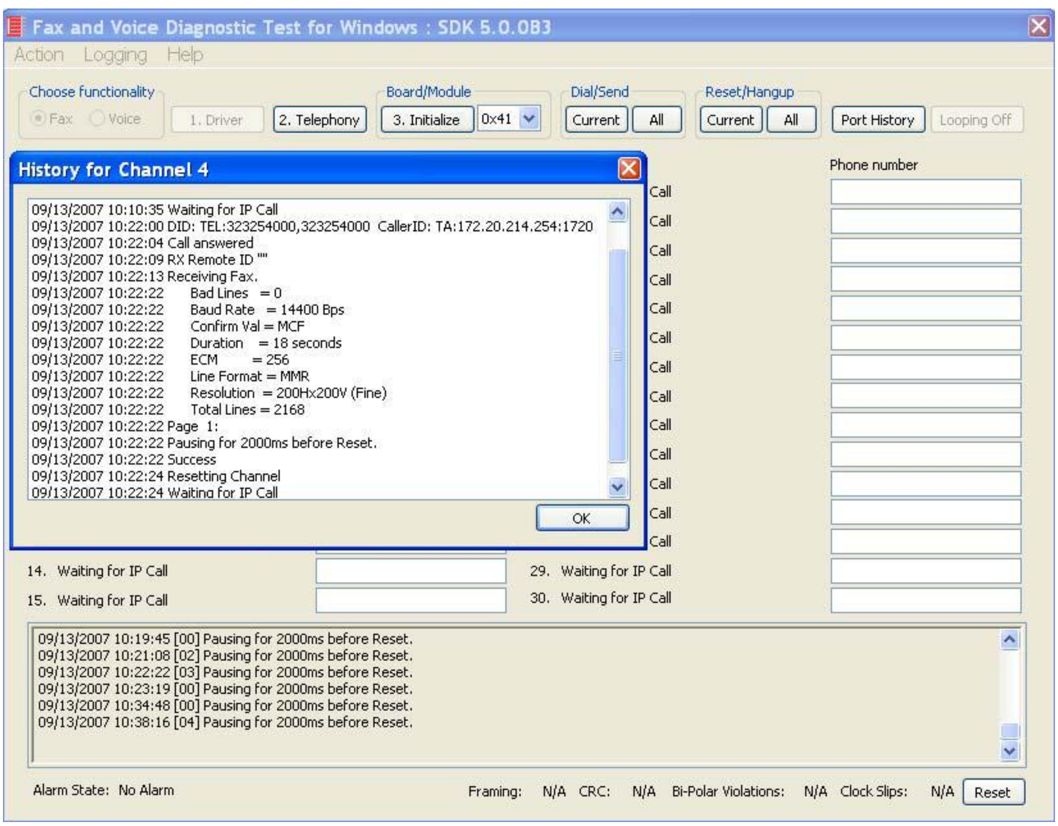

Figure 115. Inbound Call Successful

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7
Topology: H.323 - CUCM 4.2(3) - MGCP

Introduction

In this topology, the CUCM (Version 4.2.3) does all the call control. The gateway sends all signaling (MGCP) to the CUCM which forwards it along to the Fax Server. The Fax Server responds to the CUCM (H.323) and the CUCM forwards all signaling (MGCP) back to the gateway. Once the call is established, the fax traffic flows directly between the gateway and the Fax Server.

Note: The SR140 Software is used as an example Fax Server in this chapter. The TR1034 IP board can also be used as Fax Server.

The diagrams below show the IP addresses of the hardware which are also included in the procedure and configuration files referenced in this chapter.

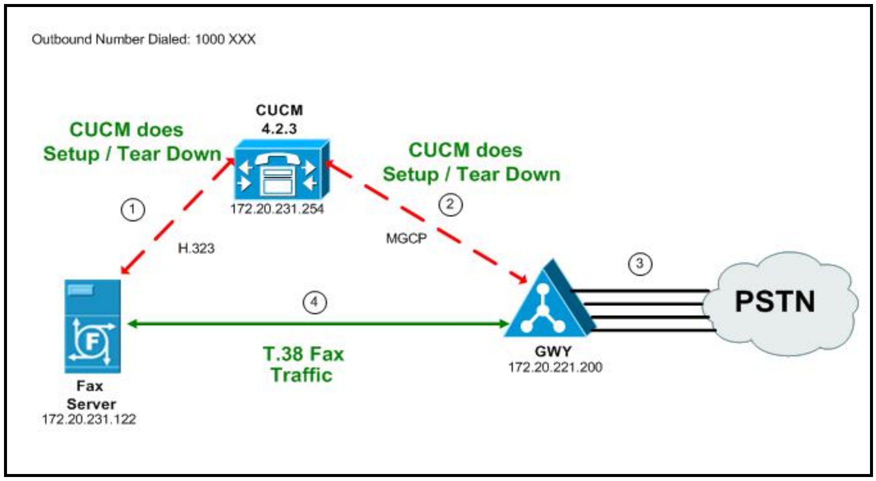

Figure 116. Outbound Call Flow - CUCM Does Call Control - H.323 - CUCM 4.2(3) - H.323 Topology

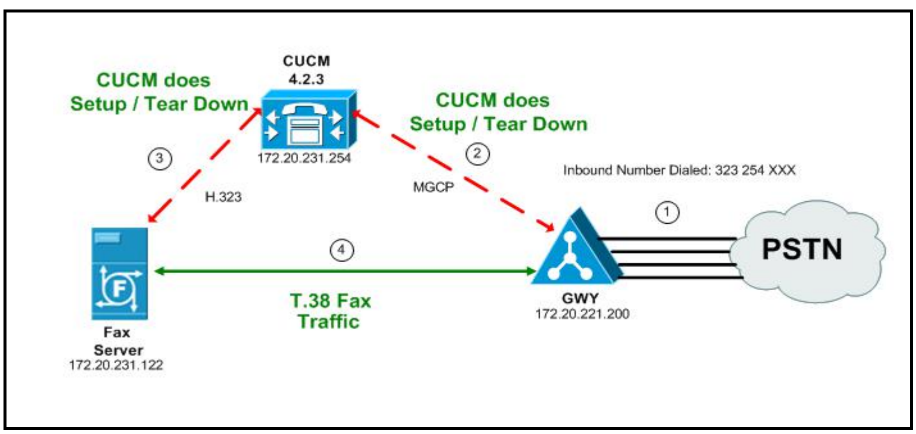

Figure 117. Inbound Call Flow - CUCM Does Call Control - H.323 - CUCM 4.2(3) - H.323 Topology

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Related Documentation

For more information on configuring MGCP, refer to the following documents:

- How to Configure MGCP with Digital PRI and Cisco CallManager, Document ID 23966

http://www.cisco.com/en/US/tech/tk1077/technologies_configuration_example 09186a00801ad22f.shtml

- MGCP with Digital CAS and Cisco CallManager Configuration Example, Document ID 43802

http://www.cisco.com/en/US/tech/tk1077/technologies_configuration_example 09186a008022eaa3.shtml

Configuration Sequence

Follow the sequence below when configuring the Dialogic Brooktrout FoIP with Cisco Products.

- *Configuring the Dialogic Brooktrout Fax Server on page 111*
- *Configuring the Cisco Media Gateway with IOS Commands on page 116*
- *Configuring the Cisco Unified Communications Manager on page 117*
  - *Configuring the Cisco Media Gateway on page 118*
  - *Configuring the Trunk Between the CUCM and the Fax Server on page 126*
  - *Configuring a Route Pattern for a Trunk to the Gateway on page 131*
  - *Configuring a Route Pattern for a Trunk to the Fax Server on page 136*
- *Verifying the Configuration on page 141*

Configuring the Dialogic Brooktrout Fax Server

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➢ **Follow the steps below to configure the SR140 Software using the Dialogic Brooktrout Configuration Tool to support this network topology:**

1. Open the Dialogic Brooktrout Configuration Tool in Advanced Mode.

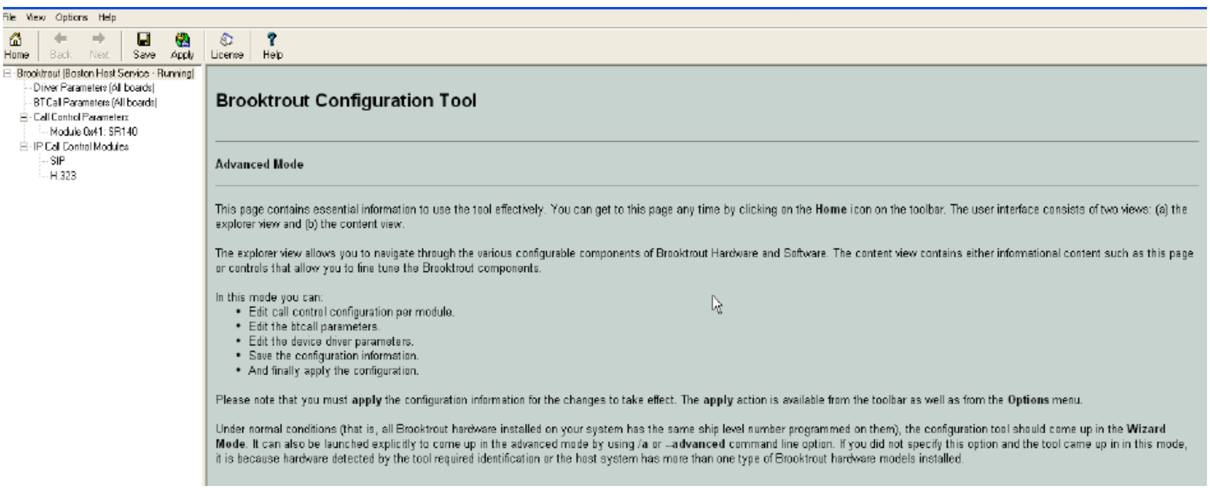

Figure 118. Dialogic Brooktrout Configuration Tool

2. Configure for the H.323 protocol as follows. Under IP Call Control Modules, click H.323 then click the IP Parameters tab.

The following screen appears.

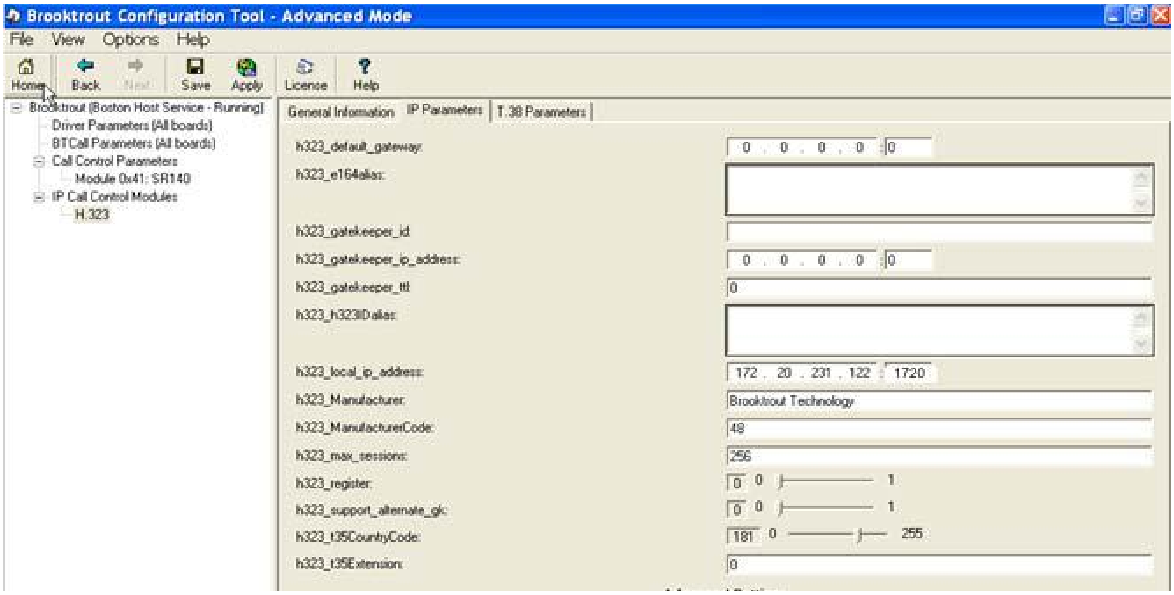

Figure 119. IP Parameters

3. Click Show Advanced. The following screen appears. Complete the fields as indicated below.

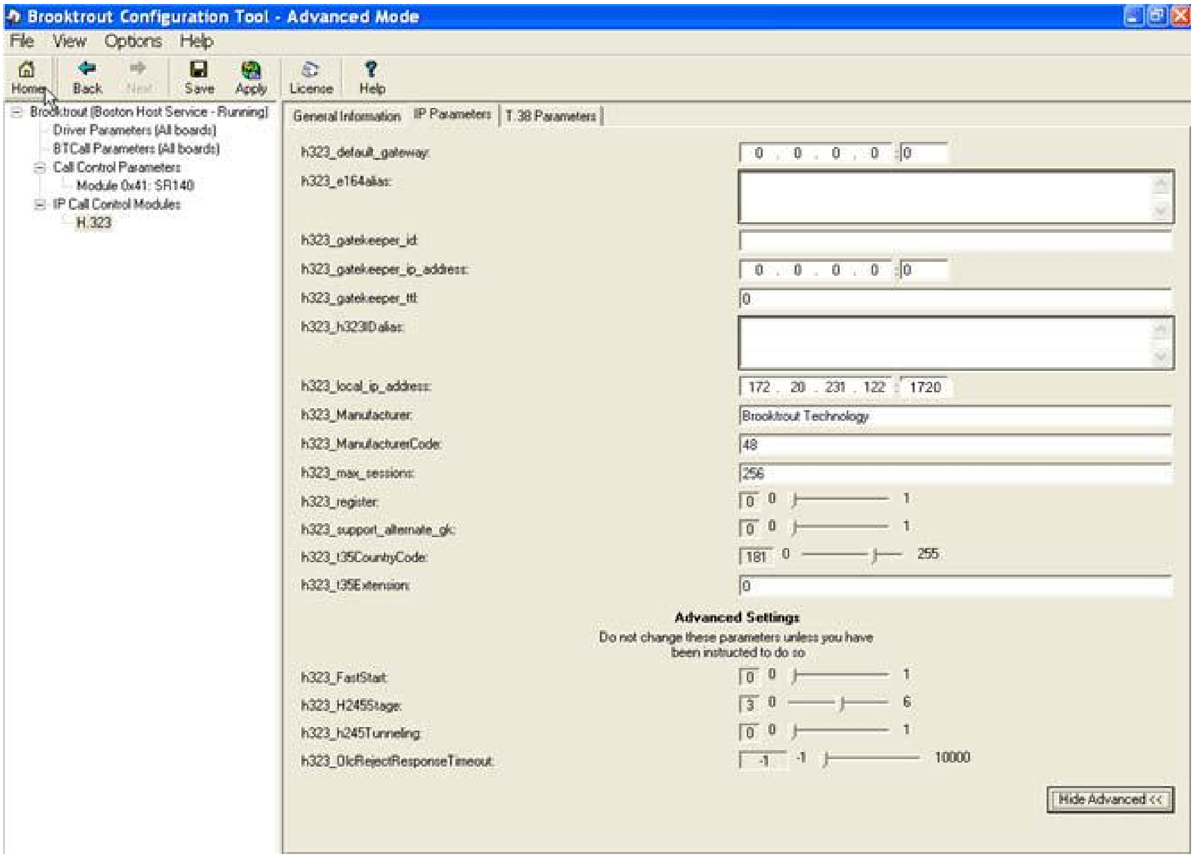

Figure 120. Advanced Settings

Note: When the h323_local_ip_address field is set to the default value (0.0.0.0:0), the system uses the IP address of the first Ethernet module in the system and port number 1720. If there are more than one ethernet modules in the Fax Server then specify the actual IP address of the desired ethernet module that will be used.

4. Set the fields below as follows to ensure that Cisco interoperability works correctly.
   - h323_FastStart = 0
   - h323_H245Stage = 3
   - h323_h245Tunneling = 0

5. Click T.38 Parameter and complete fields as indicated below.

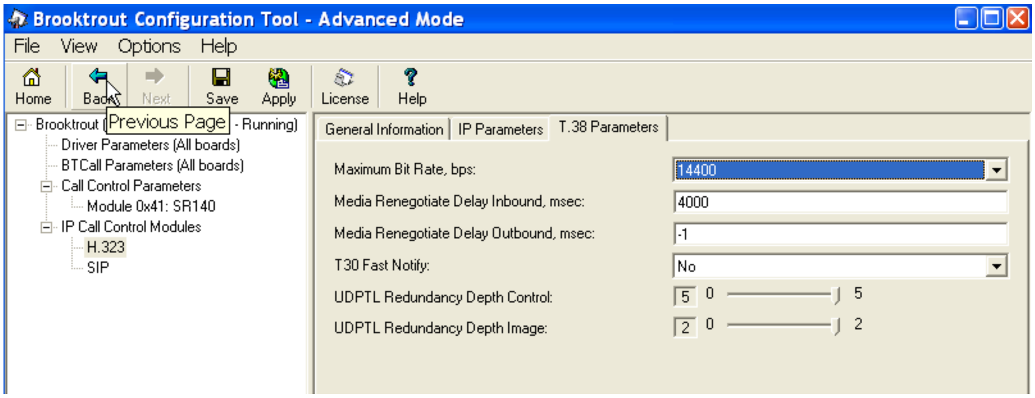

Figure 121. T.38 Parameters

6. Under Call Control Parameters, click Module 0x41: SR140 and select the Parameters tab. Complete the fields as indicated below.

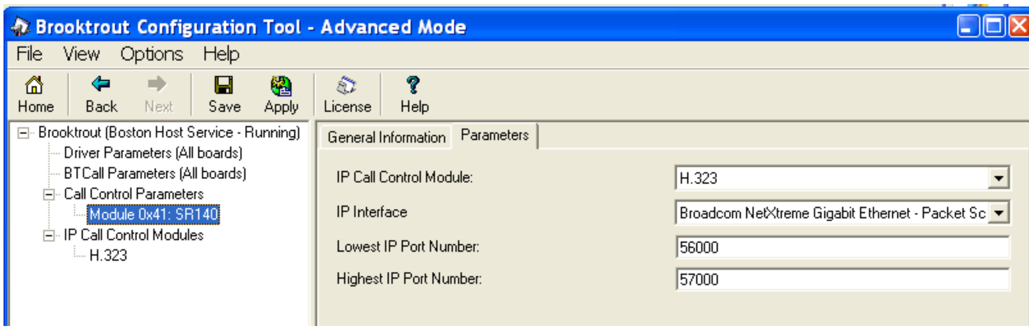

Figure 122. Module 0x41: SR140 Parameters

7. Select the desired network interface controller (NIC) for the IP Interface field.
8. Click Apply.

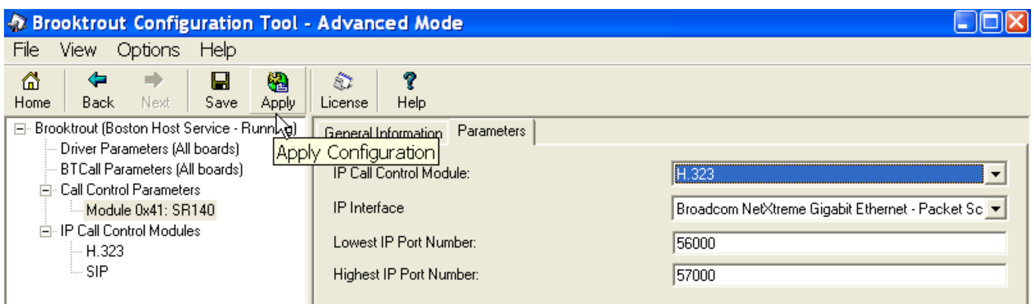

Figure 123. Apply

Configuration Files

Use the configuration files in the sections below to help you configure the SR140 Software:

Appendix F, SR140 Configuration Files on page 492

Configuring the Cisco Media Gateway with IOS Commands

Refer to the configuration file in the *Appendix F, Cisco Gateway-Config on page 499* as a guide to configure your Cisco Media Gateway with IOS Command.

Configuring the Cisco Media Gateway involves the following.

- Enable T.38 support
- Configure line card interface
- Configure Dial-Peers (VoIP and POTS)

T.38 Support

Be sure to include the `fxr-package` in your MGCP gateway configuration, since this package is needed for T.38 support. This means, when you have this package disabled, type the following IOS command in order to activate it:

`MGCP package capability fxr-package`

`and do then`

`no mgcp`

`and then`

`mgcp`

Also ensure that you do not have the following command line in your gateway configuration since you want to enable T.38.

`mgcp fax t38 inhibit`

Also, the G.711 codec is needed to start a T.38 call.

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Configuring the Cisco Unified Communications Manager

This procedure includes the following:

- *Appendix M, Configuring Service Activation on page 604* (If not already completed.)
- *Appendix M, Configuring Service Parameters on page 609* (If not already completed.)
- *Configuring the Cisco Media Gateway on page 118*
- *Configuring the Trunk Between the CUCM and the Fax Server on page 126*
- *Configuring a Route Pattern for a Trunk to the Gateway on page 131*
- *Configuring a Route Pattern for a Trunk to the Fax Server on page 136*

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Configuring the Cisco Media Gateway

➢ **Follow the steps below to configure the Cisco Media Gateway. Open CUCM version 4.2.3.**

1. From the Device menu, select Gateway.

Figure 124. Gateway from Device Menu

This document is not to be distributed to a third party without written permission from Dialogic.

2. The following screen appears. Click Add a New Gateway.

Figure 125. Add a New Gateway

The following screen appears:

Figure 126. Gateway Type

3. Select the appropriate gateway type.

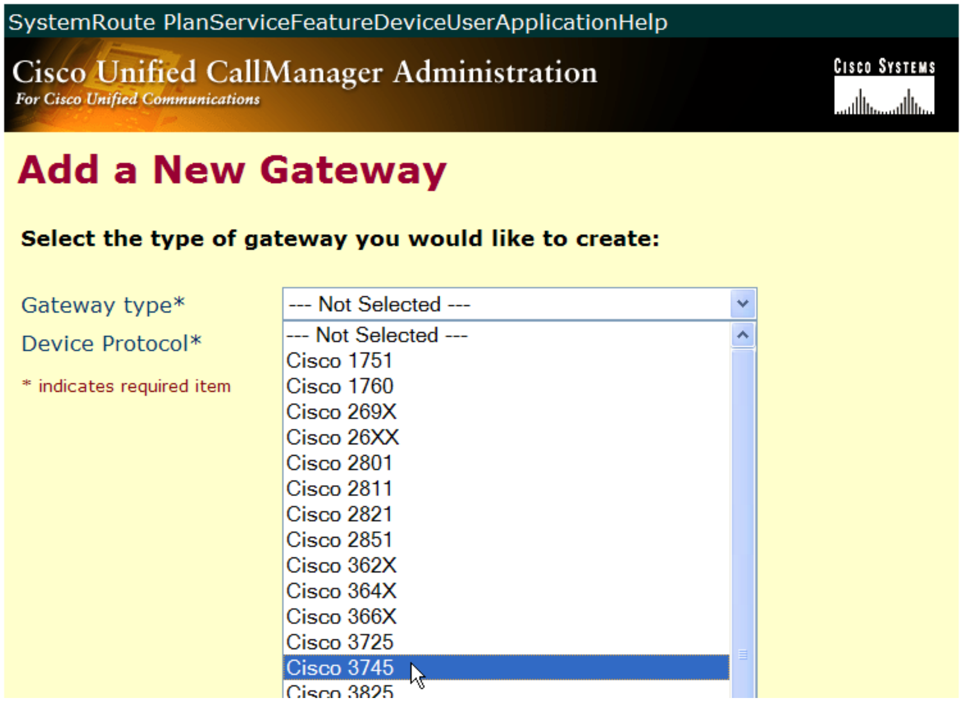

Figure 127. Select Gateway Type

4. Select MGCP for the Protocol.

Figure 128. MGCP Device Protocol

5. Click Next.

Figure 129. Next

6. Complete the screen as indicated below:

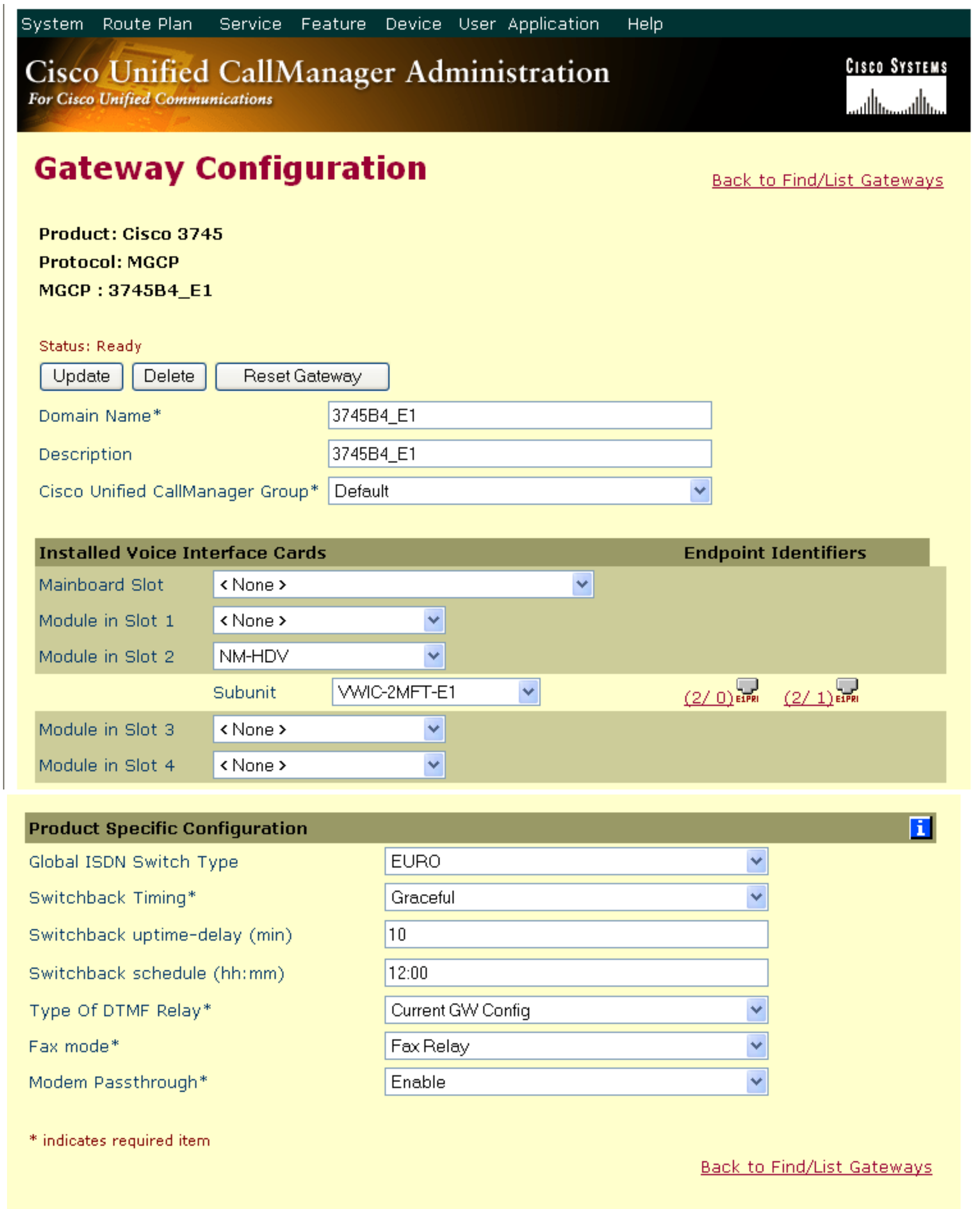

Figure 130. Gateway Configuration Data

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7. Click the E1 icon as shown below.

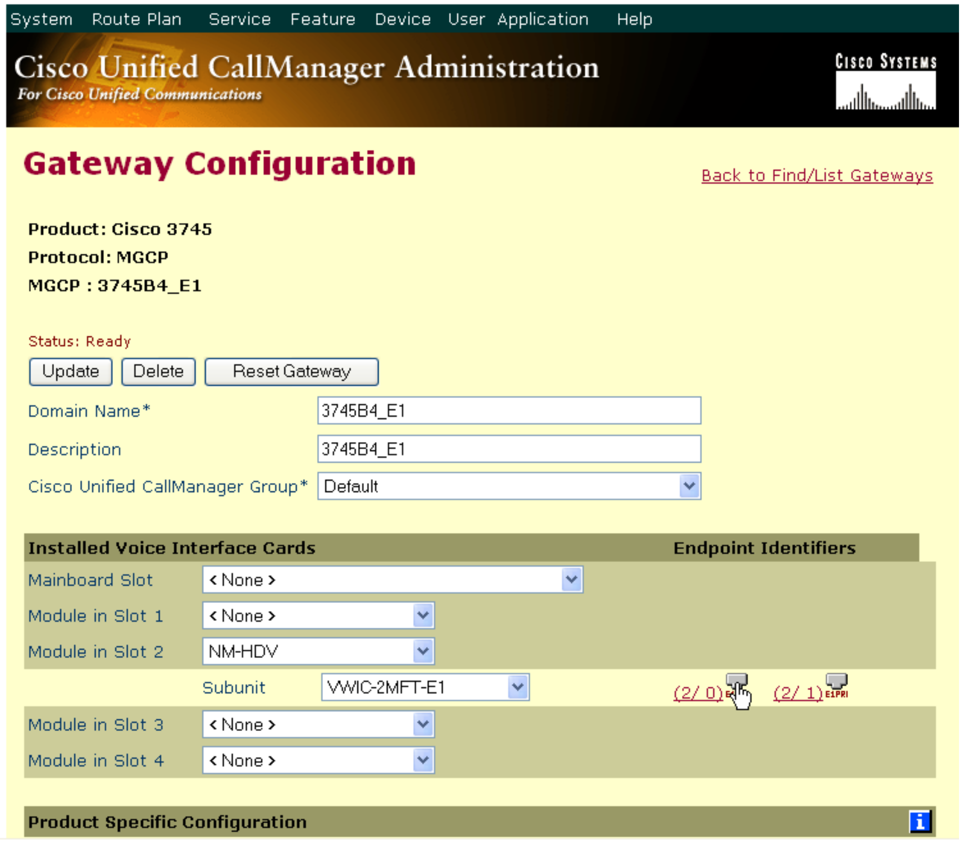


Figure 131. E1 PRI Configuration

8. Complete the screen as follows.

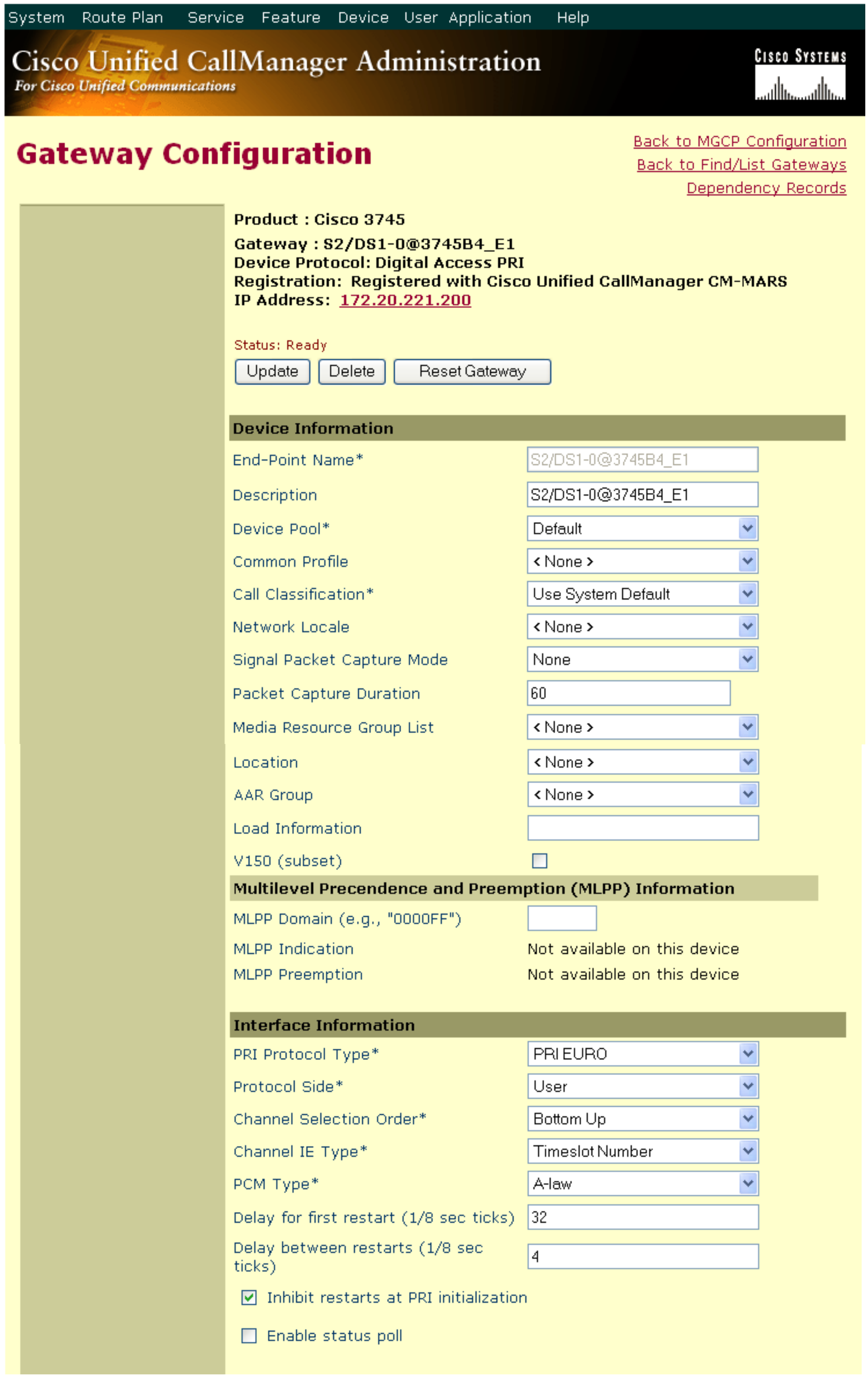
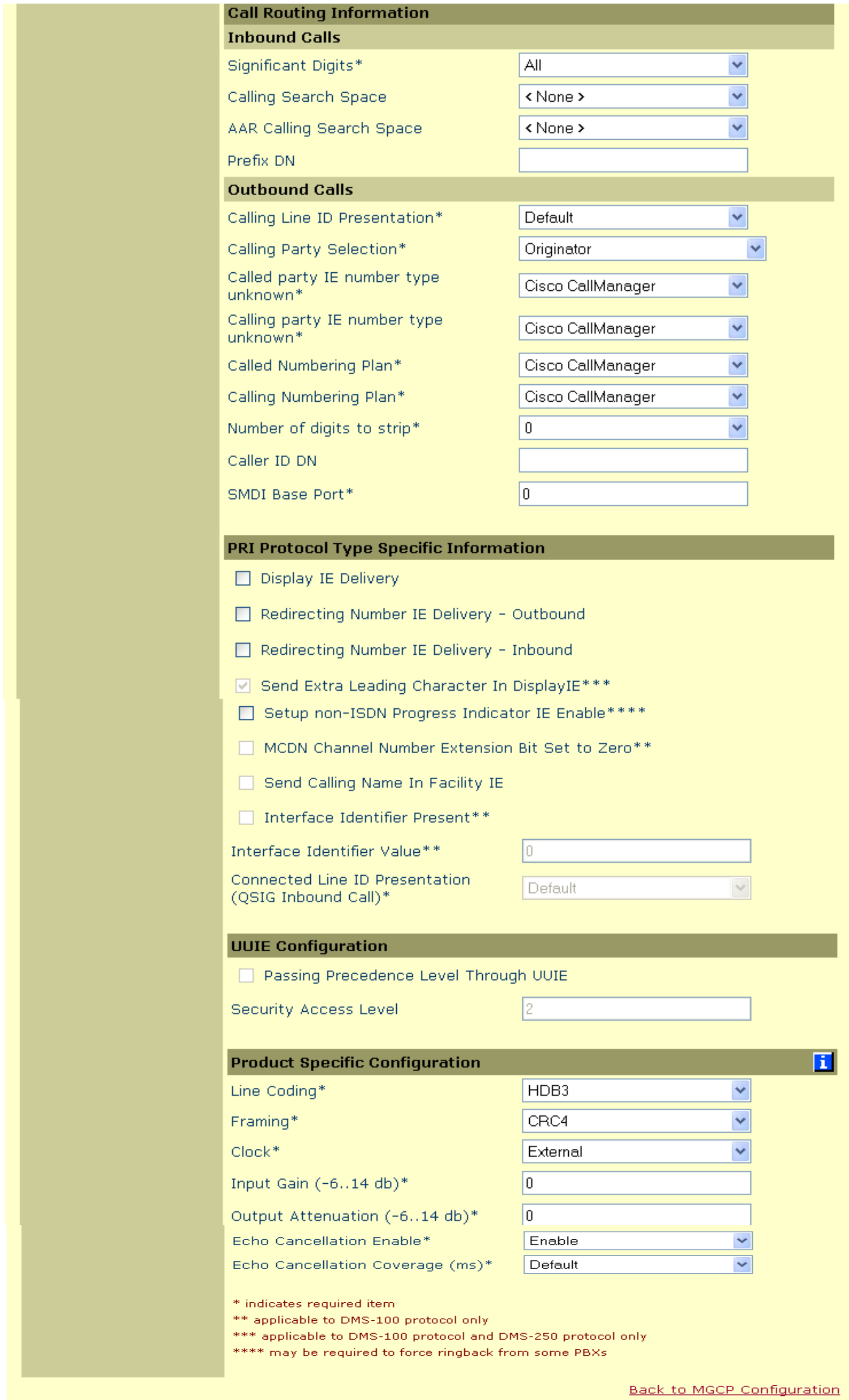


Figure 132. E1 PRI Configuration (continued on next page)


Call Routing Information
Inbound Calls
Significant Digits*
All
Calling Search Space
< None >
AAR Calling Search Space
< None >
Prefix DN
Outbound Calls
Calling Line ID Presentation*
Default
Calling Party Selection*
Originator
Called party IE number type unknown*
Cisco CallManager
Calling party IE number type unknown*
Cisco CallManager
Called Numbering Plan*
Cisco CallManager
Calling Numbering Plan*
Cisco CallManager
Number of digits to strip*
0
Caller ID DN
SMDI Base Port*
0
PRI Protocol Type Specific Information
Display IE Delivery
Redirecting Number IE Delivery - Outbound
Redirecting Number IE Delivery - Inbound
Send Extra Leading Character In DisplayIE***
Setup non-ISDN Progress Indicator IE Enable****
MCDN Channel Number Extension Bit Set to Zero**
Send Calling Name In Facility IE
Interface Identifier Present**
Interface Identifier Value**
0
Connected Line ID Presentation (QSIG Inbound Call)*
Default
UUIE Configuration
Passing Precedence Level Through UUIE
Security Access Level
2
Product Specific Configuration
Line Coding*
HDB3
Framing*
CRC4
Clock*
External
Input Gain (-6..14 db)*
0
Output Attenuation (-6..14 db)*
0
Echo Cancellation Enable*
Enable
Echo Cancellation Coverage (ms)*
Default
* indicates required item
** applicable to DMS-100 protocol only
*** applicable to DMS-100 protocol and DMS-250 protocol only
**** may be required to force ringback from some PBXs
Back to MGCP Configuration
Back to Find/List Gateways

Configuring the Trunk Between the CUCM and the Fax Server

➢ **Follow the steps below.**

1. Open CUCM Version 4.2.3.
2. From the Device menu, select Trunk.

Figure 133. New Trunk

3. The following screen appears. Click Find.

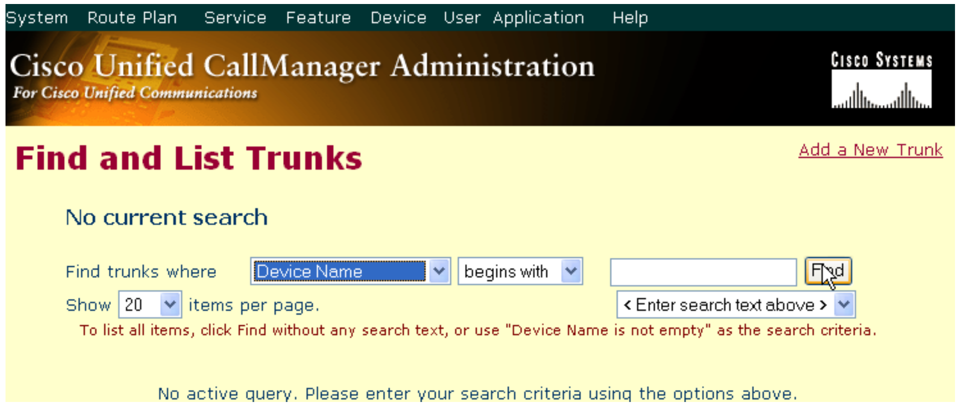


Figure 134. Trunks

4. From the screen below, click Add New Trunk.

Figure 135. Add New Trunk

5. The following screen appears. Select Intercluster Trunk (Non-Gatekeeper Controlled) for the Trunk Type.

Figure 136. Trunk Type

6. The Device Protocol defaults to Inter-Cluster Trunk. Click Next.

Figure 137. Inter-Cluster Trunk Device Protocol

The following screen appears.

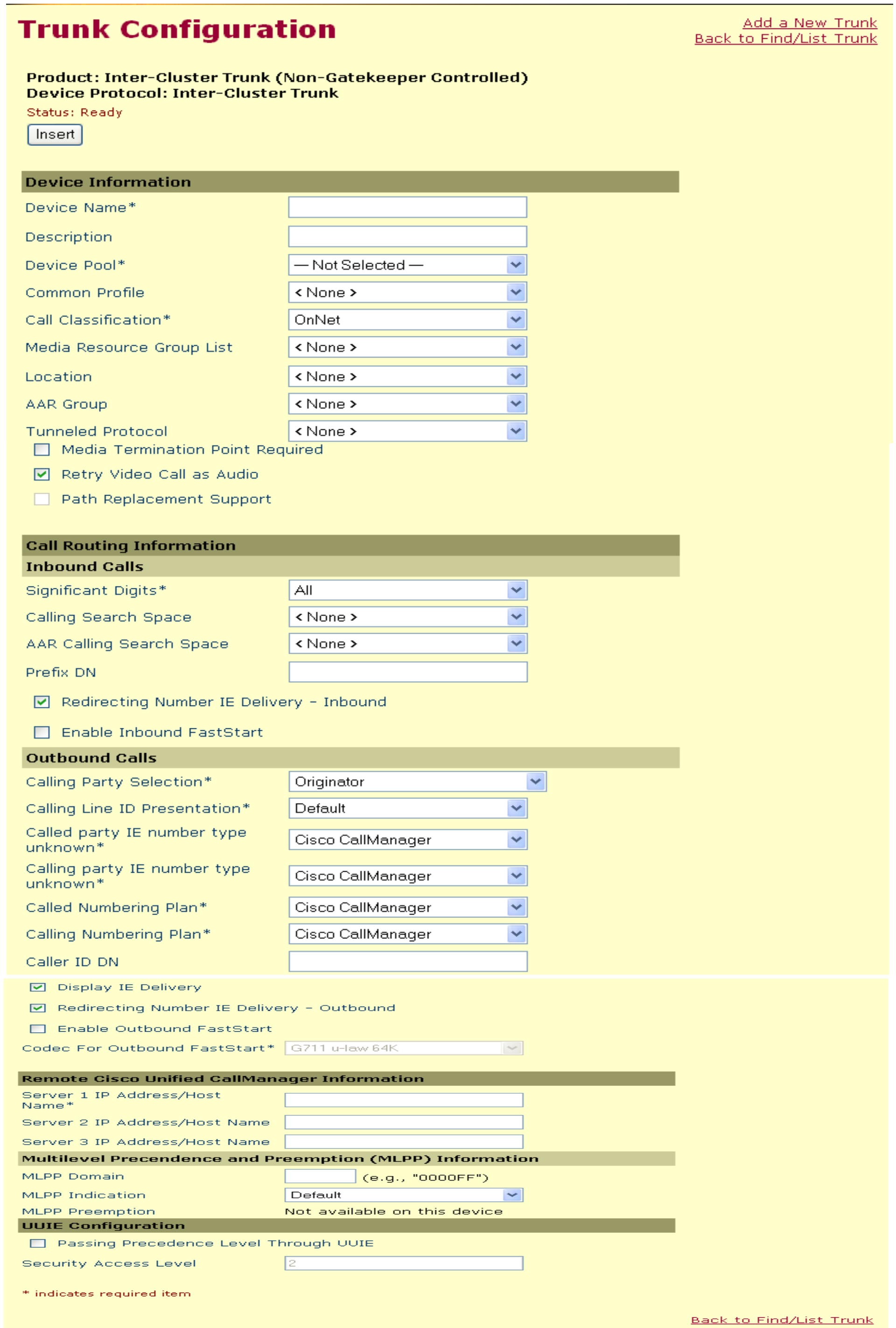


Figure 138. Trunk Configuration

7. Complete the screen as indicated below.

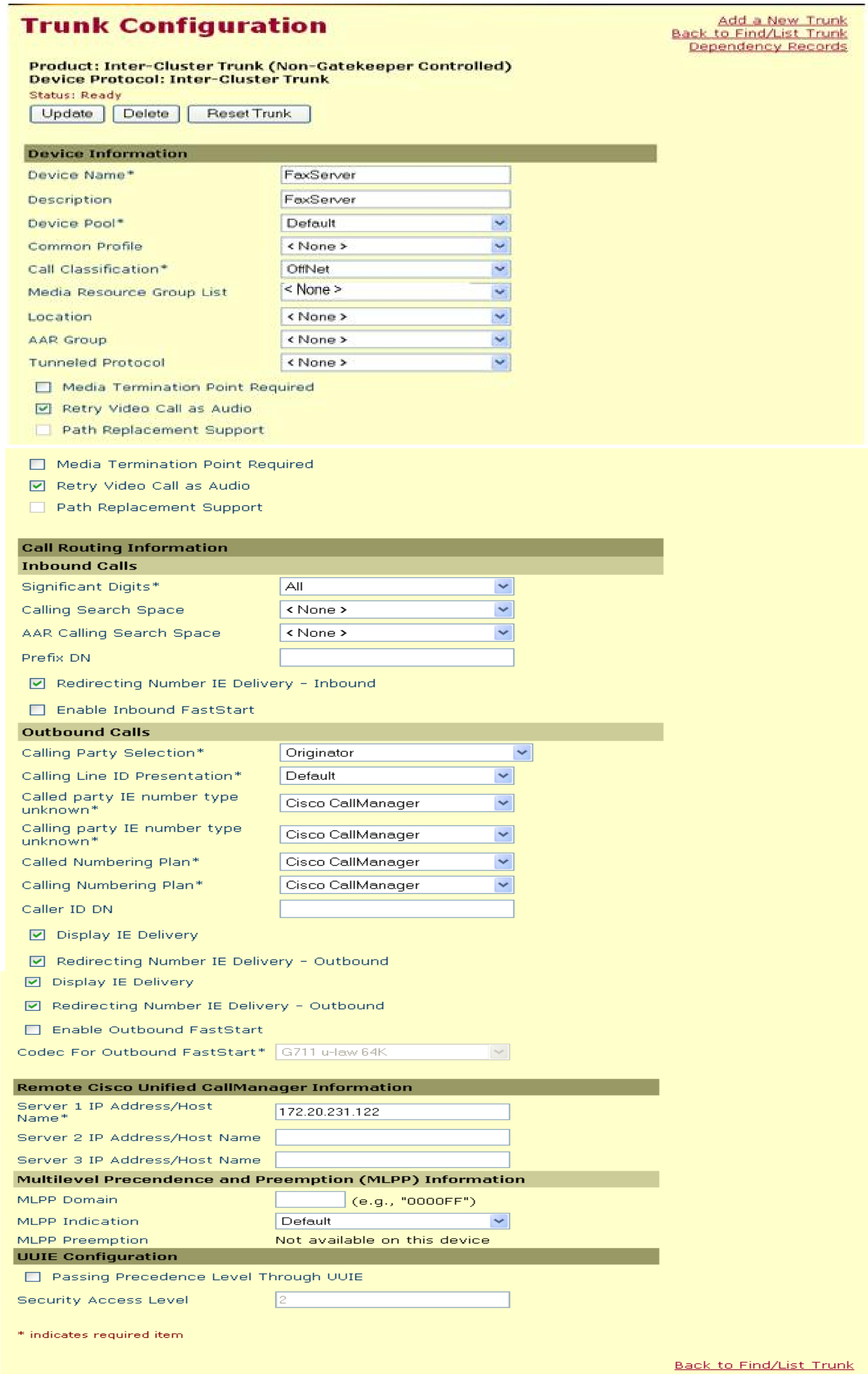


Figure 139. Trunk Configuration Data

Configuring a Route Pattern for a Trunk to the Gateway

➢ **Follow the steps below:**

1. From the Call Routing menu, click Route/Hunt, Route Pattern.

Figure 140. Route Pattern

2. The following screen appears. Click Add New Route Pattern.

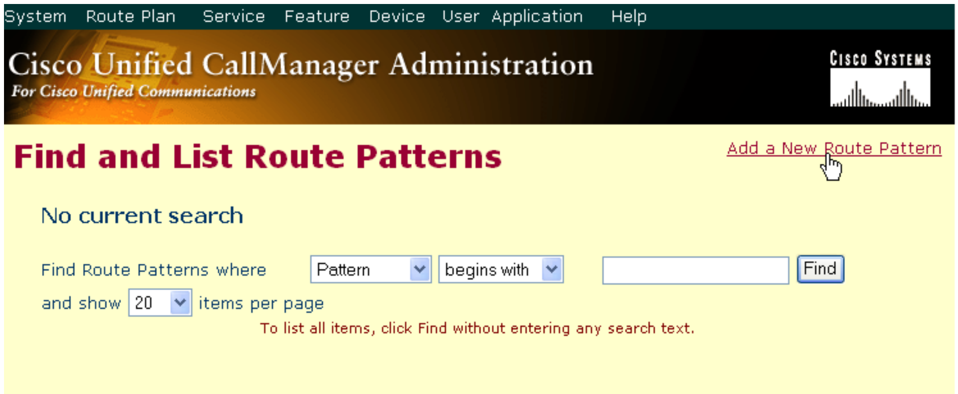


Figure 141. Add New Route Pattern

3. The following screen appears.

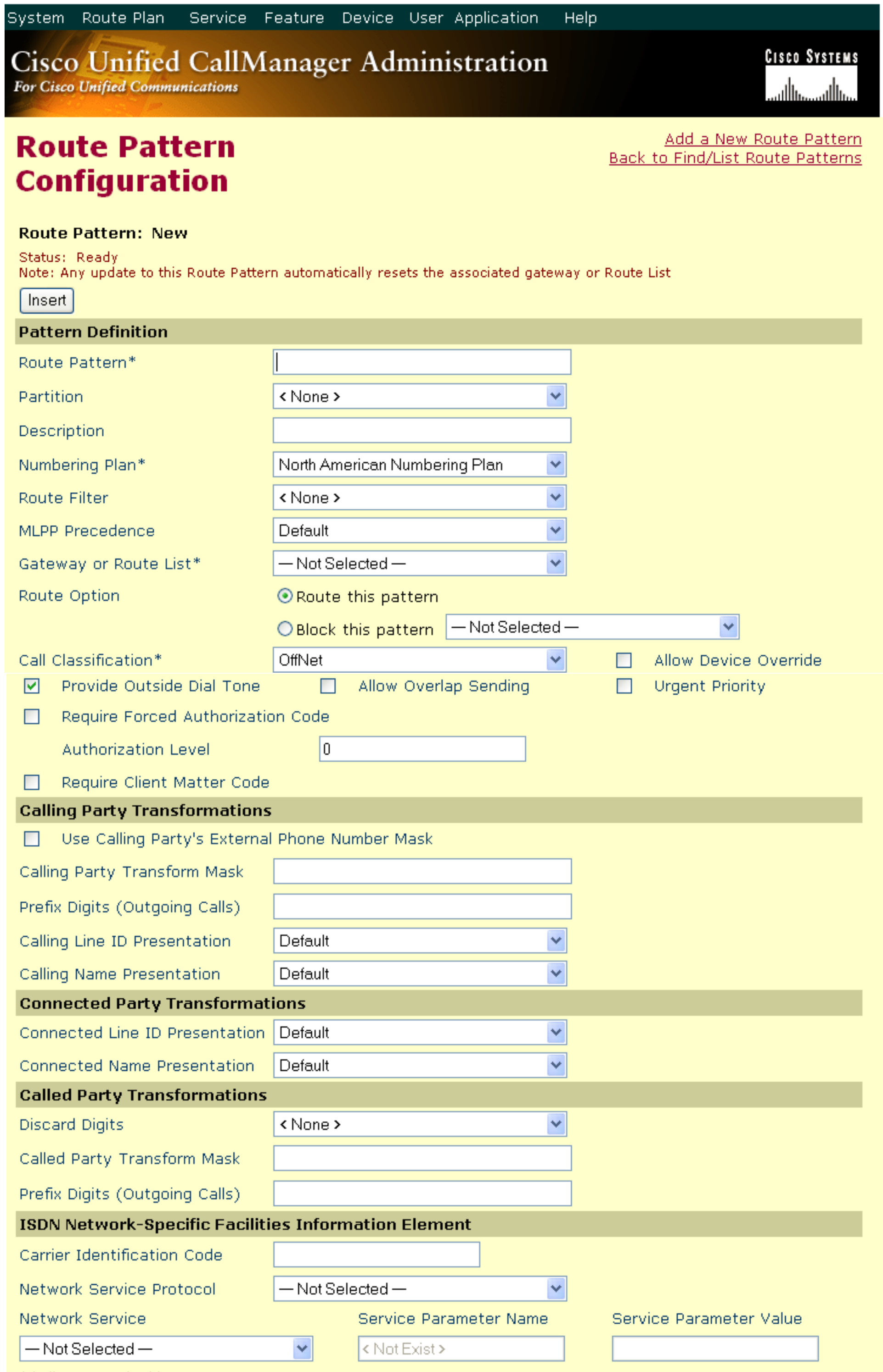


Figure 142. Route Pattern Configuration

4. Complete the screen as indicated below.

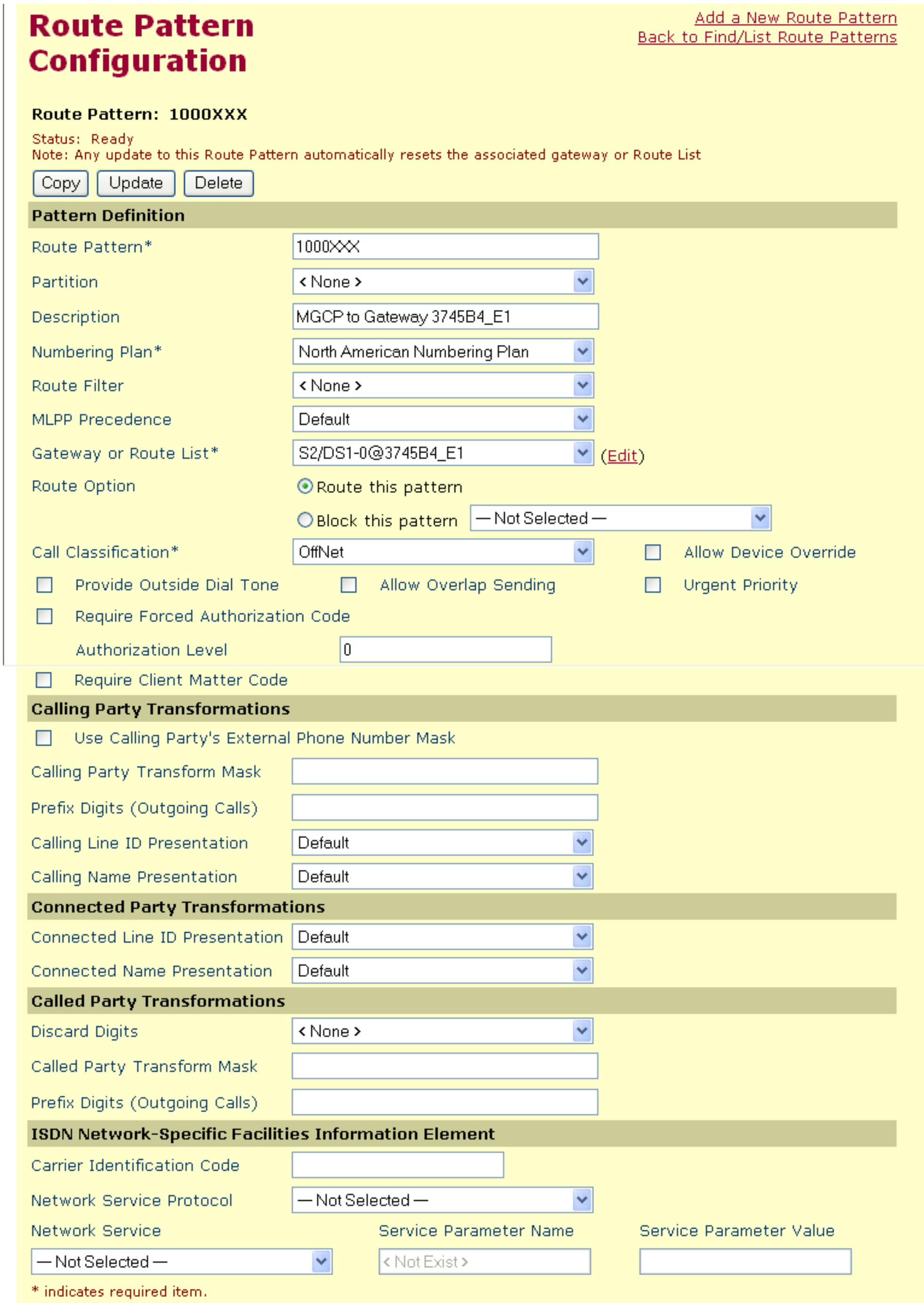


Figure 143. Route Pattern Configuration Data

5. Click Update.

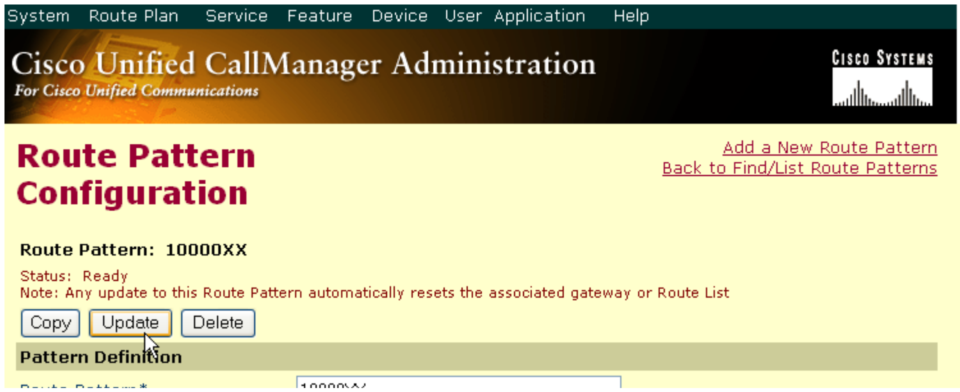


Figure 144. Update

6. Click Back to List/Find Route Patterns. The following screen appears with the new Route Pattern listed.

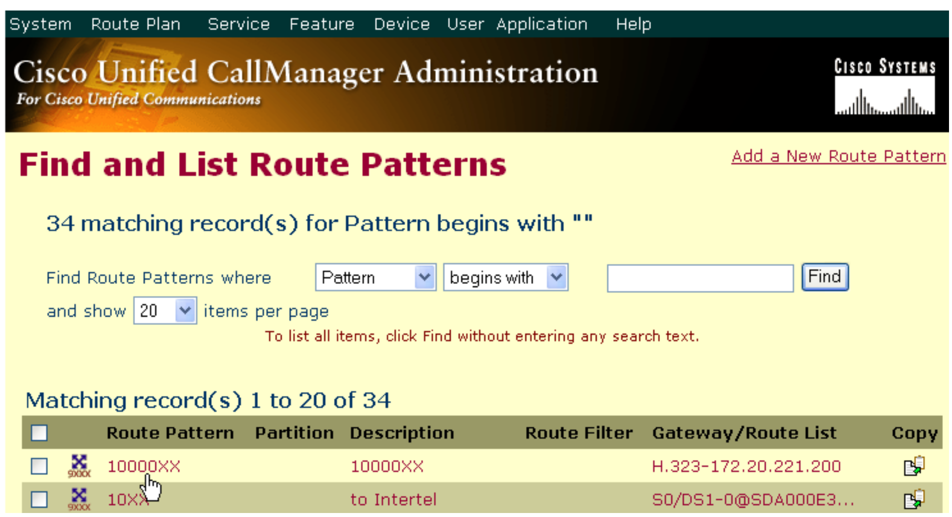


Figure 145. New Route Pattern

Configuring a Route Pattern for a Trunk to the Fax Server

➢ **Follow the steps below:**

1. From the Call Routing menu, click Route/Hunt, Route Pattern.

Figure 146. Route Pattern

2. The following screen appears. Click Add New Route Pattern.

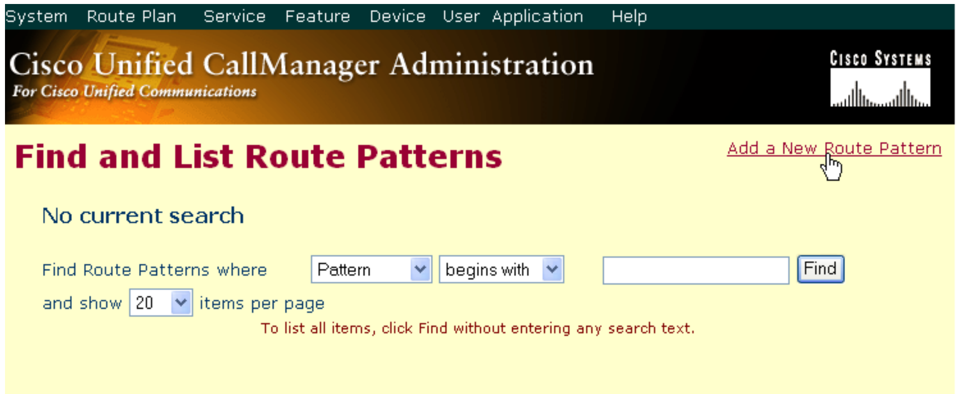


Figure 147. Add New

3. The following screen appears.

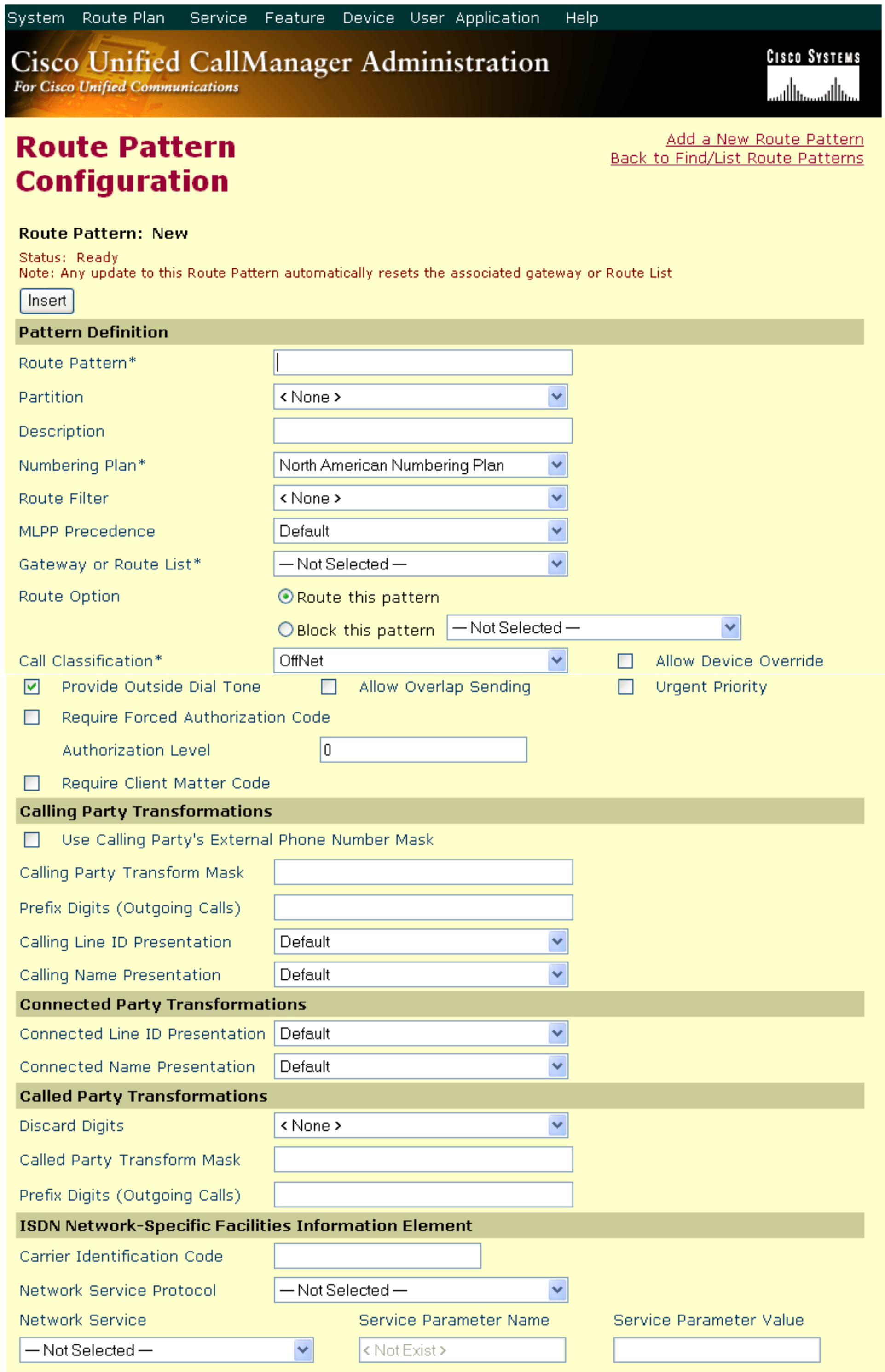


Figure 148. Route Pattern Configuration

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4. Complete the screen as indicated below.

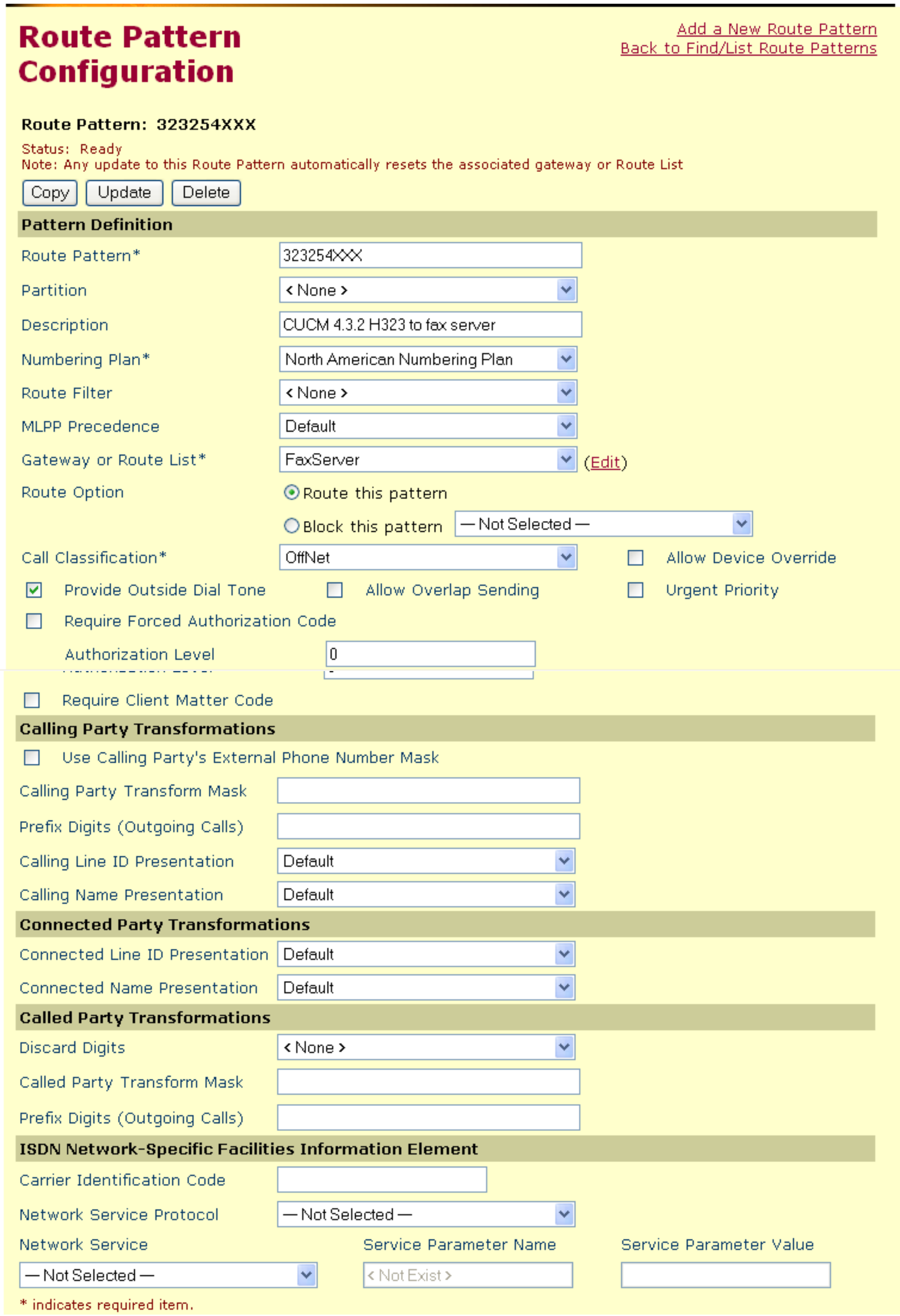

Figure 149. Route Pattern Configuration Data

5. Click Update.

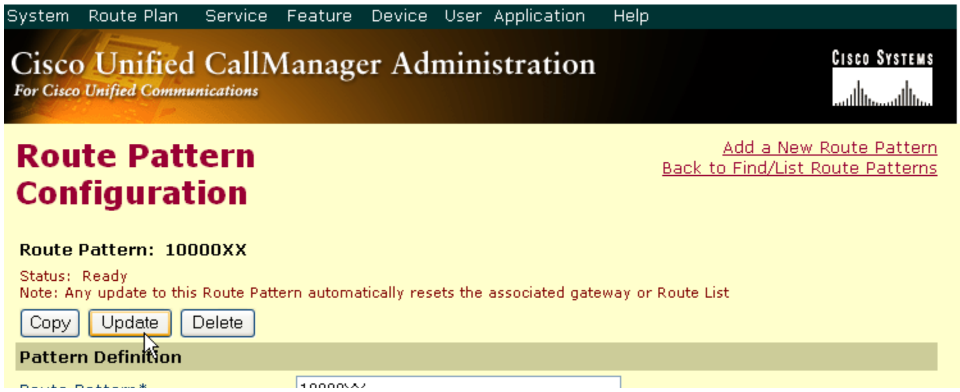

Figure 150. Update

6. Click Back to List/Find Route Patterns. The following screen appears with the new Route Pattern listed.

Figure 151. New Route Pattern

Verifying the Configuration

The Dialogic Brooktrout Fax and Voice Diagnostic Test utility allows you to test the configuration you completed. You can download the utility and instructions from the technical support site.

http://www.cantata.com/support/lanfax/fax_testing_diagnostic.cfm

This test verifies the following:

- SR140 Software configuration
- Cisco Media Gateway configuration
- Trunks and Route Patterns on the CUCM

Verifying the Fax Server Basic Configuration

Before continuing, refer to *Appendix A, Verifying Basic Configuration - Fax Server 172.20.231.122 on page 414* to verify that the Fax Server software is installed correctly.

Outbound Call

➢ **Follow the steps below to verify outbound fax traffic from the CUCM to the gateway.**

1. Open the Fax and Voice Diagnostic Test utility. The following screen appears. Click the 2.Telephony button (press the Apply button in the Brooktrout Configuration Tool after configuring). Click the 3.Initialize button.

2. Click in the Phone Number box for Port 1.

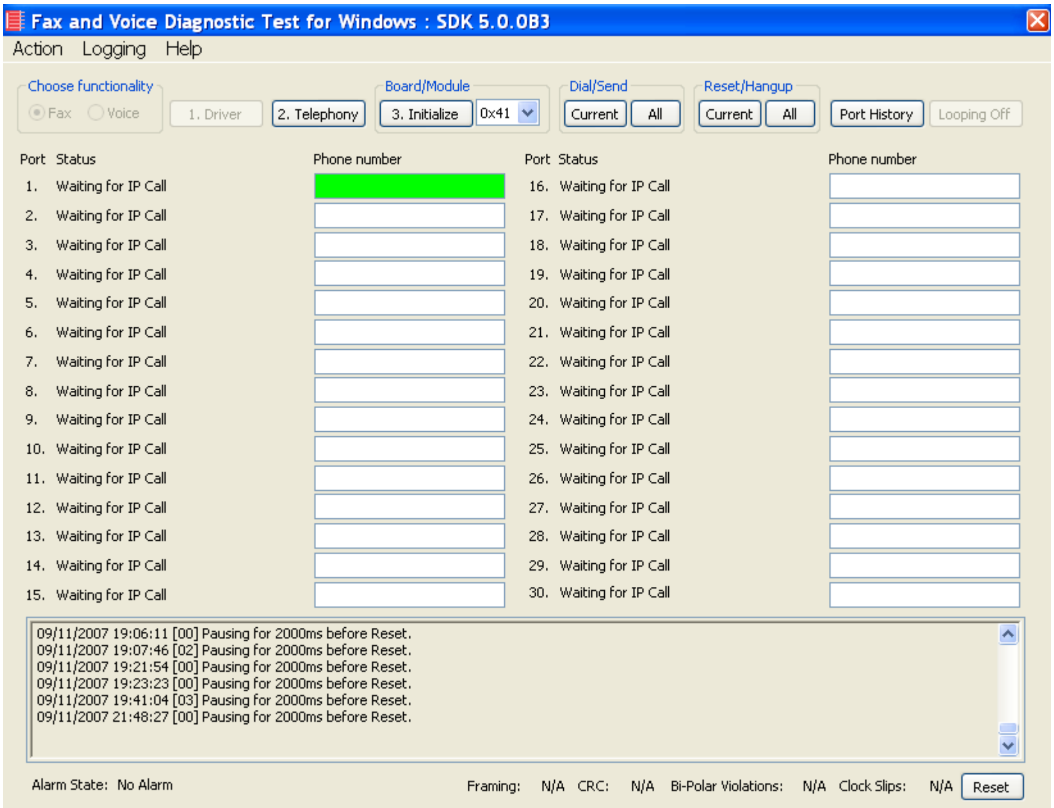

Figure 152. Fax Diagnostic Test

3. Enter the destination phone number and the IP address of the CUCM as shown below.

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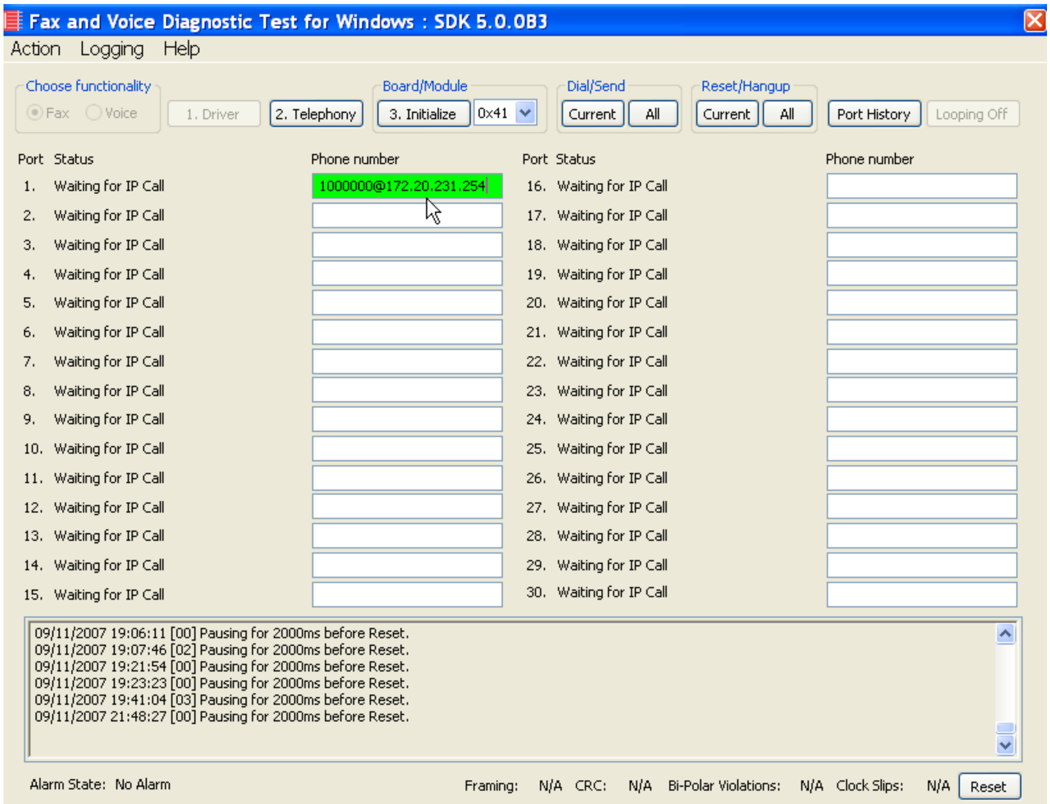

Figure 153. IP Address

4. Click Current to send the test fax.

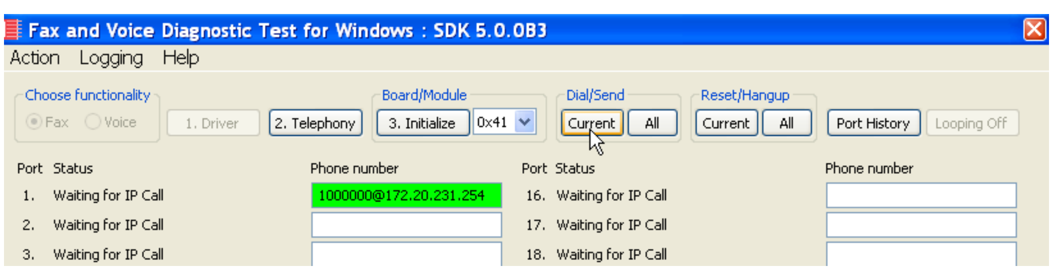

Figure 154. Current

5. Click Port History while having Port 1 highlighted.

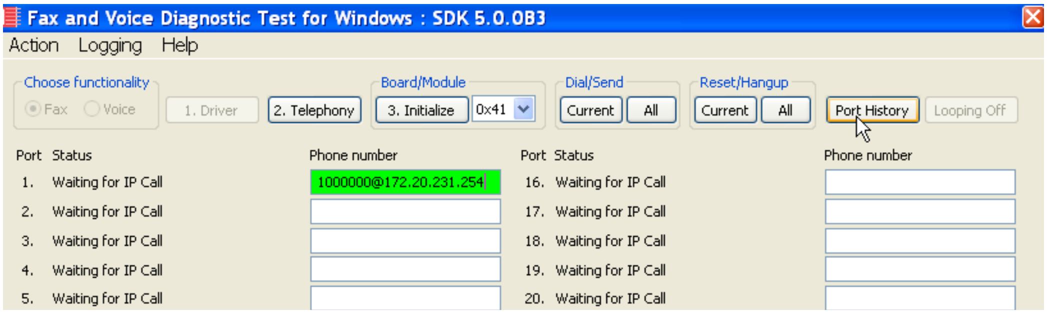

Figure 155. Port History

6. The following screen appears. Verify that the outbound call was successful.

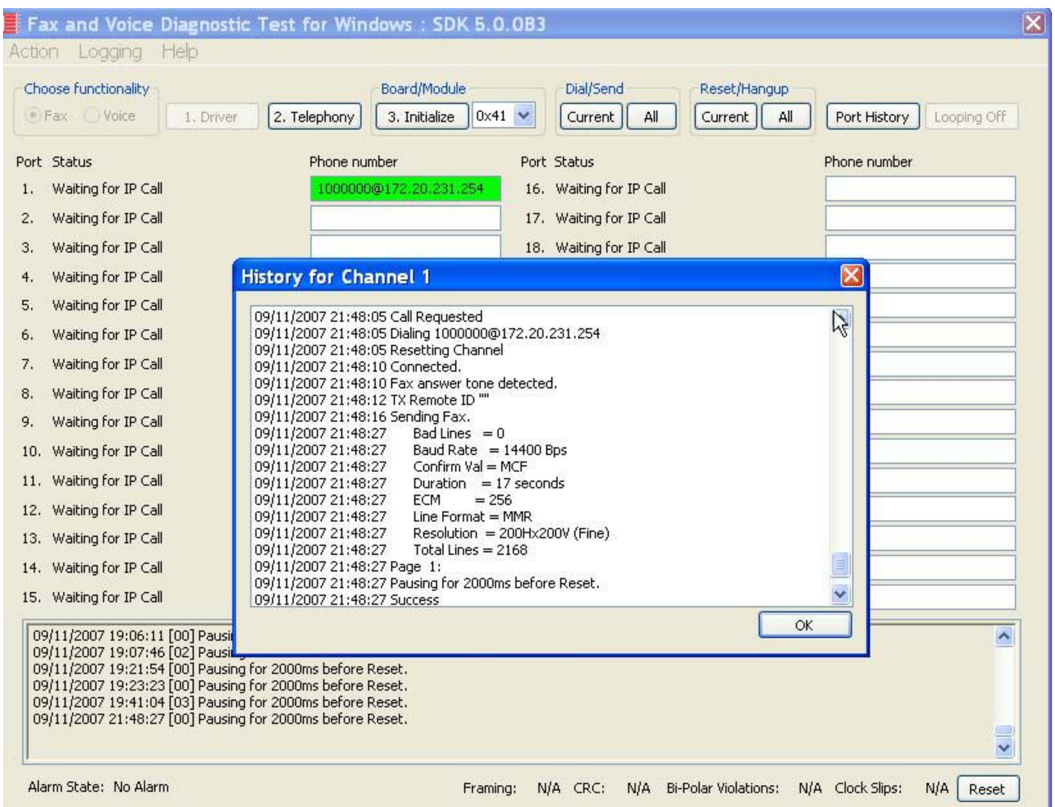

Figure 156. Outbound Call Successful

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Inbound Call

➢ **Follow the steps below to verify the inbound fax traffic from the gateway to the CUCM.**

1. Initiate a call from the PSTN using 323254000.
2. Watch all channels because a call should come in on one of the waiting channels.

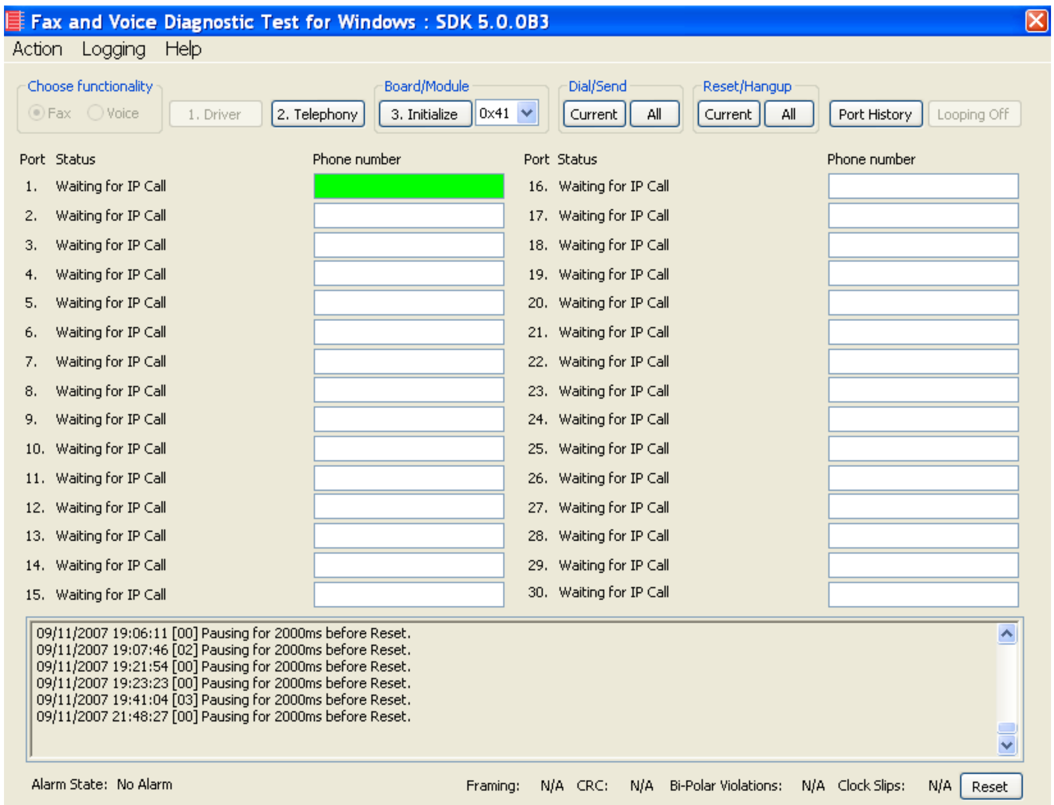

Figure 157. Fax Diagnostic Test

3. Click the Phone number box on which the call came in and click the Port History button.

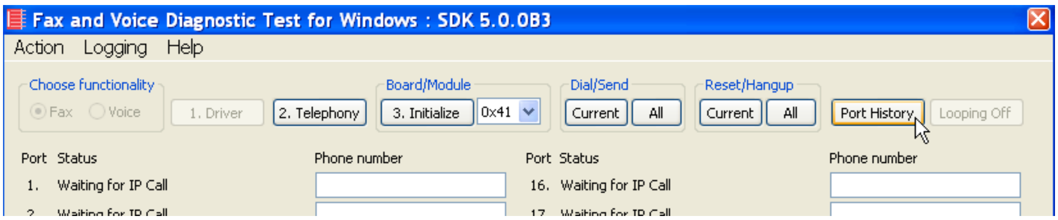

Figure 158. Port History

4. The following screen appears. Verify that the inbound call is successful.

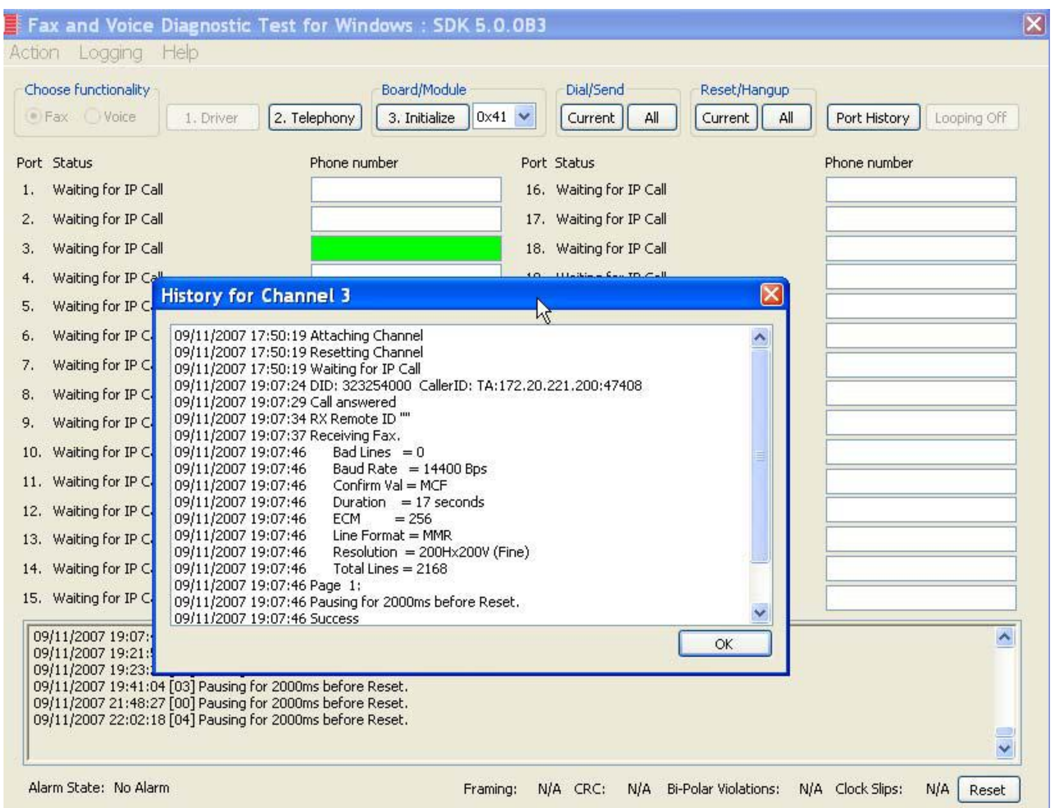

Figure 159. Inbound Call Successful

8
Topology: H.323 - CUCM 5.04 - H.323

Introduction

In this topology, the CUCM (Version 5.0(4)) does all the call control. The gateway sends all signaling (H.323) to the CUCM which forwards it along to the Fax Server. The Fax Server responds to the CUCM and the CUCM forwards all signaling back to the gateway. Once the call is established, the fax traffic flows directly between the gateway and the Fax Server.

Note: The SR140 Software is used as an example Fax Server in this chapter. The TR1034 IP board can also be used as Fax Server.

The diagrams below show the IP addresses of the hardware which are also included in the procedure and configuration files referenced in this chapter.

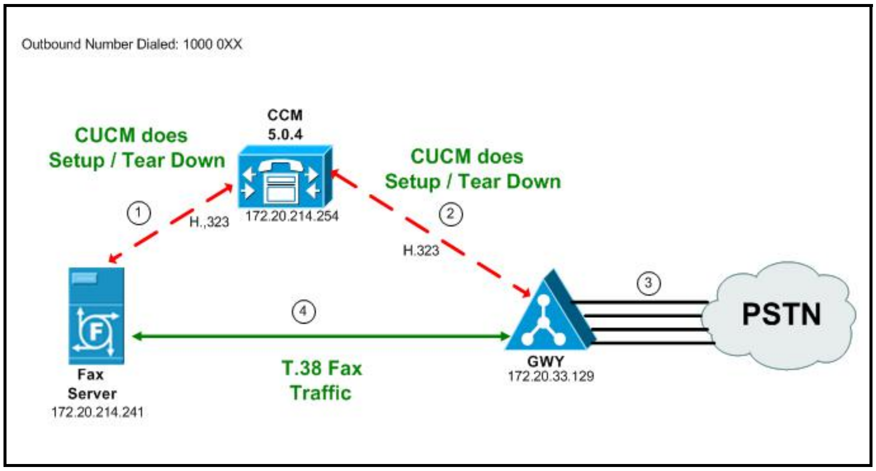

Figure 160. Outbound Call - CUCM Does Call Control - H.323 - CUCM 5.0(4) - H.323 Topology

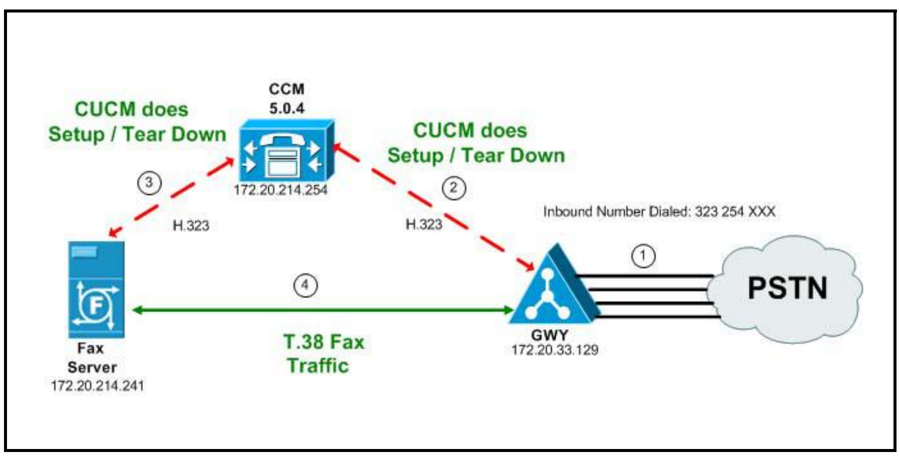

Figure 161. Inbound Call - CUCM Does Call Control - H.323 - CUCM 5.0(4) - H.323 Topology

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Configuration Sequence

Follow the sequence below when configuring the Dialogic Brooktrout FoIP with Cisco Products.

- *Configuring the Dialogic Brooktrout Fax Server on page 150*
- *Configuring the Cisco Media Gateway with IOS Commands on page 154*
- *Configuring the Cisco Unified Communications Manager on page 155*
    - *Configuring the Trunk Between CUCM and the Cisco Media Gateway on page 156*
    - *Configuring the Trunk Between the CUCM and the Fax Server on page 166*
    - *Configuring a Route Pattern for a Trunk to the Cisco Media Gateway on page 173*
    - *Configuring a Route Pattern for a Trunk to the Fax Server on page 180*
- *Verifying the Configuration on page 187*

Configuring the Dialogic Brooktrout Fax Server

➢ **Follow the steps below to configure the SR140 Software using the Dialogic Brooktrout Configuration Tool to support this network topology.**

1. Open the Dialogic Brooktrout Configuration Tool in Advanced Mode.

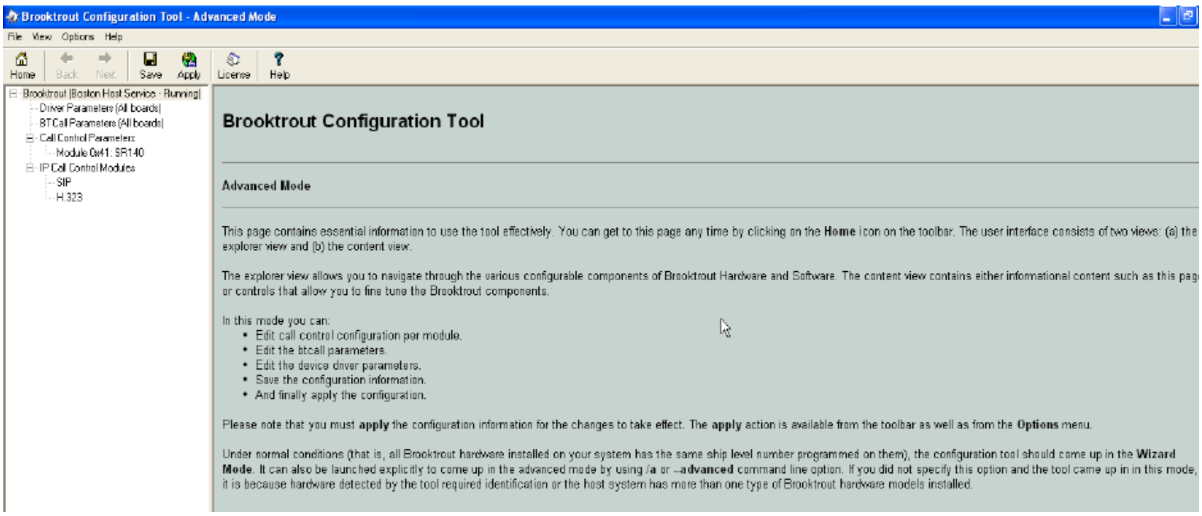

Figure 162. Dialogic Brooktrout Configuration Tool

2. Configure for the H.323 protocol as follows. Under IP Call Control Modules, click H.323 then click the IP Parameters tab.

The following screen appears.

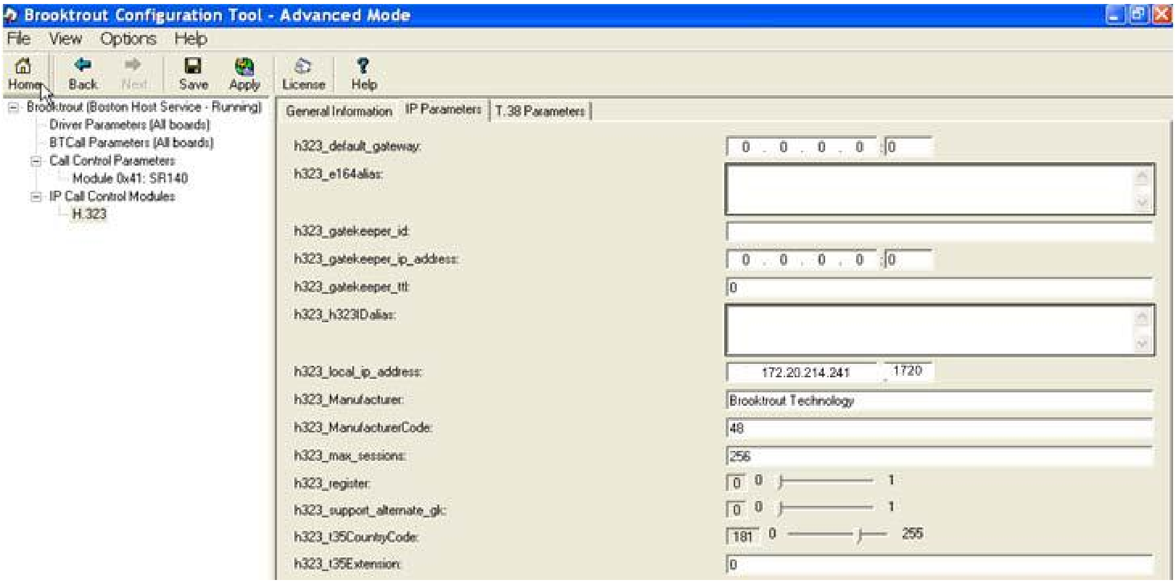

Figure 163. IP Parameters

3. Click Show Advanced. The following screen appears. Complete the fields as indicated below.

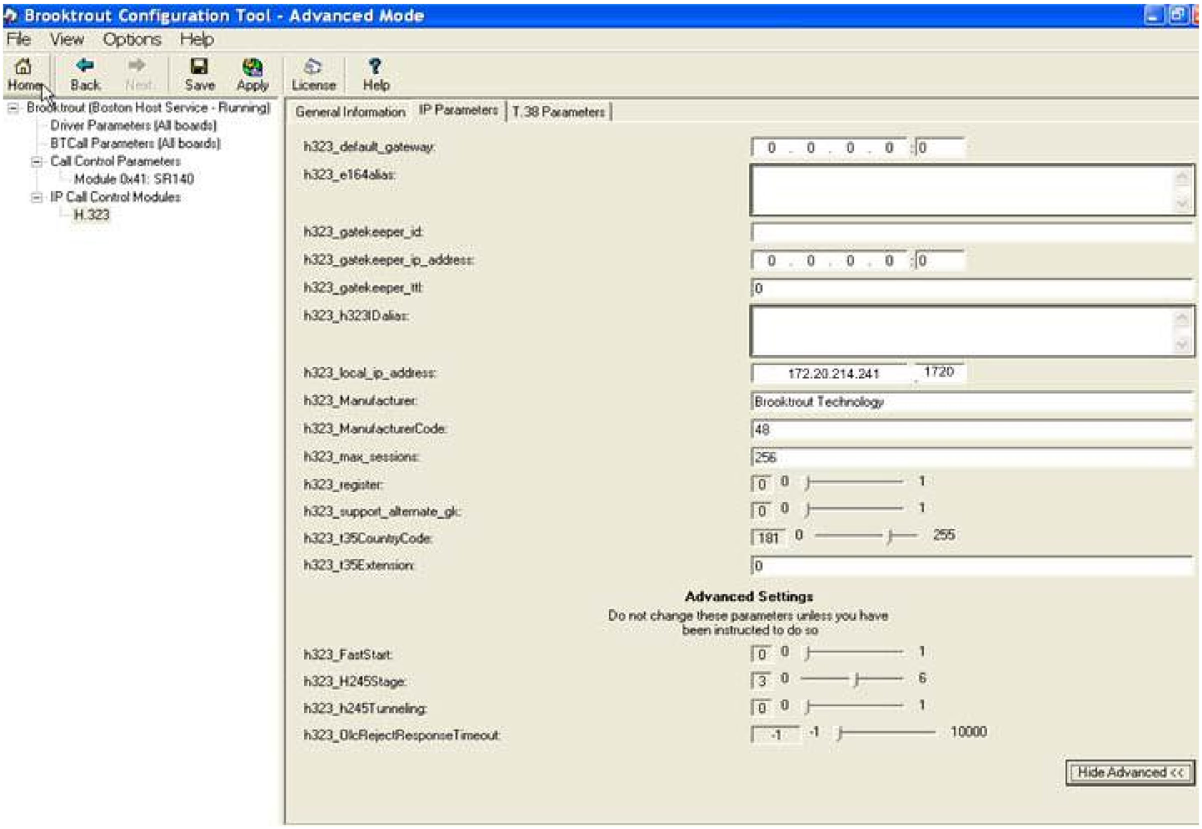

Figure 164. Advanced Settings

Note: When the h323_local_ip_address field is set to the default value (0.0.0.0:0), the system uses the IP address of the first Ethernet module in the system and port number 1720. If there are more than one ethernet modules in the Fax Server then specify the actual IP address of the desired ethernet module that will be used.

4. Set the fields below as follows to ensure that Cisco interoperability works correctly.
   - h323_FastStart = 0
   - h323_H245Stage = 3
   - h323_h245Tunneling = 0
5. Click T.38 Parameter and complete fields as indicated below.

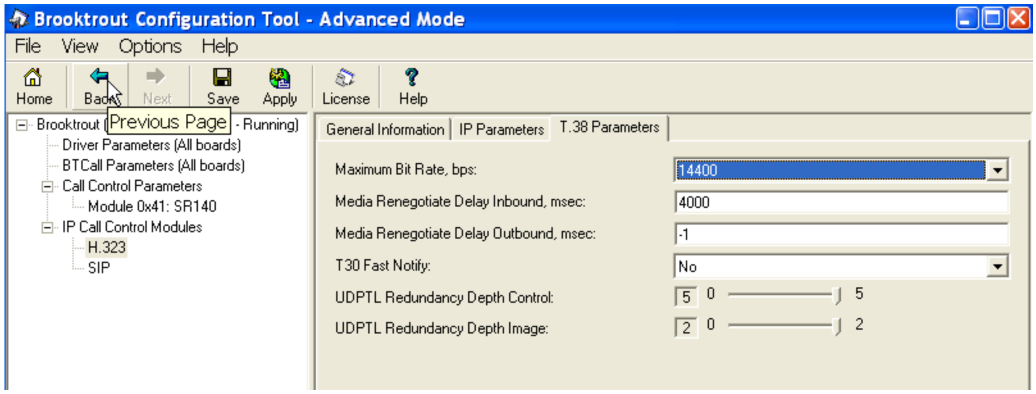

Figure 165. T.38 Parameters

6. Under Call Control Parameters, click Module 0x41: SR140 and select the Parameters tab. Complete the fields as indicated below.

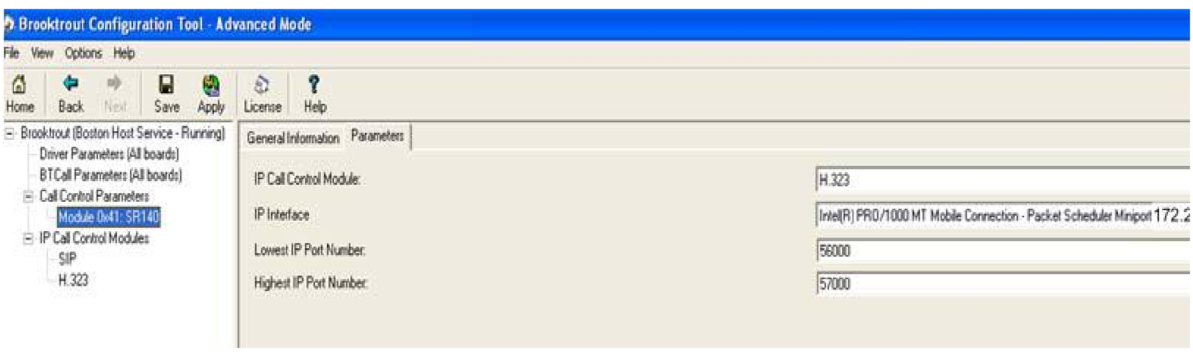

Figure 166. Module 0x41: SR140 Parameters

7. Select the desired network interface controller (NIC) for the IP Interface field.
8. Click Apply.

Configuration Files

Use the configuration files in the section below to help you configure the SR140 Software:

Appendix G, SR140 Configuration Files on page 510

Configuring the Cisco Media Gateway with IOS Commands

Configuring the Cisco Media Gateway involves the following.

- Enable T.38 support
- Configure line card interface
- Configure Dial-Peers (VoIP and POTS)

See the configuration files in *Appendix G, Cisco Gateway-Config on page 515* as a guide to configure your Cisco Media Gateway.

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Configuring the Cisco Unified Communications Manager

This procedure includes the following:

- *Configuring Service Activation on page 628* (If not completed already.)
- *Configuring Service Parameters on page 632* (If not completed already.)
- *Configuring the Trunk Between CUCM and the Cisco Media Gateway on page 156*
- *Configuring the Trunk Between the CUCM and the Fax Server on page 166*
- *Configuring a Route Pattern for a Trunk to the Cisco Media Gateway on page 173*
- *Configuring a Route Pattern for a Trunk to the Fax Server on page 180*

Configuring the Trunk Between CUCM and the Cisco Media Gateway

➢ **Follow the steps below:**

1. Open the Cisco Unified Communications Manager Administration Version 5.0(4). The following screen appears.

Figure 167. CUCM Version 5.0(4)

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2. From the Device menu, select Trunk.

Figure 168. Trunk

The following screen appears.

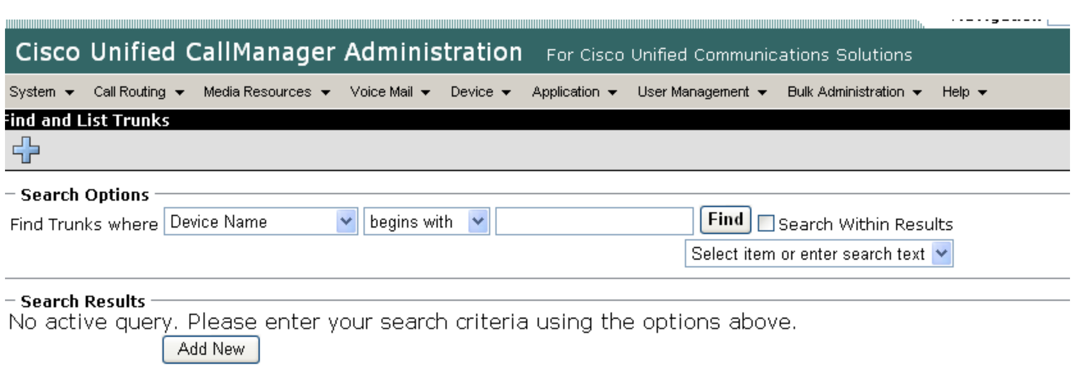

Figure 169. List Trunks

3. Click Add New.

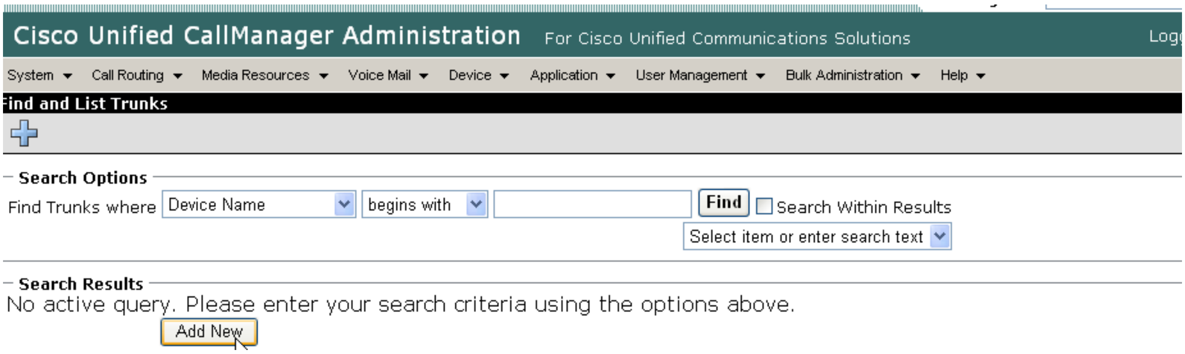

Figure 170. Add New Trunk

The following screen appears.

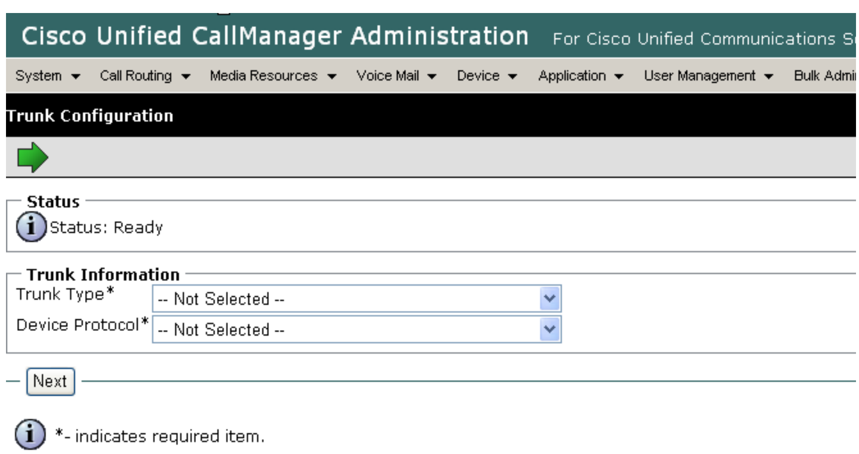

Figure 171. Trunk Configuration

4. Select Intercluster Trunk (Non-Gatekeeper Controlled) for the Trunk Type.

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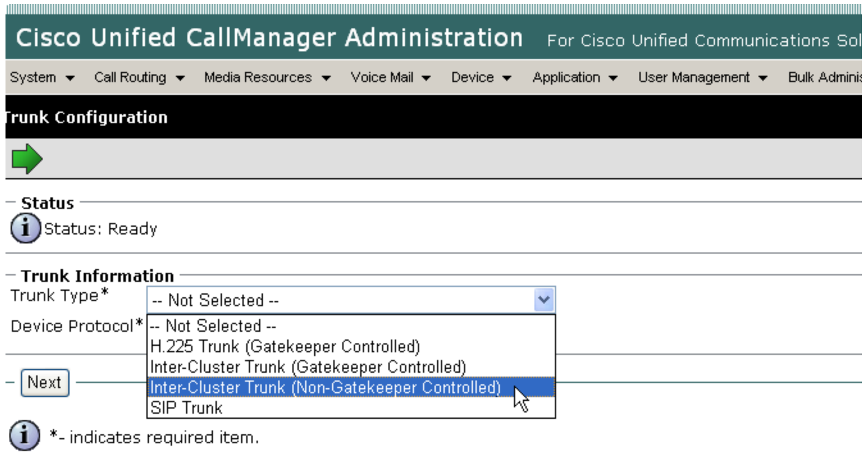

Figure 172. Trunk Type

The Device Protocol defaults to Inter-Cluster Trunk.

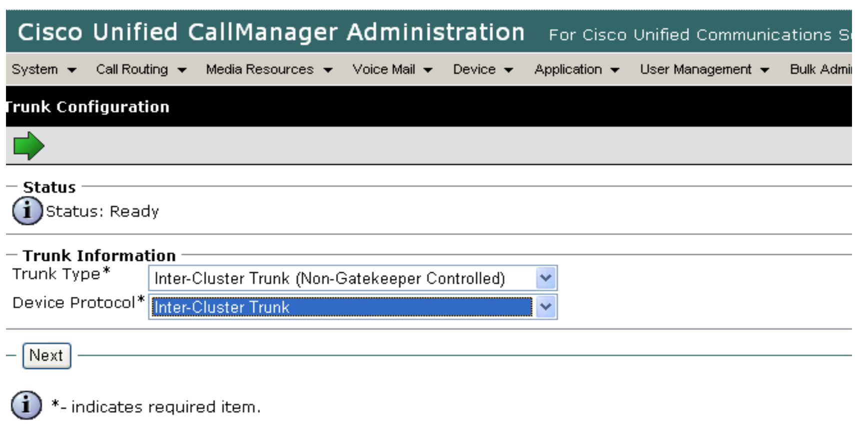

Figure 173. Inter-Cluster Trunk Device Protocol

5. Click Next.

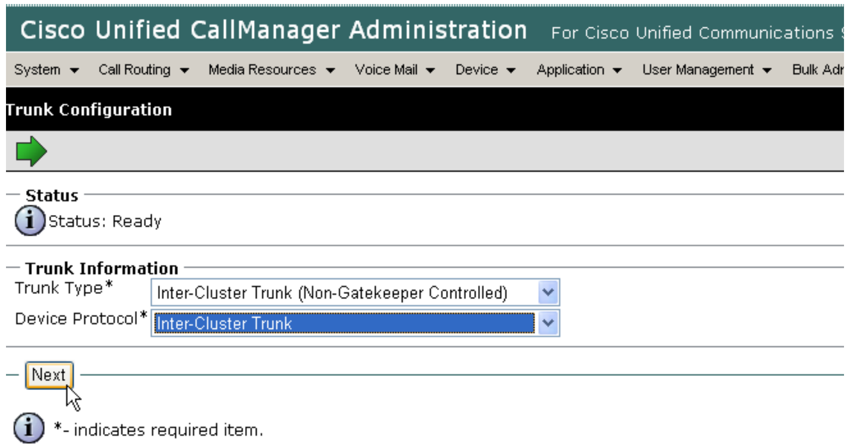

Figure 174. Next

The following screen appears.

 This document is not to be distributed to a third party without written permission from Dialogic.

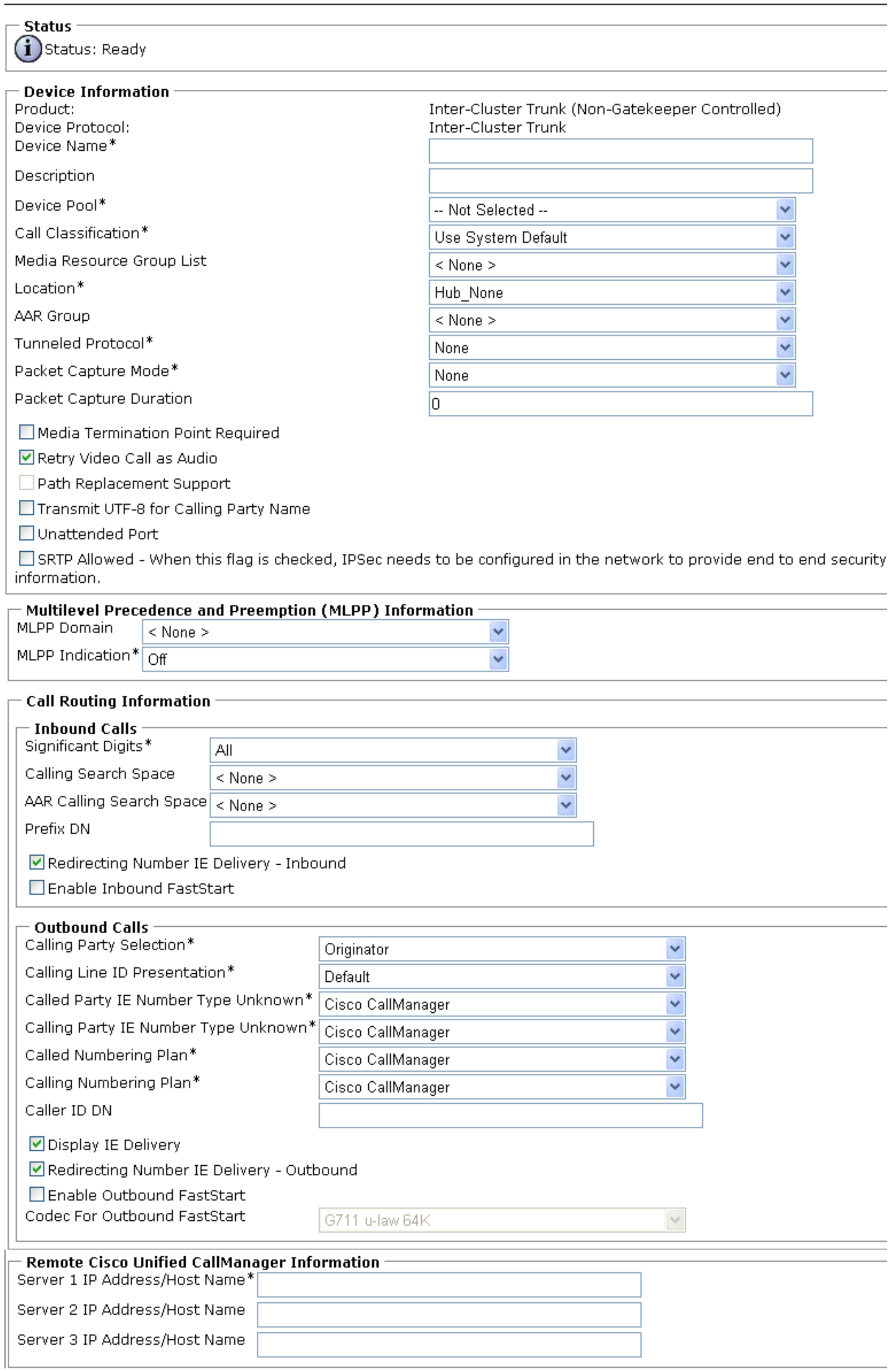

Figure 175. Trunk Configuration

6. Complete the screen as indicated below:.

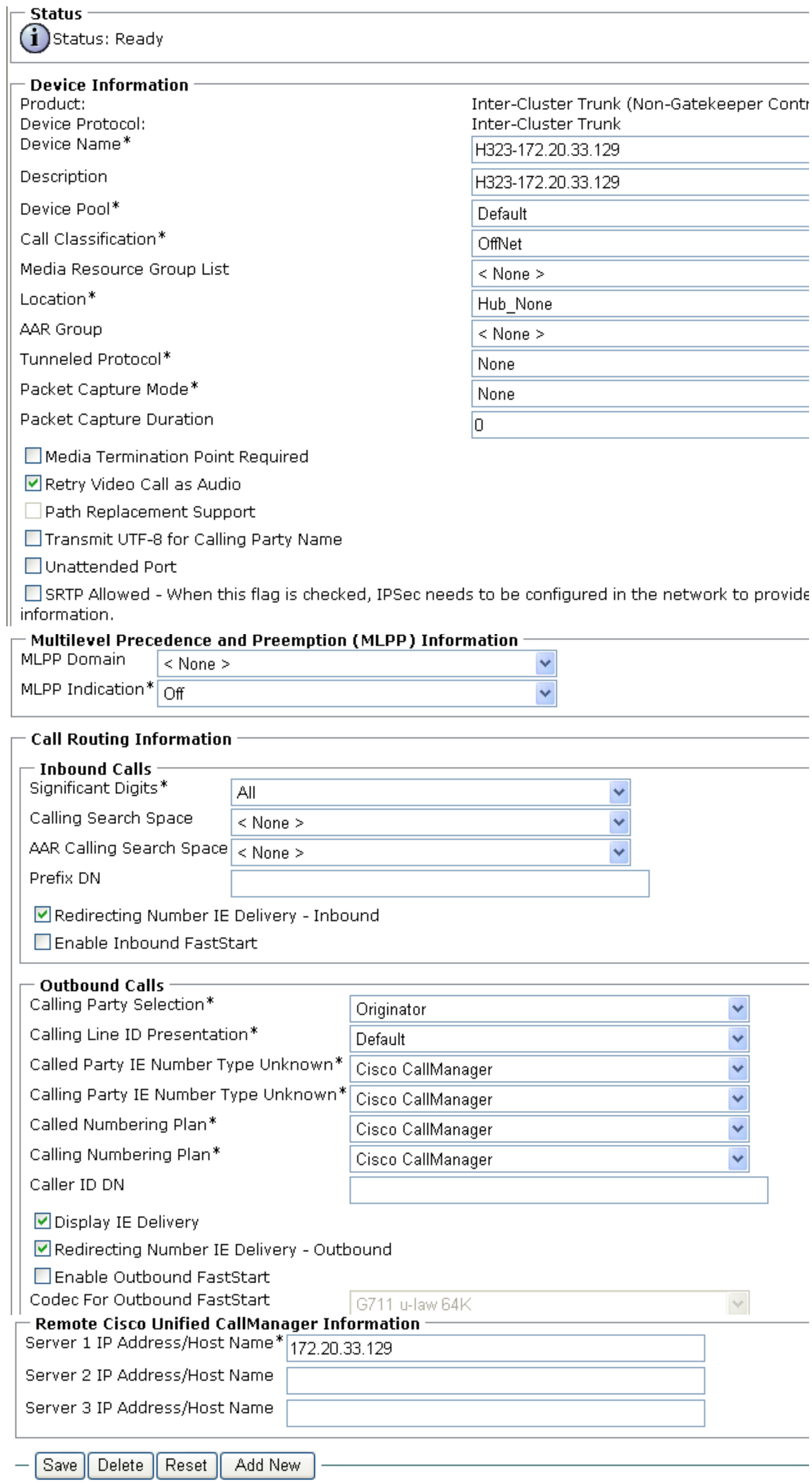

Figure 176. Trunk Configuration Data

7. Click Save.

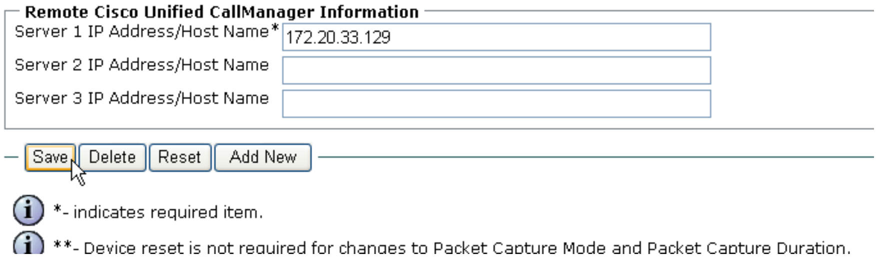

Figure 177. Save

8. Click OK.

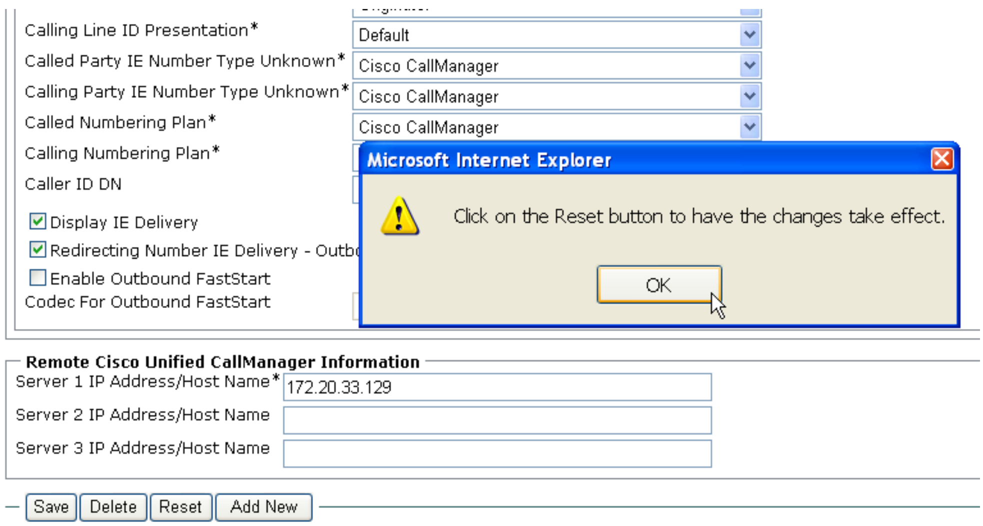

Figure 178. OK

9. Click Reset.

The following screen appears.

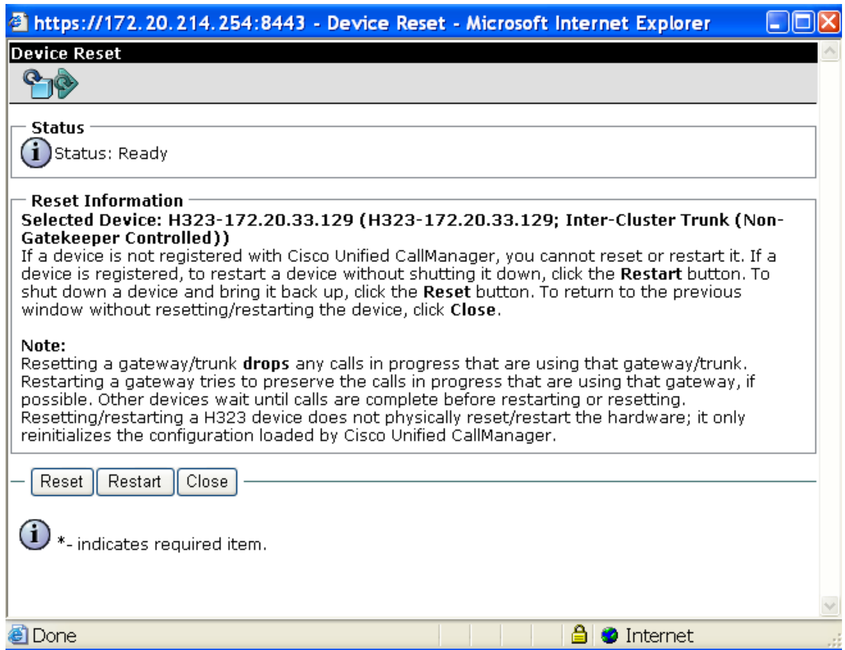

Figure 179. Device Status

10. Click **Close**.

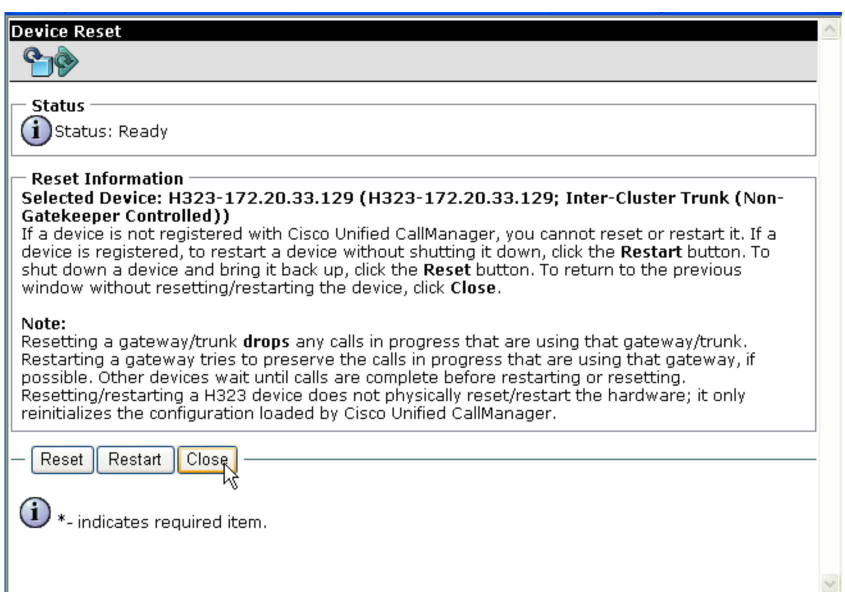

Figure 180. Close

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11. Select Back To Find/List and click Go.

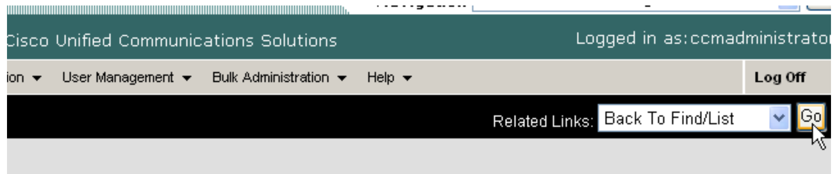

Figure 181. Go to List

The following screen appears with the new Trunk.

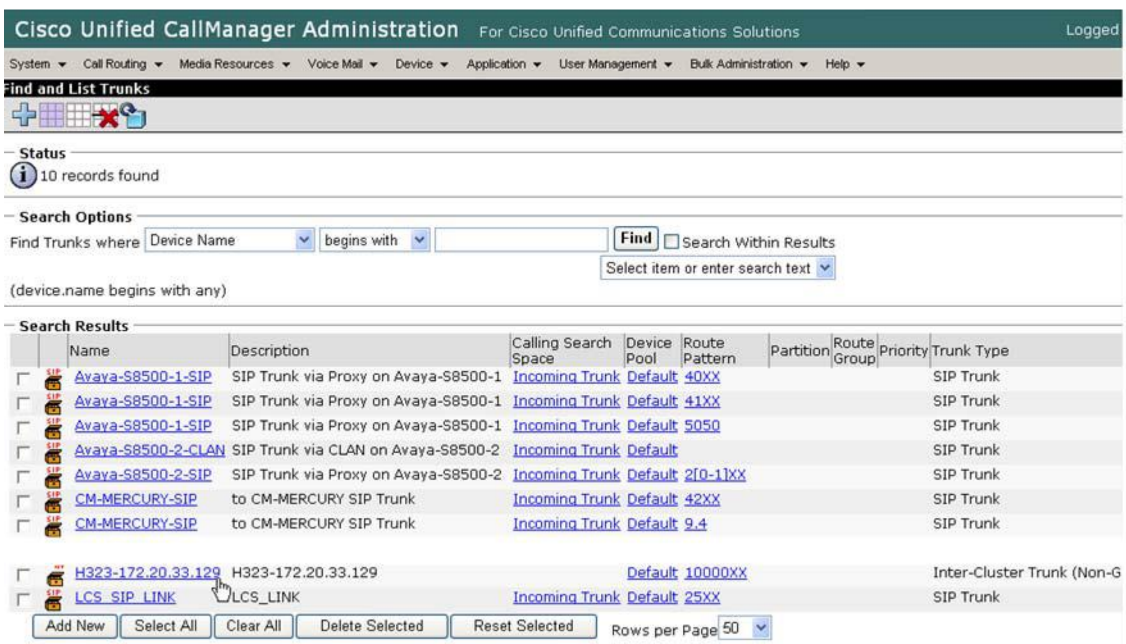

Figure 182. New Trunk in List

Configuring the Trunk Between the CUCM and the Fax Server

➢ **Follow the steps below.**

1. From the following screen, click Add New.

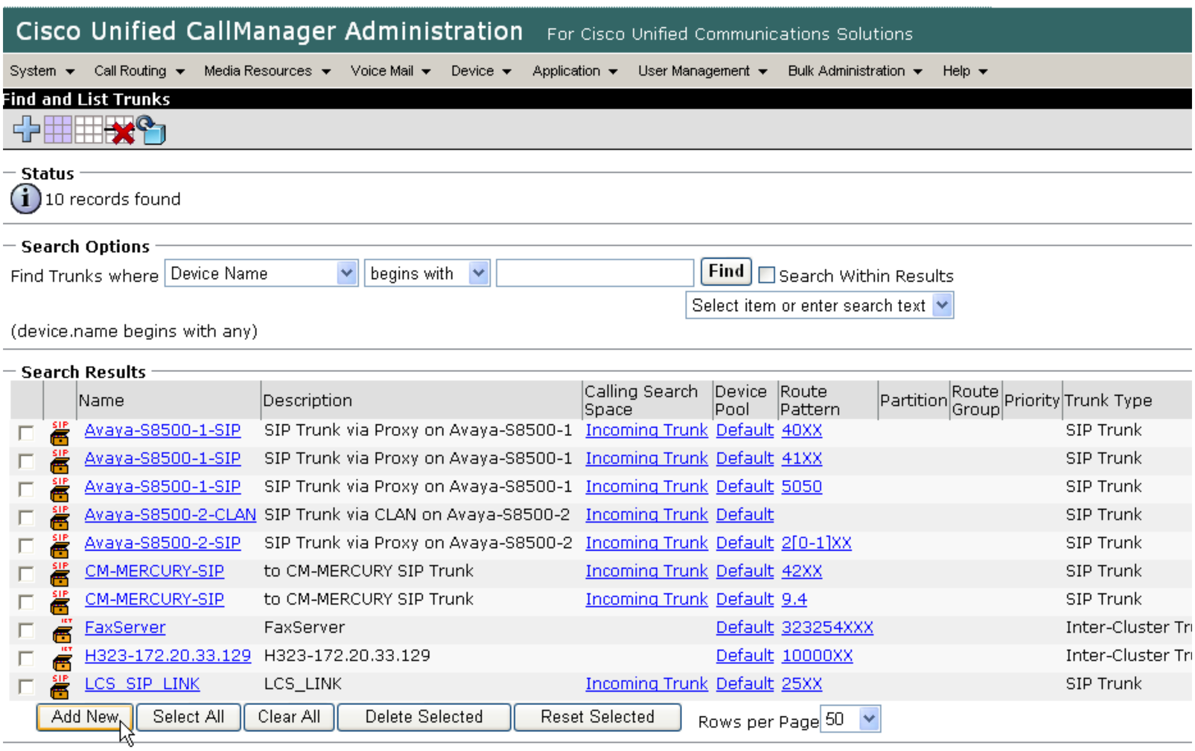

Figure 183. Add New Trunk

The following screen appears.

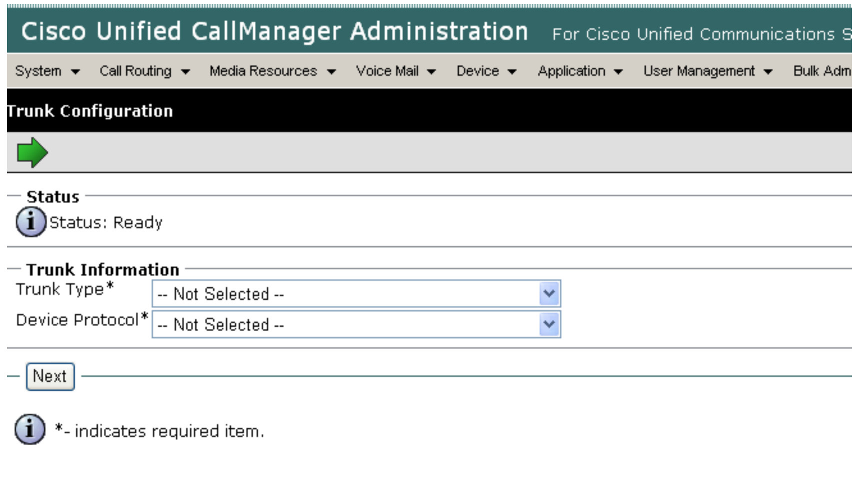

Figure 184. Trunk Configuration

2. Select Inter-Cluster Trunk (Non-Gatekeeper Controlled) for the Trunk Type.

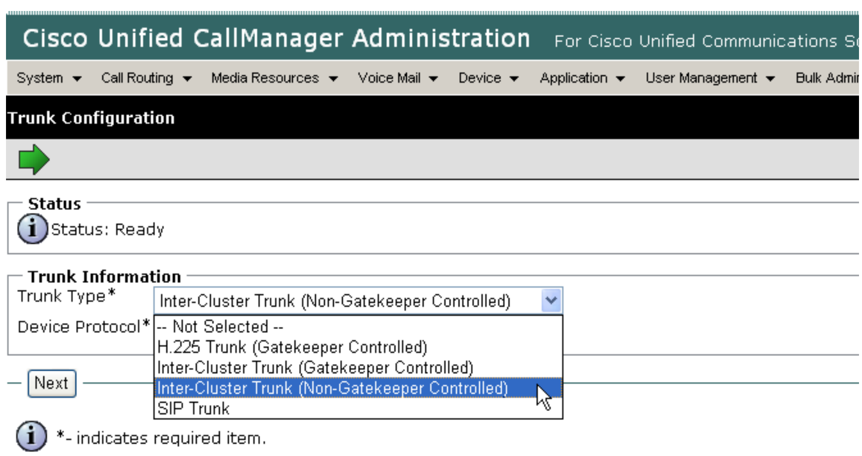

Figure 185. Trunk Information

The following screen appears.

Inter-Cluster Trunk defaults in the Device Protocol box.

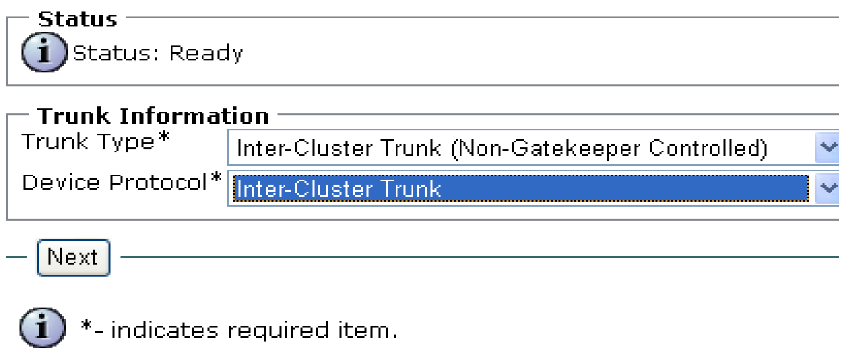

Figure 186. Inter-Cluster Trunk

3. Click Next.

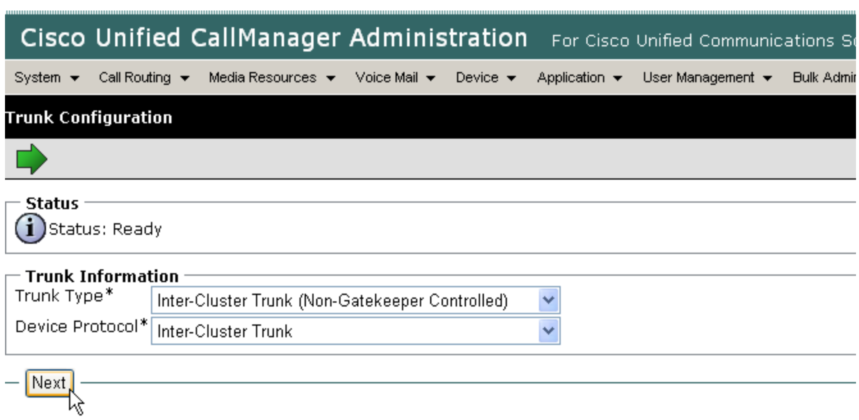

Figure 187. Next

 This document is not to be distributed to a third party without written permission from Dialogic.

The following screen appears.

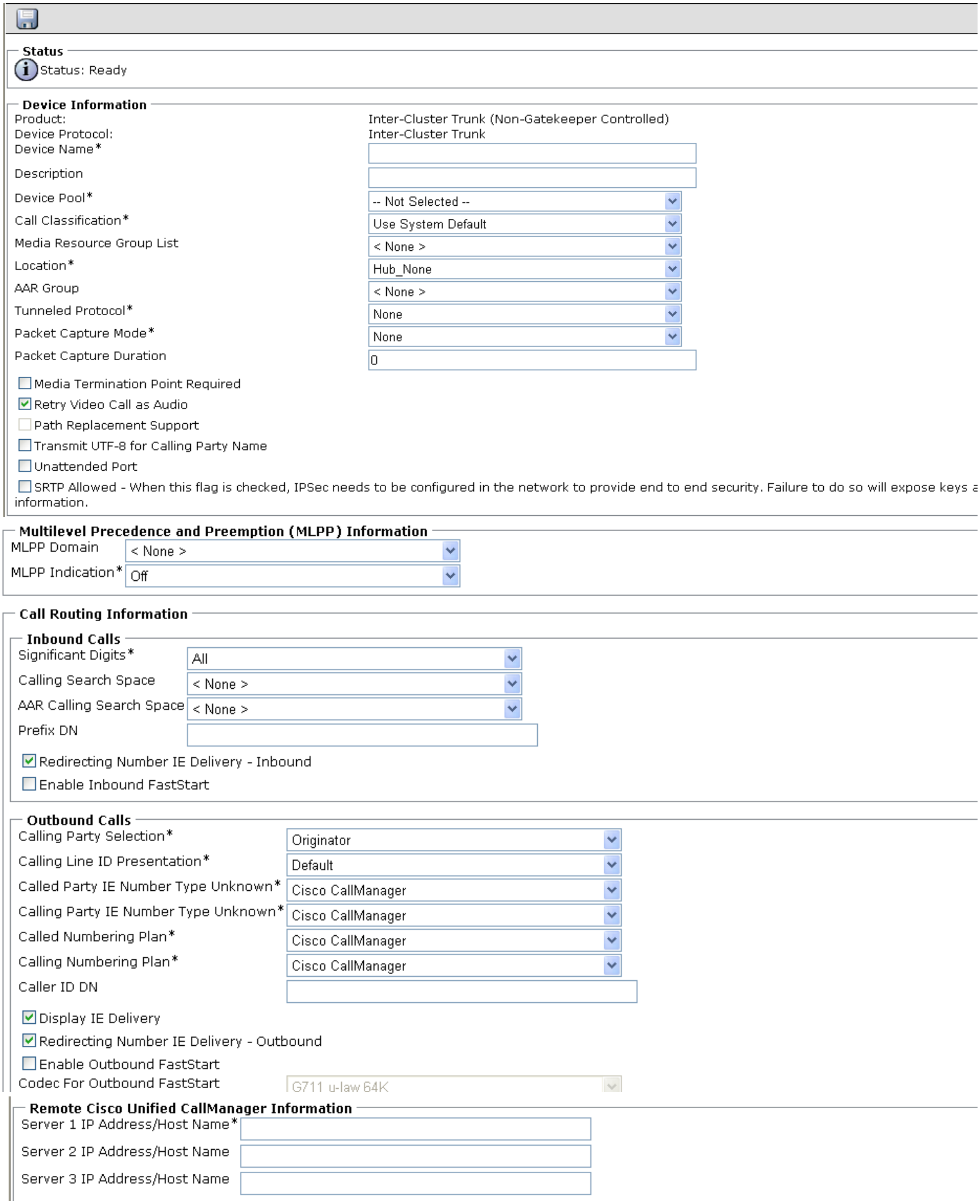

Figure 188. Trunk Configuration

4. Complete the screen as indicated below.

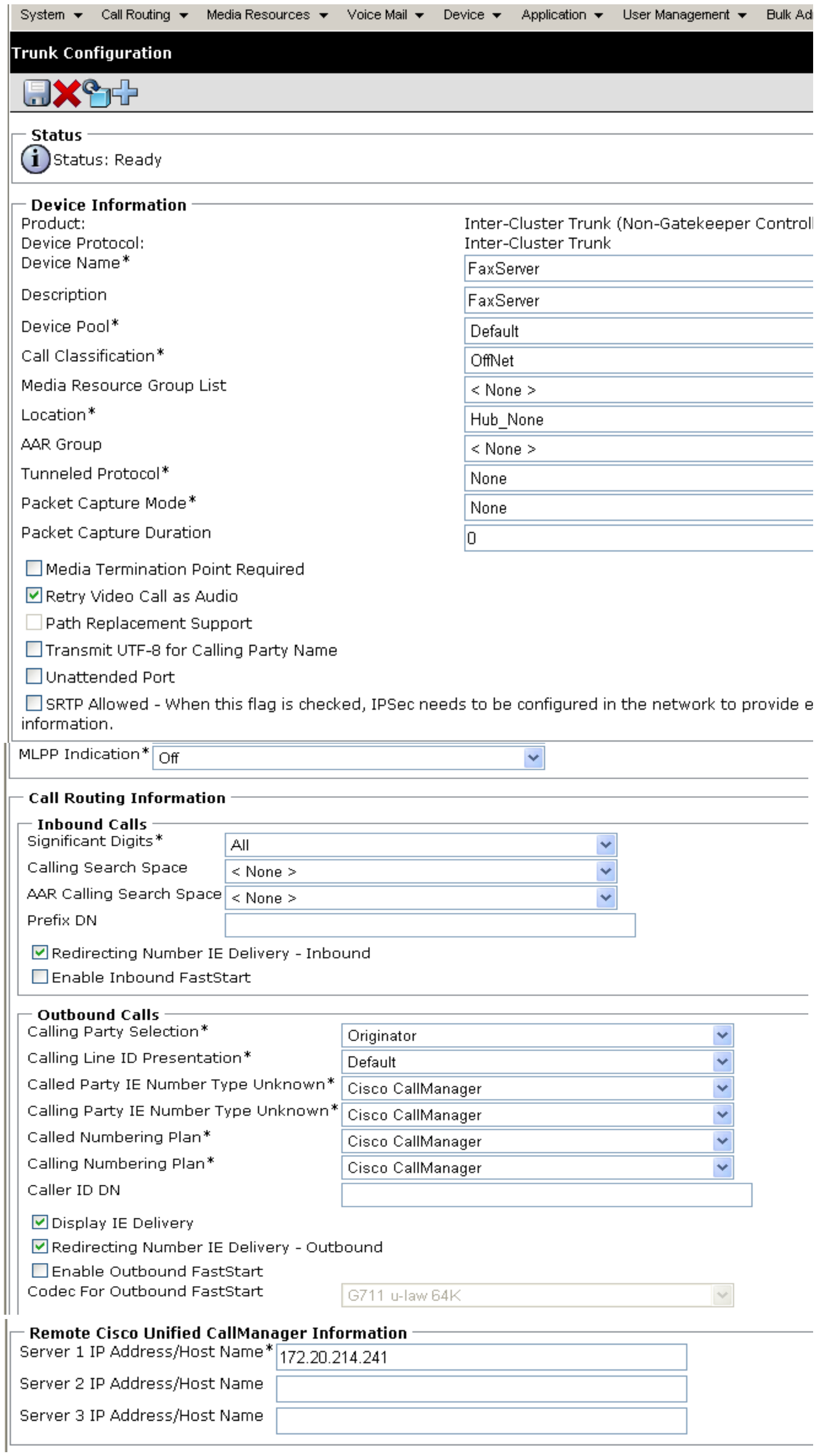

Figure 189. Trunk Configuration Data

5. Click Save.
6. Click OK.

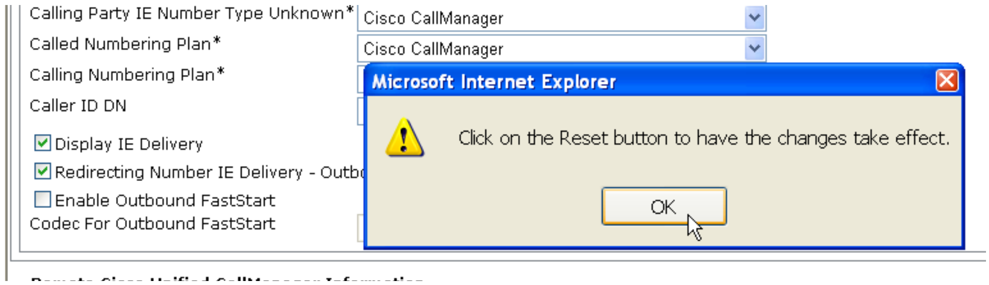

Figure 190. OK

7. Click Reset.
8. From the Device Reset screen, click Close.
9. Select Back To Find/List and click Go.

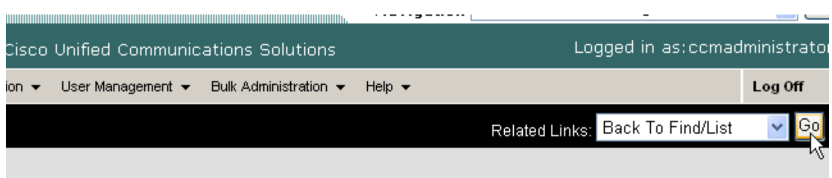

Figure 191. Go to List

The following screen appears with the new Trunk.

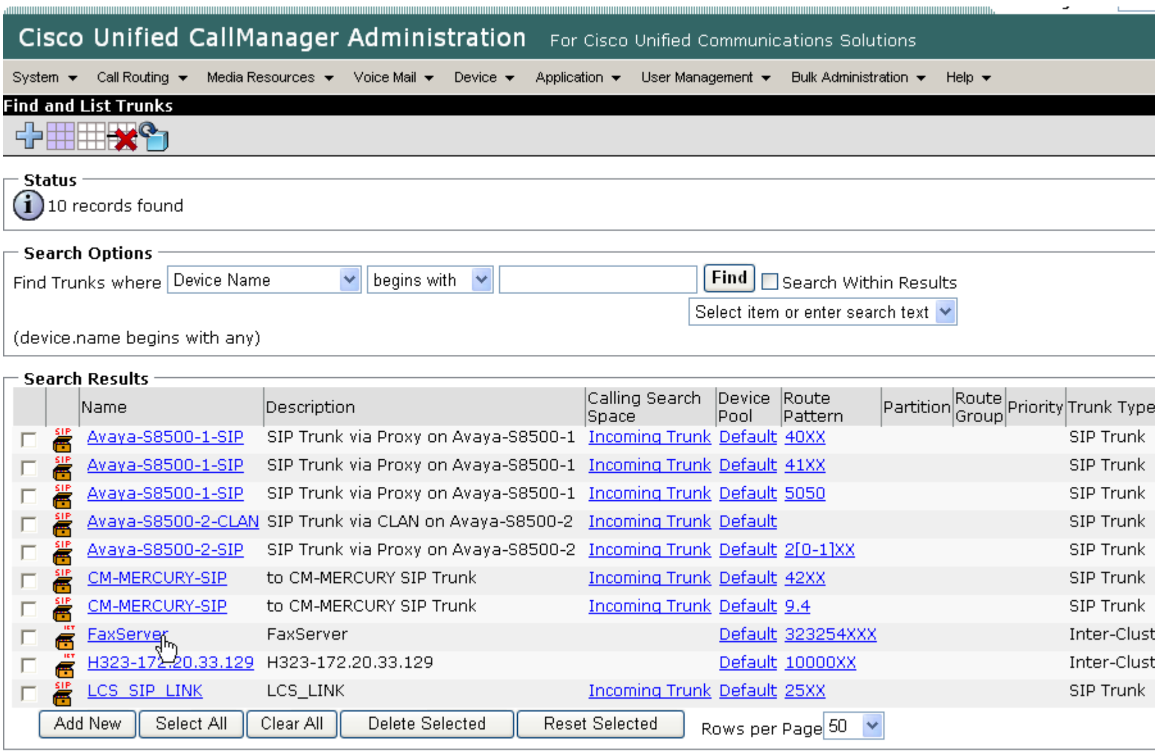

Figure 192. New Trunk

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Configuring a Route Pattern for a Trunk to the Cisco Media Gateway

➢ **Follow the steps below to configure a route pattern for the trunk.**

1. From the Call Routing menu, click Route/Hunt, Route Pattern.

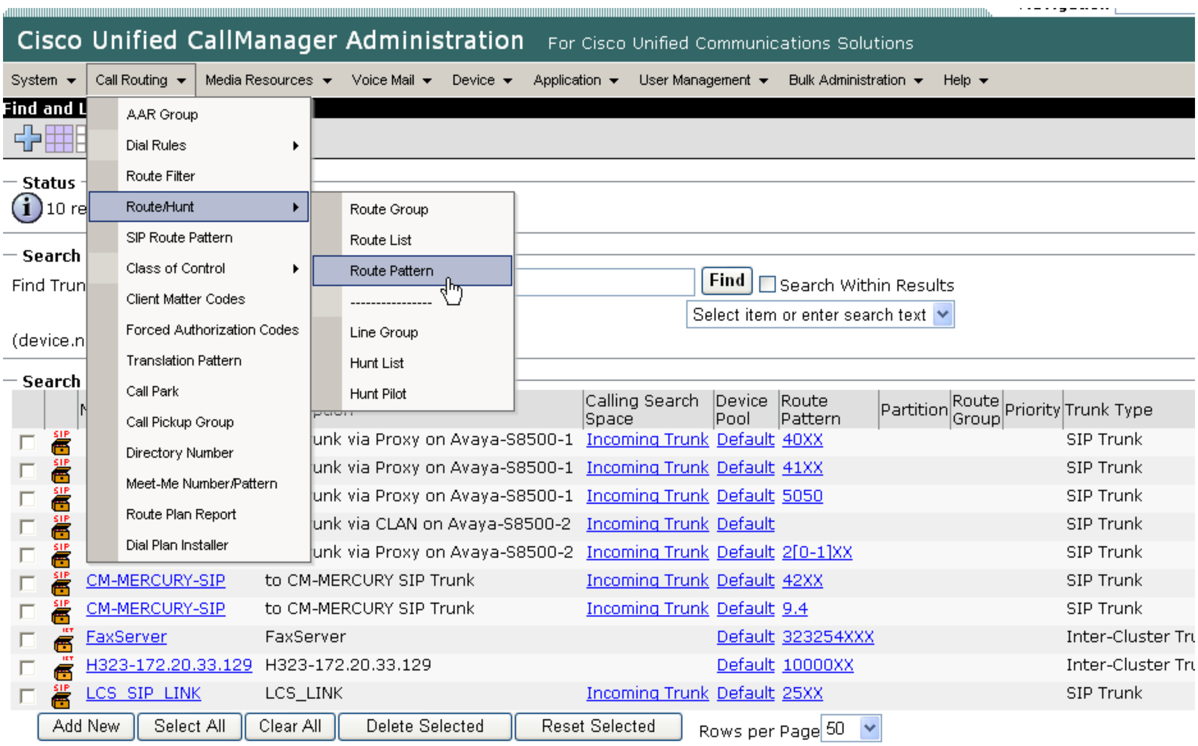

Figure 193. Route Pattern

The following screen appears.

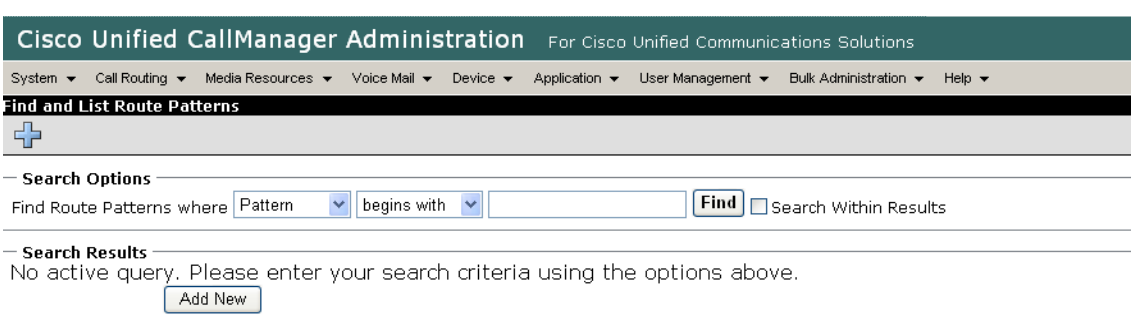

Figure 194. List Route Patterns

2. Click Add New.

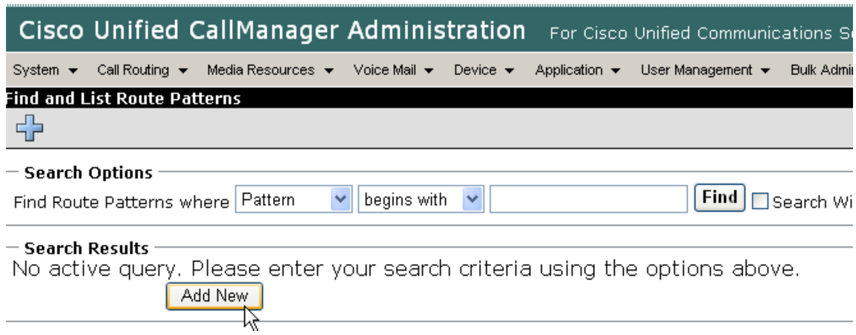

Figure 195. Add New

The following screen appears.

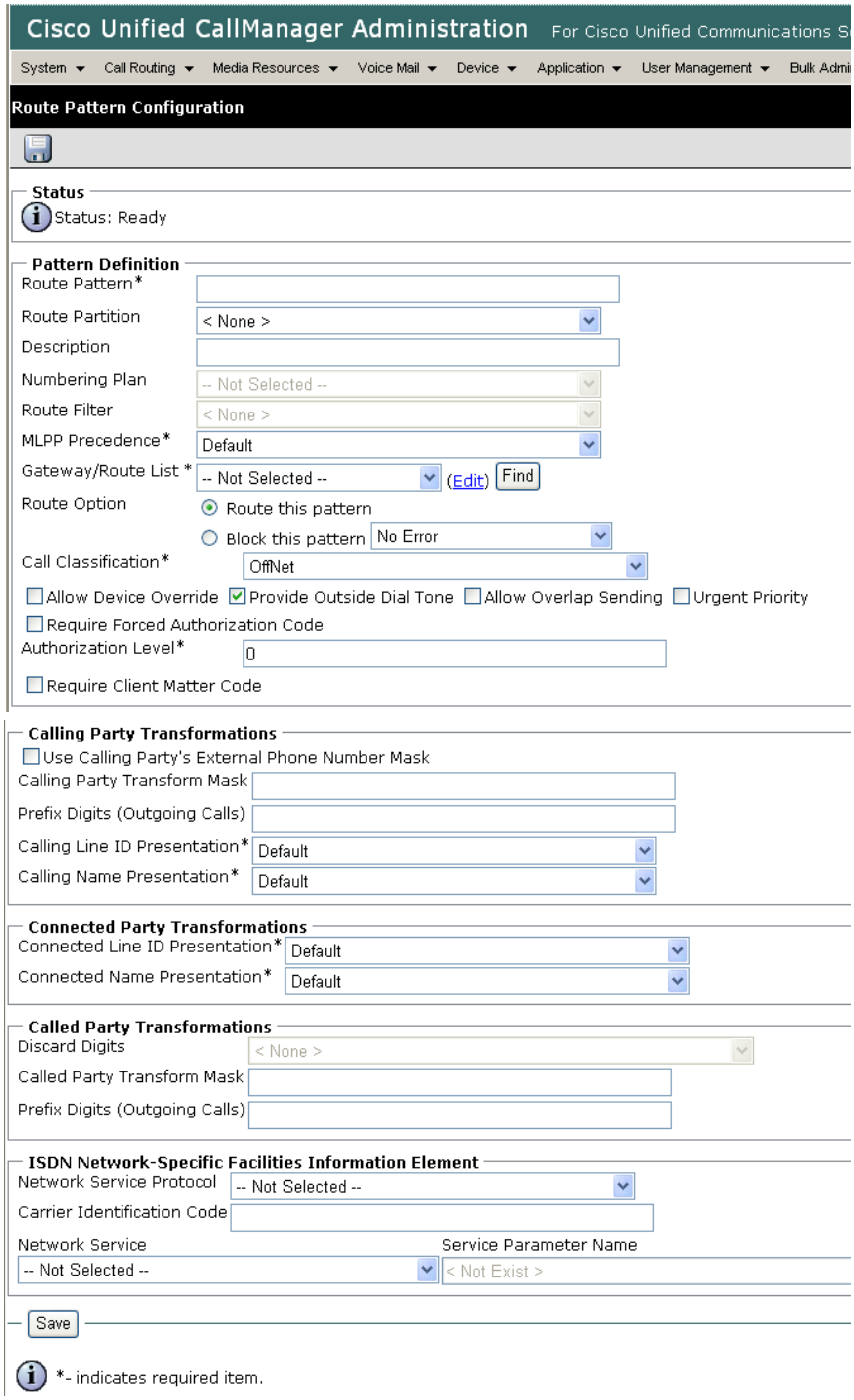

Figure 196. Route Pattern Configuration

Complete the screen as indicated below.

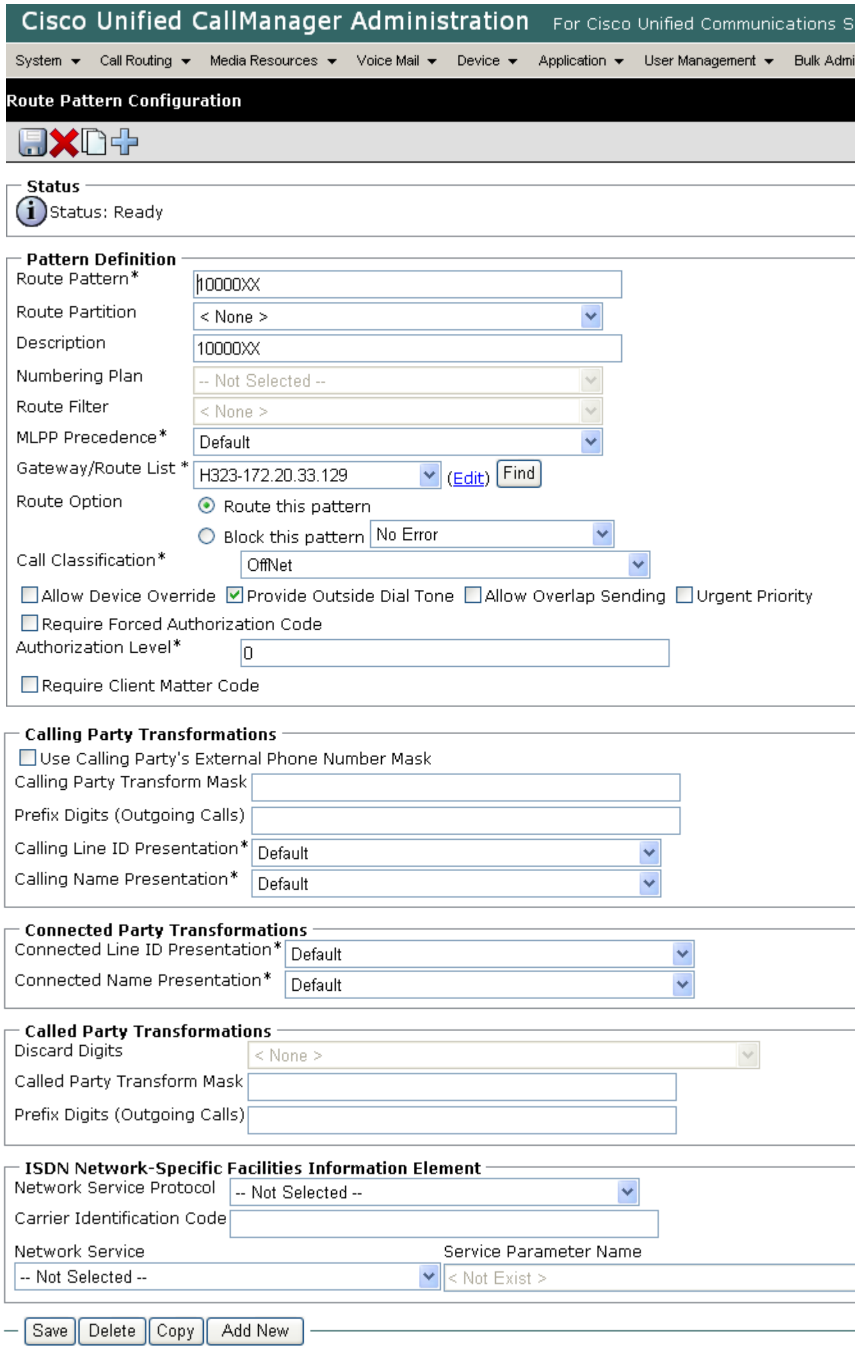

Figure 197. Route Pattern Configuration Data

This document is not to be distributed to a third party without written permission from Dialogic.

3. Click Save.

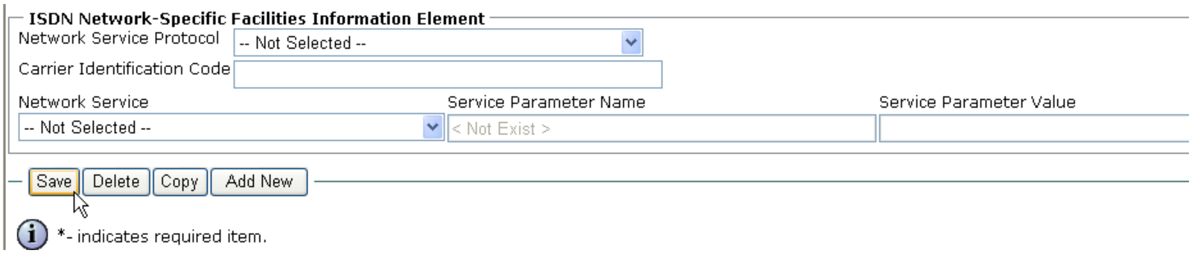

Figure 198. Save

4. The following appears because you did not required a Forced Authorization Code. Click OK.

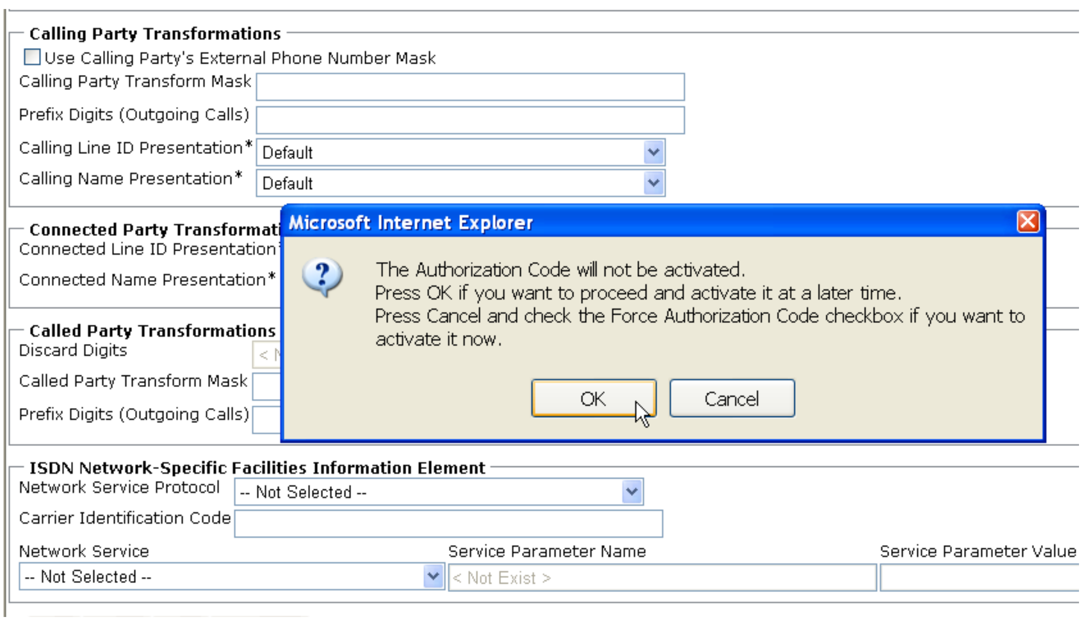

Figure 199. OK

5. The following appears. Click OK.

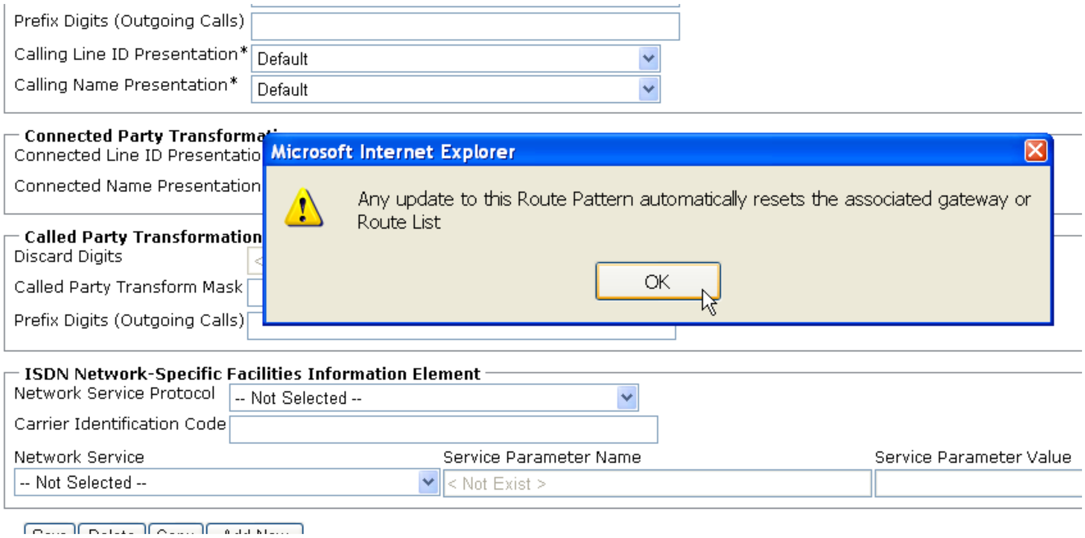

Figure 200. OK

6. Select Back To Find/List and click Go.

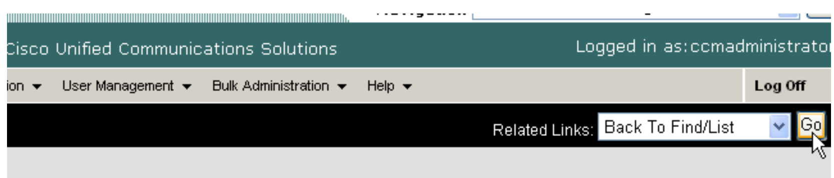

Figure 201. Go to List

This document is not to be distributed to a third party without written permission from Dialogic.

The following screen appears with the new Route Pattern.

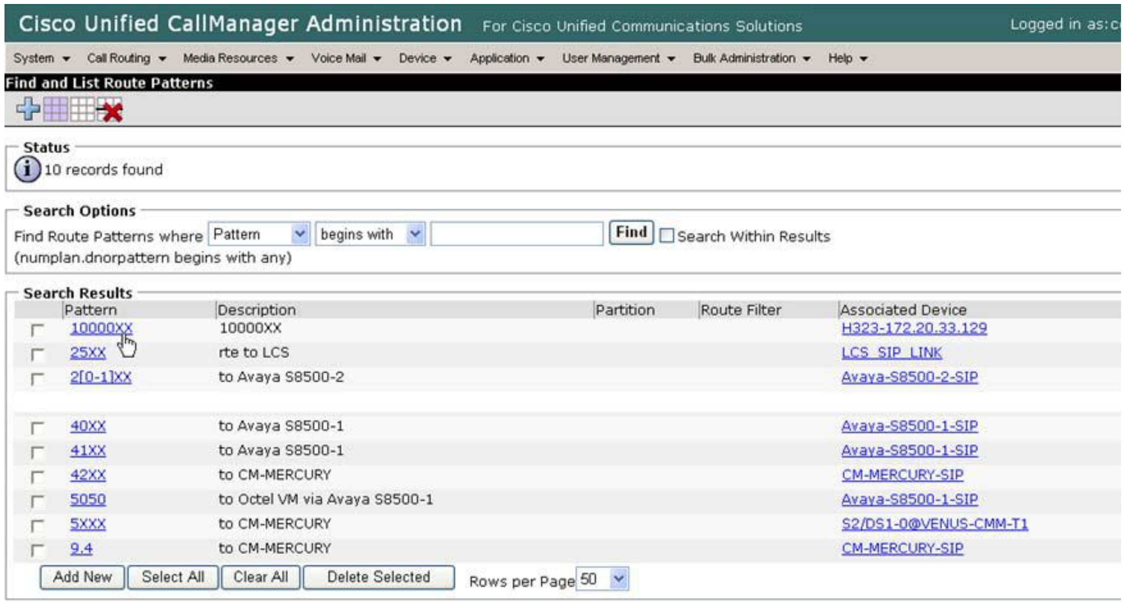

Figure 202. New Route Pattern

Configuring a Route Pattern for a Trunk to the Fax Server

➢ **Follow the steps below:**

1. From the Call Routing menu, click Route/Hunt, Route Pattern.

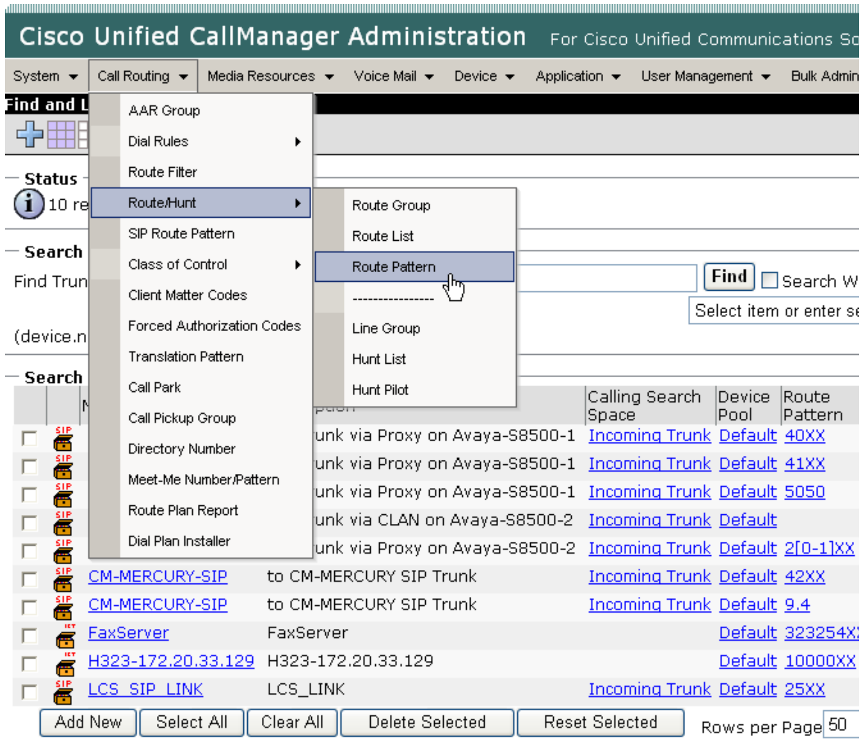

Figure 203. Route Pattern

The following screen appears.

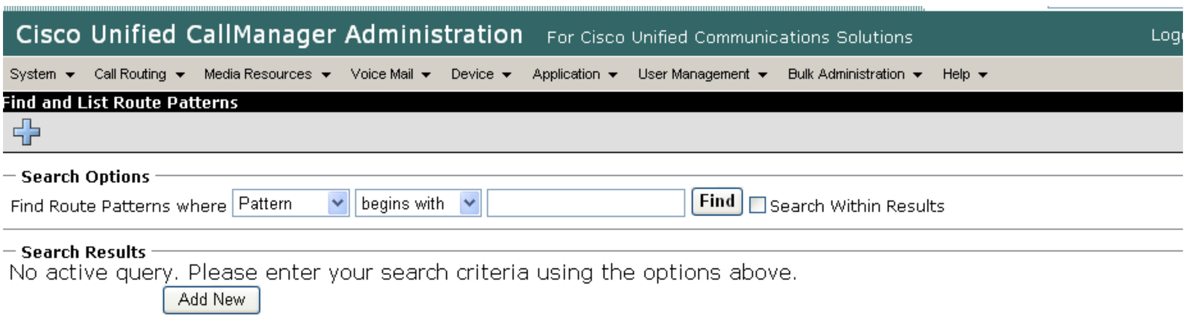

Figure 204. Route Patterns

2. Click Add New.

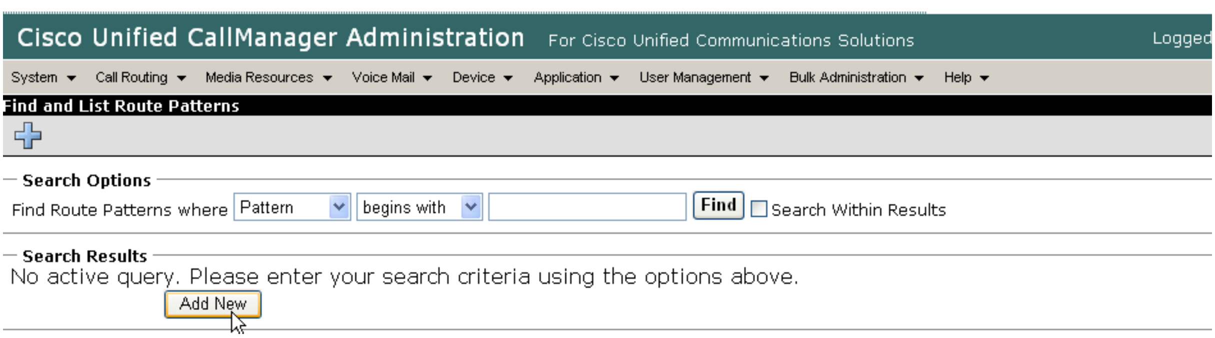

Figure 205. Add New

The following screen appears.

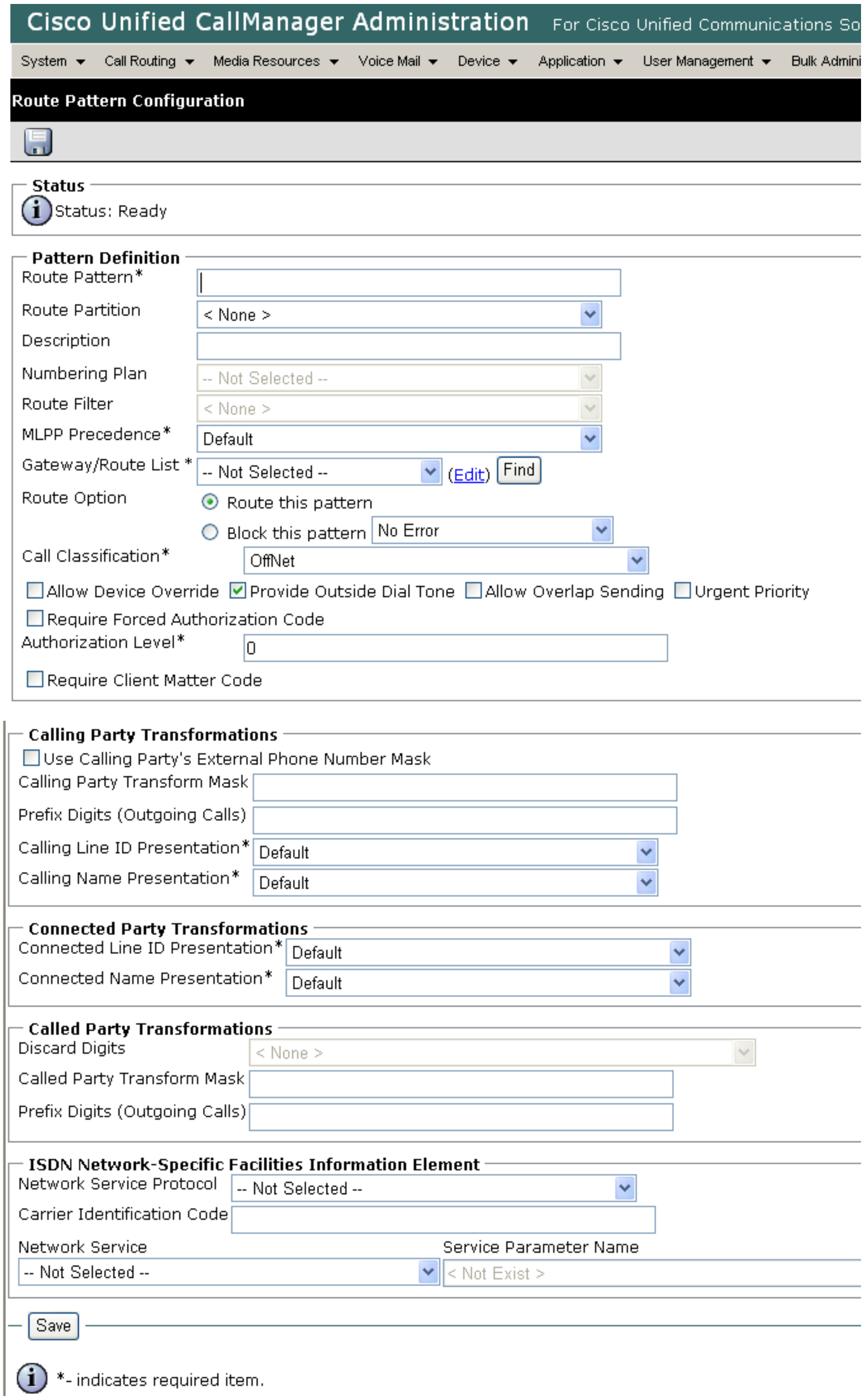

Figure 206. Route Pattern Configuration

This document is not to be distributed to a third party without written permission from Dialogic.

3. Complete the screen as indicated below.

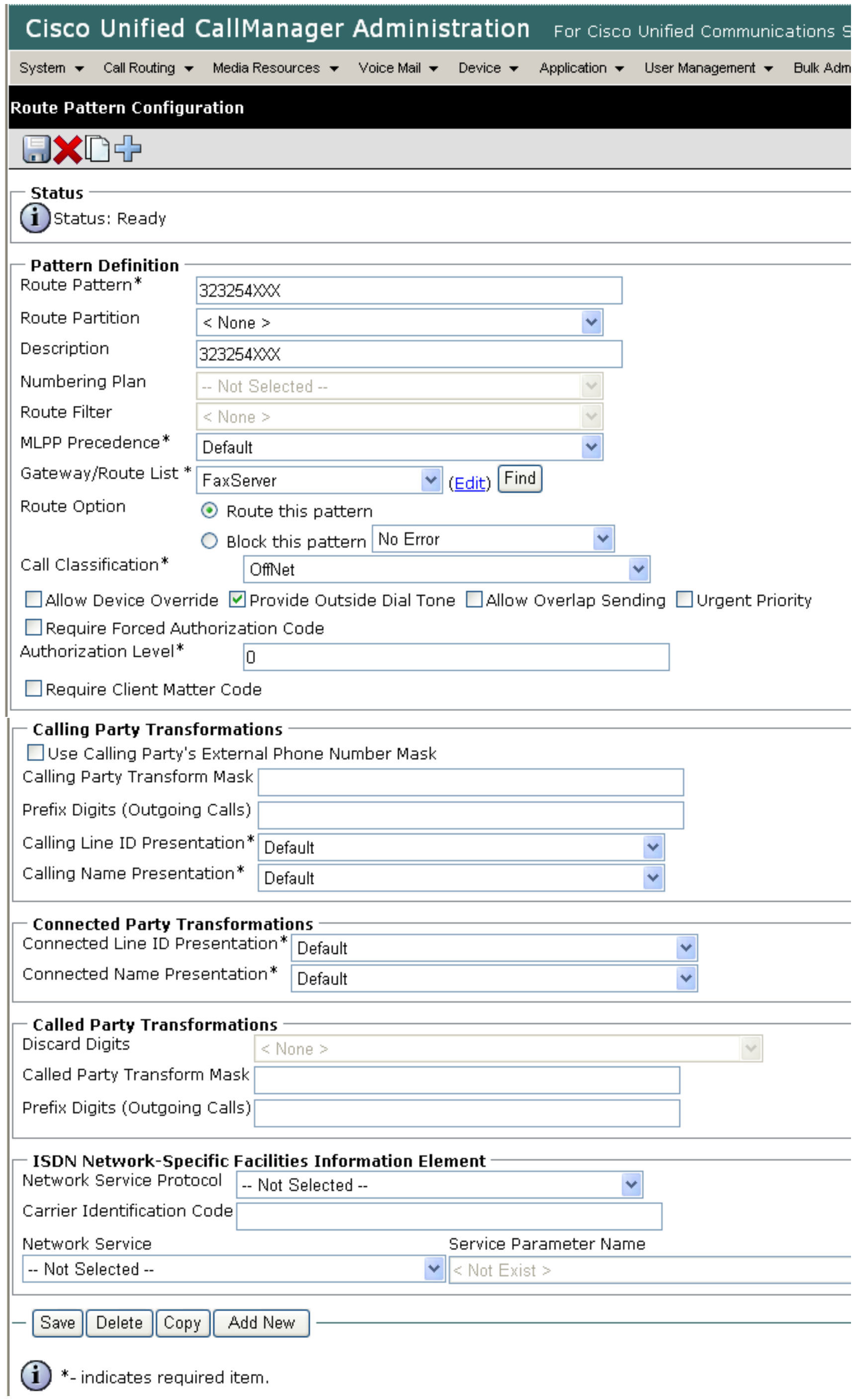

Figure 207. Route Pattern Configuration Data

4. Click Save.

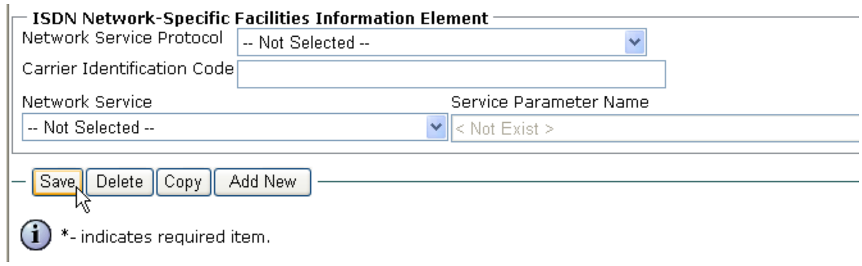

Figure 208. Save

5. The following appears because you did not required a Forced Authorization Code. Click OK.

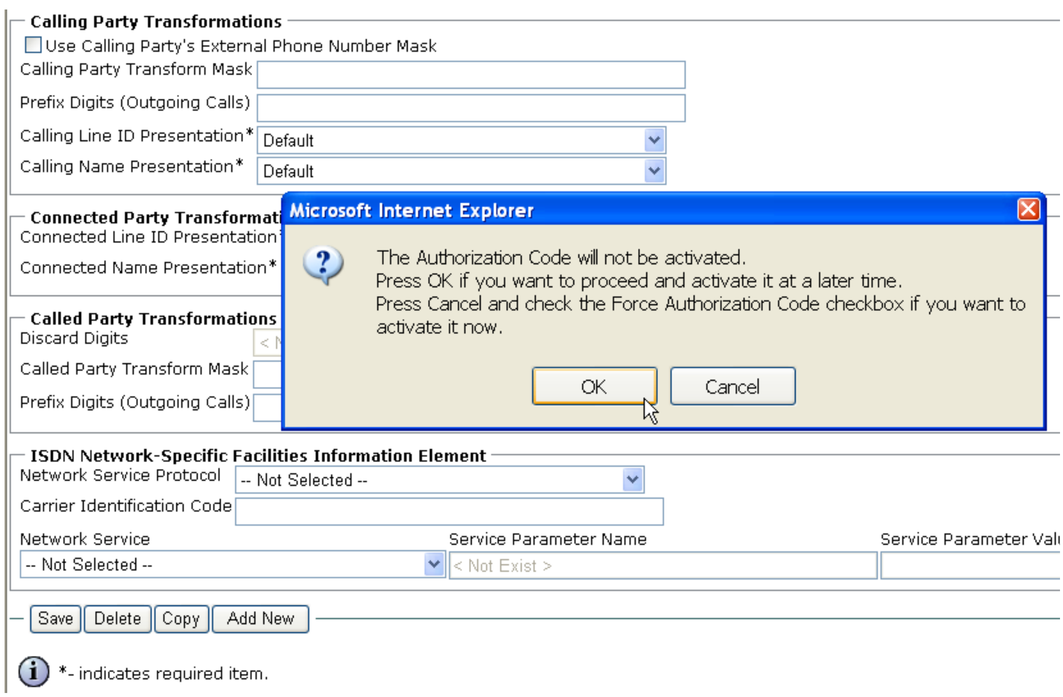

Figure 209. OK

6. The following appears. Click OK.

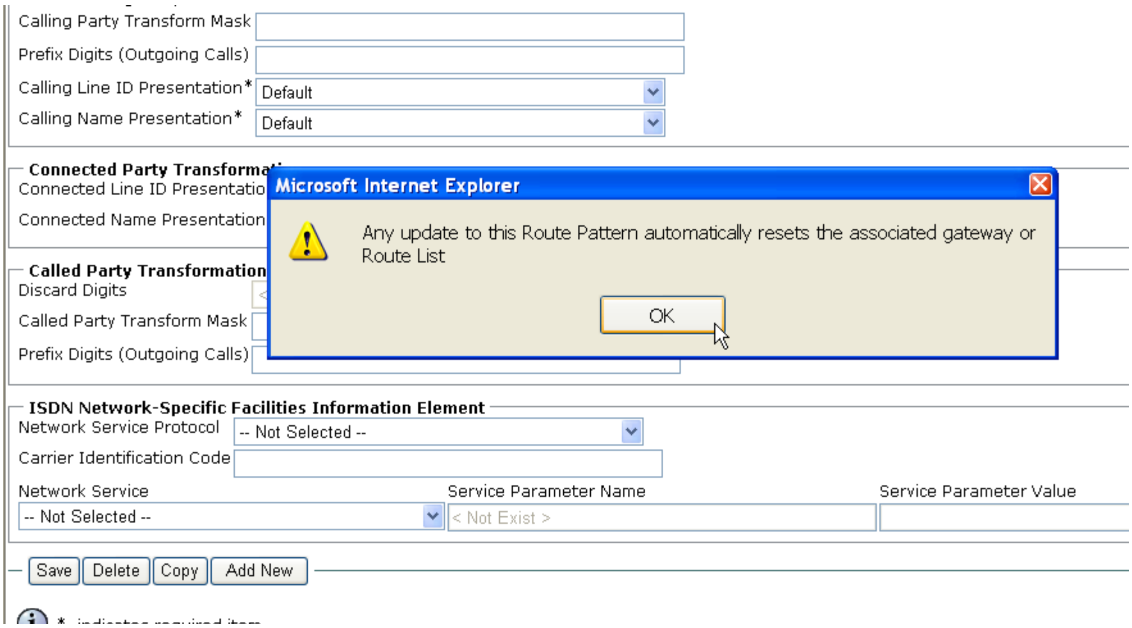

Figure 210. OK

7. Select Back To Find/List and click Go.

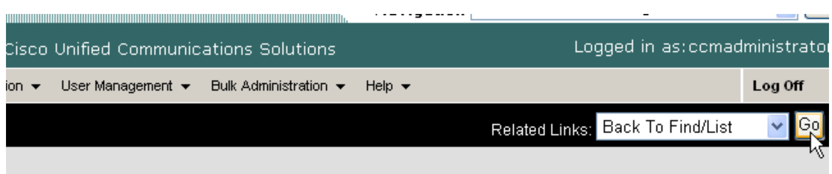

Figure 211. Go to List

8. The following screen appears. Note the new Route Pattern.

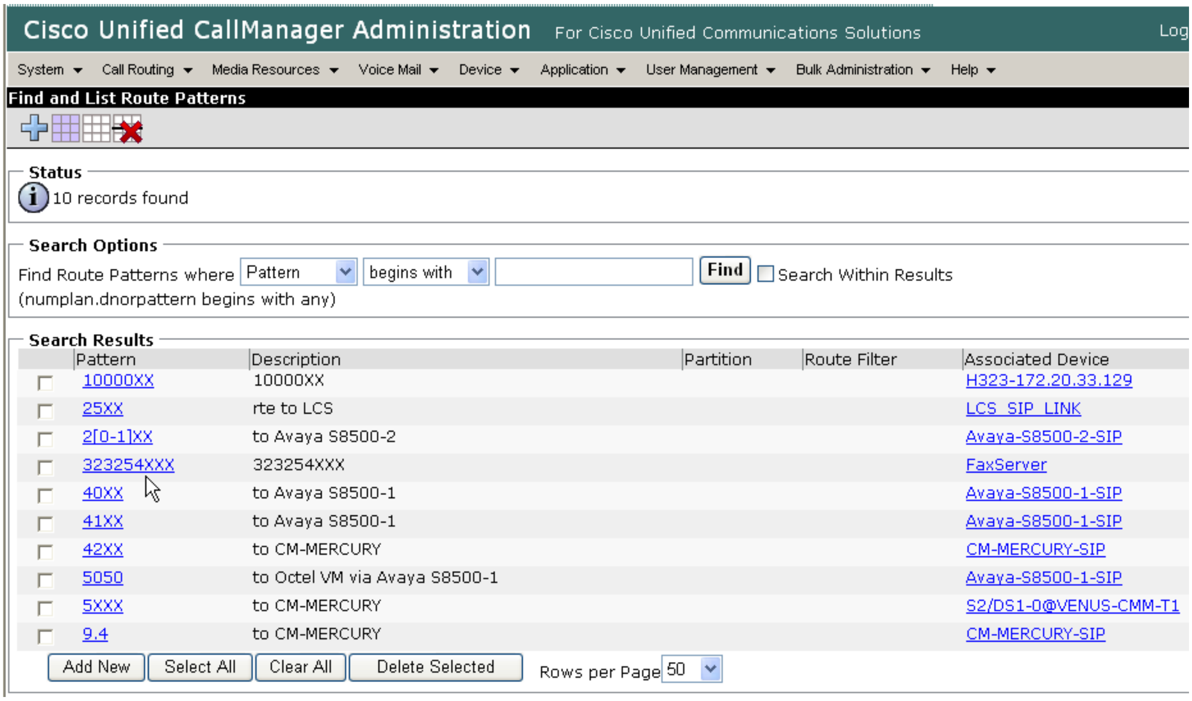

Figure 212. List of Patterns

Verifying the Configuration

The Dialogic Brooktrout Fax and Voice Diagnostic Test utility allows you to test the configuration you completed. You can download the utility and instructions from the technical support site.

http://www.cantata.com/support/lanfax/fax_testing_diagnostic.cfm

This test verifies the following:

- SR140 Software configuration
- Cisco Media Gateway configuration
- Trunks and Route Patterns on the CUCM

Verifying the Fax Server Basic Configuration

Before continuing, refer to *Appendix A, Verifying Basic Configuration - Fax Server 172.20.214.241 on page 410* to verify that the Fax Server software is installed correctly.

Outbound Call

➢ **Follow the steps below to verify outbound fax traffic from the CUCM to the gateway.**

1. Open the Fax and Voice Diagnostic Test utility. The following screen appears. Click the 2.Telephony button (press the Apply button in the Brooktrout Configuration Tool after configuring). Click the 3.Initialize button.

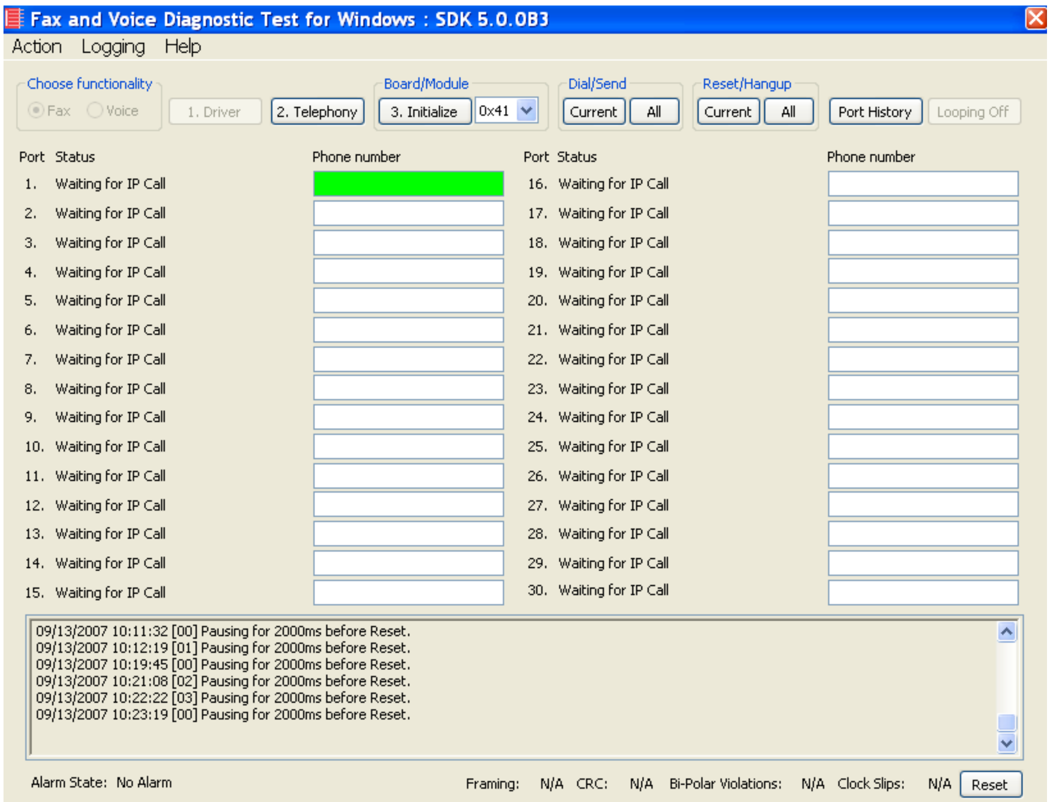

Figure 213. Fax Diagnostic Test

2. Enter the destination phone number and the IP address of the CUCM as shown below.

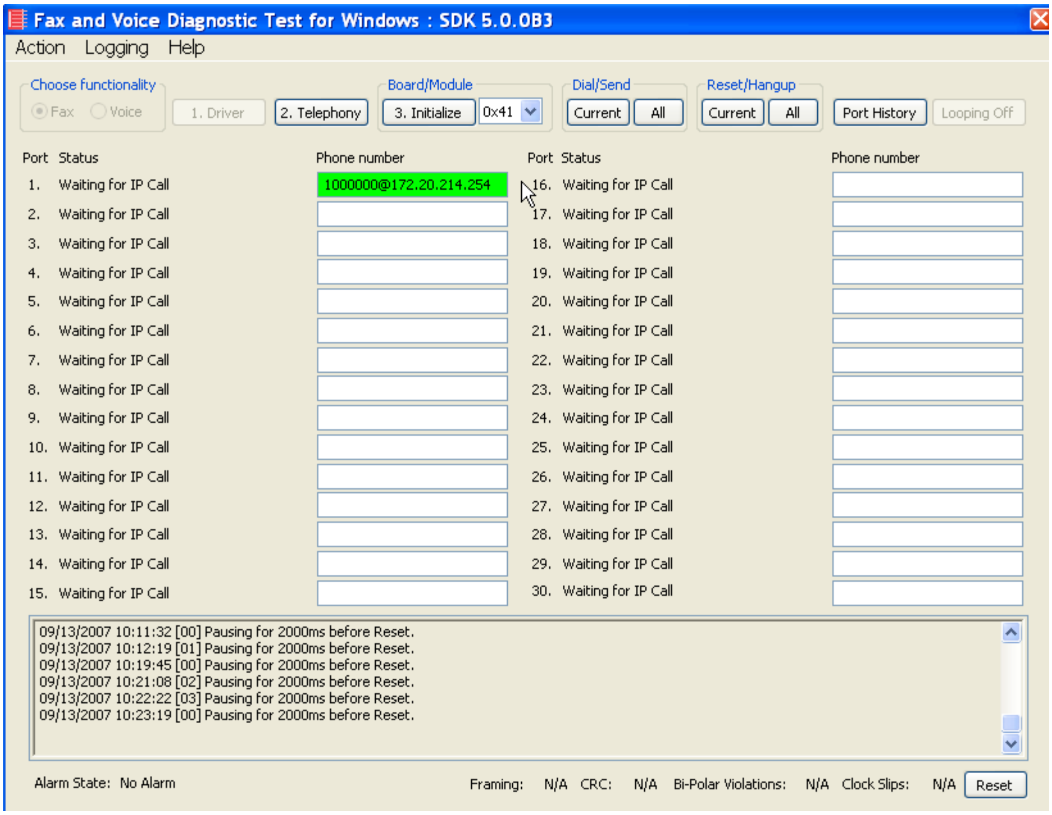

Figure 214. IP Address

3. Click Current to send the test fax.

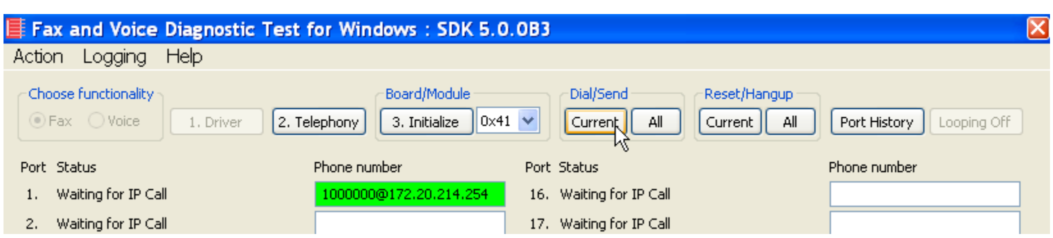

Figure 215. Current

4. Click Port History while Port 1 is highlighted.

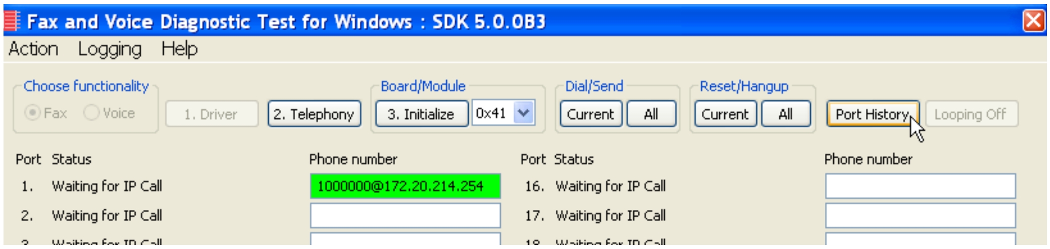

Figure 216. Port History

5. The following screen appears. Verify that the outbound call was successful.

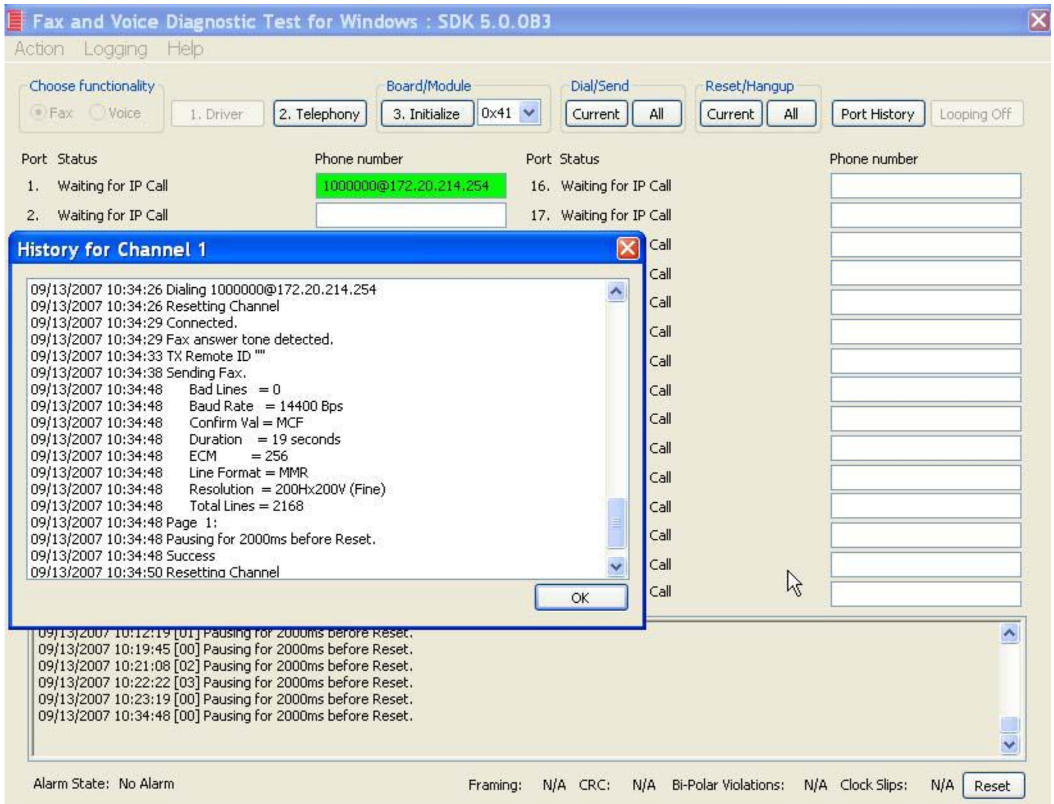

Figure 217. Outbound Call Successful

Inbound Call

➢ **Follow the steps below to verify the inbound fax traffic from the gateway to the CUCM.**

1. Initiate a call from the PSTN using 323254000.
2. Watch all channels because a call should come in on one of the waiting channels

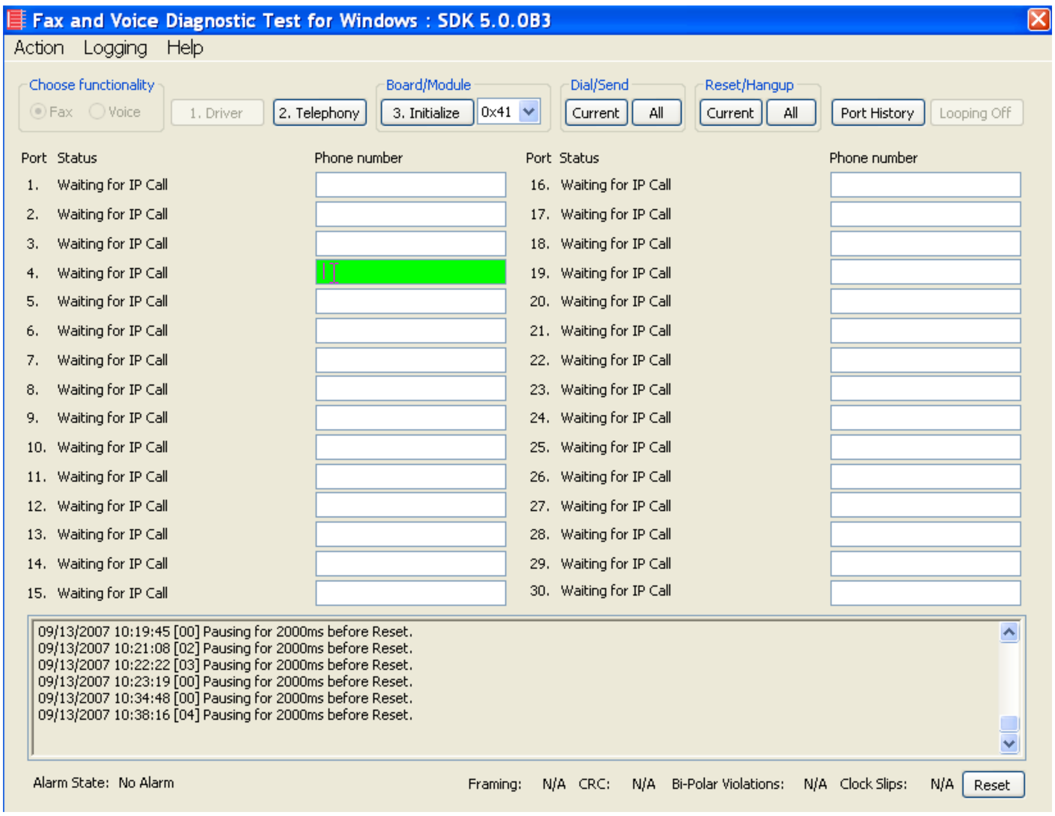

Figure 218. Fax Diagnostic Test

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3. Click the Phone number box on which the call came in and click the Port History button.

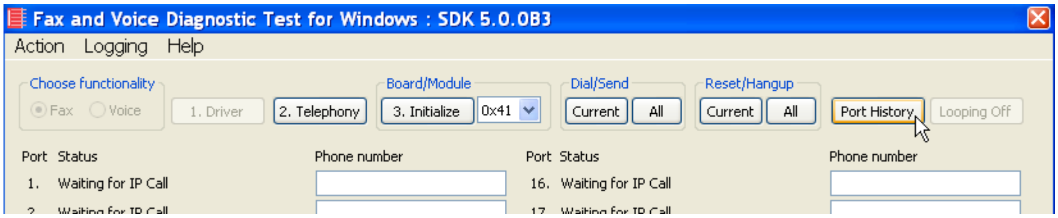

Figure 219. Port History

4. The following screen appears. Verify that the inbound call is successful.

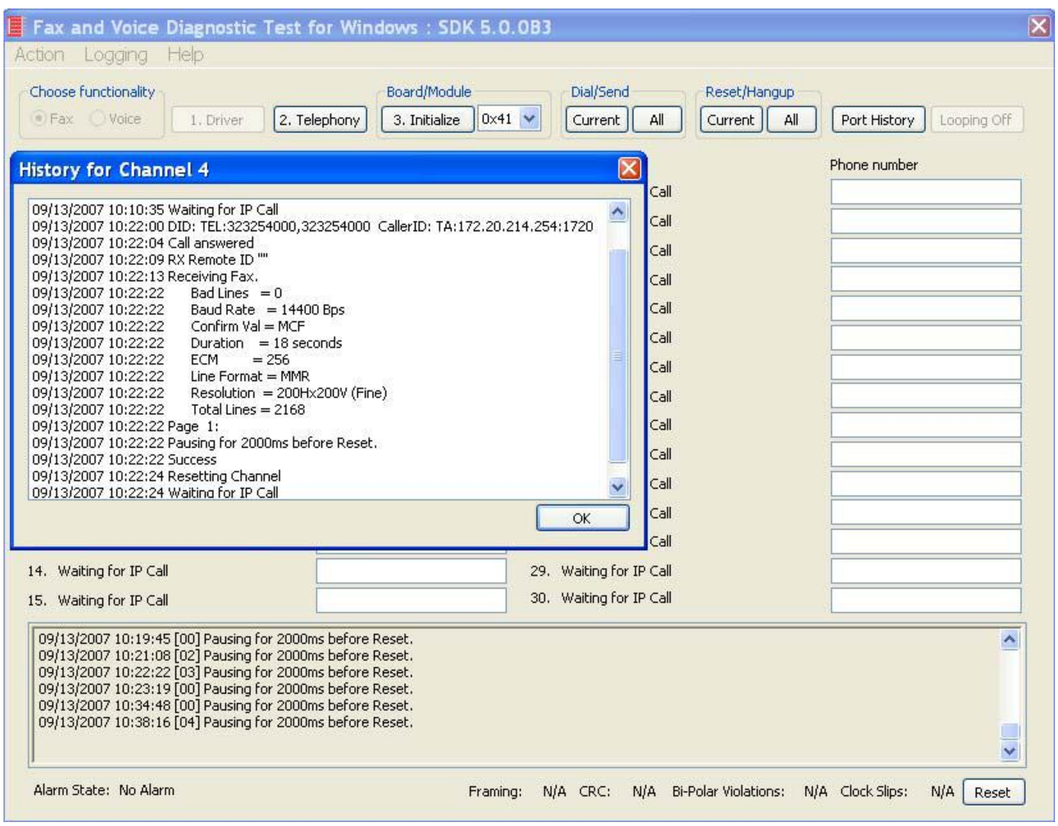

Figure 220. Inbound Call Successful

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9
Topology: SIP - CUCM 5.04 - SIP

Introduction

In this topology, the Cisco Unified CUCM (hereafter referred to as the CUCM) Version 5.0(4) does all the call control. The gateway sends all signaling (SIP) to the CUCM which forwards it along to the Fax Server. The Fax Server responds to the CUCM and the CUCM forwards all signaling back to the gateway. Once the call is established, the fax traffic flows directly between the gateway and the Fax Server.

Note: The SR140 Software is used as an example Fax Server in this chapter. The TR1034 IP board can also be used as Fax Server.

The diagrams below show the IP addresses of the hardware which are also included in the procedure and configuration files referenced in this chapter.

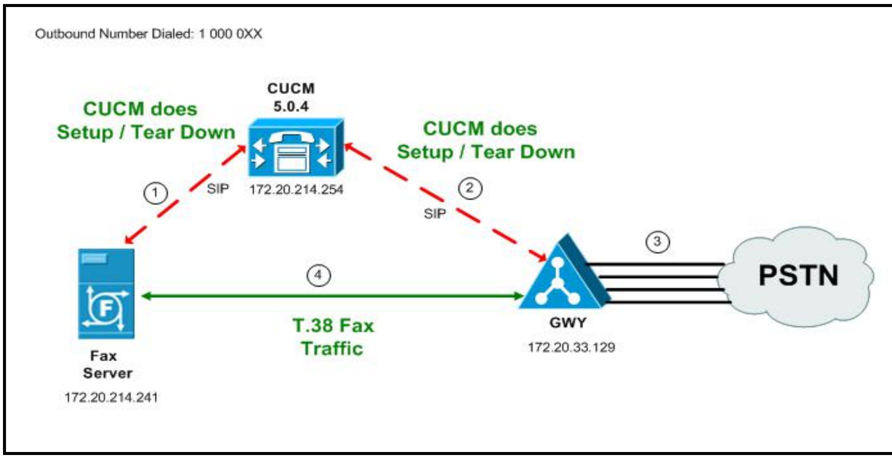

Figure 221. Outbound Call - CUCM Does Call Control - SIP - CUCM 5.0(4) - SIP Topology

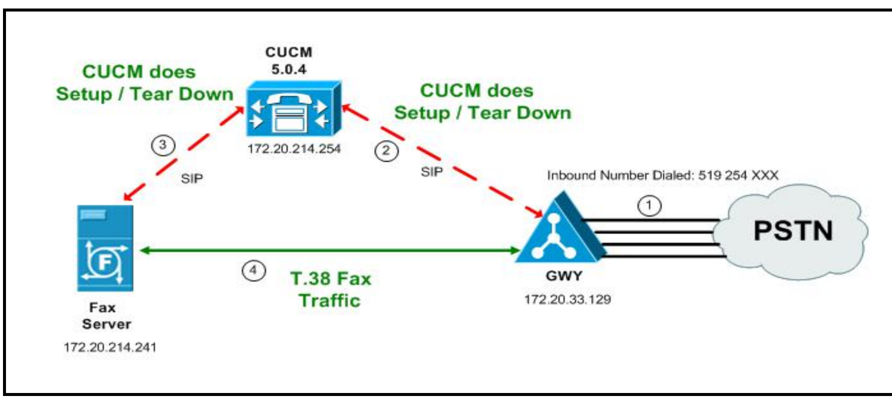

Figure 222. Inbound Call - CUCM Does Call Control - SIP - CUCM 5.0(4) - SIP Topology

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Configuration Sequence

Follow the sequence below when configuring the Dialogic Brooktrout FoIP with Cisco Products.

- *Configuring the Dialogic Brooktrout Fax Server on page 198*
- *Configuring the Cisco Media Gateway with IOS Commands on page 201*
- *Configuring the Cisco Unified Communications Manager on page 202*
  - *Configuring CUCM SIP Trunk Security Profile on page 203*
  - *Configuring the Trunk Between CUCM and the Cisco Media Gateway on page 209*
  - *Configuring the Trunk Between the CUCM and the Fax Server on page 218*
  - *Configuring a Route Pattern for a Trunk to the Cisco Media Gateway on page 225*
  - *Configuring a Route Pattern for a Trunk to the Fax Server on page 231*
- *Verifying the Configuration on page 238*

Configuring the Dialogic Brooktrout Fax Server

➢ **Follow the steps below to configure the SR140 Software using the Dialogic Brooktrout Configuration Tool to support this network topology.**

1. Open the Dialogic Brooktrout Configuration Tool in Advanced Mode.

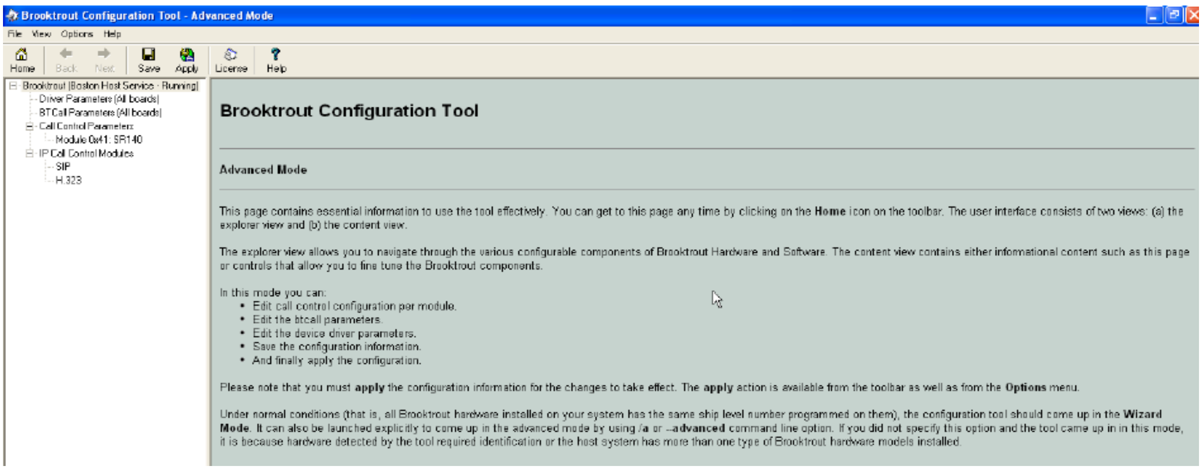

Figure 223. Brooktrout Confutation Tool

2. Configure for the SIP protocol as follows. Under IP Call Control Modules, click SIP then click the IP Parameters tab. The following screen appears.

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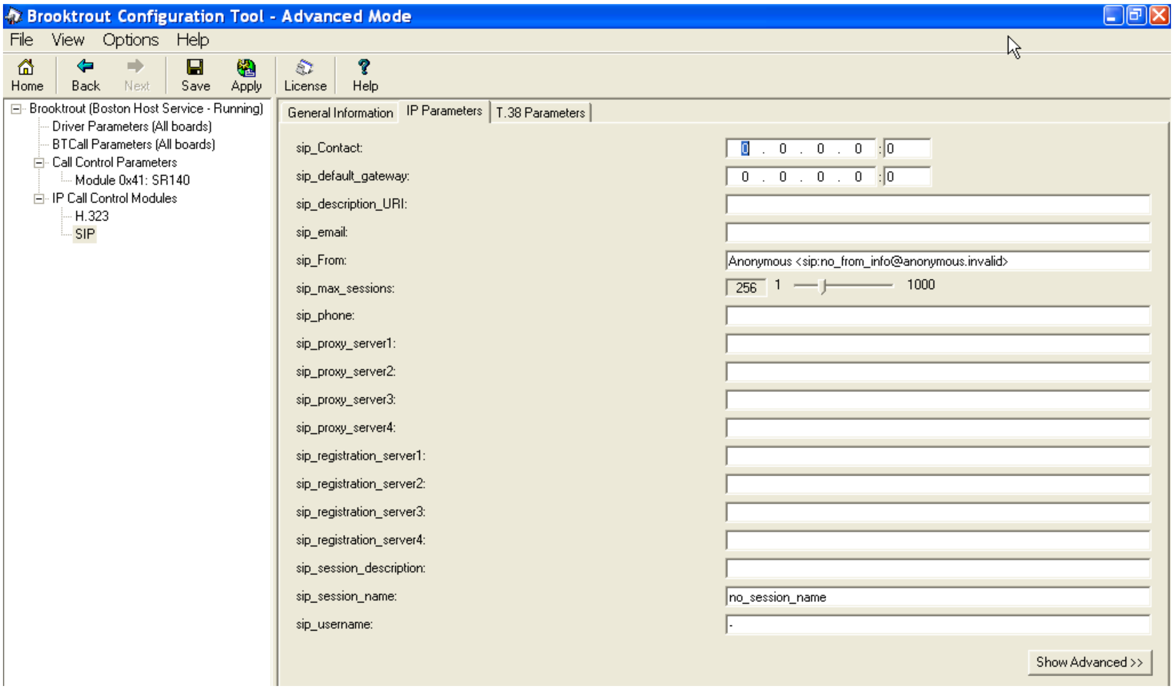

Figure 224. SIP Configuration

Note: When the SIP_Contact is set to the default value (0.0.0.0:0), the system uses the IP address of the first Ethernet module in the system and port number 5060. If there are more than one ethernet modules in the Fax Server then specify the actual IP address and port of the desired ethernet module that will be used.

3. Click T.38 Parameter and complete fields as indicated below.

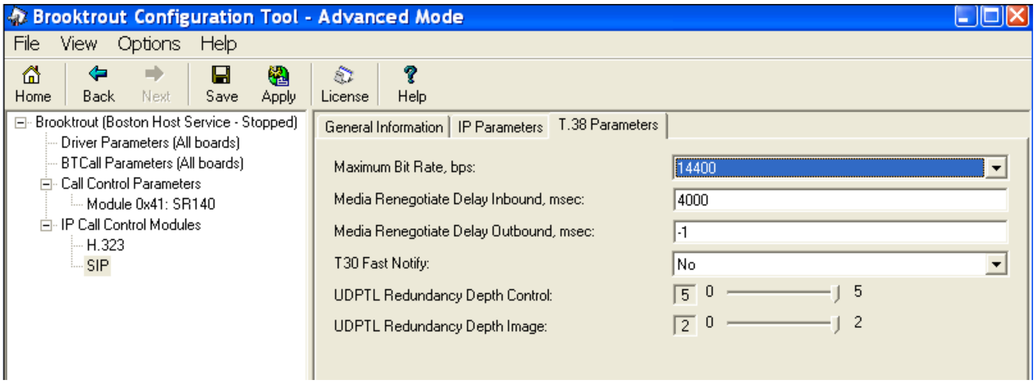

Figure 225. T.38 Parameters

4. Under Call Control Parameters, click Module 0x41: SR140 and select the Parameters tab. Complete the fields as indicated below.

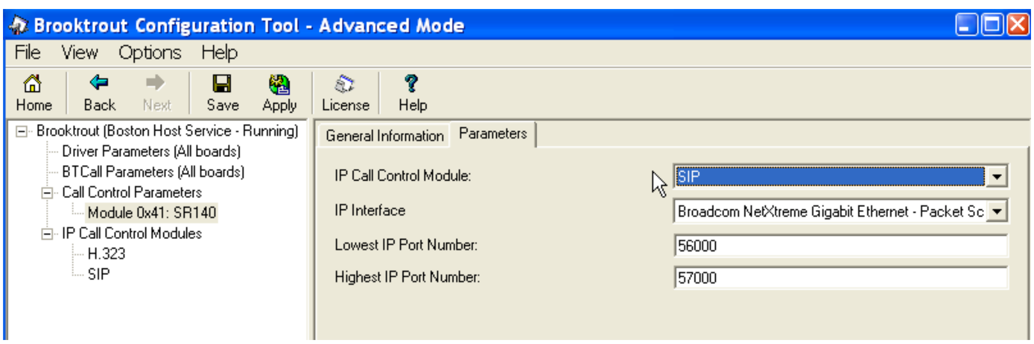

Figure 226. Parameters

5. Select the desired network interface controller (NIC) for the IP Interface field.
6. Click Apply.

Configuration Files

Use the configuration files in the sections below to help you configure the SR140 Software:

Appendix H, SR140 Configuration Files on page 524

Configuring the Cisco Media Gateway with IOS Commands

Refer to the configuration file in the *Appendix H, Cisco Gateway-Config on page 530* as a guide to configure your Cisco Media Gateway with IOS Command.

Configuring the Cisco Media Gateway involves the following.

- Enable T.38 support
- Configure line card interface
- Configure Dial-Peers (VoIP and POTS)

Configuring the Cisco Unified Communications Manager

This procedure includes the following:

- *Appendix N, Configuring Service Activation on page 628* (if not completed)
- *Appendix N, Configuring Service Parameters on page 632* (if not completed)
- *Configuring CUCM SIP Trunk Security Profile on page 203*
- *Configuring the Trunk Between CUCM and the Cisco Media Gateway on page 209*
- *Configuring the Trunk Between the CUCM and the Fax Server on page 218*
- *Configuring a Route Pattern for a Trunk to the Cisco Media Gateway on page 225*
- *Configuring a Route Pattern for a Trunk to the Fax Server on page 231*

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Configuring CUCM SIP Trunk Security Profile

You must configure a SIP Trunk security profile that you will specify when you configure SIP trunks from the CUCM.

➢ **Follow the steps below.**

1. Open the Cisco Unified Communications Manager Administration Version 5.0(4). The following screen appears.

Figure 227. CUCM Version 5.0(4)

2. From the System menu, select Security Profile, SIP Trunk Security Profile.

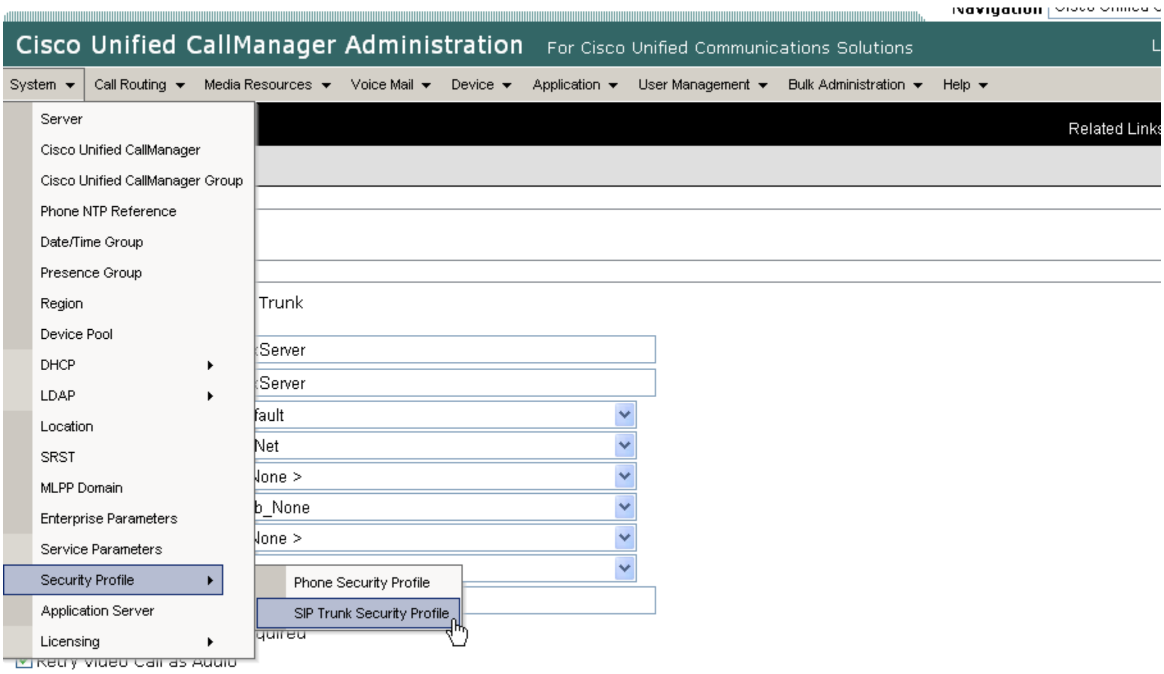

Figure 228. SIP Trunk Security Profile

3. The following screen appears. Click Add New.

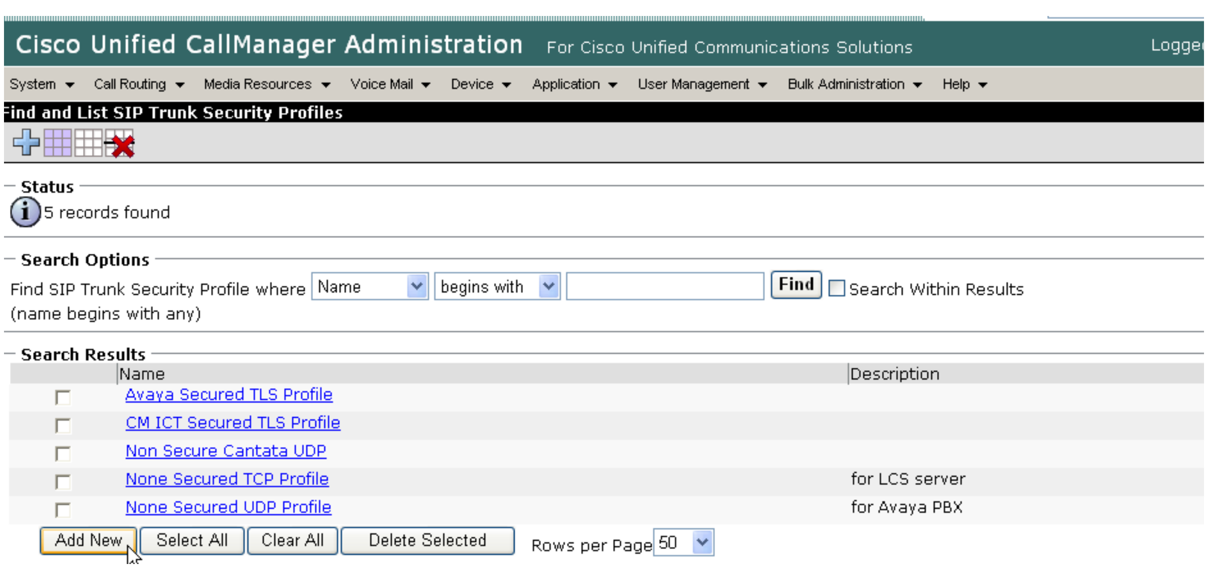

Figure 229. Add New Profile

The following screen appears.

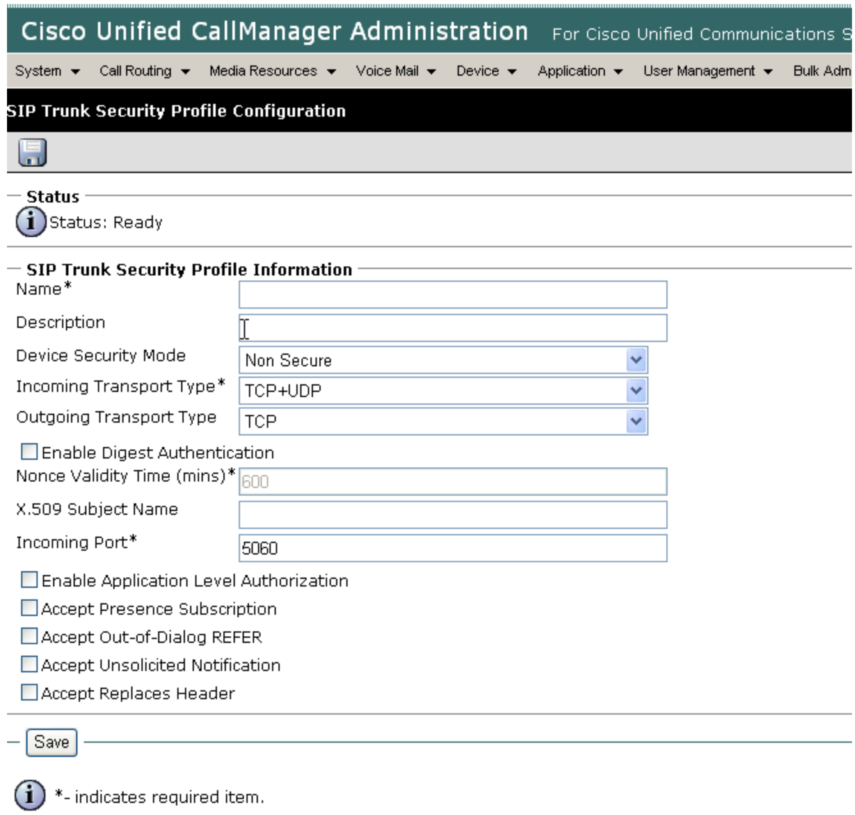

Figure 230. SIP Trunk Security Profile Configuration

4. Complete the screen as indicated below.

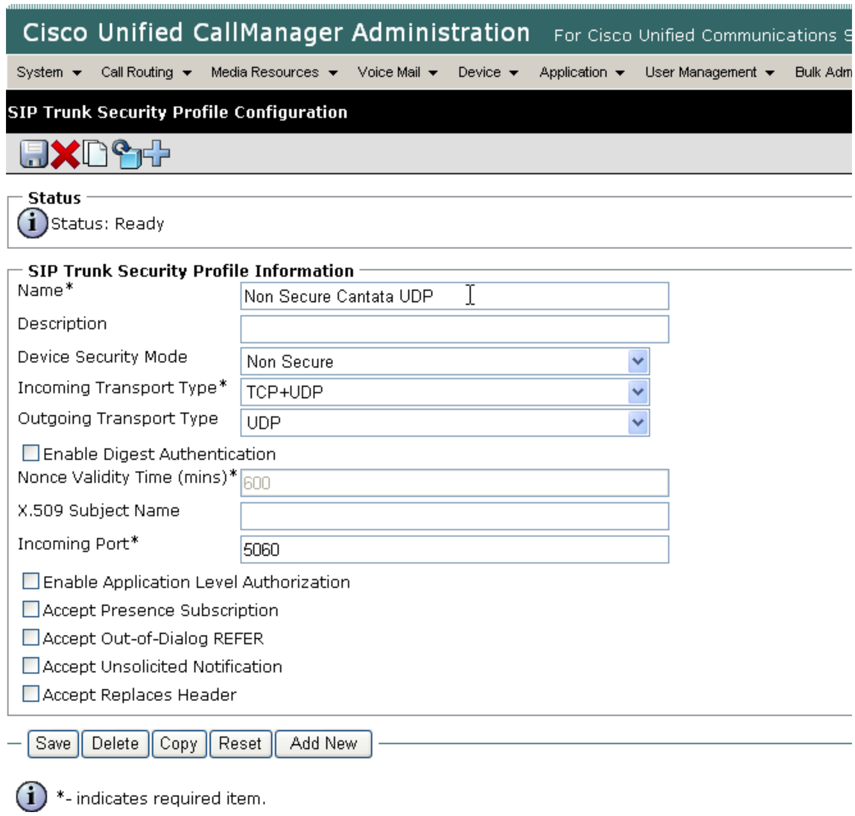

Figure 231. SIP Trunk Security Profile Information

5. Click Save.

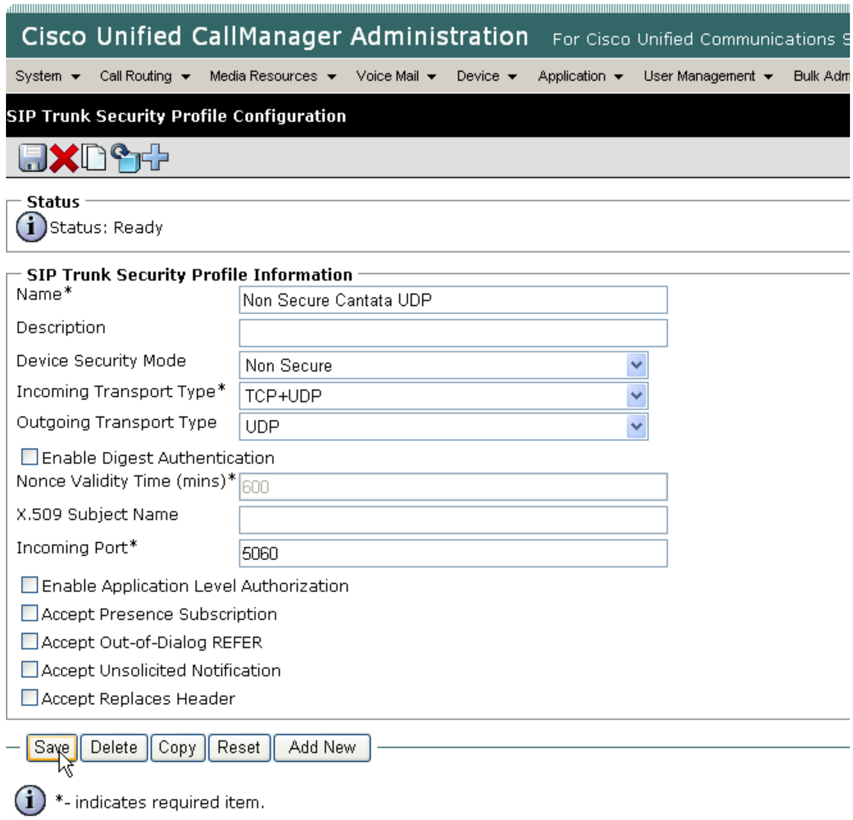

Figure 232. Save Configuration

Note that you have to reset the trunk for the changes to take effect.

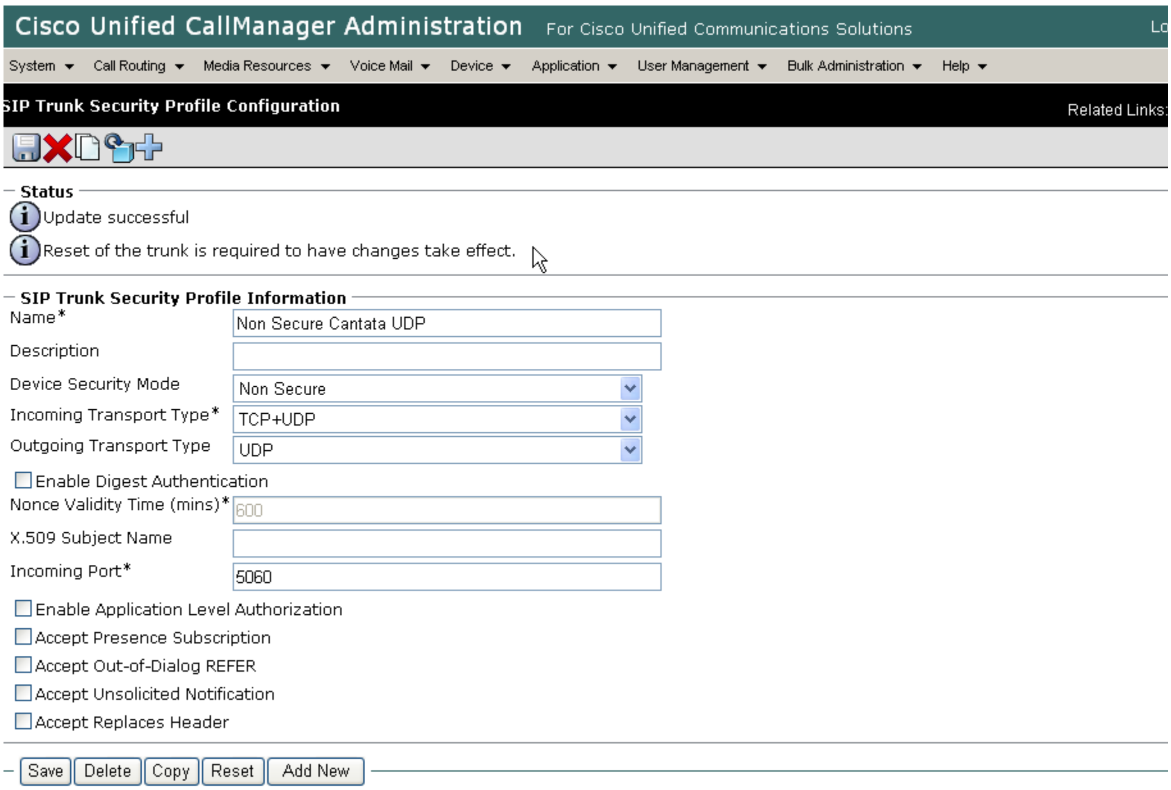

Figure 233. Reset Trunk

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Configuring the Trunk Between CUCM and the Cisco Media Gateway

➢ **Follow the steps below.**

1. Open the Cisco Unified Communications Manager Administration Version 5.0(4). The following screen appears.

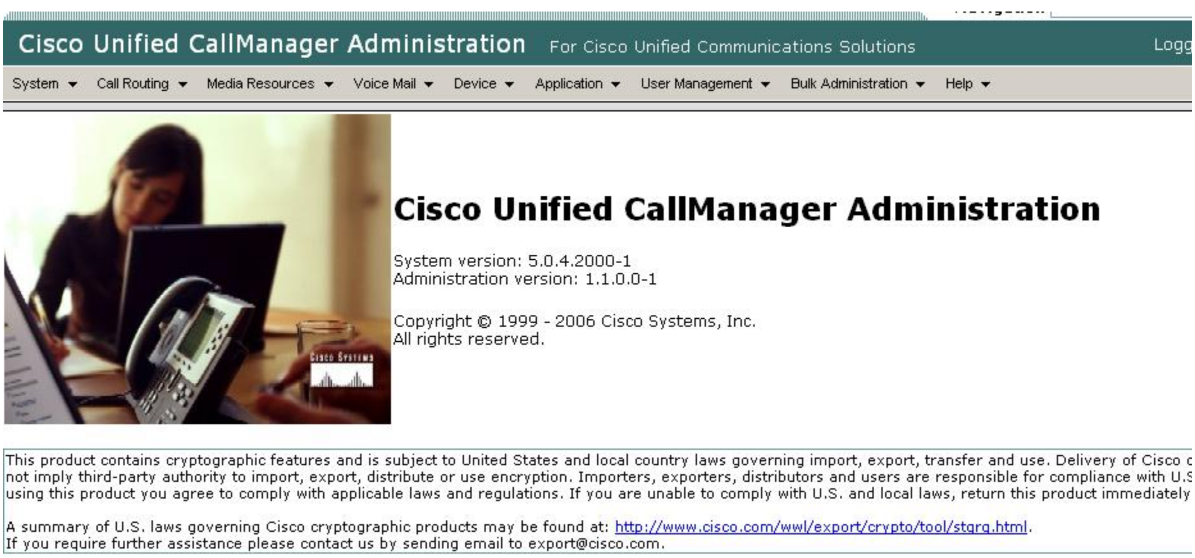

Figure 234. CUCM

2. From the Device menu, select Trunk.

Figure 235. Configure Trunk

The following screen appears.

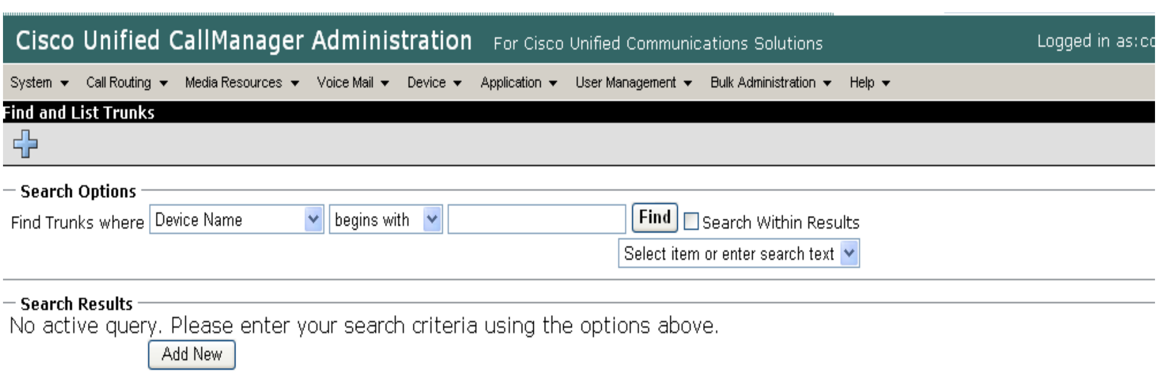

Figure 236. Trunks

3. Click Add New.

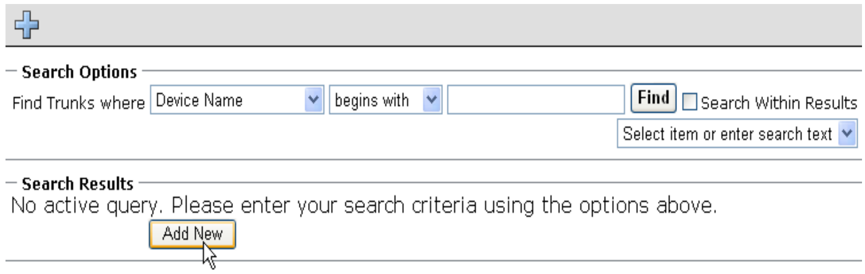

Figure 237. Add New Trunk

The following screen appears.

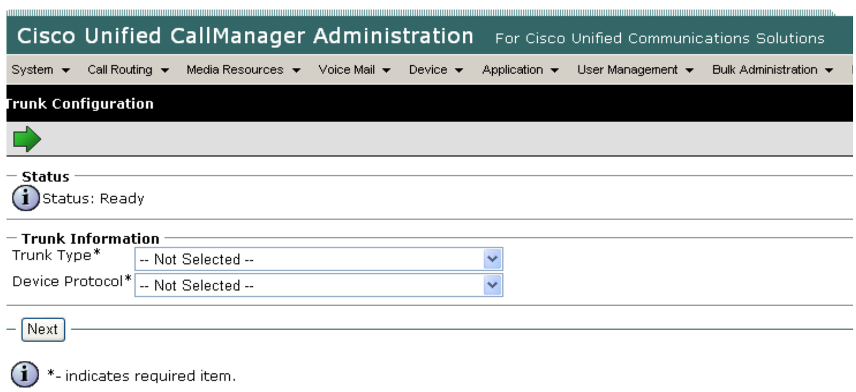

Figure 238. New Trunk

4. Select SIP Trunk for the Trunk Type.

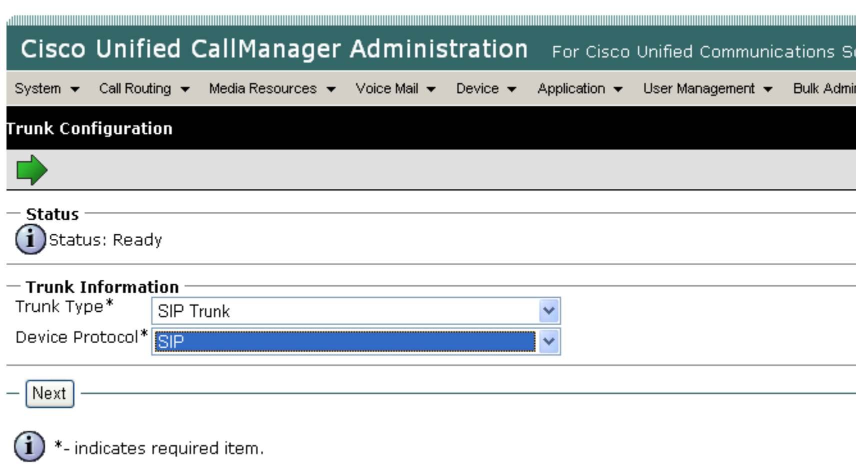

Figure 239. SIP Trunk Type

5. Click Next.

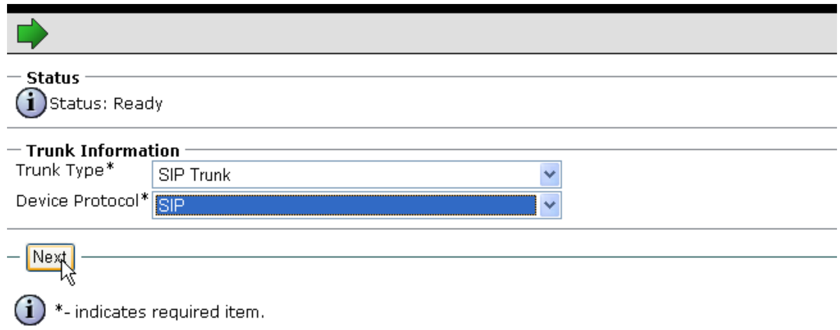

Figure 240. Trunk Information

The following screen appears.

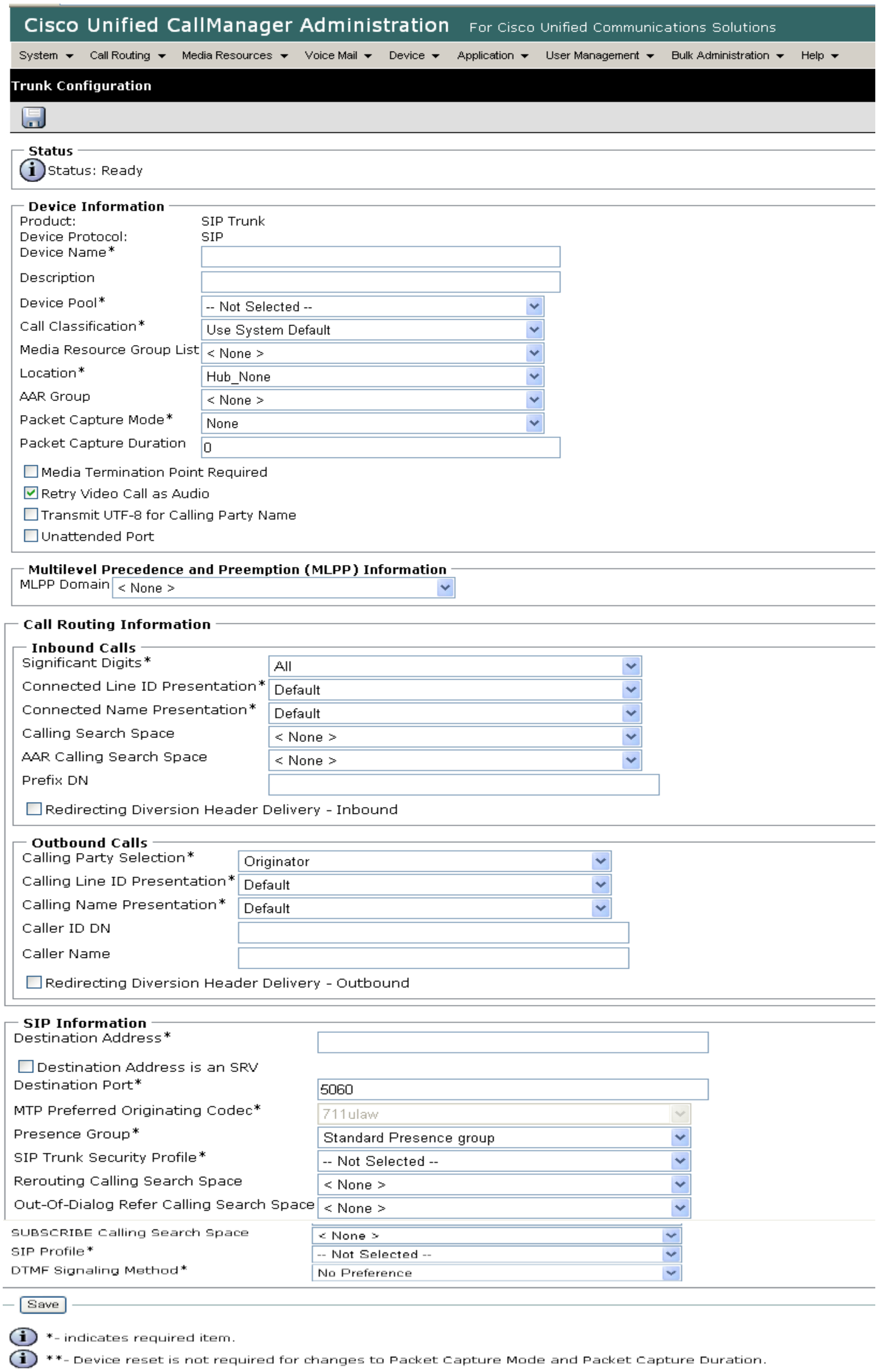

Figure 241. Trunk Configuration

6. Complete the screen as indicated below:

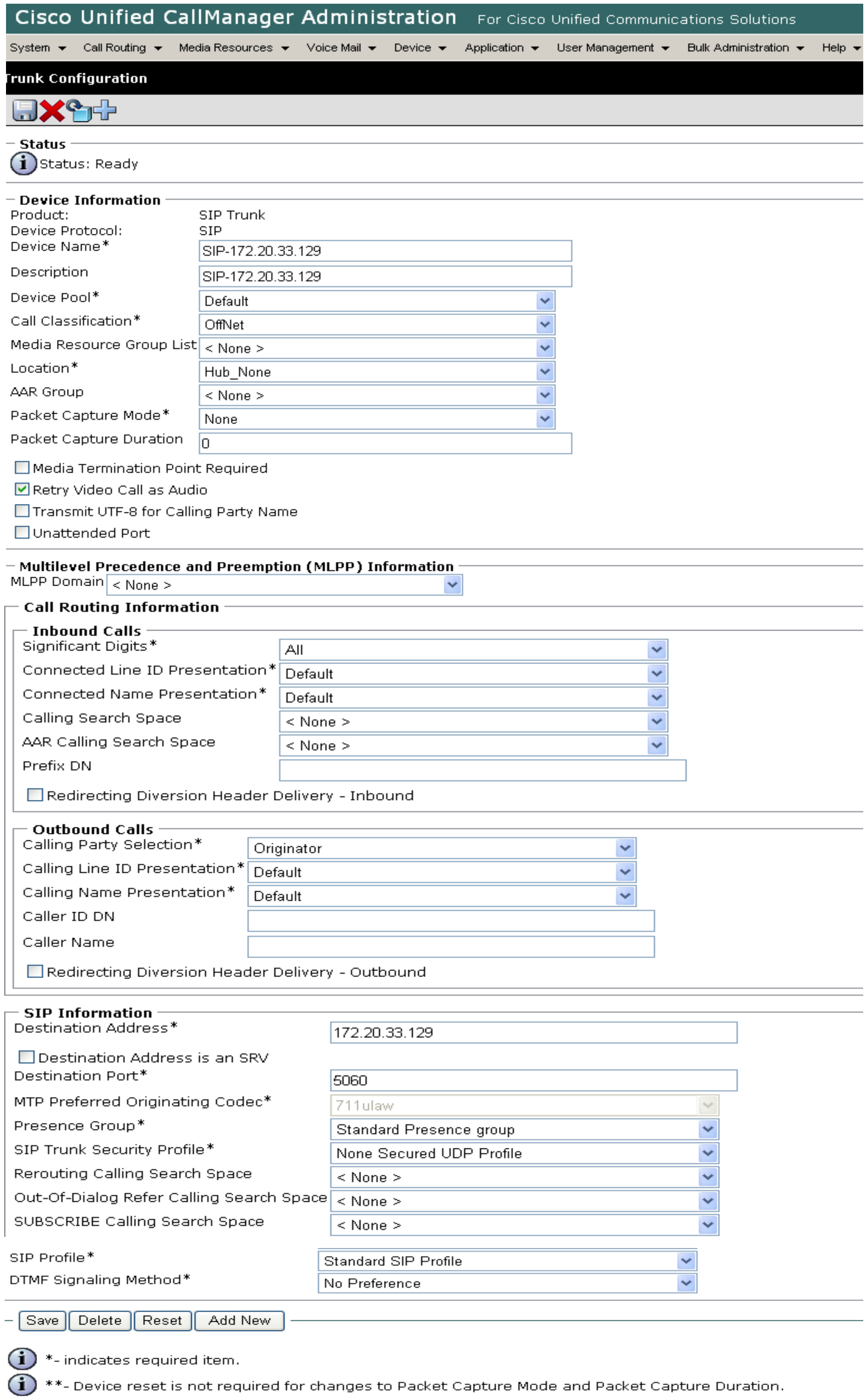

Figure 242. Trunk Configuration Data

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7. Click Save.

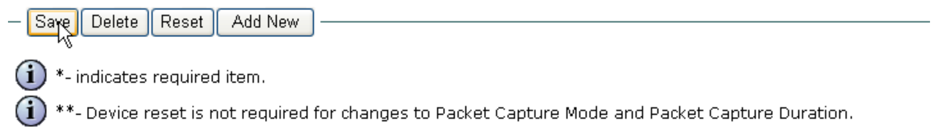

Figure 243. Save

8. Click OK.

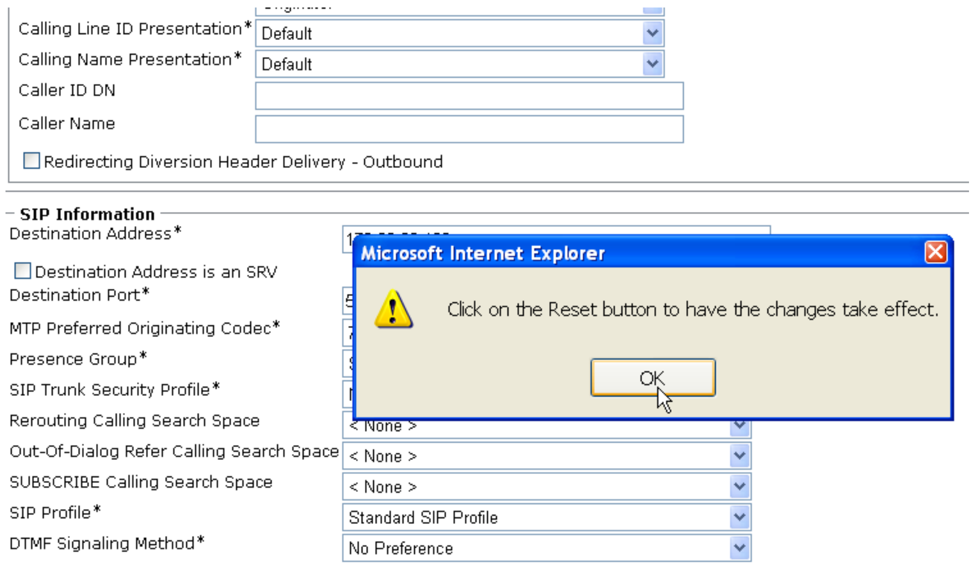

Figure 244. OK

9. Click Reset.

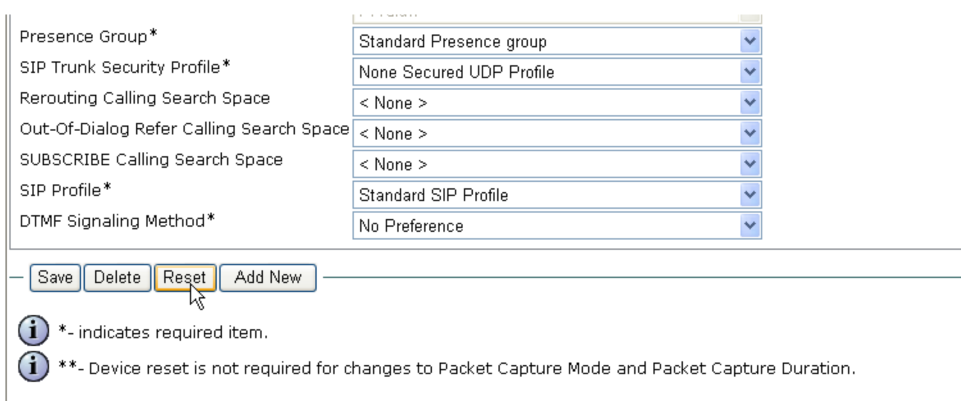

Figure 245. Reset

The following screen appears.

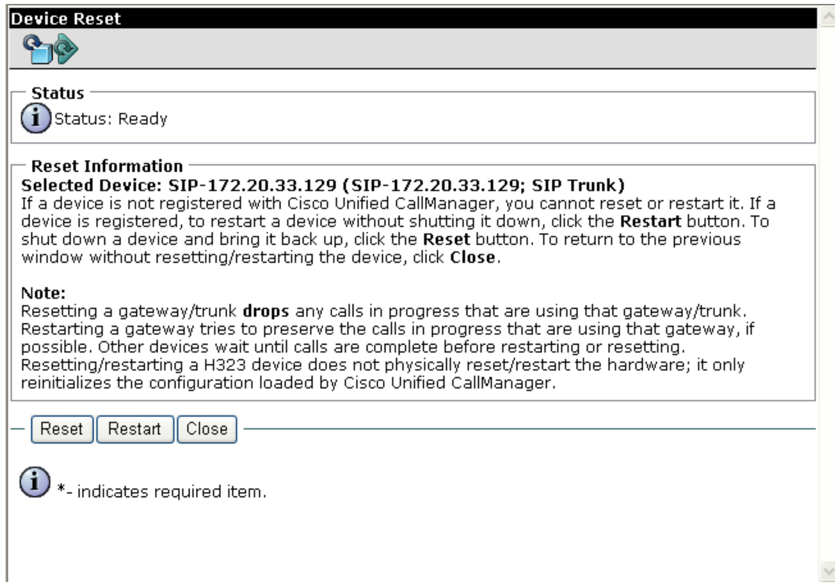

Figure 246. Device Reset

10. Click Close.

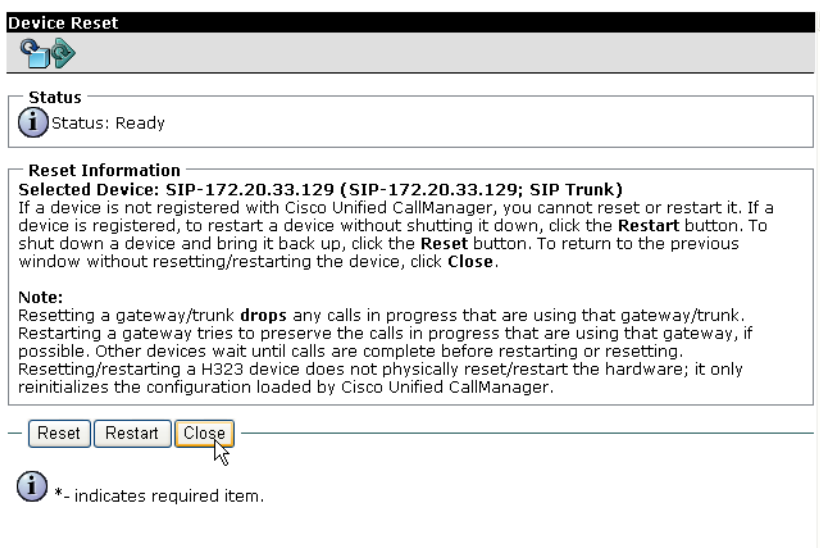

Figure 247. Device Reset

11. Click Find and the new trunk appears.

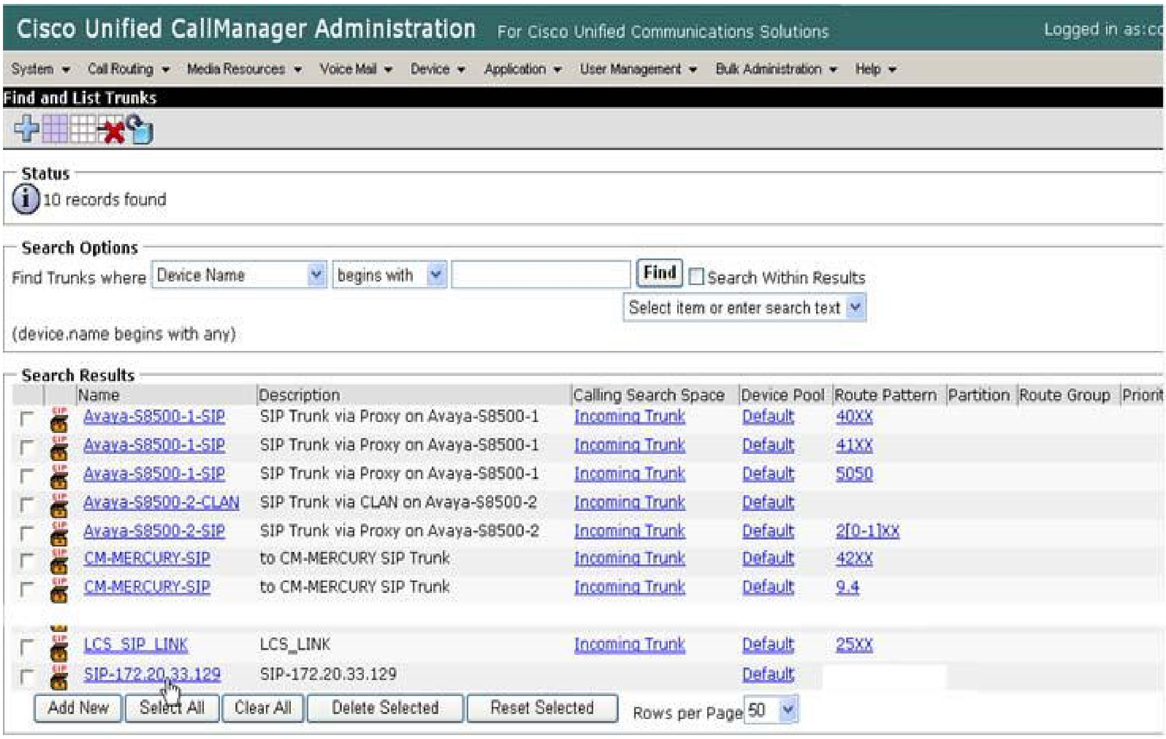

Figure 248. List of Trunks

Configuring the Trunk Between the CUCM and the Fax Server

➤ **Follow the steps below.**

1. From the following screen, click Add New.

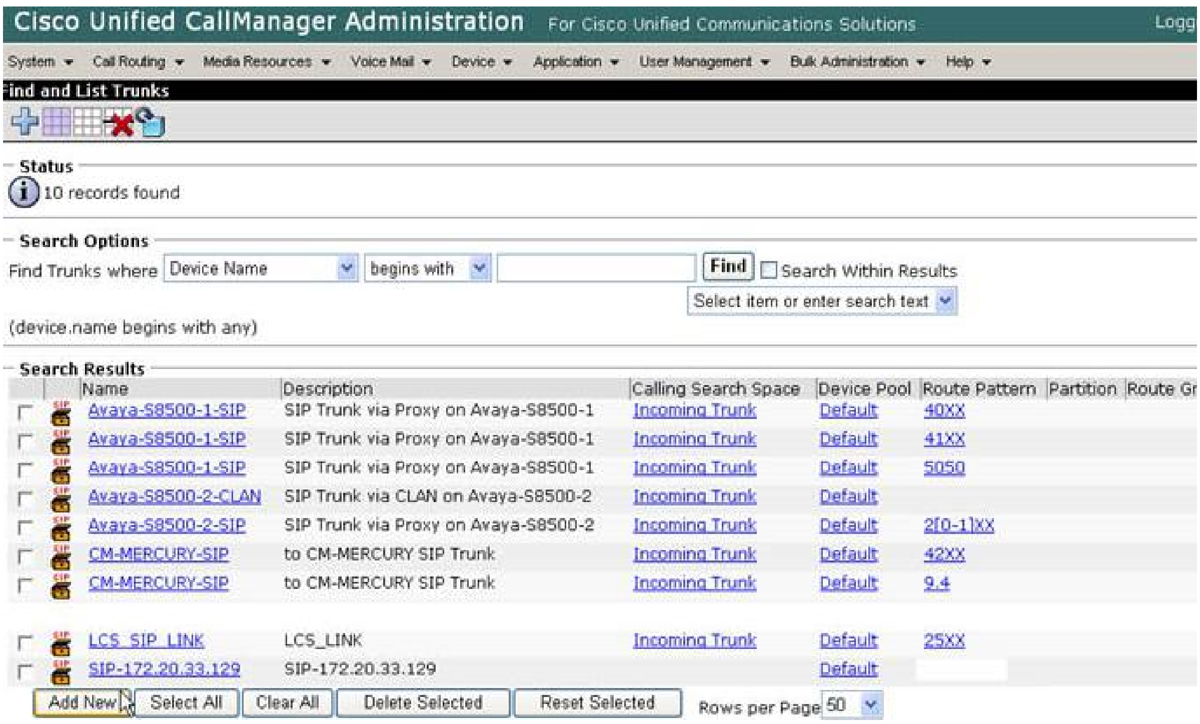

Figure 249. New Trunk

The following screen appears.

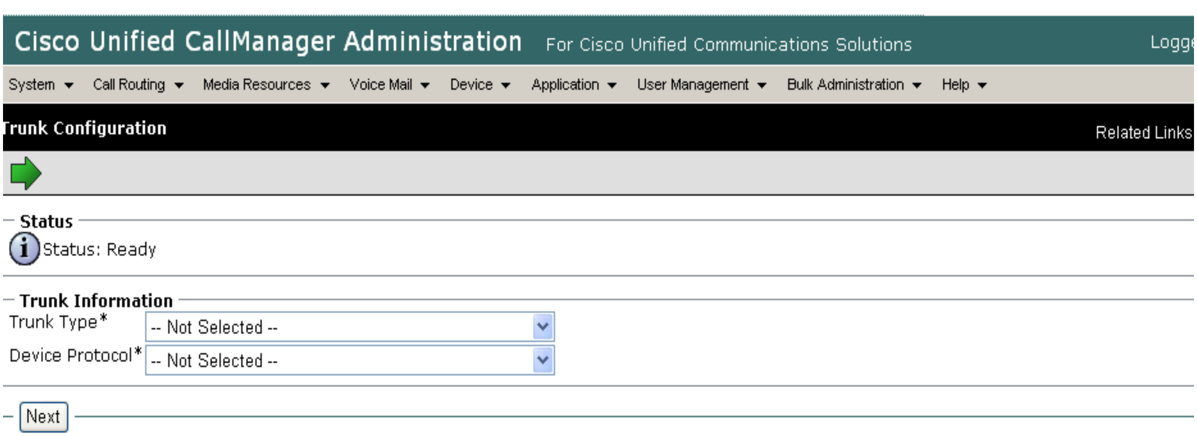

Figure 250. Trunk Configuration

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2. From the Trunk Type box, select SIP Trunk.

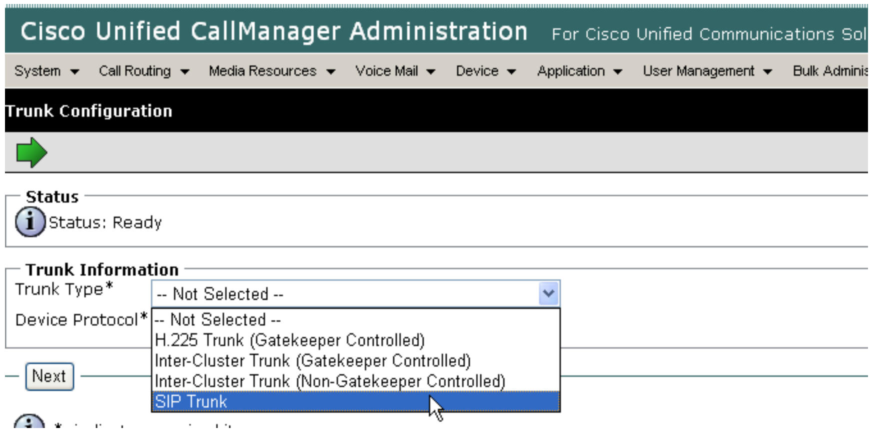

Figure 251. SIP Trunk

The following screen appears.

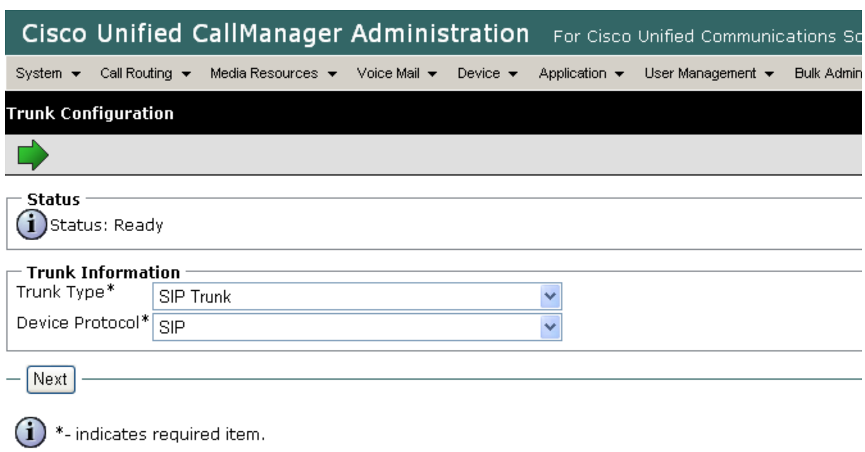

Figure 252. SIP Device Protocol

3. Click Next.

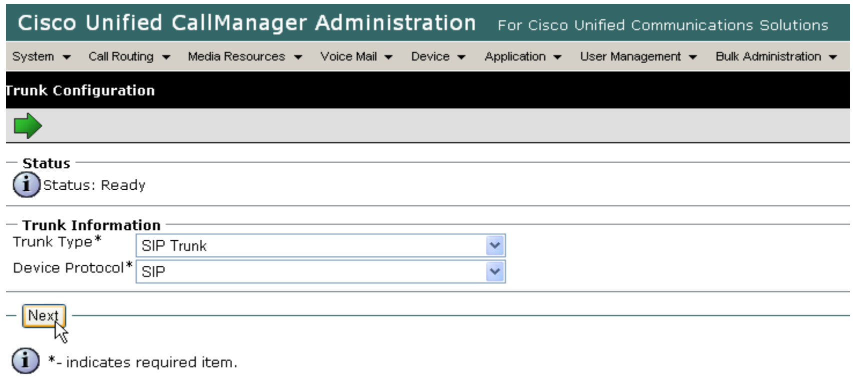

Figure 253. Next

The following screen appears.

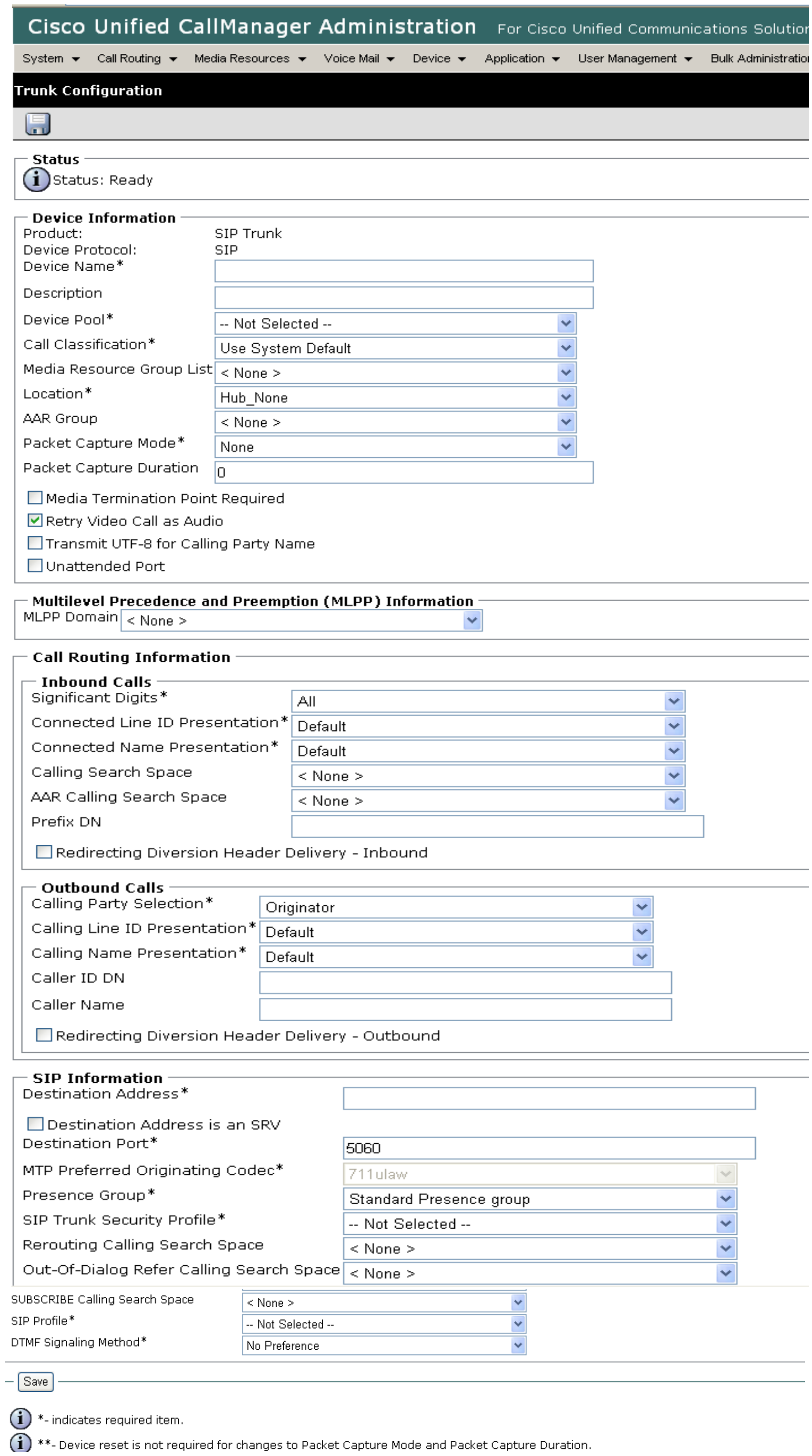

Figure 254. Trunk Configuration

4. Complete the screen as indicated below.

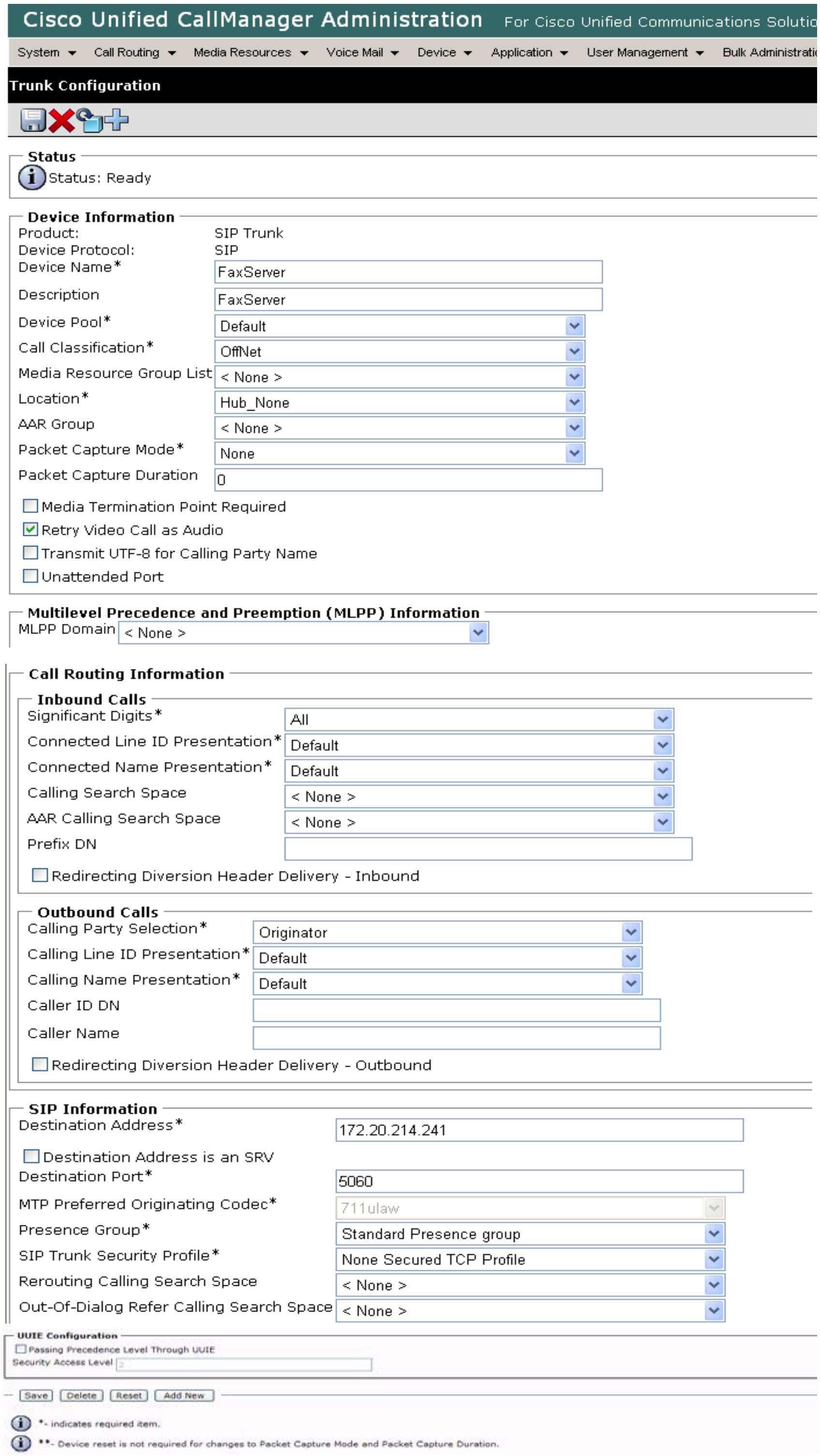

Figure 255. Trunk Configuration

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5. Click Save.

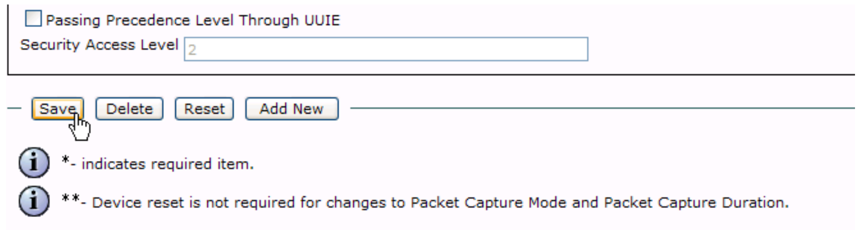

Figure 256. Save

6. Click Reset.

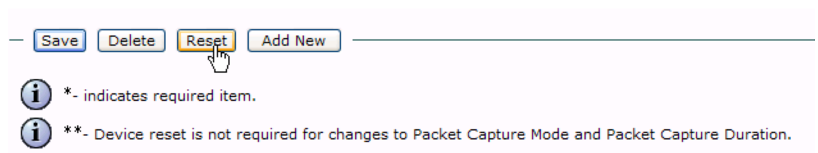

Figure 257. Reset

7. Click OK.

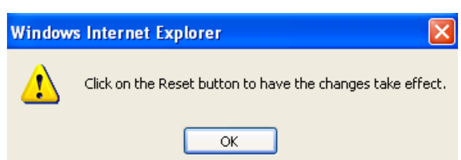

Figure 258. OK

The following screen appears.

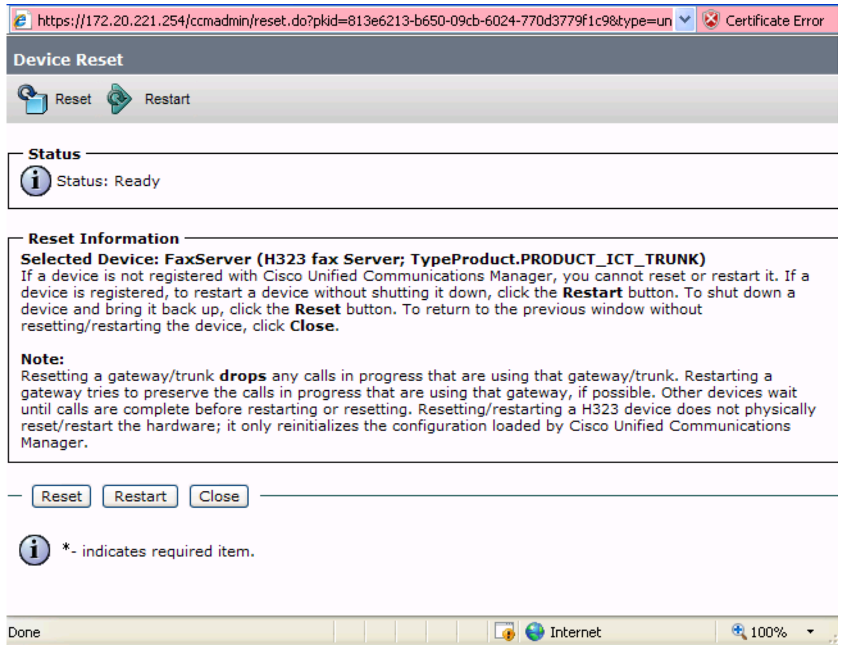

Figure 259. Device Reset

8. Click Close.

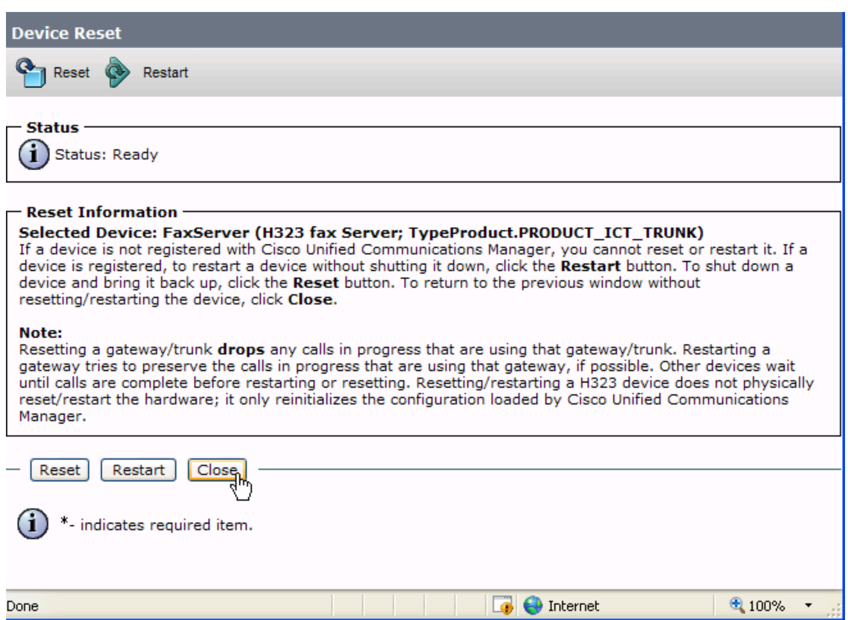

Figure 260. Close

Configuring a Route Pattern for a Trunk to the Cisco Media Gateway

➢ **Follow the steps below to configure a route pattern for the trunk.**

1. From the Call Routing menu, click Route/Hunt, Route Pattern.

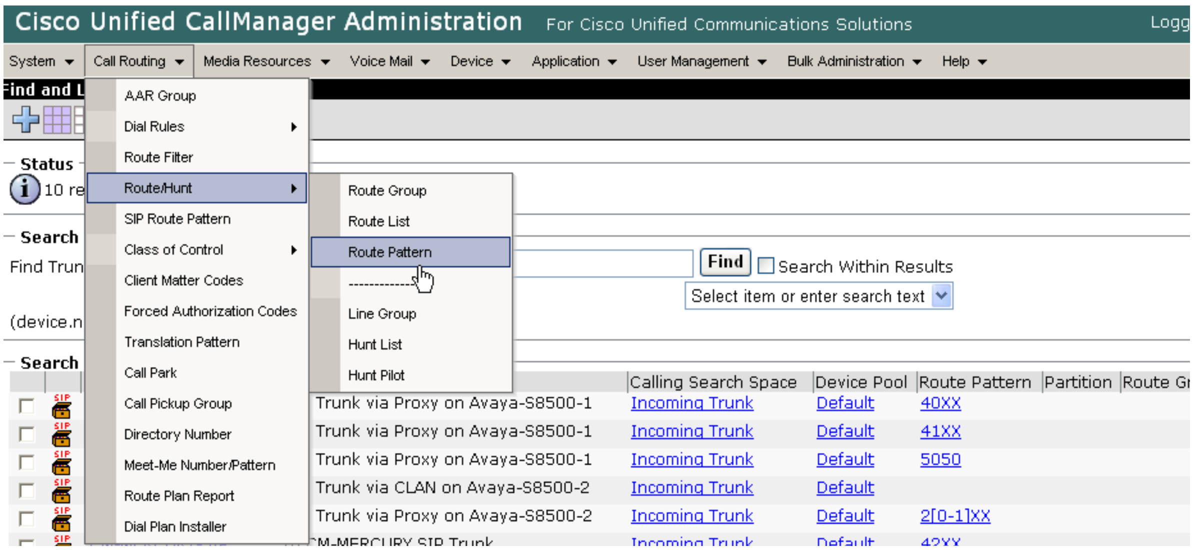

Figure 261. Route Pattern

The following screen appears.

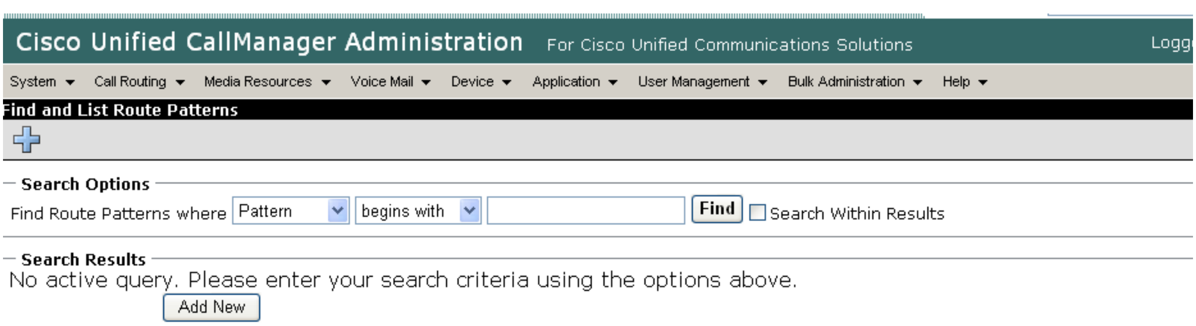

Figure 262. New Route Pattern

2. Click Add New.

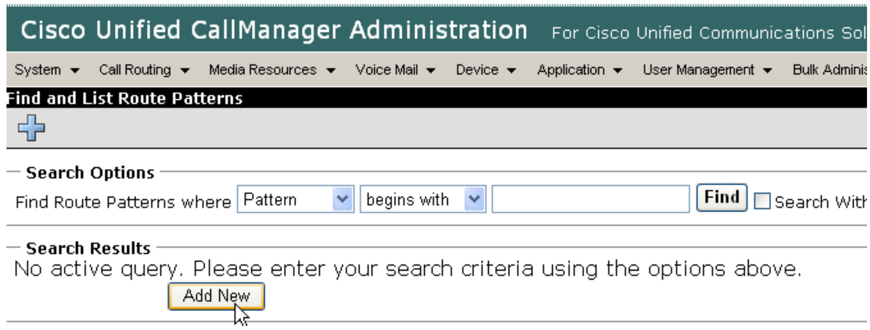

Figure 263. Add New

The following screen appears.

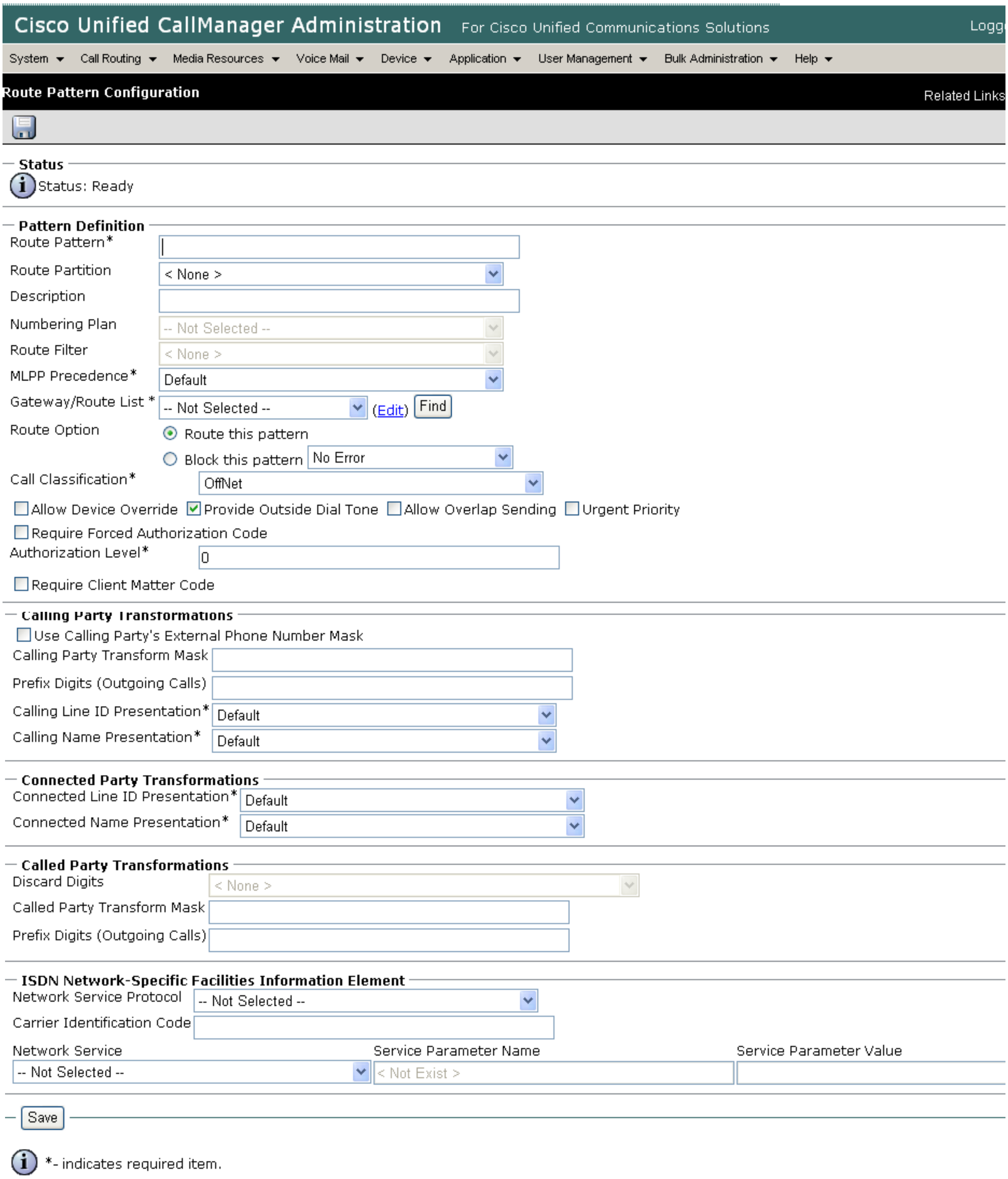

Figure 264. Route Pattern Configuration

3. Complete the screen as indicated below.

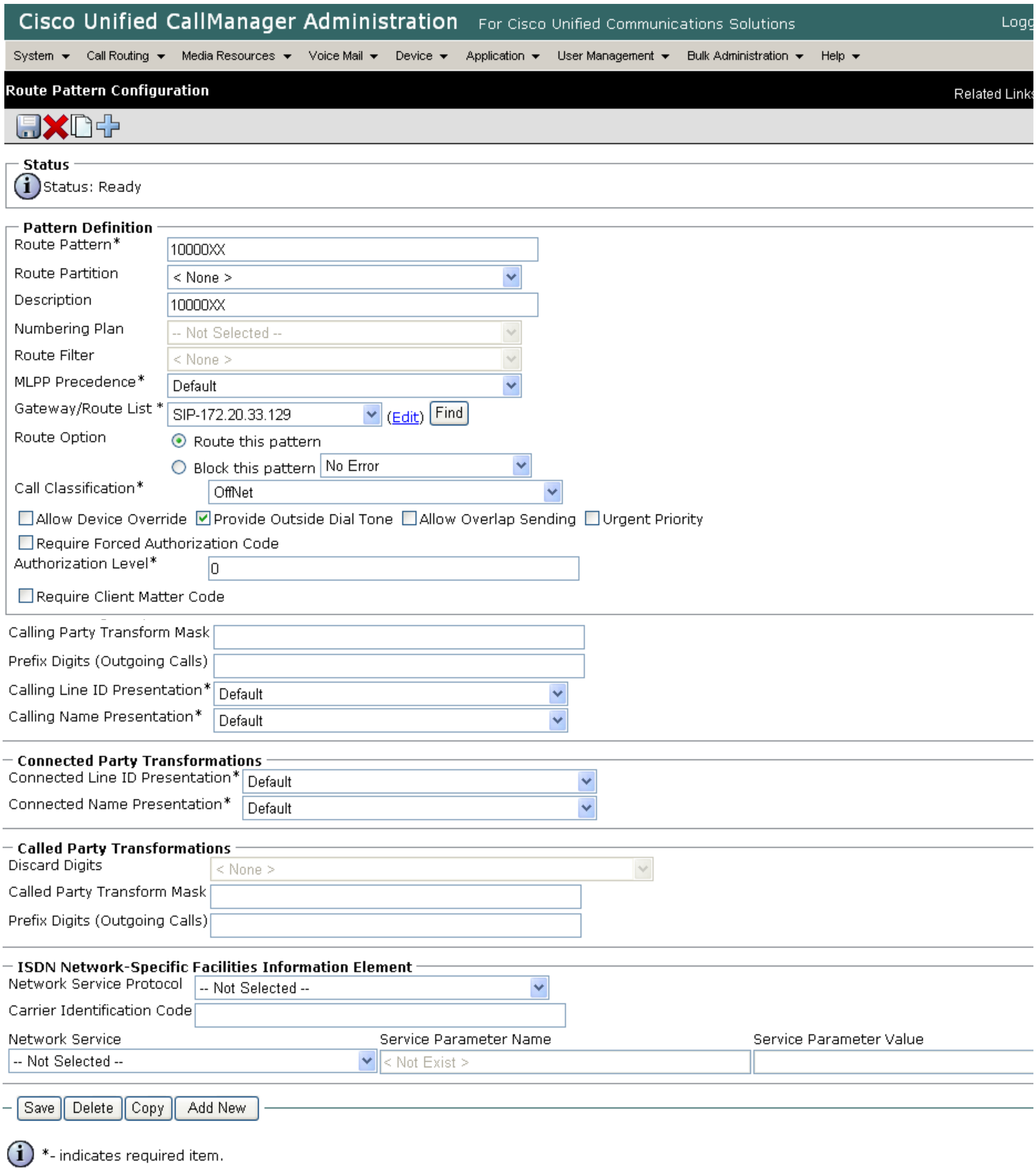

Figure 265. Route Pattern Configuration

4. The following appears because you did not required a Forced Authorization Code. Click OK.

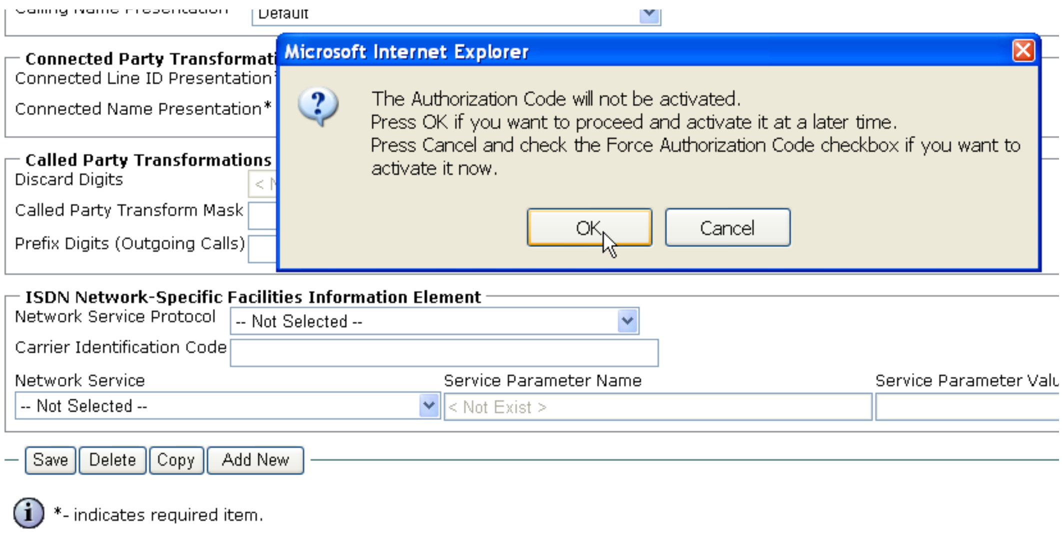

Figure 266. OK

5. The following appears. Click OK.

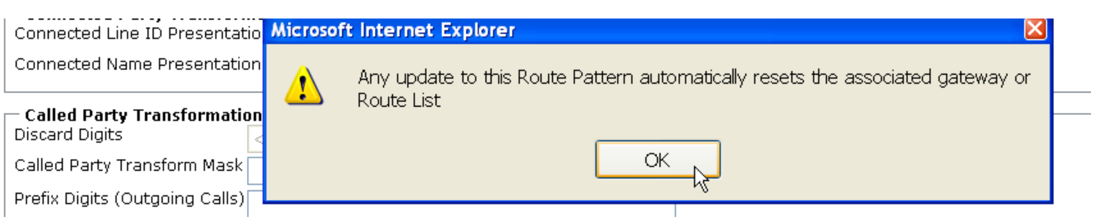

Figure 267. OK

The following screen appears. Note the new Route Pattern.

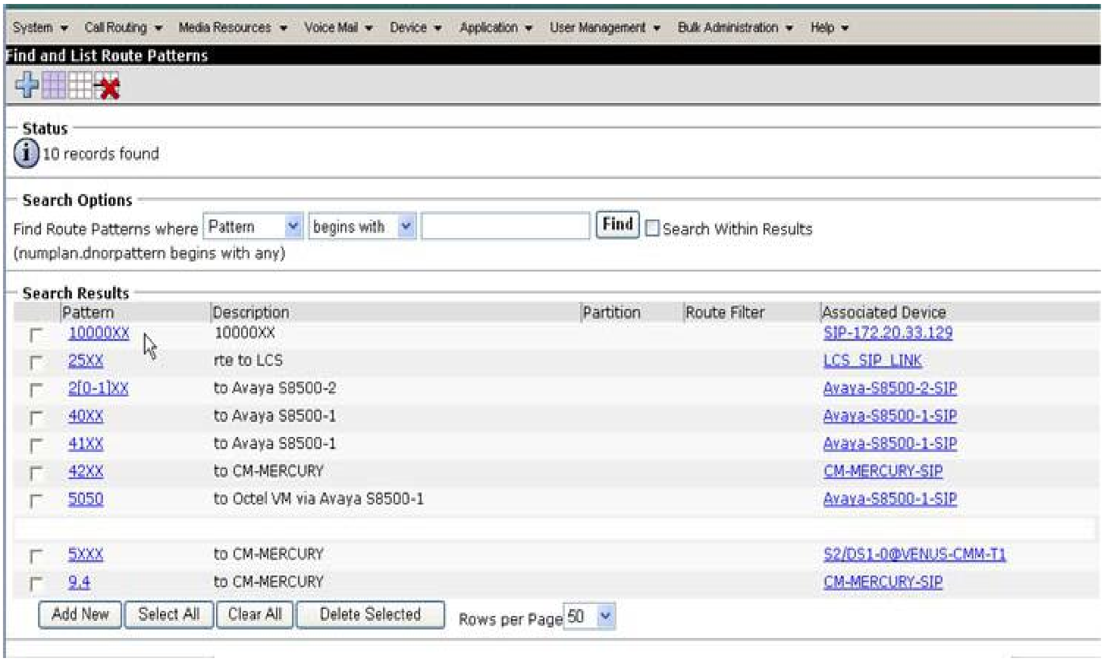

Figure 268. Route Pattern List

Configuring a Route Pattern for a Trunk to the Fax Server

➢ **Follow the steps below:**

1. From the Call Routing menu, click Route/Hunt, Route Pattern.

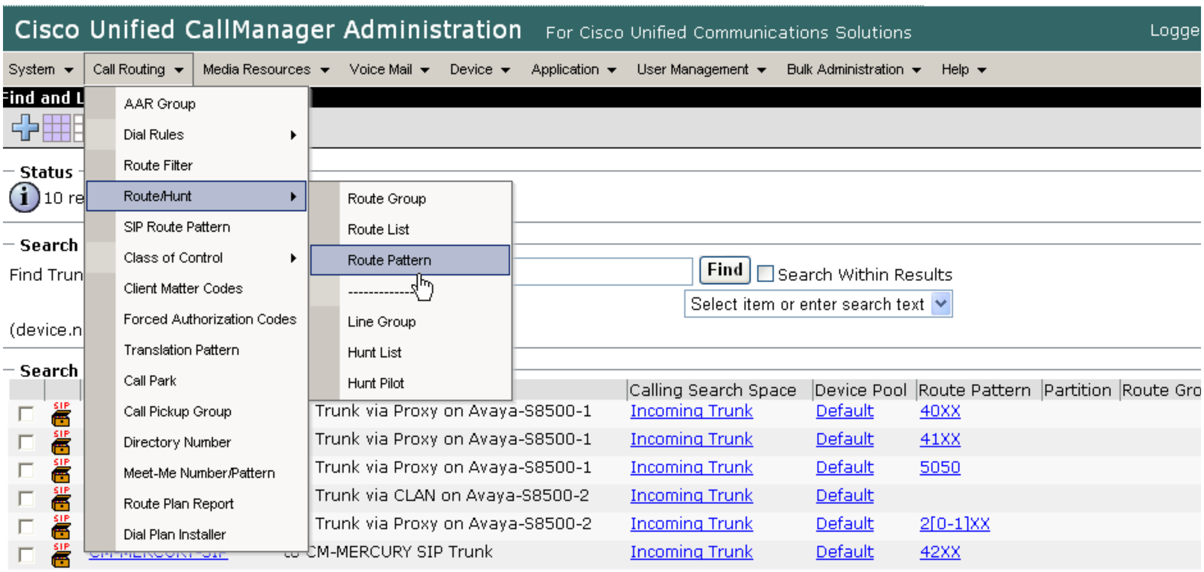

Figure 269. Route Pattern

The following screen appears.

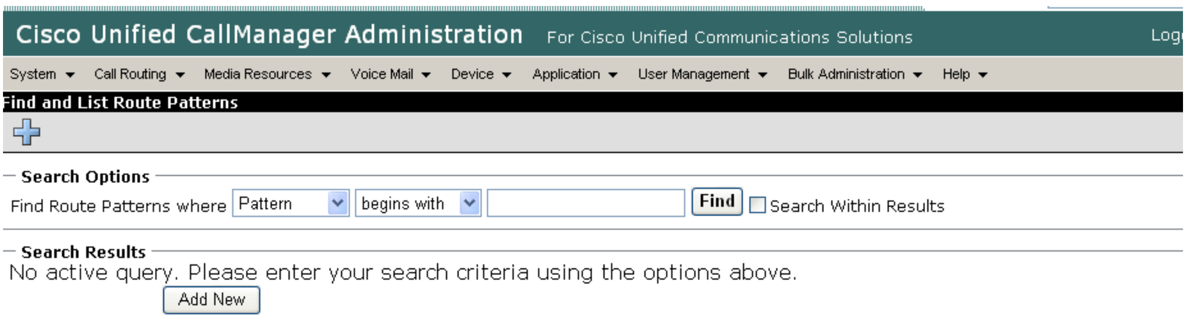

Figure 270. Route Pattern

2. Click Add New.

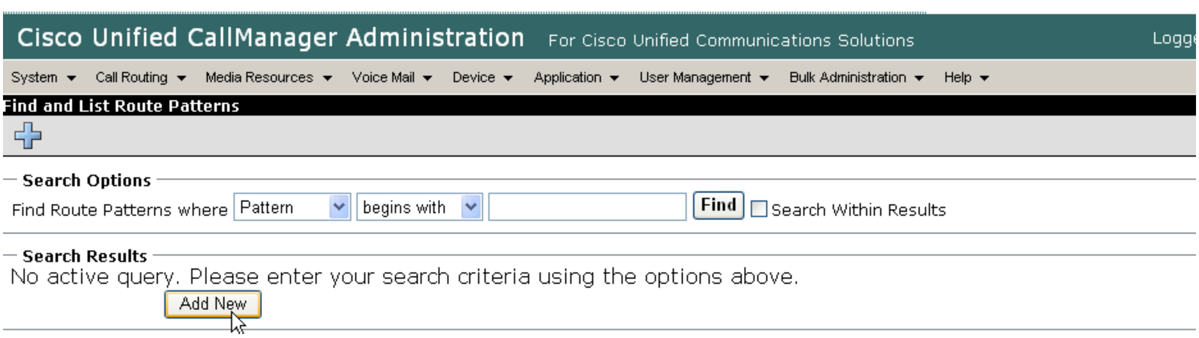

Figure 271. Add New

The following screen appears.

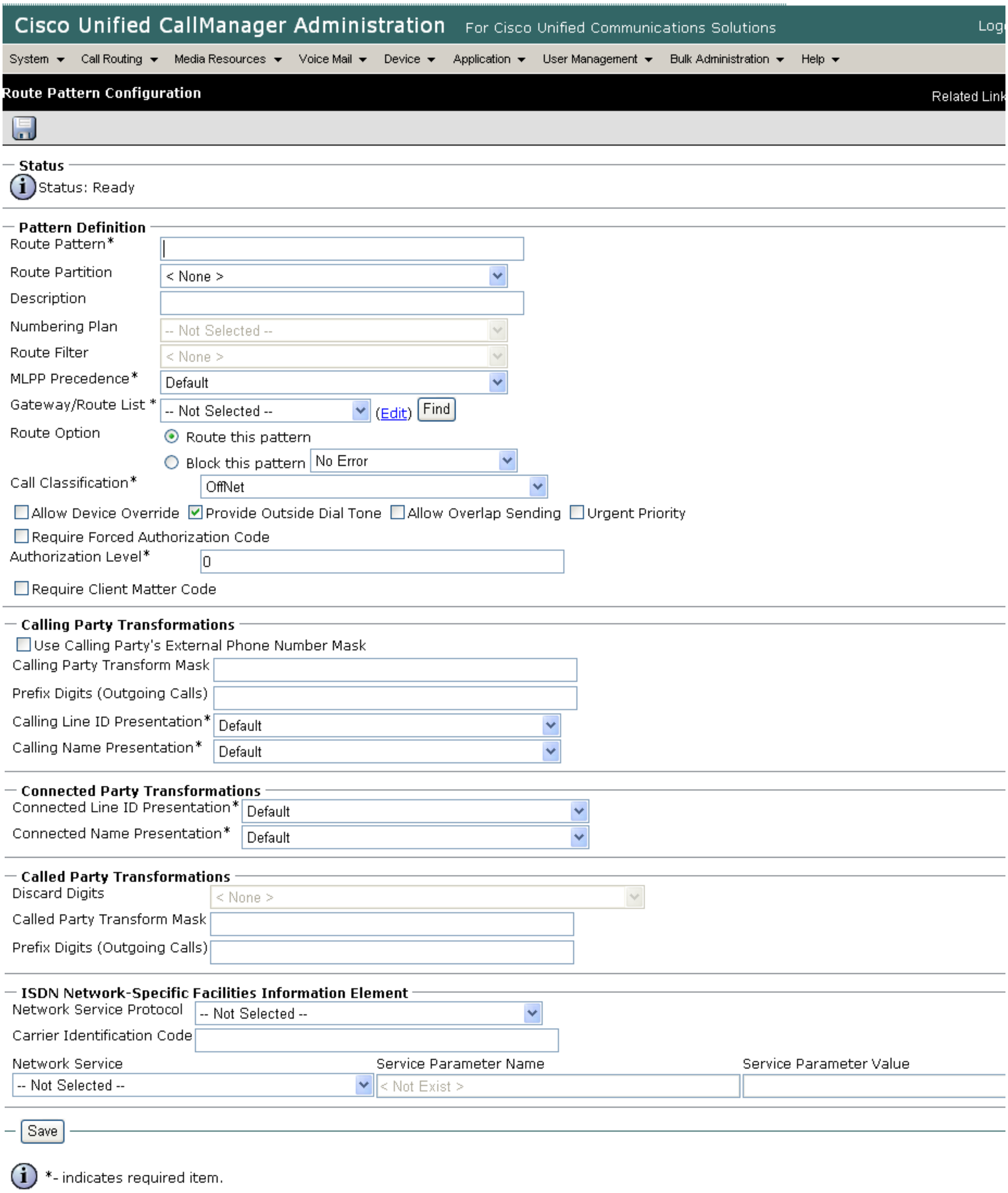

Figure 272. Route Pattern Configuration

3. Complete the screen as indicated below.

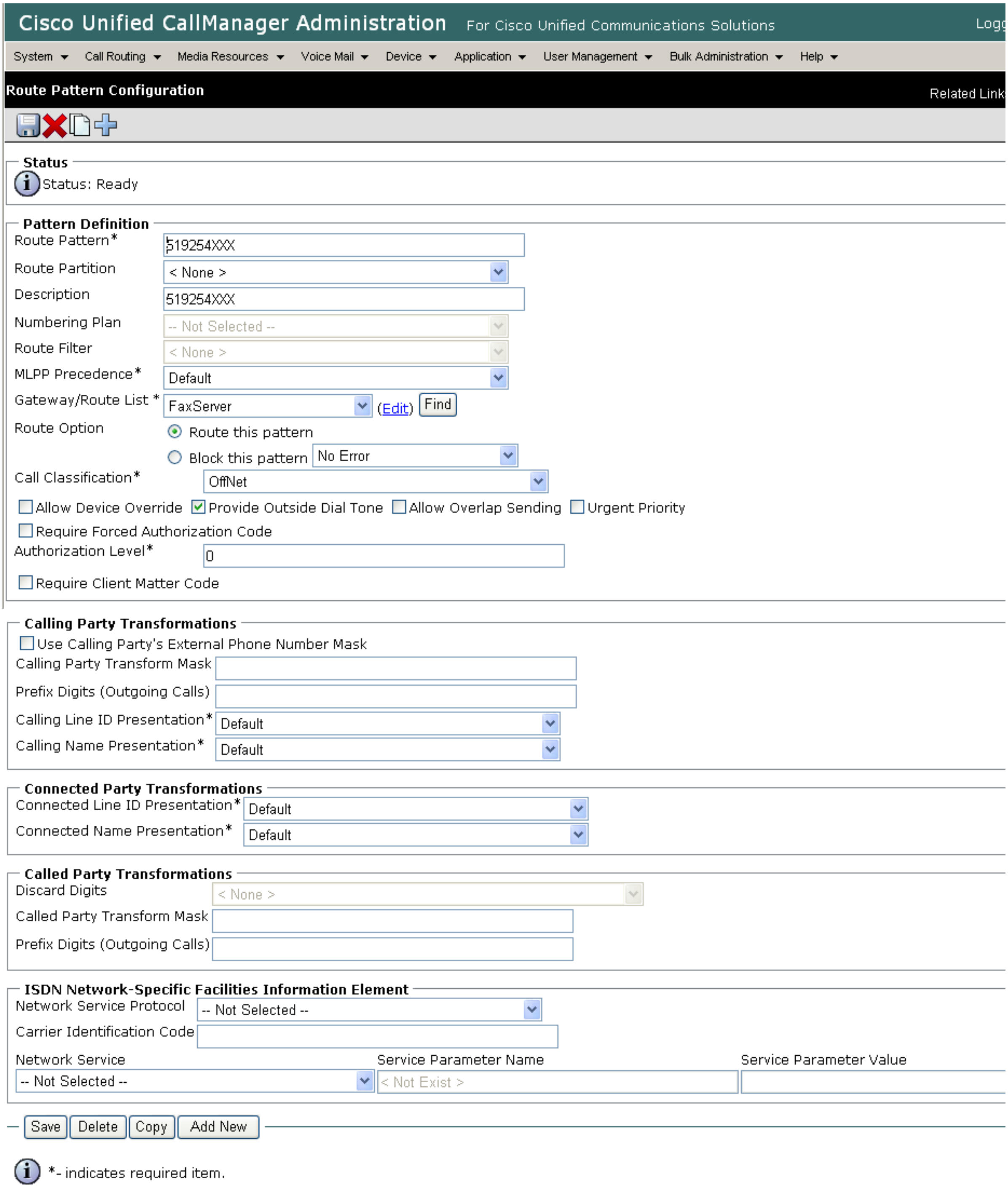

Figure 273. Route Pattern Configuration

4. Click Save.

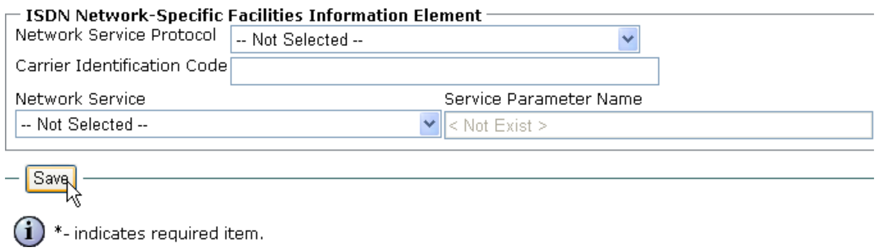

Figure 274. Save

5. The following appears because you did not required a Forced Authorization Code. Click OK.

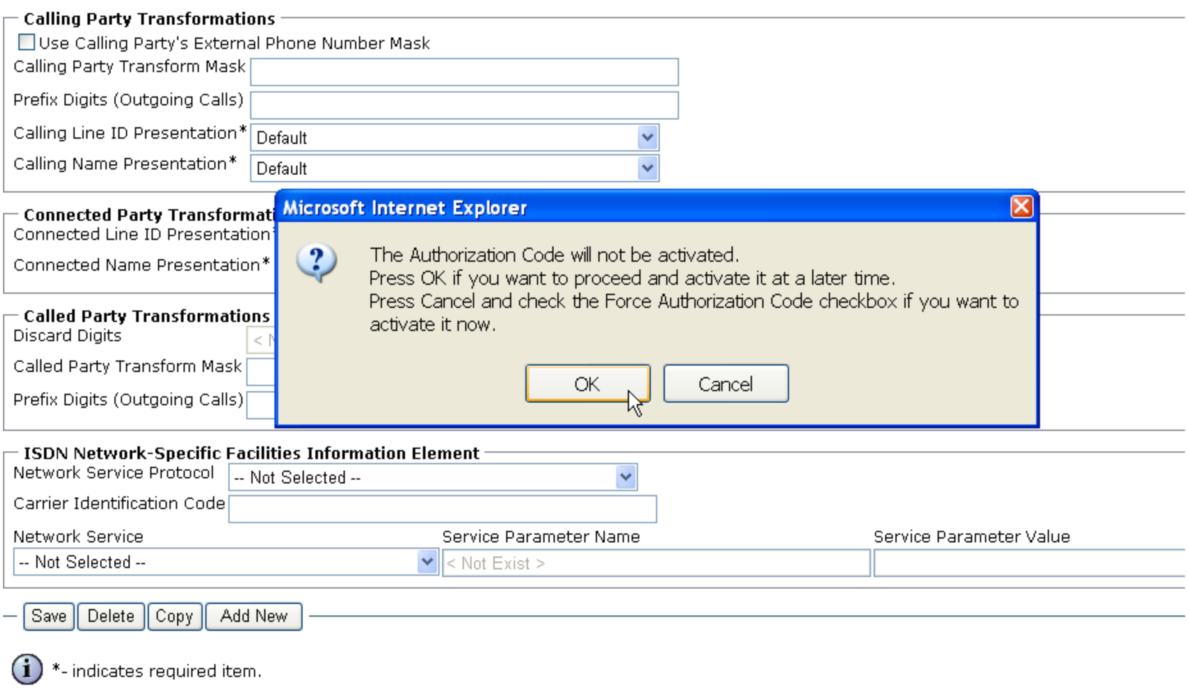

Figure 275. OK

6. The following appears. Click OK.

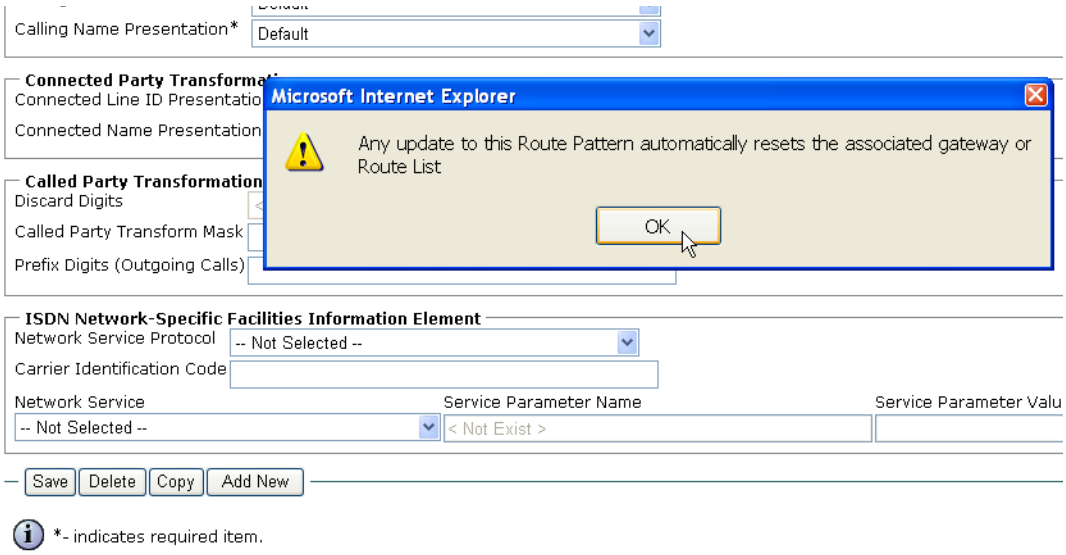

Figure 276. OK

7. The following screen appears. Note the new Route Pattern.

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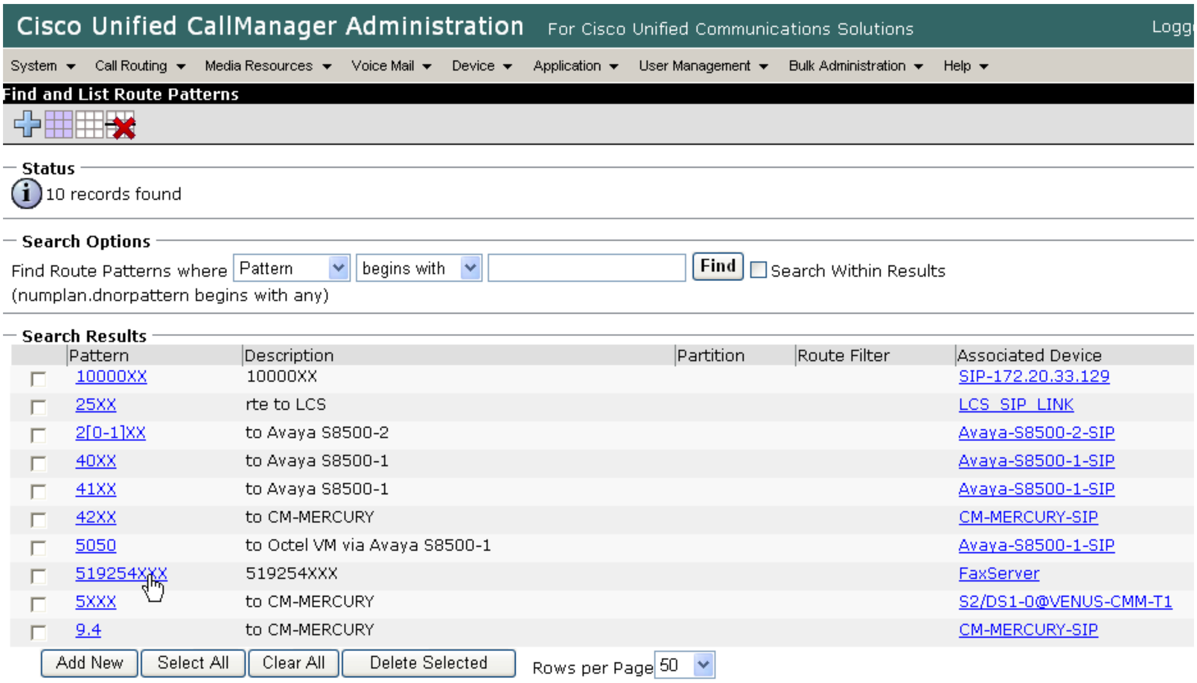

Figure 277. Route Pattern List

Verifying the Configuration

The Dialogic Brooktrout Fax and Voice Diagnostic Test utility allows you to test the configuration you completed. You can download the utility and instructions from the technical support site.

http://www.cantata.com/support/lanfax/fax_testing_diagnostic.cfm

This test verifies the following:

- SR140 Software configuration
- Cisco Media Gateway configuration
- Trunks and Route Patterns on the CUCM

Verifying the Fax Server Basic Configuration

Before continuing, refer to *Appendix A, Verifying Basic Configuration - Fax Server 172.20.214.241 on page 410* to verify that the Fax Server software is installed correctly.

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Outbound Call

➢ **Follow the steps below to verify outbound fax traffic from the CUCM to the gateway.**

1. Open the Fax and Voice Diagnostic Test utility. The following screen appears. Click the 2.Telephony button (press the Apply button in the Brooktrout Configuration Tool after configuring). Click the 3.Initialize button.

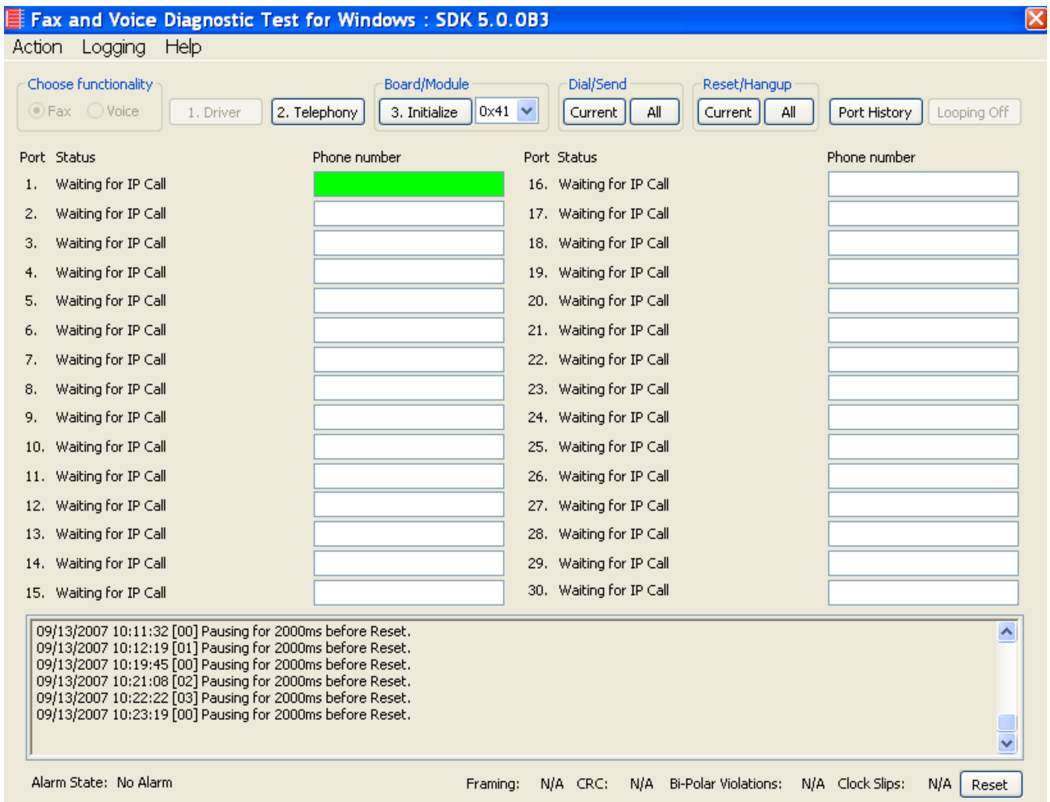

Figure 278. Diagnostic Test

2. Enter the destination phone number and the IP address of CUCM as shown below.

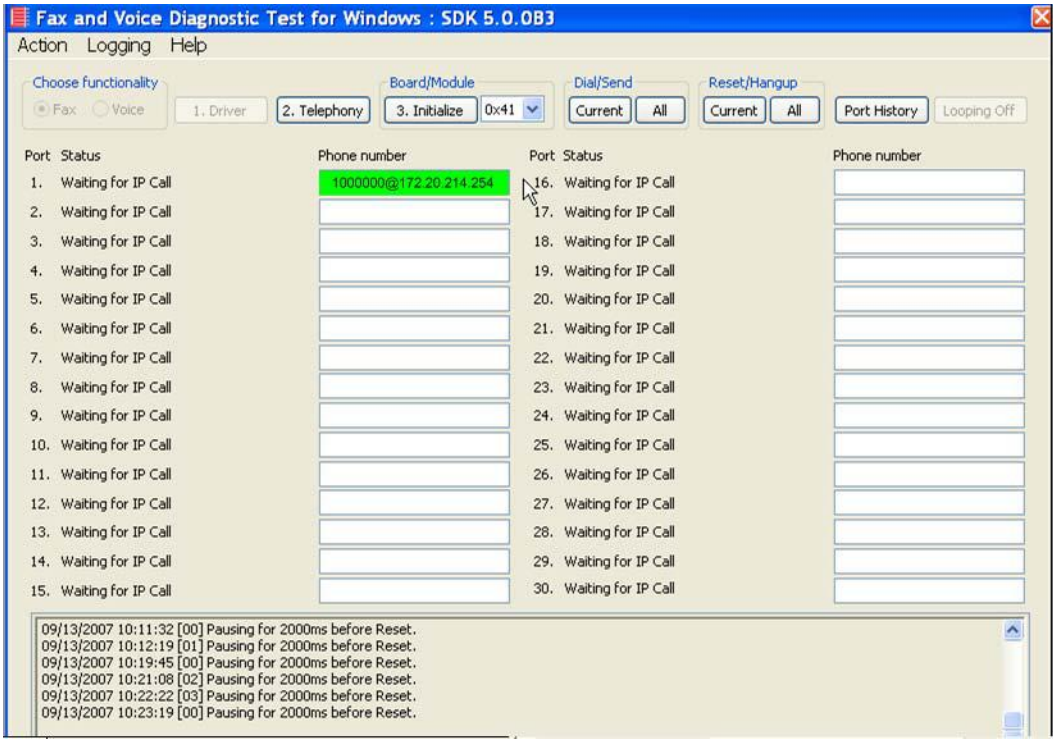

Figure 279. IP Address

3. Click Current to send the test fax.

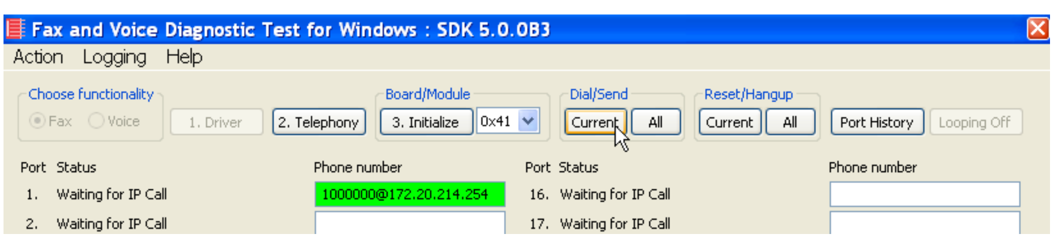

Figure 280. Send Test Fax

4. Note the status at the bottom of the screen. When Port 1 [00] pauses the call is complete. Click Port History.

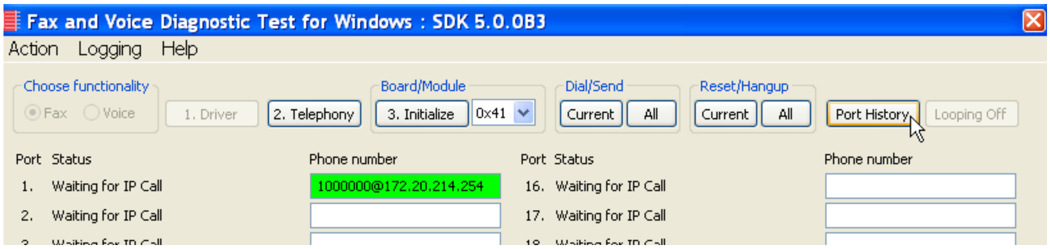

Figure 281. Port History

The following screen appears. Verify that the outbound call was successful.

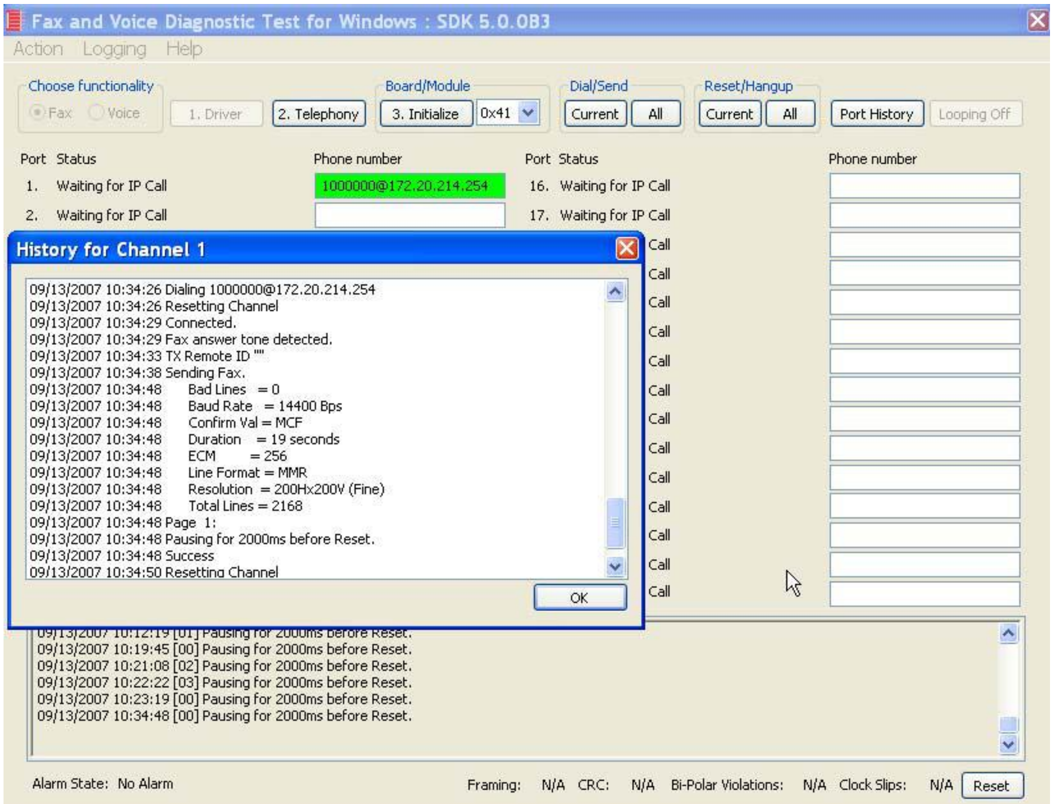

Figure 282. Success

Inbound Call

➢ **Follow the steps below to verify the inbound fax traffic from the gateway to the CUCM.**

1. Initiate a call from the PSTN using 519254000.
2. Watch all channels because a call should come in on one of the waiting channels

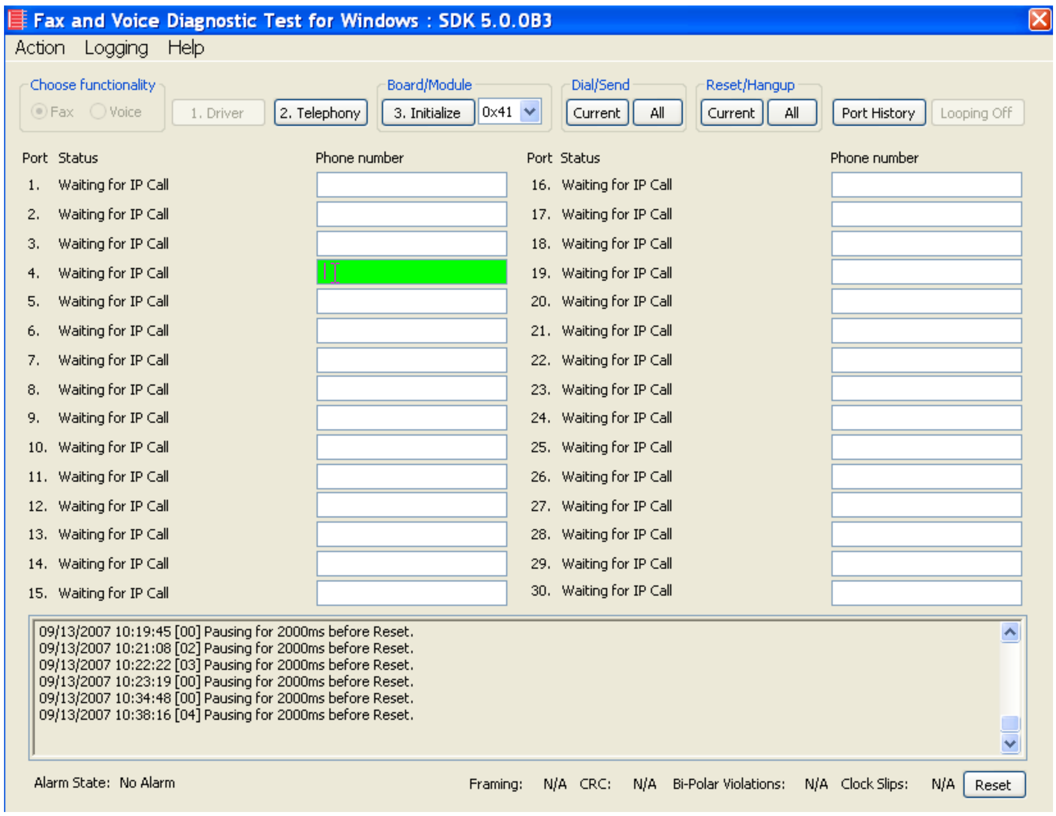

Figure 283. Inbound Call

3. Click the Phone number box on which the call came in and click the Port History button.

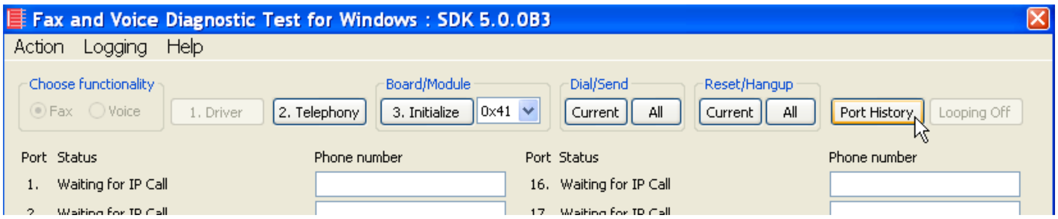

Figure 284. Port History

The following screen appears. Verify that the inbound call is successful.

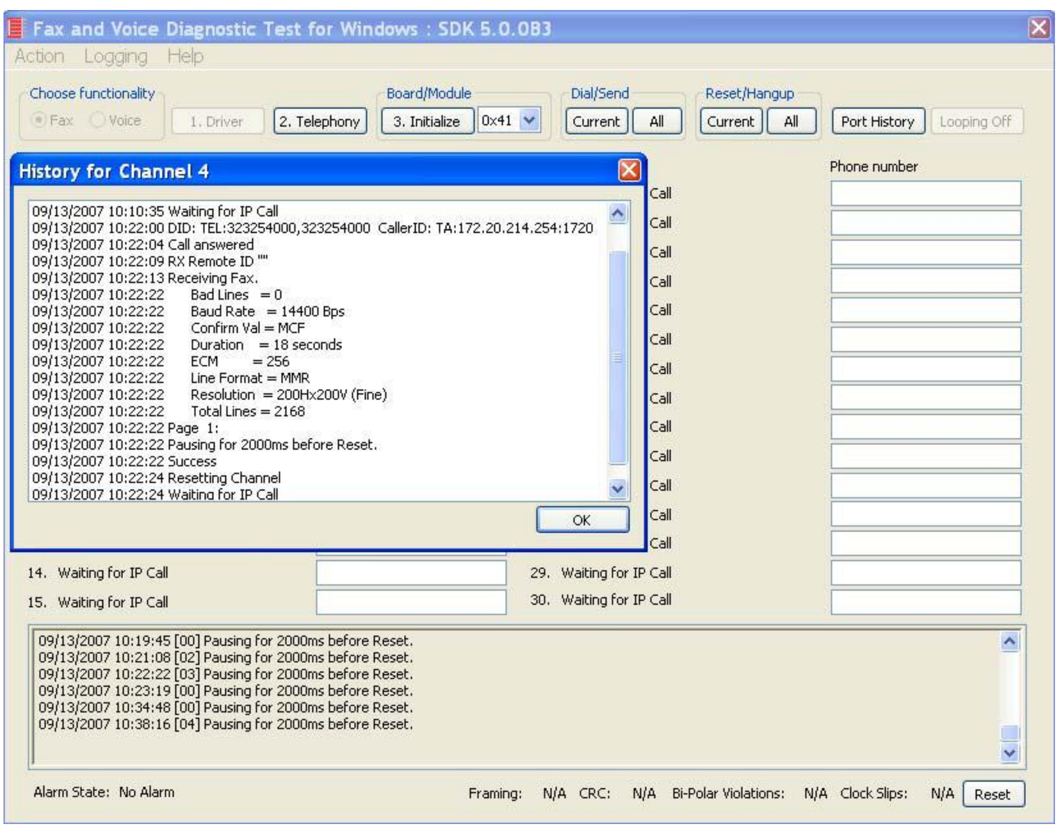

Figure 285. Call Successful

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10
Topology: H.323 - CUCM 6.0(1) - H.323

Introduction

In this topology, the CUCM (Version 6.0(1)) does all the call control. The gateway sends all signaling (H.323) to the CUCM which forwards it along to the Fax Server. The Fax Server responds to the CUCM and the CUCM forwards all signaling back to the gateway. Once the call is established, the fax traffic flows directly between the gateway and the Fax Server.

Note: The SR140 Software is used as an example Fax Server in this chapter. The TR1034 IP board can also be used as Fax Server.

The diagrams below show the IP addresses of the hardware which are also included in the procedure and configuration files referenced in this chapter.

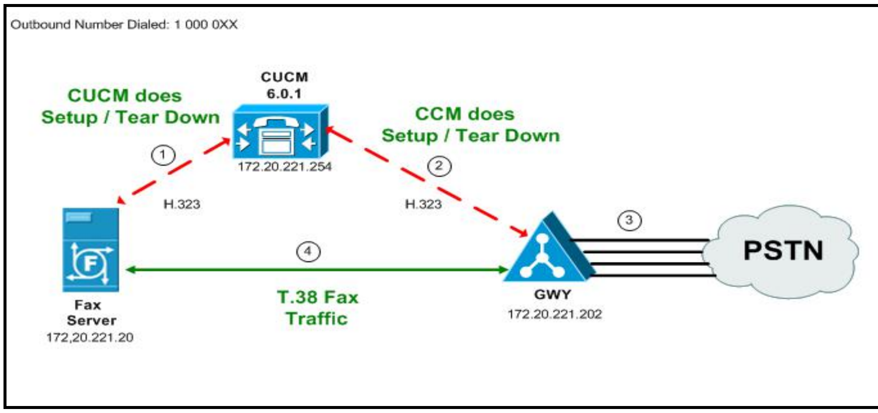

Figure 286. Outbound Call - CUCM Does Call Control - H.323 - CUCM 6.0(1) - H.323 Topology

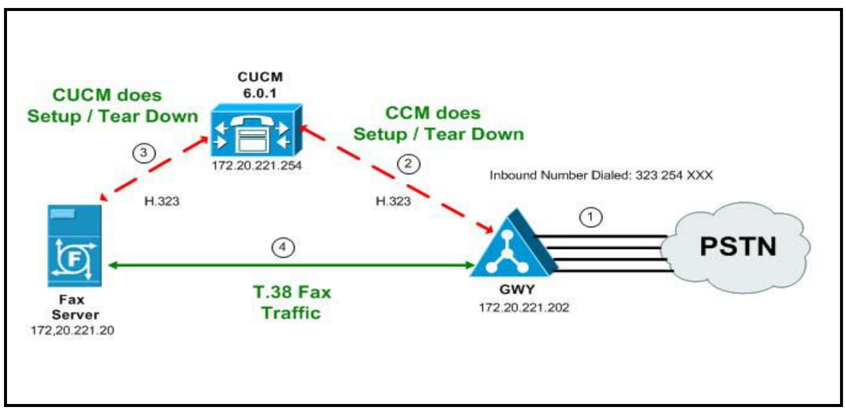

Figure 287. Inbound Call - CUCM Does Call Control - H.323 - CUCM 6.0(1) - H.323 Topology

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Configuration Sequence

Follow the sequence below when configuring the Dialogic Brooktrout FoIP with Cisco Products.

- *Configuring the Dialogic Brooktrout Fax Server on page 248*
- *Configuring the Cisco Media Gateway with IOS Commands on page 253*
- *Configuring the Unified Communications Manager on page 254*
  - *Configuring the Trunk Between CUCM and the Cisco Media Gateway on page 255*
  - *Configuring the Trunk Between the CUCM and the Fax Server on page 262*
  - *Configuring a Route Pattern for a Trunk to the Cisco Media Gateway on page 267*
  - *Configuring a Route Pattern for a Trunk to the Fax Server on page 272*
- *Verifying the Configuration on page 277*

Configuring the Dialogic Brooktrout Fax Server

➢ **Follow the steps below to configure the SR140 Software using the Dialogic Brooktrout Configuration Tool to support this network topology:**

1. Open the Dialogic Brooktrout Configuration Tool in Advanced Mode.

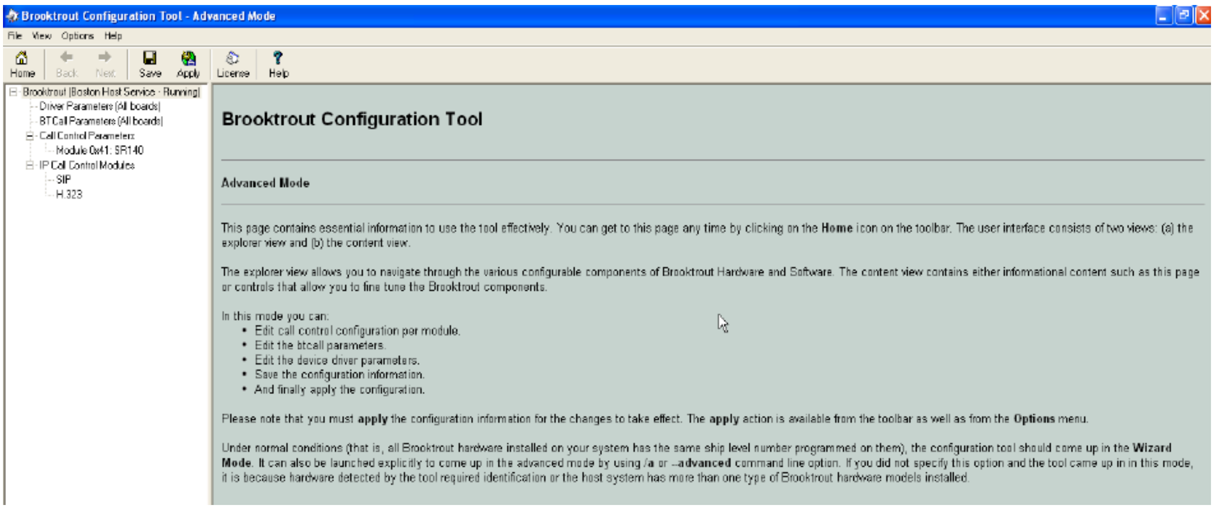

Figure 288. Dialogic Brooktrout Configuration Tool

2. Configure for the H.323 protocol as follows. Under IP Call Control Modules, click H.323 then click the IP Parameters tab.

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3. The following screen appears. Click Show Advanced.

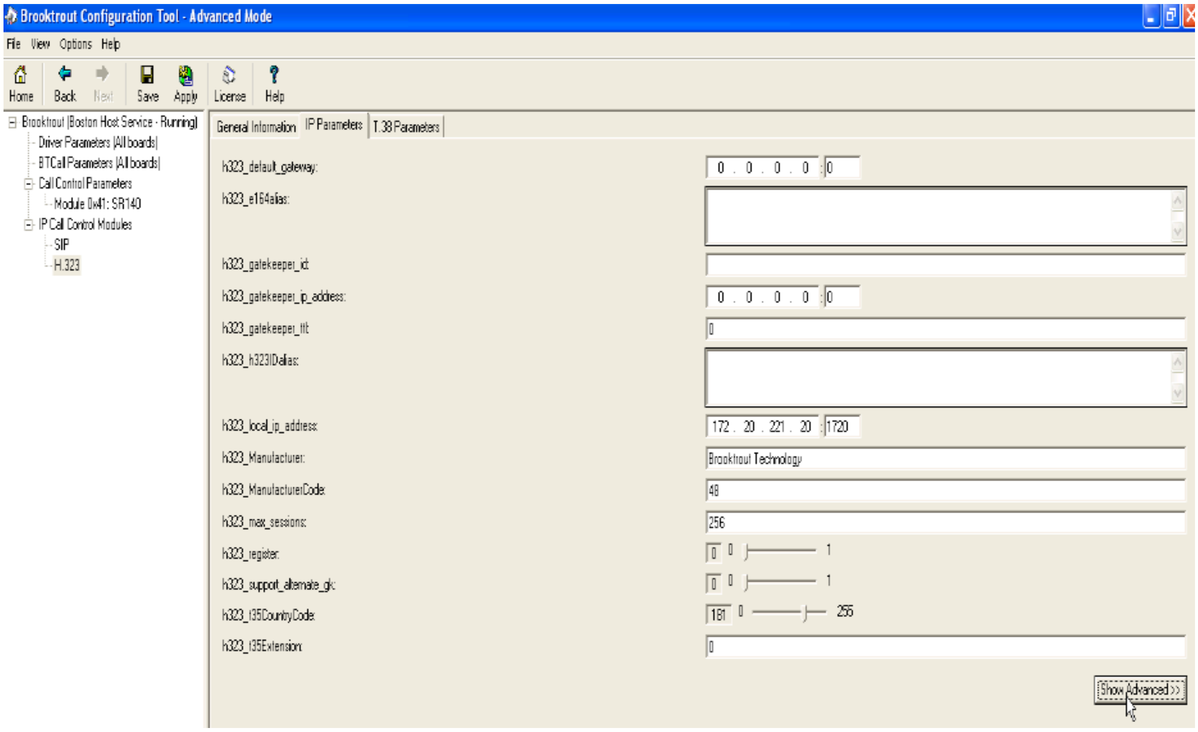

Figure 289. IP Parameters

4. The following screen appears. Complete the fields as indicated below.

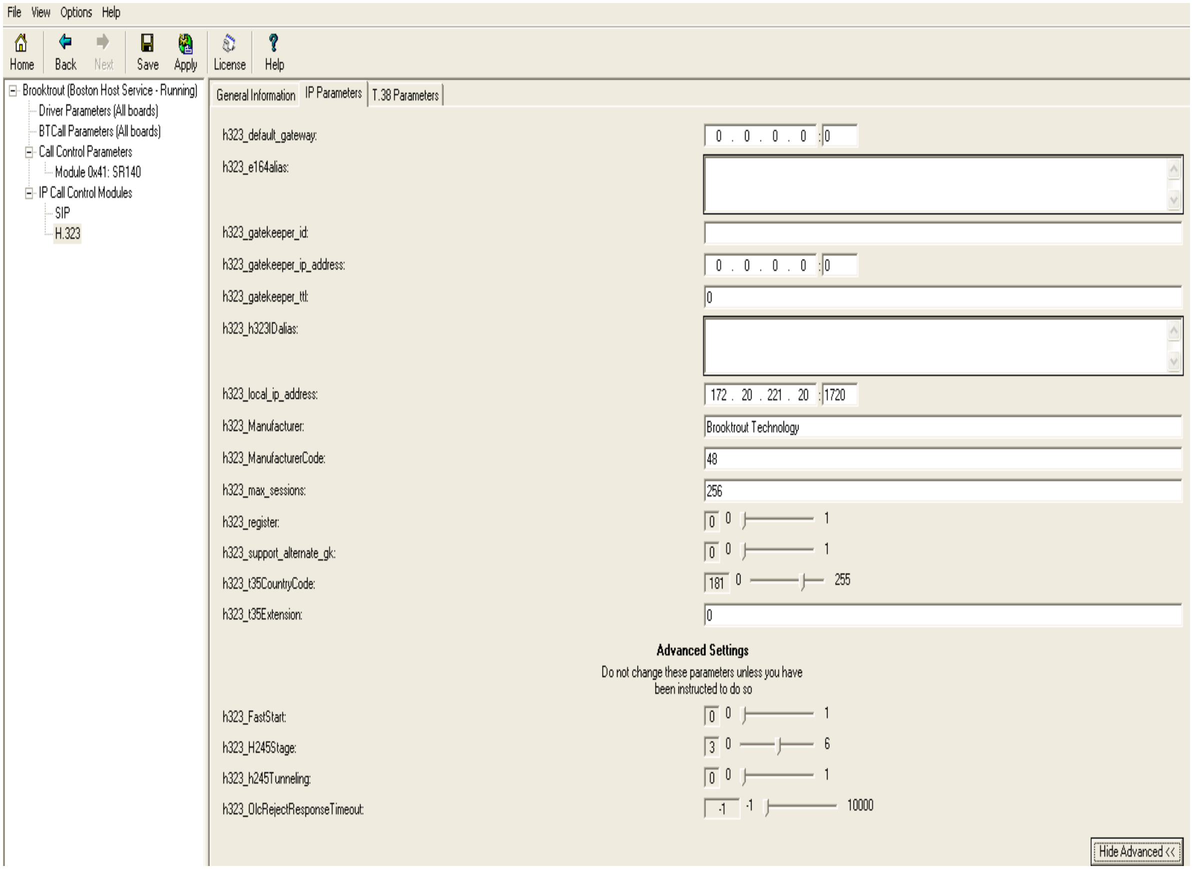

Figure 290. Advanced Settings

Note: When the h323_local_ip_address field is set to the default value (0.0.0.0:0), the system uses the IP address of the first Ethernet module in the system and port number 1720. If there are more than one ethernet modules in the Fax Server then specify the actual IP address of the desired ethernet module that will be used.

5. Set the fields below as follows to ensure that Cisco interoperability works correctly.
   - h323_FastStart = 0
   - h323_H245Stage = 3
   - h323_h245Tunneling = 0

6. Click T.38 Parameter and complete fields as indicated below.

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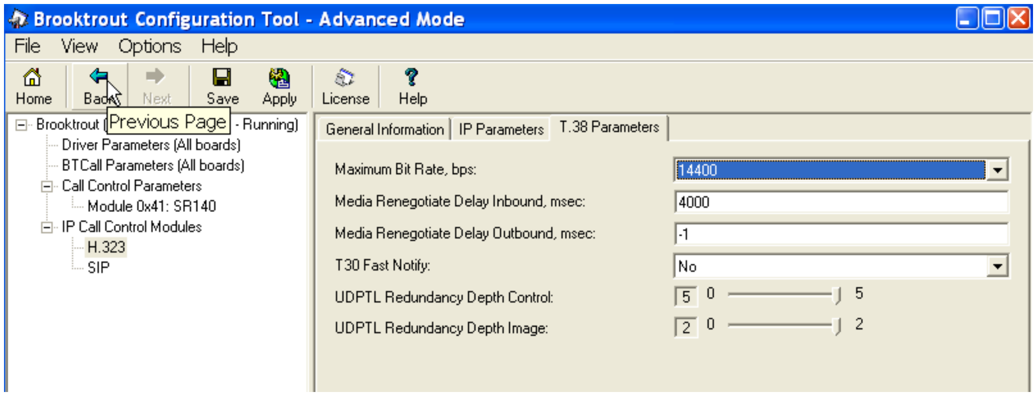

Figure 291. T.38 Parameters

7. Under Call Control Parameters, click Module 0x41: SR140 and select the Parameters tab. Complete the fields as indicated below.

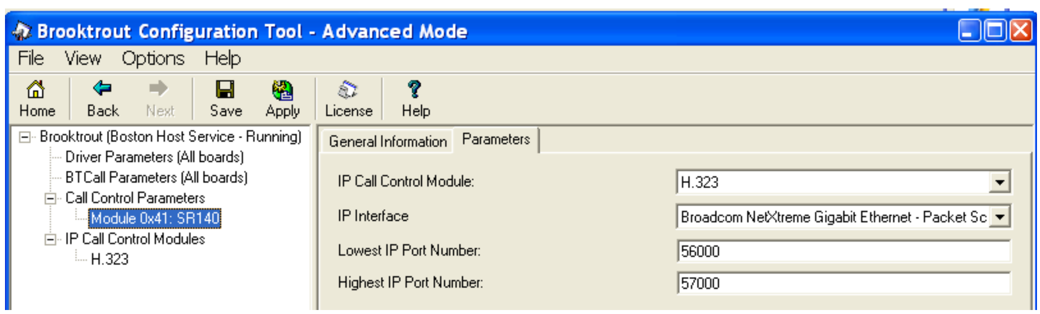

Figure 292. Module 0x41: SR140 Parameters

8. Select the desired network interface controller (NIC) for the IP Interface field.
9. Click Apply.

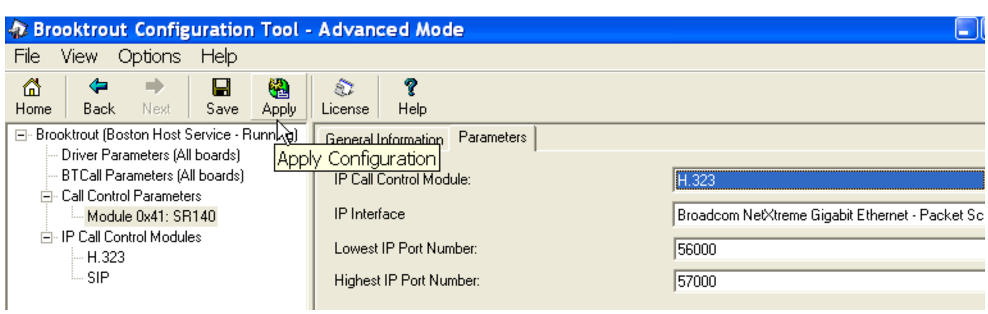

Figure 293. Apply Configuration

Configuration Files

Use the configuration files in the sections below to help you configure the SR140 Software:

Appendix I, SR140 Configuration Files on page 538

Configuring the Cisco Media Gateway with IOS Commands

Configuring the Cisco Media Gateway involves the following.

- Enable T.38 support
- Configure line card interface
- Configure Dial-Peers (VoIP and POTS)

See the configuration files in *Appendix I, Cisco Gateway-Config on page 542* as a guide to configure your Cisco Media Gateway.

Configuring the Unified Communications Manager

This procedure includes the following:

- *Appendix O, Configuring Service Activation on page 646*
- *Appendix O, Configuring System Service Parameters on page 648*
- *Configuring the Trunk Between CUCM and the Cisco Media Gateway on page 255*
- *Configuring the Trunk Between the CUCM and the Fax Server on page 262*
- *Configuring a Route Pattern for a Trunk to the Cisco Media Gateway on page 267*
- *Configuring a Route Pattern for a Trunk to the Fax Server on page 272*

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Configuring the Trunk Between CUCM and the Cisco Media Gateway

➢ **Follow the steps below.**

1. Log into the Cisco Unified Communications Manager Administration.

Figure 294. Cisco Unified Communications Manager Administration

2. From the Device menu, select Trunk.

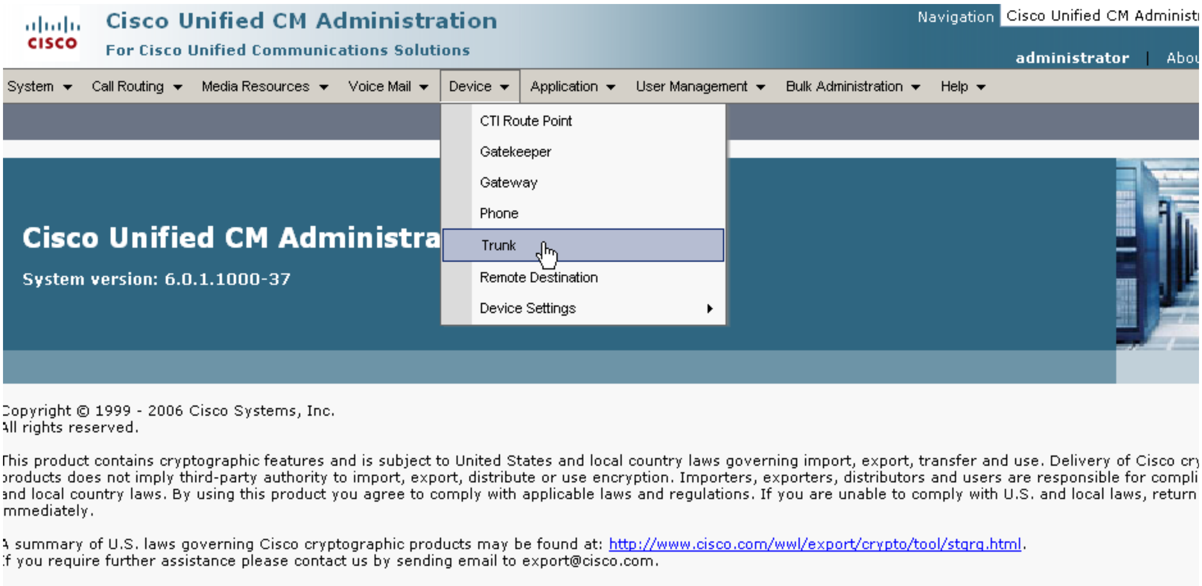

Figure 295. Trunk

3. The following screen appears. Click Add New.

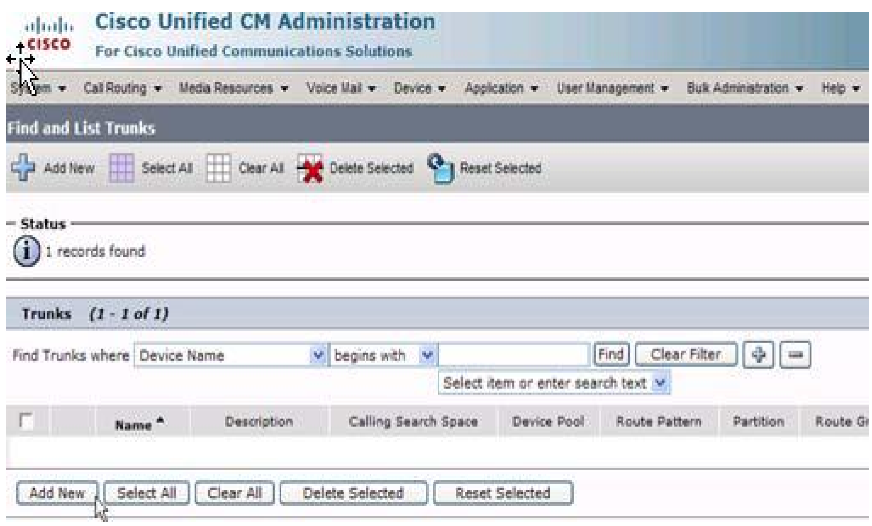

Figure 296. Add New Trunk

The following screen appears.

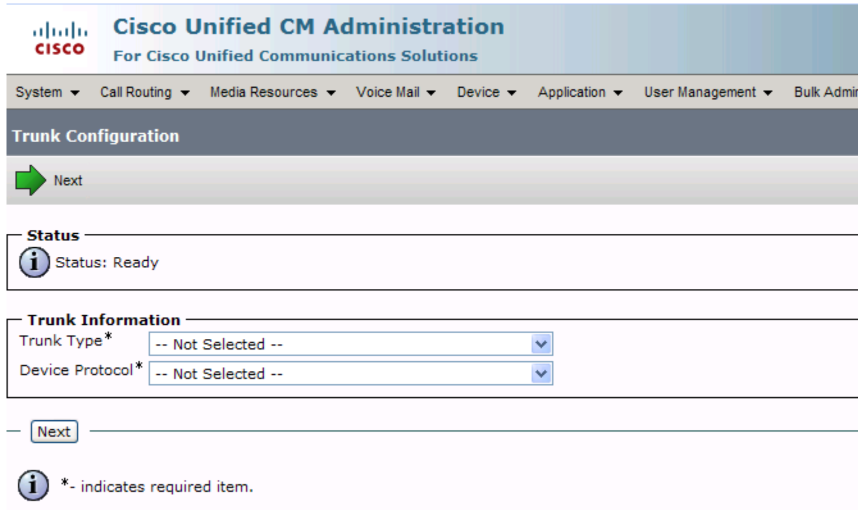

Figure 297. Trunk Configuration

4. Select Intercluster Trunk (Non-Gatekeeper Controlled) for the Trunk Type.

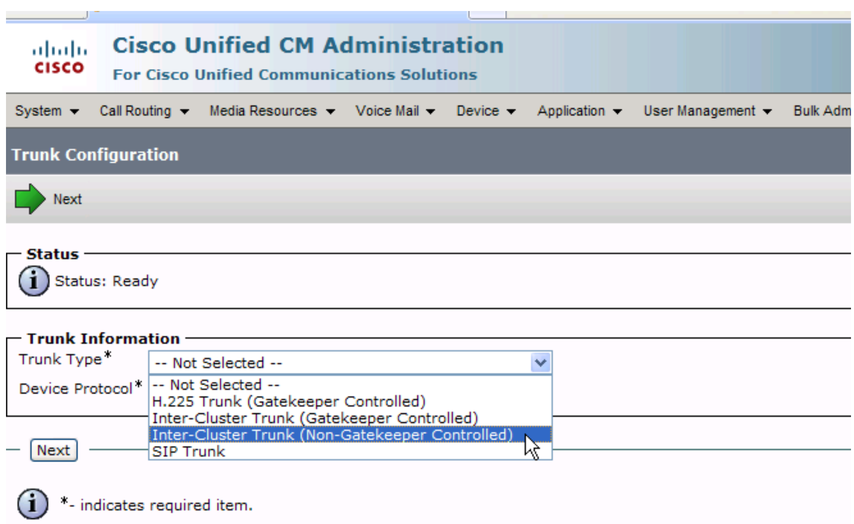

Figure 298. Trunk Type

The Device Protocol defaults to Inter-Cluster Trunk.

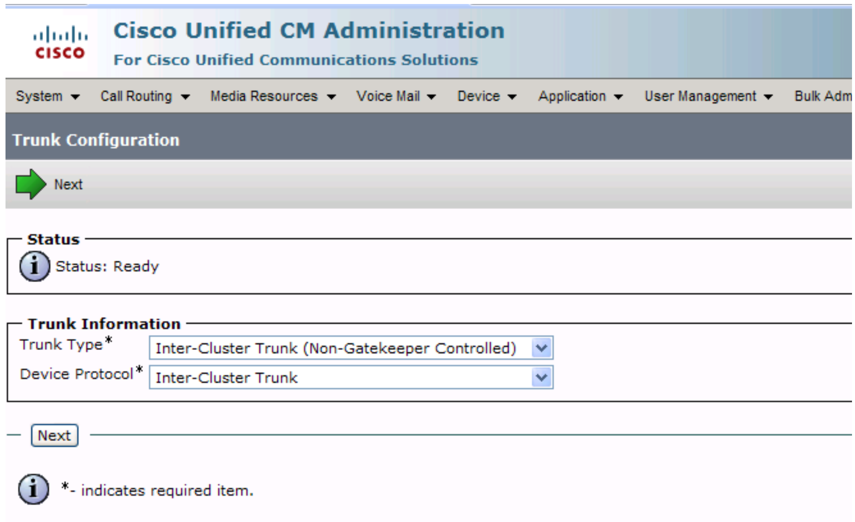

Figure 299. Inter-Cluster Trunk Device Protocol

5. Click Next.

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6. Complete the screen as indicated below.

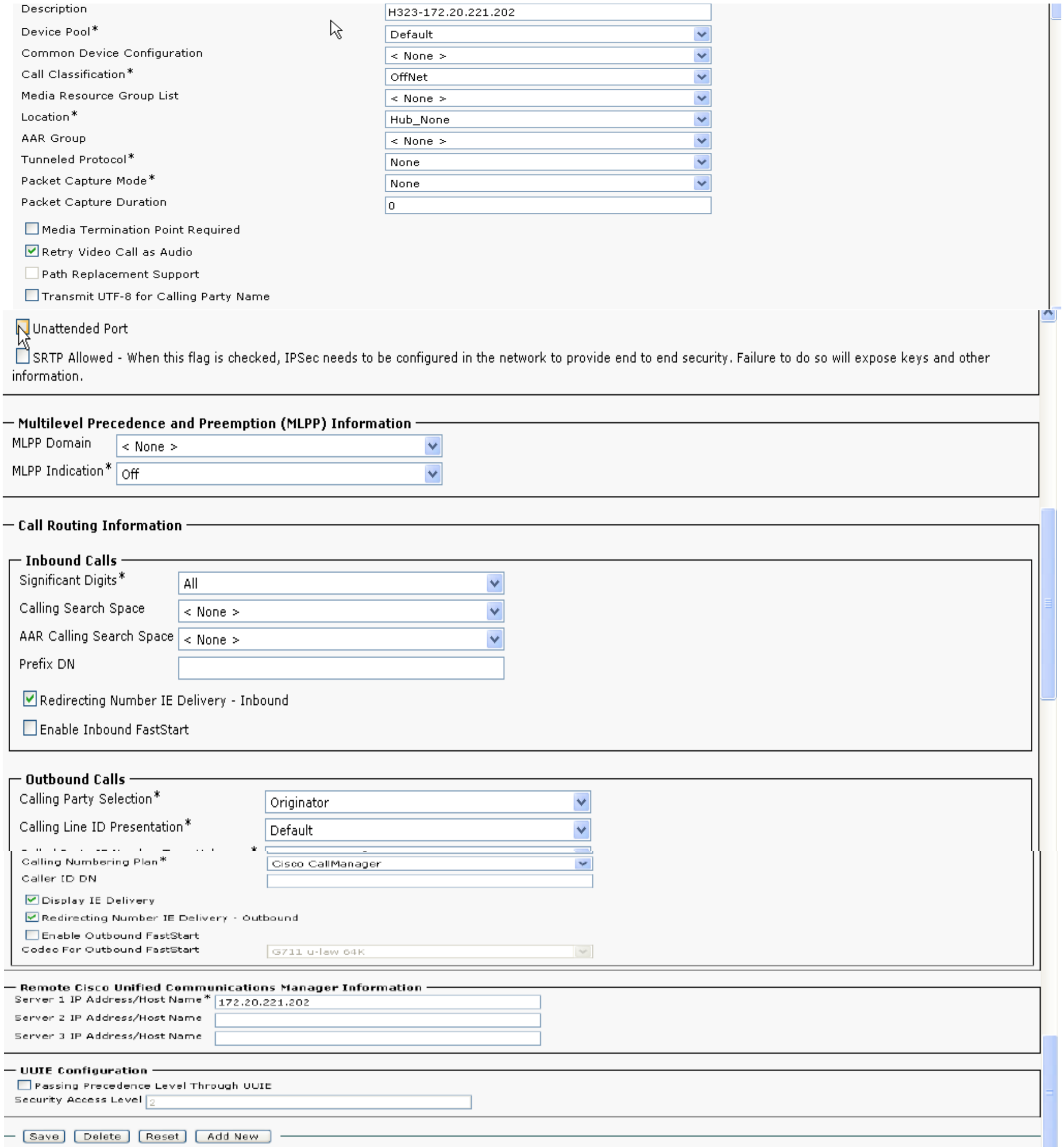

Figure 300. Trunk Configuration Data

7. Click Save.

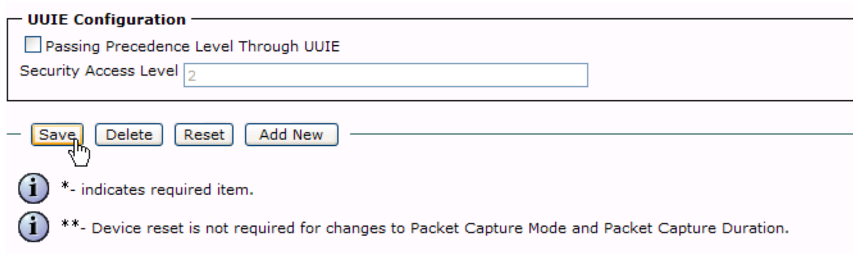

Figure 301. Save

8. Click OK.

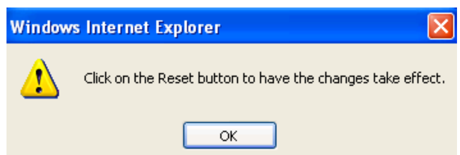

Figure 302. OK

9. Click Reset.

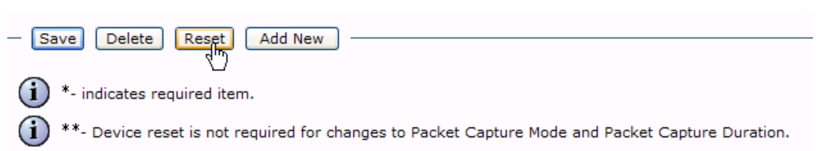

Figure 303. Reset

The following screen appears.

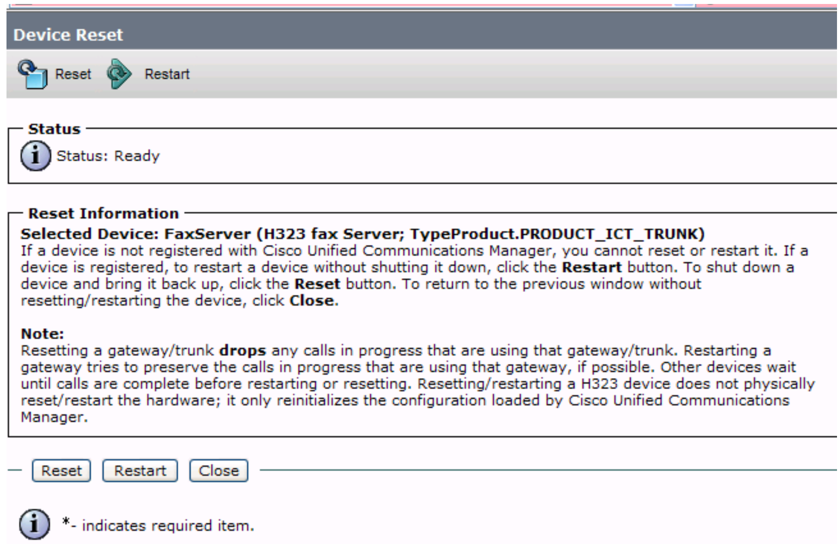

Figure 304. Device Reset

10. Click Close.

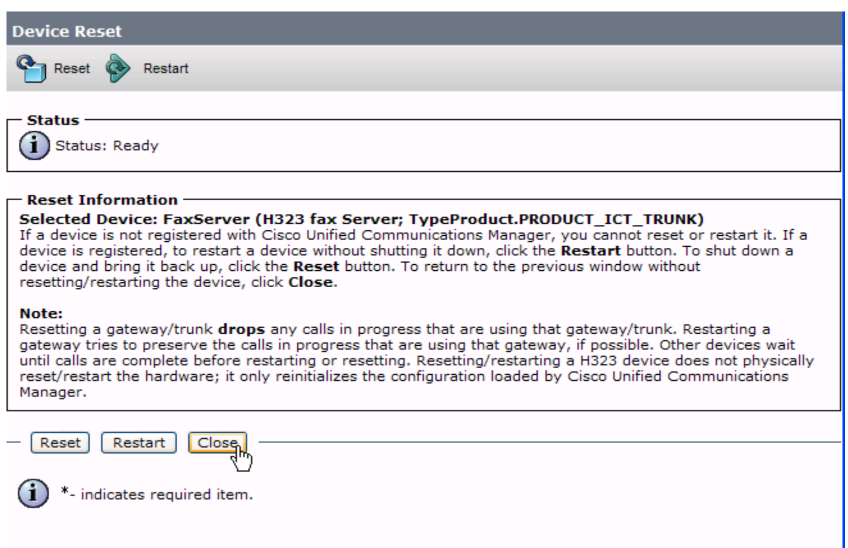

Figure 305. Close

Configuring the Trunk Between the CUCM and the Fax Server

➢ **Follow the steps below.**

1. From the following screen, click Add New.

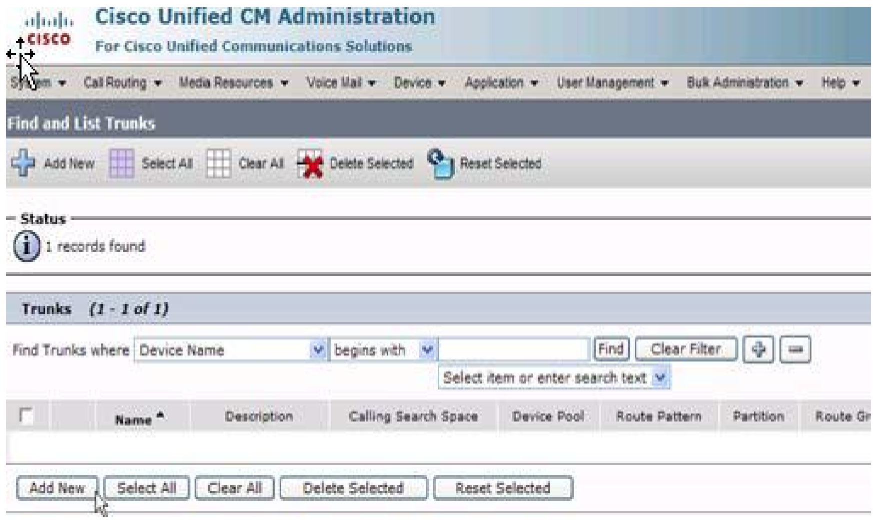

Figure 306. Add New Trunk

The following screen appears.

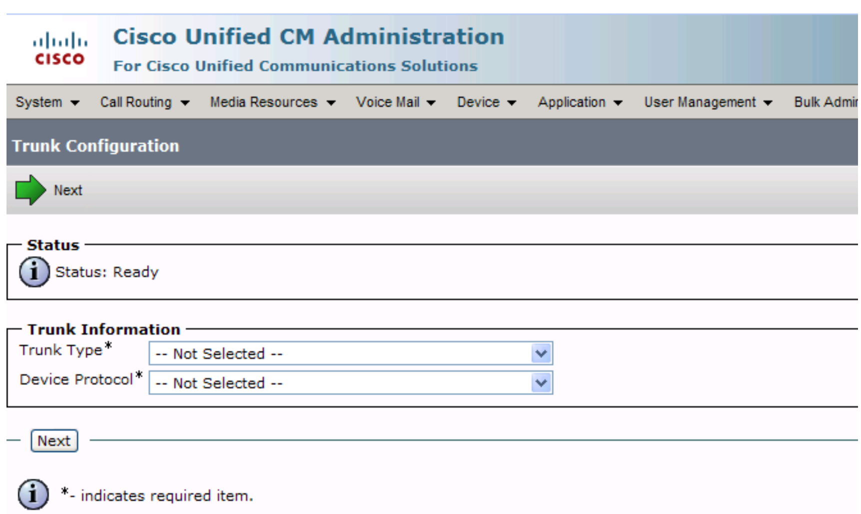

Figure 307. Trunk Configuration

2. Select Intercluster Trunk (Non-Gatekeeper Controlled) for the Trunk Type.

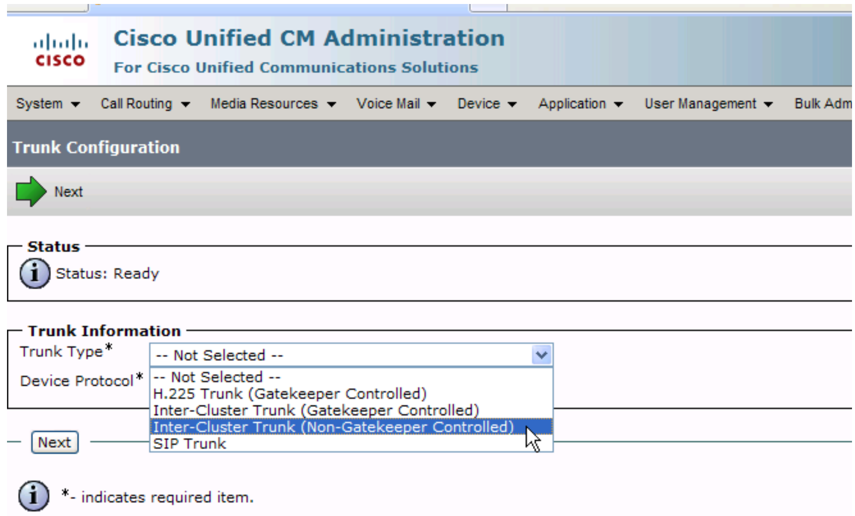

Figure 308. Trunk Type

The Device Protocol defaults to Inter-Cluster Trunk.

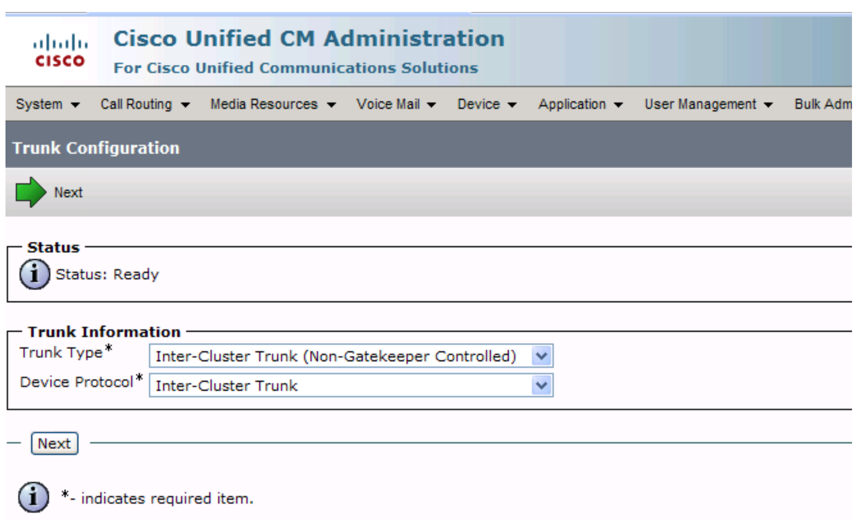

Figure 309. Inter-Cluster Trunk Device Protocol

3. Click Next.

4. Complete the screen as indicated below.

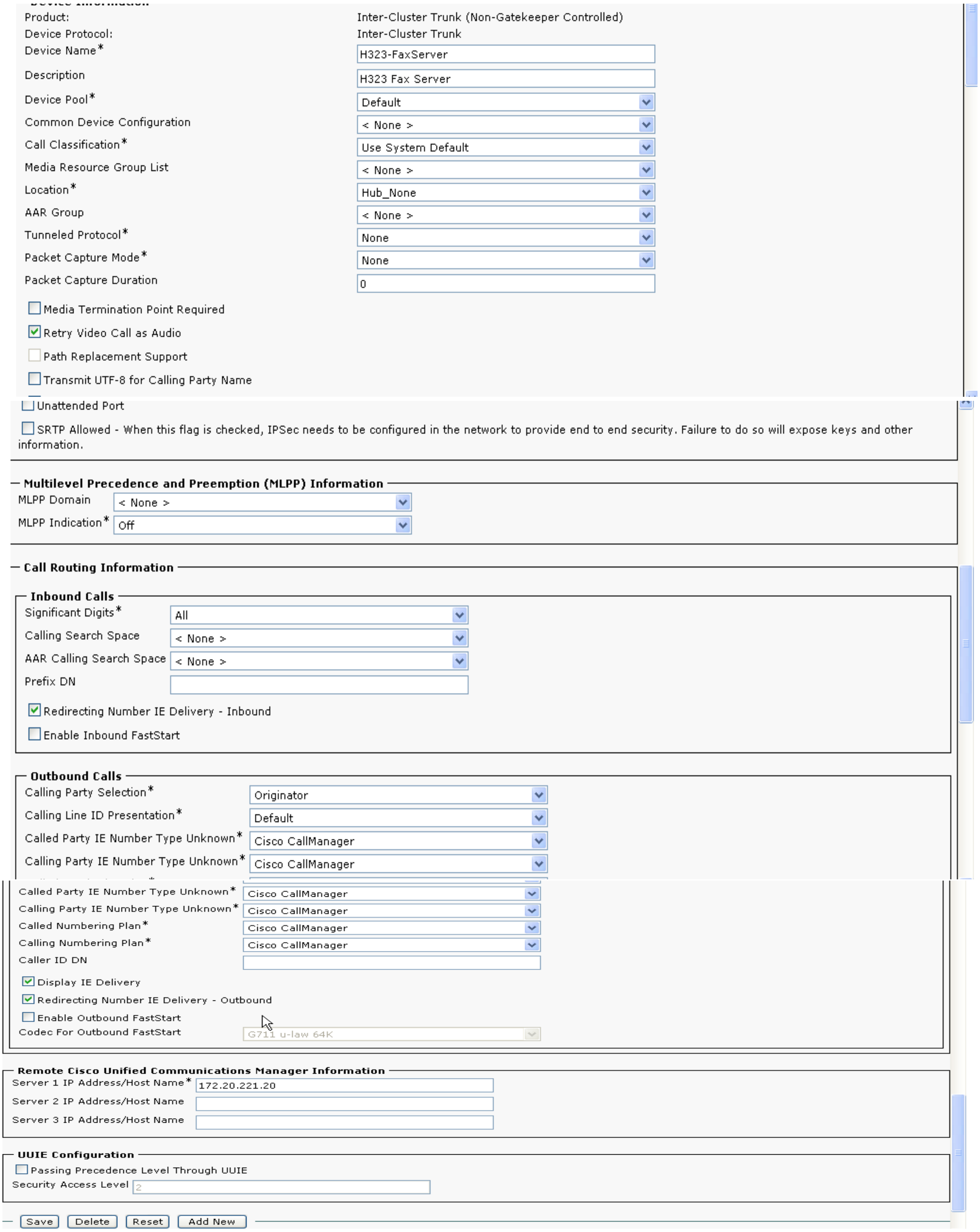

Figure 310. Trunk Configuration Data

5. Click Save.

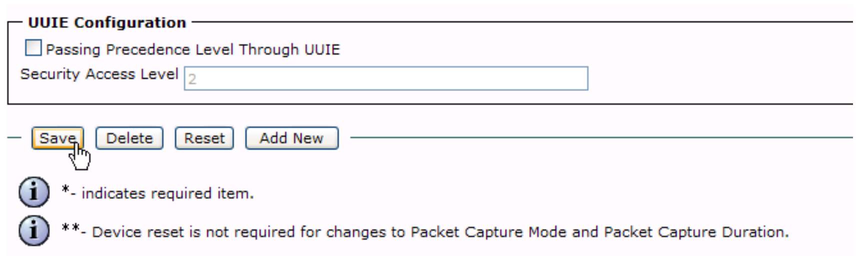

Figure 311. Save

6. Click OK.

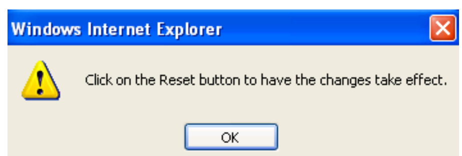

Figure 312. OK

7. Click Reset.

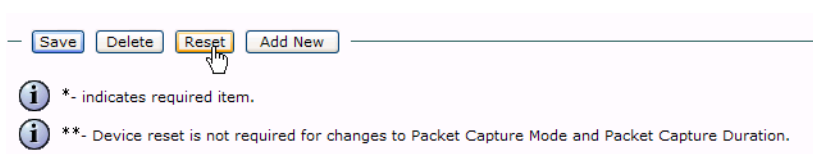

Figure 313. Reset

The following screen appears.

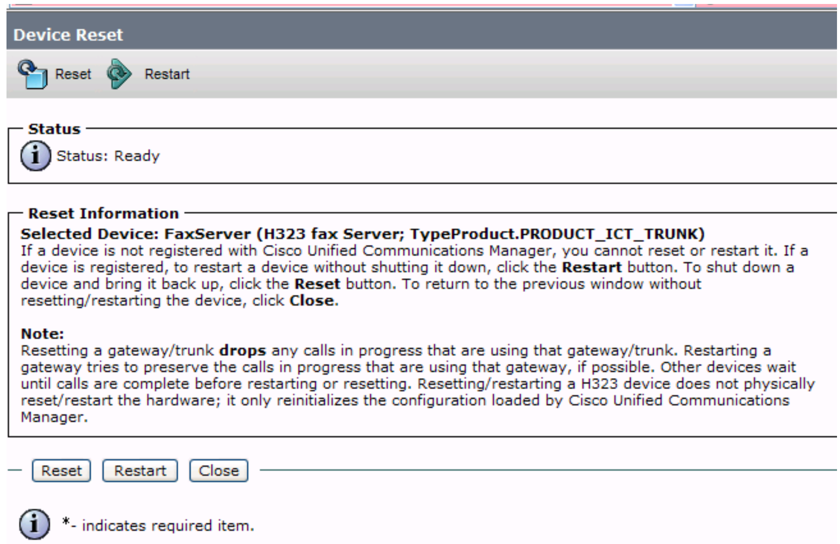

Figure 314. Device Reset

8. Click Close.

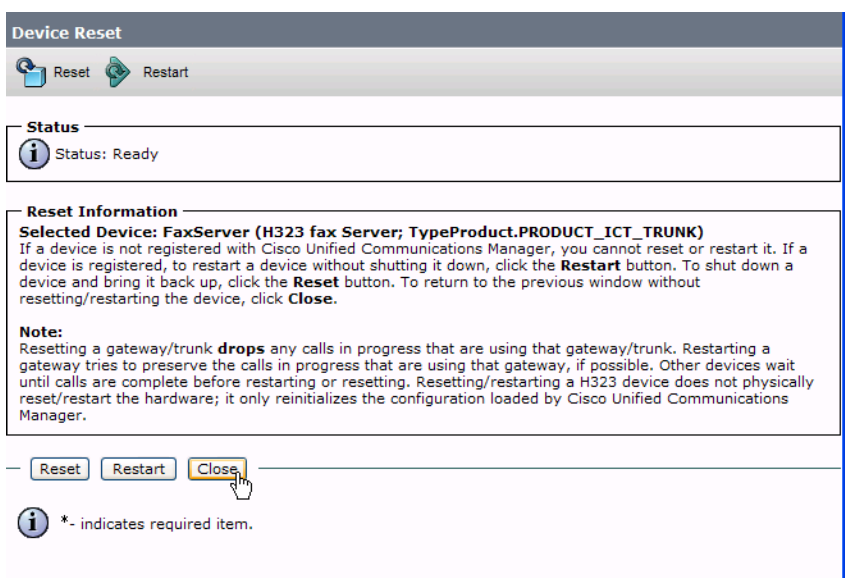

Figure 315. Close

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Configuring a Route Pattern for a Trunk to the Cisco Media Gateway

➢ **Follow the steps below to configure a route pattern for the trunk.**

1. From the Call Routing menu, click Route/Hunt, Route Pattern.

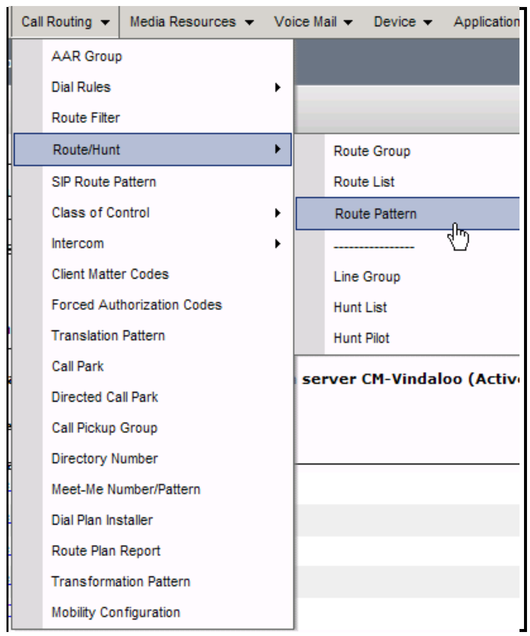

Figure 316. Route Pattern

2. The following screen appears. Click Add New.

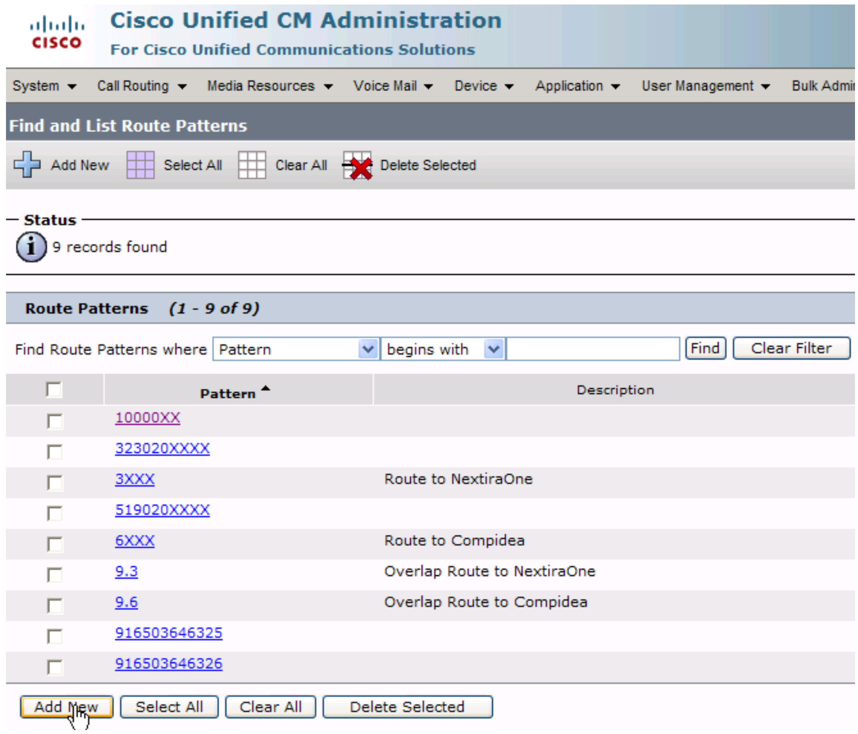

Figure 317. Add New

3. Complete the screen as follows.

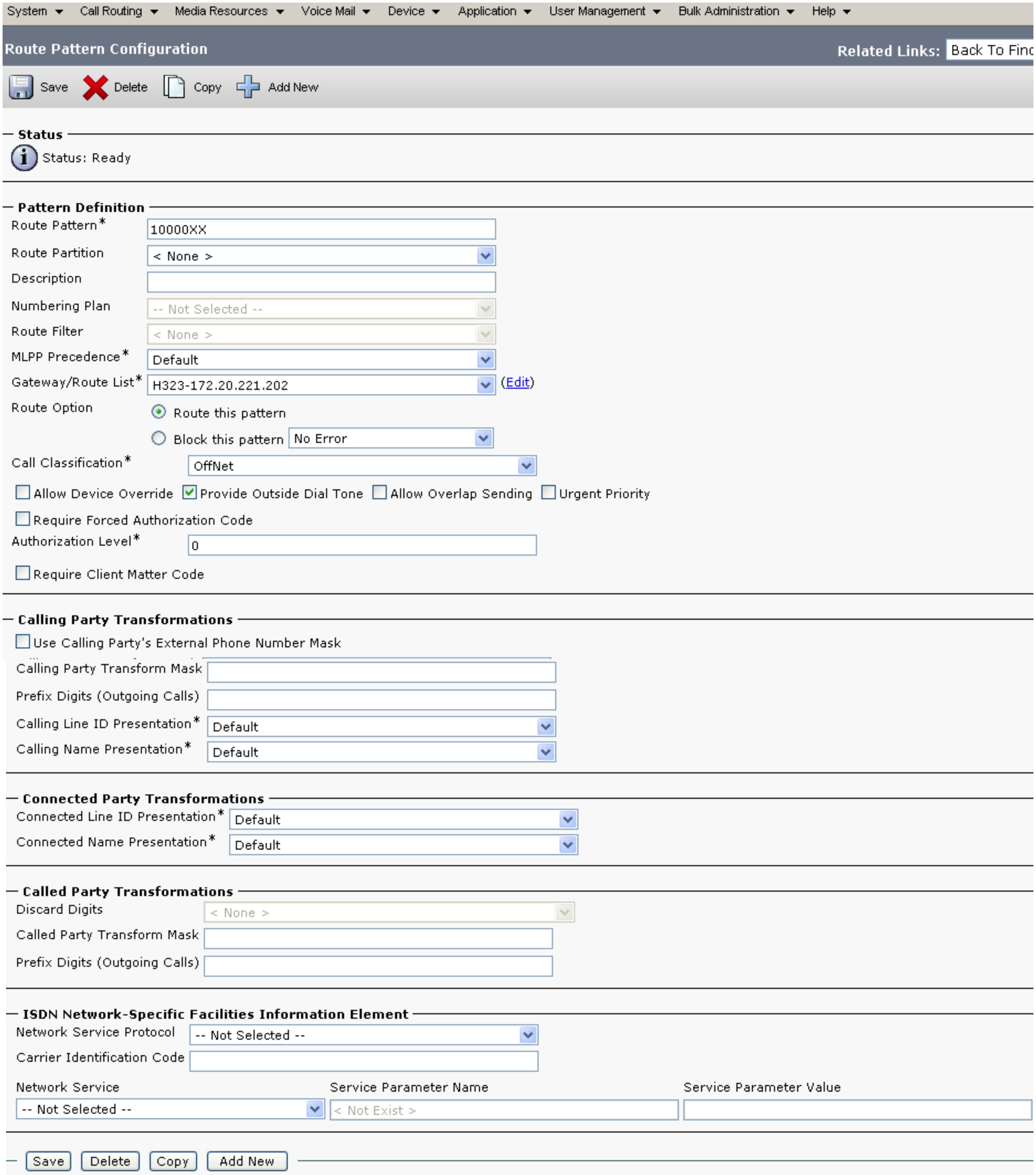

Figure 318. Route Pattern Configuration Data

4. Click Save.

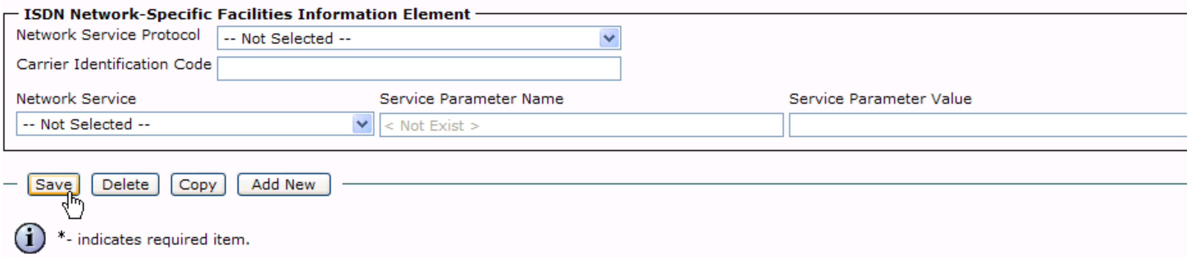

Figure 319. Save

5. The following appears because you did not required a Forced Authorization Code. Click OK.

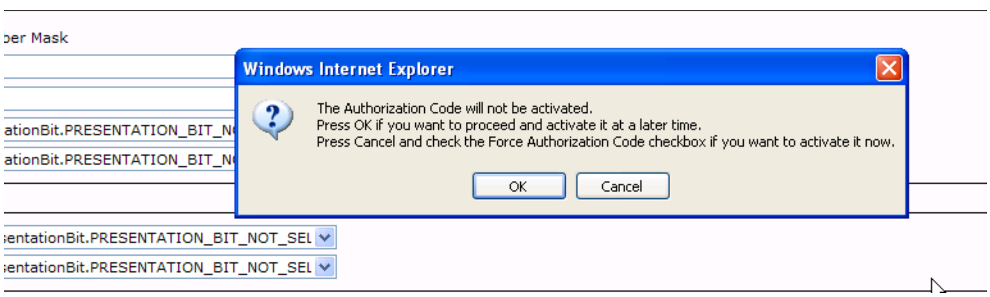

Figure 320. OK

6. Click OK.

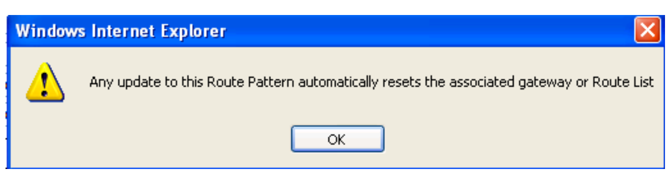

Figure 321. OK

7. Select Back To Find/List and click Go. Confirm that the new route pattern appears in the list.

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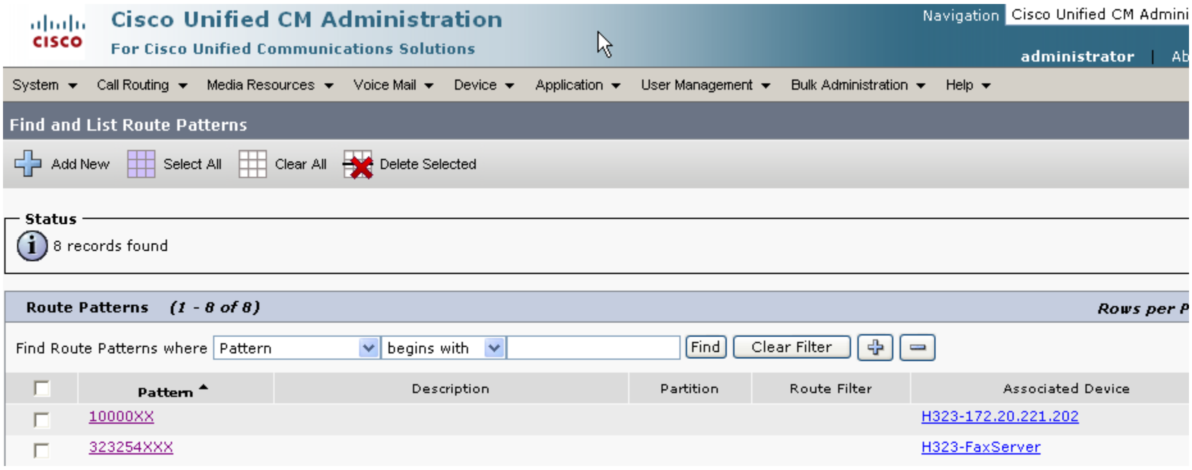

Figure 322. New Route Pattern

Configuring a Route Pattern for a Trunk to the Fax Server

➢ **Follow the steps below:**

1. From the Call Routing menu, click Route/Hunt, Route Pattern.

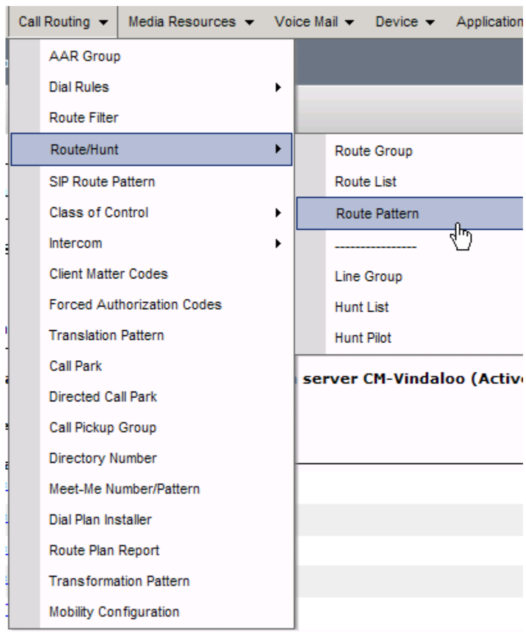

Figure 323. Route Pattern

2. The following screen appears. Click Add New.

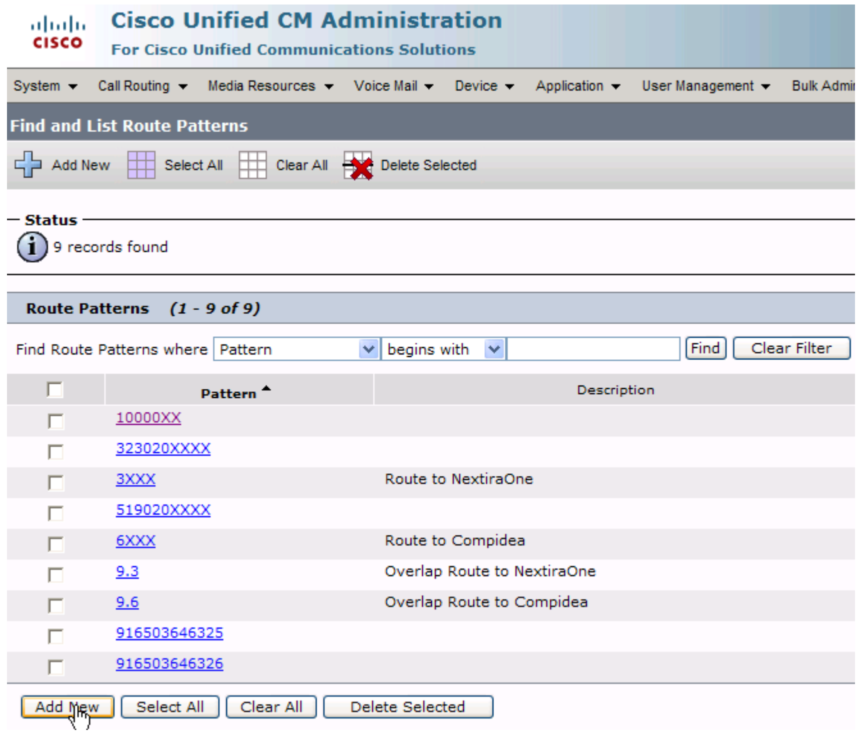

Figure 324. Add New

3. Complete the screen as follows.

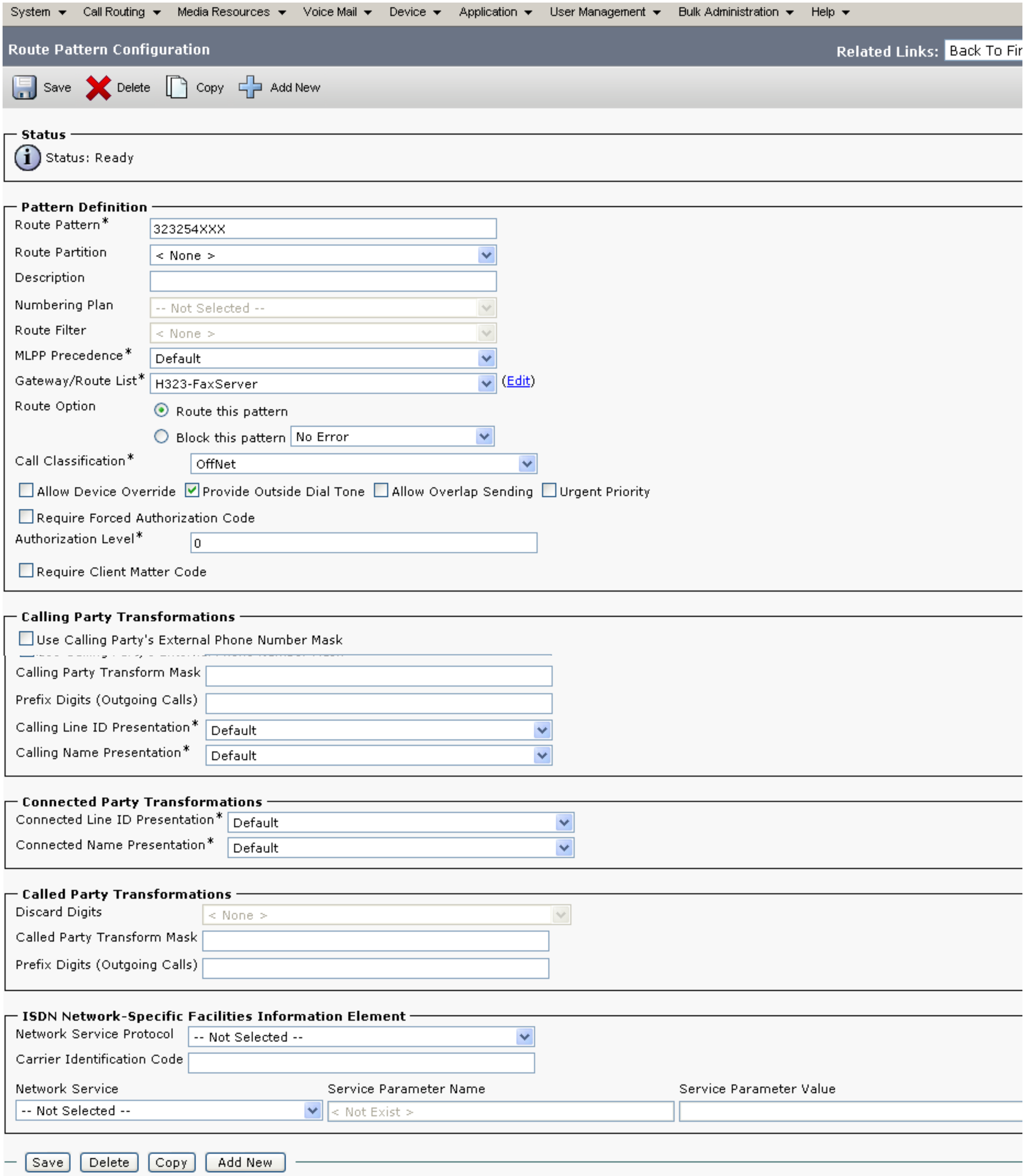

Figure 325. Route Pattern Configuration Data

4. Click Save.

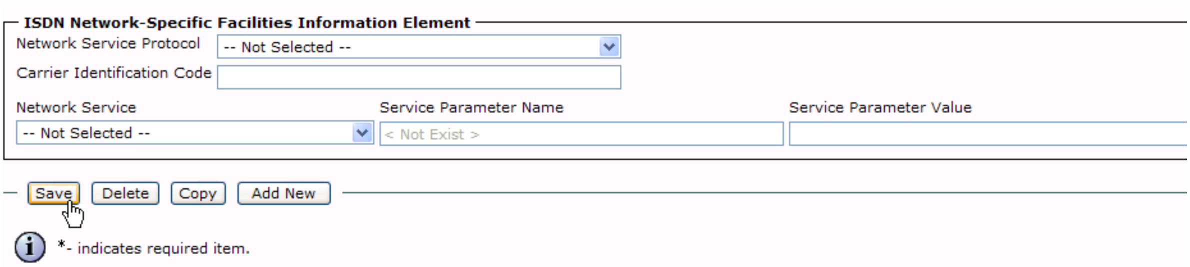

Figure 326. Save

5. The following appears because you did not required a Forced Authorization Code. Click OK.

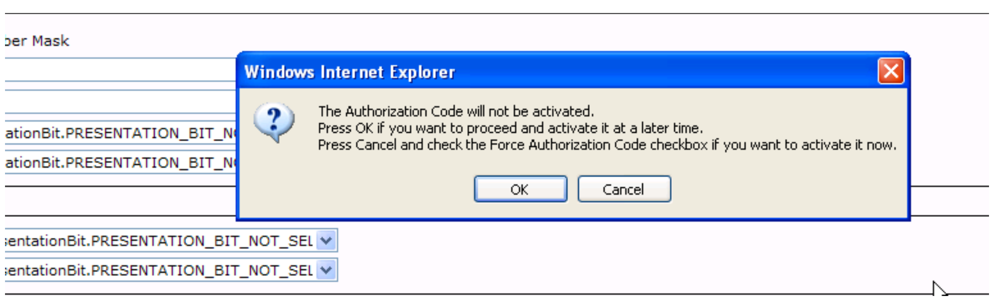

Figure 327. OK

6. Click OK.

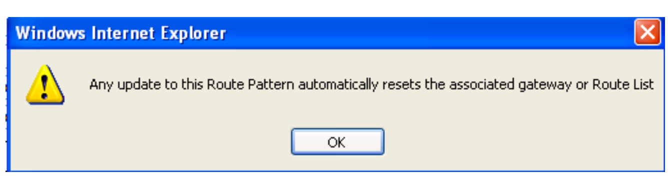

Figure 328. OK

7. Select Back To Find/List and click Go. Confirm that the new route pattern appears in the list.

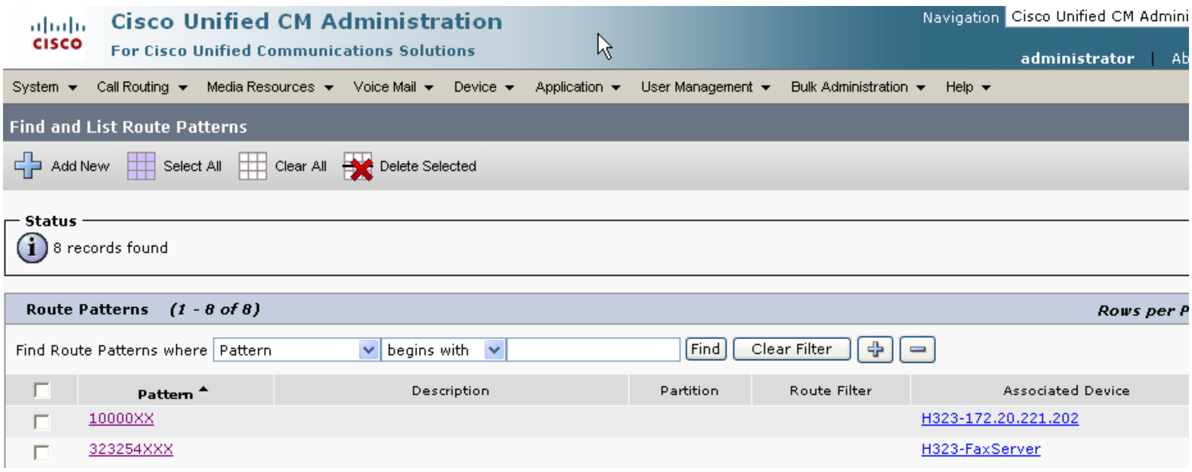

Figure 329. New Route Pattern

Verifying the Configuration

The Dialogic Brooktrout Fax and Voice Diagnostic Test utility allows you to test the configuration you completed. You can download the utility and instructions from the technical support site.

http://www.cantata.com/support/lanfax/fax_testing_diagnostic.cfm

This test verifies the following:

- SR140 Software configuration
- Cisco Media Gateway configuration
- Trunks and Route Patterns on the CUCM

Verifying the Fax Server Basic Configuration

Before continuing, refer to *Appendix A, Verifying Basic Configuration - Fax Server 172.20.221.20 on page 418* to verify that the Fax Server software is installed correctly.

Outbound Call

➢ **Follow the steps below to verify outbound fax traffic from the CUCM to the gateway.**

1. Open the Fax and Voice Diagnostic Test utility. The following screen appears. Click the 2.Telephony button (press the Apply button in the Brooktrout Configuration Tool after configuring). Click the 3.Initialize button.

.

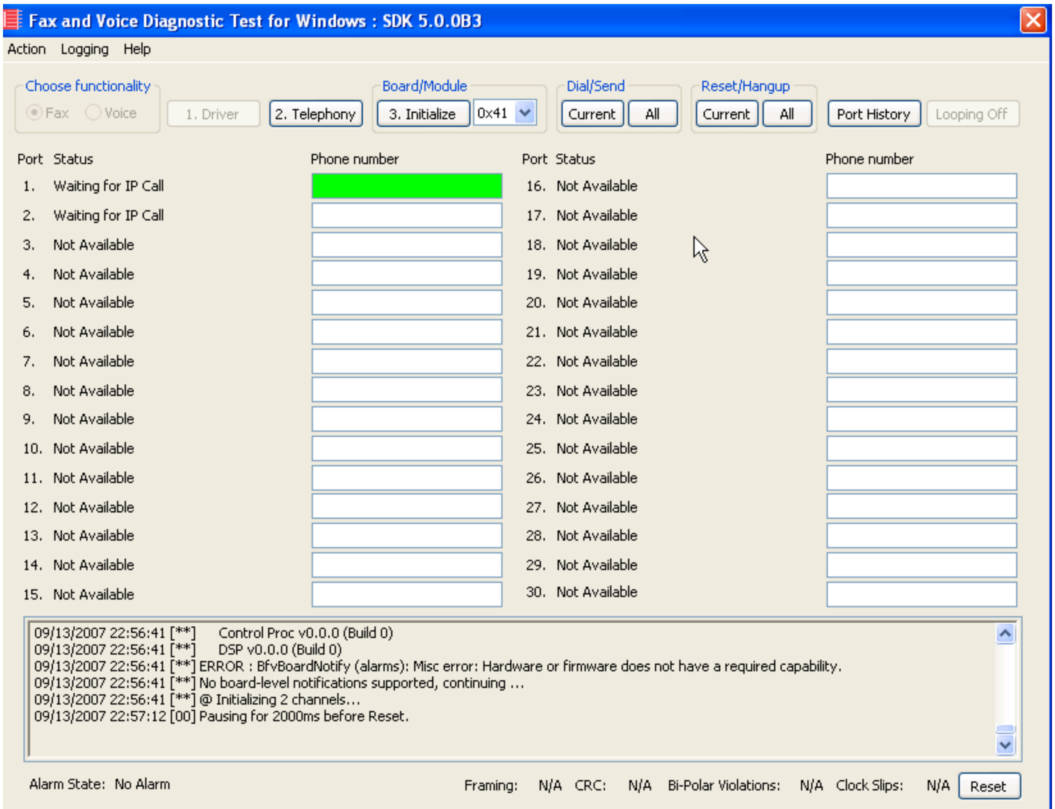

Figure 330. Fax Diagnostic Test

2. Enter the destination phone number and the IP address of the CUCM as shown below.

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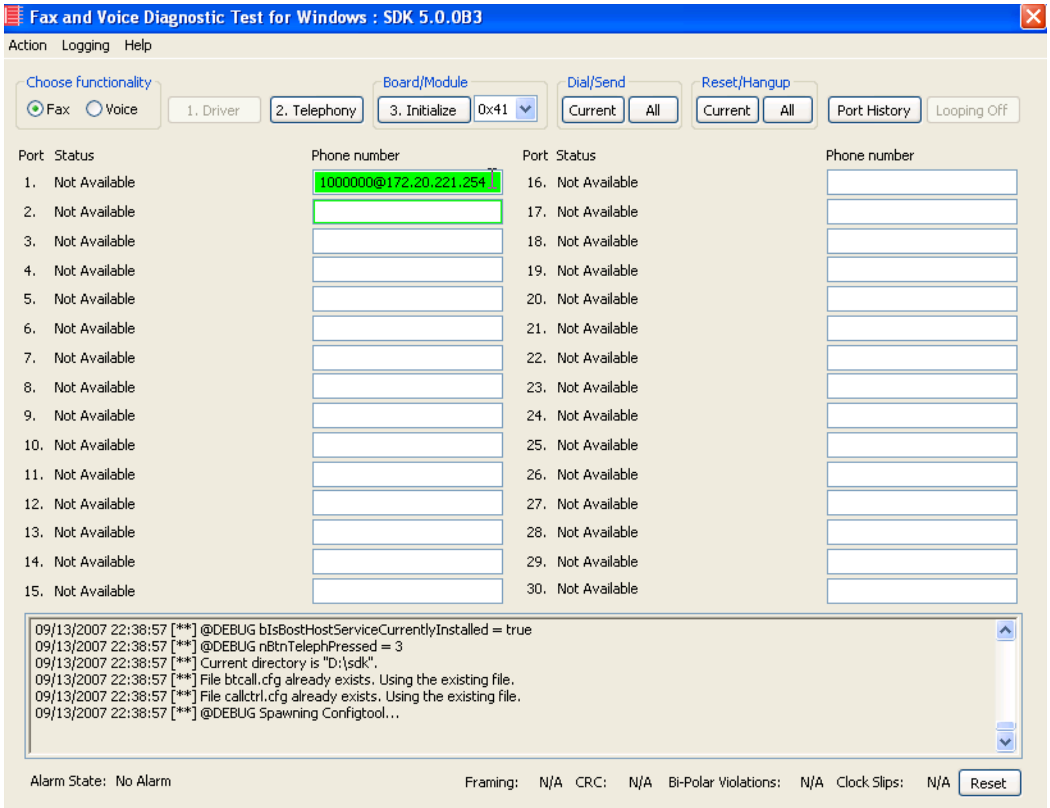

Figure 331. IP Address

3. Click Current to send the test fax.

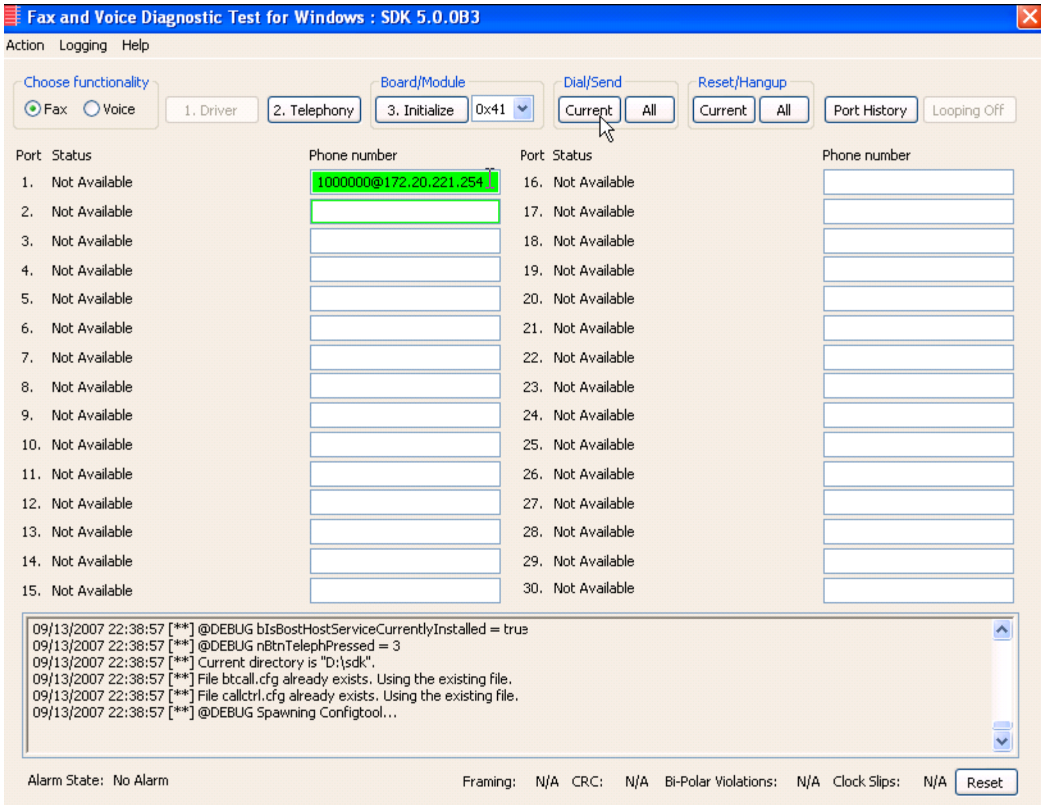

Figure 332. Current

4. When Port 1 [00] pauses the call is complete. Click Port History. The following screen appears. Verify that the outbound call was successful.

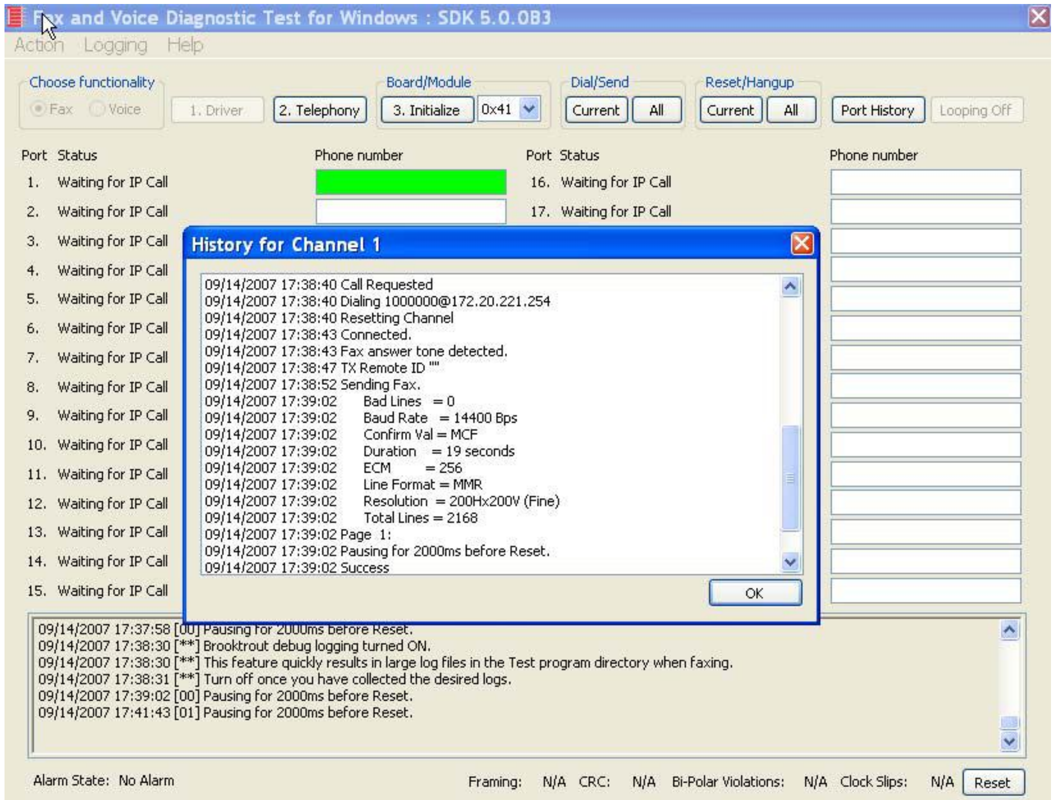

Figure 333. Outbound Call Successful

Inbound Call

➢ **Follow the steps below to verify the inbound fax traffic from the gateway to the CUCM.**

1. Initiate a call from the PSTN using 323254000.
2. Watch all channels because a call should come in on one of the waiting channels.

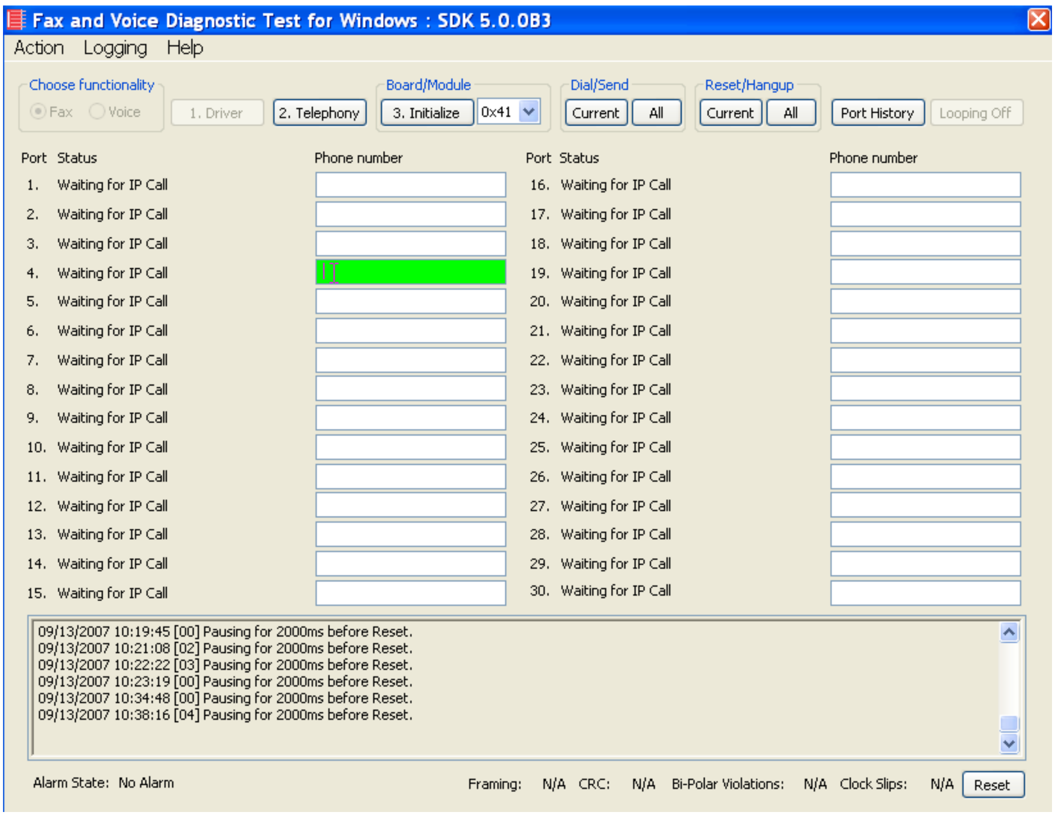

Figure 334. Fax Diagnostic Test

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3. Click the Phone number box on which the call came in and click the Port History button.

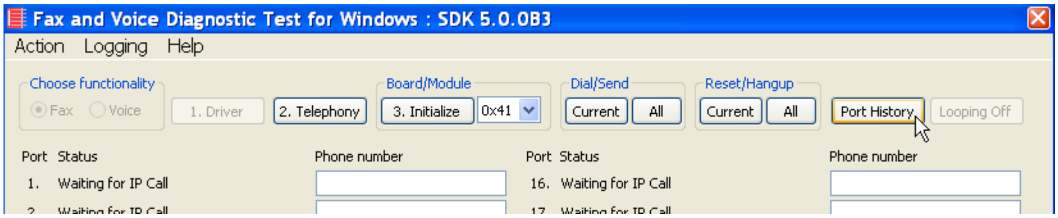

Figure 335. Port History

4. The following screen appears. Verify that the inbound call is successful.

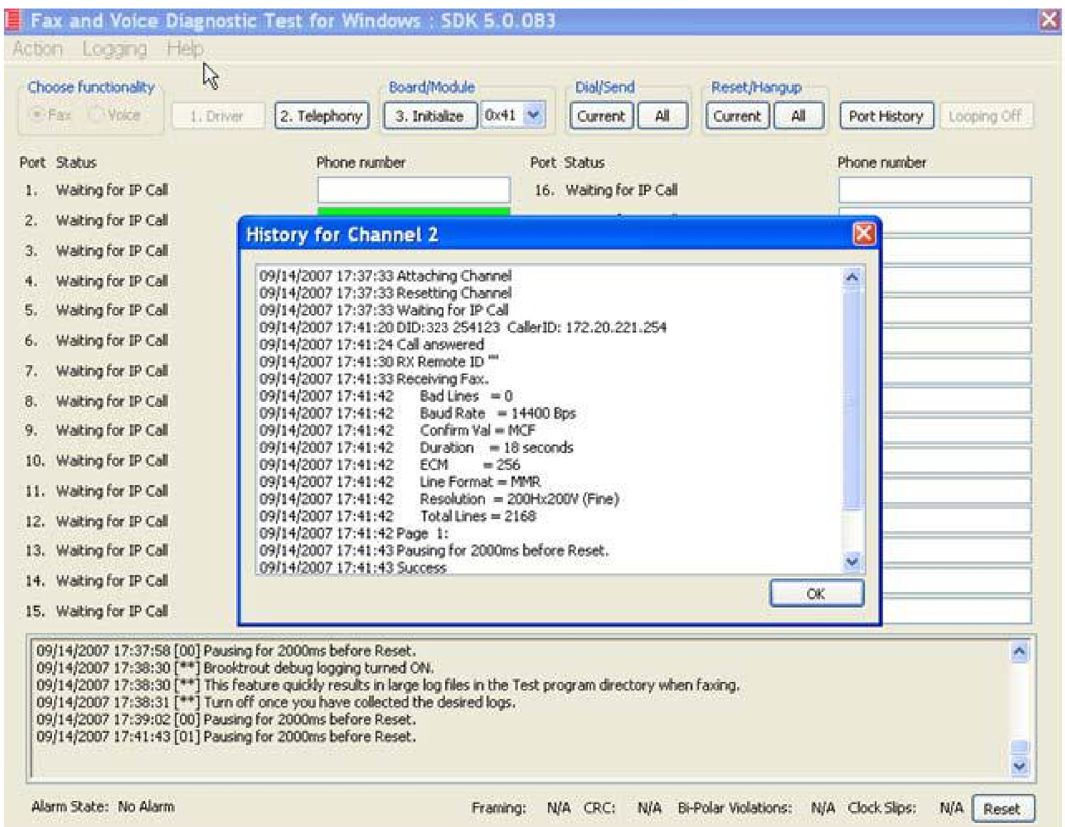

Figure 336. Inbound Call Successful

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11
Topology: H.323 - CUCM 6.0(1) - MGCP

Introduction

In this topology, the CUCM (Version 6.0(1)) does all the call control. The gateway sends all MGCP signaling to the CUCM which transmits H.323 signaling to the Fax Server. The Fax Server responds to the CUCM with H.323 signaling and the CUCM forwards MGCP signaling back to the gateway.

Once the call is established, the fax traffic flows directly between the gateway and the Fax Server.

Note: The SR140 Software is used as an example Fax Server in this chapter. The TR1034 IP board can also be used as Fax Server.

The diagrams below show the IP addresses of the hardware which are also included in the procedure and configuration files referenced in this chapter.

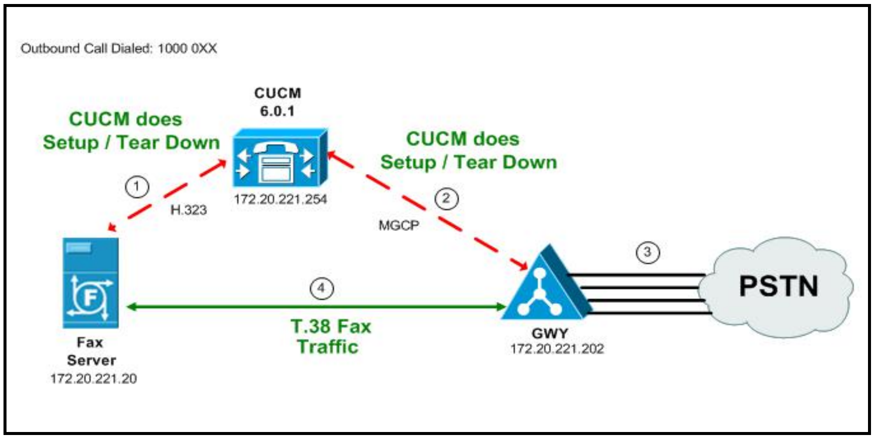

Figure 337. Outbound Call - CUCM Does Call Control - H.323 - CUCM 6.0(1) - MGCP Topology

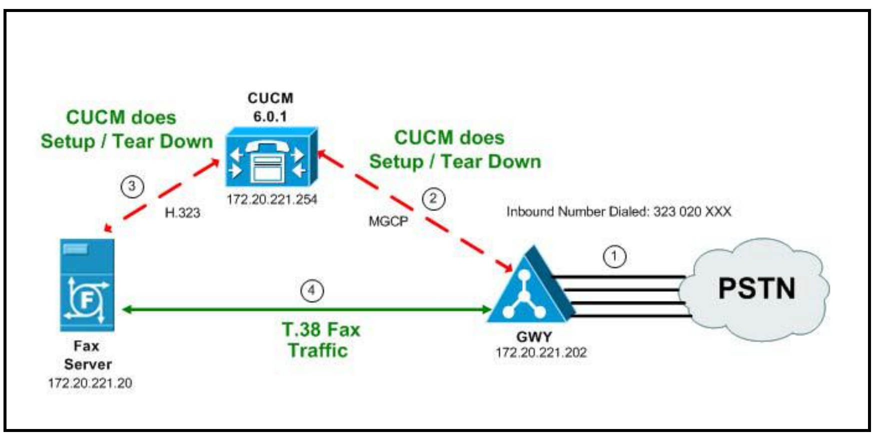

Figure 338. Inbound Call - CUCM Does Call Control - H.323 - CUCM 6.0(1) - MGCP Topology

Related Documentation

For more information on configuring MGCP, refer to the following documents:

- How to Configure MGCP with Digital PRI and Cisco CallManager, Document ID 23966

http://www.cisco.com/en/US/tech/tk1077/technologies_configuration_example09186a00801ad22f.shtml

- MGCP with Digital CAS and Cisco CallManager Configuration Example, Document ID 43802

http://www.cisco.com/en/US/tech/tk1077/technologies_configuration_example09186a008022eaa3.shtml

Configuration Sequence

Follow the sequence below when configuring the Dialogic Brooktrout FoIP with Cisco Products.

- *Configuring the Dialogic Brooktrout Fax Server on page 289*
- *Configuring the Cisco Media Gateway with IOS Commands on page 294*
- *Configuring the Cisco Unified Communications Manager on page 295*
  - *Configuring the Cisco Media Gateway on page 296*
  - *Configuring the Trunk Between the CUCM and the Fax Server on page 304*
  - *Configuring a Route Pattern for a Trunk to the Cisco Media Gateway on page 311*
- *Configuring a Route Pattern for a Trunk to the Fax Server on page 317*

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Configuring the Dialogic Brooktrout Fax Server

➢ **Follow the steps below to configure the SR140 Software using the Dialogic Brooktrout Configuration Tool to support this network topology.**

1. Open the Dialogic Brooktrout Configuration Tool in Advanced Mode.

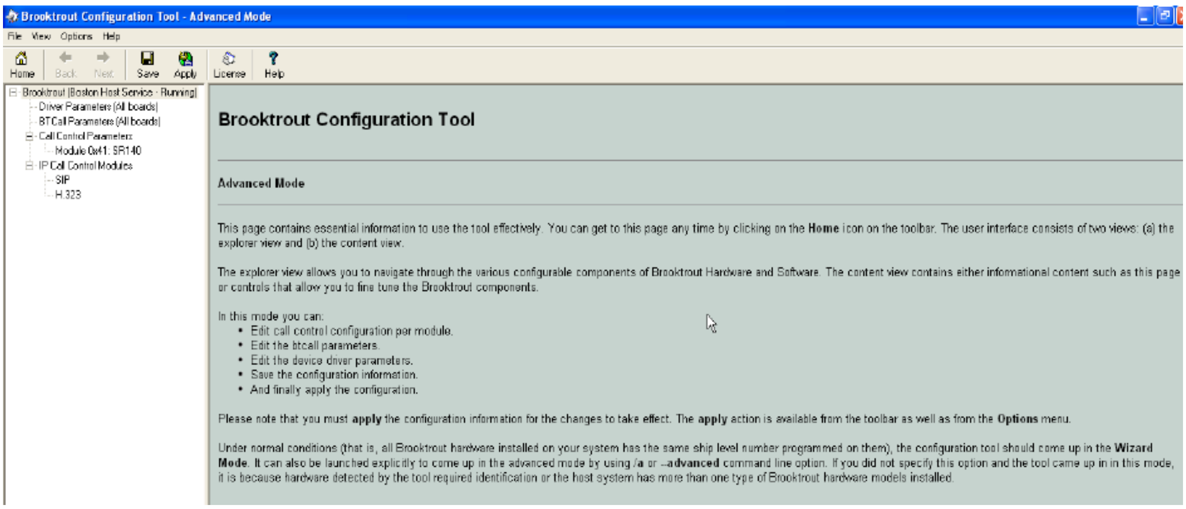

Figure 339. Dialogic Brooktrout Configuration Tool

2. Configure for the H.323 protocol as follows. Under IP Call Control Modules, click H.323 then click the IP Parameters tab.

The following screen appears.

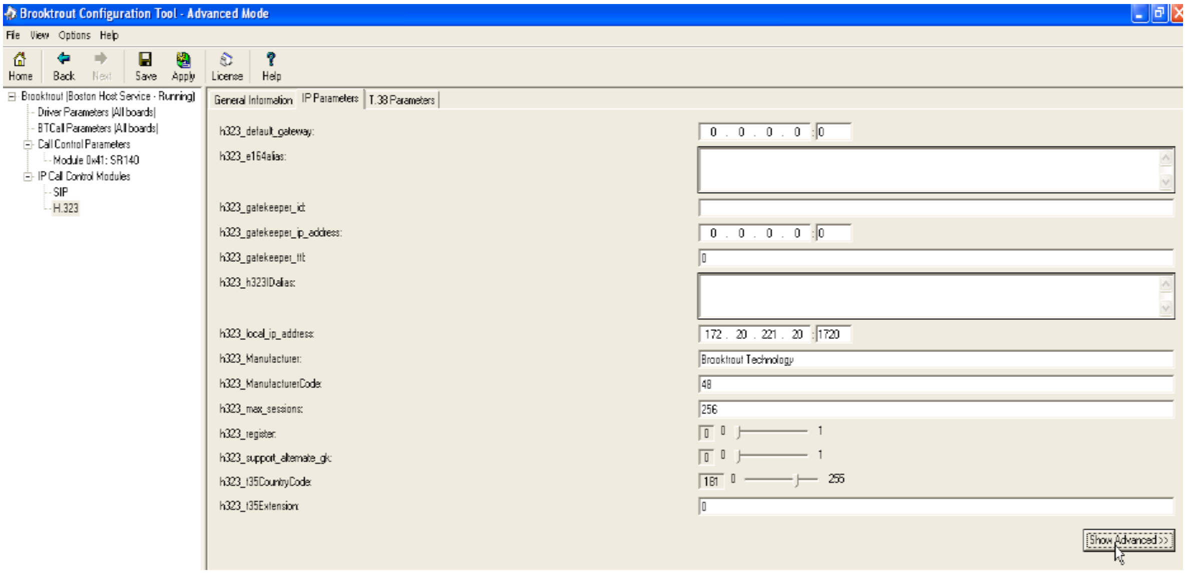

Figure 340. IP Parameters

3. Click Show Advanced. The following screen appears. Complete the fields as indicated below.

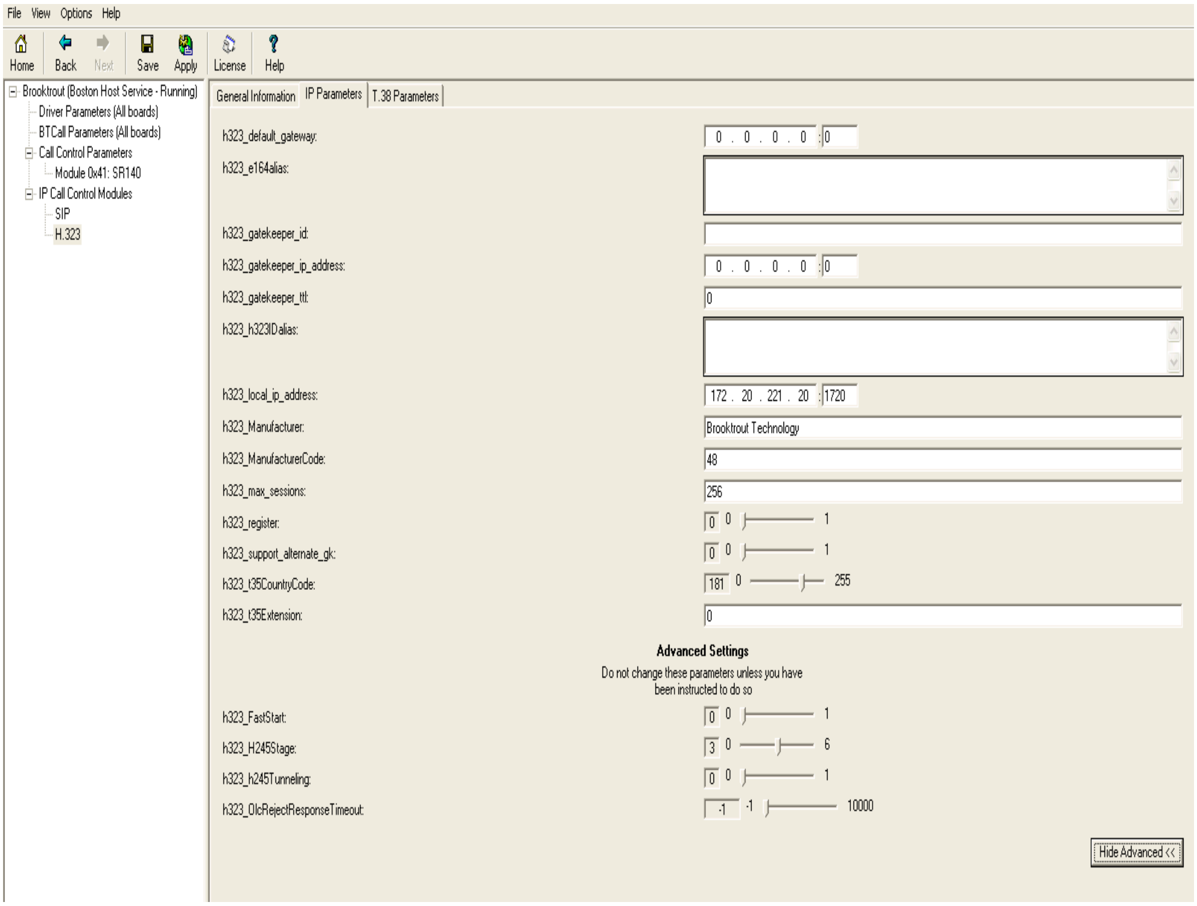

Figure 341. Advanced Settings

Note: When the h323_local_ip_address field is set to the default value (0.0.0.0:0), the system uses the IP address of the first Ethernet module in the system and port number 1720. If there are more than one ethernet modules in the Fax Server then specify the actual IP address of the desired ethernet module that will be used.

4. Set the fields below as follows to ensure that Cisco interoperability works correctly.
   - h323_FastStart = 0
   - h323_H245Stage = 3
   - h323_h245Tunneling = 0
5. Click T.38 Parameter and complete fields as indicated below.

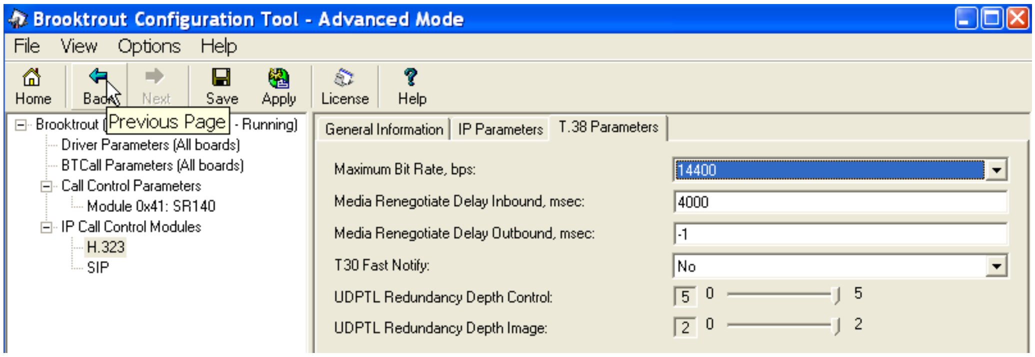

Figure 342. T.38 Parameters

6. Under Call Control Parameters, click Module 0x41: SR140 and select the Parameters tab. Complete the fields as indicated below.

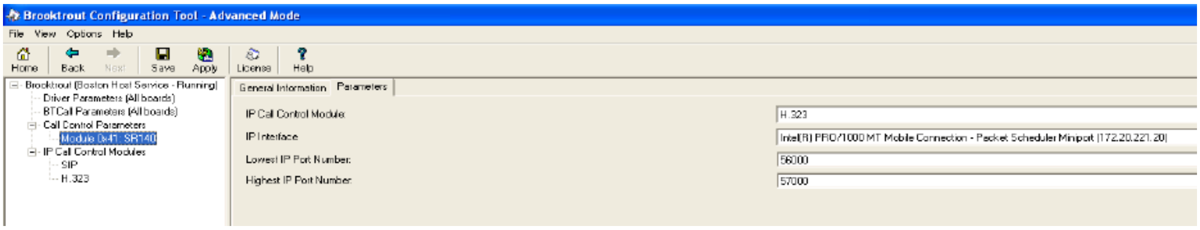

Figure 343. Module 0x41: SR140 Parameters

7. Select the desired network interface controller (NIC) for the IP Interface field.
8. Click Apply.

Configuration Files

Use the configuration files in the section below to help you configure the SR140 Software:

Appendix J, SR140 Configuration Files on page 552

Configuring the Cisco Media Gateway with IOS Commands

Refer to the configuration file in the *Appendix J, Cisco Gateway-Config on page 558* as a guide to configure your Cisco Media Gateway with IOS Command.

Configuring the Cisco Media Gateway involves the following.

- Enable T.38 support
- Configure line card interface
- Configure Dial-Peers (VoIP and POTS)

T.38 Support

Be sure to include the `fxr-package` in your MGCP gateway configuration, since this package is needed for T.38 support. This means, when you have this package disabled, type the following IOS command in order to activate it:

`MGCP package capability fxr-package`

`and do then`

`no mgcp`

`and then`

`mgcp`

Also ensure that you do not have the following command line in your gateway configuration since you want to enable T.38.

`mgcp fax t38 inhibit`

Also, the G.711 codec is needed to start a T.38 call.

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Configuring the Cisco Unified Communications Manager

This procedure includes the following:

- *Appendix O, Configuring Service Activation on page 646* (If not completed already.)
- *Appendix O, Configuring System Service Parameters on page 648* (If not completed already.)
- *Configuring the Cisco Media Gateway on page 296*
- *Configuring the Trunk Between the CUCM and the Fax Server on page 304*
- *Configuring a Route Pattern for a Trunk to the Cisco Media Gateway on page 311*
- *Configuring a Route Pattern for a Trunk to the Fax Server on page 317*

Configuring the Cisco Media Gateway

➤ **Follow the steps below:**

1. Open the Cisco Unified Communications Manager Administration Version 6.0(1).
2. From the Device menu, select Gateway.

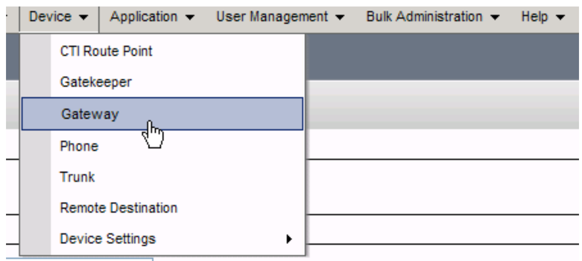

Figure 344. Gateway

3. The following screen appears. Click Add New.

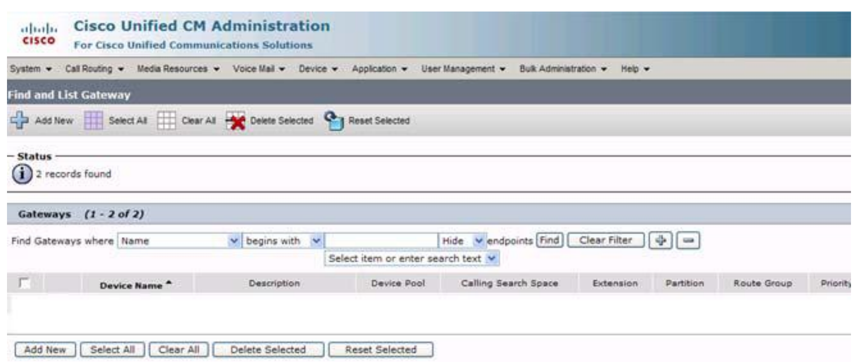

Figure 345. Add New Gateway

The following screen appears.

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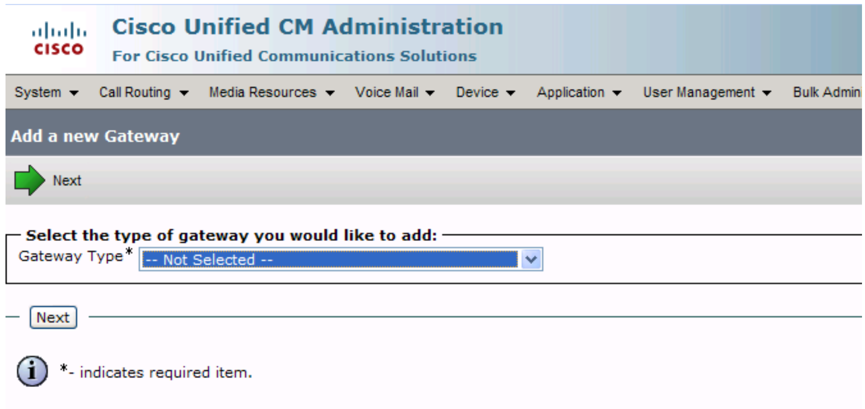


Figure 346. Gateway Type

4. Select the appropriate gateway.

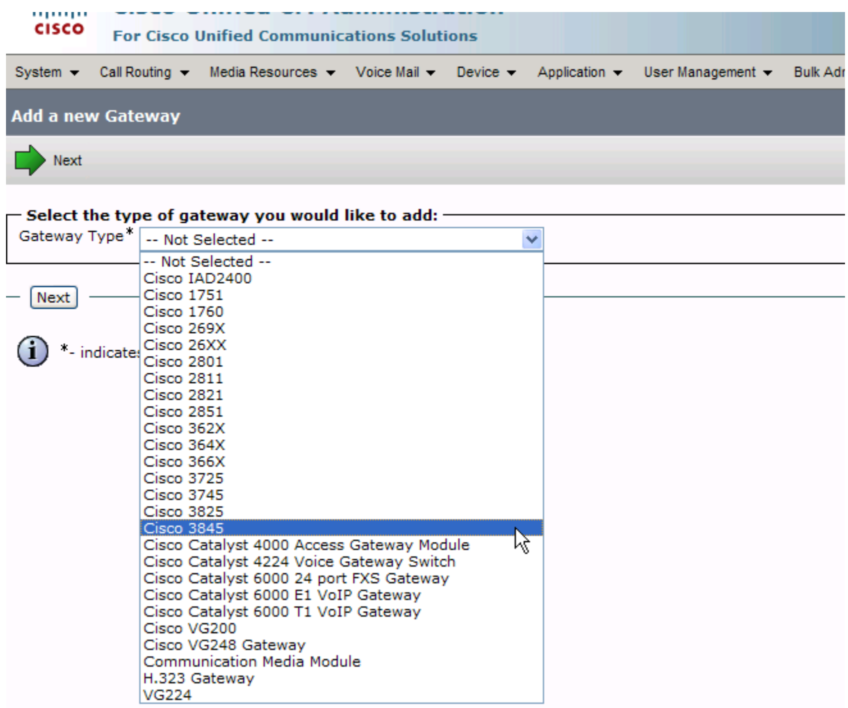


Figure 347. Cisco Media Gateway

5. Click Next.

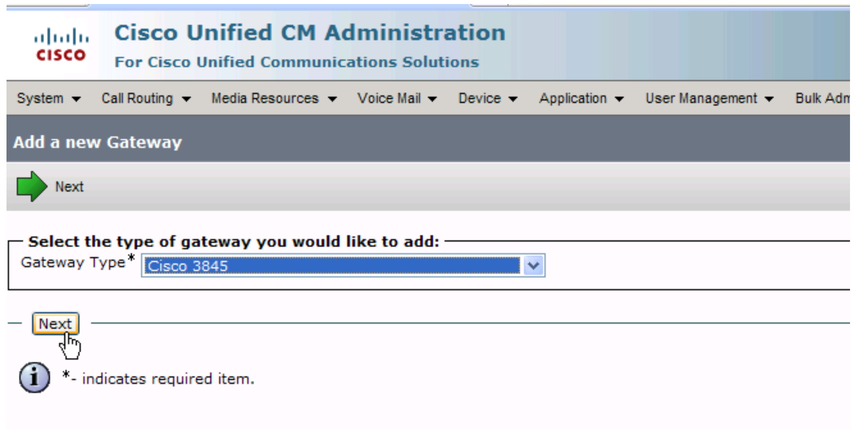


Figure 348. Next

The following screen appears:

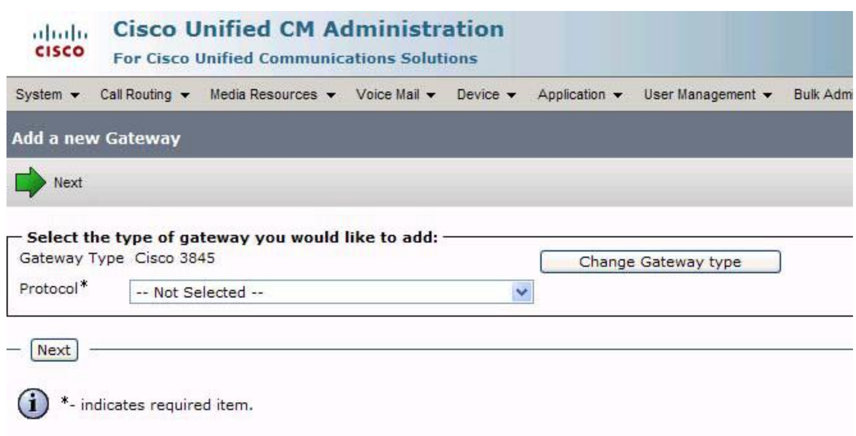


Figure 349. Protocol

6. Select MGCP for the Protocol.

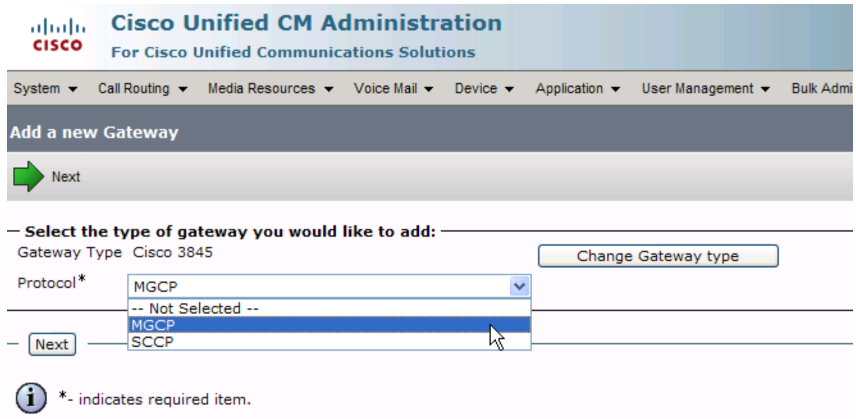


Figure 350. MGCP

7. Click Next.

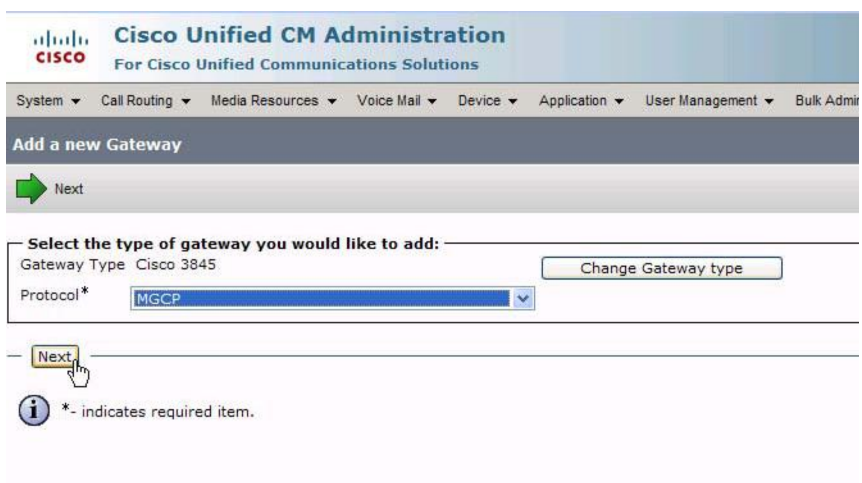


Figure 351. Next

The following screen appears.

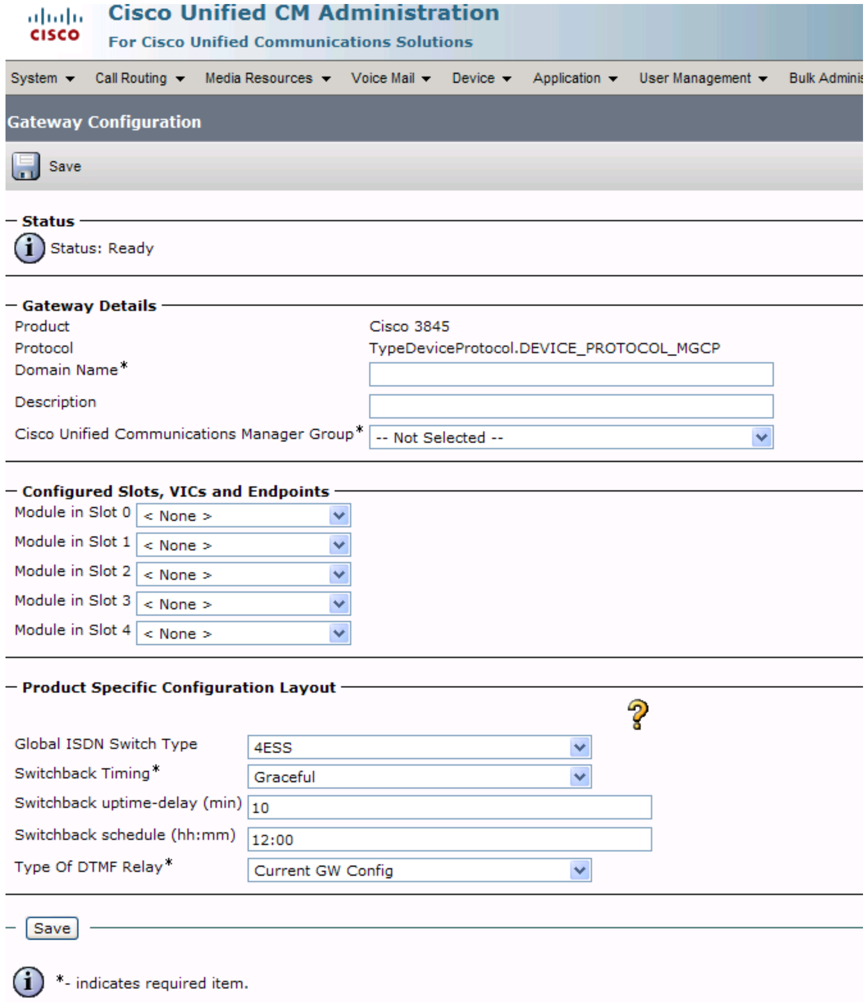


Figure 352. Gateway Configuration

8. Enter EURO for the EURO Global ISDN Switch Type.

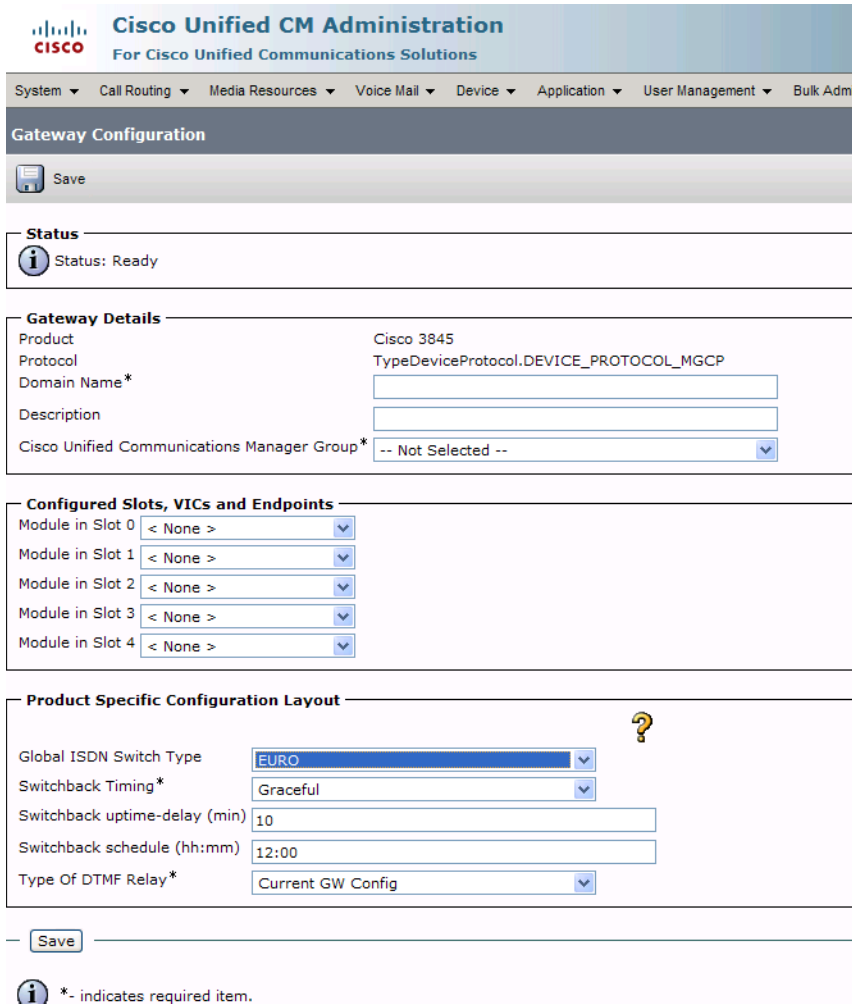
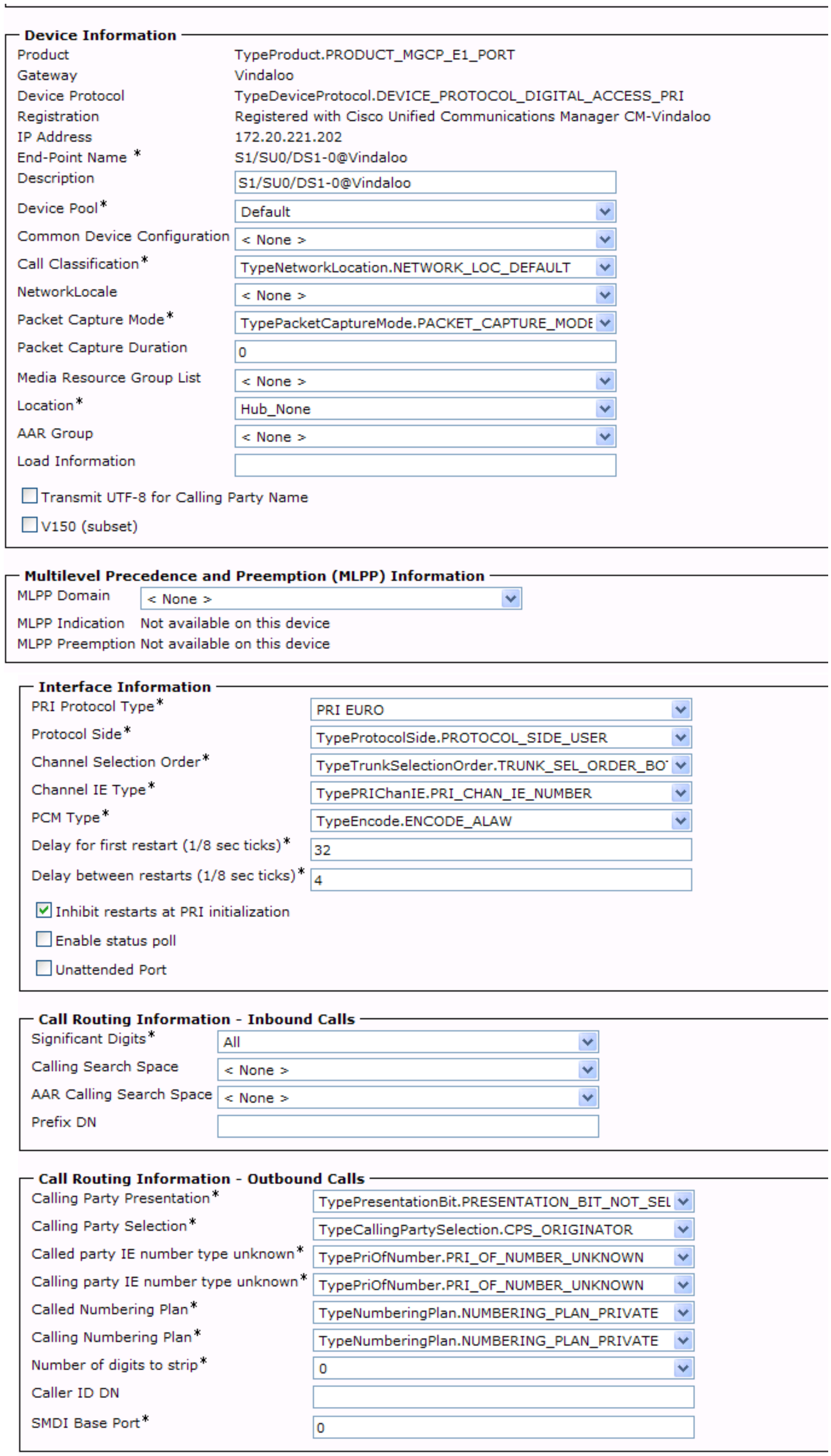


Figure 353. Gateway Configuration

9. Complete the screen as indicated on the following two pages.



Device Information

Product	TypeProduct.PRODUCT_MGCP_E1_PORT
Gateway	Vindaloo
Device Protocol	TypeDeviceProtocol.DEVICE_PROTOCOL_DIGITAL_ACCESS_PRI
Registration	Registered with Cisco Unified Communications Manager CM-Vindaloo
IP Address	172.20.221.202
End-Point Name *	S1/SU0/DS1-0@Vindaloo
Description	S1/SU0/DS1-0@Vindaloo
Device Pool*	Default
Common Device Configuration	< None >
Call Classification*	TypeNetworkLocation.NETWORK_LOC_DEFAULT
NetworkLocale	< None >
Packet Capture Mode*	TypePacketCaptureMode.PACKET_CAPTURE_MODE
Packet Capture Duration	0
Media Resource Group List	< None >
Location*	Hub_None
AAR Group	< None >
Load Information	

☐ Transmit UTF-8 for Calling Party Name

☐ V150 (subset)

Multilevel Precedence and Preemption (MLPP) Information

MLPP Domain	< None >
MLPP Indication	Not available on this device
MLPP Preemption	Not available on this device

Interface Information

PRI Protocol Type*	PRI EURO
Protocol Side*	TypeProtocolSide.PROTOCOL_SIDE_USER
Channel Selection Order*	TypeTrunkSelectionOrder.TRUNK_SEL_ORDER_BO
Channel IE Type*	TypePRIChanIE.PRI_CHAN_IE_NUMBER
PCM Type*	TypeEncode.ENCODE_ALAW
Delay for first restart (1/8 sec ticks)*	32
Delay between restarts (1/8 sec ticks)*	4

☑ Inhibit restarts at PRI initialization

☐ Enable status poll

☐ Unattended Port

Call Routing Information - Inbound Calls

Significant Digits*	All
Calling Search Space	< None >
AAR Calling Search Space	< None >
Prefix DN	

Call Routing Information - Outbound Calls

Calling Party Presentation*	TypePresentationBit.PRESENTATION_BIT_NOT_SEL
Calling Party Selection*	TypeCallingPartySelection.CPS_ORIGINATOR
Called party IE number type unknown*	TypePriOfNumber.PRI_OF_NUMBER_UNKNOWN
Calling party IE number type unknown*	TypePriOfNumber.PRI_OF_NUMBER_UNKNOWN
Called Numbering Plan*	TypeNumberingPlan.NUMBERING_PLAN_PRIVATE
Calling Numbering Plan*	TypeNumberingPlan.NUMBERING_PLAN_PRIVATE
Number of digits to strip*	0
Caller ID DN	
SMDI Base Port*	0

(Gateway Configuration Continued.)

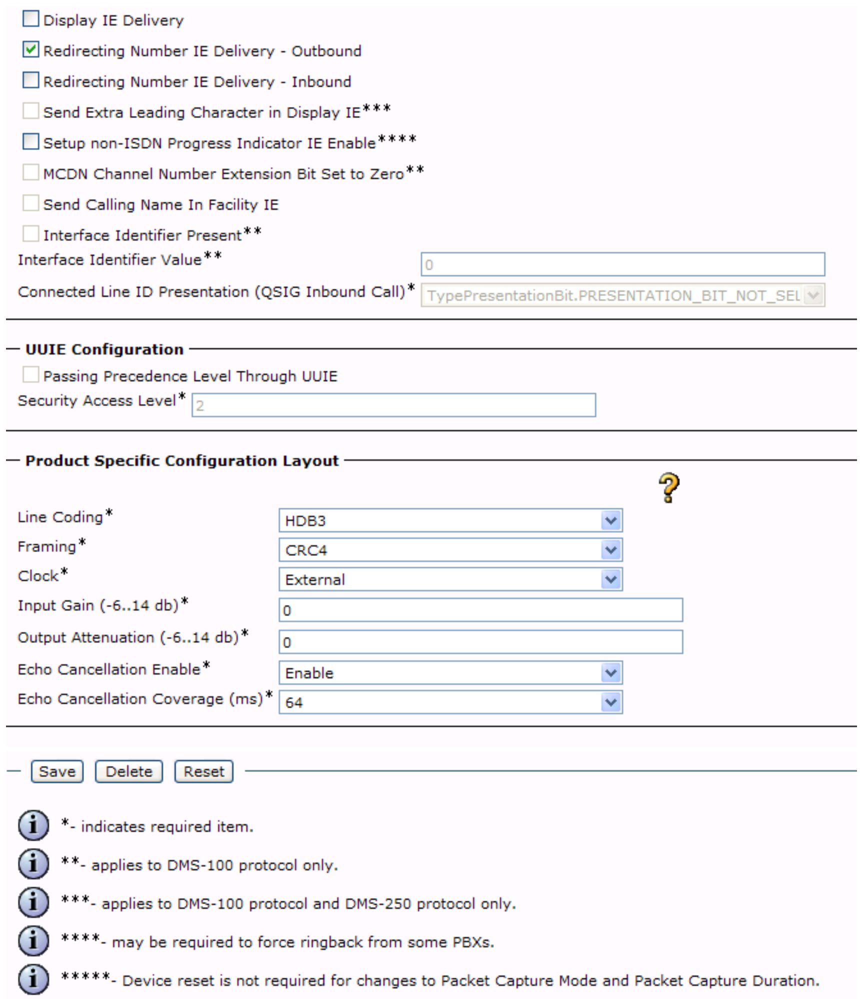


Figure 354. Gateway Configuration

Configuring the Trunk Between the CUCM and the Fax Server

➢ **Follow the steps below.**

1. From the Device menu, select Trunk.

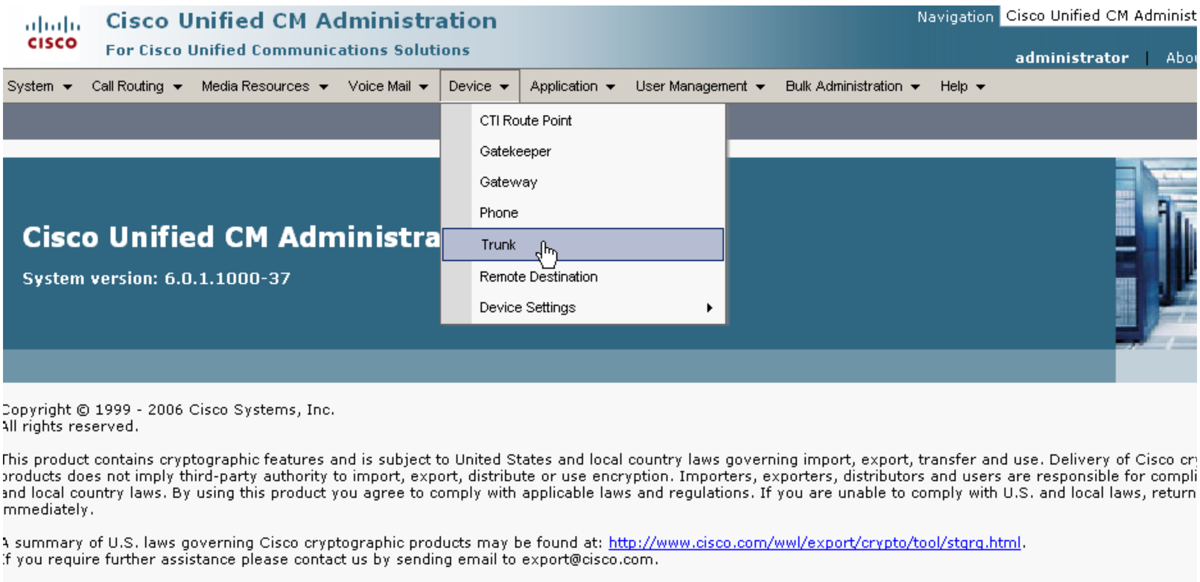


Figure 355. Trunk

2. From the following screen, click Add New.

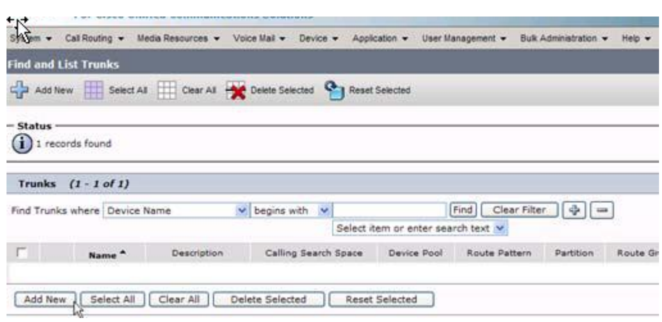


Figure 356. New Trunk

The following screen appears.

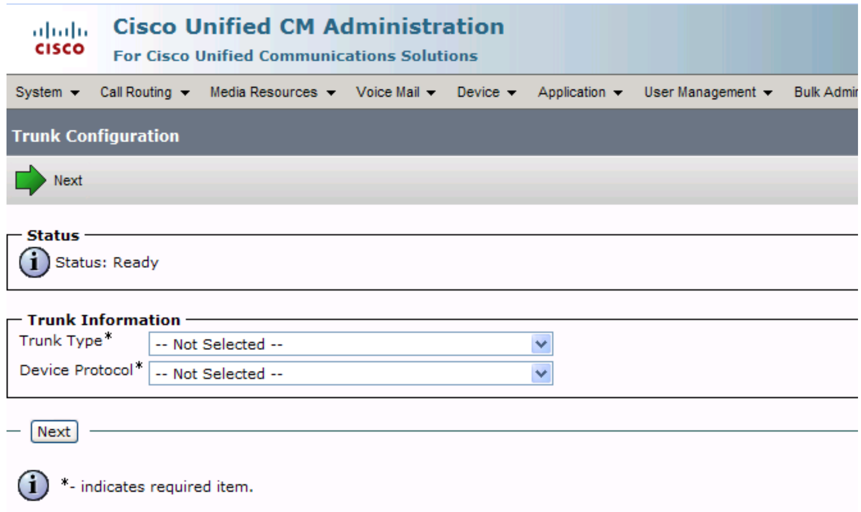


Figure 357. Trunk Configuration

3. Select Intercluster Trunk (Non-Gatekeeper Controlled) for the Trunk Type.

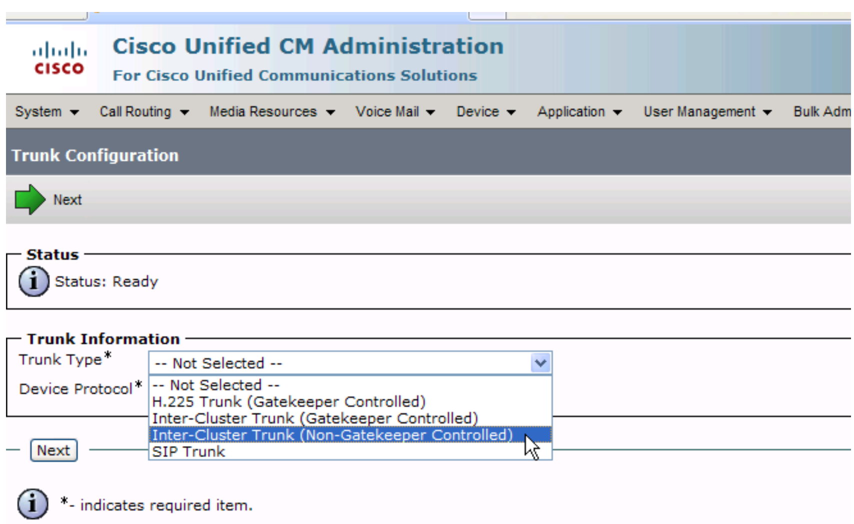


Figure 358. Trunk Type

The Device Protocol defaults to Inter-Cluster Trunk.

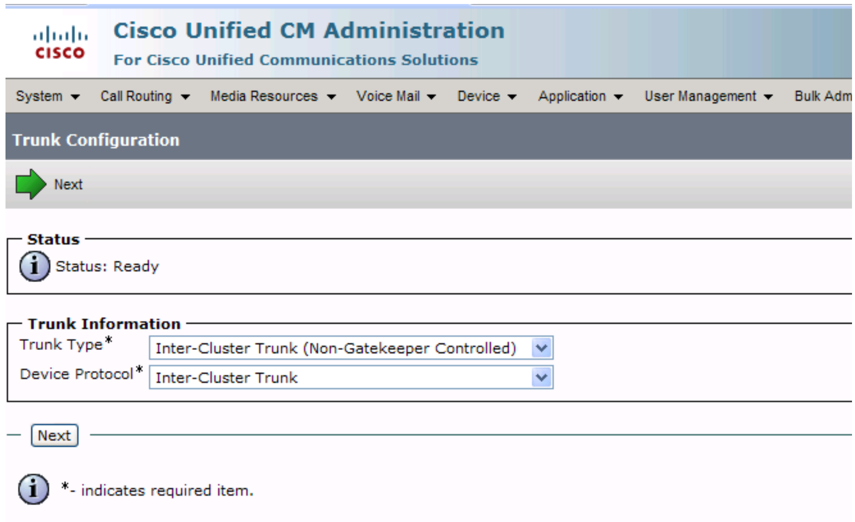


Figure 359. Inter-Cluster Trunk Device Protocol

4. Click Next.

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5. The following screen appears.

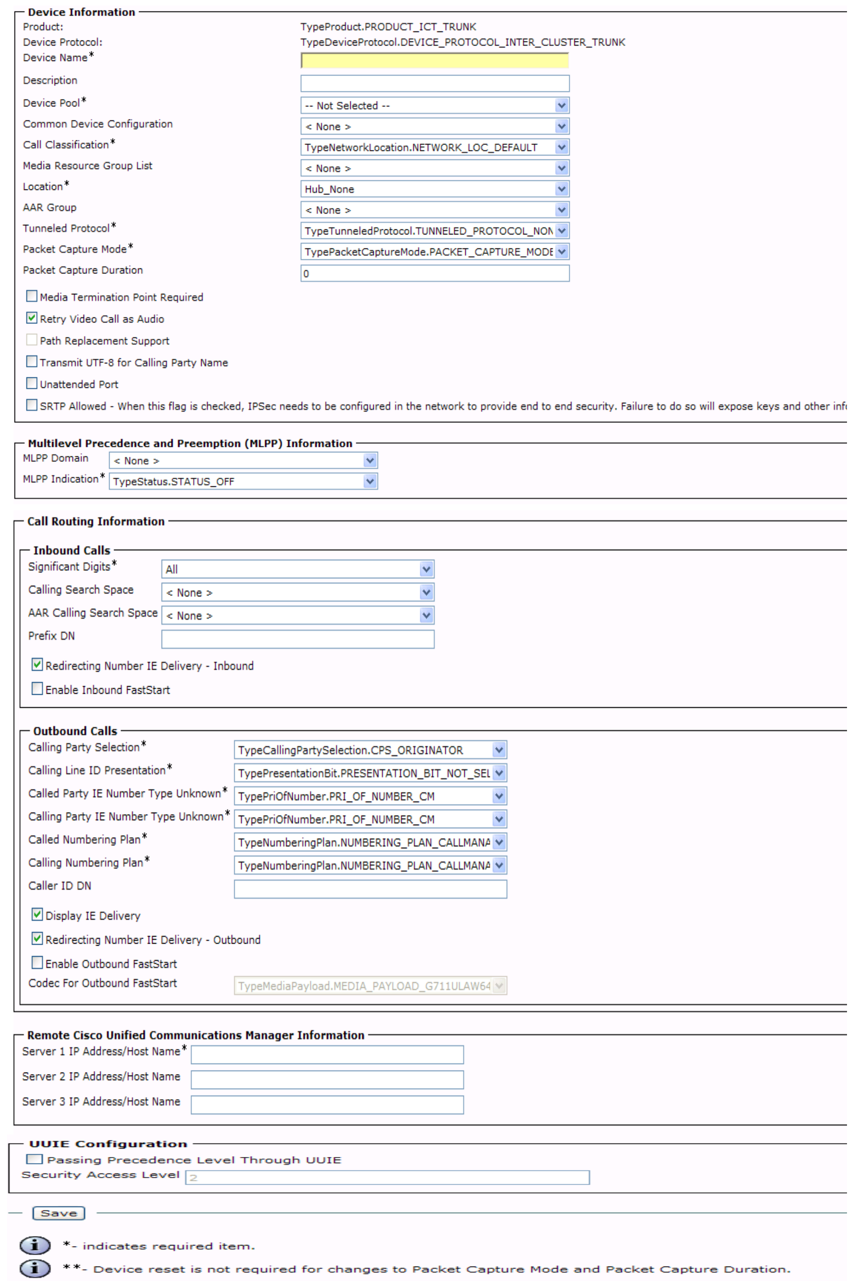

Figure 360. Trunk Configuration

6. Complete the screen as indicated below.

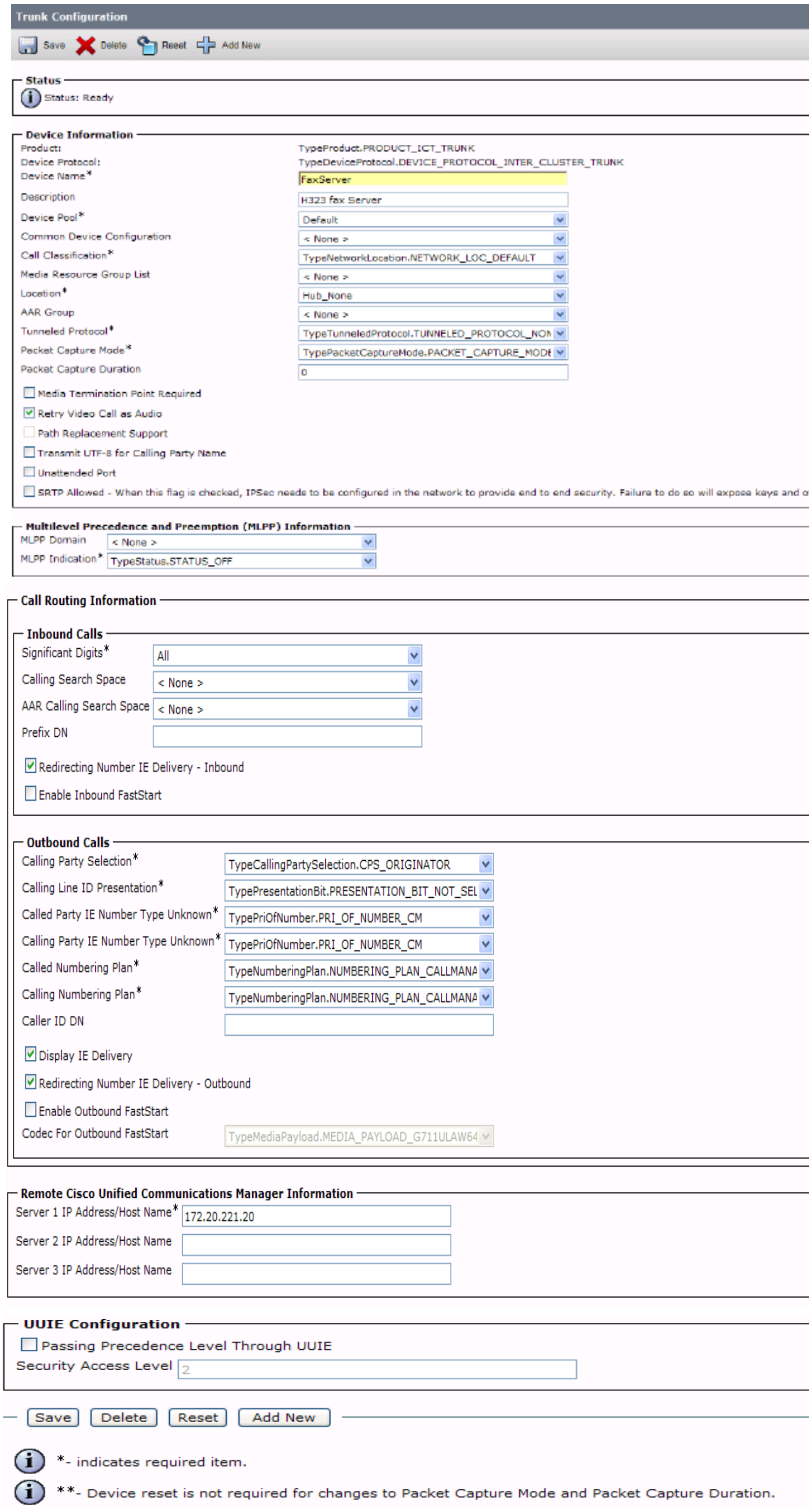

Figure 361. Trunk Configuration Data

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7. Click Save.

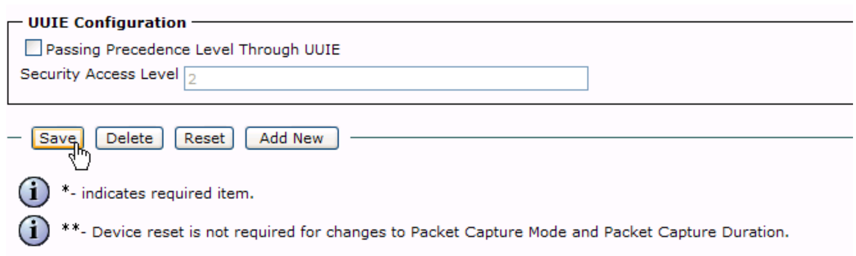

Figure 362. Save

8. Click OK.

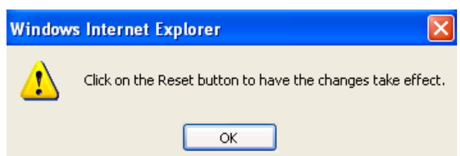

Figure 363. OK

9. Click Reset.

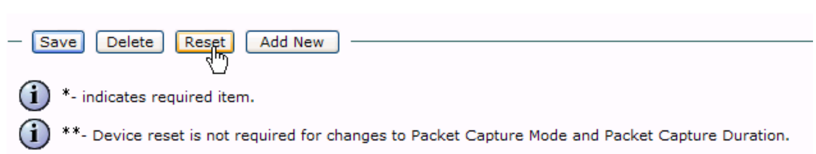

Figure 364. Reset

The following screen appears.

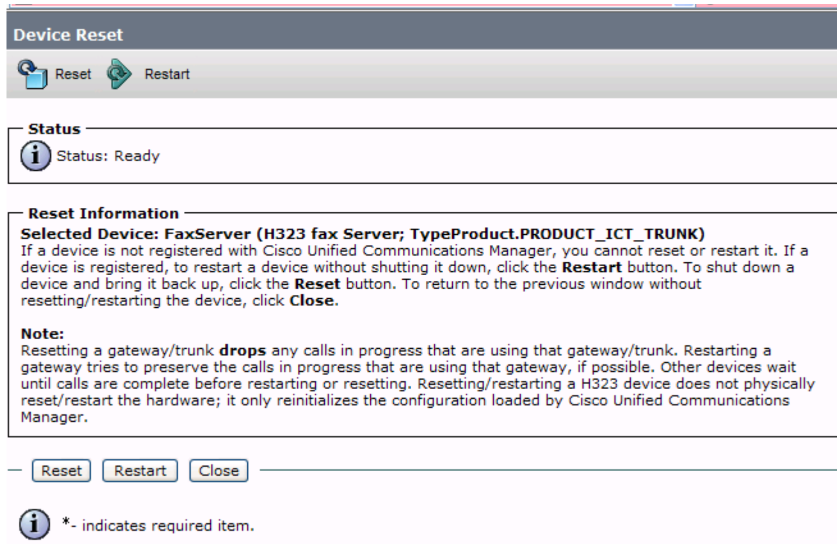

Figure 365. Device Reset

10. Click Close.

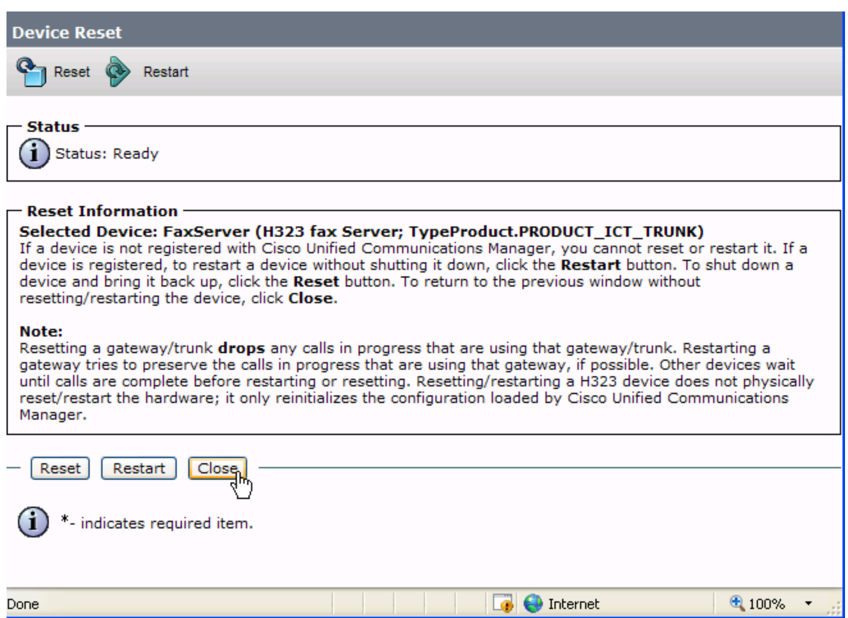

Figure 366. Close

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Configuring a Route Pattern for a Trunk to the Cisco Media Gateway

➢ **Follow the steps below to configure a route pattern for the trunk.**

1. From the Call Routing menu, click Route/Hunt, Route Pattern.

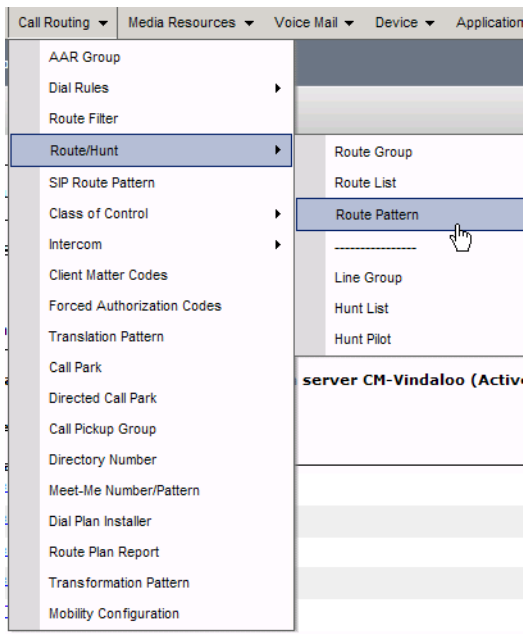

Figure 367. Route Pattern

2. The following screen appears. Click Add New.

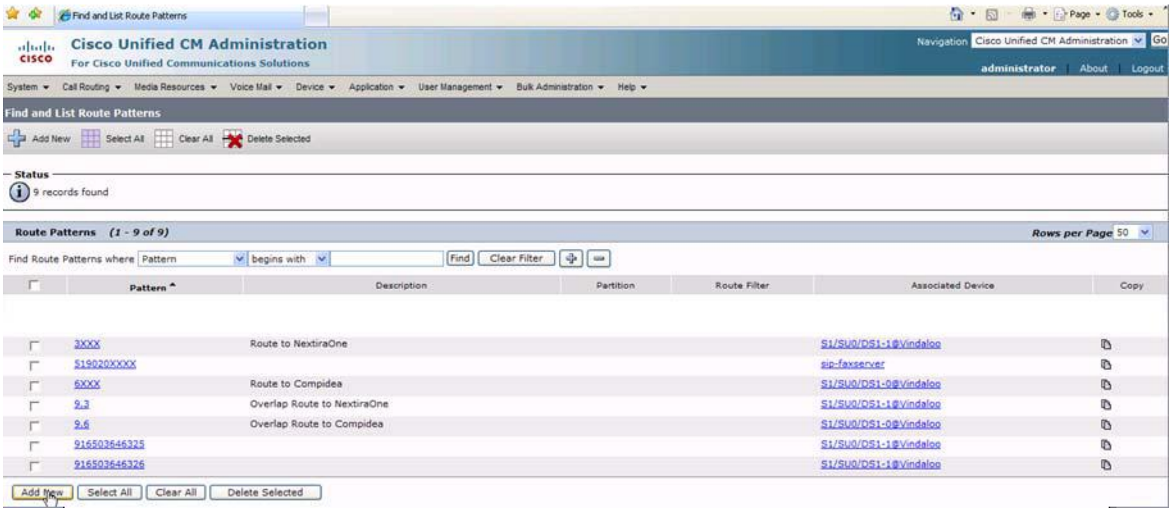

Figure 368. Add New

3. The following screen appears.

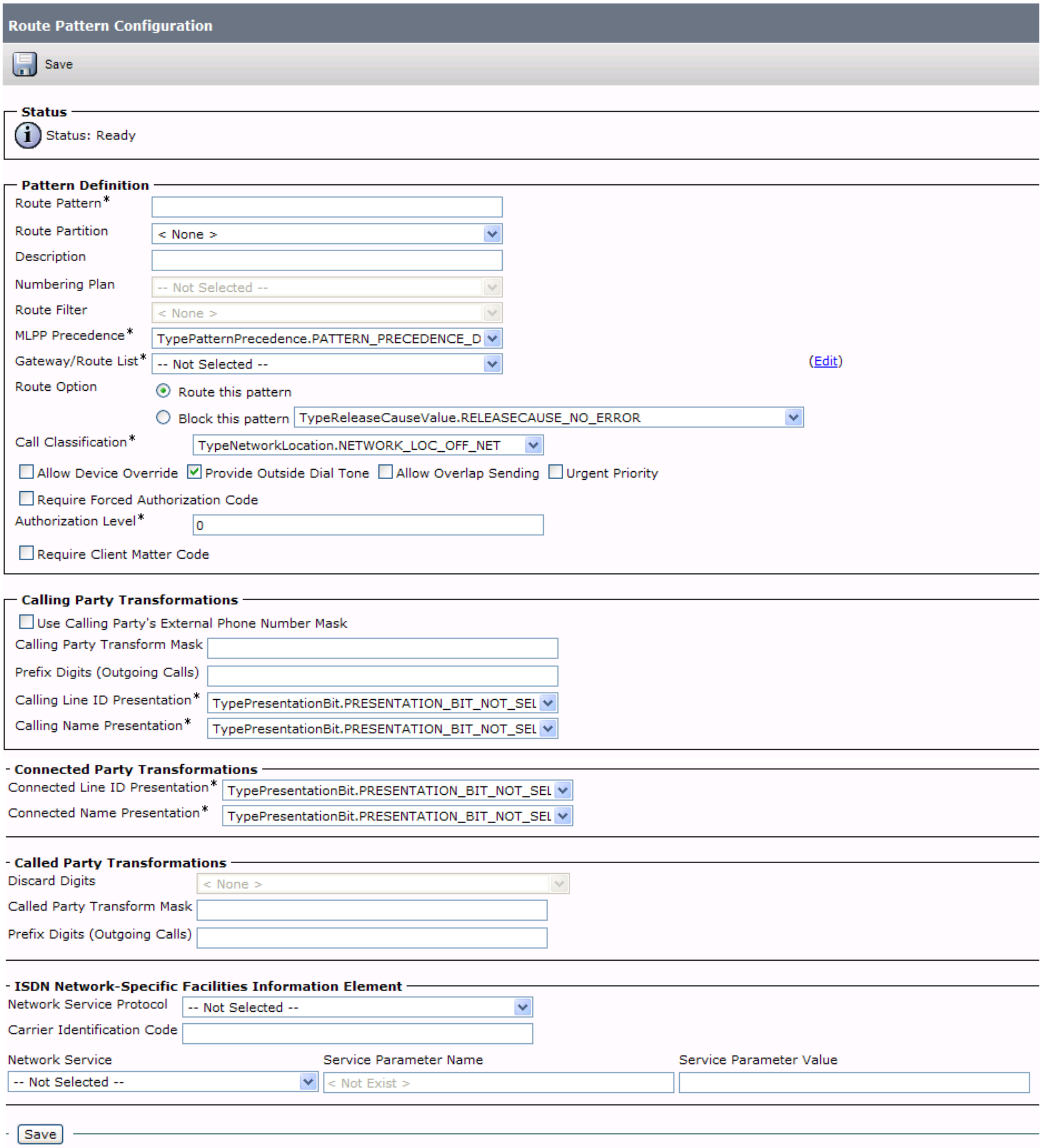

Figure 369. Route Pattern Configuration

4. Complete the screen as indicated below.

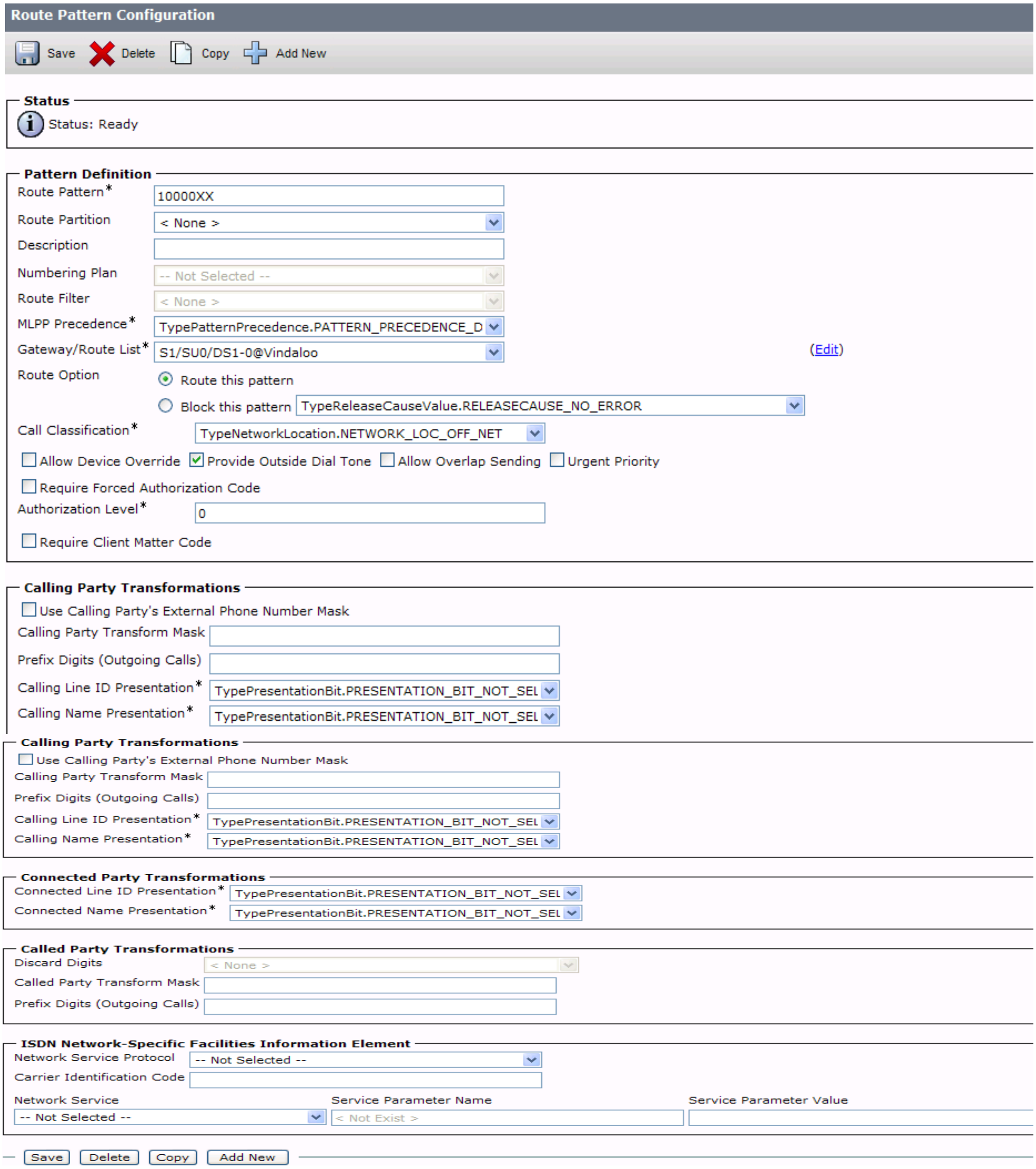

Figure 370. Route Pattern Configuration Data

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5. Click Save.

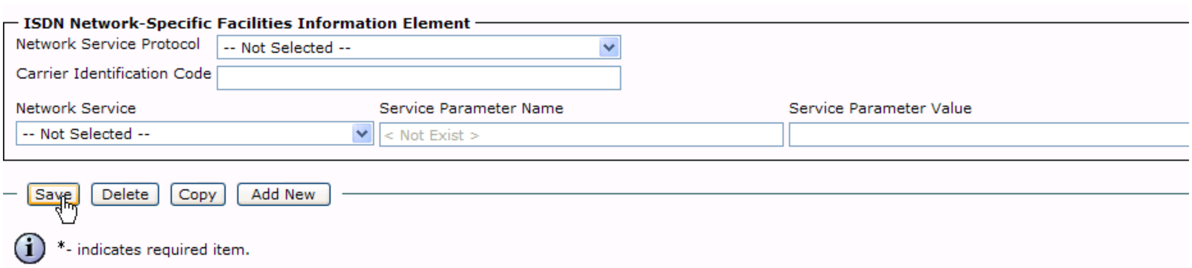

Figure 371. Save

6. The following appears because you did not required a Forced Authorization Code. Click OK.

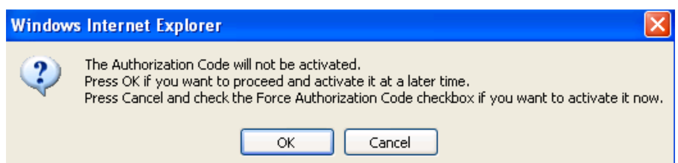

Figure 372. OK

7. Click OK.

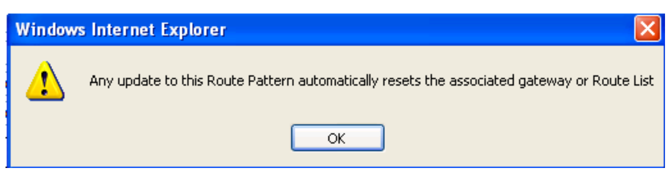

Figure 373. OK

8. Select Back To Find/List and click Go. Confirm that the new route pattern appears in the list.

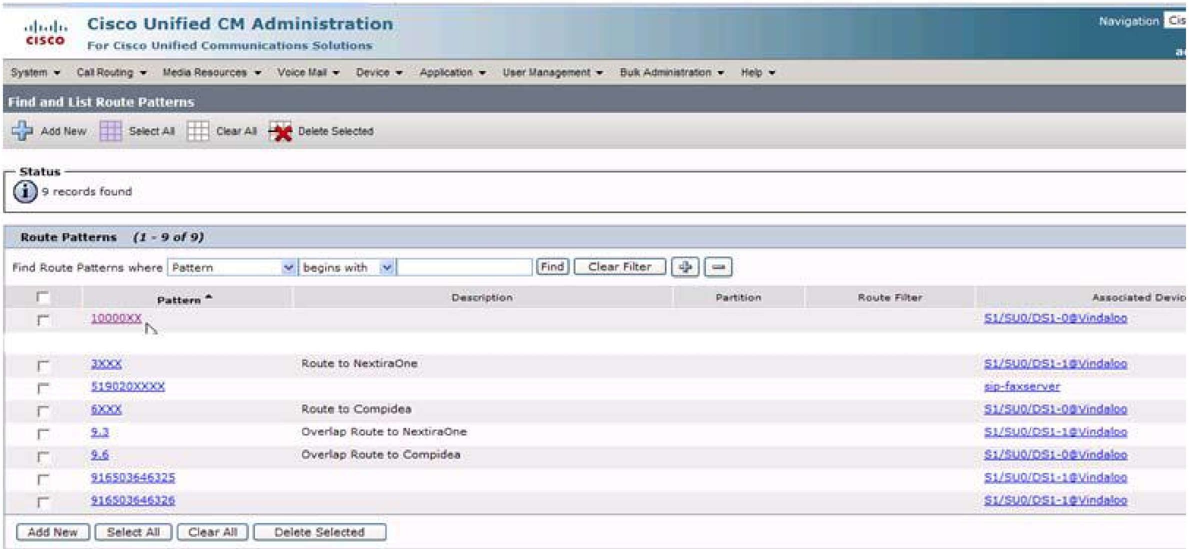

Figure 374. New Route Pattern

Configuring a Route Pattern for a Trunk to the Fax Server

➢ **Follow the steps below to configure a route pattern for the trunk.**

1. From the screen below, click Add New.

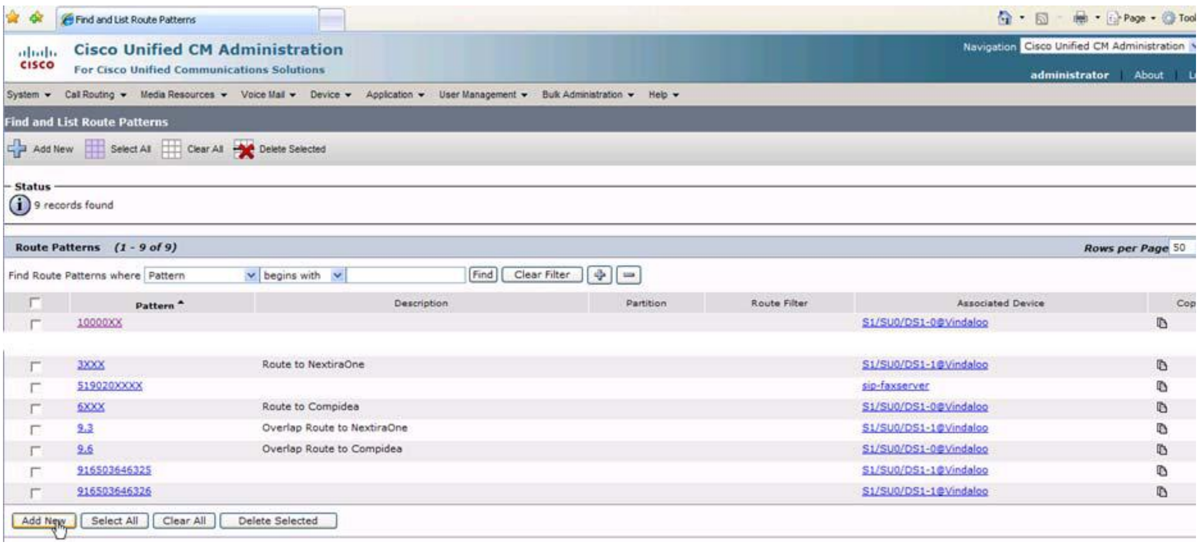

Figure 375. Add New

2. The following screen appears.

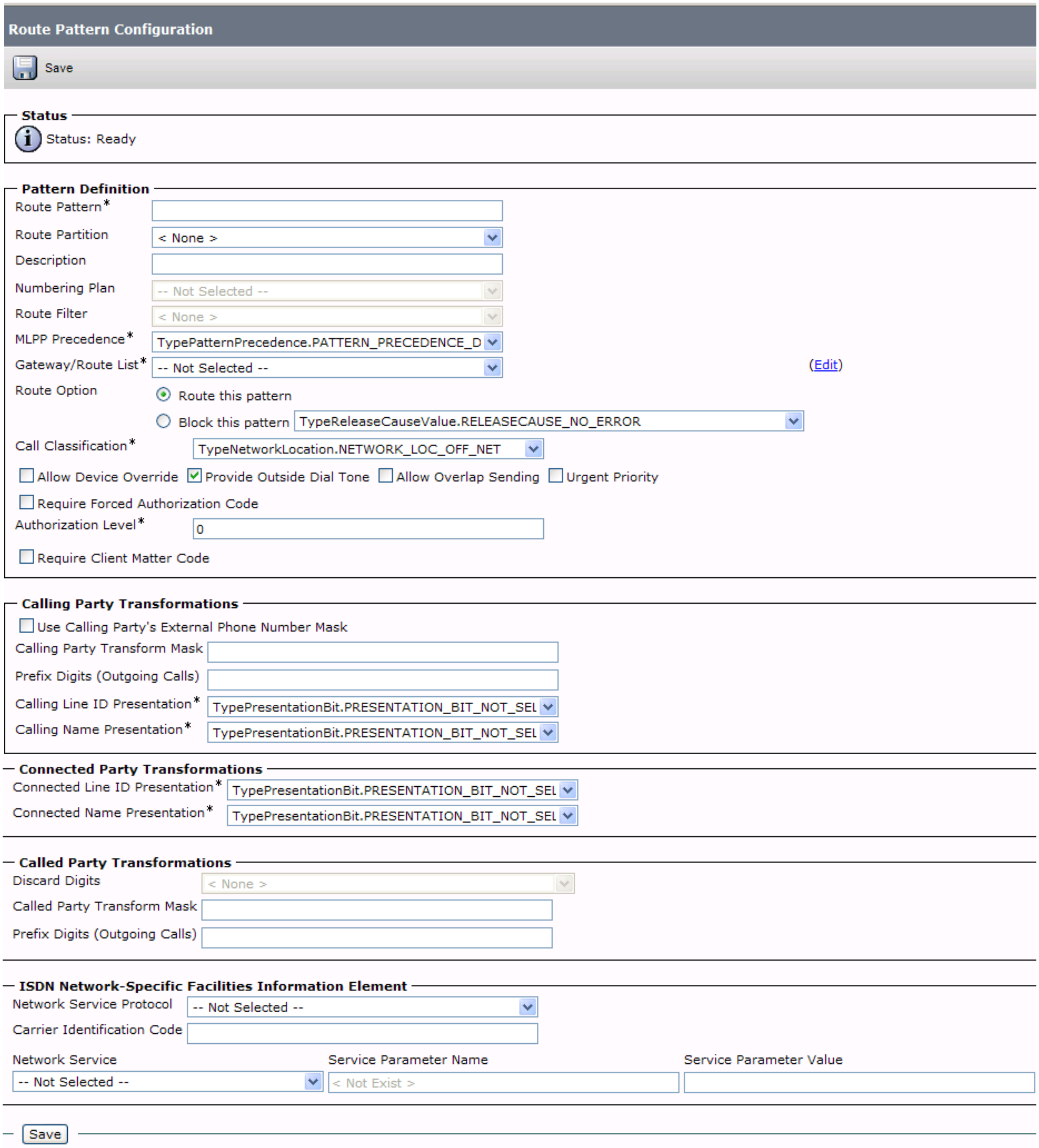

Figure 376. Route Pattern Configuration

 This document is not to be distributed to a third party without written permission from Dialogic.

3. Complete the screen as indicated below.

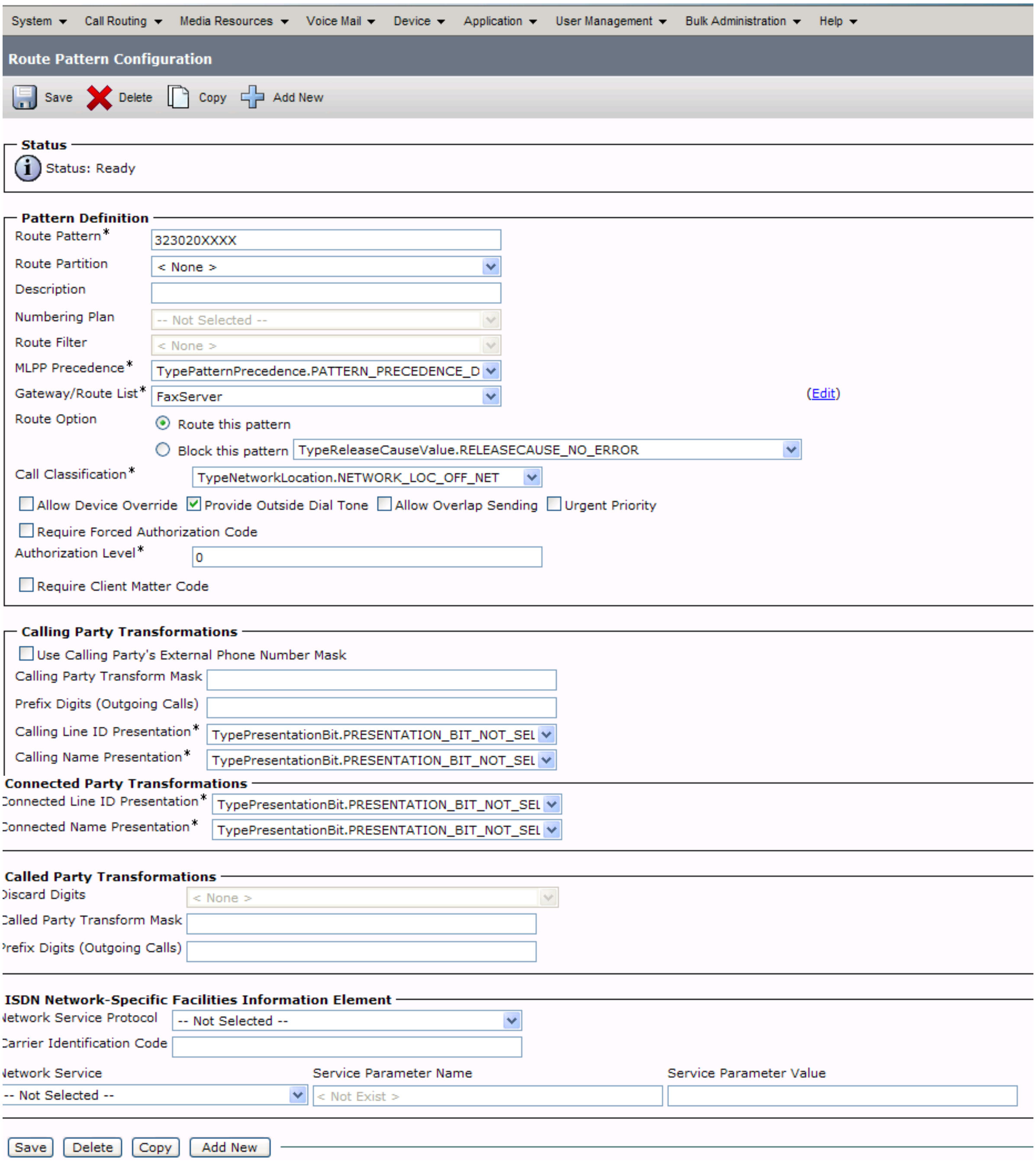

Figure 377. Route Pattern Configuration Data

4. Click Save.

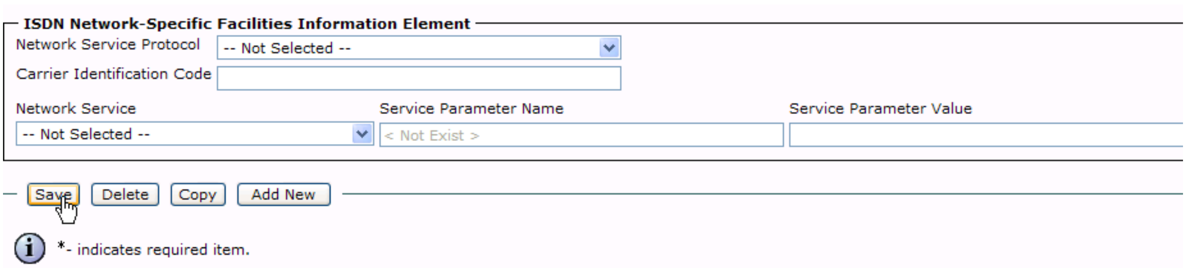

Figure 378. Save

5. The following appears because you did not required a Forced Authorization Code. Click OK.

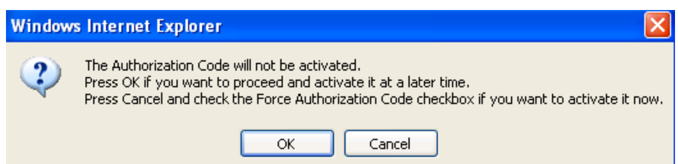

Figure 379. OK

6. Click OK.

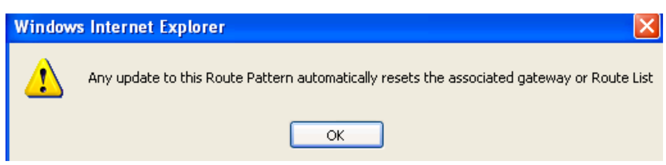

Figure 380. OK

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7. Select Back To Find/List and click Go. Confirm that the new route pattern appears in the list.

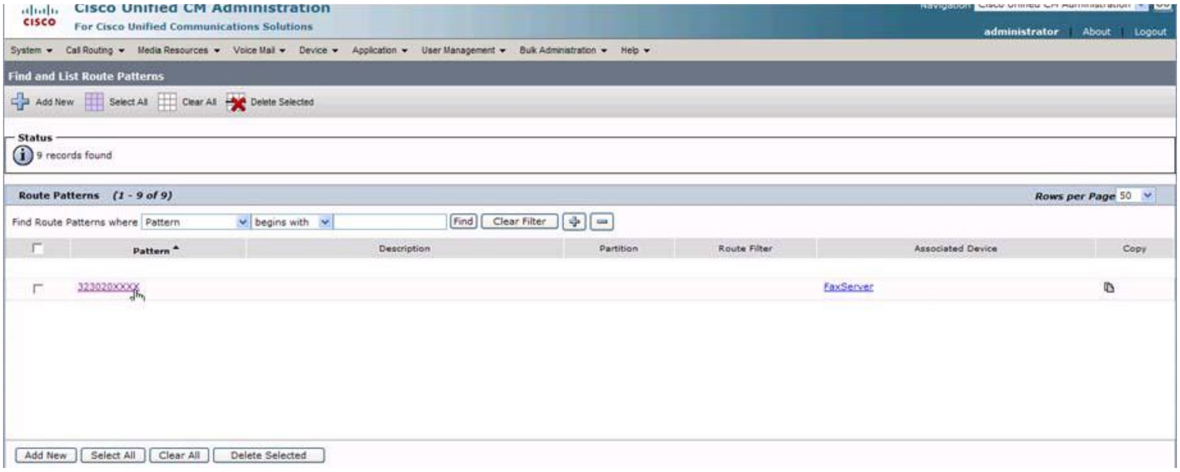

Figure 381. New Route Pattern

Verifying the Configuration

The Dialogic Brooktrout Fax and Voice Diagnostic Test utility allows you to test the configuration you completed. You can download the utility and instructions from the technical support site.

http://www.cantata.com/support/lanfax/fax_testing_diagnostic.cfm

This test verifies the following:

- SR140 Software configuration
- Cisco Media Gateway configuration
- Trunks and Route Patterns on the CUCM

Verifying the Fax Server Basic Configuration

Before continuing, refer to *Appendix A, Verifying Basic Configuration - Fax Server 172.20.221.20 on page 418* to verify that the Fax Server software is installed correctly.

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Outbound Call

➢ **Follow the steps below to verify outbound fax traffic from the CUCM to the gateway.**

1. Open the Fax and Voice Diagnostic Test utility. The following screen appears. Click the 2.Telephony button (press the Apply button in the Brooktrout Configuration Tool after configuring). Click the 3.Initialize button.

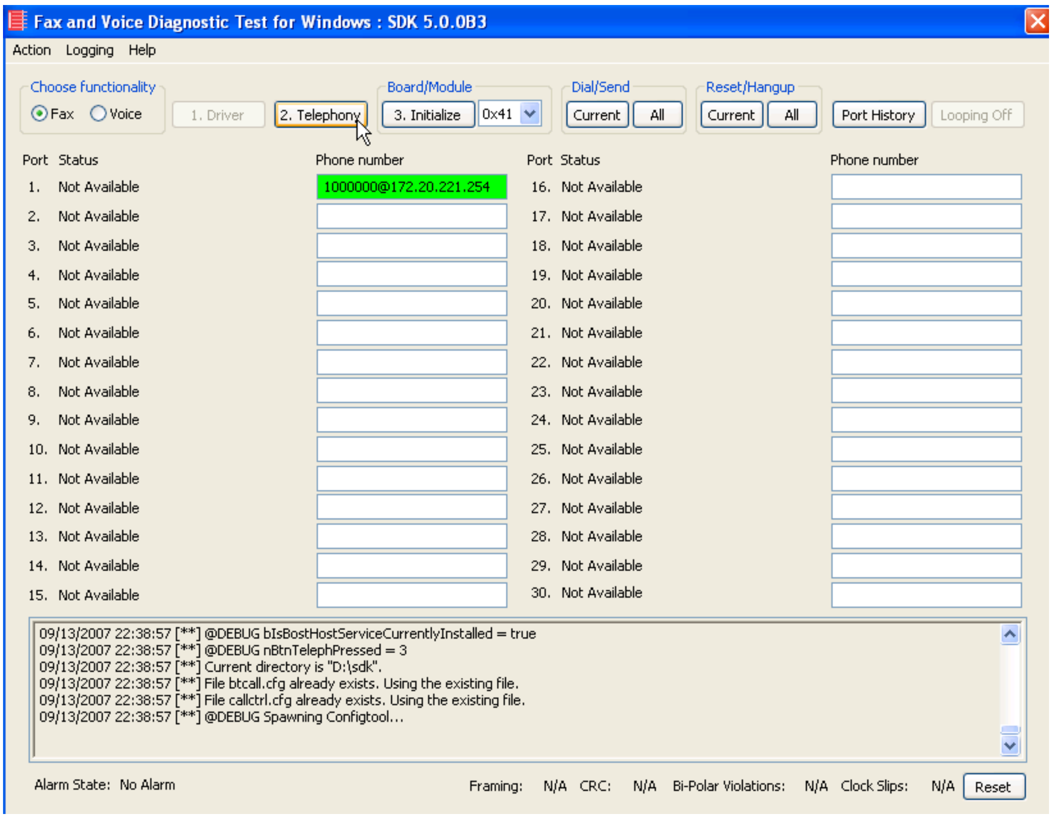

Figure 382. Fax Diagnostic Test

2. Enter the destination phone number and the IP address of the CUCM as shown below.

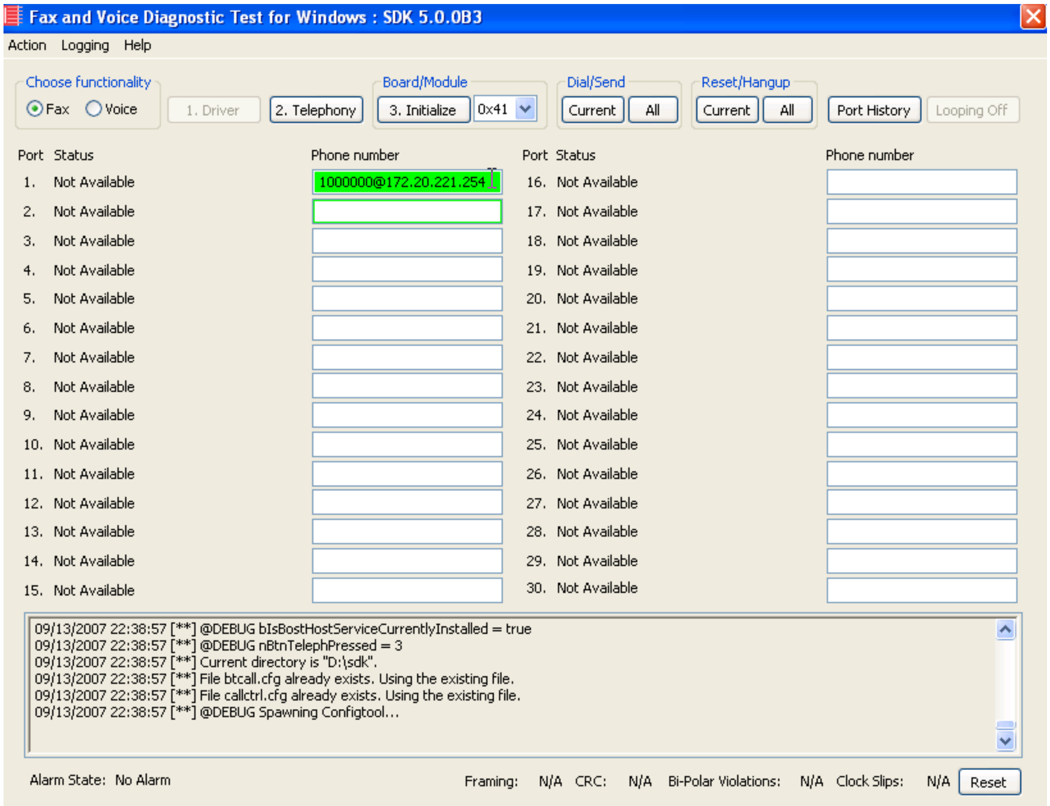

Figure 383. IP Address

3. Click Current to send the test fax.

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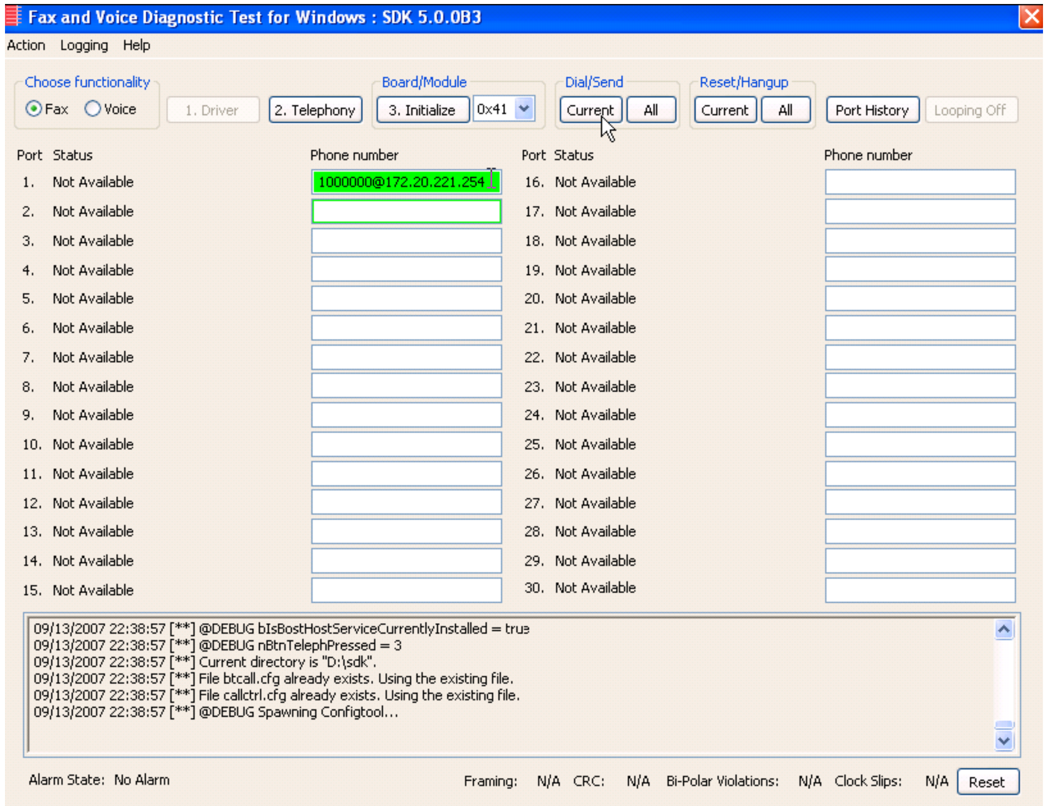

Figure 384. Current

4. When Port 1 [00] pauses the call is complete. Click Port History. The following screen appears. Ensure that the outbound call was successful.

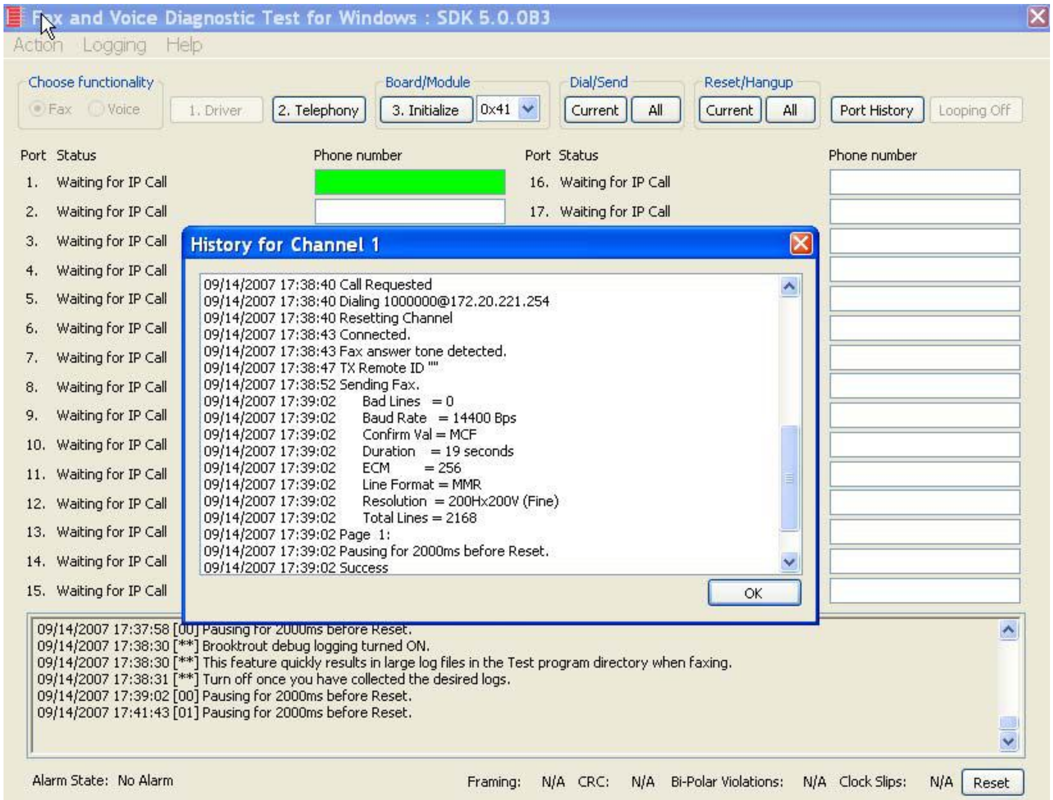

Figure 385. Outbound Call Successful

Inbound Call

➢ **Follow the steps below to verify the inbound fax traffic from the gateway to the CUCM.**

1. Initiate a call from the PSTN using 323254000.
2. Watch all channels because a call should come in on one of the waiting channels

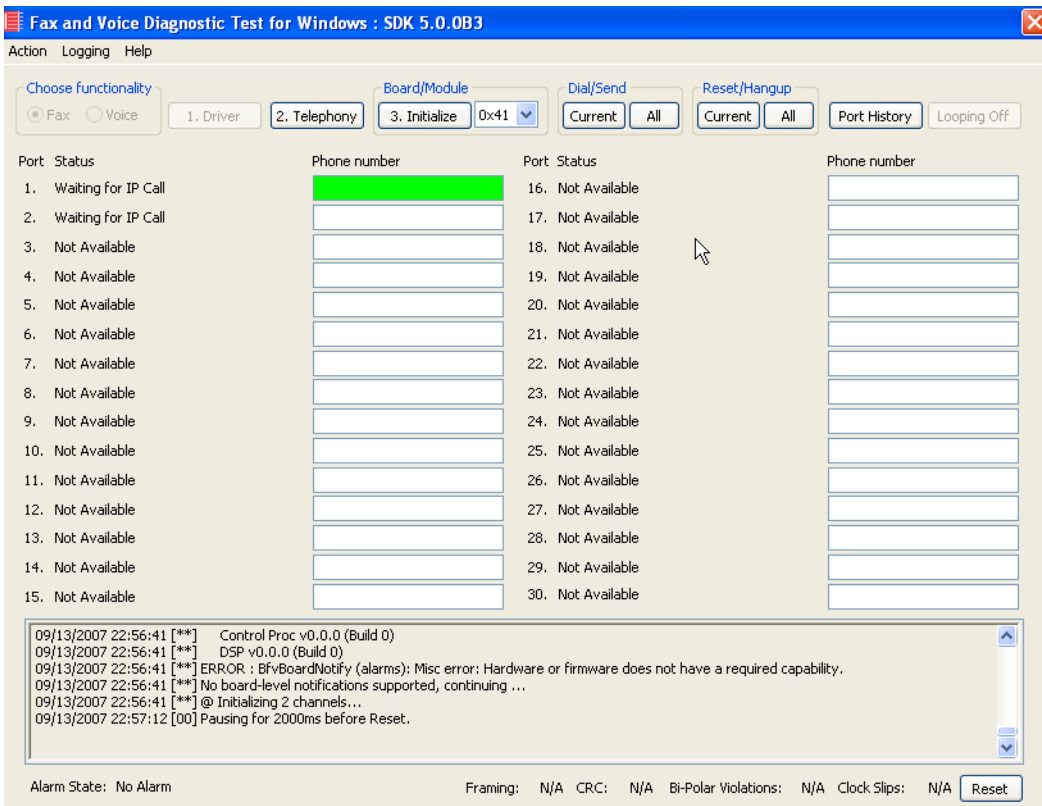

Figure 386. Fax Diagnostic Test

3. Click the Phone number box on which the call came in and click the Port History button.

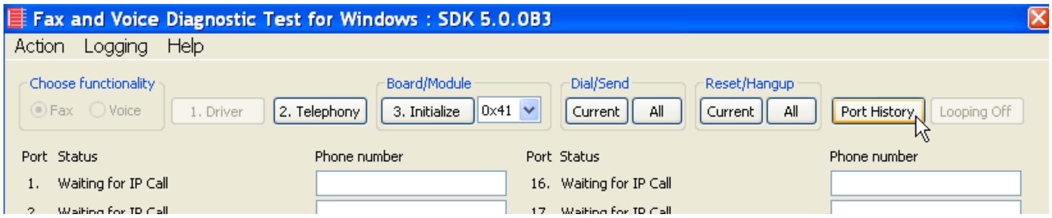

Figure 387. Port History

4. The following screen appears. Verify that the inbound call is successful.

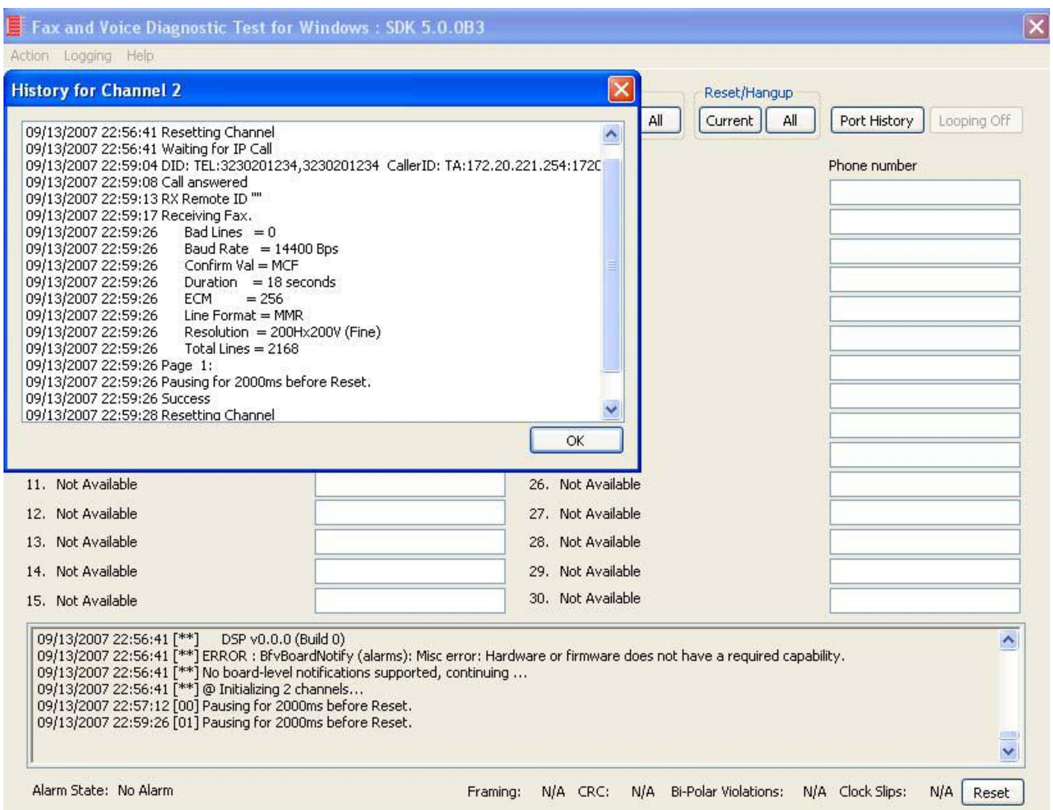

Figure 388. Inbound Call Successful

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12
Topology: SIP - CUCM 6.0(1) - SIP

Introduction

In this topology, the Cisco Unified Communications Manager (hereafter referred to as the CUCM) Version 6.0(1) does all the call control.

The gateway sends all signaling (SIP) to the CUCM which forwards it along to the Fax Server in SIP. The Fax Server responds to the CUCM and the CUCM forwards all signaling back to the gateway. Once the call is established, the fax traffic flows directly between the gateway and the Fax Server.

Note: The SR140 Software is used as an example Fax Server in this chapter. The TR1034 IP board can also be used as Fax Server.

The diagrams below show the IP addresses of the hardware which are also included in the procedure and configuration files referenced in this chapter.

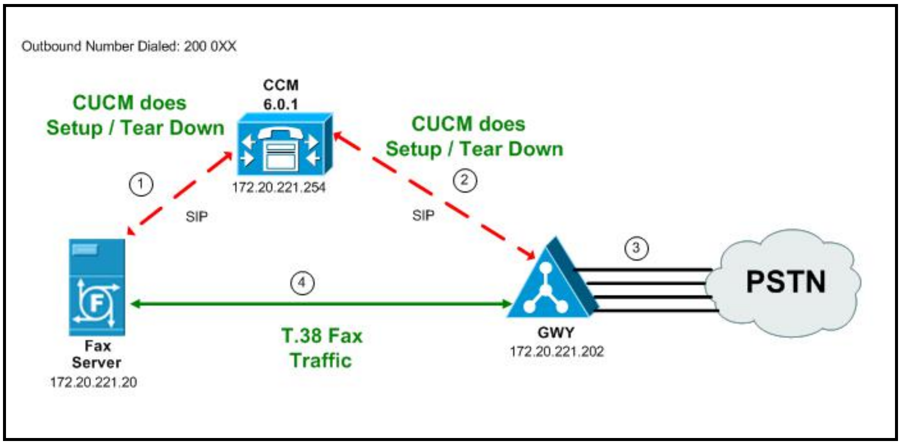

Figure 389. Outbound Call - CUCM Does Call Control - SIP - CUCM 6.0(1) - SIP Topology

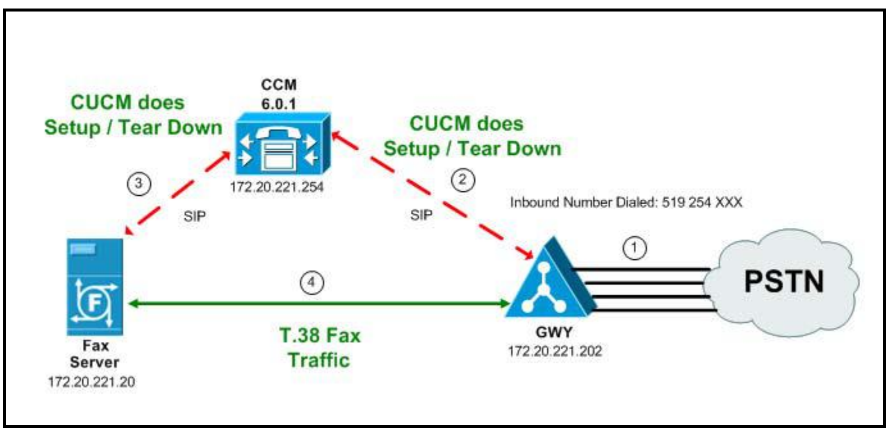

Figure 390. Inbound Call - CUCM Does Call Control - SIP - CUCM 6.0(1) - SIP Topology

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Configuration Sequence

Follow the sequence below when configuring the Dialogic Brooktrout FoIP with Cisco Products.

- *Configuring the Dialogic Brooktrout Fax Server on page 332*
- *Configuring the Cisco Media Gateway with IOS Commands on page 335*
- *Configuring the Cisco Unified Communications Manager on page 336*
  - *Configuring CUCM SIP Trunk Security Profile on page 337*
  - *Configuring the Trunk Between CUCM and the Cisco Media Gateway on page 342*
  - *Configuring the Trunk Between the CUCM and the Fax Server on page 346*
  - *Configuring a Route Pattern for a Trunk to the Cisco Media Gateway on page 350*
  - *Configuring a Route Pattern for a Trunk to the Fax Server on page 353*
- *Verifying the Configuration on page 358*

Configuring the Dialogic Brooktrout Fax Server

➢ **Follow the steps below to configure the SR140 Software using the Dialogic Brooktrout Configuration Tool to support this network topology.**

1. Open the Dialogic Brooktrout Configuration Tool in Advanced Mode.

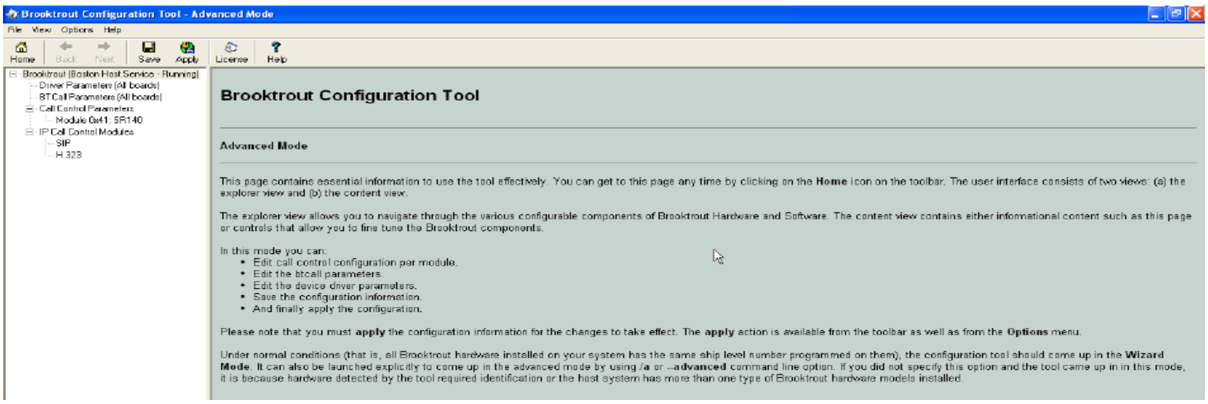

Figure 391. Dialogic Brooktrout Confutation Tool

2. Configure for the SIP protocol as follows. Under IP Call Control Modules, click SIP then click the IP Parameters tab. The following screen appears.

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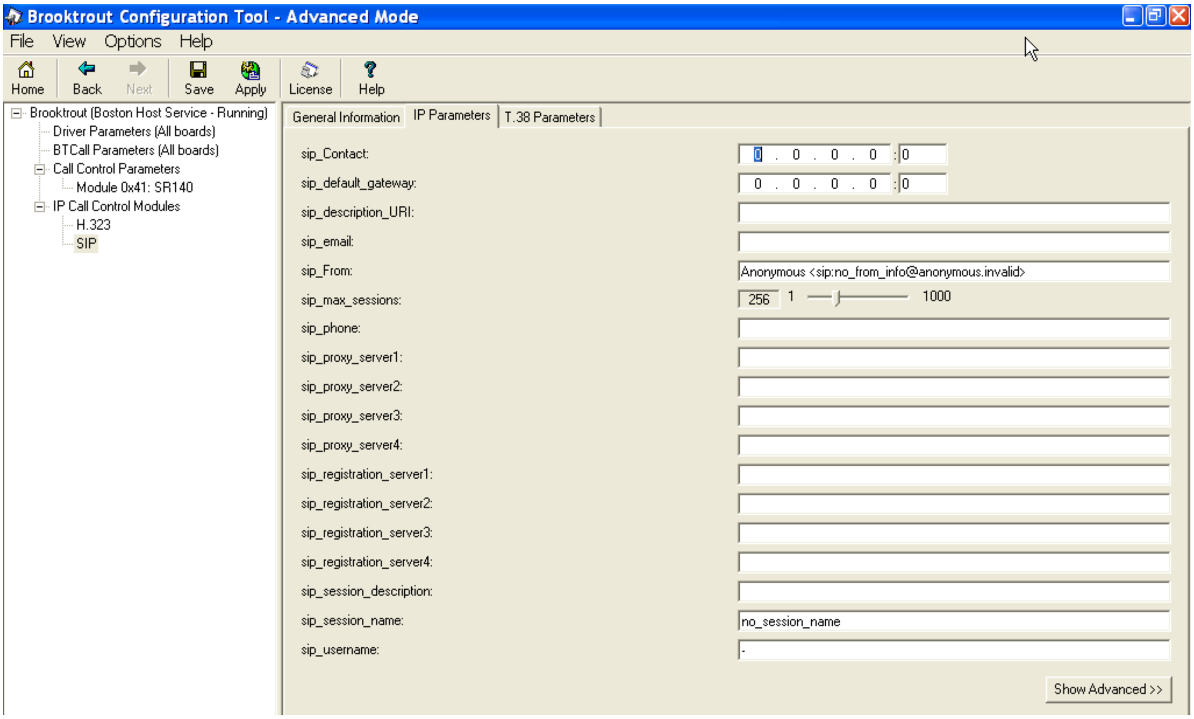

Figure 392. SIP Configuration

Note: When the SIP_Contact is set to the default value (0.0.0.0:0), the system uses the IP address of the first Ethernet module in the system and port number 5060. If there are more than one ethernet modules in the Fax Server then specify the actual IP address and port of the desired ethernet module that will be used.

3. Click T.38 Parameter and complete fields as indicated below.

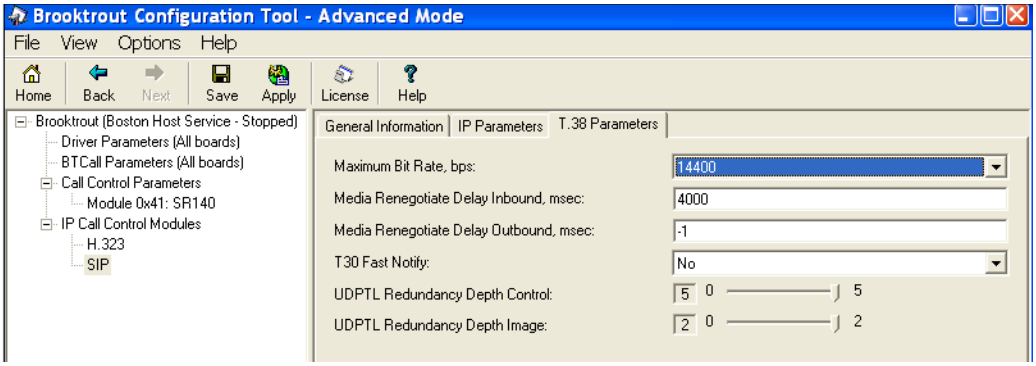

Figure 393. T.38 Parameters

4. Under Call Control Parameters, click Module 0x41: SR140 and select the Parameters tab. Complete the fields as indicated below.

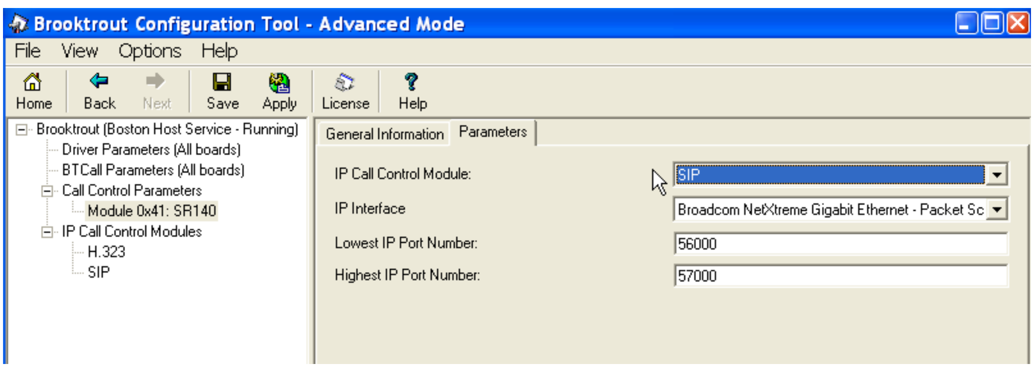

Figure 394. Parameters

5. Select the desired network interface controller (NIC) for the IP Interface field.
6. Click Apply.

Configuration Files

Use the configuration files in the sections below to help you configure the SR140 Software:

Appendix K, SR140 Configuration Files on page 570

Configuring the Cisco Media Gateway with IOS Commands

Refer to the configuration file in the *Appendix K, Cisco Gateway-Config on page 576* as a guide to configure your Cisco Media Gateway with IOS Command.

Configuring the Cisco Media Gateway involves the following.

- Enable T.38 support
- Configure line card interface
- Configure Dial-Peers (VoIP and POTS)

Configuring the Cisco Unified Communications Manager

The procedure includes the following:

- *Appendix O, Configuring Service Activation on page 646* (If not completed already.)
- *Appendix O, Configuring System Service Parameters on page 648* (If not completed already.)
- *Configuring CUCM SIP Trunk Security Profile on page 337*
- *Configuring the Trunk Between CUCM and the Cisco Media Gateway on page 342*
- *Configuring the Trunk Between the CUCM and the Fax Server on page 346*
- *Configuring a Route Pattern for a Trunk to the Cisco Media Gateway on page 350*
- *Configuring a Route Pattern for a Trunk to the Fax Server on page 353*

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Configuring CUCM SIP Trunk Security Profile

You must configure a SIP Trunk security profile that you will specify when you configure SIP trunks from the Cisco Unified Communications Manager.

➢ **Follow the steps below.**

1. Open the Cisco Unified Communications Manager Administration Version 6.0(1). The following screen appears.
2. From the System menu, select Security Profile, SIP Trunk Security Profile.

Figure 395. SIP Trunk Security Profile

3. The following screen appears. Click Add New.

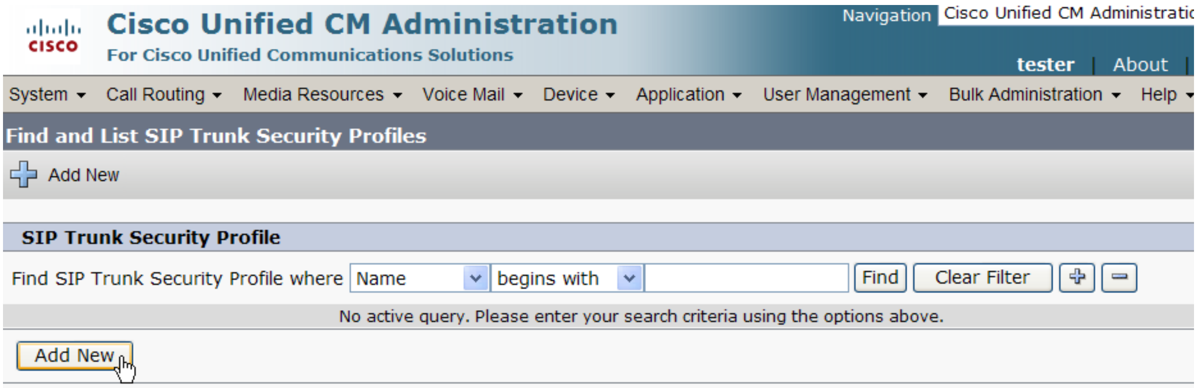

Figure 396. Add New SIP Trunk Security Profile

This document is not to be distributed to a third party without written permission from Dialogic.

The following screen appears.

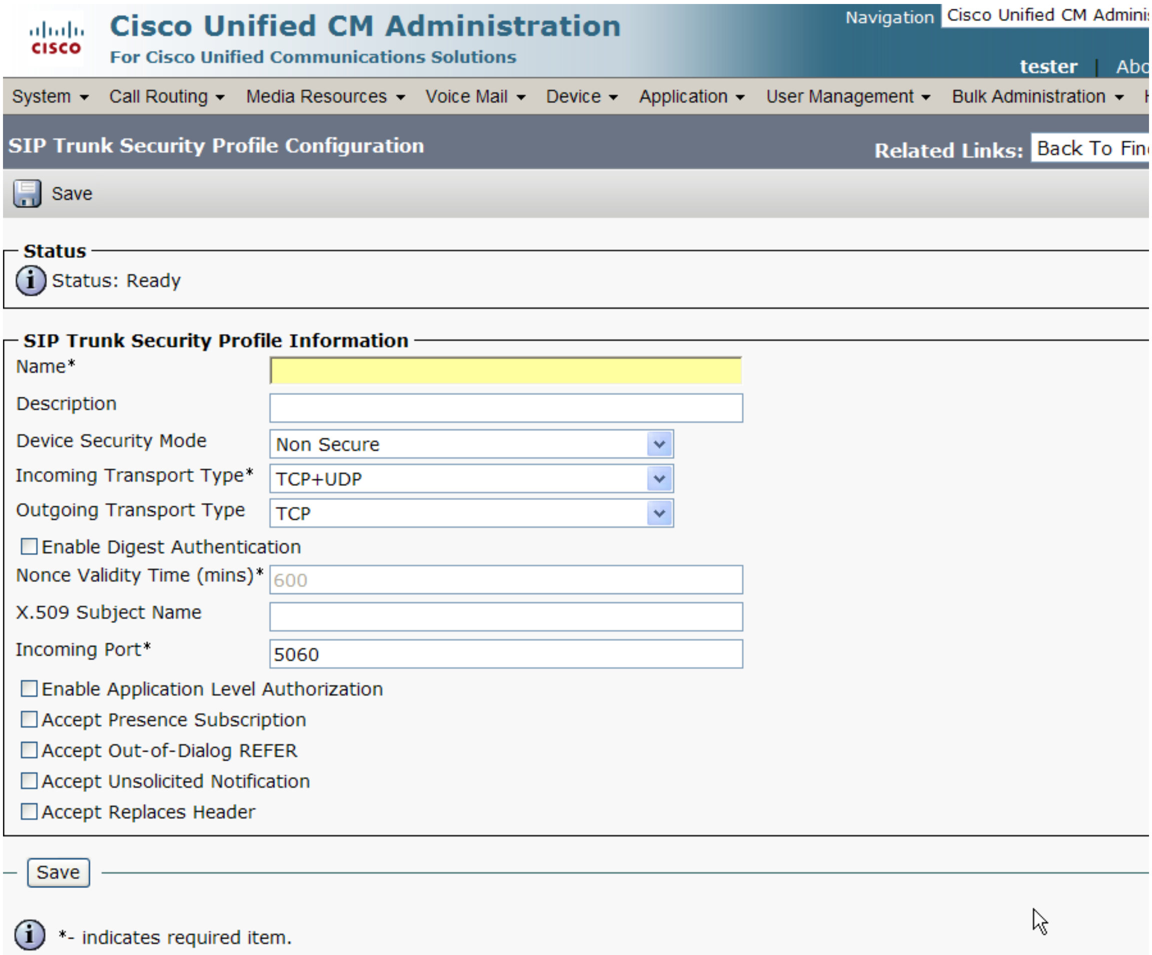

Figure 397. SIP Trunk Security Profile Configuration

4. Complete the screen as indicated below.

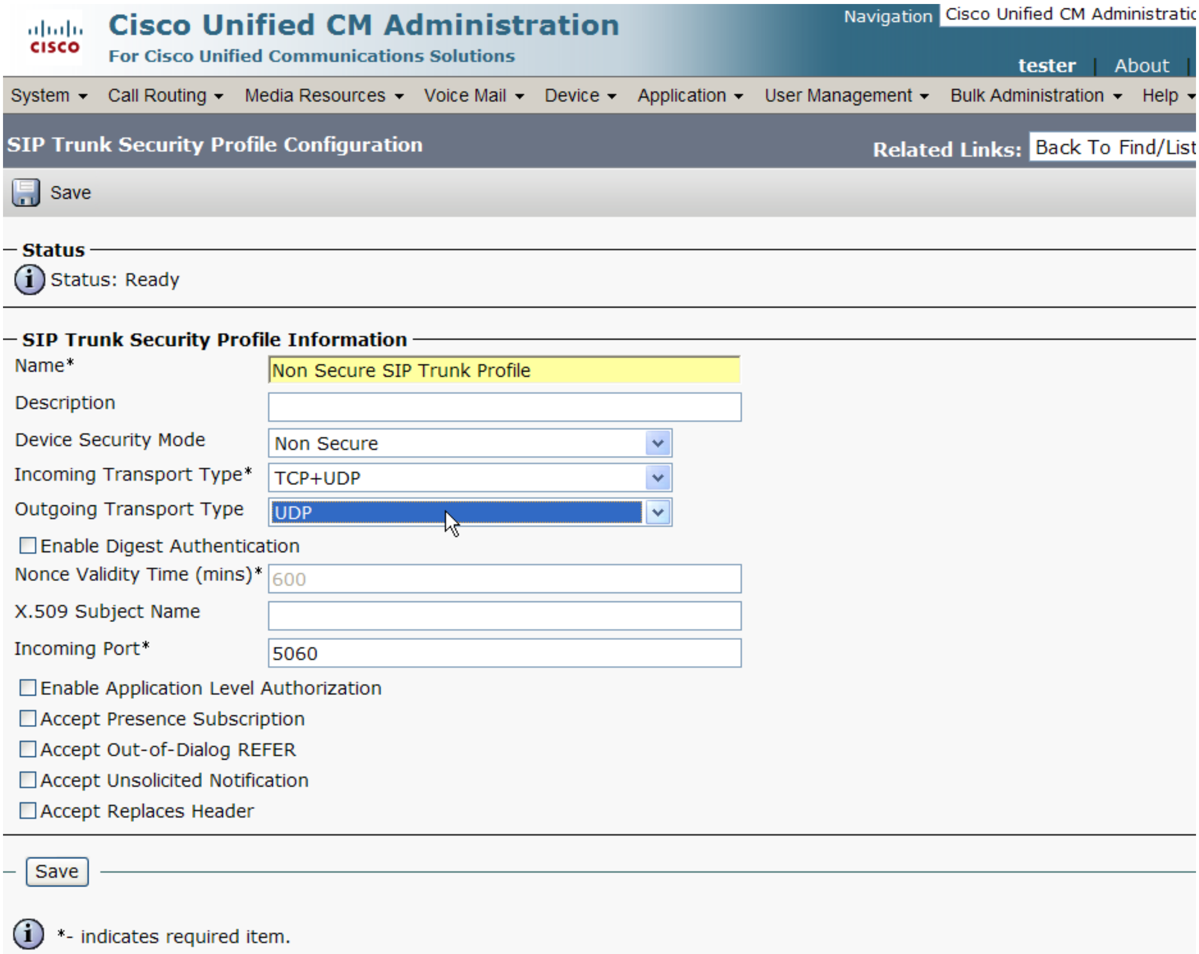

Figure 398. SIP Trunk Security Profile Data

5. Click Save.

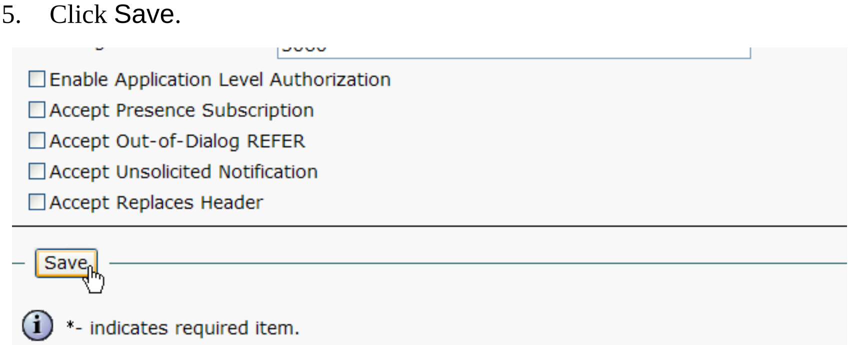

Figure 399. Save Configuration

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6. Click Find to display the new SIP Trunk Security Profile.

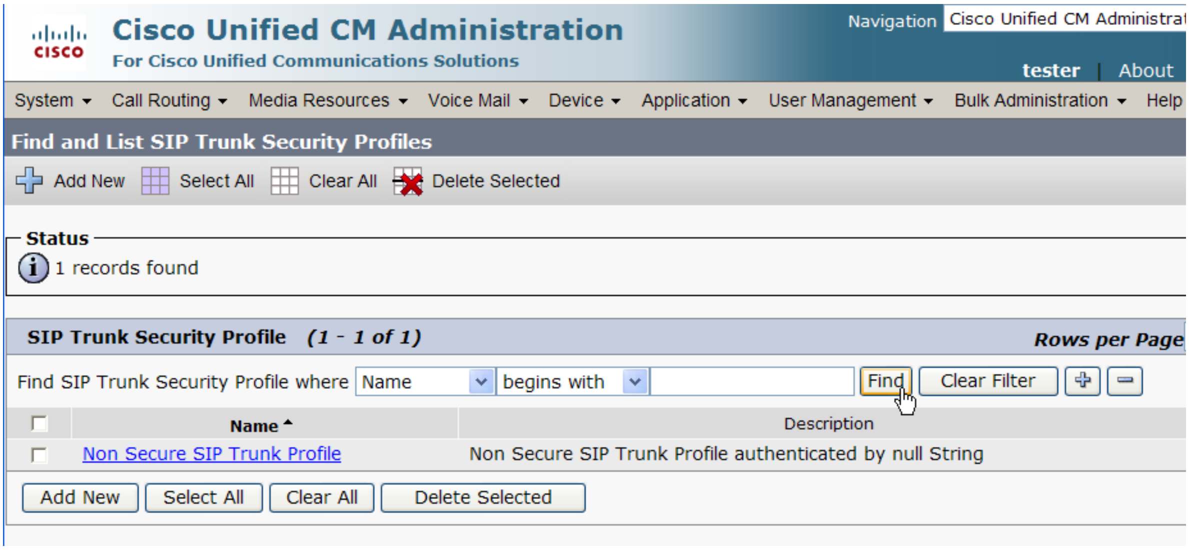

Figure 400. New SIP Trunk Security Profile

Note that you have to reset the trunk for the changes to take effect.

Configuring the Trunk Between CUCM and the Cisco Media Gateway

➢ **Follow the steps below.**

1. Open the Cisco Unified Communications Manager Administration Version 6.0(1). The following screen appears. From the Device menu, select Trunk.

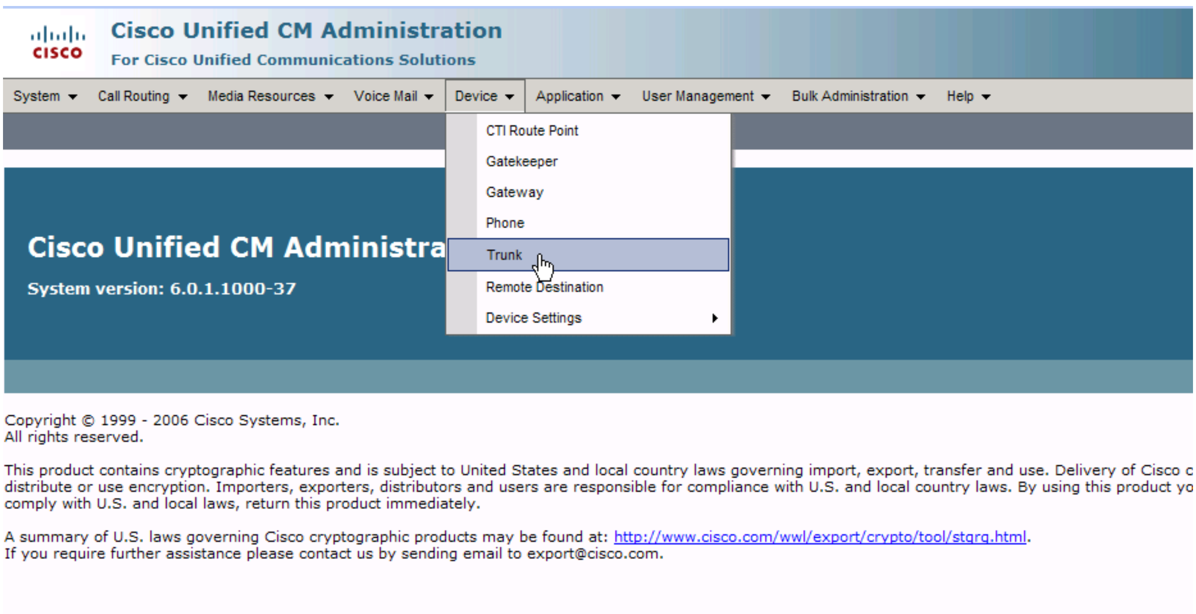

Figure 401. CUCM Version 6.0(1)

2. The following screen appears. Click Add New.

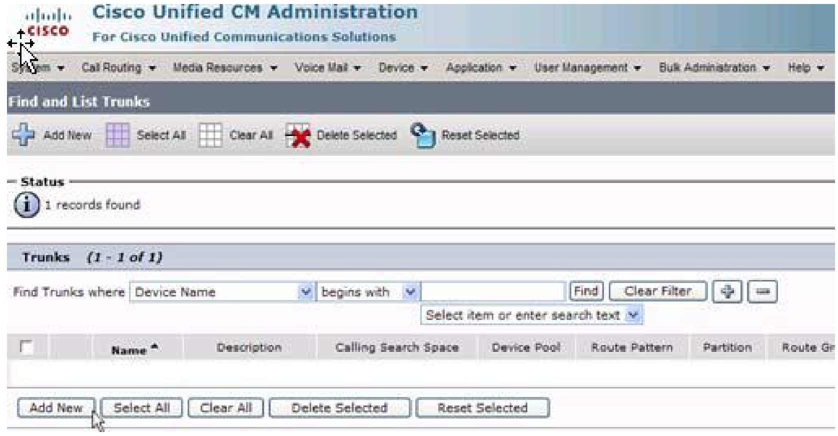

Figure 402. Add New

The following screen appears.

Figure 403. Trunk Configuration

3. Select SIP Trunk for the Trunk Type. The Device Protocol defaults to SIP.
4. Click Next.

5. Complete the screen as indicated below.

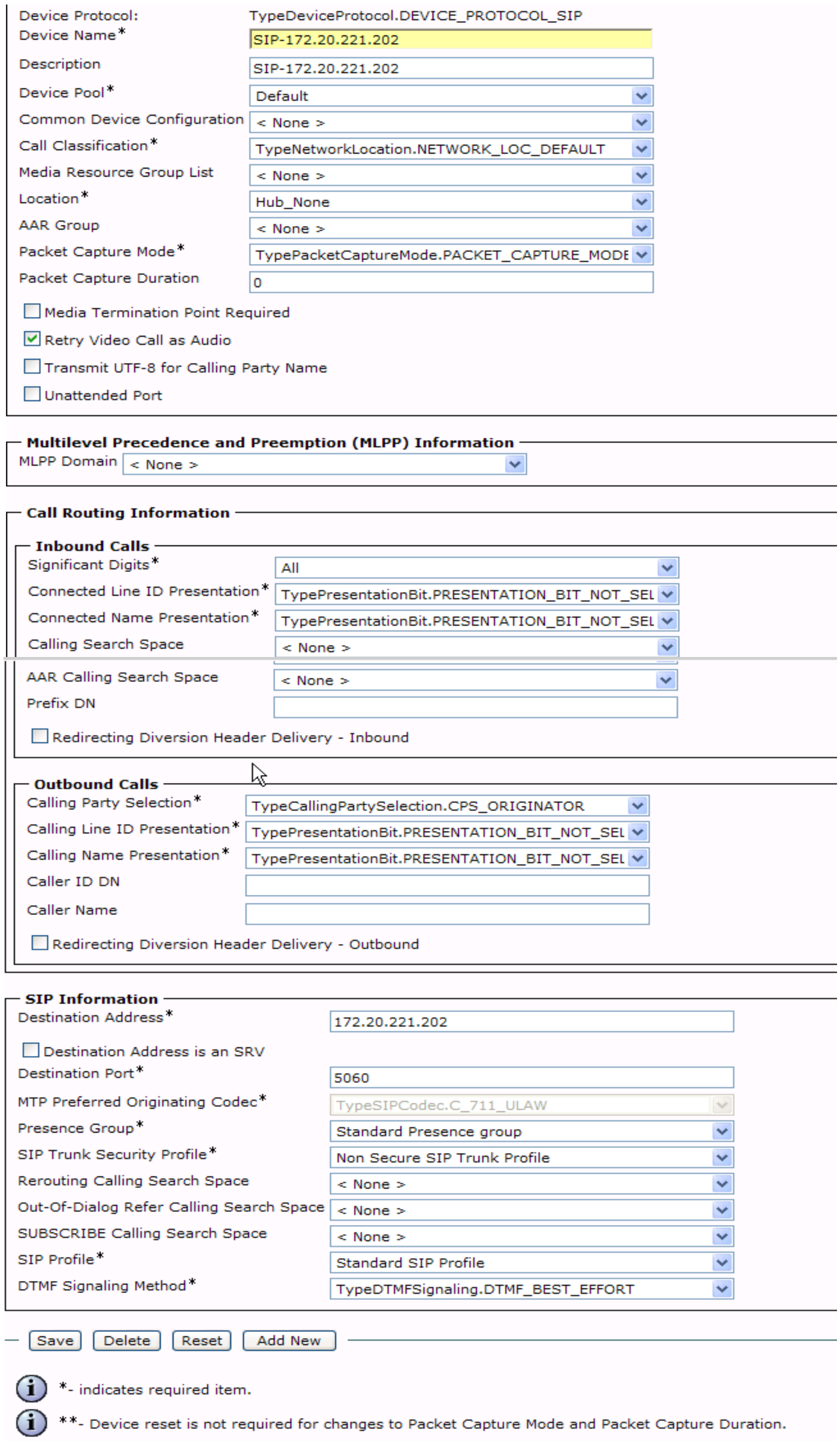

Figure 404. Trunk Configuration Data

6. Click Save.

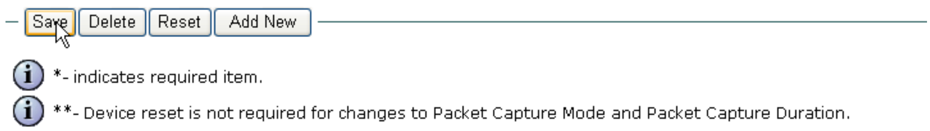

Figure 405. Save

7. Click OK.

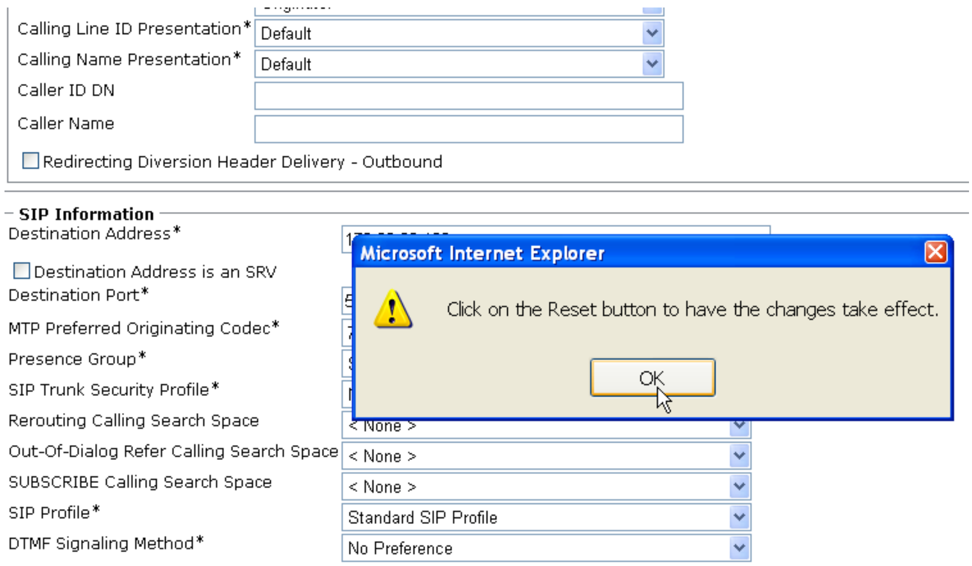

Figure 406. OK

8. Click Reset.

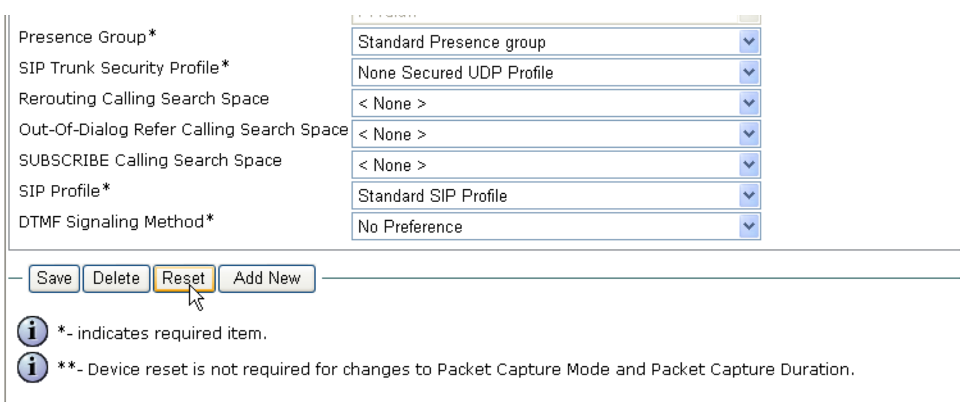

Figure 407. Reset

Configuring the Trunk Between the CUCM and the Fax Server

➢ **Follow the steps below.**

1. Open the Cisco Unified Communications Manager Administration Version 6.0(1). The following screen appears. From the Device menu, select Trunk.

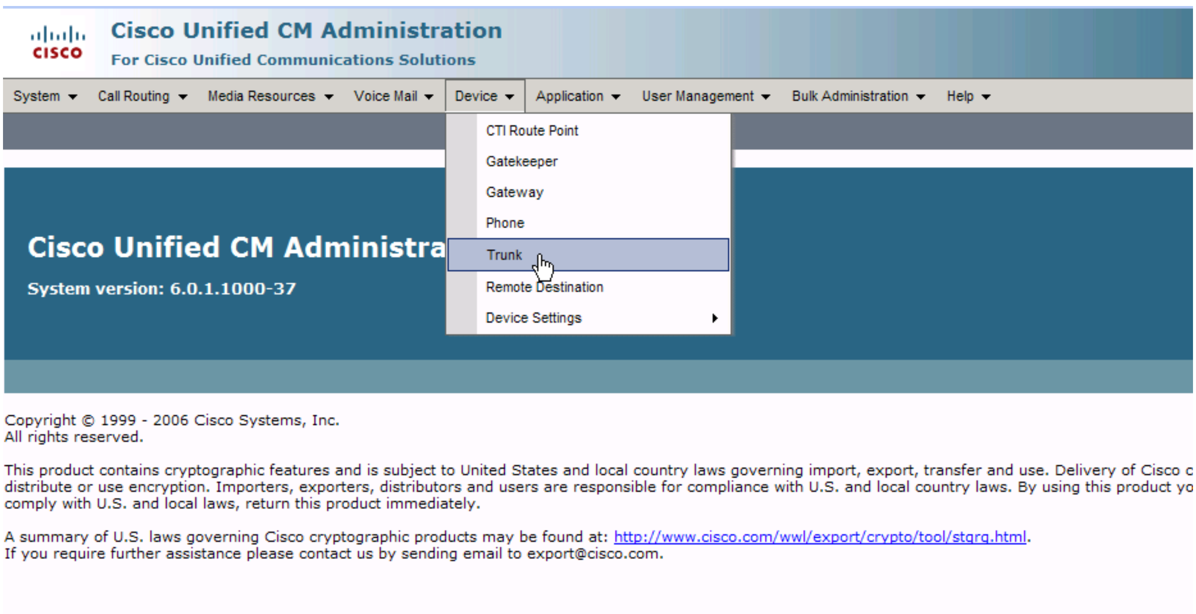

Figure 408. Trunk

2. The following screen appears. Click Add New.

 This document is not to be distributed to a third party without written permission from Dialogic.

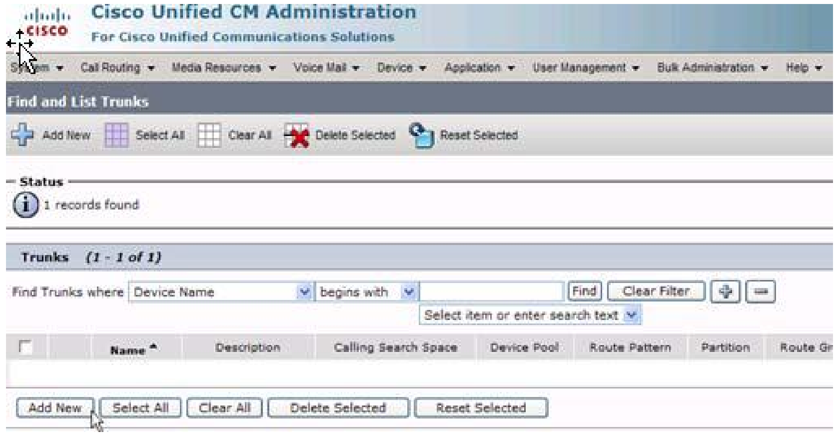

Figure 409. Add New

The following screen appears.

Figure 410. Trunk Configuration

3. Select SIP Trunk for the Trunk Type. The Device Protocol defaults to SIP.
4. Click Next.

5. Complete the screen as indicated below.

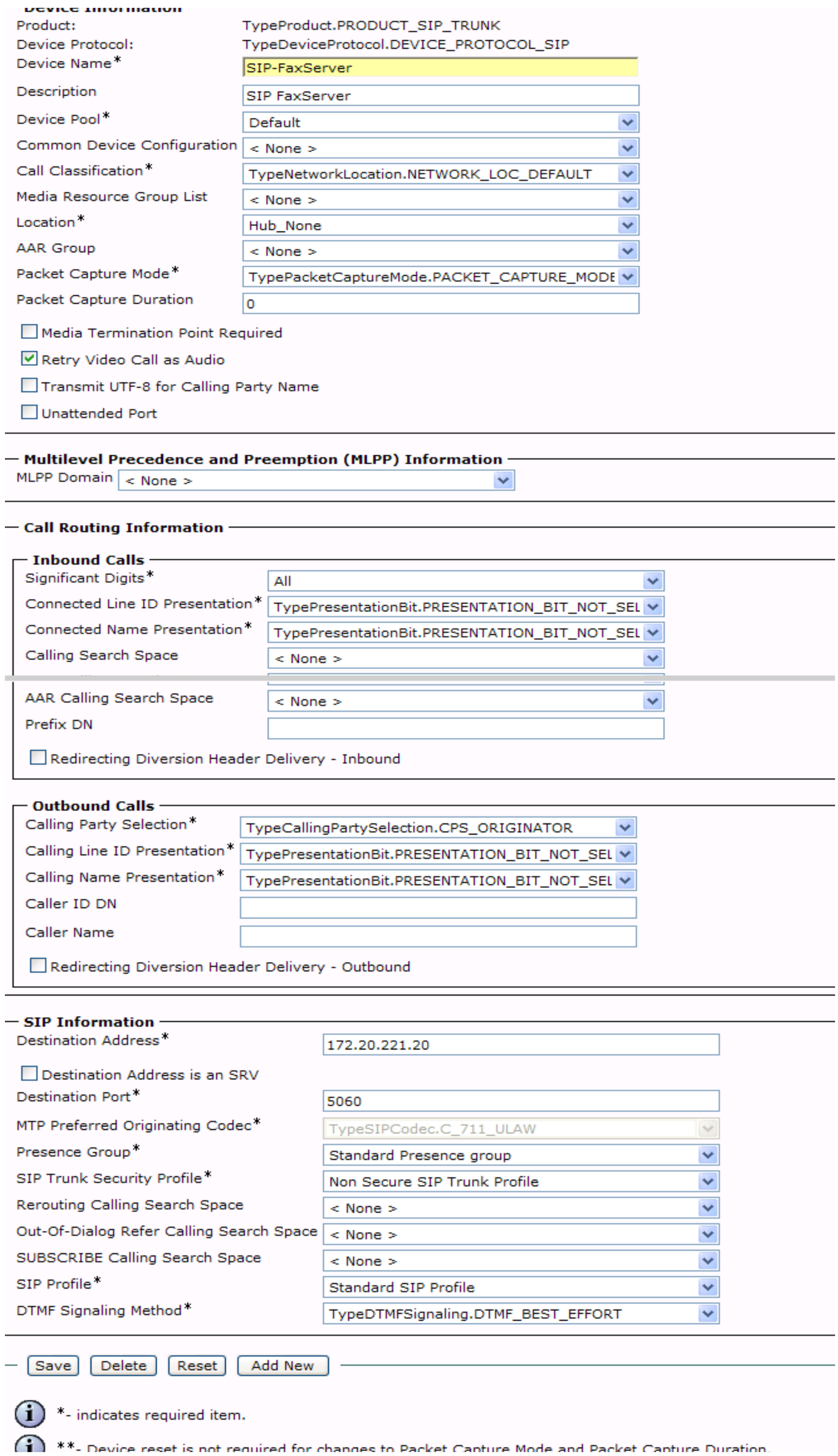

Figure 411. Trunk Configuration Data

6. Click Save.

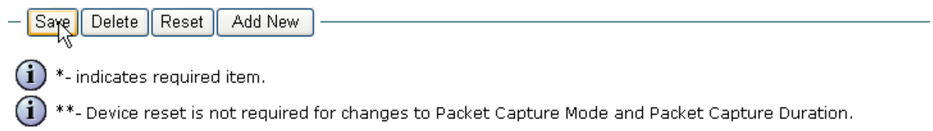

Figure 412. Save

7. Click OK.

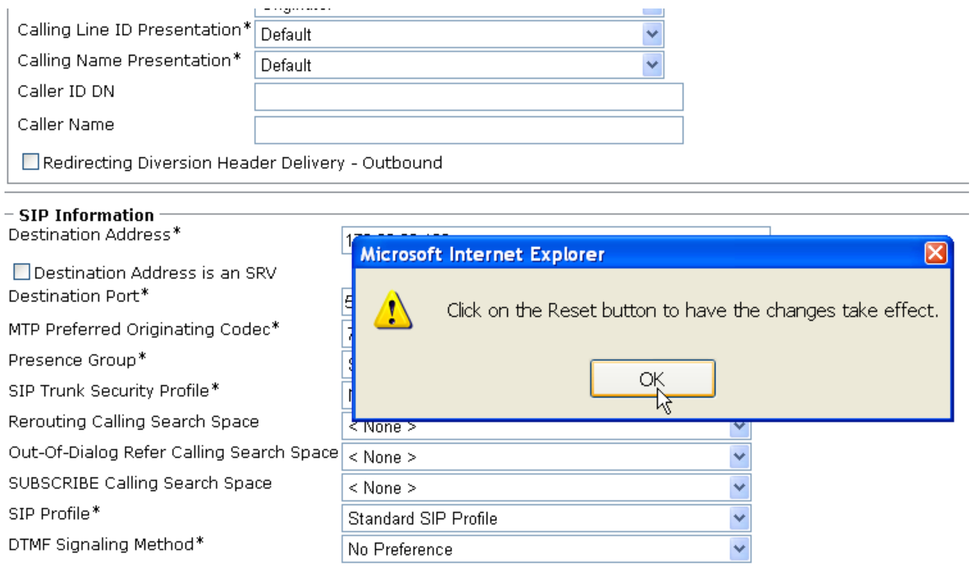

Figure 413. OK

8. Click Reset.

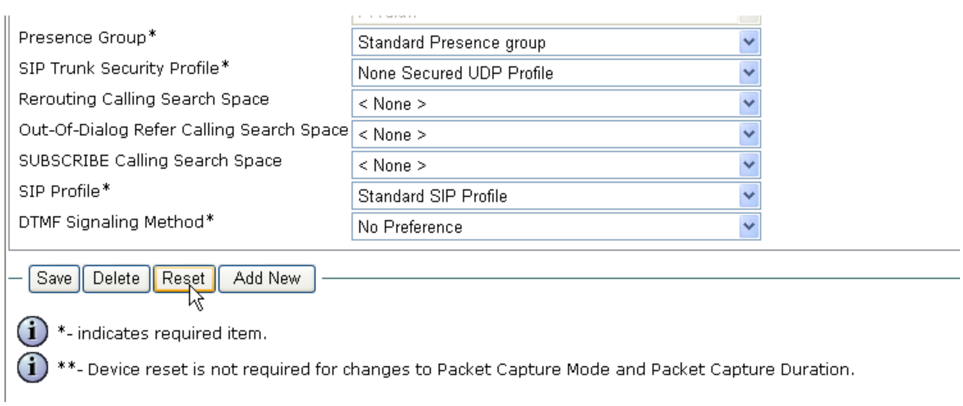

Figure 414. Reset

9. Follow the steps below.

Configuring a Route Pattern for a Trunk to the Cisco Media Gateway

➢ **Follow the steps below to configure a route pattern for the trunk.**

1. From the Call Routing menu, click Route/Hunt, Route Pattern.

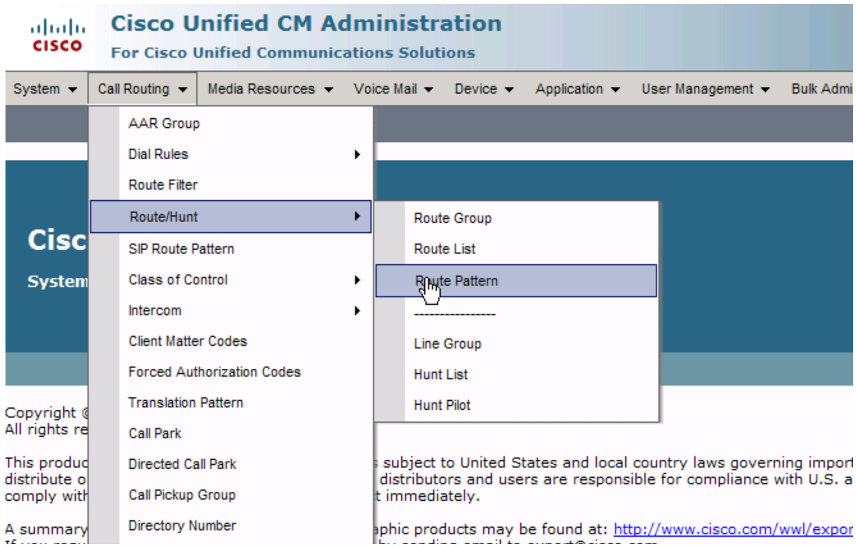

Figure 415. Route Pattern

The following screen appears.

2. Click Add New.

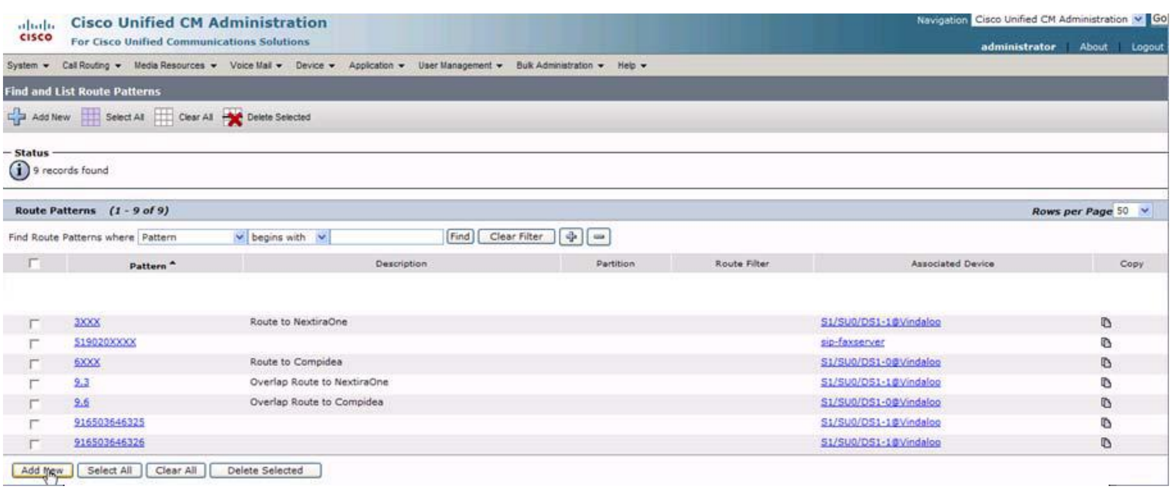

Figure 416. Add New

3. Complete the screen as indicated below.

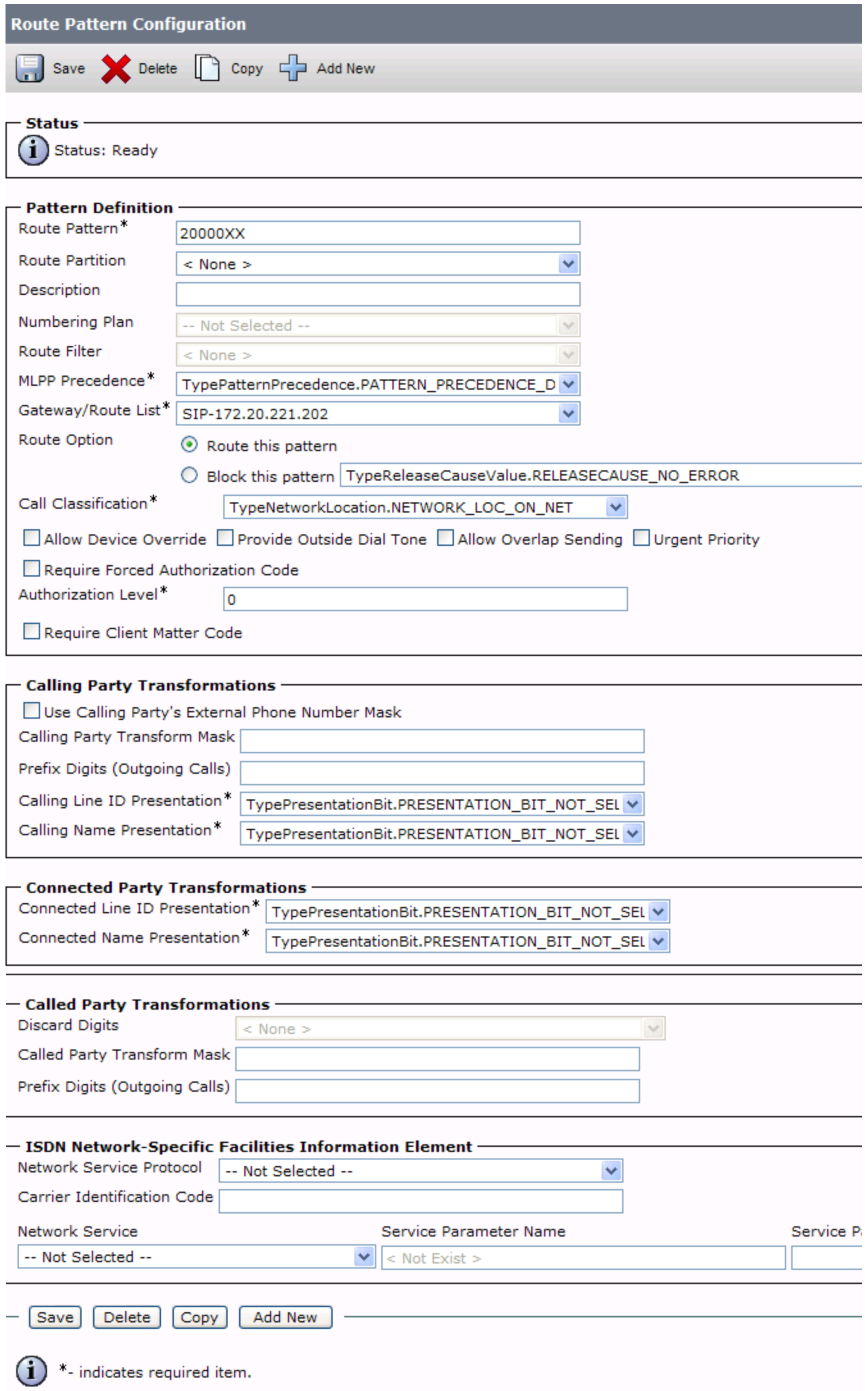

Figure 417. Route Pattern Configuration

4. The following appears because you did not required a Forced Authorization Code. Click OK.

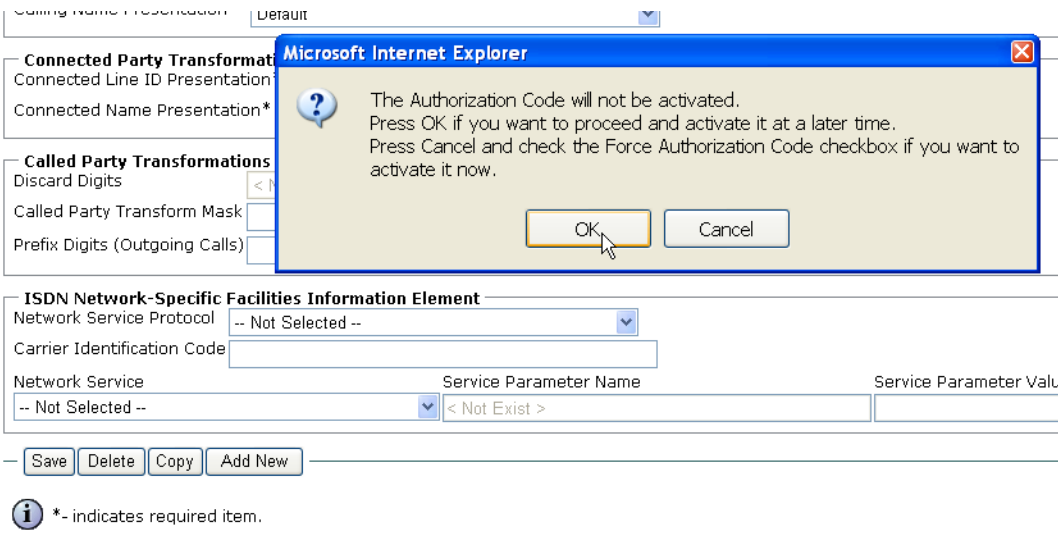

Figure 418. OK

5. The following appears. Click OK.

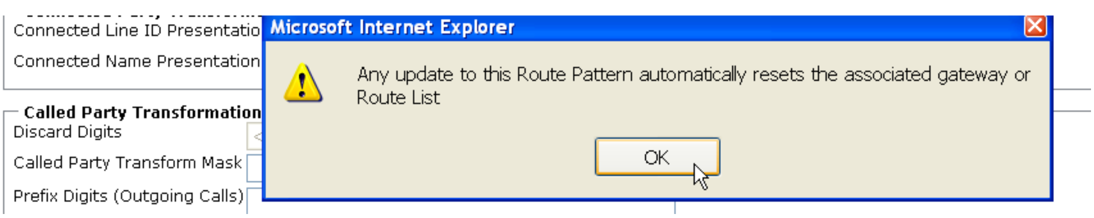

Figure 419. OK

Configuring a Route Pattern for a Trunk to the Fax Server

➢ **Follow the steps below:**

1. From the Call Routing menu, click Route/Hunt, Route Pattern.

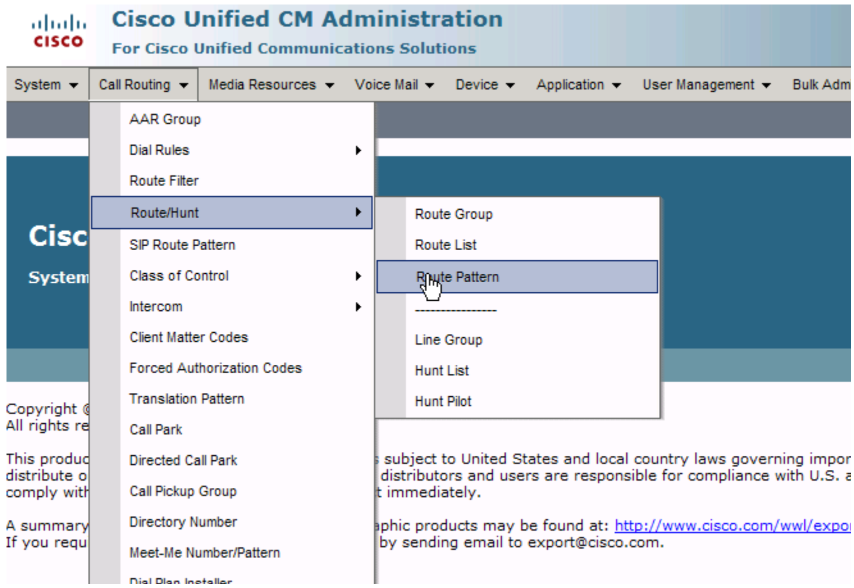

Figure 420. Route Pattern

The following screen appears.

2. Click Add New.

Figure 421. Add New

The following screen appears.

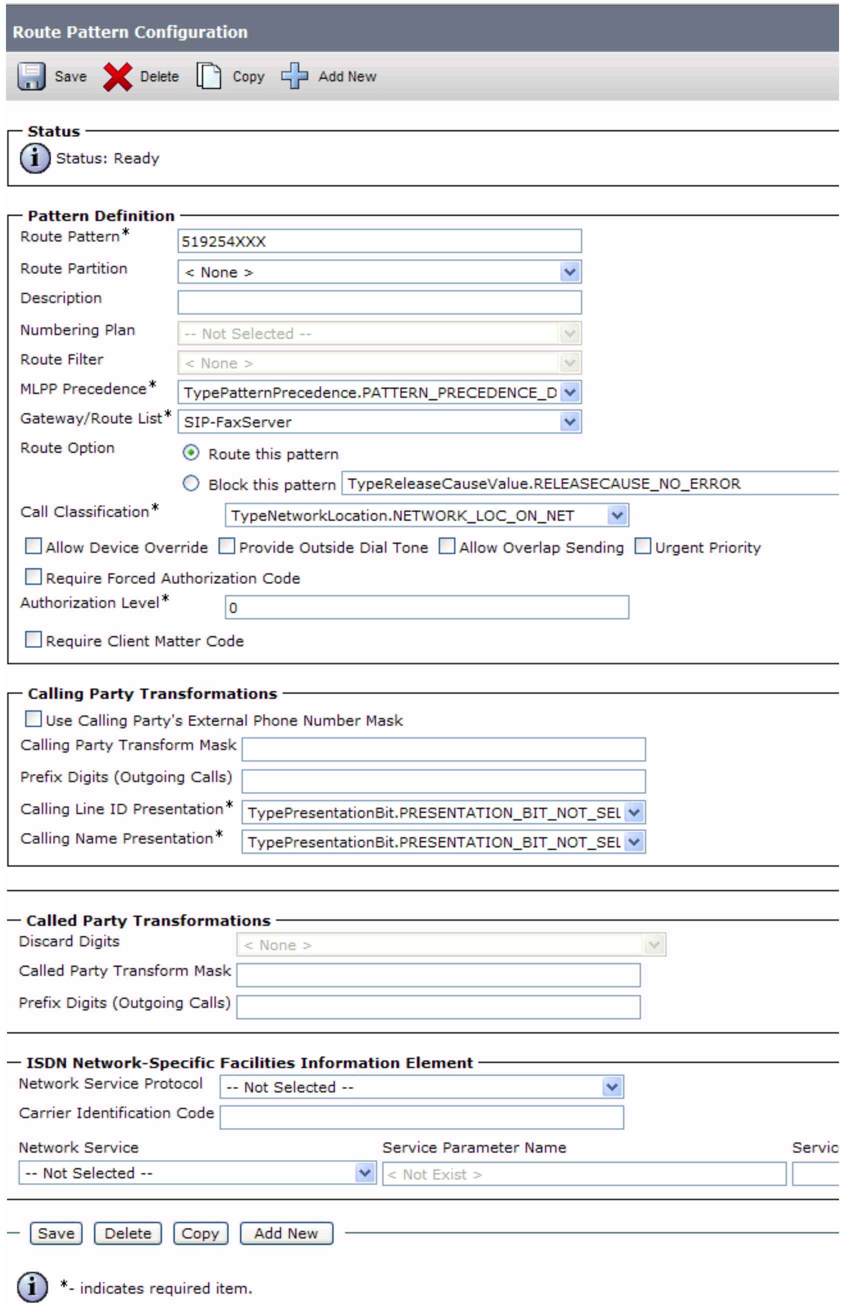

Figure 422.   Route Pattern Configuration Data

3. Click Save.

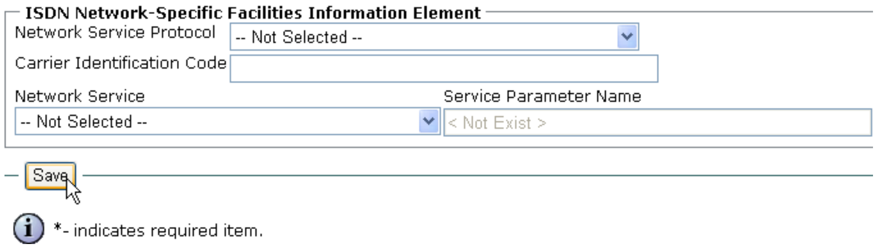

Figure 423. Save

4. The following appears because you did not required a Forced Authorization Code. Click OK.

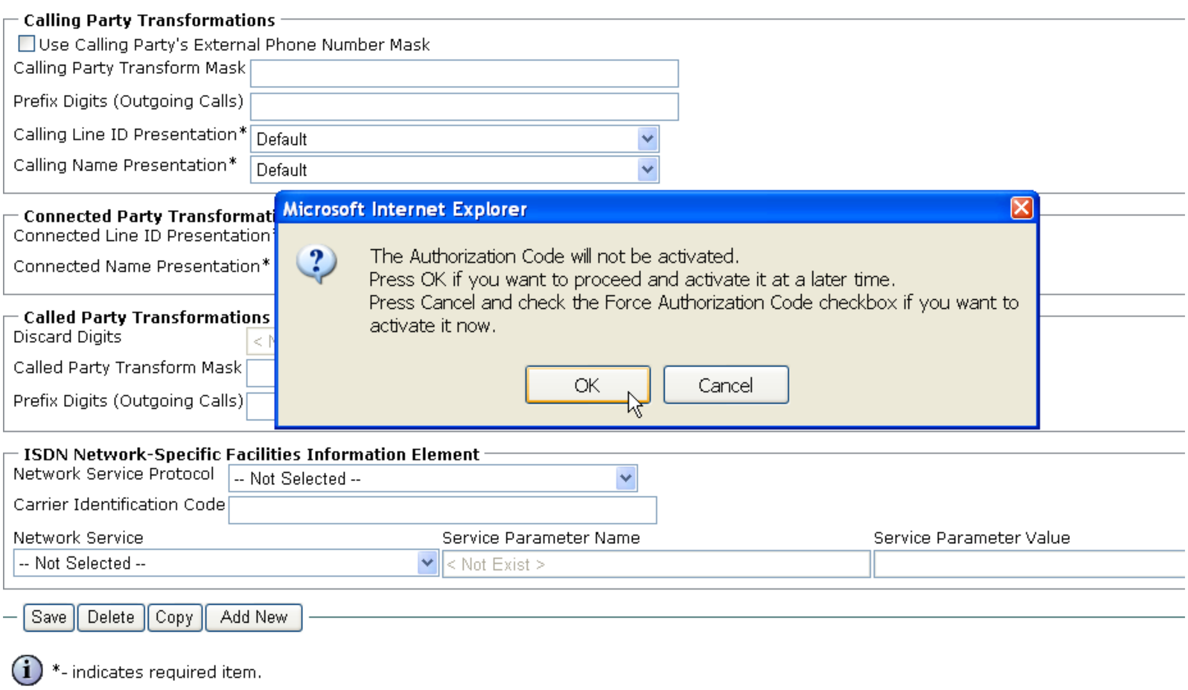

Figure 424. OK

5. The following appears. Click OK.

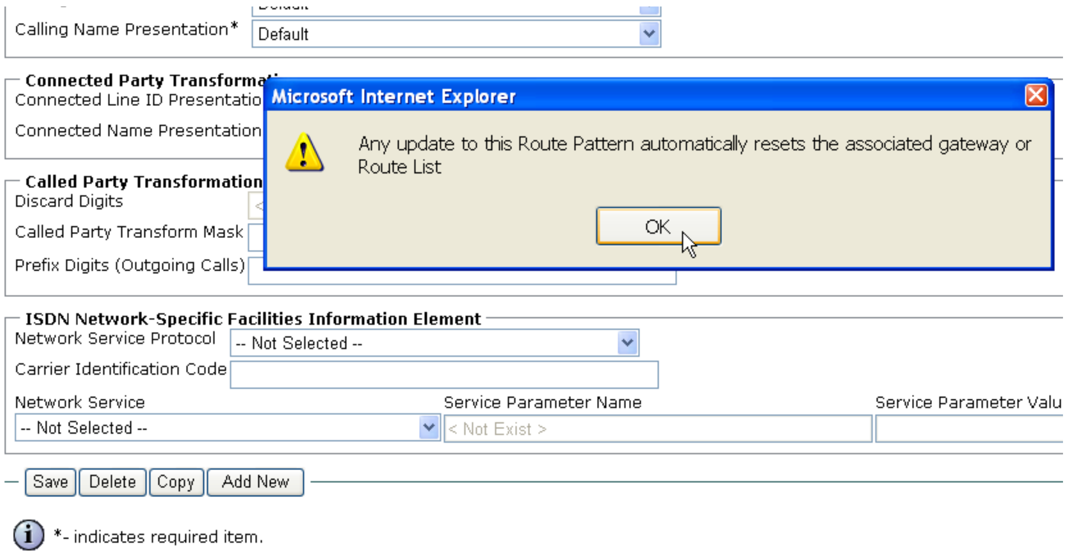

Figure 425. OK

Verifying the Configuration

The Dialogic Brooktrout Fax and Voice Diagnostic Test utility allows you to test the configuration you completed. You can download the utility and instructions from the technical support site.

http://www.cantata.com/support/lanfax/fax_testing_diagnostic.cfm

This test verifies the following:

- SR140 Software configuration
- Cisco Media Gateway configuration
- Trunks and Route Patterns on the CUCM

Verifying the Fax Server Basic Configuration

Before continuing, refer to *Appendix A, Verifying Basic Configuration - Fax Server 172.20.221.20 on page 418* to verify that the Fax Server software is installed correctly.

Outbound Call

➢ **Follow the steps below to verify outbound fax traffic from the CUCM to the gateway.**

1. Open the Fax and Voice Diagnostic Test utility. The following screen appears. Click the 2.Telephony button (press the Apply button in the Brooktrout Configuration Tool after configuring). Click the 3.Initialize button.

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2. Enter the destination telephone number and the IP Address of the CUCM as follows.

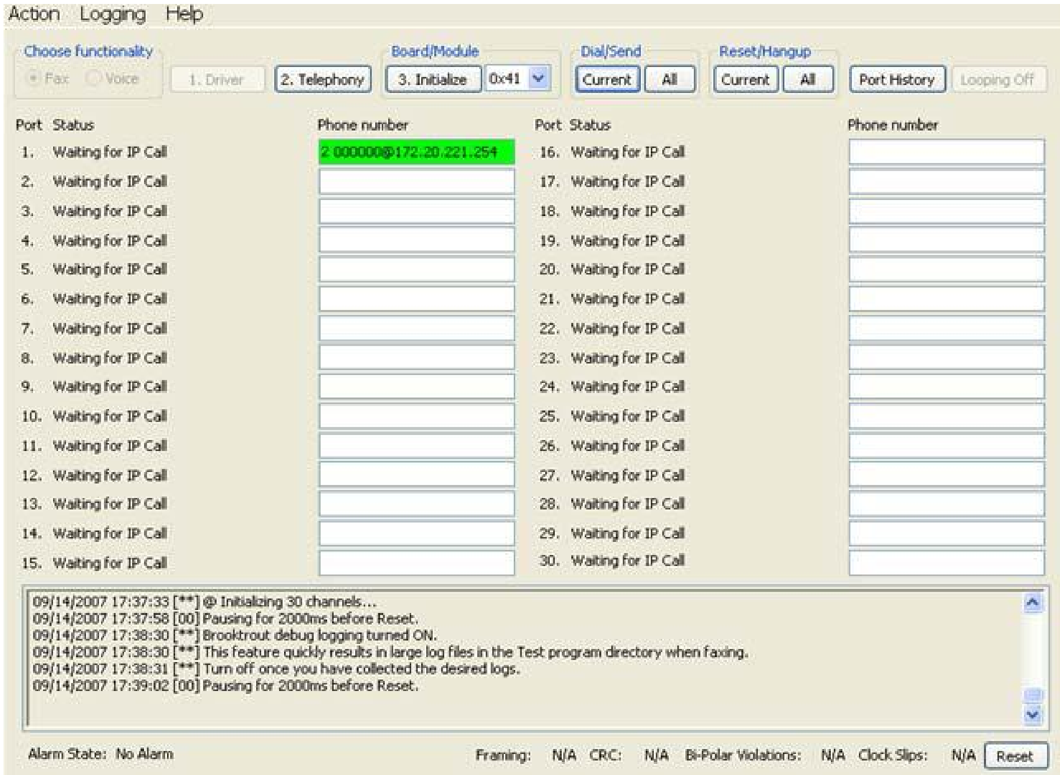

Figure 426. IP Address

3. Click Current to send the test fax.

Figure 427. Send Test Fax

4. Note the status at the bottom of the screen. When Port 1 [00] pauses the call is complete. Click Port History.

Figure 428. Port History

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The following screen appears. Verify that the outbound call was successful.

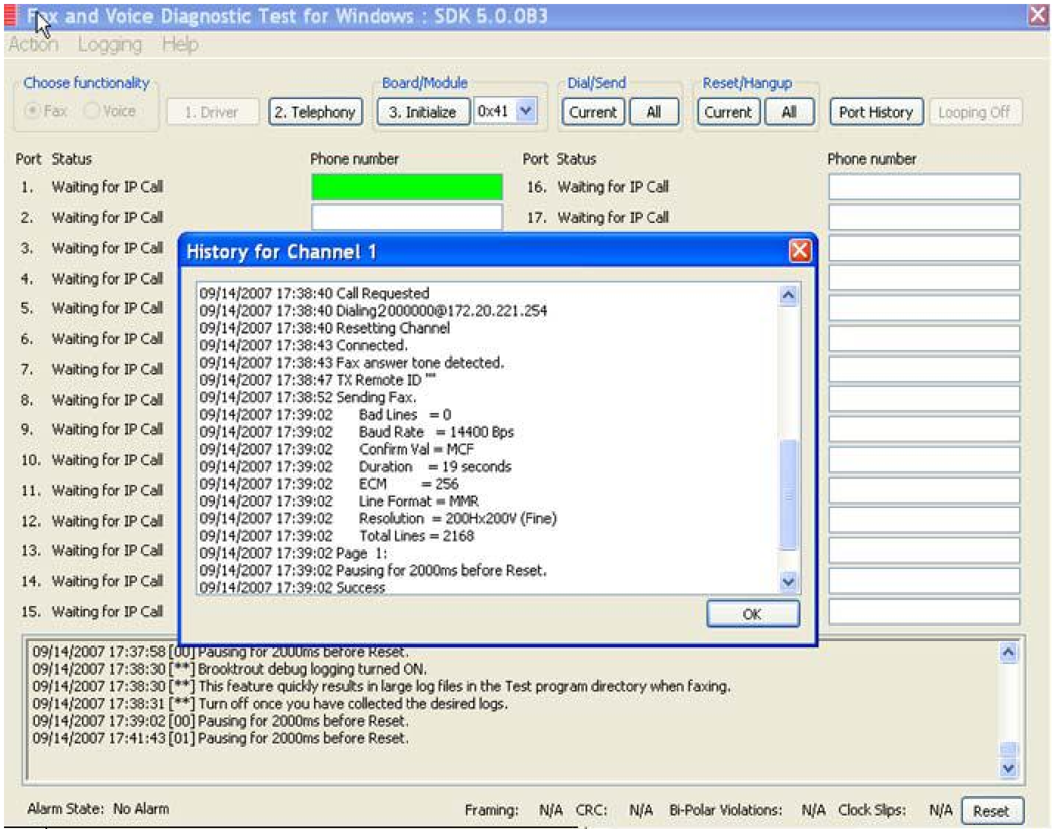

Figure 429. Outbound Call Success

Inbound Call

➢ **Follow the steps below to verify the inbound fax traffic from the gateway to the CUCM.**

1. Initiate a call from the PSTN using 519254000.
2. Watch all channels because a call should come in on one of the waiting channels

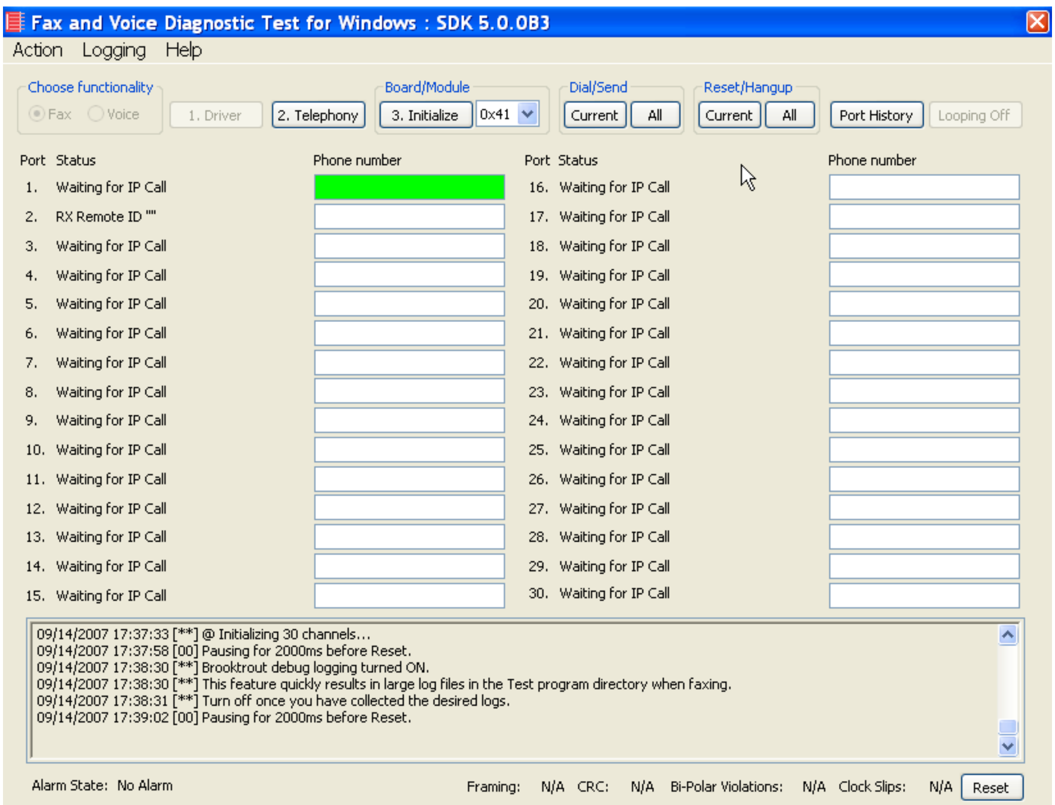

Figure 430. Inbound Call

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3. Click the Phone number box on which the call came in and click the Port History button.

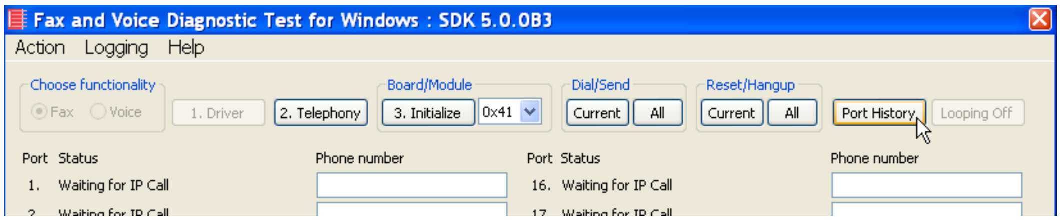

Figure 431. Port History

4. The following screen appears. Verify that the inbound call is successful.

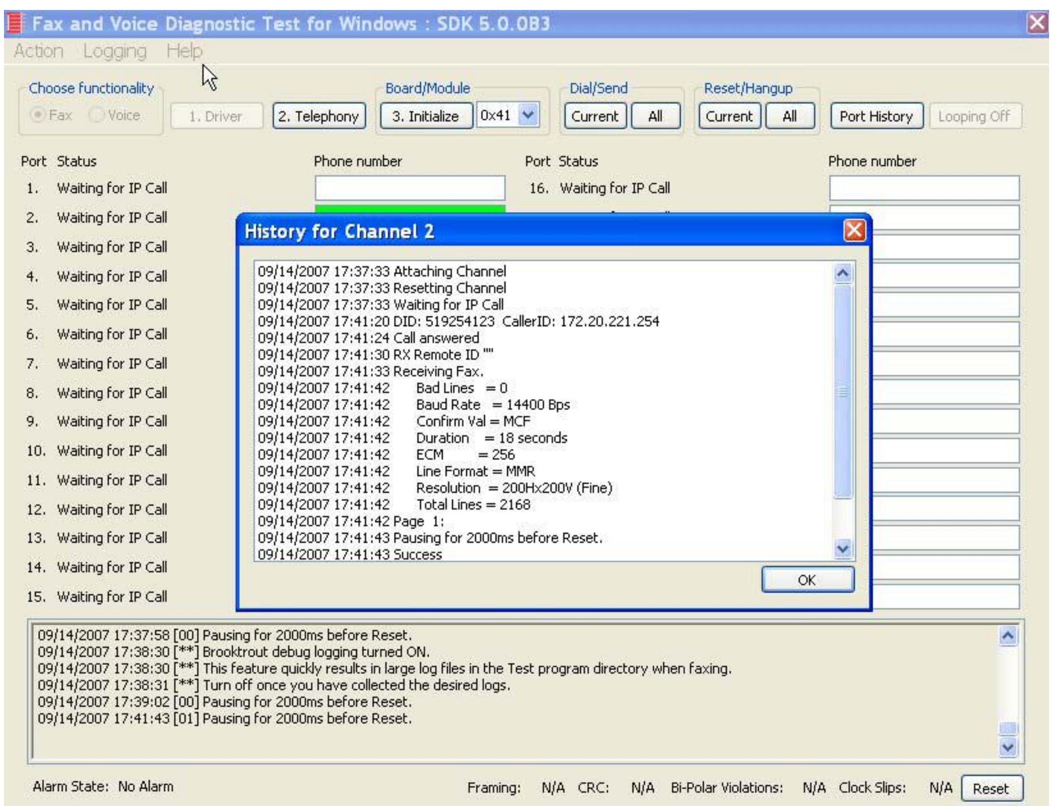

Figure 432. Call Successful

13
Topology: SIP - CUCM 6.0(1) - MGCP

Introduction

In this topology, the CUCM (Version 6.0(1)) does all the call control. The gateway sends all MGCP signaling to the CUCM which transmits SIP signaling to the Fax Server. The Fax Server responds to the CUCM with SIP signaling and the CUCM forwards MGCP signaling back to the gateway.

Once the call is established, the fax traffic flows directly between the gateway and the Fax Server.

Note: The SR140 Software is used as an example Fax Server in this chapter. The TR1034 IP board can also be used as Fax Server.

The diagrams below show the IP addresses of the hardware which are also included in the procedure and configuration files referenced in this chapter.

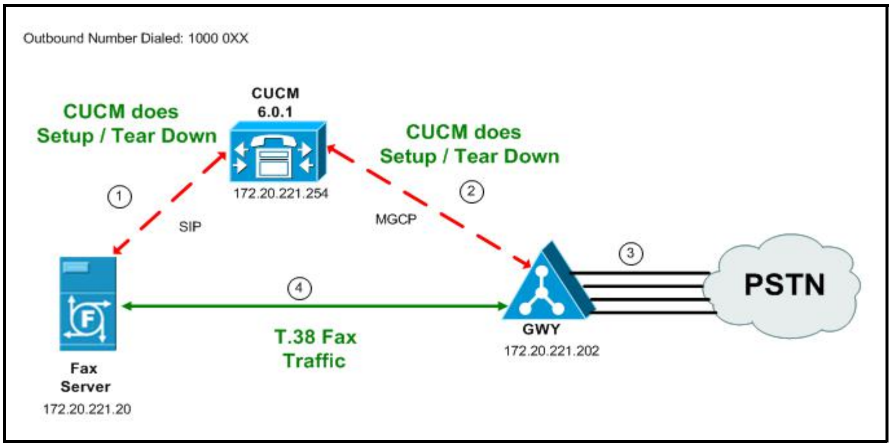

Figure 433. Outbound Call - CUCM Does Call Control - SIP - CUCM 6.0(1) - MGCP Topology

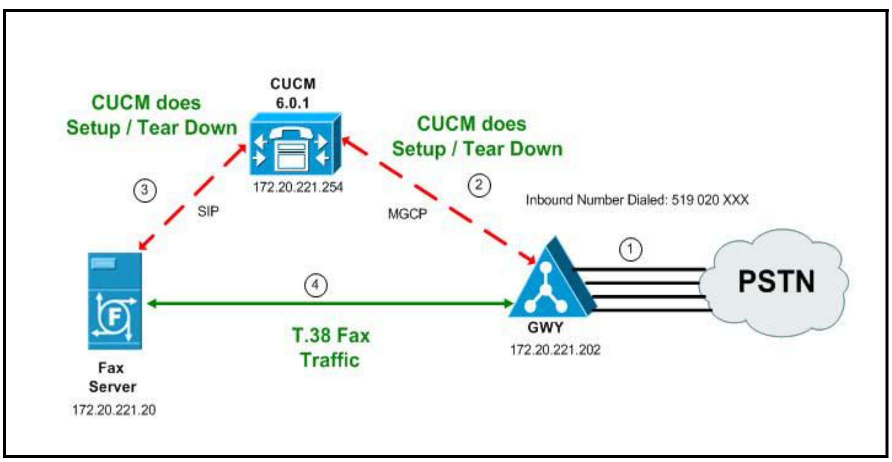

Figure 434. Inbound Call - CUCM Does Call Control - SIP - CUCM 6.0(1) - MGCP Topology

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Related Documentation

For more information on configuring MGCP, refer to the following documents:

- How to Configure MGCP with Digital PRI and Cisco CallManager, Document ID 23966

http://www.cisco.com/en/US/tech/tk1077/technologies_configuration_example09186a00801ad22f.shtml

- MGCP with Digital CAS and Cisco CallManager Configuration Example, Document ID 43802

http://www.cisco.com/en/US/tech/tk1077/technologies_configuration_example09186a008022eaa3.shtml

Configuration Sequence

Follow the sequence below when configuring the Dialogic Brooktrout FoIP with Cisco Products.

- *Configuring the Dialogic Brooktrout Fax Server on page 369*
- *Configuring the Cisco Media Gateway with IOS Commands on page 372*
- *Configuring the Cisco Unified Communications Manager on page 373*
  - *Configuring the Cisco Media Gateway on page 374*
  - *Configuring CUCM SIP Trunk Security Profile on page 382*
  - *Configuring the Trunk Between the CUCM and the Fax Server on page 387*
  - *Configuring a Route Pattern for a Trunk to the Cisco Media Gateway on page 391*
  - *Configuring a Route Pattern for a Trunk to the Fax Server on page 397*
- *Verifying the Configuration on page 401*

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Configuring the Dialogic Brooktrout Fax Server

Follow the steps below to configure the SR140 Software using the Dialogic Brooktrout Configuration Tool to support this network topology.

➢ **Follow the steps below:**

1. Open the Dialogic Brooktrout Configuration Tool in Advanced Mode.

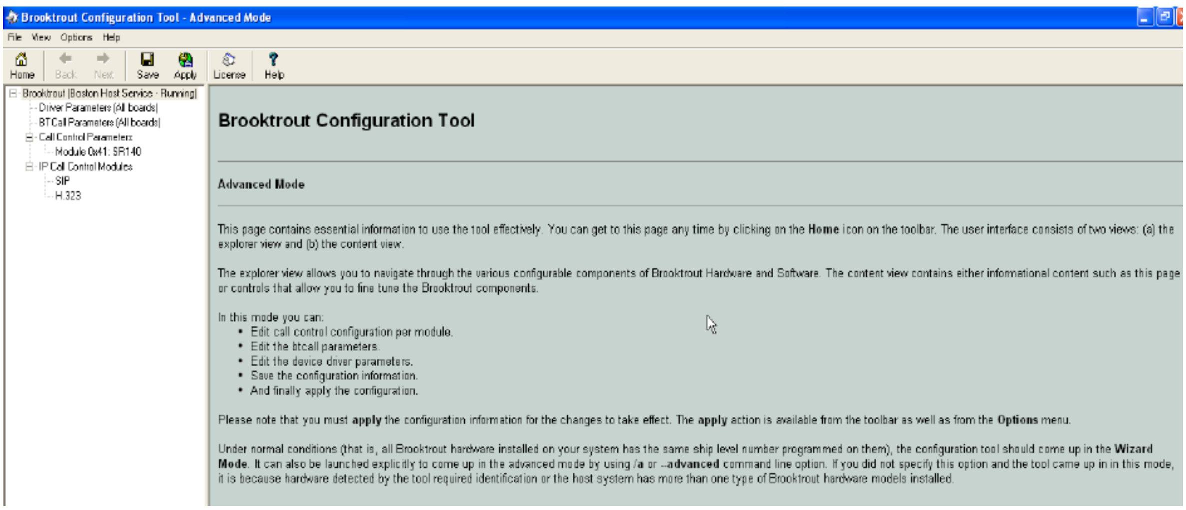

Figure 435. Dialogic Brooktrout Configuration Tool

2. Configure for the SIP protocol as follows. Under IP Call Control Modules, click SIP then click the IP Parameters tab.

The following screen appears.

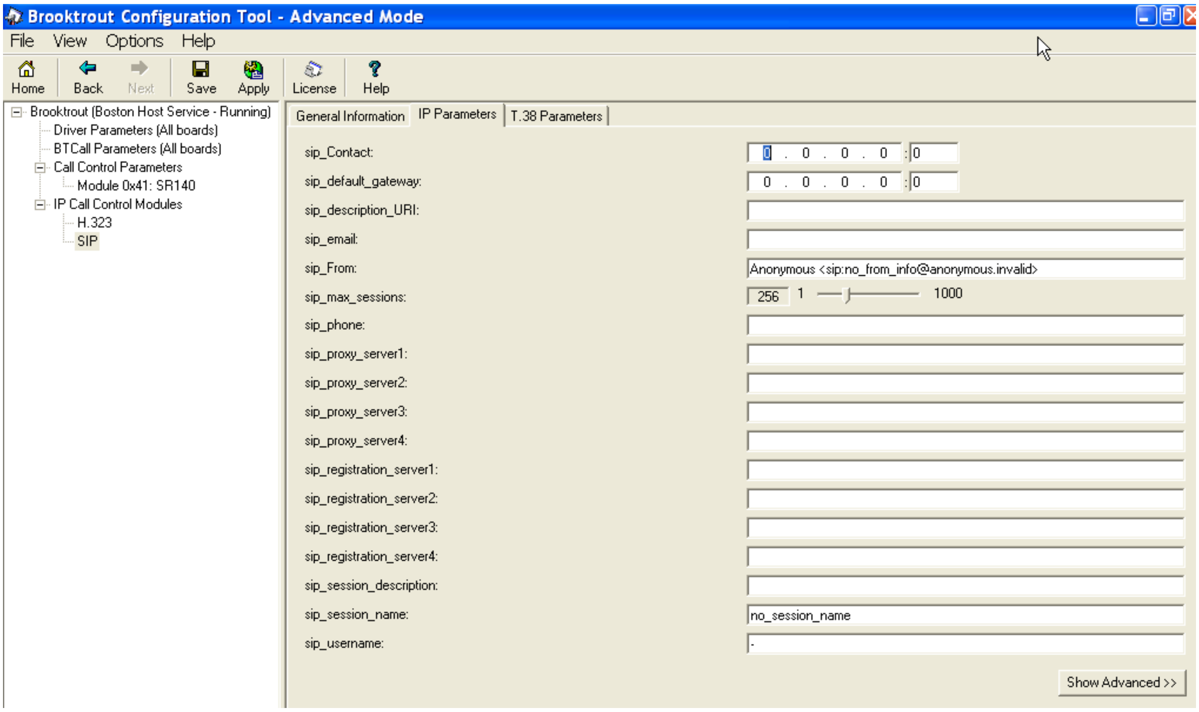

Figure 436. IP Parameters

Note: When the SIP_Contact is set to the default value (0.0.0.0:0), the system uses the IP address of the first Ethernet module in the system and port number 5060. If there are more than one ethernet modules in the Fax Server then specify the actual IP address and port of the desired ethernet module that will be used.

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3. Click T.38 Parameter and complete fields as indicated below.

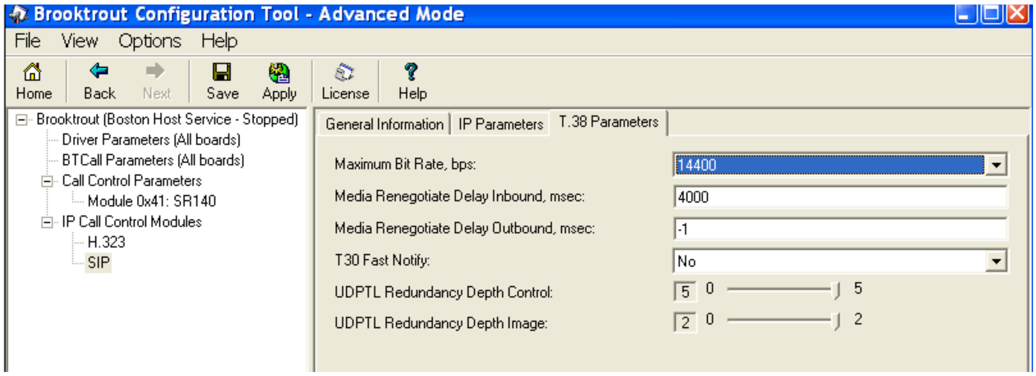


Figure 437. T.38 Parameters

4. Under Call Control Parameters, click Module 0x41: SR140 and select the Parameters tab. Complete the fields as indicated below.

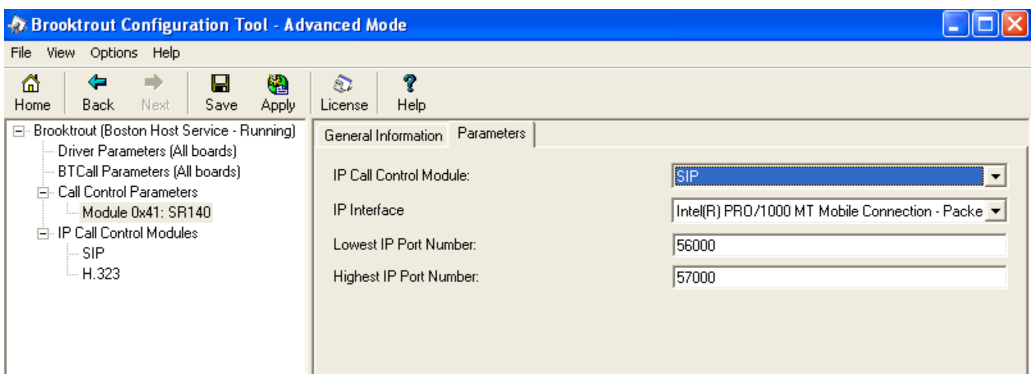


Figure 438. Module 0x41: SR140 Parameters

5. Select the desired network interface controller (NIC) for the IP Interface field.
6. Click Apply.

Configuration Files

Use the configuration files in the section below to help you configure the SR140 Software:

Appendix L, SR140 Configuration Files on page 586

Configuring the Cisco Media Gateway with IOS Commands

Refer to the configuration file in the *Appendix L, Cisco Gateway-Config on page 592* as a guide to configure your Cisco Media Gateway with IOS Command.

Configuring the Cisco Media Gateway involves the following.

- Enable T.38 support
- Configure line card interface
- Configure Dial-Peers (VoIP and POTS)

T.38 Support

Be sure to include the `fxr-package` in your MGCP gateway configuration, since this package is needed for T.38 support. This means, when you have this package disabled, type the following IOS command in order to activate it:

`MGCP package capability fxr-package`

`and do then`

`no mgcp`

`and then`

`mgcp`

Also ensure that you do not have the following command line in your gateway configuration since you want to enable T.38.

`mgcp fax t38 inhibit`

Also, the G.711 codec is needed to start a T.38.

Configuring the Cisco Unified Communications Manager

This procedure includes the following:

- *Appendix O, Configuring System Service Parameters on page 648* (If not completed already.)
- *Appendix O, Configuring Service Activation on page 646* (If not completed already.)
- *Configuring the Cisco Media Gateway on page 374*
- *Configuring CUCM SIP Trunk Security Profile on page 382*
- *Configuring a Route Pattern for a Trunk to the Cisco Media Gateway on page 391*
- *Configuring a Route Pattern for a Trunk to the Fax Server on page 397*

Configuring the Cisco Media Gateway

➢ **Follow the steps below:**

1. Open the Cisco Unified Communications Manager Administration Version 6.0(1).
2. From the Device menu, select Gateway.

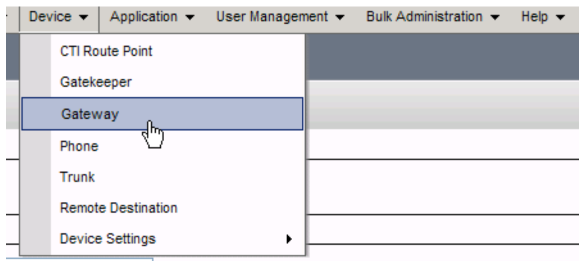


Figure 439. Gateway

3. The following screen appears. Click Add New.

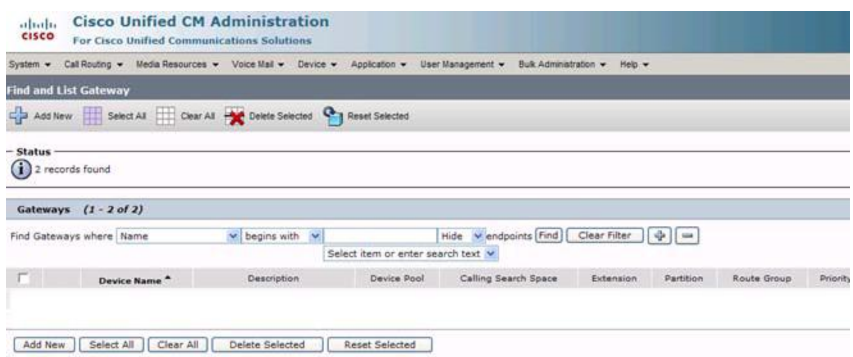


Figure 440. Add New Gateway

The following screen appears.

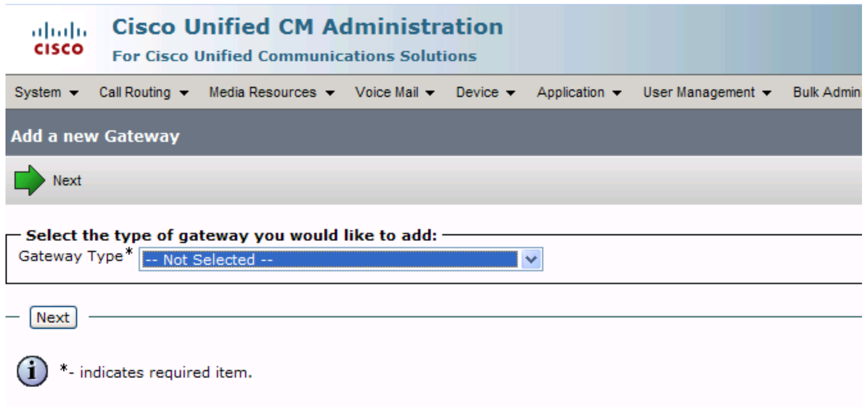


Figure 441. Gateway Type

4. Select the appropriate gateway.

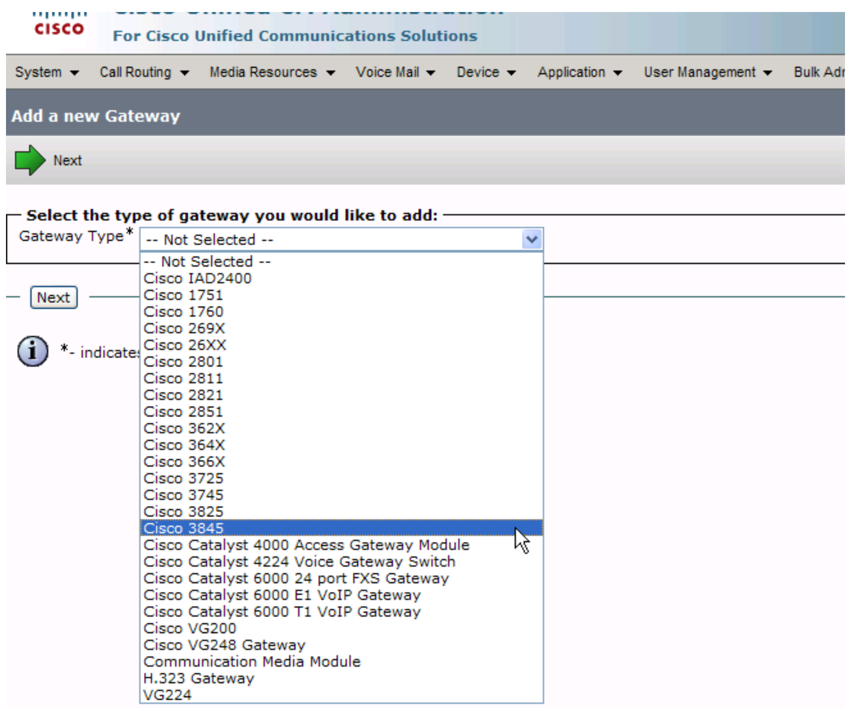


Figure 442. Cisco Media Gateway

5. Click Next.

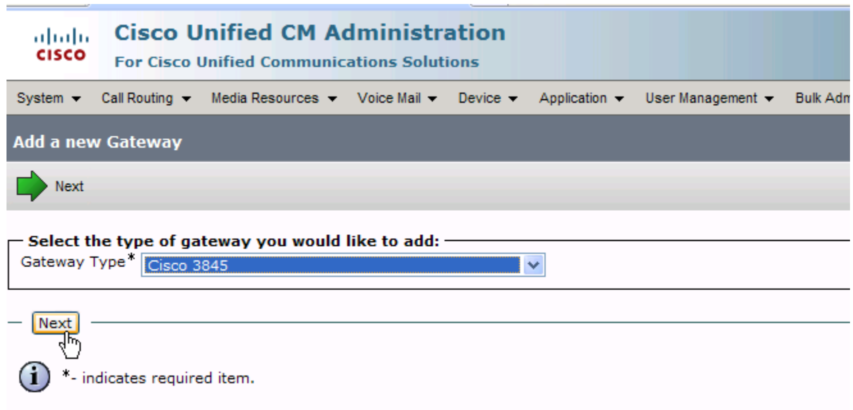


Figure 443. Next

The following screen appears:

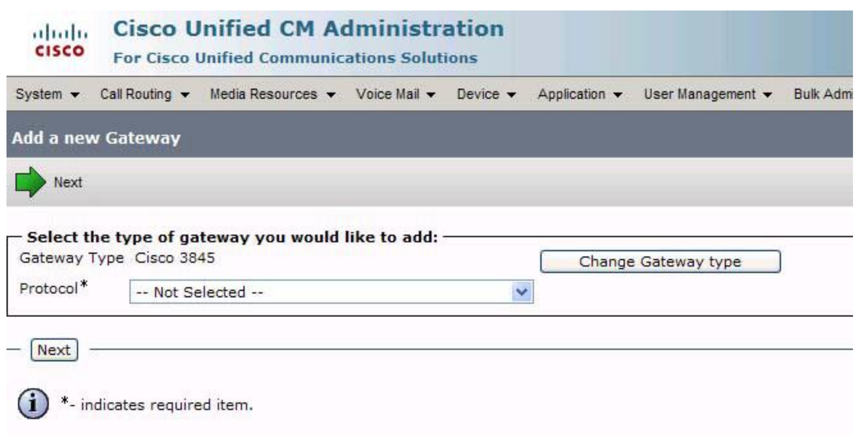


Figure 444. Protocol

6. Select MGCP for the Protocol.

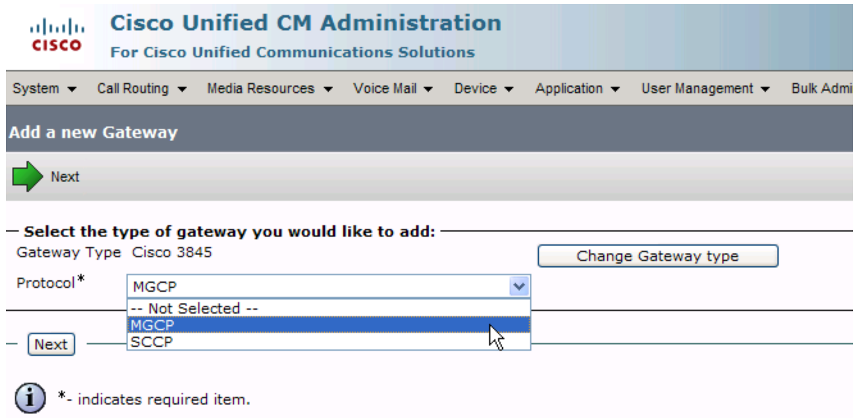


Figure 445. MGCP

7. Click Next.

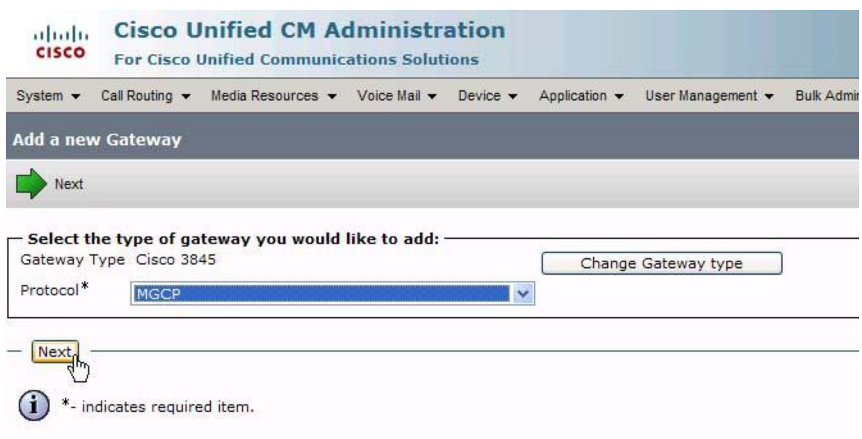


Figure 446. Next

The following screen appears.

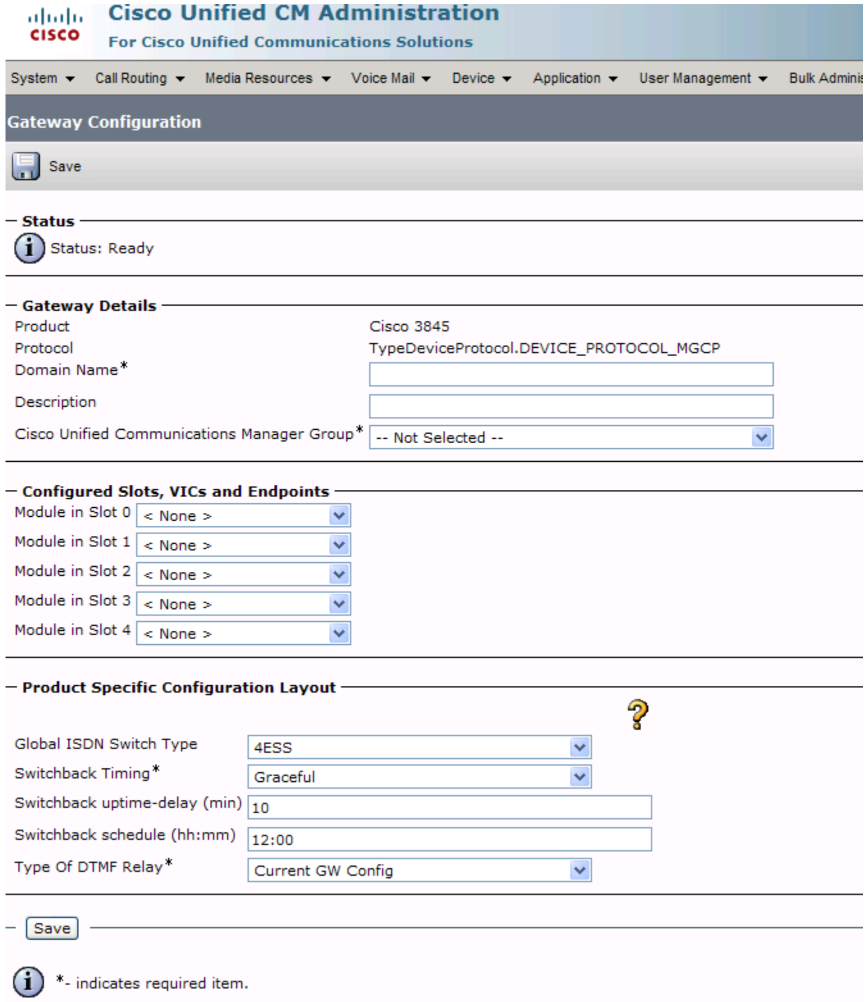


Figure 447. Gateway Configuration

8. Enter EURO for the EURO Global ISDN Switch Type.

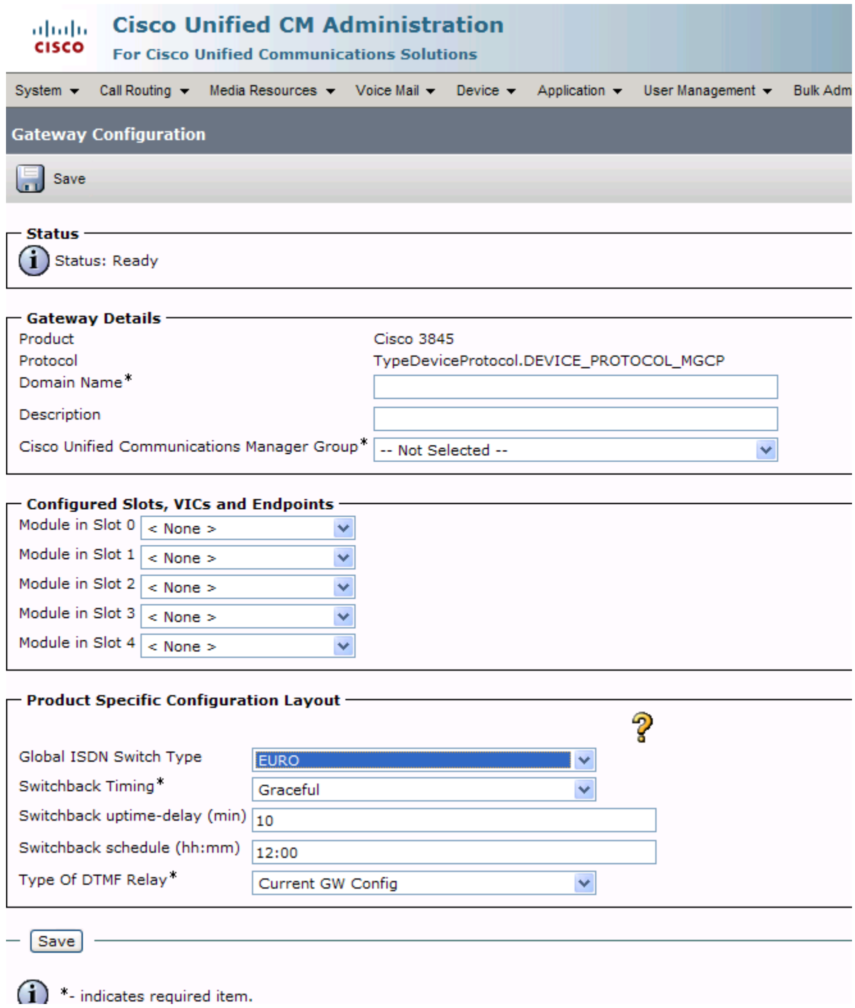
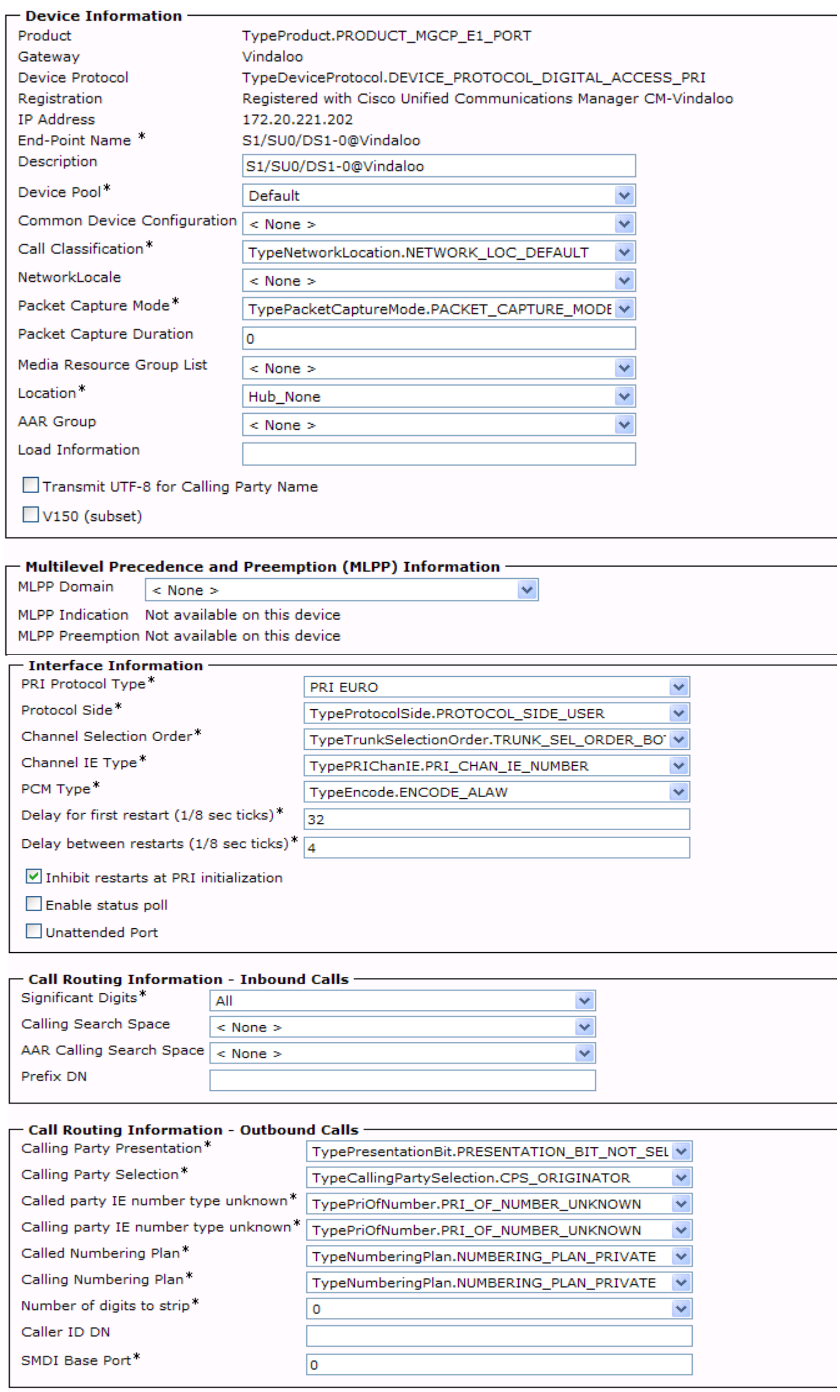


Figure 448. Gateway Configuration

9. Complete the screen as indicated on the following two pages.



Device Information

Product	TypeProduct.PRODUCT_MGCP_E1_PORT
Gateway	Vindaloo
Device Protocol	TypeDeviceProtocol.DEVICE_PROTOCOL_DIGITAL_ACCESS_PRI
Registration	Registered with Cisco Unified Communications Manager CM-Vindaloo
IP Address	172.20.221.202
End-Point Name *	S1/SU0/DS1-0@Vindaloo
Description	S1/SU0/DS1-0@Vindaloo
Device Pool*	Default
Common Device Configuration	< None >
Call Classification*	TypeNetworkLocation.NETWORK_LOC_DEFAULT
NetworkLocale	< None >
Packet Capture Mode*	TypePacketCaptureMode.PACKET_CAPTURE_MODE
Packet Capture Duration	0
Media Resource Group List	< None >
Location*	Hub_None
AAR Group	< None >
Load Information	

☐ Transmit UTF-8 for Calling Party Name

☐ V150 (subset)

Multilevel Precedence and Preemption (MLPP) Information

MLPP Domain	< None >
MLPP Indication	Not available on this device
MLPP Preemption	Not available on this device

Interface Information

PRI Protocol Type*	PRI EURO
Protocol Side*	TypeProtocolSide.PROTOCOL_SIDE_USER
Channel Selection Order*	TypeTrunkSelectionOrder.TRUNK_SEL_ORDER_BO
Channel IE Type*	TypePRIChanIE.PRI_CHAN_IE_NUMBER
PCM Type*	TypeEncode.ENCODE_ALAW
Delay for first restart (1/8 sec ticks)*	32
Delay between restarts (1/8 sec ticks)*	4

☑ Inhibit restarts at PRI initialization

☐ Enable status poll

☐ Unattended Port

Call Routing Information - Inbound Calls

Significant Digits*	All
Calling Search Space	< None >
AAR Calling Search Space	< None >
Prefix DN	

Call Routing Information - Outbound Calls

Calling Party Presentation*	TypePresentationBit.PRESENTATION_BIT_NOT_SEL
Calling Party Selection*	TypeCallingPartySelection.CPS_ORIGINATOR
Called party IE number type unknown*	TypePriOfNumber.PRI_OF_NUMBER_UNKNOWN
Calling party IE number type unknown*	TypePriOfNumber.PRI_OF_NUMBER_UNKNOWN
Called Numbering Plan*	TypeNumberingPlan.NUMBERING_PLAN_PRIVATE
Calling Numbering Plan*	TypeNumberingPlan.NUMBERING_PLAN_PRIVATE
Number of digits to strip*	0
Caller ID DN	
SMDI Base Port*	0

(Gateway Configuration Continued.)

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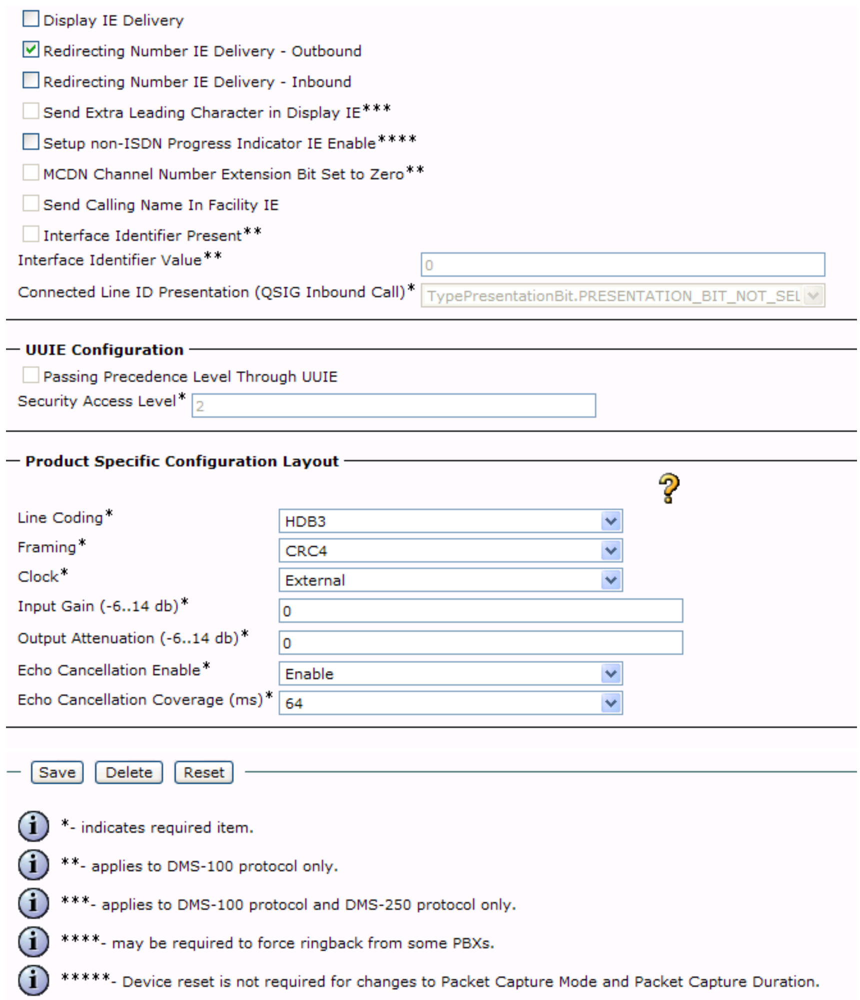

Figure 449. Gateway Configuration

Configuring CUCM SIP Trunk Security Profile

You must configure a SIP Trunk security profile that you will specify when you configure SIP trunks from the Cisco Unified Communications Manager.

➢ **Follow the steps below.**

1. Open the Cisco Unified Communications Manager Administration Version 6.0(1). The following screen appears.
2. From the System menu, select Security Profile, SIP Trunk Security Profile.

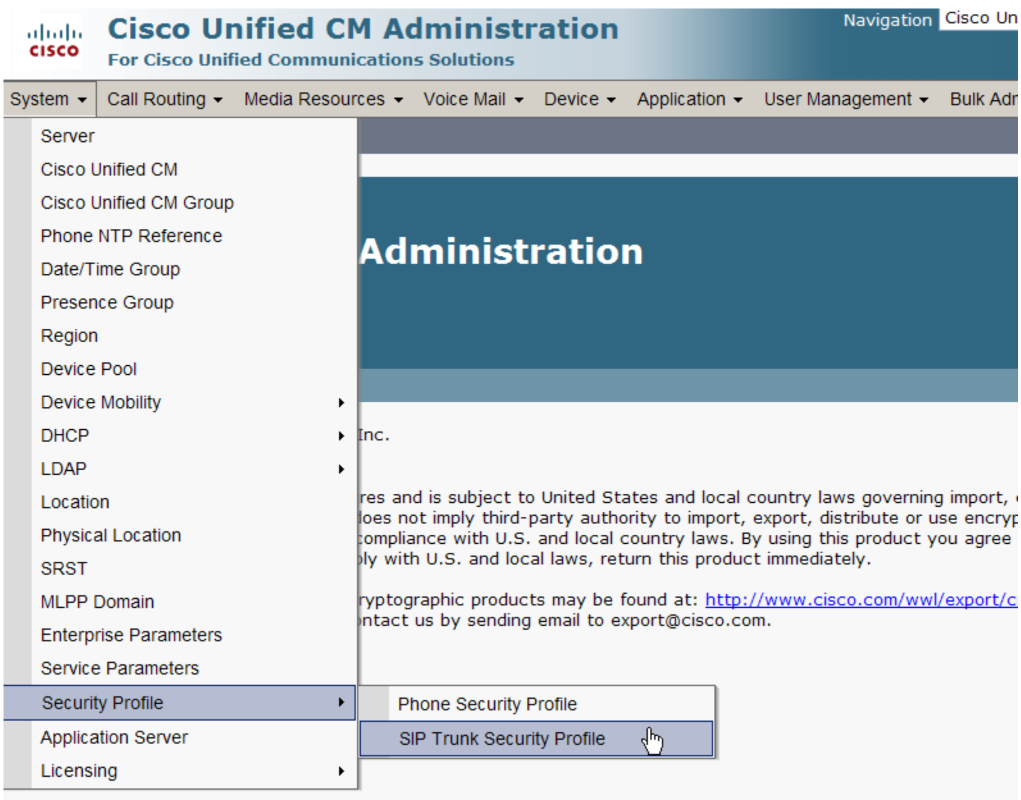

Figure 450. SIP Trunk Security Profile

3. The following screen appears. Click Add New.

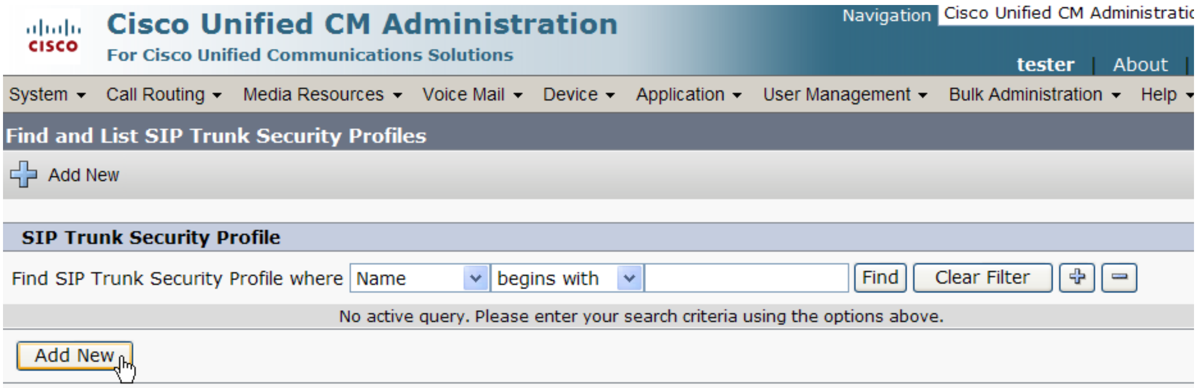

Figure 451. Add New SIP Trunk Security Profile

The following screen appears.

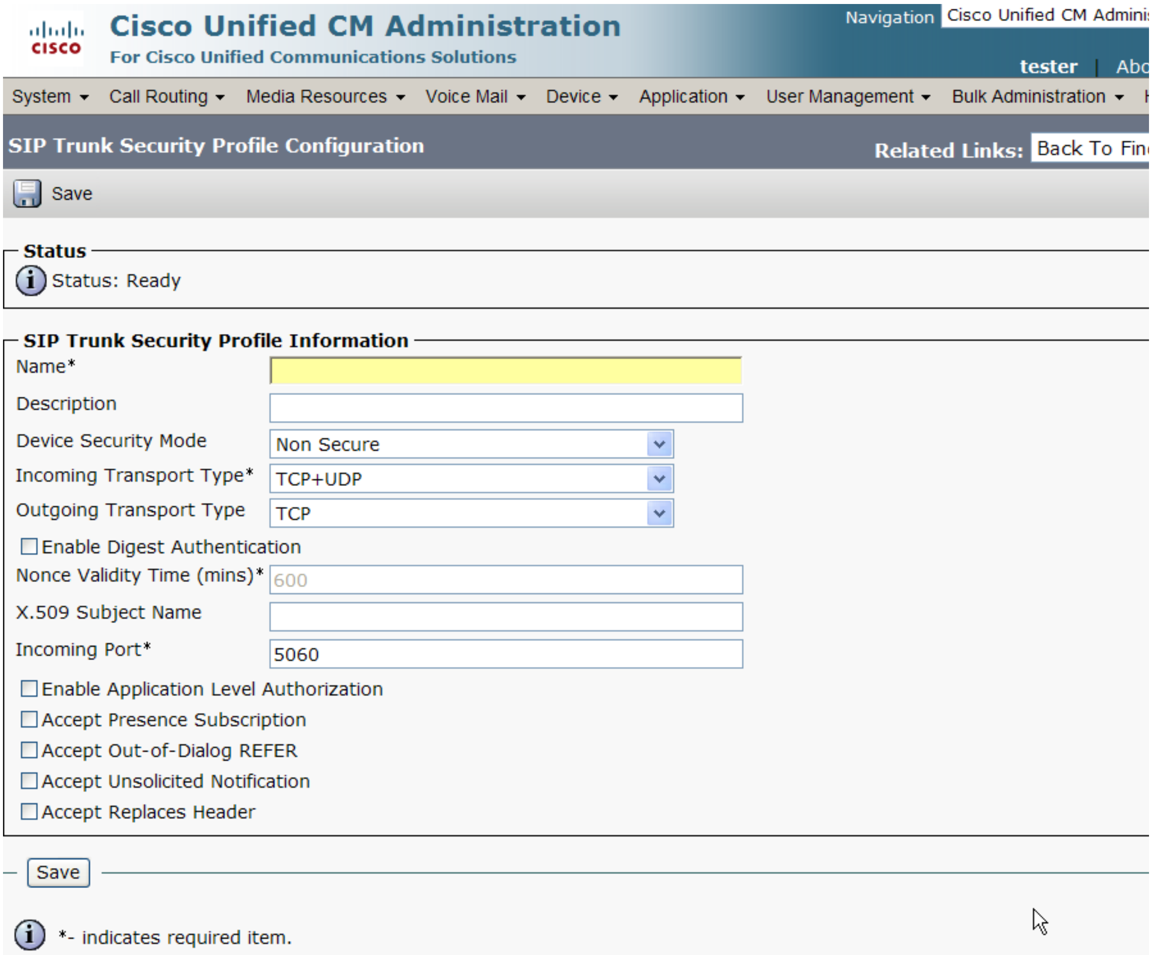

Figure 452. SIP Trunk Security Profile Configuration

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4. Complete the screen as indicated below.

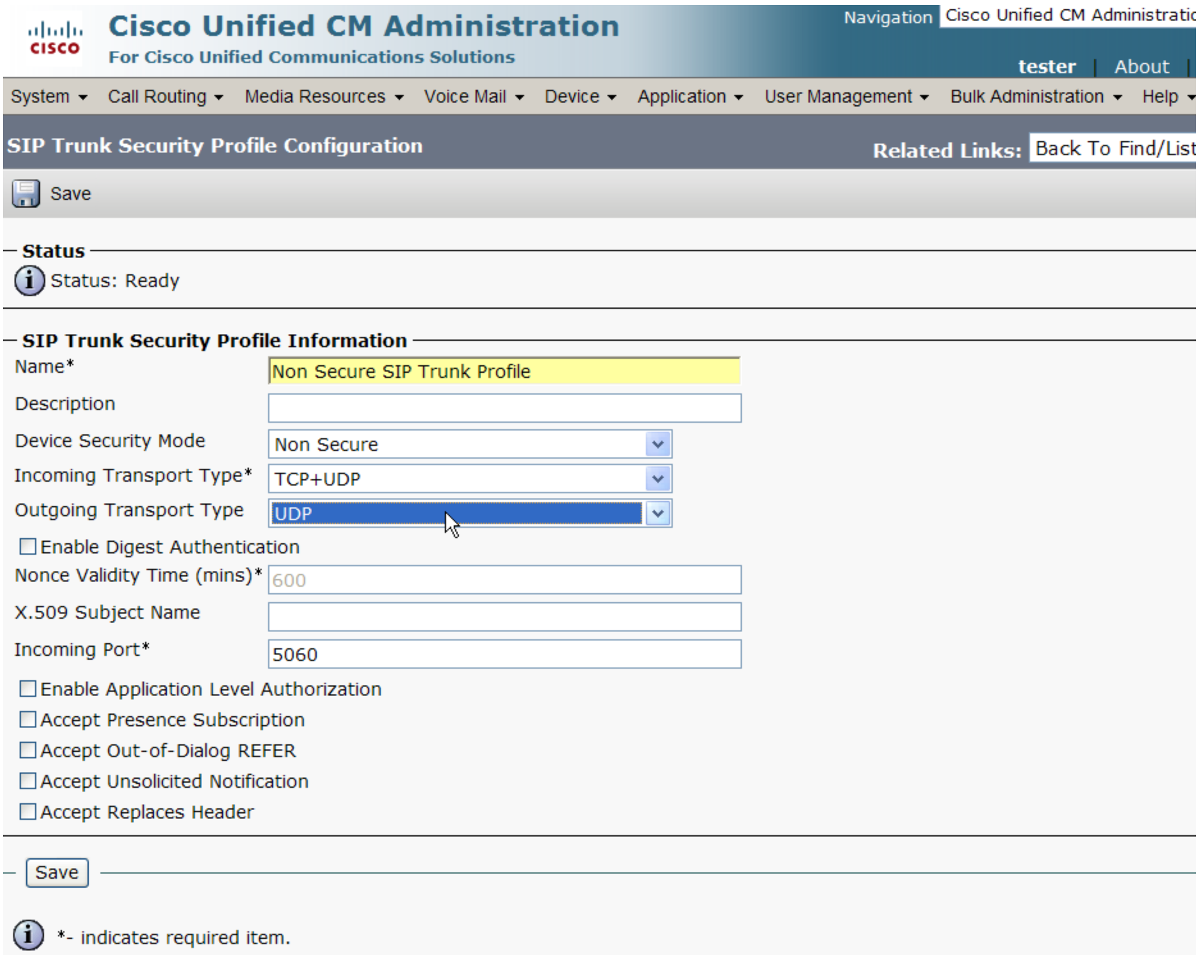

Figure 453. SIP Trunk Security Profile Data

5. Click Save.

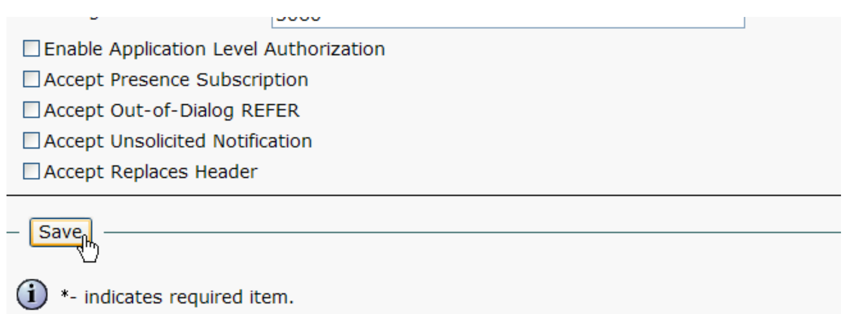

Figure 454. Save Configuration

6. Click Find to display the new SIP Trunk Security Profile.

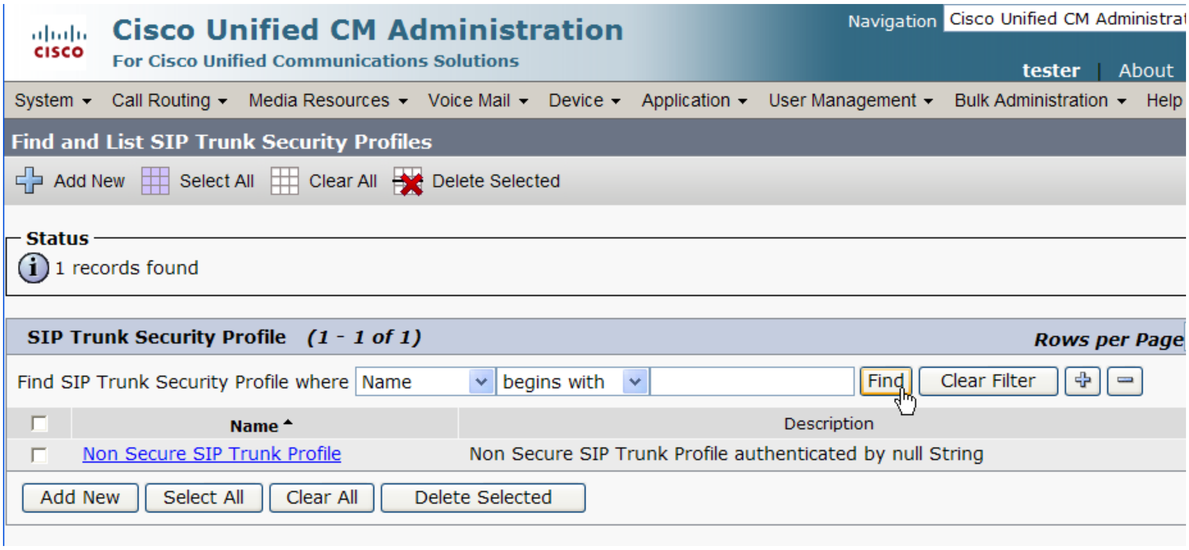

Figure 455. New SIP Trunk Security Profile

Note that you have to reset the trunk for the changes to take effect.

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Configuring the Trunk Between the CUCM and the Fax Server

➢ **Follow the steps below.**

1. From the Device menu, select Trunk.

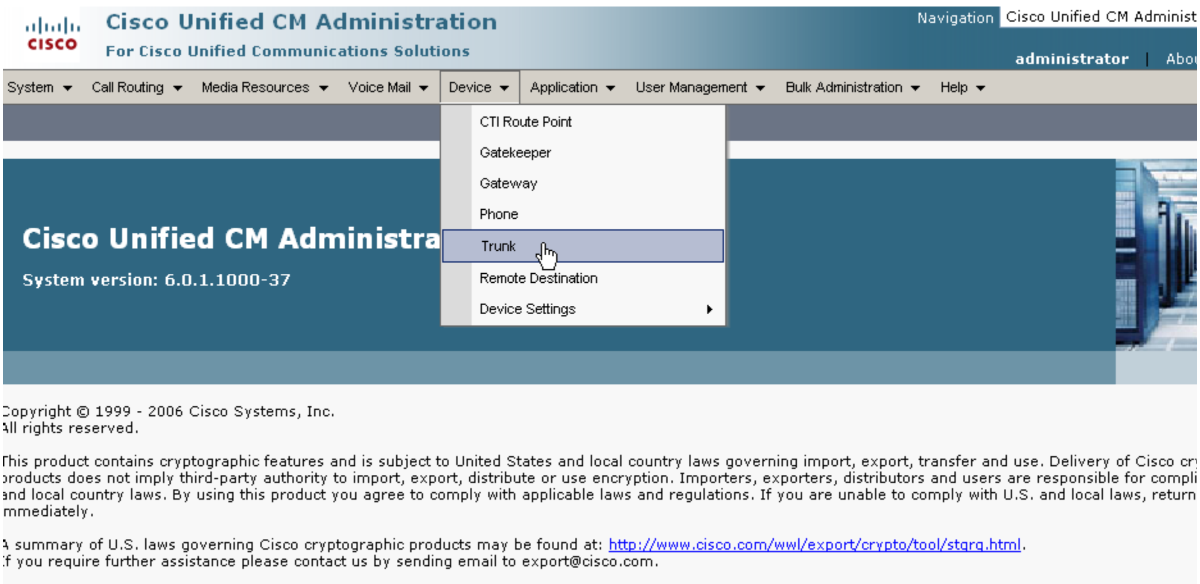

Figure 456. Trunk

2. From the following screen, click Add New.

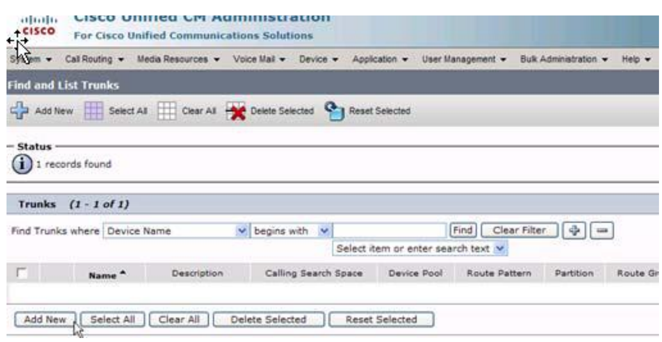

Figure 457. New Trunk

The following screen appears.

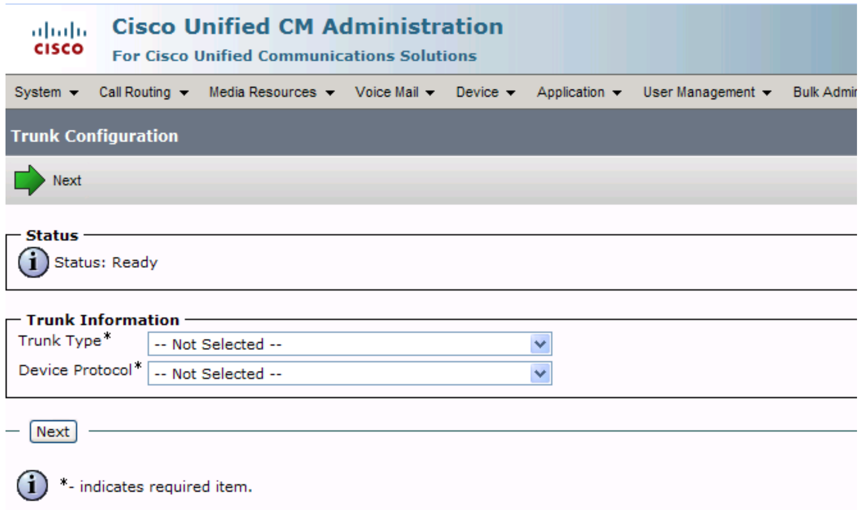

Figure 458. Trunk Configuration

3. Select SIP Trunk for the Trunk Type. The Device Protocol defaults to SIP.
4. Click Next.

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5. The following screen appears. Complete the screen as indicated below.

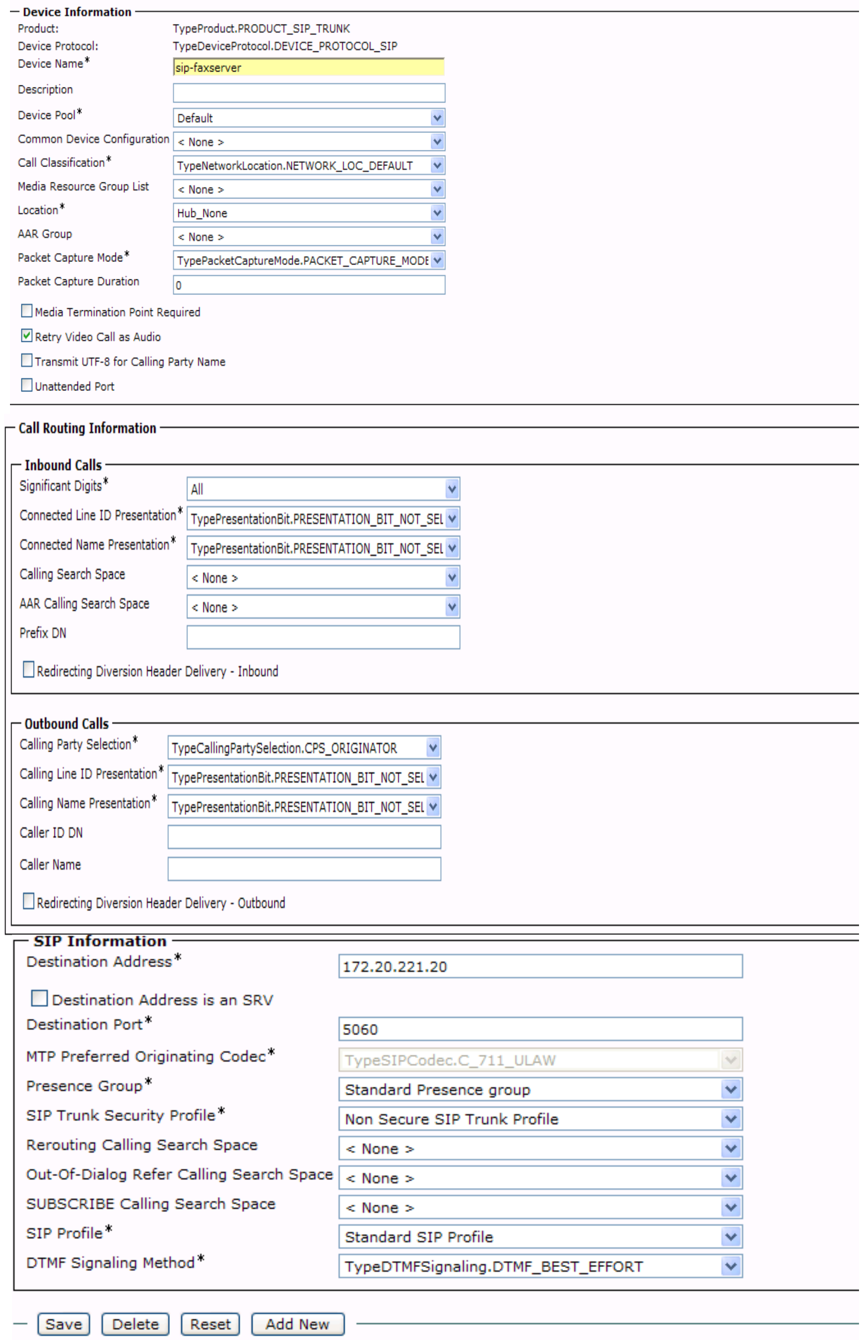

Figure 459. Trunk Configuration Data

6. Click Save.

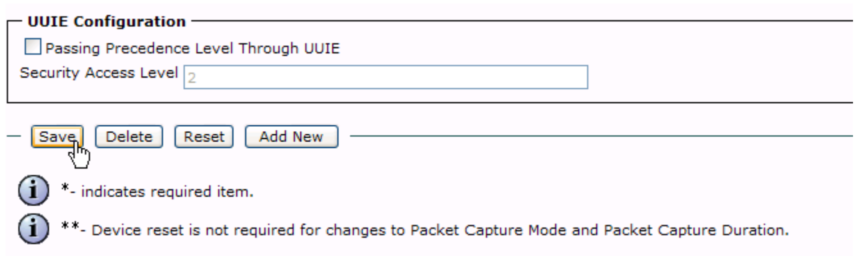

Figure 460. Save

7. Click OK.

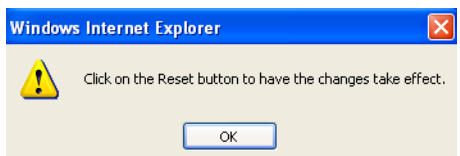

Figure 461. OK

8. Click Reset.

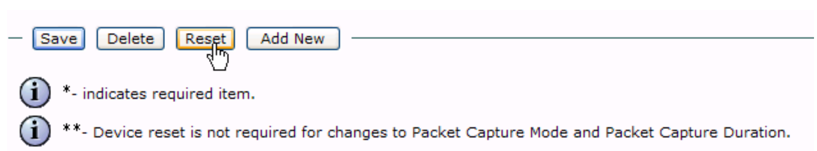

Figure 462. Reset

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Configuring a Route Pattern for a Trunk to the Cisco Media Gateway

➢ **Follow the steps below to configure a route pattern for the trunk.**

1. From the Call Routing menu, click Route/Hunt, Route Pattern.

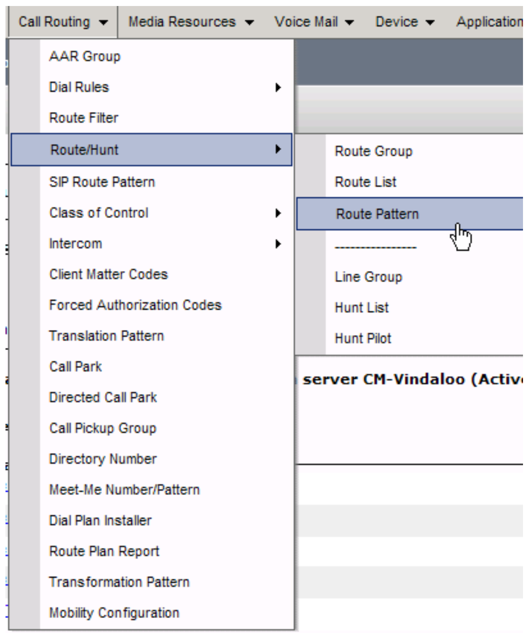

Figure 463. Route Pattern

2. The following screen appears. Click Add New.

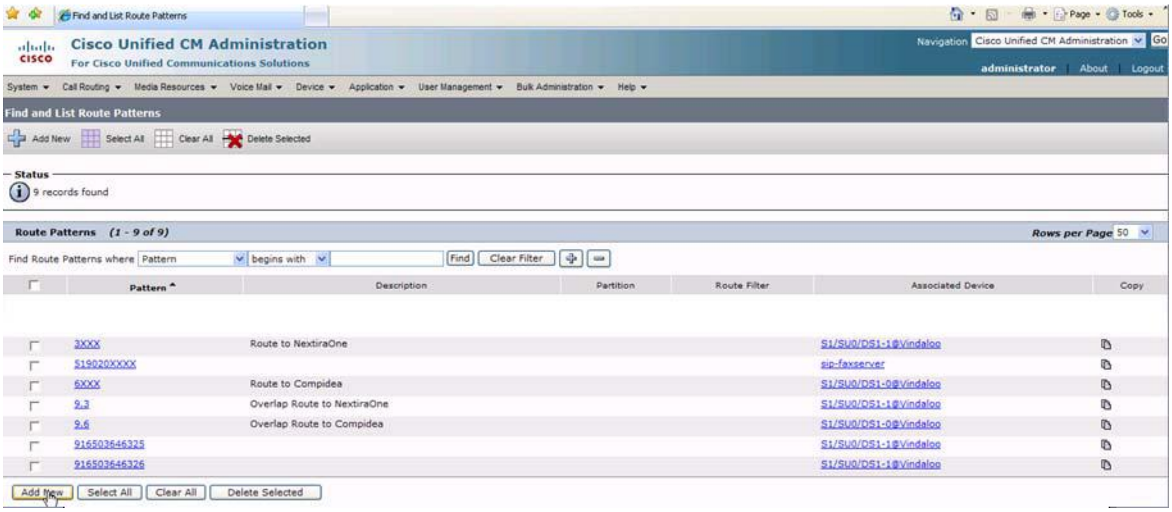

Figure 464. Add New

This document is not to be distributed to a third party without written permission from Dialogic.

3. The following screen appears.

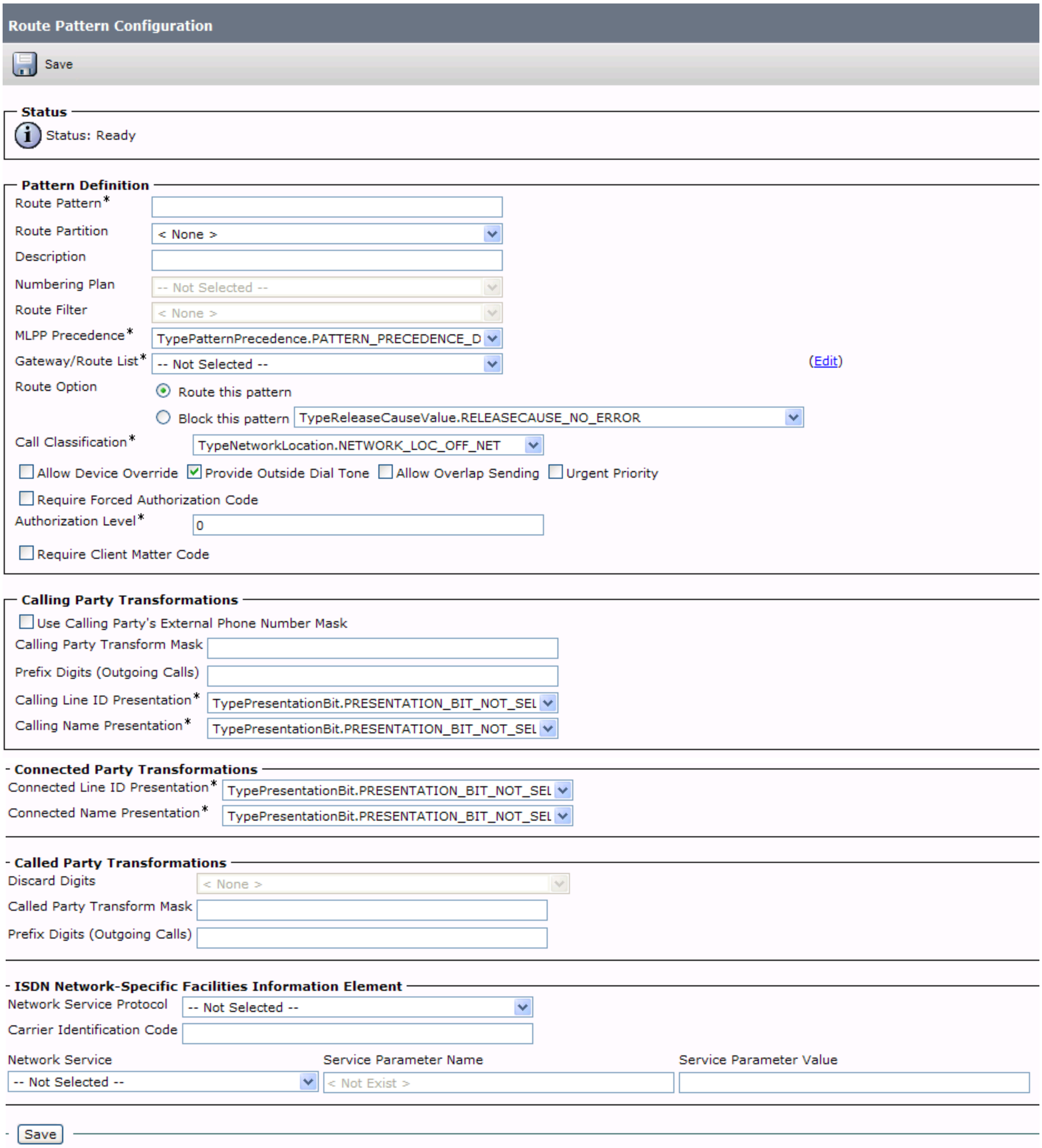

Figure 465. Route Pattern Configuration

4. Complete the screen as indicated below.

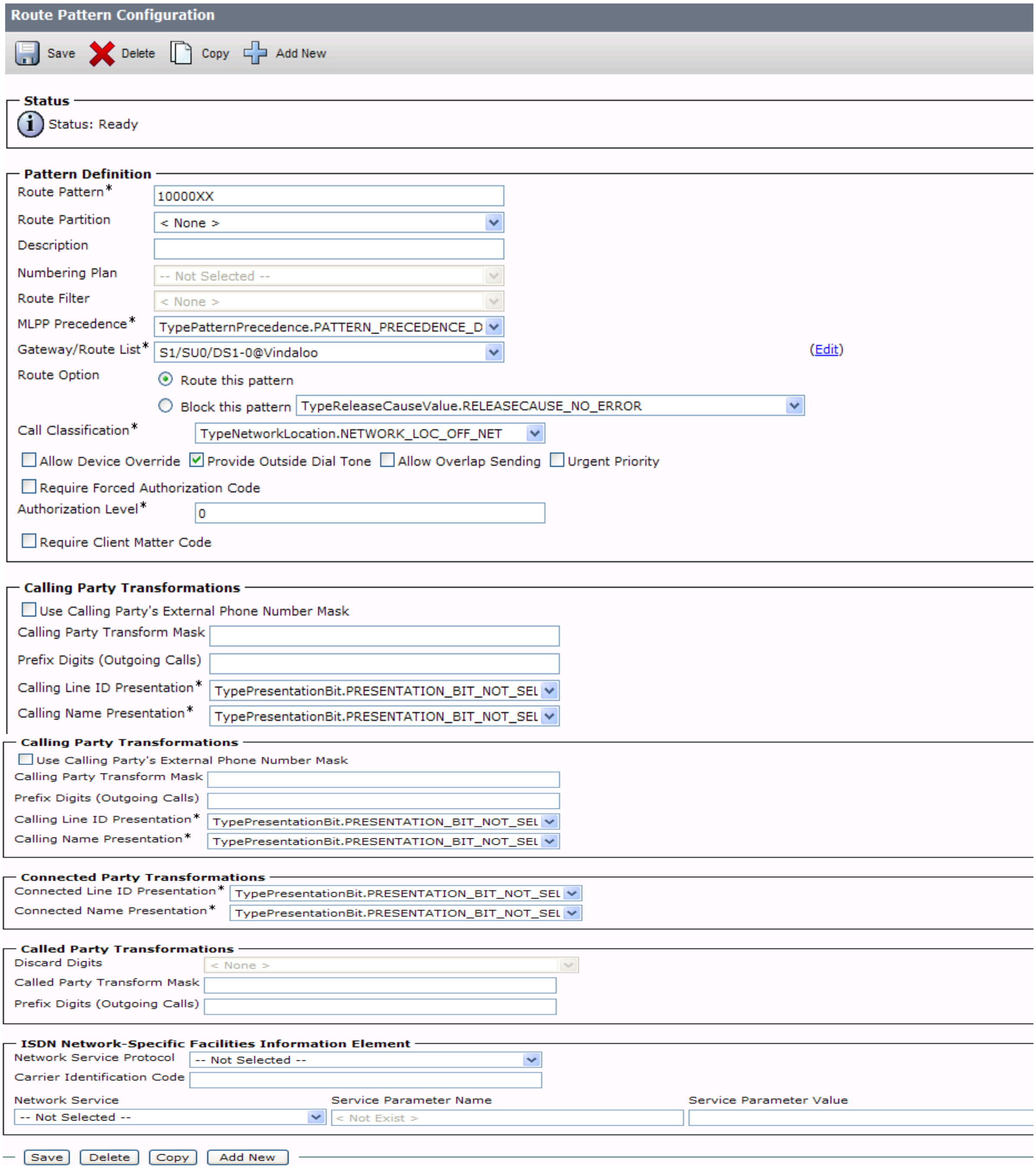

Figure 466. Route Pattern Configuration Data

5. Click Save.

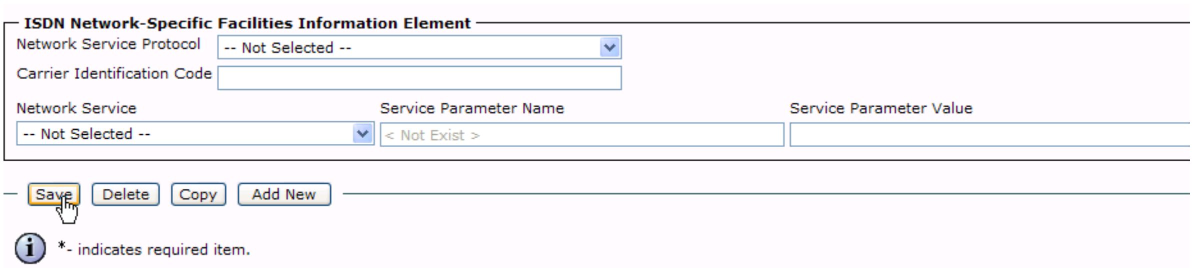

Figure 467. Save

6. The following appears because you did not required a Forced Authorization Code. Click OK.

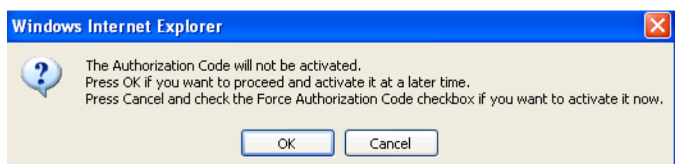

Figure 468. OK

7. Click OK.

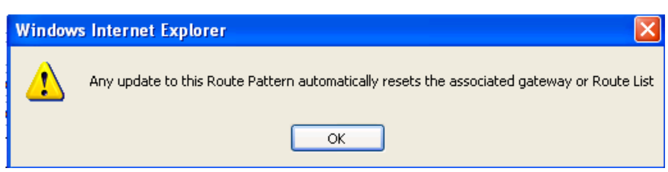

Figure 469. OK

8. Select Back To Find/List and click Go. Confirm that the new route pattern appears in the list.

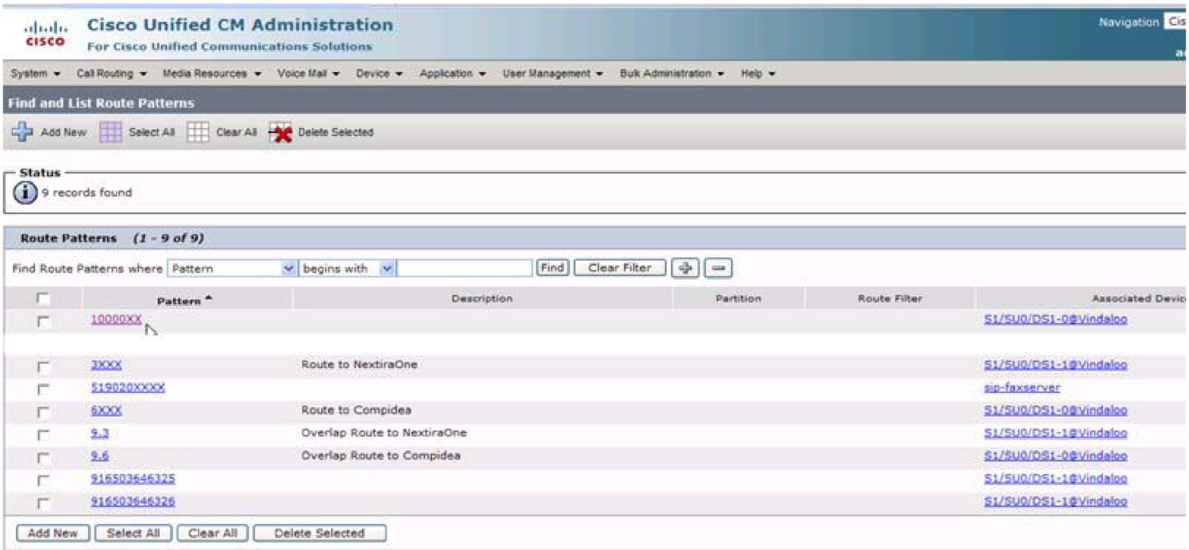

Figure 470. New Route Pattern

Configuring a Route Pattern for a Trunk to the Fax Server

➢ **Follow the steps below to configure a route pattern for the trunk.**

1. From the Call Routing menu, click Route/Hunt, Route Pattern.

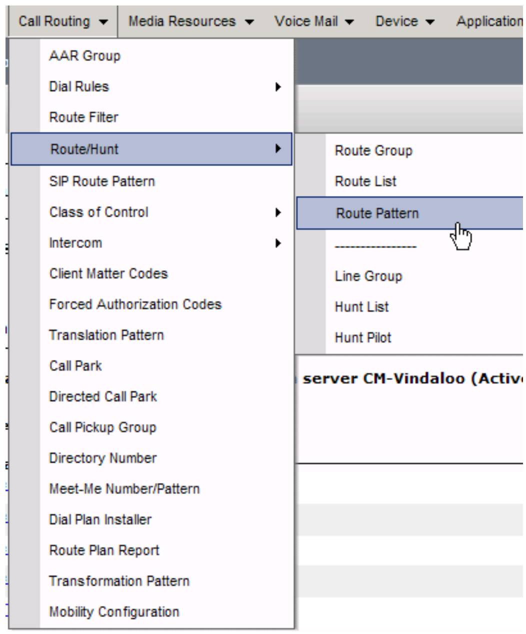

Figure 471. Route Pattern

2. The following screen appears. Click Add New.

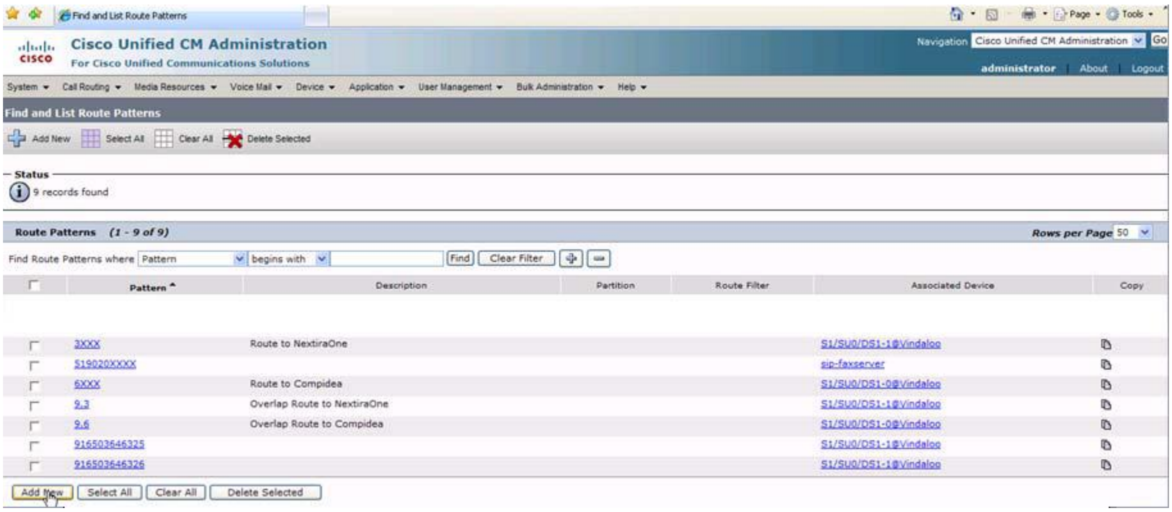

Figure 472. Add New

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3. Complete the screen as indicated below.

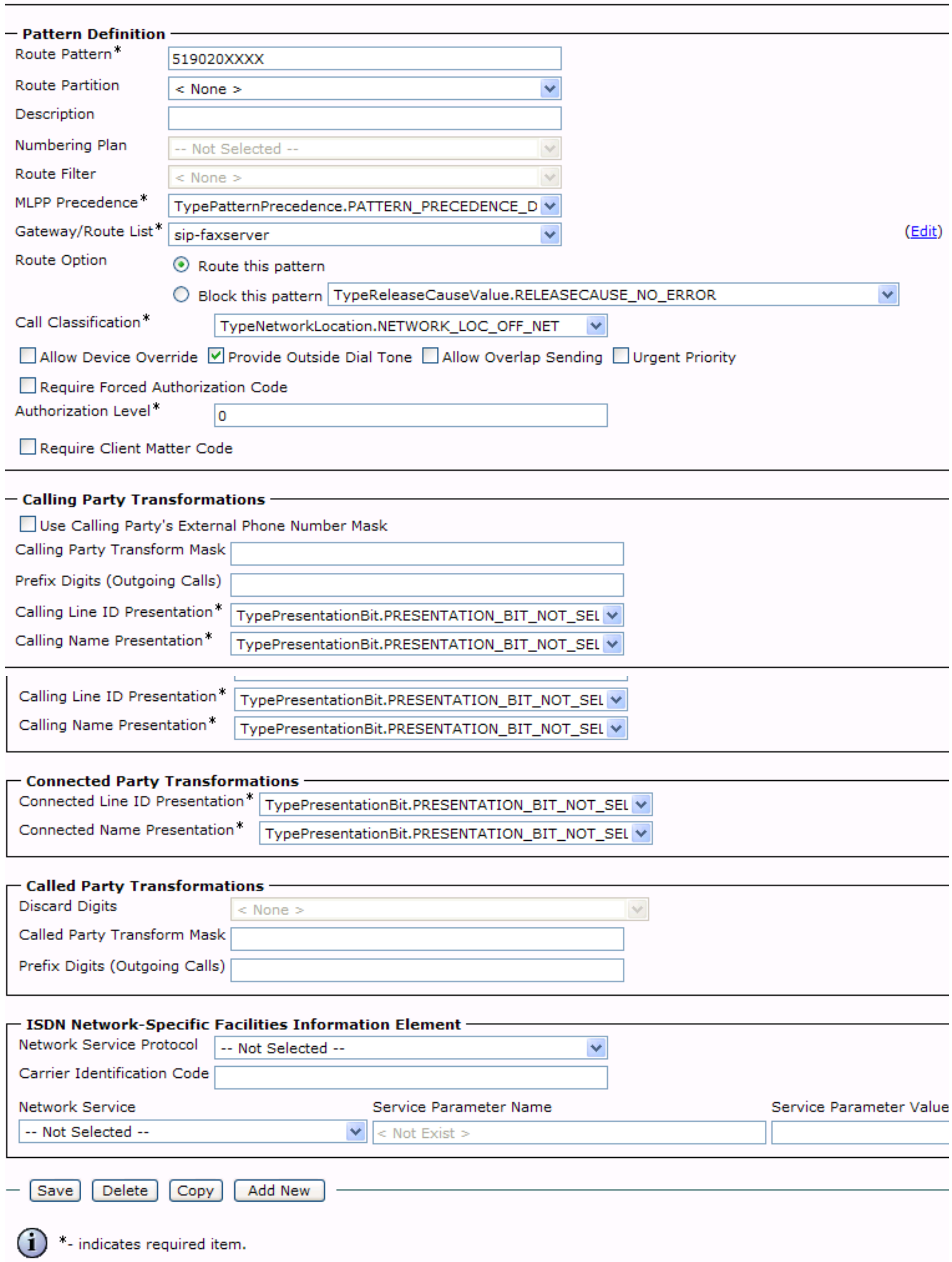

Figure 473. Route Pattern Configuration Data

4. Click Save.

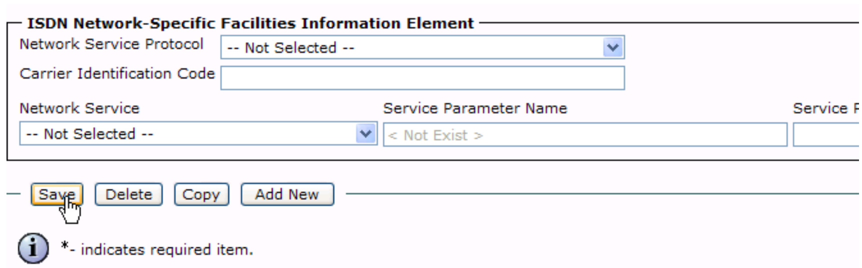

Figure 474. Save

5. The following appears because you did not required a Forced Authorization Code. Click OK.

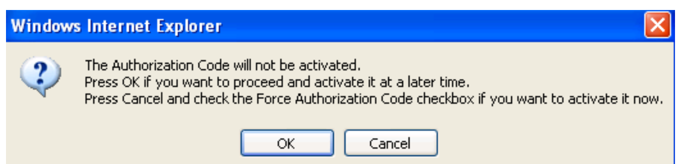

Figure 475. OK

6. Click OK.

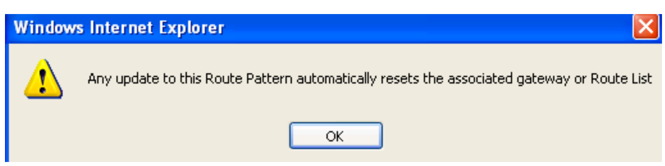

Figure 476. OK

7. Select Back To Find/List and click Go. Confirm that the new route pattern appears in the list.

Verifying the Configuration

The Dialogic Brooktrout Fax and Voice Diagnostic Test utility allows you to test the configuration you completed. You can download the utility and instructions from the technical support site.

http://www.cantata.com/support/lanfax/fax_testing_diagnostic.cfm

This test verifies the following:

- SR140 Software configuration
- Cisco Media Gateway configuration
- Trunks and Route Patterns on the CUCM

Verifying the Fax Server Basic Configuration

Before continuing, refer to *Verifying Basic Configuration - Fax Server 172.20.221.20 on page 418* to verify that the Fax Server software is installed correctly.

Outbound Call

➢ **Follow the steps below to verify outbound fax traffic from the CUCM to the gateway.**

1. Open the Fax and Voice Diagnostic Test utility. The following screen appears. Click the 2.Telephony button (press the Apply button in the Brooktrout Configuration Tool after configuring). Click the 3.Initialize button.

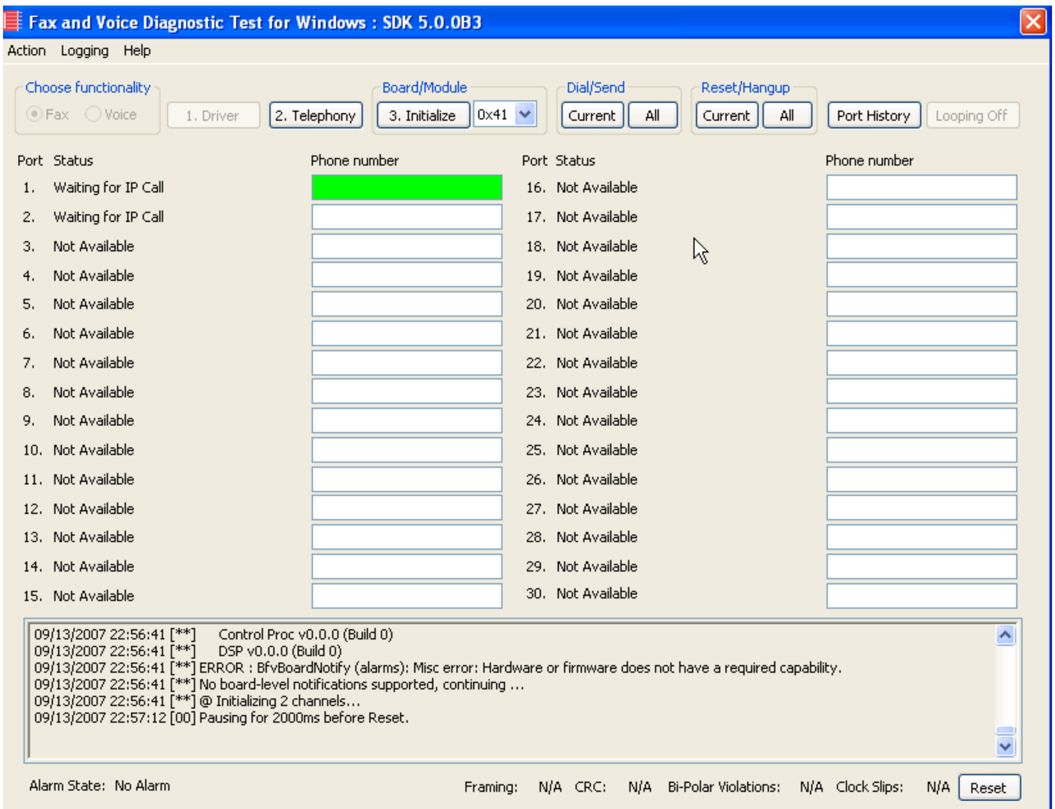

Figure 477. Fax Diagnostic Test

2. Enter the destination phone number and the IP address of CUCM as shown below.

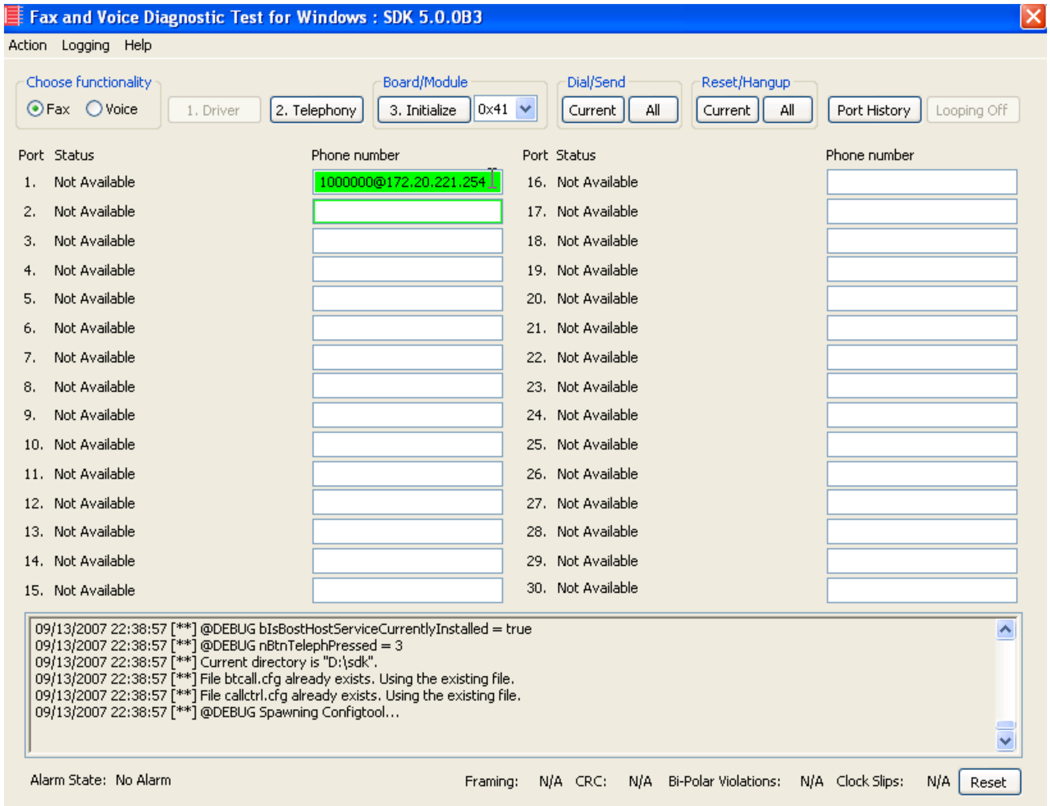

Figure 478. IP Address

3. Click Current to send the test fax.

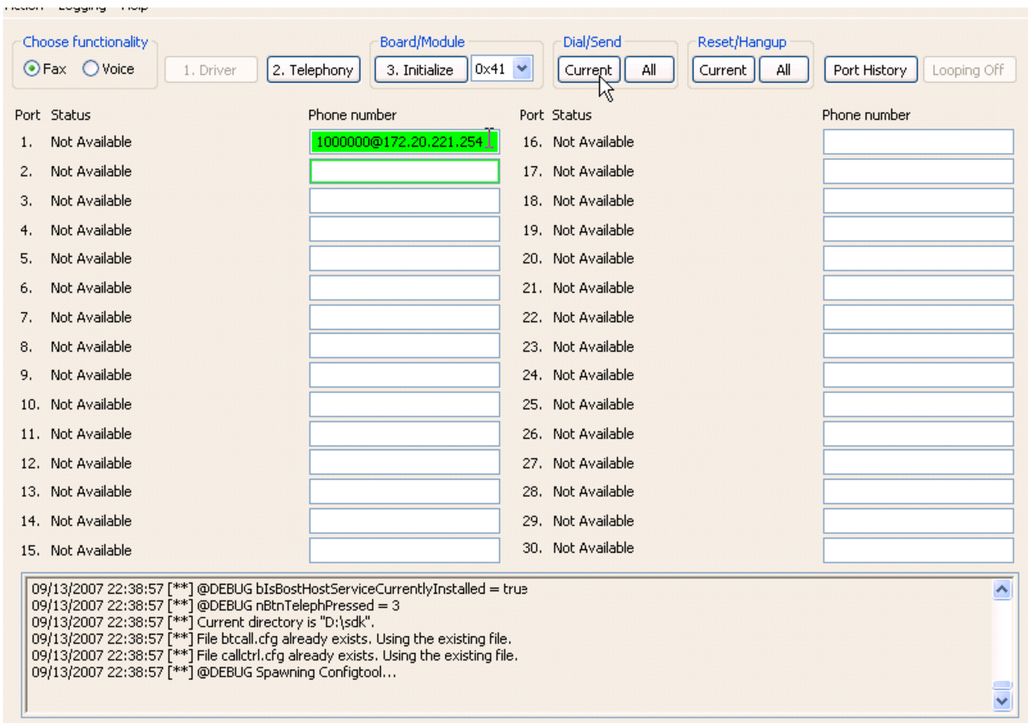

Figure 479. Current

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4. When Port 1 [00] pauses the call is complete. Click Port History. The following screen appears. Ensure that the outbound call was successful.

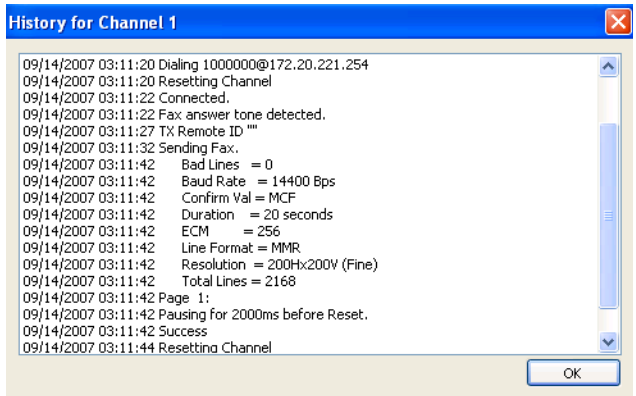

Figure 480. Outbound Call Successful

Inbound Call

➢ **Follow the steps below to verify the inbound fax traffic from the gateway to the CUCM.**

1. Initiate a call from the PSTN using 519254000.
2. Watch all channels because a call should come in on one of the waiting channels

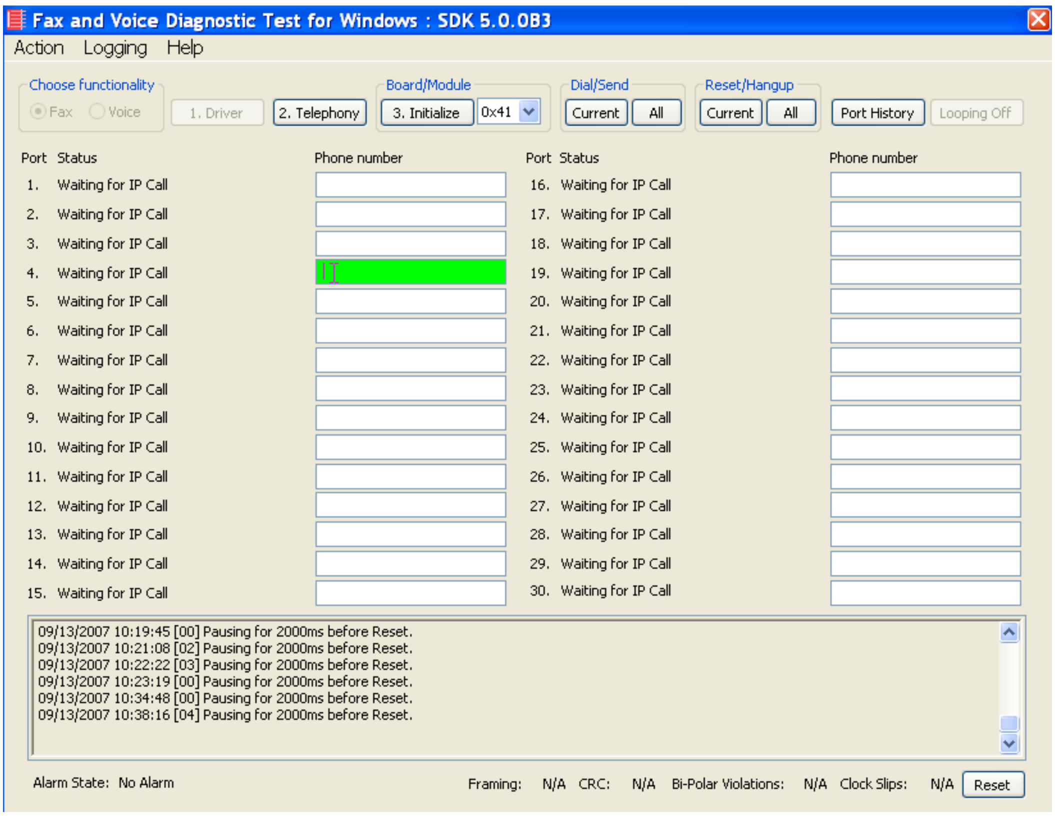

Figure 481. Fax Diagnostic Test

3. Click the Phone number box on which the call came in and click the Port History button.

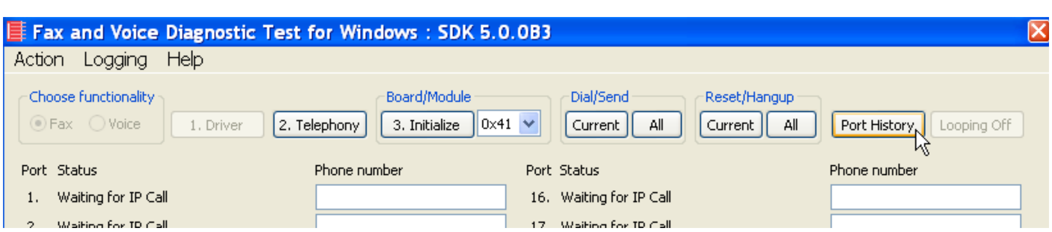

Figure 482. Port History

4. The following screen appears. Verify that the inbound call is successful.

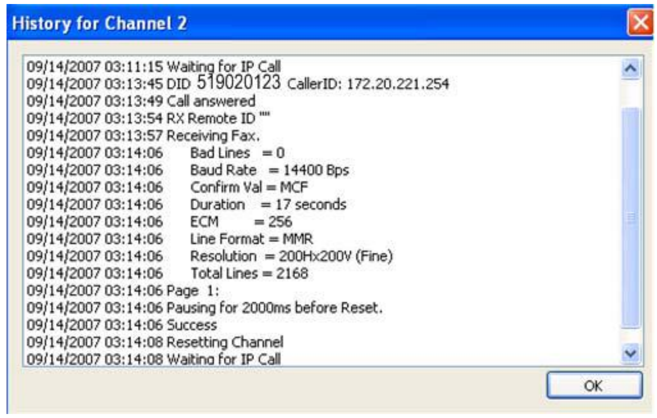

Figure 483. Inbound Call Successful

Appendix A
Verifying Basic Configuration

Introduction

Each topology in this document includes a procedure to use the Dialogic Brooktrout GUI-based Fax and Voice Diagnostic Test Utility to verify the configuration.

Before testing the full configuration, you should test the basic configuration of the Fax Server which involves having the SR140 Software place a fax to itself without accessing the Cisco network. This test verifies that the SR140 license and the SR140 Software is correctly installed.

This chapter contains the procedures to do that and is organized by the IP address of the Fax Server.

Note: A network protocol analyzer such as Wireshark will not capture any packets in this back-to-back test since the packets do not go on to the ethernet cable.

Verifying Basic Configuration - Fax Server 172.20.214.241

➢ **Follow the steps below to verify the basic configuration of Fax Server 172.20.214.241.**

1. Enter the IP address of the NIC interface card of the Fax Server and click Current.

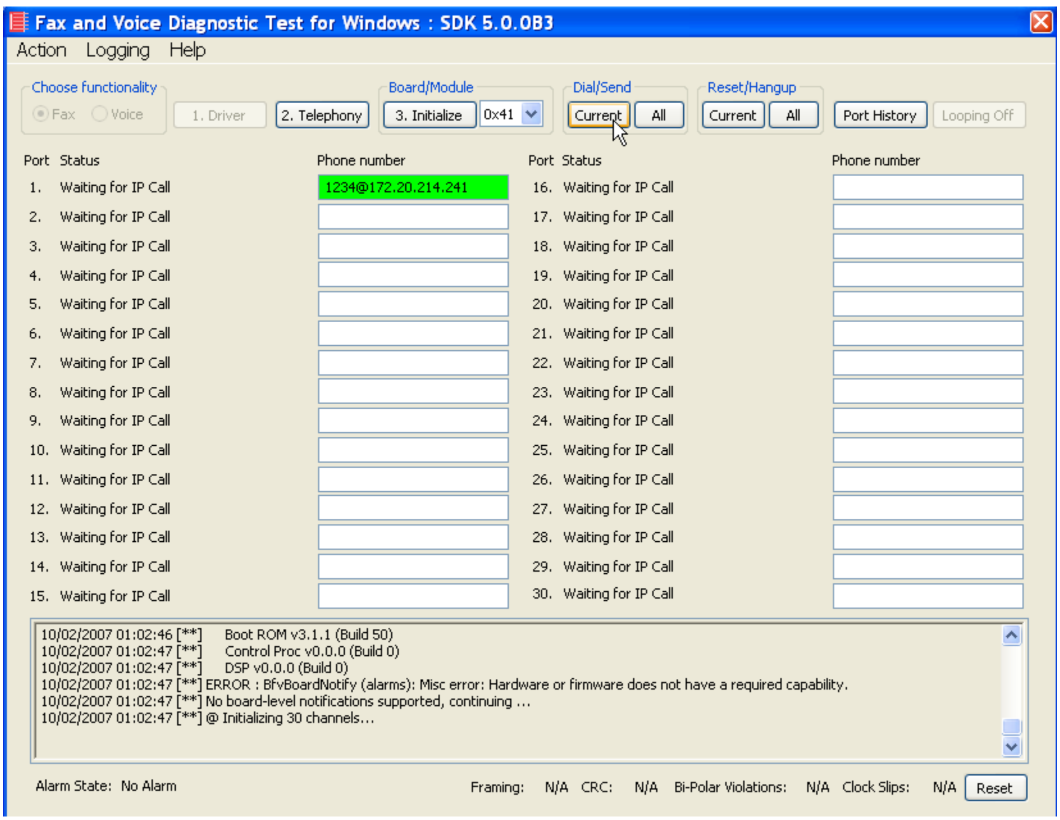

Figure 484. Send Fax

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The call comes in on another available channel of the Fax Server.

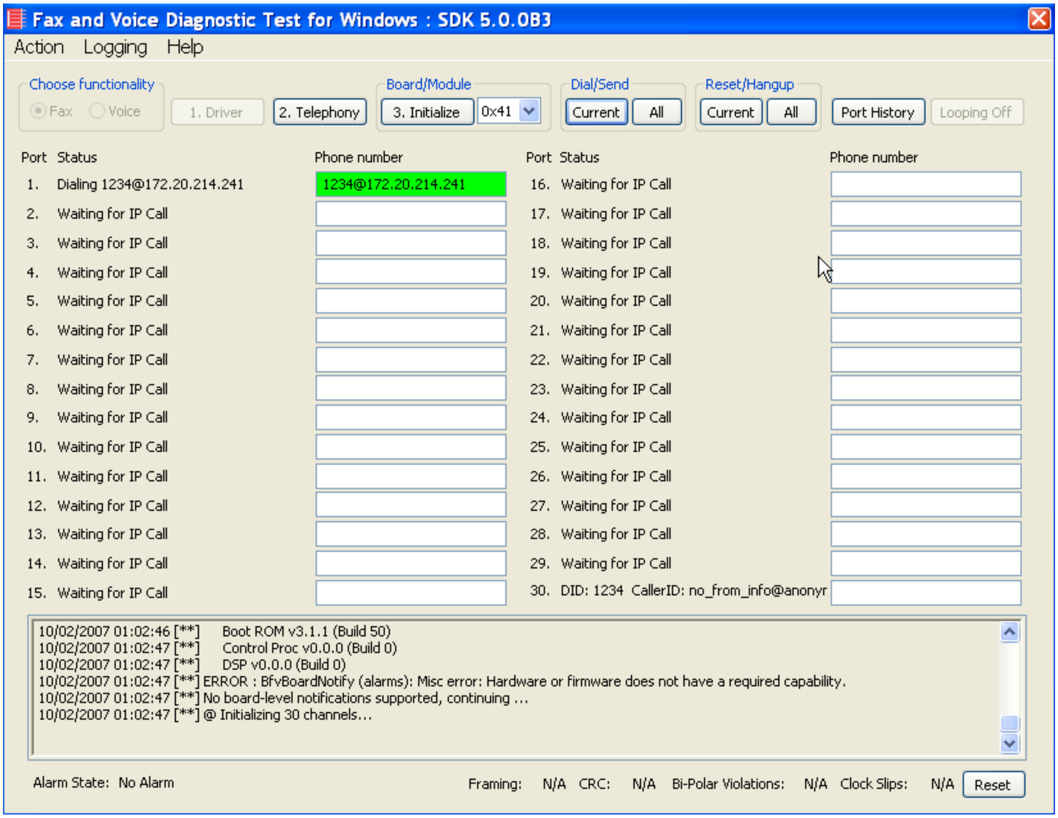

Figure 485. Fax Sent Back to Fax Server

2. Select the outbound port and click Port History and verify that the call was successful.

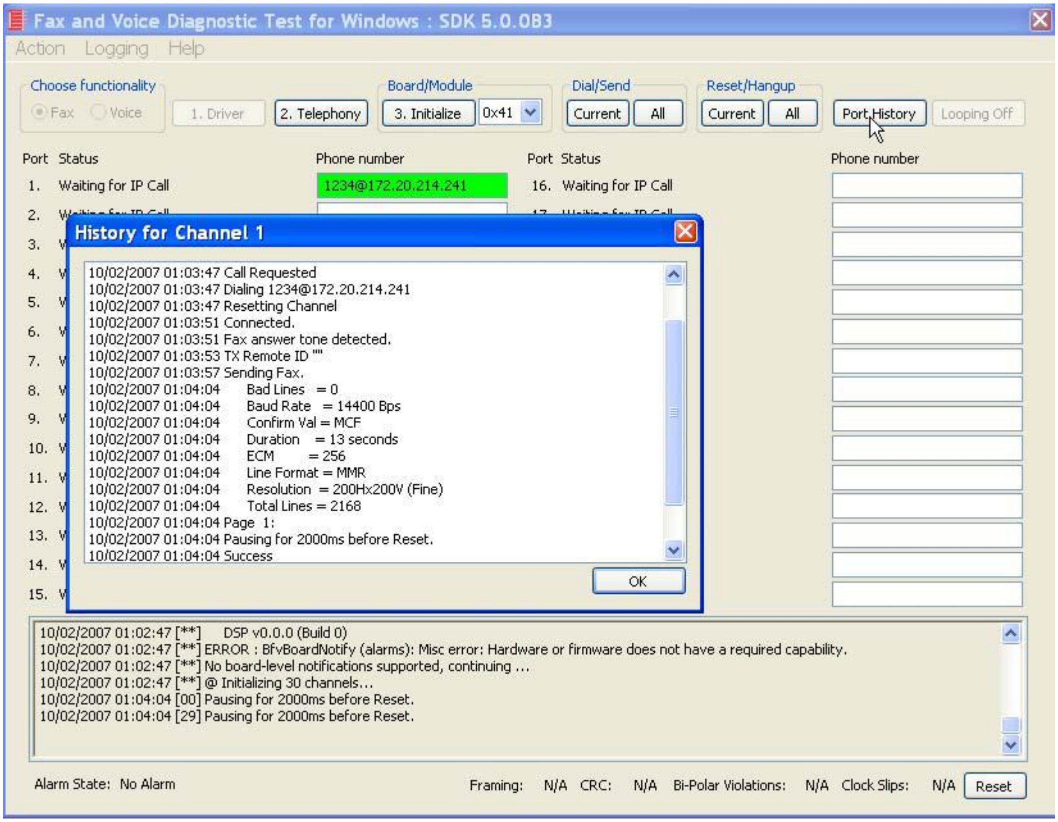

Figure 486. Outbound Call Successful

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3. Select the inbound port and click Port History. Verify that the call was successful.

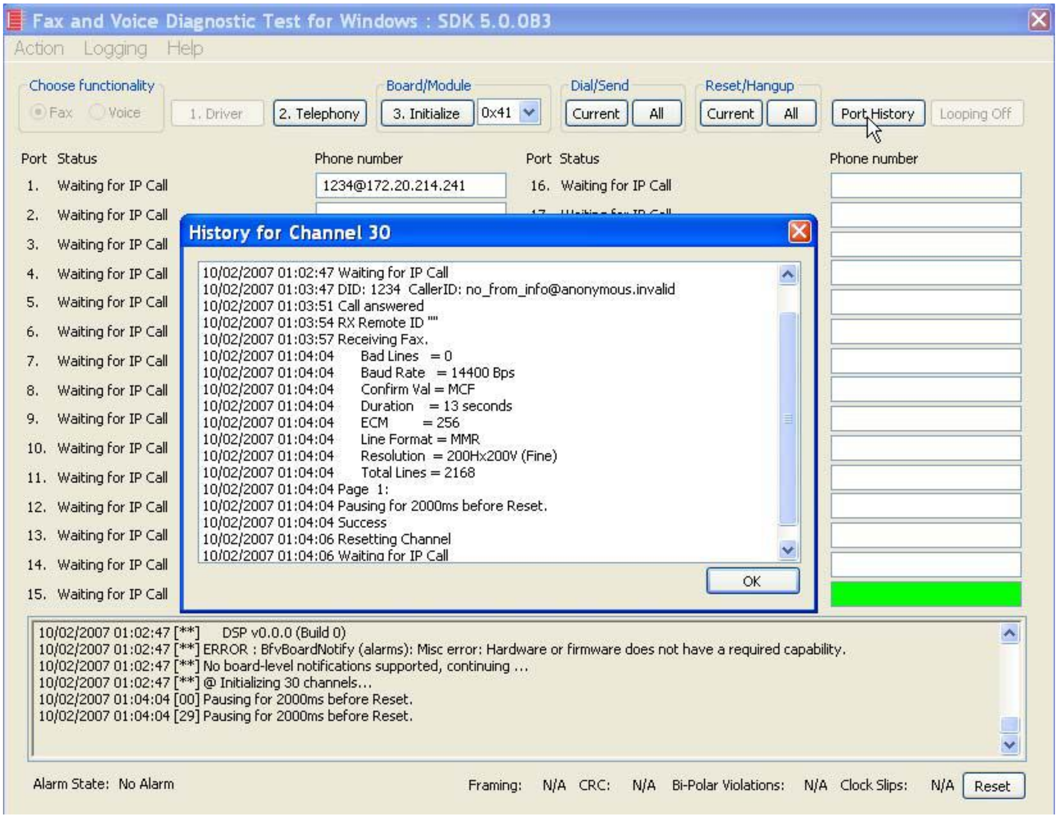

Figure 487. Inbound Call Successful

Verifying Basic Configuration - Fax Server 172.20.231.122

➢ **Follow the steps below to verify the basic configuration of Fax Server 172.20.231.122**

1. Enter the IP address of the NIC interface card of the Fax Server and click Current.

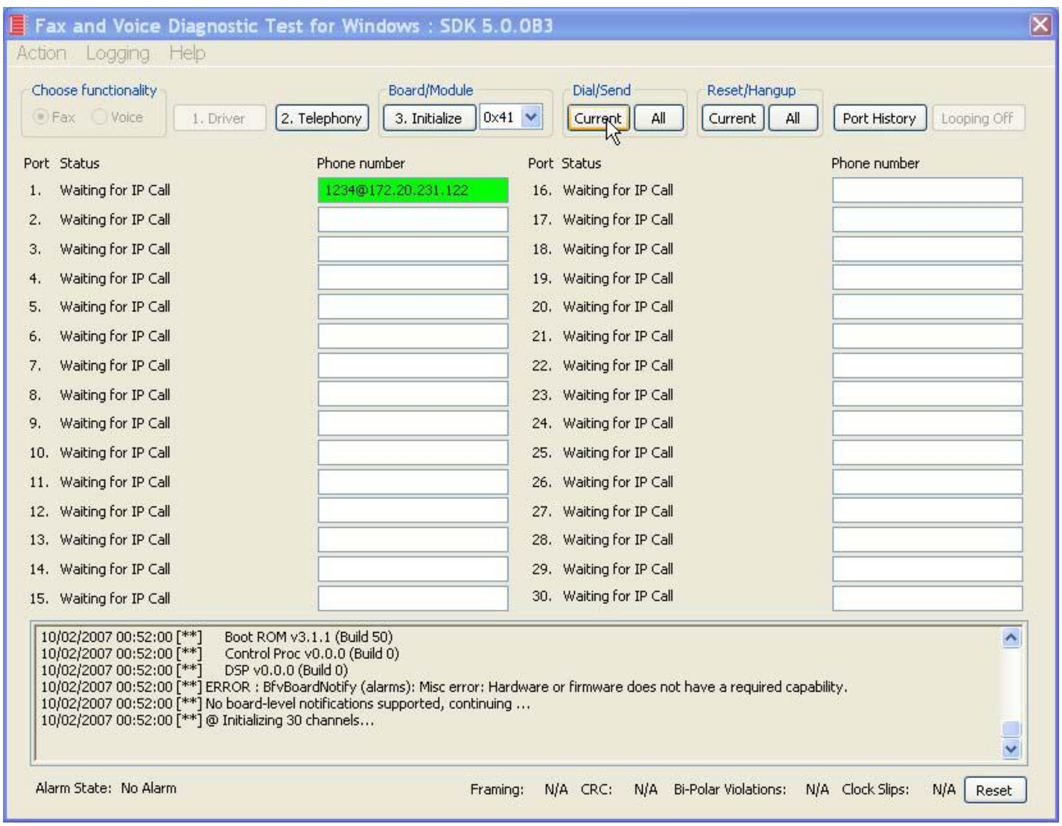

Figure 488. Send Fax

The call comes in on another available channel of the Fax Server.

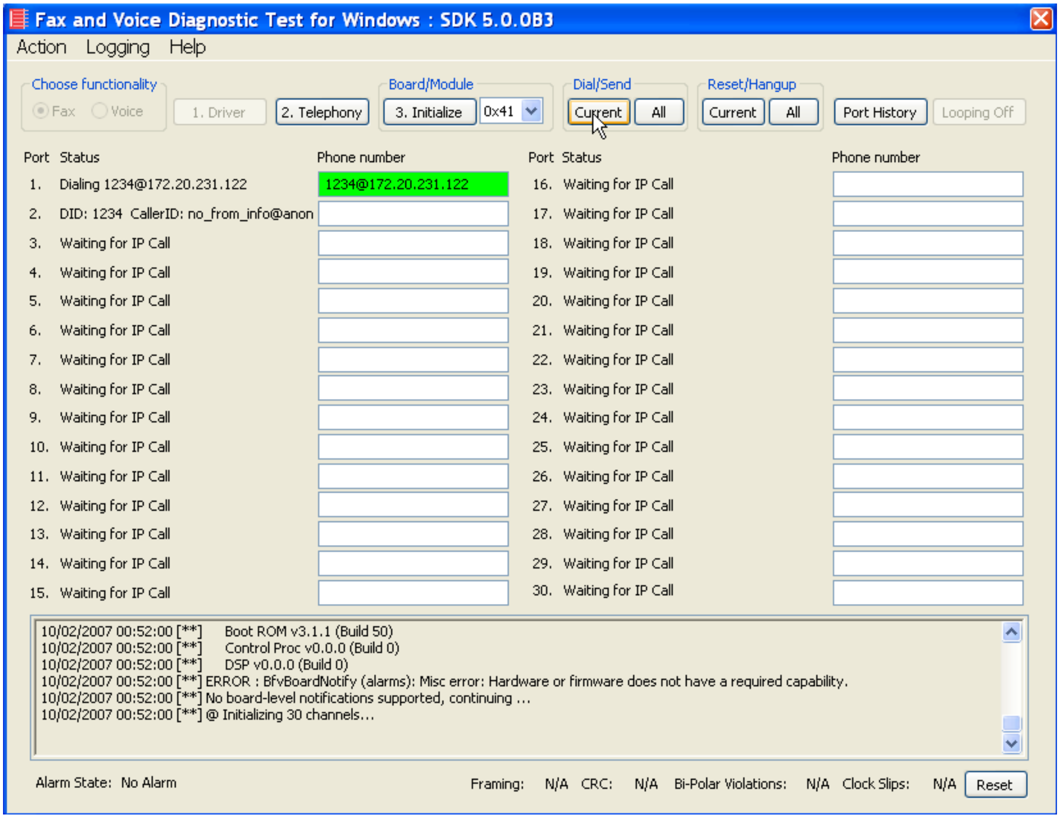

Figure 489. Fax Sent Back to Fax Server

2. Select the outbound port and click Port History and verify that the call was successful.

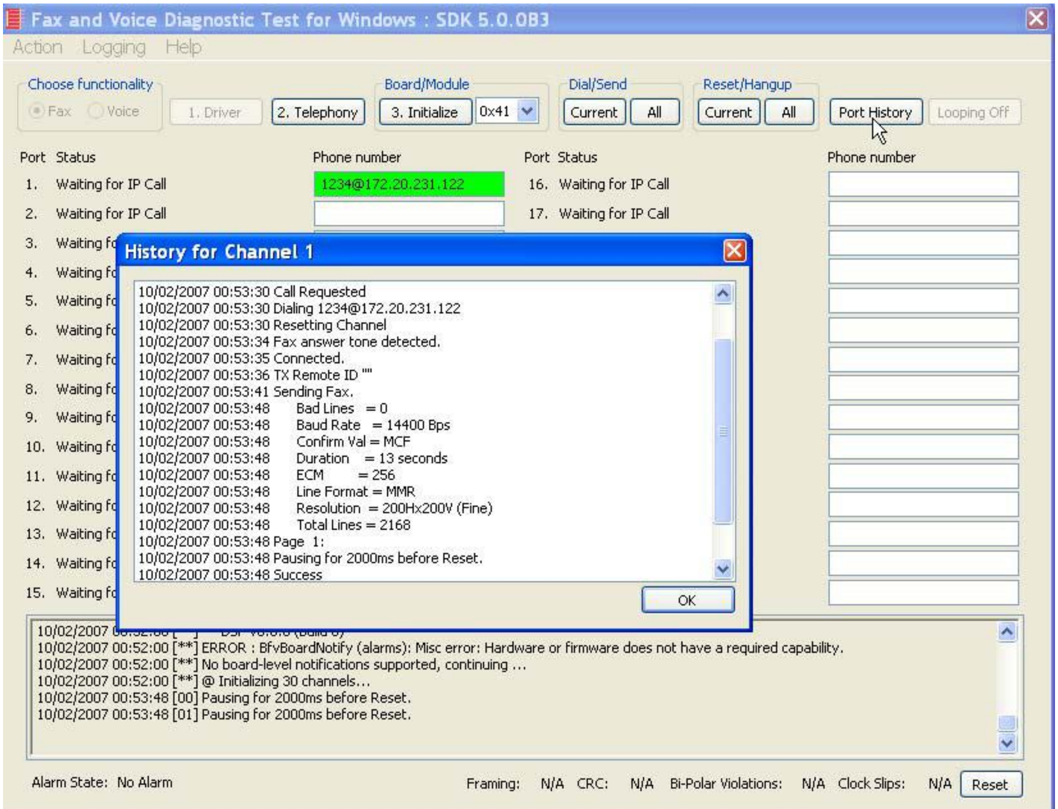

Figure 490. Outbound Call Successful

3. Select the inbound port and click Port History. Verify that the call was successful.

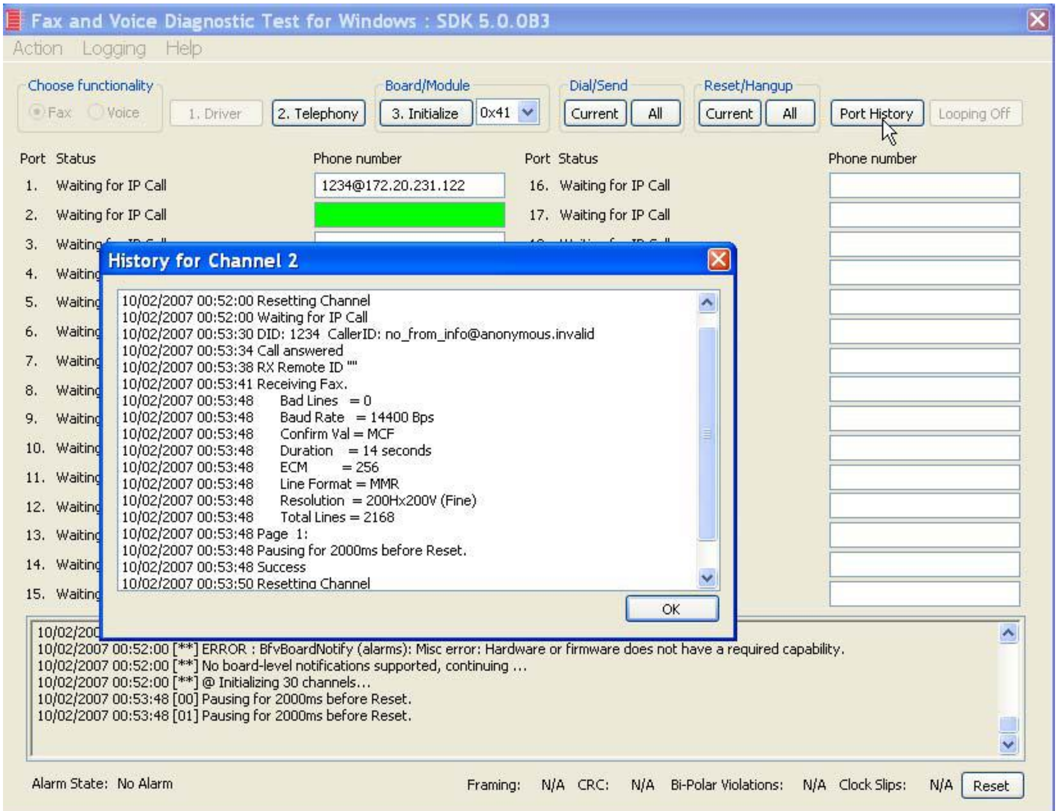

Figure 491. Inbound Call Successful

Verifying Basic Configuration - Fax Server 172.20.221.20

➢ **Follow the steps below to verify the basic configuration of Fax Server 172.20.221.20.**

1. Enter the IP address of the NIC interface card of the Fax Server and click Current.

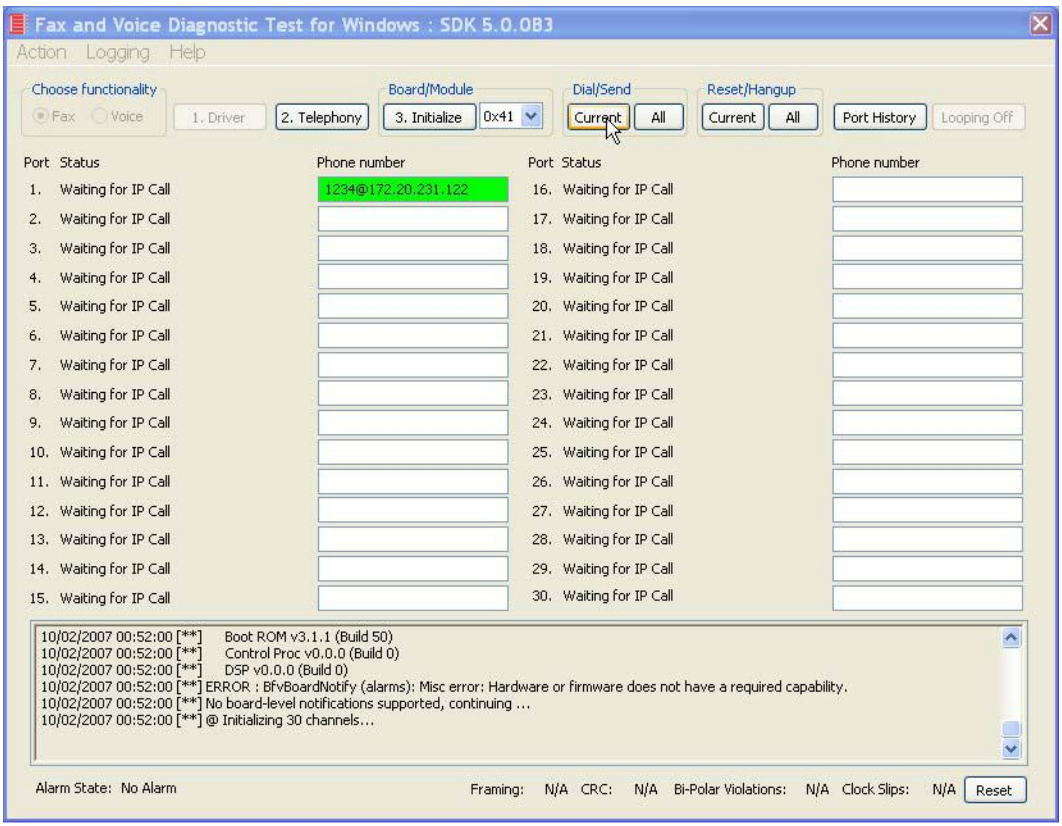

Figure 492. Send Fax

This document is not to be distributed to a third party without written permission from Dialogic.

The call comes in on another available channel of the Fax Server.

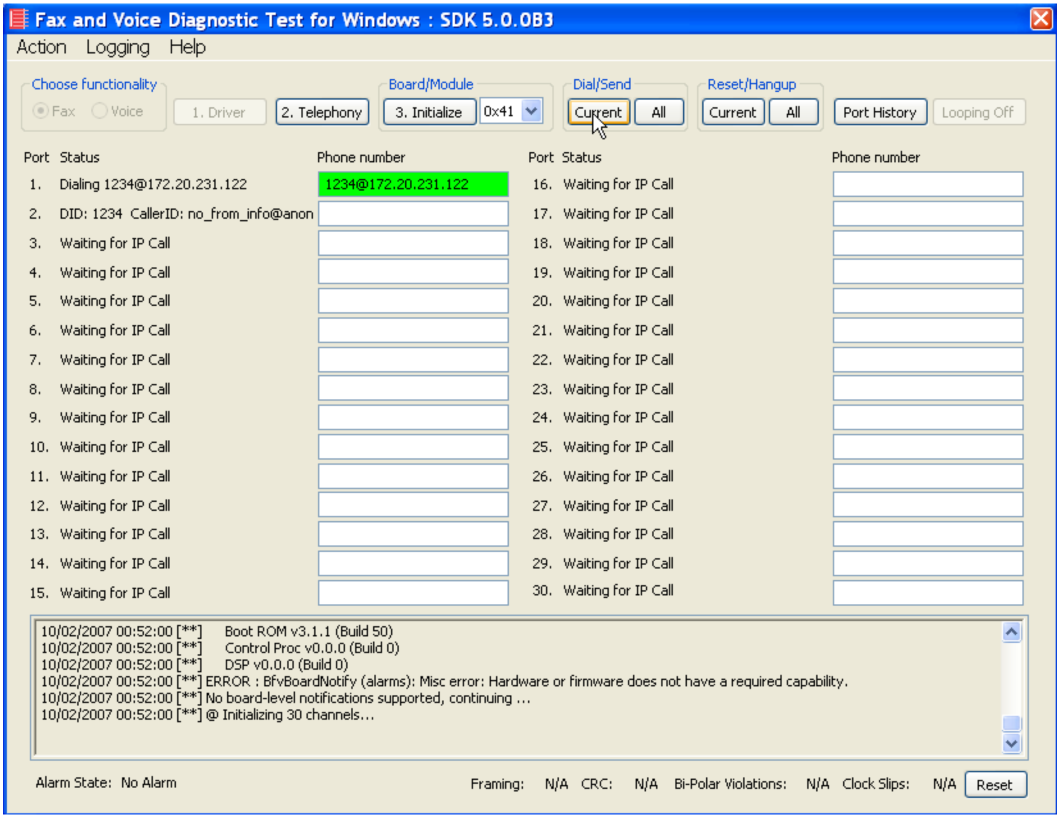

Figure 493. Fax Sent Back to Fax Server

2. Select the outbound port and click Port History and verify that the call was successful.

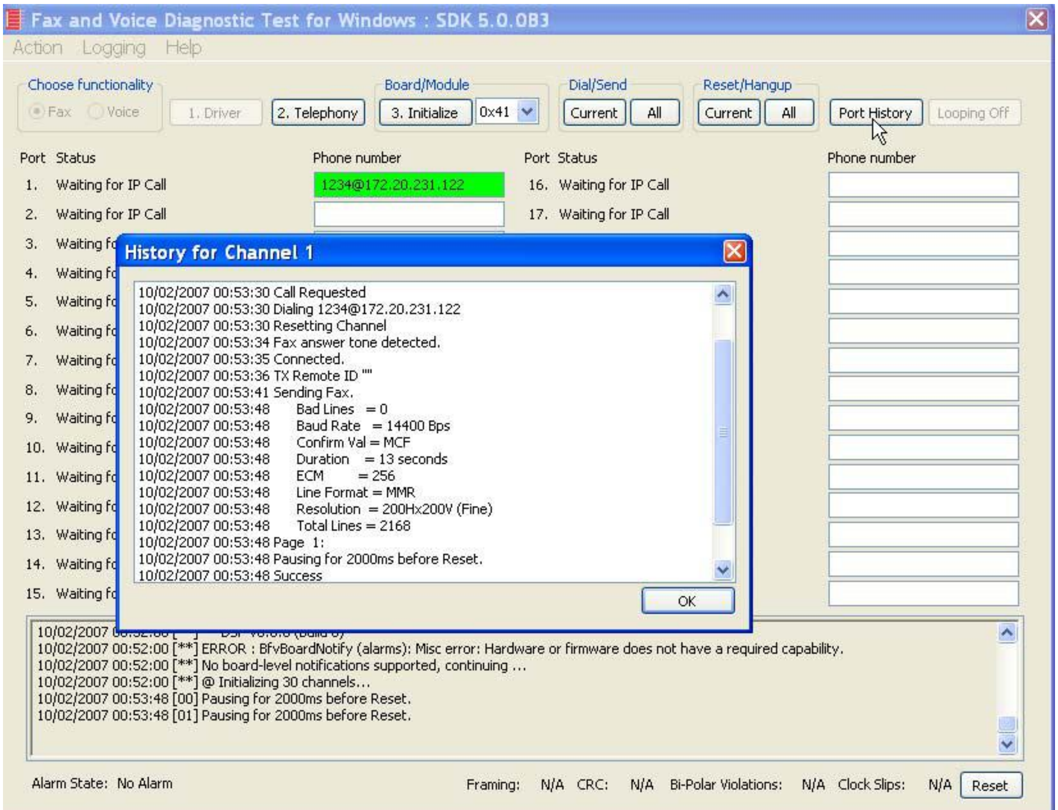

Figure 494. Outbound Call Successful

This document is not to be distributed to a third party without written permission from Dialogic.

3. Select the inbound port and click Port History. Verify that the call was successful.

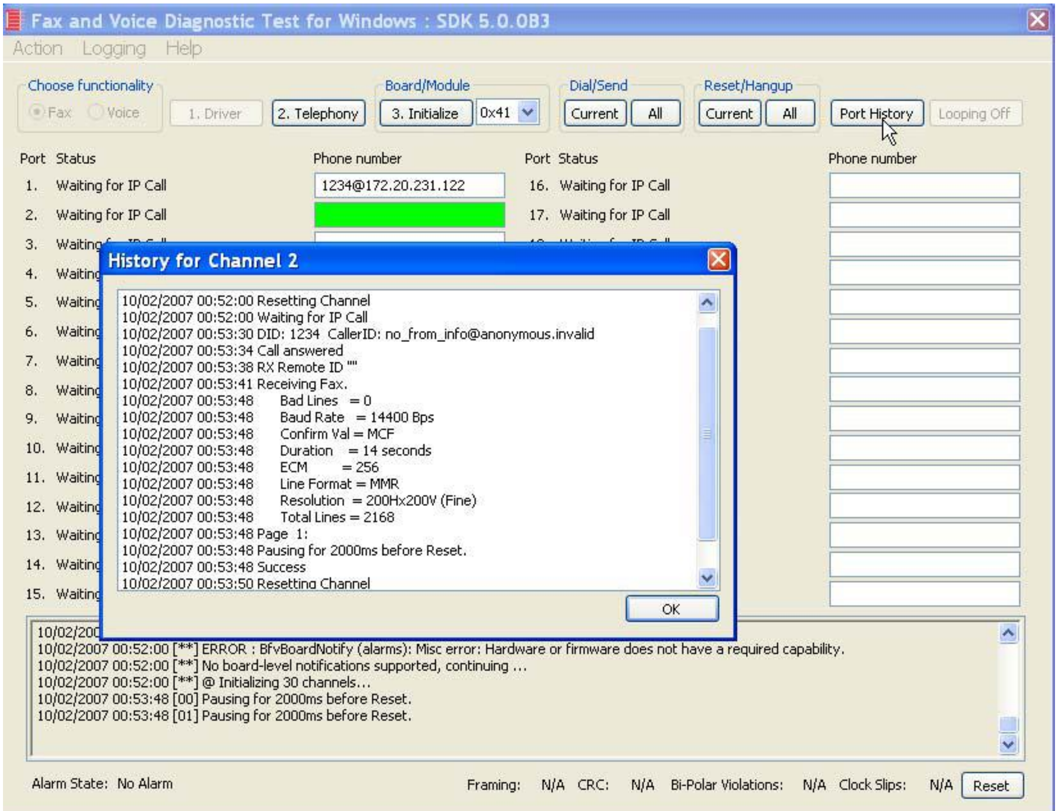

Figure 495. Inbound Call Successful

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Appendix B
Configuration Files for Topology: FoIP Direct - H.323

Introduction

This appendix includes configuration files for the Dialogic Brooktrout SR140 Software and the Cisco Media Gateway for a topology where the Fax Server communicates directly with the Cisco Media Gateway.

Use these files to help you configure this topology in a faststart and slowstart configuration.

Faststart Configuration - SR140

This section contains the following configuration files for the SR140 Software for a faststart configuration.

- btcall.cfg
- callctl.cfg

btcall.cfg

```
#Filenames may contain spaces if enclosed in double quotes ("")
  bft_rcv_cap 0
  bt_cparm BT_CPARM.CFG
  cabs 0
  call_control C:\FVD513\callctrl.cfg
#Other sample call ctrl config files are also in samples.cfg
  ced_timeout 4000
  country_code 0010
  ecm_enable 1
  eff_pt_caps 0
  error_mult 40
  error_thresh 3
  error_enable 1
  font_file ../bfv.api/fonts/ibmpcps.fz8 0
  font_file ../bfv.api/fonts/ibmpcps.fz8 255
  id_string
  line_compression 5
  max_width 0
  max_pagelist 30
  restrict_res 1
  subpwdsep 0
  tone
  v_timeout 60
  width_res_behavior 1
```


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```
max_timeout 0
badline_behavior 0
error_mult_rtp 200
min_length 0
fax_rtp_enable 1
v34_ci_enable 1
v34_2400_baud_ctrl 1
v34_enable 1
agc 1
dtmf_thresh 0
dtmf_hi_to_lo_twist_idle 2
dtmf_hi_to_lo_twist_play 4
dtmf_in_to_in_ratio_idle 16
dtmf_in_to_in_ratio_play 6
dtmf_in_to_out_ratio_idle 8
dtmf_in_to_out_ratio_play 2
dtmf_lo_to_hi_twist_idle 2
dtmf_lo_to_hi_twist_play 3
dtmf_min_off_idle 45
dtmf_min_off_play 45
dtmf_min_on_idle 30
dtmf_min_on_play 45
v_play_gain 0
silcompr_middle 1000
record_beep_dur 500
record_beep_freq 500
silcompr_start 500
answer_dropout 255
answer_silence_history 2010
answer_spike 45
digital_answer_cp 1
max_answer_analysis 3000
max_answer_silence 1005
max_answer_voice 2010
init_answer_silence 2010
```

```
  busy_dt_ct 1
  line_encoding 0
```

callctrl.cfg

```
# callctrl.cfg
#
# Sample Call Control configuration file for Boston Bfv API.
#
# This is an all-in-one file that contains examples for several
# different types of configurations.  All of the configuration lines have
# been commented out.  You should uncomment the lines that are
# appropriate for your configuration.
#
# NOTE: Ensure that you use an absolute path for all the parameters that accept
#   file names. For example:
#   protocol_file=[INSTALL_LOCATION]/config/analog_loopstart_us.lec
#   where [INSTALL_LOCATION] is the location where your software is installed.
#
#   For instance if the install location is C:/Brooktrout/Boston. Then
#   protocol_file=C:/Brooktrout/Boston/config/analog_loopstart_us.lec
#
# Refer to the Call Control Configuration File section in the Brooktrout Fax
# and Voice API Programmer's Reference Manual for more information.



  l3l4_trace=none
  l4l3_trace=none
  api_trace=none
  internal_trace=none
  host_module_trace=none
  ip_stack_trace=none
```

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```
# Most of the time a path should be used for this file name.
  trace_file=ecc.log
  max_trace_files=1
  max_trace_file_size=10

[host_module.1]
  module_library=brkth323.dll
  enabled=true
[host_module.1/t38parameters]
  t38_fax_rate_management=transferredTCF
  t38_fax_udp_ec=t38UDPRedundancy
  rtp_ced_enable=true
  t38_max_bit_rate=14400
  media_renegotiate_delay_inbound=4000
  media_renegotiate_delay_outbound=-1
  t38_fax_fill_bit_removal=false
  t38_fax_transcoding_jbig=false
  t38_fax_transcoding_mmr=false
  t38_t30_fastnotify=false
  t38_UDPTL_redundancy_depth_control=5
  t38_UDPTL_redundancy_depth_image=2
[host_module.1/parameters]
  h323_default_gateway=0.0.0.0:0
  h323_e164alias=
  h323_FastStart=1
  h323_gatekeeper_id=
  h323_gatekeeper_ip_address=0.0.0.0:0
  h323_gatekeeper_ttl=0
  h323_H245Stage=5
  h323_h245Tunneling=1
  h323_h323IDalias=
  h323_local_ip_address=172.20.214.241:1720
  h323_Manufacturer=Brooktrout Technology
  h323_ManufacturerCode=48
  h323_max_sessions=256
```

```
  h323_OlcRejectResponseTimeout=-1
  h323_register=0
  h323_support_alternate_gk=0
  h323_t35CountryCode=181
  h323_t35Extension=0
[module.41]
  model=SR140
  virtual=1
  exists=1
  vb_firm=C:\FVD513\fw\bostvb.dll
  channels=60
[module.41/ethernet.1]
  ip_interface={A3E5EAA4-8023-4927-84FB-4A7905FE3987}:0
  media_port_min=56000
  media_port_max=57000
[module.41/host_cc.1]
  host_module=1
  number_of_channels=60
```

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Faststart Configuration - Cisco Gateway-Config

Use the following file to configure the Cisco Media Gateway in a faststart configuration.

```
!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname 3845_West
!
boot-start-marker
boot system flash:c3845-ipvoicek9-mz.124-11.T3.bin
boot-end-marker
!
logging buffered 1000000
enable secret 5 $1$MFhi$AqqpDsFeO4Sb/IkzkrcmO/
!
no aaa new-model
network-clock-participate slot 1
network-clock-select 1 E1 1/0/0
voice-card 0
 no dspfarm
!
voice-card 1
 dspfarm
!
ip cef
ip tcp synwait-time 13
!
!
!
```

```
!
no ip domain lookup
ip host CM-VENUS 172.20.214.254
ip host CM-JUPITER 172.20.33.254
ip name-server 172.20.33.254
multilink bundle-name authenticated
!
isdn switch-type primary-net5
!
!
voice call carrier capacity active
!
voice service pots
!
voice service voip
 fax protocol t38 ls-redundancy 2 hs-redundancy 0 fallback none
 h323
  session transport udp
  sip
!
!
voice class codec 1
 codec preference 1 g711alaw
!
!
!
voice class h323 1
  call start fast
!
!
!
!
!
!
!
```

```
!
!
!
fax send transmitting-subscriber $s$
!
!
!
!
!
!
controller E1 1/0/0
 pri-group timeslots 1-31
!
controller E1 1/0/1
 pri-group timeslots 1-31
!
!
!
!
interface GigabitEthernet0/0
 description $ETH-LAN$$ETH-SW-LAUNCH$$INTF-INFO-GE 0/0$
 ip address 10.10.10.1 255.255.255.248
 shutdown
 duplex auto
 speed auto
 media-type rj45
 no keepalive
!
interface GigabitEthernet0/1
 ip address 172.20.33.129 255.255.255.0
 duplex auto
 speed auto
 media-type rj45
 no keepalive
!
```

```
interface Serial1/0/0:15
 no ip address
 encapsulation hdlc
 isdn switch-type primary-net5
 isdn incoming-voice voice
 no cdp enable
!
interface Serial1/0/1:15
 no ip address
 encapsulation hdlc
 isdn switch-type primary-net5
 isdn incoming-voice voice
 no cdp enable
!
ip route 0.0.0.0 0.0.0.0 GigabitEthernet0/1
ip route 0.0.0.0 0.0.0.0 172.20.33.1
!
!
ip http server
ip http authentication local
no ip http secure-server
!
!
!
!
control-plane
!
!
!
voice-port 0/1/0
!
voice-port 0/1/1
!
voice-port 1/0/0:15
!
```

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```
voice-port 1/0/1:15
!
!
!
!
dial-peer cor custom
!
!
!
dial-peer voice 1000000 pots
 destination-pattern 10000[012][0-9]
 no digit-strip
 direct-inward-dial
 port 1/0/0:15
!
dial-peer voice 1100000 pots
 destination-pattern 11000[012][0-9]
 no digit-strip
 direct-inward-dial
 port 1/0/1:15
!
dial-peer voice 323241 voip
 destination-pattern 323241...
 voice-class h323 1
 session target ipv4:172.20.214.241
 session transport udp

 codec g711alaw
!
!
banner login
-----------------------------------------------------------------------
Cisco Router and Security Device Manager (SDM) is installed on this device. This
feature requires the one time use, initial credentials, of username "cisco"
with password "cisco".
```

```
Please change these publicly known initial credentials through SDM or IOS CLI.
Here's the Cisco IOS command:

no username cisco

NOTE: Please add a new username to be able to launch SDM for router management.

For more information about SDM please follow the instructions in the QUICK
START GUIDE for your router or at
http://www.cisco.com/go/sdm
-----------------------------------------------------------------------

!
line con 0
 exec-timeout 600 0
 password cisco
 login
 stopbits 1
line aux 0
 stopbits 1
line vty 0 4
 exec-timeout 600 0
 privilege level 15
 password cisco
 login
 transport input telnet
line vty 5 15
 privilege level 15
 login local
 transport input telnet
!
scheduler allocate 20000 1000
!
end
```


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Slowstart Configuration - SR140

This section contains the following configuration files for the SR140 Software in a slowstart configuration.

- btcall.cfg
- callctl.cfg

btcall.cfg

```
#Filenames may contain spaces if enclosed in double quotes ("")
  bft_rcv_cap 0
  bt_cparm BT_CPARM.CFG
  cabs 0
  call_control C:\FVD513\callctrl.cfg
#Other sample call ctrl config files are also in samples.cfg
  ced_timeout 4000
  country_code 0010
  ecm_enable 1
  eff_pt_caps 0
  error_mult 40
  error_thresh 3
  error_enable 1
  font_file ../bfv.api/fonts/ibmpcps.fz8 0
  font_file ../bfv.api/fonts/ibmpcps.fz8 255
  id_string
  line_compression 5
  max_width 0
  max_pagelist 30
  restrict_res 1
  subpwdsep 0
  tone
  v_timeout 60
  width_res_behavior 1
```

```
max_timeout 0
badline_behavior 0
error_mult_rtp 200
min_length 0
fax_rtp_enable 1
v34_ci_enable 1
v34_2400_baud_ctrl 1
v34_enable 1
agc 1
dtmf_thresh 0
dtmf_hi_to_lo_twist_idle 2
dtmf_hi_to_lo_twist_play 4
dtmf_in_to_in_ratio_idle 16
dtmf_in_to_in_ratio_play 6
dtmf_in_to_out_ratio_idle 8
dtmf_in_to_out_ratio_play 2
dtmf_lo_to_hi_twist_idle 2
dtmf_lo_to_hi_twist_play 3
dtmf_min_off_idle 45
dtmf_min_off_play 45
dtmf_min_on_idle 30
dtmf_min_on_play 45
v_play_gain 0
silcompr_middle 1000
record_beep_dur 500
record_beep_freq 500
silcompr_start 500
answer_dropout 255
answer_silence_history 2010
answer_spike 45
digital_answer_cp 1
max_answer_analysis 3000
max_answer_silence 1005
max_answer_voice 2010
init_answer_silence 2010
```


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```
  busy_dt_ct 1
  line_encoding 0
```

callctrl.cfg

```
# callctrl.cfg
#
# Sample Call Control configuration file for Boston Bfv API.
#
# This is an all-in-one file that contains examples for several
# different types of configurations.  All of the configuration lines have
# been commented out.  You should uncomment the lines that are
# appropriate for your configuration.
#
# NOTE: Ensure that you use an absolute path for all the parameters that accept
#   file names. For example:
#   protocol_file=[INSTALL_LOCATION]/config/analog_loopstart_us.lec
#   where [INSTALL_LOCATION] is the location where your software is installed.
#
#   For instance if the install location is C:/Brooktrout/Boston. Then
#   protocol_file=C:/Brooktrout/Boston/config/analog_loopstart_us.lec
#
# Refer to the Call Control Configuration File section in the Brooktrout Fax
# and Voice API Programmer's Reference Manual for more information.



  l3l4_trace=none
  l4l3_trace=none
  api_trace=none
  internal_trace=none
  host_module_trace=none
  ip_stack_trace=none
# Most of the time a path should be used for this file name.
```

```
  trace_file=ecc.log
  max_trace_files=1
  max_trace_file_size=10

[host_module.1]
  module_library=brkth323.dll
  enabled=true
[host_module.1/t38parameters]
  t38_fax_rate_management=transferredTCF
  t38_fax_udp_ec=t38UDPRedundancy
  rtp_ced_enable=true
  t38_max_bit_rate=14400
  media_renegotiate_delay_inbound=4000
  media_renegotiate_delay_outbound=-1
  t38_fax_fill_bit_removal=false
  t38_fax_transcoding_jbig=false
  t38_fax_transcoding_mmr=false
  t38_t30_fastnotify=false
  t38_UDPTL_redundancy_depth_control=5
  t38_UDPTL_redundancy_depth_image=2
[host_module.1/parameters]
  h323_default_gateway=0.0.0.0:0
  h323_e164alias=
  h323_FastStart=0
  h323_gatekeeper_id=
  h323_gatekeeper_ip_address=0.0.0.0:0
  h323_gatekeeper_ttl=0
  h323_H245Stage=3
  h323_h245Tunneling=0
  h323_h323IDalias=
  h323_local_ip_address=172.20.214.241:1720
  h323_Manufacturer=Brooktrout Technology
  h323_ManufacturerCode=48
  h323_max_sessions=256
  h323_OlcRejectResponseTimeout=-1
```


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```
  h323_register=0
  h323_support_alternate_gk=0
  h323_t35CountryCode=181
  h323_t35Extension=0
[module.41]
  model=SR140
  virtual=1
  exists=1
  vb_firm=C:\FVD513\fw\bostvb.dll
  channels=60
[module.41/ethernet.1]
  ip_interface={A3E5EAA4-8023-4927-84FB-4A7905FE3987}:0
  media_port_min=56000
  media_port_max=57000
[module.41/host_cc.1]
  host_module=1
  number_of_channels=60
```

Slowstart Configuration - Cisco Gateway-Config

Use the following file to configure the Cisco Media Gateway in a slowstart configuration.

```
!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname 3845_West
!
boot-start-marker
boot system flash:c3845-ipvoicek9-mz.124-11.T3.bin
boot-end-marker
!
logging buffered 1000000
enable secret 5 $1$MFhi$AqqpDsFeO4Sb/IkzkrcmO/
!
no aaa new-model
network-clock-participate slot 1
network-clock-select 1 E1 1/0/0
voice-card 0
 no dspfarm
!
voice-card 1
 dspfarm
!
ip cef
ip tcp synwait-time 13
!
!
!
!
```


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```
no ip domain lookup
ip host CM-VENUS 172.20.214.254
ip host CM-JUPITER 172.20.33.254
ip name-server 172.20.33.254
multilink bundle-name authenticated
!
isdn switch-type primary-net5
!
!
voice call carrier capacity active
!
voice service pots
!
voice service voip
 fax protocol t38 ls-redundancy 2 hs-redundancy 0 fallback none
 h323
  session transport udp
  h245 tunnel disable
 sip
!
!
voice class codec 1
 codec preference 1 g711alaw
!
!
!
voice class h323 1
  call start slow
!
!
!
!
!
!
!
```

```
!
!
!
fax send transmitting-subscriber $s$
!
!
!
!
!
!
controller E1 1/0/0
 pri-group timeslots 1-31
!
controller E1 1/0/1
 pri-group timeslots 1-31
!
!
!
!
interface GigabitEthernet0/0
 description $ETH-LAN$$ETH-SW-LAUNCH$$INTF-INFO-GE 0/0$
 ip address 10.10.10.1 255.255.255.248
 shutdown
 duplex auto
 speed auto
 media-type rj45
 no keepalive
!
interface GigabitEthernet0/1
 ip address 172.20.33.129 255.255.255.0
 duplex auto
 speed auto
 media-type rj45
 no keepalive
!
```


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```
interface Serial1/0/0:15
 no ip address
 encapsulation hdlc
 isdn switch-type primary-net5
 isdn incoming-voice voice
 no cdp enable
!
interface Serial1/0/1:15
 no ip address
 encapsulation hdlc
 isdn switch-type primary-net5
 isdn incoming-voice voice
 no cdp enable
!
ip route 0.0.0.0 0.0.0.0 GigabitEthernet0/1
ip route 0.0.0.0 0.0.0.0 172.20.33.1
!
!
ip http server
ip http authentication local
no ip http secure-server
!
!
!
!
control-plane
!
!
!
voice-port 0/1/0
!
voice-port 0/1/1
!
voice-port 1/0/0:15
!
```

```
voice-port 1/0/1:15
!
!
!
!
dial-peer cor custom
!
!
!
dial-peer voice 1000000 pots
 destination-pattern 10000[012][0-9]
 no digit-strip
 direct-inward-dial
 port 1/0/0:15
!
dial-peer voice 1100000 pots
 destination-pattern 11000[012][0-9]
 no digit-strip
 direct-inward-dial
 port 1/0/1:15
!
dial-peer voice 323241 voip
 destination-pattern 323241...
 voice-class h323 1
 session target ipv4:172.20.214.241
 session transport udp
 codec g711alaw
!
!
banner login
-----------------------------------------------------------------
Cisco Router and Security Device Manager (SDM) is installed on this device. This
feature requires the one time use, initial credentials, of username "cisco"
with password "cisco".
```


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```
Please change these publicly known initial credentials through SDM or IOS CLI.
Here's the Cisco IOS command:

no username cisco

NOTE: Please add a new username to be able to launch SDM for router management.

For more information about SDM please follow the instructions in the QUICK
START GUIDE for your router or at
http://www.cisco.com/go/sdm
-----------------------------------------------------------------------

!
line con 0
 exec-timeout 600 0
 password cisco
 login
 stopbits 1
line aux 0
 stopbits 1
line vty 0 4
 exec-timeout 600 0
 privilege level 15
 password cisco
 login
 transport input telnet
line vty 5 15
 privilege level 15
 login local
 transport input telnet
!
scheduler allocate 20000 1000
!
end
```

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Appendix C
Configuration Files for Topology: FoIP Direct - SIP

Introduction

This appendix includes configuration files for the Dialogic Brooktrout SR140 and the Cisco Media Gateway for a topology where the Fax Server communicates directly with the Cisco Media Gateway.

Use these files to help you configure this topology.

SR140 Configuration Files on page 448

Cisco Gateway-Config on page 454

SR140 Configuration Files

The two configuration files below show the configuration of the Dialogic Brooktrout SR140 Software.

- btcall.cfg
- callctrl.cfg

btcall.cfg

```
#Filenames may contain spaces if enclosed in double quotes ("")
  bft_rcv_cap 0
  bt_cparm BT_CPARM.CFG
  cabs 0
  call_control C:\FVD513\callctrl.cfg
#Other sample call ctrl config files are also in samples.cfg
  ced_timeout 4000
  country_code 0010
  ecm_enable 1
  eff_pt_caps 0
  error_mult 40
  error_thresh 3
  error_enable 1
  font_file ../bfv.api/fonts/ibmpcps.fz8 0
  font_file ../bfv.api/fonts/ibmpcps.fz8 255
  id_string
  line_compression 5
  max_width 0
  max_pagelist 30
  restrict_res 1
  subpwdsep 0
  tone
```

```
v_timeout 60
width_res_behavior 1
max_timeout 0
badline_behavior 0
error_mult_rtp 200
min_length 0
fax_rtp_enable 1
v34_ci_enable 1
v34_2400_baud_ctrl 1
v34_enable 1
agc 1
dtmf_thresh 0
dtmf_hi_to_lo_twist_idle 2
dtmf_hi_to_lo_twist_play 4
dtmf_in_to_in_ratio_idle 16
dtmf_in_to_in_ratio_play 6
dtmf_in_to_out_ratio_idle 8
dtmf_in_to_out_ratio_play 2
dtmf_lo_to_hi_twist_idle 2
dtmf_lo_to_hi_twist_play 3
dtmf_min_off_idle 45
dtmf_min_off_play 45
dtmf_min_on_idle 30
dtmf_min_on_play 45
v_play_gain 0
silcompr_middle 1000
record_beep_dur 500
record_beep_freq 500
silcompr_start 500
answer_dropout 255
answer_silence_history 2010
answer_spike 45
digital_answer_cp 1
max_answer_analysis 3000
max_answer_silence 1005
```

```
  max_answer_voice 2010
  init_answer_silence 2010
  busy_dt_ct 1
  line_encoding 0
```

callctrl.cfg

```
# callctrl.cfg
#
# Sample Call Control configuration file for Boston Bfv API.
#
# This is an all-in-one file that contains examples for several
# different types of configurations.  All of the configuration lines have
# been commented out.  You should uncomment the lines that are
# appropriate for your configuration.
#
# NOTE: Ensure that you use an absolute path for all the parameters that accept
#   file names. For example:
#   protocol_file=[INSTALL_LOCATION]/config/analog_loopstart_us.lec
#   where [INSTALL_LOCATION] is the location where your software is installed.
#
#   For instance if the install location is C:/Brooktrout/Boston. Then
#   protocol_file=C:/Brooktrout/Boston/config/analog_loopstart_us.lec
#
# Refer to the Call Control Configuration File section in the Brooktrout Fax
# and Voice API Programmer's Reference Manual for more information.



  l3l4_trace=none
  l4l3_trace=none
  api_trace=none
  internal_trace=none
```


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```
  host_module_trace=none
  ip_stack_trace=none
# Most of the time a path should be used for this file name.
  trace_file=ecc.log
  max_trace_files=1
  max_trace_file_size=10

[host_module.1]
  module_library=brktsip.dll
  enabled=true
[host_module.1/t38parameters]
  t38_fax_rate_management=transferredTCF
  t38_fax_udp_ec=t38UDPRedundancy
  rtp_ced_enable=true
  t38_max_bit_rate=14400
  media_renegotiate_delay_inbound=4000
  media_renegotiate_delay_outbound=-1
  t38_fax_fill_bit_removal=false
  t38_fax_transcoding_jbig=false
  t38_fax_transcoding_mmr=false
  t38_t30_fastnotify=false
  t38_UDPTL_redundancy_depth_control=5
  t38_UDPTL_redundancy_depth_image=2
[host_module.1/parameters]
  sip_Contact=0.0.0.0:0
  sip_default_gateway=0.0.0.0:0
  sip_description_URI=
  sip_email=
  sip_From=Anonymous <sip:no_from_info@anonymous.invalid>
  sip_Max-Forwards=70
  sip_max_sessions=256
  sip_phone=
  sip_proxy_server1=
  sip_proxy_server2=
  sip_proxy_server3=
```

```
  sip_proxy_server4=
  sip_registration_interval=60
  sip_registration_server1=
  sip_registration_server1_aor=
  sip_registration_server1_expires=3600
  sip_registration_server1_password=
  sip_registration_server1_username=
  sip_registration_server2=
  sip_registration_server2_aor=
  sip_registration_server2_expires=3600
  sip_registration_server2_password=
  sip_registration_server2_username=
  sip_registration_server3=
  sip_registration_server3_aor=
  sip_registration_server3_expires=3600
  sip_registration_server3_password=
  sip_registration_server3_username=
  sip_registration_server4=
  sip_registration_server4_aor=
  sip_registration_server4_expires=3600
  sip_registration_server4_password=
  sip_registration_server4_username=
  sip_Route=
  sip_session_description=
  sip_session_name=no_session_name
  sip_username=-
[module.41]
  model=SR140
  virtual=1
  exists=1
  vb_firm=C:\FVD513\fw\bostvb.dll
  channels=60
[module.41/ethernet.1]
  ip_interface={A3E5EAA4-8023-4927-84FB-4A7905FE3987}:0
  media_port_min=56000
```


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```
  media_port_max=57000
[module.41/host_cc.1]
  host_module=1
  number_of_channels=60
```

Cisco Gateway-Config

```
!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname 3845_West
!
boot-start-marker
boot system flash:c3845-ipvoicek9-mz.124-11.T3.bin
boot-end-marker
!
logging buffered 1000000
enable secret 5 $1$MFhi$AqqpDsFeO4Sb/IkzkrcmO/
!
no aaa new-model
network-clock-participate slot 1
network-clock-select 1 E1 1/0/0
voice-card 0
 no dspfarm
!
voice-card 1
 dspfarm
!
ip cef
ip tcp synwait-time 13
!
!
!
!
no ip domain lookup
```

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```
ip host CM-VENUS 172.20.214.254
ip host CM-JUPITER 172.20.33.254
ip name-server 172.20.33.254
multilink bundle-name authenticated
!
isdn switch-type primary-net5
!
!
voice call carrier capacity active
!
voice service pots
!
voice service voip
 fax protocol t38 ls-redundancy 2 hs-redundancy 0 fallback none
 sip
!
!
voice class codec 1
 codec preference 1 g711alaw
!
!
!
fax send transmitting-subscriber $s$
!
!
!
!
!
!
controller E1 1/0/0
 pri-group timeslots 1-31
!
controller E1 1/0/1
 pri-group timeslots 1-31
!
```

```
!
!
!
interface GigabitEthernet0/0
 description $ETH-LAN$$ETH-SW-LAUNCH$$INTF-INFO-GE 0/0$
 ip address 10.10.10.1 255.255.255.248
 shutdown
 duplex auto
 speed auto
 media-type rj45
 no keepalive
!
interface GigabitEthernet0/1
 ip address 172.20.33.129 255.255.255.0
 duplex auto
 speed auto
 media-type rj45
 no keepalive
!
interface Serial1/0/0:15
 no ip address
 encapsulation hdlc
 isdn switch-type primary-net5
 isdn incoming-voice voice
 no cdp enable
!
interface Serial1/0/1:15
 no ip address
 encapsulation hdlc
 isdn switch-type primary-net5
 isdn incoming-voice voice
 no cdp enable
!
ip route 0.0.0.0 0.0.0.0 GigabitEthernet0/1
ip route 0.0.0.0 0.0.0.0 172.20.33.1
```


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```
!
!
ip http server
ip http authentication local
no ip http secure-server
!
!
!
!
control-plane
!
!
!
voice-port 0/1/0
!
voice-port 0/1/1
!
voice-port 1/0/0:15
!
voice-port 1/0/1:15
!
!
!
!
dial-peer cor custom
!
!
!
dial-peer voice 1000000 pots
 destination-pattern 10000[012][0-9]
 no digit-strip
 direct-inward-dial
 port 1/0/0:15
!
dial-peer voice 1100000 pots
```

```
 destination-pattern 11000[012][0-9]
 no digit-strip
 direct-inward-dial
 port 1/0/1:15
!
dial-peer voice 519241 voip
 destination-pattern 519241...
 session protocol sipv2
 session target ipv4:172.20.214.241
 session transport udp
 codec g711alaw
!
!
banner login
-----------------------------------------------------------------------
Cisco Router and Security Device Manager (SDM) is installed on this device. This
feature requires the one time use, initial credentials, of username "cisco"
with password "cisco".

Please change these publicly known initial credentials through SDM or IOS CLI.
Here's the Cisco IOS command:

no username cisco

NOTE: Please add a new username to be able to launch SDM for router management.

For more information about SDM please follow the instructions in the QUICK
START GUIDE for your router or at
http://www.cisco.com/go/sdm
-----------------------------------------------------------------------

!
line con 0
 exec-timeout 600 0
 password cisco
```

```
 login
 stopbits 1
line aux 0
 stopbits 1
line vty 0 4
 exec-timeout 600 0
 privilege level 15
 password cisco
 login
 transport input telnet
line vty 5 15
 privilege level 15
 login local
 transport input telnet
!
scheduler allocate 20000 1000
!
end
```

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Appendix D
Configuration Files for Topology: IOS Gatekeeper - H.323

Introduction

This appendix includes configuration files for the Dialogic Brooktrout TR1034 board and the Cisco Media Gateway where both are provisioned to use an H.323 Gatekeeper.

Use these files to help you configure this topology.

- *TR1034 Configuration Files on page 462*
- *Startup-Config (Gatekeeper PV2821) on page 467*
- *Startup-Config (Gateway PV3845) on page 472*

TR1034 Configuration Files

The two configuration files below show the configuration of the Dialogic Brooktrout TR1034 fax board.

- btcall.cfg
- callctrl.cfg

btcall.cfg

```
#Filenames may contain spaces if enclosed in double quotes ("")
  bft_rcv_cap 0
  bt_cparm BT_CPARM.CFG
  cabs 0
  call_control C:\FVD513\callctrl.cfg
#Other sample call ctrl config files are also in samples.cfg
  ced_timeout 4000
  country_code 0010
  ecm_enable 1
  eff_pt_caps 0
  error_mult 40
  error_thresh 3
  error_enable 1
  font_file ../bfv.api/fonts/ibmpcps.fz8 0
  font_file ../bfv.api/fonts/ibmpcps.fz8 255
  id_string
  line_compression 5
  max_width 0
  max_pagelist 30
  restrict_res 1
  subpwdsep 0
  tone
  v_timeout 60
```

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```
width_res_behavior 1
max_timeout 0
badline_behavior 0
error_mult_rtp 200
min_length 0
fax_rtp_enable 1
v34_ci_enable 1
v34_2400_baud_ctrl 1
v34_enable 1
agc 1
dtmf_thresh 0
dtmf_hi_to_lo_twist_idle 2
dtmf_hi_to_lo_twist_play 4
dtmf_in_to_in_ratio_idle 16
dtmf_in_to_in_ratio_play 6
dtmf_in_to_out_ratio_idle 8
dtmf_in_to_out_ratio_play 2
dtmf_lo_to_hi_twist_idle 2
dtmf_lo_to_hi_twist_play 3
dtmf_min_off_idle 45
dtmf_min_off_play 45
dtmf_min_on_idle 30
dtmf_min_on_play 45
v_play_gain 0
silcompr_middle 1000
record_beep_dur 500
record_beep_freq 500
silcompr_start 500
answer_dropout 255
answer_silence_history 2010
answer_spike 45
digital_answer_cp 1
max_answer_analysis 3000
max_answer_silence 1005
max_answer_voice 2010
```

```
  init_answer_silence 2010
  busy_dt_ct 1
  line_encoding 0
```

callctrl.cfg

```
  api_trace=none
  host_module_trace=none
  internal_trace=none
  ip_stack_trace=basic
  l3l4_trace=none
  l4l3_trace=none
  max_trace_files=1
  max_trace_file_size=10
  trace_file=ecc.log
[host_module.1]
  module_library=brkth323.dll
  enabled=true
[host_module.1/t38parameters]
  t38_fax_rate_management=transferredTCF
  t38_fax_udp_ec=t38UDPRedundancy
  rtp_ced_enable=true
  t38_max_bit_rate=14400
  media_renegotiate_delay_inbound=4000
  media_renegotiate_delay_outbound=-1
  t38_fax_fill_bit_removal=false
  t38_fax_transcoding_jbig=false
  t38_fax_transcoding_mmr=false
  t38_t30_fastnotify=false
  t38_UDPTL_redundancy_depth_control=5
  t38_UDPTL_redundancy_depth_image=2
[host_module.1/parameters]
```

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```
  h323_default_gateway=0.0.0.0:0
  h323_e164alias=323119000
  h323_gatekeeper_id=pv2821
  h323_gatekeeper_ip_address=0.0.0.0:0
  h323_gatekeeper_ttl=240
  h323_h323IDalias=faxserver
  h323_local_ip_address=10.128.53.119
  h323_Manufacturer=Brooktrout Technology
  h323_ManufacturerCode=48
  h323_max_sessions=256
  h323_register=1
  h323_support_alternate_gk=0
  h323_t35CountryCode=181
  h323_t35Extension=0
  h323_FastStart=0
  h323_H245Stage=3
  h323_h245Tunneling=0
  h323_OlcRejectResponseTimeout=-1
[module.2]
  model=TR1034+P24V24FH-T1-1N
  exists=1
  cc_type=1
  channels=24
  set_api=bfv
  auto_connect=true
  pcm_law=mulaw
  static_ring_detect_enable=true
[module.2/clock_config]
  clock_mode=master
  clock_source=internal
  clock_compatibility=none
  bus_speed=2
  master_ref_fallback=disabled
  master_drive=clock_a
[module.2/ethernet.1]
```

```
  dhcp=disabled
  ip_address=10.128.53.20
  ip_netmask=255.255.252.0
  ip_gateway=10.128.52.254
  ip_broadcast=10.128.53.255
  media_port_min=56000
  media_port_max=57000
  ethernet_speed=auto
  ethernet_duplex=half
  ethernet_flow_control=auto
  ip_arp_timeout=10
[module.2/port.1]
  port_config=inactive
[module.2/host_cc.1]
  host_module=1
  number_of_channels=24
```

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Startup-Config (Gatekeeper PV2821)

```
!
! Last configuration change at 09:39:20 PST Mon Sep 24 2007
! NVRAM config last updated at 13:38:15 PST Mon Sep 24 2007
!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname pv2821
!
boot-start-marker
boot-end-marker
!
card type t1 1 1
no logging buffered
no logging console
enable password xxxxxx
!
no aaa new-model
clock timezone PST -8
no network-clock-participate slot 1
!
!
ip cef
!
!
ip domain list brooktrout.com
ip domain name brooktrout.com
ip name-server 10.128.48.45
ip name-server 10.128.40.79
```

```
isdn switch-type primary-4ess
!
voice-card 0
 no dspfarm
!
voice-card 1
 no dspfarm
!
!
!
voice service pots
!
voice service voip
 fax protocol t38 ls-redundancy 2 hs-redundancy 0 fallback none
 h323
  session transport udp
  h245 tunnel disable
 sip
!
!
voice class codec 1
 codec preference 1 g711ulaw
!
!
!
voice class h323 1
  call start slow
!
!
!
!
!
!
!
username tester privilege 15 secret 5 xxxxxxxxxxxxxxxxxxxxxxxxxxxxx
```


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```
!
!
controller T1 1/0
 shutdown
 framing esf
 clock source internal
 linecode b8zs
 cablelength short 133
 ds0-group 0 timeslots 1-24 type e&m-wink-start dtmf dnis
 description "Cisco drives the clock"
!
controller T1 1/1
 shutdown
 framing esf
 clock source internal
 linecode b8zs
 cablelength short 133
 ds0-group 0 timeslots 1-24 type e&m-wink-start dtmf dnis
 description "Cisco drives the clock"
!
!
!
!
interface GigabitEthernet0/0
 ip address 10.128.52.6 255.255.252.0
 duplex auto
 speed auto
 no keepalive
 no cdp enable
!
interface GigabitEthernet0/1
 no ip address
 shutdown
 duplex auto
 speed auto
```

```
 no keepalive
!
ip default-gateway 10.128.52.254
no ip classless
ip route 0.0.0.0 0.0.0.0 10.128.52.254
ip route 10.128.30.0 255.255.255.0 10.128.52.254
ip route 10.128.53.0 255.255.255.0 10.128.52.254
ip route 10.128.54.0 255.255.255.0 10.128.52.254
!
ip http server
ip http authentication local
ip http timeout-policy idle 5 life 86400 requests 10000
!
snmp-server community public RO
!
!
!
control-plane
!
!
!
voice-port 1/0:0
 shutdown
!
voice-port 1/1:0
 shutdown
!
!
!
!
!
!
gatekeeper
 zone local pv2821 cantata.com
 no shutdown
```

```
!
banner login
-----------------------------------------------------------------------
Cisco Router 2821
-----------------------------------------------------------------------

!
line con 0
 login local
 stopbits 1
line aux 0
 stopbits 1
line vty 0 4
 privilege level 15
 password xxxxxx
 login
 transport input telnet
line vty 5 15
 privilege level 15
 login local
 transport input telnet
!
scheduler allocate 20000 1000
ntp clock-period 17180216
ntp server 10.128.30.1
!
end
```

Startup-Config (Gateway PV3845)

```
!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname pv3845
!
boot-start-marker
boot system flash flash:c3845-ipvoice_ivs-mz.124-11.T1.bin
boot-end-marker
!
card type t1 1 1
card type t1 2 1
no logging buffered
no logging console
enable password xxxxxx
!
no aaa new-model
clock timezone PST -8
no network-clock-participate slot 1
no network-clock-participate slot 2
ip cef
!
!
!
!
ip domain list brooktrout.com
ip domain name brooktrout.com
ip name-server 208.242.16.45
multilink bundle-name authenticated
```

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```
!
voice-card 0
 no dspfarm
!
voice-card 1
 no dspfarm
!
voice-card 2
 no dspfarm
!
!
!
!
voice service voip
 allow-connections h323 to h323
 fax protocol t38 ls-redundancy 2 hs-redundancy 0 fallback none
 h323
  session transport udp
  h245 tunnel disable
 sip
!
!
!
voice class codec 1
 codec preference 1 g711ulaw
!
!
!
voice class h323 1
  call start slow
!
!
!
!
!
```

```
!
!
!
!
!
!
!
username tester privilege 15 secret 5 $1$H1wI$PJ1OgFvQgJ4a9RFjsDO7n0
!
!
controller T1 1/0
 framing esf
 clock source internal
 linecode b8zs
 cablelength short 133
 ds0-group 0 timeslots 1-24 type e&m-wink-start dtmf dnis
 description "Cisco drives the clock"
!
controller T1 1/1
 framing esf
 clock source internal
 linecode b8zs
 cablelength short 133
 ds0-group 0 timeslots 1-24 type e&m-wink-start dtmf dnis
 description "Cisco drives the clock"
!
controller T1 2/0
 framing esf
 clock source internal
 linecode b8zs
 cablelength short 133
 ds0-group 0 timeslots 1-24 type e&m-wink-start dtmf dnis
 description Cisco drives the clock
!
controller T1 2/1
```


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```
 framing esf
 clock source internal
 linecode b8zs
 cablelength short 133
 ds0-group 0 timeslots 1-24 type e&m-wink-start dtmf dnis
 description Cisco drives the clock
!
!
!
!
interface GigabitEthernet0/0
 description $ETH-LAN$$ETH-SW-LAUNCH$$INTF-INFO-GE 0/0$
 ip address 10.128.52.4 255.255.252.0
 duplex auto
 speed auto
 media-type rj45
 no keepalive
 no cdp enable
 h323-gateway voip interface
 h323-gateway voip id pv2821 ipaddr 10.128.52.6 1719
 h323-gateway voip h323-id pv3845@cantata.com
!
interface GigabitEthernet0/1
 no ip address
 shutdown
 duplex auto
 speed auto
 media-type rj45
 no keepalive
!
ip default-gateway 10.128.52.254
no ip classless
ip route 0.0.0.0 0.0.0.0 10.128.52.254
ip route 10.128.30.0 255.255.255.0 10.128.52.254
ip route 10.128.53.0 255.255.255.0 10.128.52.254
```

```
!
!
ip http server
ip http authentication local
ip http timeout-policy idle 5 life 86400 requests 10000
!
snmp-server community public RO
!
!
!
control-plane
!
!
!
voice-port 1/0:0
!
voice-port 1/1:0
!
voice-port 2/0:0
!
voice-port 2/1:0
!
!
!
!
!
dial-peer voice 1000000 pots
 destination-pattern 10000[01][0-9]
 no digit-strip
 direct-inward-dial
 port 1/0:0
!
dial-peer voice 1000001 pots
 destination-pattern 10000[2][0-3]
 no digit-strip
```

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```
 direct-inward-dial
 port 1/0:0
!
dial-peer voice 323119 voip
 destination-pattern 323119...
 session target ras
 codec g711ulaw
!
!
gateway
 timer receive-rtp 1200
!
!
gatekeeper
 shutdown
!
banner login
-----------------------------------------------------------------------
Cisco Router 3845
-----------------------------------------------------------------------

!
line con 0
 login local
 stopbits 1
line aux 0
 stopbits 1
line vty 0 4
 privilege level 15
 password xxxxxx
 login
 transport input telnet
line vty 5 15
 privilege level 15
 login local
```

```
 transport input telnet
!
scheduler allocate 20000 1000
ntp clock-period 17179696
ntp server 204.176.205.6
!
end
```


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Appendix E
Configuration Files for Topology: H.323 - CCM 4.2(3) - H.323

Introduction

This appendix includes configuration files for the Dialogic Brooktrout SR140 and the Cisco Media Gateway. Use these files to configure these systems.

SR140 Configuration Files on page 480

Cisco Gateway-Config on page 485

SR140 Configuration Files

The two configuration files below show the configuration of the Dialogic Brooktrout SR140 Software.

- btcall.cfg
- CallCtrl.cfg

btcall.cfg

```
#Filenames may contain spaces if enclosed in double quotes ("")
  bft_rcv_cap 0
  bt_cparm BT_CPARM.CFG
  cabs 0
  call_control C:\FVD513\callctrl.cfg
#Other sample call ctrl config files are also in samples.cfg
  ced_timeout 4000
  country_code 0010
  ecm_enable 1
  eff_pt_caps 0
  error_mult 40
  error_thresh 3
  error_enable 1
  font_file ../bfv.api/fonts/ibmpcps.fz8 0
  font_file ../bfv.api/fonts/ibmpcps.fz8 255
  id_string
  line_compression 5
  max_width 0
  max_pagelist 30
  restrict_res 1
  subpwdsep 0
  tone
  v_timeout 60
  width_res_behavior 1
```


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```
max_timeout 0
badline_behavior 0
error_mult_rtp 200
min_length 0
fax_rtp_enable 1
v34_ci_enable 1
v34_2400_baud_ctrl 1
v34_enable 1
agc 1
dtmf_thresh 0
dtmf_hi_to_lo_twist_idle 2
dtmf_hi_to_lo_twist_play 4
dtmf_in_to_in_ratio_idle 16
dtmf_in_to_in_ratio_play 6
dtmf_in_to_out_ratio_idle 8
dtmf_in_to_out_ratio_play 2
dtmf_lo_to_hi_twist_idle 2
dtmf_lo_to_hi_twist_play 3
dtmf_min_off_idle 45
dtmf_min_off_play 45
dtmf_min_on_idle 30
dtmf_min_on_play 45
v_play_gain 0
silcompr_middle 1000
record_beep_dur 500
record_beep_freq 500
silcompr_start 500
answer_dropout 255
answer_silence_history 2010
answer_spike 45
digital_answer_cp 1
max_answer_analysis 3000
max_answer_silence 1005
max_answer_voice 2010
init_answer_silence 2010
```

```
  busy_dt_ct 1
  line_encoding 0
```

callctrl.cfg

```
 # callctrl.cfg
#
# Sample Call Control configuration file for Boston Bfv API.
#
# This is an all-in-one file that contains examples for several
# different types of configurations.  All of the configuration lines have
# been commented out.  You should uncomment the lines that are
# appropriate for your configuration.
#
# NOTE: Ensure that you use an absolute path for all the parameters that accept
#   file names. For example:
#   protocol_file=[INSTALL_LOCATION]/config/analog_loopstart_us.lec
#   where [INSTALL_LOCATION] is the location where your software is installed.
#
#   For instance if the install location is C:/Brooktrout/Boston. Then
#   protocol_file=C:/Brooktrout/Boston/config/analog_loopstart_us.lec
#
# Refer to the Call Control Configuration File section in the Brooktrout Fax
# and Voice API Programmer's Reference Manual for more information.
```

```
  l3l4_trace=none
  l4l3_trace=none
  api_trace=none
  internal_trace=none
  host_module_trace=none
```


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```
  ip_stack_trace=none
# Most of the time a path should be used for this file name.
  trace_file=ecc.log
  max_trace_files=1
  max_trace_file_size=10

[host_module.2]
  module_library=brkth323.dll
  enabled=true
[host_module.2/t38parameters]
  t38_fax_rate_management=transferredTCF
  t38_fax_udp_ec=t38UDPRedundancy
  rtp_ced_enable=true
  t38_max_bit_rate=14400
  media_renegotiate_delay_inbound=4000
  media_renegotiate_delay_outbound=-1
  t38_fax_fill_bit_removal=false
  t38_fax_transcoding_jbig=false
  t38_fax_transcoding_mmr=false
  t38_t30_fastnotify=false
  t38_UDPTL_redundancy_depth_control=5
  t38_UDPTL_redundancy_depth_image=2
[host_module.2/parameters]
  h323_default_gateway=0.0.0.0:0
  h323_e164alias=
  h323_FastStart=0
  h323_gatekeeper_id=
  h323_gatekeeper_ip_address=0.0.0.0:0
  h323_gatekeeper_ttl=0
  h323_H245Stage=3
  h323_h245Tunneling=0
  h323_h323IDalias=
  h323_local_ip_address=172.20.231.122.1720
  h323_Manufacturer=Brooktrout Technology
  h323_ManufacturerCode=48
```

```
  h323_max_sessions=256
  h323_OlcRejectResponseTimeout=-1
  h323_register=0
  h323_support_alternate_gk=0
  h323_t35CountryCode=181
  h323_t35Extension=0
[module.41]
  model=SR140
  virtual=1
  exists=1
  vb_firm=C:\FVD513\fw\bostvb.dll
  channels=60
[module.41/ethernet.1]
  ip_interface={A3E5EAA4-8023-4927-84FB-4A7905FE3987}:0
  media_port_min=56000
  media_port_max=57000
[module.41/host_cc.1]
  host_module=2
  number_of_channels=60
```


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Cisco Gateway-Config

```
!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname 3745B4_E1
!
boot-start-marker
boot system flash:c3745-ipvoicek9-mz.124-11.T3.bin
boot system flash:c3745-ipvoice-mz.124-3.bin
boot-end-marker
!
logging buffered 1000000
enable password cisco
!
no aaa new-model
no network-clock-participate slot 1
no network-clock-participate slot 2
voice-card 1
 dspfarm
!
voice-card 2
 dspfarm
!
ip cef
ip tcp synwait-time 13
!
!
no ip dhcp use vrf connected
ip dhcp excluded-address 192.168.10.0 192.168.10.60
```

```
ip dhcp excluded-address 192.168.11.0 192.168.11.10
!
ip dhcp pool hq-pool-phones
   network 192.168.10.0 255.255.255.0
   option 150 ip 192.168.10.50
   default-router 192.168.10.1
!
ip dhcp pool hq-pool-data
   network 192.168.11.0 255.255.255.0
   default-router 192.168.11.1
!
!
no ip domain lookup
ip host whiz 171.69.1.162
ip host dirt 171.69.1.129
ip host danube 171.69.17.14
ip host CM-VINDALOO 172.20.221.254
ip host CM-Pluto 172.20.238.254
ip host CM-MADRAS 172.20.237.254
ip host CM-MARS 172.20.231.254
ip name-server 172.20.221.254
ip name-server 172.20.238.254
ip name-server 172.20.237.254
ip dhcp-server 192.168.10.1
multilink bundle-name authenticated
isdn switch-type primary-net5
!
!
voice call carrier capacity active
!
voice service pots
!
voice service voip
 fax protocol t38 ls-redundancy 2 hs-redundancy 0 fallback none
 h323
```


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```
  session transport udp
  h245 tunnel disable
 sip
!
!
voice class codec 1
 codec preference 1 g711alaw
!
!
!
voice class h323 1
  call start slow
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
controller E1 2/0
 pri-group timeslots 1-31
!
controller E1 2/1
 pri-group timeslots 1-31
!
!
```

```
!
!
interface FastEthernet0/0
 ip address 172.20.221.200 255.255.255.0
 duplex auto
 speed auto
!
interface FastEthernet0/0.10
 encapsulation dot1Q 10
!
interface FastEthernet0/0.11
 encapsulation dot1Q 11
 ip address 192.168.11.1 255.255.255.0
!
interface FastEthernet0/1
 no ip address
 shutdown
 duplex auto
 speed auto
!
interface Serial2/0:15
 no ip address
 encapsulation hdlc
 isdn switch-type primary-net5
 isdn incoming-voice voice
 isdn bchan-number-order ascending
 no cdp enable
!
interface Serial2/1:15
 no ip address
 encapsulation hdlc
 isdn switch-type primary-net5
 isdn incoming-voice voice
 no cdp enable
!
```


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```
ip route 0.0.0.0 0.0.0.0 FastEthernet0/0
ip route 0.0.0.0 0.0.0.0 172.20.221.1
!
ip http server
no ip http secure-server
!
dialer-list 1 protocol ip permit
!
!
!
control-plane
!
!
!
voice-port 2/0:15
!
voice-port 2/1:15
!
!
mgcp package-capability res-package
mgcp package-capability fxr-package
no mgcp timer receive-rtcp
!
!
dial-peer cor custom
!
!
!
dial-peer voice 323254 voip
 destination-pattern 323254...
 voice-class h323 1
 session target ipv4:172.20.231.254
 session transport udp
 codec g711alaw
!
```

```
dial-peer voice 1000000 pots
 destination-pattern 10000[012][0-9]
 no digit-strip
 direct-inward-dial
 port 2/0:15
!
!
!
line con 0
 exec-timeout 600 0
 password cisco
 login
 stopbits 1
line aux 0
line vty 0 4
 exec-timeout 600 0
 password cisco
 login
!
!
end
```

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Appendix F
Configuration Files for Topology: H.323 - CCM 4.2(3) - MGCP

Introduction

This appendix includes configuration files for the Dialogic Brooktrout SR140 and the Cisco Media Gateway. Use these files to configure these systems.

SR140 Configuration Files on page 492

Cisco Gateway-Config on page 499

SR140 Configuration Files

The two configuration files below show the configuration of the Dialogic Brooktrout SR140 Software.

- btcall.cfg
- callctrl.cfg

btcall.cfg

```
#Filenames may contain spaces if enclosed in double quotes ("")
  bft_rcv_cap 0
  bt_cparm BT_CPARM.CFG
  cabs 0
  call_control C:\FVD513\callctrl.cfg
#Other sample call ctrl config files are also in samples.cfg
  ced_timeout 4000
  country_code 0010
  ecm_enable 1
  eff_pt_caps 0
  error_mult 40
  error_thresh 3
  error_enable 1
  font_file ../bfv.api/fonts/ibmpcps.fz8 0
  font_file ../bfv.api/fonts/ibmpcps.fz8 255
  id_string
  line_compression 5
  max_width 0
  max_pagelist 30
  restrict_res 1
  subpwdsep 0
  tone
  v_timeout 60
  width_res_behavior 1
  max_timeout 0
  badline_behavior 0
  error_mult_rtp 200
  min_length 0
```

```
fax_rtp_enable 1
v34_ci_enable 1
v34_2400_baud_ctrl 1
v34_enable 1
agc 1
dtmf_thresh 0
dtmf_hi_to_lo_twist_idle 2
dtmf_hi_to_lo_twist_play 4
dtmf_in_to_in_ratio_idle 16
dtmf_in_to_in_ratio_play 6
dtmf_in_to_out_ratio_idle 8
dtmf_in_to_out_ratio_play 2
dtmf_lo_to_hi_twist_idle 2
dtmf_lo_to_hi_twist_play 3
dtmf_min_off_idle 45
dtmf_min_off_play 45
dtmf_min_on_idle 30
dtmf_min_on_play 45
v_play_gain 0
silcompr_middle 1000
record_beep_dur 500
record_beep_freq 500
silcompr_start 500
answer_dropout 255
answer_silence_history 2010
answer_spike 45
digital_answer_cp 1
max_answer_analysis 3000
max_answer_silence 1005
max_answer_voice 2010
```

```
init_answer_silence 2010
busy_dt_ct 1
line_encoding 0
```

callctrl.cfg

```
# callctrl.cfg
#
# Sample Call Control configuration file for Boston Bfv API.
#
# This is an all-in-one file that contains examples for several
# different types of configurations.  All of the configuration lines have
# been commented out.  You should uncomment the lines that are
# appropriate for your configuration.
#
# NOTE: Ensure that you use an absolute path for all the parameters that accept
#   file names. For example:
#   protocol_file=[INSTALL_LOCATION]/config/analog_loopstart_us.lec
#   where [INSTALL_LOCATION] is the location where your software is installed.
#
#   For instance if the install location is C:/Brooktrout/Boston. Then
#   protocol_file=C:/Brooktrout/Boston/config/analog_loopstart_us.lec
#
# Refer to the Call Control Configuration File section in the Brooktrout Fax
# and Voice API Programmer's Reference Manual for more information.



  l3l4_trace=none
  l4l3_trace=none
  api_trace=none
  internal_trace=none
  host_module_trace=none
  ip_stack_trace=none
# Most of the time a path should be used for this file name.
  trace_file=ecc.log
  max_trace_files=1
  max_trace_file_size=100
```

```
[host_module.1]
  module_library=brkth323.dll
  enabled=true
[host_module.1/t38parameters]
  t38_fax_rate_management=transferredTCF
  t38_fax_udp_ec=t38UDPRedundancy
  rtp_ced_enable=true
  t38_max_bit_rate=14400
  media_renegotiate_delay_inbound=4000
  media_renegotiate_delay_outbound=-1
  t38_fax_fill_bit_removal=false
  t38_fax_transcoding_jbig=false
  t38_fax_transcoding_mmr=false
  t38_t30_fastnotify=false
  t38_UDPTL_redundancy_depth_control=5
  t38_UDPTL_redundancy_depth_image=2
[host_module.1/parameters]
  h323_default_gateway=0.0.0.0:0
  h323_e164alias=
  h323_FastStart=0
  h323_gatekeeper_id=
  h323_gatekeeper_ip_address=0.0.0.0:0
  h323_gatekeeper_ttl=0
  h323_H245Stage=3
  h323_h245Tunneling=0
  h323_h323IDalias=
  h323_local_ip_address=172.20.231.122:1720
  h323_Manufacturer=Brooktrout Technology
  h323_ManufacturerCode=48
  h323_max_sessions=256
  h323_OlcRejectResponseTimeout=-1
  h323_register=0
  h323_support_alternate_gk=0
  h323_t35CountryCode=181
  h323_t35Extension=0
```

```
[module.41]
  model=SR140
  virtual=1
  exists=1
  vb_firm=C:\FVD513\fw\bostvb.dll
  channels=60
[module.41/ethernet.1]
  ip_interface={A3E5EAA4-8023-4927-84FB-4A7905FE3987}:0
  media_port_min=56000
  media_port_max=57000
[module.41/host_cc.1]
  host_module=2
  number_of_channels=60
```

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Cisco Gateway-Config

```
3745B4_E1#show ver
Cisco IOS Software, 3700 Software (C3745-IPVOICEK9-M), Version 12.4(11)T3, RELEA
SE SOFTWARE (fc4)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2007 by Cisco Systems, Inc.
Compiled Wed 11-Jul-07 20:18 by prod_rel_team

ROM: System Bootstrap, Version 12.2(8r)T2, RELEASE SOFTWARE (fc1)
ROM: Cisco IOS Software, 3700 Software (C3745-IPVOICE-M), Version 12.4(3), RELEA
SE SOFTWARE (fc2)

3745B4_E1 uptime is 18 hours, 40 minutes
System returned to ROM by reload
System image file is "flash:c3745-ipvoicek9-mz.124-11.T3.bin"

agree to comply with applicable laws and regulations. If you are unable
to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at:
http://www.cisco.com/wwl/export/crypto/tool/stqrg.html

If you require further assistance please contact us by sending email to
export@cisco.com.

Cisco 3745 (R7000) processor (revision 2.0) with 241664K/20480K bytes of memory.
Processor board ID JMX0715L08P
R7000 CPU at 350MHz, Implementation 39, Rev 3.3, 256KB L2, 2048KB L3 Cache
2 FastEthernet interfaces
62 Serial interfaces
2 Channelized E1/PRI ports
DRAM configuration is 64 bits wide with parity disabled.
151K bytes of NVRAM.
```

```
125184K bytes of ATA System CompactFlash (Read/Write)
62592K bytes of ATA Slot0 CompactFlash (Read/Write)

Configuration register is 0x0

3745B4_E1# show mgcp
MGCP Admin State ACTIVE, Oper State ACTIVE - Cause Code NONE
MGCP call-agent: CM-MARS 2427 Initial protocol service is MGCP 0.1
MGCP validate call-agent source-ipaddr DISABLED
MGCP validate domain name DISABLED
MGCP block-newcalls DISABLED
MGCP send SGCP RSIP: forced/restart/graceful/disconnected DISABLED
MGCP quarantine mode discard/step
MGCP quarantine of persistent events is ENABLED
MGCP dtmf-relay voip codec all mode out-of-band
MGCP dtmf-relay for voAAL2 is SDP controlled
MGCP voip modem passthrough mode: NSE, codec: g711ulaw, redundancy: DISABLED,
MGCP voaal2 modem passthrough disabled
MGCP voip modem relay: Disabled
MGCP T.38 Named Signalling Event (NSE) response timer: 200
MGCP Network (IP/AAL2) Continuity Test timer: 200
MGCP 'RTP stream loss' timer disabled
MGCP request timeout 500
MGCP maximum exponential request timeout 4000
MGCP rtp unreachable timeout 1000 action notify
MGCP gateway port: 2427, MGCP maximum waiting delay 3000
MGCP restart delay 0, MGCP vad DISABLED
MGCP rtrcac DISABLED
MGCP system resource check DISABLED
MGCP xpc-codec: DISABLED, MGCP persistent hookflash: DISABLED
MGCP persistent offhook: ENABLED, MGCP persistent onhook: DISABLED
MGCP piggyback msg ENABLED, MGCP endpoint offset DISABLED
MGCP simple-sdp ENABLED
MGCP undotted-notation DISABLED
MGCP codec type g711ulaw, MGCP packetization period 20
```

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```
MGCP JB threshold lwm 30, MGCP JB threshold hwm 150
MGCP LAT threshold lwm 150, MGCP LAT threshold hwm 300
MGCP PL threshold lwm 1000, MGCP PL threshold hwm 10000
MGCP CL threshold lwm 1000, MGCP CL threshold hwm 10000
MGCP playout mode is adaptive 60, 40, 200 in msec
MGCP Fax Playout Buffer is 300 in msec
MGCP media (RTP) dscp: ef, MGCP signaling dscp: af31
MGCP default package: trunk-package
MGCP supported packages: gm-package dtmf-package trunk-package line-package
                        hs-package rtp-package atm-package ms-package dt-package
                       mo-package mt-package sst-package fxr-package pre-package
                         md-package
MGCP Digit Map matching order: shortest match
SGCP Digit Map matching order: always left-to-right
MGCP VoAAL2 ignore-lco-codec DISABLED
MGCP T.38 Max Fax Rate is DEFAULT
MGCP T.38 Fax is ENABLED
MGCP T.38 Fax ECM is ENABLED
MGCP T.38 Fax NSF Override is DISABLED
MGCP T.38 Fax Low Speed Redundancy: 0
MGCP T.38 Fax High Speed Redundancy: 0
MGCP Fax relay SG3-to-G3: ENABLED
MGCP control bind :DISABLED
MGCP media bind :DISABLED
MGCP Upspeed payload type for G711ulaw: 0,  G711alaw: 8
MGCP Static payload type for G.726-16K codec
MGCP Dynamic payload type for G.726-24K codec
MGCP Dynamic payload type for G.Clear codec
MGCP Dynamic payload type for NSE is 100
MGCP Dynamic payload type for NTE is 99
MGCP rsip-range is enabled for TGCP only.
MGCP Comedia role is NONE
MGCP Comedia check media source is DISABLED
MGCP Comedia SDP force is DISABLED
MGCP Guaranteed scheduler time is DISABLED
```

```
MGCP DNS stale threshold is 30 seconds

3745B4_E1# show run
Building configuration...

Current configuration : 3475 bytes
!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname 3745B4_E1
!
boot-start-marker
boot system flash:c3745-ipvoicek9-mz.124-11.T3.bin
boot system flash:c3745-ipvoice-mz.124-3.bin
boot-end-marker
!
logging buffered 1000000
enable password cisco
!
no aaa new-model
no network-clock-participate slot 1
no network-clock-participate slot 2
voice-card 1
 dspfarm
!
voice-card 2
 dspfarm
!
ip cef
ip tcp synwait-time 13
!
!
```

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```
no ip dhcp use vrf connected
ip dhcp excluded-address 192.168.10.0 192.168.10.60
ip dhcp excluded-address 192.168.11.0 192.168.11.10
!
ip dhcp pool hq-pool-phones
   network 192.168.10.0 255.255.255.0
   option 150 ip 192.168.10.50
   default-router 192.168.10.1
!
ip dhcp pool hq-pool-data
   network 192.168.11.0 255.255.255.0
   default-router 192.168.11.1
!
!
no ip domain lookup
ip host whiz 171.69.1.162
ip host dirt 171.69.1.129
ip host danube 171.69.17.14
ip host CM-VINDALOO 172.20.221.254
ip host CM-Pluto 172.20.238.254
ip host CM-MADRAS 172.20.237.254
ip host CM-MARS 172.20.231.254
ip name-server 172.20.221.254
ip name-server 172.20.238.254
ip name-server 172.20.237.254
ip dhcp-server 192.168.10.1
multilink bundle-name authenticated
isdn switch-type primary-net5
!
!
voice call carrier capacity active
!
voice service pots
!
voice service voip
```

```
 fax protocol t38 ls-redundancy 2 hs-redundancy 0 fallback none
 h323
  session transport udp
  h245 tunnel disable
 sip
!
!
voice class codec 1
 codec preference 1 g711alaw
!
!
!
voice class h323 1
  call start slow
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
controller E1 2/0
 pri-group timeslots 1-31 service mgcp
!
controller E1 2/1
 pri-group timeslots 1-31 service mgcp
```


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```
!
!
!
!
interface FastEthernet0/0
 ip address 172.20.221.200 255.255.255.0
 duplex auto
 speed auto
!
interface FastEthernet0/0.10
 encapsulation dot1Q 10
!
interface FastEthernet0/0.11
 encapsulation dot1Q 11
 ip address 192.168.11.1 255.255.255.0
!
interface FastEthernet0/1
 no ip address
 shutdown
 duplex auto
 speed auto
!
interface Serial2/0:15
 no ip address
 encapsulation hdlc
 isdn switch-type primary-net5
 isdn incoming-voice voice
 isdn bind-l3 ccm-manager
 isdn bchan-number-order ascending
 no cdp enable
!
interface Serial2/1:15
 no ip address
 encapsulation hdlc
 isdn switch-type primary-net5
```

```
 isdn protocol-emulate network
 isdn incoming-voice voice
 isdn bind-l3 ccm-manager
 no cdp enable
!
ip route 0.0.0.0 0.0.0.0 FastEthernet0/0
ip route 0.0.0.0 0.0.0.0 172.20.221.1
!
ip http server
no ip http secure-server
!
dialer-list 1 protocol ip permit
!
!
!
control-plane
!
!
!
voice-port 2/0:15
!
voice-port 2/1:15
!
ccm-manager mgcp
ccm-manager music-on-hold
ccm-manager config server 172.20.231.254
ccm-manager config
!
mgcp
mgcp call-agent CM-MARS 2427 service-type mgcp version 0.1
mgcp dtmf-relay voip codec all mode out-of-band
mgcp rtp unreachable timeout 1000 action notify
mgcp modem passthrough voip mode nse
mgcp package-capability rtp-package
mgcp package-capability sst-package
```

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```
mgcp package-capability pre-package
no mgcp package-capability res-package
no mgcp timer receive-rtcp
mgcp sdp simple
mgcp fax t38 gateway force
mgcp rtp payload-type g726r16 static
!
mgcp profile default
!
!
dial-peer cor custom
!
!
!
dial-peer voice 1 pots
 service mgcp
 port 2/0:15
!
!
!
line con 0
 exec-timeout 600 0
 password cisco
 login
 stopbits 1
line aux 0
line vty 0 4
 exec-timeout 600 0
 password cisco
 login
!
!
end

3745B4_E1#
```

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Appendix G
Configuration Files for Topology: H.323 - CCM 5.04 - H.323

Introduction

This appendix includes configuration files for the Dialogic Brooktrout SR140 Software and the Cisco Media Gateway. Use these files to configure these systems.

SR140 Configuration Files on page 510

Cisco Gateway-Config on page 515

SR140 Configuration Files

The two configuration files below show the configuration of the Dialogic Brooktrout SR140 Software.

- btcall.cfg
- CallCtrl.cfg

btcall.cfg

```
#Filenames may contain spaces if enclosed in double quotes ("")
  bft_rcv_cap 0
  bt_cparm BT_CPARM.CFG
  cabs 0
  call_control C:\FVD513\callctrl.cfg
#Other sample call ctrl config files are also in samples.cfg
  ced_timeout 4000
  country_code 0010
  ecm_enable 1
  eff_pt_caps 0
  error_mult 40
  error_thresh 3
  error_enable 1
  font_file ../bfv.api/fonts/ibmpcps.fz8 0
  font_file ../bfv.api/fonts/ibmpcps.fz8 255
  id_string
  line_compression 5
  max_width 0
  max_pagelist 30
  restrict_res 1
  subpwdsep 0
  tone
  v_timeout 60
```


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```
width_res_behavior 1
max_timeout 0
badline_behavior 0
error_mult_rtp 200
min_length 0
fax_rtp_enable 1
v34_ci_enable 1
v34_2400_baud_ctrl 1
v34_enable 1
agc 1
dtmf_thresh 0
dtmf_hi_to_lo_twist_idle 2
dtmf_hi_to_lo_twist_play 4
dtmf_in_to_in_ratio_idle 16
dtmf_in_to_in_ratio_play 6
dtmf_in_to_out_ratio_idle 8
dtmf_in_to_out_ratio_play 2
dtmf_lo_to_hi_twist_idle 2
dtmf_lo_to_hi_twist_play 3
dtmf_min_off_idle 45
dtmf_min_off_play 45
dtmf_min_on_idle 30
dtmf_min_on_play 45
v_play_gain 0
silcompr_middle 1000
record_beep_dur 500
record_beep_freq 500
silcompr_start 500
answer_dropout 255
answer_silence_history 2010
answer_spike 45
digital_answer_cp 1
max_answer_analysis 3000
max_answer_silence 1005
max_answer_voice 2010
```

```
  init_answer_silence 2010
  busy_dt_ct 1
  line_encoding 0
```

callctrl.cfg

```
# callctrl.cfg
#
# Sample Call Control configuration file for Boston Bfv API.
#
# This is an all-in-one file that contains examples for several
# different types of configurations.  All of the configuration lines have
# been commented out.  You should uncomment the lines that are
# appropriate for your configuration.
#
# NOTE: Ensure that you use an absolute path for all the parameters that accept
#   file names. For example:
#   protocol_file=[INSTALL_LOCATION]/config/analog_loopstart_us.lec
#   where [INSTALL_LOCATION] is the location where your software is installed.
#
#   For instance if the install location is C:/Brooktrout/Boston. Then
#   protocol_file=C:/Brooktrout/Boston/config/analog_loopstart_us.lec
#
# Refer to the Call Control Configuration File section in the Brooktrout Fax
# and Voice API Programmer's Reference Manual for more information.



  l3l4_trace=none
  l4l3_trace=none
  api_trace=none
```

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```
  internal_trace=none
  host_module_trace=none
  ip_stack_trace=none
# Most of the time a path should be used for this file name.
  trace_file=ecc.log
  max_trace_files=1
  max_trace_file_size=10

[module.41]
  model=SR140
  virtual=1
  exists=1
  vb_firm=C:\FVD513\fw\bostvb.dll
  channels=60
[module.41/ethernet.1]
  ip_interface={A3E5EAA4-8023-4927-84FB-4A7905FE3987}:0
  media_port_min=56000
  media_port_max=57000
[module.41/host_cc.1]
  host_module=1
  number_of_channels=60
[host_module.1]
  module_library=brkth323.dll
  enabled=true
[host_module.1/t38parameters]
  t38_fax_rate_management=transferredTCF
  t38_fax_udp_ec=t38UDPRedundancy
  rtp_ced_enable=true
  t38_max_bit_rate=14400
  media_renegotiate_delay_inbound=4000
  media_renegotiate_delay_outbound=-1
  t38_fax_fill_bit_removal=false
  t38_fax_transcoding_jbig=false
  t38_fax_transcoding_mmr=false
  t38_t30_fastnotify=false
```

```
  t38_UDPTL_redundancy_depth_control=5
  t38_UDPTL_redundancy_depth_image=2
[host_module.1/parameters]
  h323_default_gateway=0.0.0.0:0
  h323_e164alias=
  h323_FastStart=0
  h323_gatekeeper_id=
  h323_gatekeeper_ip_address=0.0.0.0:0
  h323_gatekeeper_ttl=0
  h323_H245Stage=3
  h323_h245Tunneling=0
  h323_h323IDalias=
  h323_local_ip_address=172.20.214.241:1720
  h323_Manufacturer=Brooktrout Technology
  h323_ManufacturerCode=48
  h323_max_sessions=256
  h323_OlcRejectResponseTimeout=-1
  h323_register=0
  h323_support_alternate_gk=0
  h323_t35CountryCode=181
  h323_t35Extension=0
```


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Cisco Gateway-Config

```
!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname 3845_West
!
boot-start-marker
boot system flash:c3845-ipvoicek9-mz.124-11.T3.bin
boot-end-marker
!
logging buffered 1000000
enable secret 5 $1$MFhi$AqqpDsFeO4Sb/IkzkrcmO/
!
no aaa new-model
network-clock-participate slot 1
network-clock-select 1 E1 1/0/0
voice-card 0
 no dspfarm
!
voice-card 1
 dspfarm
!
ip cef
ip tcp synwait-time 13
!
!
!
!
```

```
no ip domain lookup
ip host CM-VENUS 172.20.214.254
ip host CM-JUPITER 172.20.33.254
ip name-server 172.20.33.254
multilink bundle-name authenticated
!
isdn switch-type primary-net5
!
!
voice call carrier capacity active
!
voice service pots
!
voice service voip
 fax protocol t38 ls-redundancy 2 hs-redundancy 0 fallback none
 h323
  session transport udp
  h245 tunnel disable
 sip
!
!
voice class codec 1
 codec preference 1 g711ulaw
!
!
!
voice class h323 1
  call start slow
!
!
!
!
!
!
!
```


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```
!
!
!
fax send transmitting-subscriber $s$
!
!
!
!
!
!
controller E1 1/0/0
 pri-group timeslots 1-31
!
controller E1 1/0/1
 pri-group timeslots 1-31
!
!
!
!
interface GigabitEthernet0/0
 description $ETH-LAN$$ETH-SW-LAUNCH$$INTF-INFO-GE 0/0$
 ip address 10.10.10.1 255.255.255.248
 shutdown
 duplex auto
 speed auto
 media-type rj45
 no keepalive
!
interface GigabitEthernet0/1
 ip address 172.20.33.129 255.255.255.0
 duplex auto
 speed auto
 media-type rj45
 no keepalive
!
```

```
interface Serial1/0/0:15
 no ip address
 encapsulation hdlc
 isdn switch-type primary-net5
 isdn incoming-voice voice
 no cdp enable
!
interface Serial1/0/1:15
 no ip address
 encapsulation hdlc
 isdn switch-type primary-net5
 isdn incoming-voice voice
 no cdp enable
!
ip route 0.0.0.0 0.0.0.0 GigabitEthernet0/1
ip route 0.0.0.0 0.0.0.0 172.20.33.1
!
!
ip http server
ip http authentication local
no ip http secure-server
!
!
!
!
control-plane
!
!
!
voice-port 0/1/0
!
voice-port 0/1/1
!
voice-port 1/0/0:15
!
```

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```
voice-port 1/0/1:15
!
!
!
!
dial-peer cor custom
!
!
!
dial-peer voice 519254 voip
 destination-pattern 519254...
 session protocol sipv2
 session target ipv4:172.20.214.254
 session transport udp
 codec g711alaw
!
dial-peer voice 323254 voip
 destination-pattern 323254...
 voice-class h323 1
 session target ipv4:172.20.214.254
 session transport udp
 codec g711alaw
!
dial-peer voice 1000000 pots
 destination-pattern 10000[012][0-9]
 no digit-strip
 direct-inward-dial
 port 1/0/0:15
!
dial-peer voice 1100000 pots
 destination-pattern 11000[012][0-9]
 no digit-strip
 direct-inward-dial
 port 1/0/1:15
!
```

```
dial-peer voice 519241 voip
 destination-pattern 519241...
 session protocol sipv2
 session target ipv4:172.20.214.241
 session transport udp
 codec g711alaw
!
dial-peer voice 323241 voip
 destination-pattern 323241...
 voice-class h323 1
 session target ipv4:172.20.214.241
 session transport udp
 codec g711alaw
!
!
banner login
-----------------------------------------------------------------------
Cisco Router and Security Device Manager (SDM) is installed on this device. This
feature requires the one time use, initial credentials, of username "cisco"
with password "cisco".

Please change these publicly known initial credentials through SDM or IOS CLI.
Here's the Cisco IOS command:

no username cisco

NOTE: Please add a new username to be able to launch SDM for router management.

For more information about SDM please follow the instructions in the QUICK
START GUIDE for your router or at
http://www.cisco.com/go/sdm
-----------------------------------------------------------------------

!
line con 0
```


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```
 exec-timeout 600 0
 password cisco
 login
 stopbits 1
line aux 0
 stopbits 1
line vty 0 4
 exec-timeout 600 0
 privilege level 15
 password cisco
 login
 transport input telnet
line vty 5 15
 privilege level 15
 login local
 transport input telnet
!
scheduler allocate 20000 1000
!
end
```

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Appendix H
Configuration Files for Topology: SIP - CCM 5.0(4) - SIP

Introduction

This appendix includes configuration files for the Dialogic Brooktrout SR140 and the Cisco Media Gateway. Use these files to configure these systems.

SR140 Configuration Files on page 524

Cisco Gateway-Config on page 530

SR140 Configuration Files

The two configuration files below show the configuration of the Dialogic Brooktrout SR140 Software.

- btcall.cfg
- CallCtrl.cfg

btcall.cfg

```
#Filenames may contain spaces if enclosed in double quotes ("")
  bft_rcv_cap 0
  bt_cparm BT_CPARM.CFG
  cabs 0
  call_control C:\FVD513\callctrl.cfg
#Other sample call ctrl config files are also in samples.cfg
  ced_timeout 4000
  country_code 0010
  ecm_enable 1
  eff_pt_caps 0
  error_mult 40
  error_thresh 3
  error_enable 1
  font_file ../bfv.api/fonts/ibmpcps.fz8 0
  font_file ../bfv.api/fonts/ibmpcps.fz8 255
  id_string
  line_compression 5
  max_width 0
  max_pagelist 30
  restrict_res 1
  subpwdsep 0
  tone
  v_timeout 60
```


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```
width_res_behavior 1
max_timeout 0
badline_behavior 0
error_mult_rtp 200
min_length 0
fax_rtp_enable 1
v34_ci_enable 1
v34_2400_baud_ctrl 1
v34_enable 1
agc 1
dtmf_thresh 0
dtmf_hi_to_lo_twist_idle 2
dtmf_hi_to_lo_twist_play 4
dtmf_in_to_in_ratio_idle 16
dtmf_in_to_in_ratio_play 6
dtmf_in_to_out_ratio_idle 8
dtmf_in_to_out_ratio_play 2
dtmf_lo_to_hi_twist_idle 2
dtmf_lo_to_hi_twist_play 3
dtmf_min_off_idle 45
dtmf_min_off_play 45
dtmf_min_on_idle 30
dtmf_min_on_play 45
v_play_gain 0
silcompr_middle 1000
record_beep_dur 500
record_beep_freq 500
silcompr_start 500
answer_dropout 255
answer_silence_history 2010
answer_spike 45
digital_answer_cp 1
max_answer_analysis 3000
max_answer_silence 1005
max_answer_voice 2010
```

```
  init_answer_silence 2010
  busy_dt_ct 1
  line_encoding 0
```

CallCtl.cfg

```
# callctrl.cfg
#
# Sample Call Control configuration file for Boston Bfv API.
#
# This is an all-in-one file that contains examples for several
# different types of configurations.  All of the configuration lines have
# been commented out.  You should uncomment the lines that are
# appropriate for your configuration.
#
# NOTE: Ensure that you use an absolute path for all the parameters that accept
#   file names. For example:
#   protocol_file=[INSTALL_LOCATION]/config/analog_loopstart_us.lec
#   where [INSTALL_LOCATION] is the location where your software is installed.
#
#   For instance if the install location is C:/Brooktrout/Boston. Then
#   protocol_file=C:/Brooktrout/Boston/config/analog_loopstart_us.lec
#
# Refer to the Call Control Configuration File section in the Brooktrout Fax
# and Voice API Programmer's Reference Manual for more information.



  l3l4_trace=none
  l4l3_trace=none
  api_trace=none
```

 This document is not to be distributed to a third party without written permission from Dialogic.

```
  internal_trace=none
  host_module_trace=none
  ip_stack_trace=nonenone
# Most of the time a path should be used for this file name.
  trace_file=ecc.log
  max_trace_files=1
  max_trace_file_size=10

[host_module.1]
  module_library=brktsip.dll
  enabled=true
[host_module.1/t38parameters]
  t38_fax_rate_management=transferredTCF
  t38_fax_udp_ec=t38UDPRedundancy
  rtp_ced_enable=true
  t38_max_bit_rate=14400
  media_renegotiate_delay_inbound=4000
  media_renegotiate_delay_outbound=-1
  t38_fax_fill_bit_removal=false
  t38_fax_transcoding_jbig=false
  t38_fax_transcoding_mmr=false
  t38_t30_fastnotify=false
  t38_UDPTL_redundancy_depth_control=5
  t38_UDPTL_redundancy_depth_image=2
[host_module.1/parameters]
  sip_Contact=0.0.0.0:0
  sip_default_gateway=0.0.0.0:0
  sip_description_URI=
  sip_email=
  sip_From=Anonymous <sip:no_from_info@anonymous.invalid>
```

```
  sip_Max-Forwards=70
  sip_max_sessions=256
  sip_phone=
  sip_proxy_server1=
  sip_proxy_server2=
  sip_proxy_server3=
  sip_proxy_server4=
  sip_registration_interval=60
  sip_registration_server1=
  sip_registration_server1_aor=
  sip_registration_server1_expires=3600
  sip_registration_server1_password=
  sip_registration_server1_username=
  sip_registration_server2=
  sip_registration_server2_aor=
  sip_registration_server2_expires=3600
  sip_registration_server2_password=
  sip_registration_server2_username=
  sip_registration_server3=
  sip_registration_server3_aor=
  sip_registration_server3_expires=3600
  sip_registration_server3_password=
  sip_registration_server3_username=
  sip_registration_server4=
  sip_registration_server4_aor=
  sip_registration_server4_expires=3600
  sip_registration_server4_password=
  sip_registration_server4_username=
  sip_Route=
  sip_session_description=
  sip_session_name=no_session_name
  sip_username=-
[module.41]
  model=SR140
  virtual=1
```


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```
  exists=1
  vb_firm=C:\FVD513\fw\bostvb.dll
  channels=60
[module.41/ethernet.1]
  ip_interface={A3E5EAA4-8023-4927-84FB-4A7905FE3987}:0
  media_port_min=56000
  media_port_max=57000
[module.41/host_cc.1]
  host_module=1
  number_of_channels=60
```

Cisco Gateway-Config

```
!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname 3845_West
!
boot-start-marker
boot system flash:c3845-ipvoicek9-mz.124-11.T3.bin
boot-end-marker
!
logging buffered 1000000
enable secret 5 $1$MFhi$AqqpDsFeO4Sb/IkzkrcmO/
!
no aaa new-model
network-clock-participate slot 1
network-clock-select 1 E1 1/0/0
voice-card 0
 no dspfarm
!
voice-card 1
 dspfarm
!
ip cef
ip tcp synwait-time 13
!
!
!
!
no ip domain lookup
ip host CM-VENUS 172.20.214.254
```

```
ip host CM-JUPITER 172.20.33.254
ip name-server 172.20.33.254
multilink bundle-name authenticated
!
isdn switch-type primary-net5
!
!
voice call carrier capacity active
!
voice service pots
!
voice service voip
 fax protocol t38 ls-redundancy 2 hs-redundancy 0 fallback none
 h323
  session transport udp
  h245 tunnel disable
 sip
!
!
voice class codec 1
 codec preference 1 g711ulaw
!
!
!
voice class h323 1
  call start slow
!
!
!
!
!
!
!
!
!
```

```
!
fax send transmitting-subscriber $s$
!
!
!
!
!
!
controller E1 1/0/0
 pri-group timeslots 1-31
!
controller E1 1/0/1
 pri-group timeslots 1-31
!
!
!
!
interface GigabitEthernet0/0
 description $ETH-LAN$$ETH-SW-LAUNCH$$INTF-INFO-GE 0/0$
 ip address 10.10.10.1 255.255.255.248
 shutdown
 duplex auto
 speed auto
 media-type rj45
 no keepalive
!
interface GigabitEthernet0/1
 ip address 172.20.33.129 255.255.255.0
 duplex auto
 speed auto
 media-type rj45
 no keepalive
!
interface Serial1/0/0:15
 no ip address
```

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```
 encapsulation hdlc
 isdn switch-type primary-net5
 isdn incoming-voice voice
 no cdp enable
!
interface Serial1/0/1:15
 no ip address
 encapsulation hdlc
 isdn switch-type primary-net5
 isdn incoming-voice voice
 no cdp enable
!
ip route 0.0.0.0 0.0.0.0 GigabitEthernet0/1
ip route 0.0.0.0 0.0.0.0 172.20.33.1
!
!
ip http server
ip http authentication local
no ip http secure-server
!
!
!
!
control-plane
!
!
!
voice-port 0/1/0
!
voice-port 0/1/1
!
voice-port 1/0/0:15
!
voice-port 1/0/1:15
!
```

```
!
!
!
dial-peer cor custom
!
!
!
dial-peer voice 519254 voip
 destination-pattern 519254...
 session protocol sipv2
 session target ipv4:172.20.214.254
 session transport udp
 codec g711alaw
!
dial-peer voice 323254 voip
 destination-pattern 323254...
 voice-class h323 1
 session target ipv4:172.20.214.254
 session transport udp
 codec g711alaw
!
dial-peer voice 1000000 pots
 destination-pattern 10000[012][0-9]
 no digit-strip
 direct-inward-dial
 port 1/0/0:15
!
dial-peer voice 1100000 pots
 destination-pattern 11000[012][0-9]
 no digit-strip
 direct-inward-dial
 port 1/0/1:15
!
dial-peer voice 519241 voip
 destination-pattern 519241...
```


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```
 session protocol sipv2
 session target ipv4:172.20.214.241
 session transport udp
 codec g711alaw
!
dial-peer voice 323241 voip
 destination-pattern 323241...
 voice-class h323 1
 session target ipv4:172.20.214.241
 session transport udp
 codec g711alaw
!
!
banner login
-----------------------------------------------------------------------
Cisco Router and Security Device Manager (SDM) is installed on this device. This
feature requires the one time use, initial credentials, of username "cisco"
with password "cisco".

Please change these publicly known initial credentials through SDM or IOS CLI.
Here's the Cisco IOS command:

no username cisco

NOTE: Please add a new username to be able to launch SDM for router management.

For more information about SDM please follow the instructions in the QUICK
START GUIDE for your router or at
http://www.cisco.com/go/sdm
-----------------------------------------------------------------------

!
line con 0
 exec-timeout 600 0
 password cisco
```

```
 login
 stopbits 1
line aux 0
 stopbits 1
line vty 0 4
 exec-timeout 600 0
 privilege level 15
 password cisco
 login
 transport input telnet
line vty 5 15
 privilege level 15
 login local
 transport input telnet
!
scheduler allocate 20000 1000
!
end
```

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Appendix I
Configuration Files for Topology: H.323 - CCM 6.0(1) - H.323

Introduction

This appendix includes configuration files for the Dialogic Brooktrout SR140 Software and the Cisco Media Gateway. Use these files to configure these systems.

- *SR140 Configuration Files on page 538*
- *Cisco Gateway-Config on page 542*

SR140 Configuration Files

The two configuration files below show the configuration of the Dialogic Brooktrout SR140 Software.

- btcall.cfg
- callctrl.cfg

btcall.cfg

```
#Filenames may contain spaces if enclosed in double quotes ("")
  bft_rcv_cap 0
  bt_cparm BT_CPARM.CFG
  cabs 0
  call_control C:\FVD513\callctrl.cfg
#Other sample call ctrl config files are also in samples.cfg
  ced_timeout 4000
  country_code 0010
  ecm_enable 1
  eff_pt_caps 0
  error_mult 40
  error_thresh 3
  error_enable 1
  font_file ../bfv.api/fonts/ibmpcps.fz8 0
  font_file ../bfv.api/fonts/ibmpcps.fz8 255
  id_string
  line_compression 5
  max_width 0
  max_pagelist 30
  restrict_res 1
  subpwdsep 0
  tone
```

```
v_timeout 60
width_res_behavior 1
max_timeout 0
badline_behavior 0
error_mult_rtp 200
min_length 0
fax_rtp_enable 1
v34_ci_enable 1
v34_2400_baud_ctrl 1
v34_enable 1
agc 1
dtmf_thresh 0
dtmf_hi_to_lo_twist_idle 2
dtmf_hi_to_lo_twist_play 4
dtmf_in_to_in_ratio_idle 16
dtmf_in_to_in_ratio_play 6
dtmf_in_to_out_ratio_idle 8
dtmf_in_to_out_ratio_play 2
dtmf_lo_to_hi_twist_idle 2
dtmf_lo_to_hi_twist_play 3
dtmf_min_off_idle 45
dtmf_min_off_play 45
dtmf_min_on_idle 30
dtmf_min_on_play 45
v_play_gain 0
silcompr_middle 1000
record_beep_dur 500
record_beep_freq 500
silcompr_start 500
answer_dropout 255
answer_silence_history 2010
answer_spike 45
digital_answer_cp 1
max_answer_analysis 3000
max_answer_silence 1005
```

```
  max_answer_voice 2010
  init_answer_silence 2010
  busy_dt_ct 1
  line_encoding 0
```

callctrl.cfg

```
# callctrl.cfg

  l3l4_trace=none
  l4l3_trace=none
  api_trace=none
  internal_trace=none
  host_module_trace=none
  ip_stack_trace=none
# Most of the time a path should be used for this file name.
  trace_file=ecc.log
  max_trace_files=1
  max_trace_file_size=100

 [host_module.2]
  module_library=brktsip.dll
  enabled=true
[host_module.2/t38parameters]
  t38_fax_rate_management=transferredTCF
  t38_fax_udp_ec=t38UDPRedundancy
  rtp_ced_enable=true
  t38_max_bit_rate=14400
  media_renegotiate_delay_inbound=4000
  media_renegotiate_delay_outbound=-1
  t38_fax_fill_bit_removal=false
  t38_fax_transcoding_jbig=false
```

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```
  t38_fax_transcoding_mmr=false
  t38_t30_fastnotify=false
  t38_UDPTL_redundancy_depth_control=5
  t38_UDPTL_redundancy_depth_image=2
 [module.41]
  model=SR140
  virtual=1
  exists=1
  vb_firm=C:\FVD513\fw\bostvb.dll
  channels=60
[module.41/ethernet.1]
  ip_interface={A3E5EAA4-8023-4927-84FB-4A7905FE3987}:0
  media_port_min=56000
  media_port_max=57000
[module.41/host_cc.1]
  host_module=1
  number_of_channels=60
```

Cisco Gateway-Config

```
Vindaloo#show ver
Cisco IOS Software, 3800 Software (C3825-IPVOICE_IVS-M), Version 12.4(11)T3,
RELEASE SOFTWARE (fc4)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2007 by Cisco Systems, Inc.
Compiled Wed 11-Jul-07 20:47 by prod_rel_team

ROM: System Bootstrap, Version 12.3(11r)T1, RELEASE SOFTWARE (fc1)

Vindaloo uptime is 29 minutes
System returned to ROM by power-on
System image file is "flash:c3825-ipvoice_ivs-mz.124-11.T3.bin"

Cisco 3825 (revision 1.0) with 226304K/35840K bytes of memory.
Processor board ID FHK0847F0QC
2 Gigabit Ethernet interfaces
62 Serial interfaces
2 Channelized E1/PRI ports
2 Voice FXO interfaces
4 Voice FXS interfaces
DRAM configuration is 64 bits wide with parity enabled.
479K bytes of NVRAM.
62592K bytes of ATA System CompactFlash (Read/Write)

Configuration register is 0x2102

Vindaloo#show run
Building configuration...

Current configuration : 3341 bytes
!
version 12.4
```

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```
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname Vindaloo
!
boot-start-marker
boot system flash:c3745-ipvoicek9-mz.124-11.T3.bin
boot system flash:c3745-ipvoice-mz.124-3.bin
boot-end-marker
!
logging buffered 1000000
enable password cisco
!
no aaa new-model
no network-clock-participate slot 1
voice-card 0
 no dspfarm
!
voice-card 1
 dspfarm
!
ip cef
ip tcp synwait-time 13
!
!
no ip dhcp use vrf connected
ip dhcp excluded-address 192.168.10.0 192.168.10.60
ip dhcp excluded-address 192.168.11.0 192.168.11.10
!
ip dhcp pool hq-pool-phones
   network 192.168.10.0 255.255.255.0
   option 150 ip 192.168.10.50
   default-router 192.168.10.1
!
```

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```
ip dhcp pool hq-pool-data
   network 192.168.11.0 255.255.255.0
   default-router 192.168.11.1
!
!
no ip domain lookup
ip host whiz 171.69.1.162
ip host dirt 171.69.1.129
ip host danube 171.69.17.14
ip host CM-VINDALOO 172.20.221.254
ip host CM-Pluto 172.20.238.254
ip host CM-MADRAS 172.20.237.254
ip host CM-MARS 172.20.231.254
ip name-server 172.20.221.254
ip name-server 172.20.238.254
ip name-server 172.20.237.254
ip dhcp-server 192.168.10.1
multilink bundle-name authenticated
!
isdn switch-type primary-net5
!
!
voice call carrier capacity active
!
voice service pots
!
voice service voip
 fax protocol t38 ls-redundancy 2 hs-redundancy 0 fallback none
 h323
  session transport udp
  h245 tunnel disable
 sip
!
!
voice class codec 1
```

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```
 codec preference 1 g711alaw
!
!
!
voice class h323 1
  call start slow
!
!
!
!
!
!
!
!
!
!
!
!
!
!
controller E1 1/0/0
 pri-group timeslots 1-31
!
controller E1 1/0/1
 pri-group timeslots 1-31
!
!
!
!
interface GigabitEthernet0/0
 ip address 172.20.221.202 255.255.255.0
 duplex auto
 speed auto
 media-type rj45
!
```

```
interface GigabitEthernet0/1
 no ip address
 shutdown
 duplex auto
 speed auto
 media-type rj45
!
interface Serial1/0/0:15
 no ip address
 encapsulation hdlc
 isdn switch-type primary-net5
 isdn incoming-voice voice
 no cdp enable
!
interface Serial1/0/1:15
 no ip address
 encapsulation hdlc
 isdn switch-type primary-net5
 isdn incoming-voice voice
 no cdp enable
!
ip route 0.0.0.0 0.0.0.0 172.20.221.1
!
!
ip http server
!
dialer-list 1 protocol ip permit
!
!
!
control-plane
!
!
!
voice-port 0/1/0
```

```
!
voice-port 0/1/1
!
voice-port 0/1/2
!
voice-port 0/1/3
!
voice-port 0/2/0
!
voice-port 0/2/1
!
voice-port 1/0/0:15
!
voice-port 1/0/1:15
!
!
no mgcp package-capability res-package
mgcp package-capability fxr-package
no mgcp timer receive-rtcp
!
!
dial-peer cor custom
!
!
!
dial-peer voice 323254 voip
 destination-pattern 323254...
 voice-class h323 1
 session target ipv4:172.20.221.254
 session transport udp
 codec g711alaw
!
dial-peer voice 1000000 pots
 destination-pattern 10000[012][0-9]
 no digit-strip
```

```
 direct-inward-dial
 port 1/0/0:15
!
dial-peer voice 519254 voip
 destination-pattern 519254...
 session protocol sipv2
 session target ipv4:172.20.221.254
 session transport udp
 codec g711alaw
!
dial-peer voice 2000000 pots
 destination-pattern 20000[012][0-9]
 no digit-strip
 direct-inward-dial
 port 1/0/0:15
!
!
!
gatekeeper
 shutdown
!
!
line con 0
 exec-timeout 600 0
 password cisco
 login
 stopbits 1
line aux 0
 stopbits 1
line vty 0 4
 exec-timeout 600 0
 password cisco
 login
!
scheduler allocate 20000 1000
```


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```
!
end
```

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Appendix J
Configuration Files for Topology: H.323 - CCM 6.0(1) - MGCP

Introduction

This appendix includes configuration files for the Dialogic Brooktrout SR140 Software and the Cisco Media Gateway. Use these files to configure these systems.

- *SR140 Configuration Files on page 552*
- *Cisco Gateway-Config on page 558*

SR140 Configuration Files

The two configuration files below show the configuration of the Dialogic Brooktrout SR140 Software.

- btcall.cfg
- callctrl.cfg

btcall.cfg

```
 #Filenames may contain spaces if enclosed in double quotes ("")
  bft_rcv_cap 0
  bt_cparm BT_CPARM.CFG
  cabs 0
  call_control D:\sdk\callctrl.cfg
#Other sample call ctrl config files are also in samples.cfg
  ced_timeout 4000
  country_code 0010
  ecm_enable 1
  eff_pt_caps 0
  error_mult 40
  error_thresh 3
  error_enable 1
  font_file ../bfv.api/fonts/ibmpcps.fz8 0
  font_file ../bfv.api/fonts/ibmpcps.fz8 255
  id_string
  line_compression 5
  max_width 0
  max_pagelist 30
  restrict_res 1
  subpwdsep 0
  tone
  v_timeout 60
  width_res_behavior 1
```


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```
max_timeout 0
badline_behavior 0
error_mult_rtp 200
min_length 0
fax_rtp_enable 1
v34_ci_enable 1
v34_2400_baud_ctrl 1
v34_enable 1
agc 1
dtmf_thresh 0
dtmf_hi_to_lo_twist_idle 2
dtmf_hi_to_lo_twist_play 4
dtmf_in_to_in_ratio_idle 16
dtmf_in_to_in_ratio_play 6
dtmf_in_to_out_ratio_idle 8
dtmf_in_to_out_ratio_play 2
dtmf_lo_to_hi_twist_idle 2
dtmf_lo_to_hi_twist_play 3
dtmf_min_off_idle 45
dtmf_min_off_play 45
dtmf_min_on_idle 30
dtmf_min_on_play 45
v_play_gain 0
silcompr_middle 1000
record_beep_dur 500
record_beep_freq 500
silcompr_start 500
answer_dropout 255
answer_silence_history 2010
answer_spike 45
digital_answer_cp 1
max_answer_analysis 3000
max_answer_silence 1005
max_answer_voice 2010
init_answer_silence 2010
```

```
busy_dt_ct 1
line_encoding 0
```


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callctrl.cfg

```
 # callctrl.cfg
#
# Sample Call Control configuration file for Boston Bfv API.
#
# This is an all-in-one file that contains examples for several
# different types of configurations.  All of the configuration lines have
# been commented out.  You should uncomment the lines that are
# appropriate for your configuration.
#
# NOTE: Ensure that you use an absolute path for all the parameters that accept
#   file names. For example:
#   protocol_file=[INSTALL_LOCATION]/config/analog_loopstart_us.lec
#   where [INSTALL_LOCATION] is the location where your software is installed.
#
#   For instance if the install location is C:/Brooktrout/Boston. Then
#   protocol_file=C:/Brooktrout/Boston/config/analog_loopstart_us.lec
#
# Refer to the Call Control Configuration File section in the Brooktrout Fax
# and Voice API Programmer's Reference Manual for more information.



  l3l4_trace=none
  l4l3_trace=none
  api_trace=none
  internal_trace=none
  host_module_trace=none
  ip_stack_trace=none
# Most of the time a path should be used for this file name.
  trace_file=ecc.log
  max_trace_files=1
  max_trace_file_size=10
```

```
[host_module.2]
  module_library=brkth323.dll
  enabled=true
[host_module.2/t38parameters]
  t38_fax_rate_management=transferredTCF
  t38_fax_udp_ec=t38UDPRedundancy
  rtp_ced_enable=true
  t38_max_bit_rate=14400
  media_renegotiate_delay_inbound=4000
  media_renegotiate_delay_outbound=-1
  t38_fax_fill_bit_removal=false
  t38_fax_transcoding_jbig=false
  t38_fax_transcoding_mmr=false
  t38_t30_fastnotify=false
  t38_UDPTL_redundancy_depth_control=5
  t38_UDPTL_redundancy_depth_image=2
[host_module.2/parameters]
  h323_default_gateway=0.0.0.0:0
  h323_e164alias=
  h323_FastStart=0
  h323_gatekeeper_id=
  h323_gatekeeper_ip_address=0.0.0.0:0
  h323_gatekeeper_ttl=0
  h323_H245Stage=3
  h323_h245Tunneling=0
  h323_h323IDalias=
  h323_local_ip_address=172.20.221.20:1720
  h323_Manufacturer=Brooktrout Technology
  h323_ManufacturerCode=48
  h323_max_sessions=256
  h323_OlcRejectResponseTimeout=-1
  h323_register=0
  h323_support_alternate_gk=0
  h323_t35CountryCode=181
  h323_t35Extension=0
```


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```
[module.41]
  model=SR140
  virtual=1
  exists=1
  vb_firm=D:\sdk\fw\bostvb.dll
  channels=2
[module.41/ethernet.1]
  ip_interface={04B00FDB-49E8-46FD-A039-7EC153D22EC4}:0
  media_port_min=56000
  media_port_max=57000
[module.41/host_cc.1]
  host_module=2
  number_of_channels=2
```

Cisco Gateway-Config

```
Vindaloo#sho ver
Cisco IOS Software, 3800 Software (C3825-IPVOICE_IVS-M), Version 12.4(11)T3,
RELEASE SOFTWARE (fc4)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2007 by Cisco Systems, Inc.
Compiled Wed 11-Jul-07 20:47 by prod_rel_team

ROM: System Bootstrap, Version 12.3(11r)T1, RELEASE SOFTWARE (fc1)

Vindaloo uptime is 1 day, 37 minutes
System returned to ROM by reload at 20:25:48 UTC Wed Sep 12 2007
System image file is "flash:c3825-ipvoice_ivs-mz.124-11.T3.bin"

Cisco 3825 (revision 1.0) with 226304K/35840K bytes of memory.
Processor board ID FHK0847F0QC
2 Gigabit Ethernet interfaces
62 Serial interfaces
2 Channelized E1/PRI ports
2 Voice FXO interfaces
4 Voice FXS interfaces
DRAM configuration is 64 bits wide with parity enabled.
479K bytes of NVRAM.
62592K bytes of ATA System CompactFlash (Read/Write)

Configuration register is 0x2102

Vindaloo#sho mgcp
MGCP Admin State ACTIVE, Oper State ACTIVE - Cause Code NONE
MGCP call-agent: CM-Vindaloo 2427 Initial protocol service is MGCP 0.1
MGCP validate call-agent source-ipaddr DISABLED
MGCP validate domain name DISABLED
MGCP block-newcalls DISABLED
```

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```
MGCP send SGCP RSIP: forced/restart/graceful/disconnected DISABLED
MGCP quarantine mode discard/step
MGCP quarantine of persistent events is ENABLED
MGCP dtmf-relay voip codec all mode out-of-band
MGCP dtmf-relay for voAAL2 is SDP controlled
MGCP voip modem passthrough disabled
MGCP voaal2 modem passthrough disabled
MGCP voip modem relay: Disabled
MGCP T.38 Named Signalling Event (NSE) response timer: 200
MGCP Network (IP/AAL2) Continuity Test timer: 200
MGCP 'RTP stream loss' timer disabled
MGCP request timeout 500
MGCP maximum exponential request timeout 4000
MGCP rtp unreachable timeout 1000 action notify
MGCP gateway port: 2427, MGCP maximum waiting delay 3000
MGCP restart delay 0, MGCP vad DISABLED
MGCP rtrcac DISABLED
MGCP system resource check DISABLED
MGCP xpc-codec: DISABLED, MGCP persistent hookflash: DISABLED
MGCP persistent offhook: ENABLED, MGCP persistent onhook: DISABLED
MGCP piggyback msg ENABLED, MGCP endpoint offset DISABLED
MGCP simple-sdp ENABLED
MGCP undotted-notation DISABLED
MGCP codec type g711ulaw, MGCP packetization period 20
MGCP JB threshold lwm 30, MGCP JB threshold hwm 150
MGCP LAT threshold lwm 150, MGCP LAT threshold hwm 300
MGCP PL threshold lwm 1000, MGCP PL threshold hwm 10000
MGCP CL threshold lwm 1000, MGCP CL threshold hwm 10000
MGCP playout mode is adaptive 60, 40, 200 in msec
MGCP Fax Playout Buffer is 300 in msec
MGCP media (RTP) dscp: ef, MGCP signaling dscp: af31
MGCP default package: trunk-package
MGCP supported packages: gm-package dtmf-package trunk-package line-package
                        hs-package rtp-package atm-package ms-package dt-package
                       mo-package mt-package sst-package fxr-package pre-package
```

```
                         md-package
MGCP Digit Map matching order: shortest match
SGCP Digit Map matching order: always left-to-right
MGCP VoAAL2 ignore-lco-codec DISABLED
MGCP T.38 Max Fax Rate is DEFAULT
MGCP T.38 Fax is ENABLED
MGCP T.38 Fax ECM is ENABLED
MGCP T.38 Fax NSF Override is DISABLED
MGCP T.38 Fax Low Speed Redundancy: 0
MGCP T.38 Fax High Speed Redundancy: 0
MGCP Fax relay SG3-to-G3: ENABLED
MGCP control bind :DISABLED
MGCP media bind :DISABLED
MGCP Upspeed payload type for G711ulaw: 0,  G711alaw: 8
MGCP Static payload type for G.726-16K codec
MGCP Dynamic payload type for G.726-24K codec
MGCP Dynamic payload type for G.Clear codec
MGCP Dynamic payload type for NSE is 100
MGCP Dynamic payload type for NTE is 99
MGCP rsip-range is enabled for TGCP only.
MGCP Comedia role is NONE
MGCP Comedia check media source is DISABLED
MGCP Comedia SDP force is DISABLED
MGCP Guaranteed scheduler time is DISABLED
MGCP DNS stale threshold is 30 seconds

Vindaloo#sho run
Building configuration...

Current configuration : 3504 bytes
!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
```


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```
!
hostname Vindaloo
!
boot-start-marker
boot-end-marker
!
logging buffered 10000000
enable password cisco
!
no aaa new-model
no network-clock-participate slot 1
voice-card 0
 dspfarm
 dsp services dspfarm
!
voice-card 1
 dspfarm
!
ip cef
!
!
!
!
ip host CM-VINDALOO 172.20.221.254
ip host CM-MERCURY 172.20.215.254
ip host CM-PLUTO 172.20.238.254
ip host CM-MADRAS 172.20.237.254
ip host cm-venus 172.20.214.254
ip name-server 172.20.2.181
ip name-server 172.20.221.254
ip name-server 172.20.215.254
ip name-server 172.20.237.254
ip name-server 172.20.238.254
multilink bundle-name authenticated
!
```

```
isdn switch-type primary-net5
!
!
!
voice service voip
 fax protocol t38 ls-redundancy 2 hs-redundancy 0 fallback none
 h323
  session transport udp
  h245 tunnel disable
!
!
voice class codec 1
 codec preference 1 g711alaw
!
!
!
voice class h323 1
  call start slow
!
!
!
!
!
!
!
!
!
!
fax interface-type fax-mail
!
!
!
!
controller E1 1/0/0
 pri-group timeslots 1-31 service mgcp
```


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```
!
controller E1 1/0/1
 pri-group timeslots 1-31 service mgcp
!
!
!
!
interface GigabitEthernet0/0
 ip address 172.20.221.202 255.255.255.0
 duplex auto
 speed auto
 media-type rj45
!
interface GigabitEthernet0/1
 ip address 172.20.237.202 255.255.255.0
 duplex auto
 speed auto
 media-type rj45
!
interface Serial1/0/0:15
 no ip address
 encapsulation hdlc
 isdn switch-type primary-net5
 isdn incoming-voice voice
 isdn bind-l3 ccm-manager
 no cdp enable
!
interface Serial1/0/1:15
 no ip address
 encapsulation hdlc
 isdn switch-type primary-qsig
 isdn timer T310 120000
 isdn protocol-emulate network
 isdn incoming-voice voice
 isdn bind-l3 ccm-manager
```

```
 no cdp enable
!
ip route 0.0.0.0 0.0.0.0 GigabitEthernet0/0
ip route 0.0.0.0 0.0.0.0 172.20.221.1
!
!
no ip http server
!
!
!
tftp-server flash:c3825-ipvoice-mz.124-3a.bin
!
control-plane
!
!
!
voice-port 0/1/0
!
voice-port 0/1/1
!
voice-port 0/1/2
!
voice-port 0/1/3
!
voice-port 0/2/0
!
voice-port 0/2/1
!
voice-port 1/0/0:15
!
voice-port 1/0/1:15
!
ccm-manager mgcp
ccm-manager music-on-hold
ccm-manager config server 172.20.221.254
```

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```
ccm-manager config
!
mgcp
mgcp call-agent CM-Vindaloo 2427 service-type mgcp version 0.1
mgcp dtmf-relay voip codec all mode out-of-band
mgcp rtp unreachable timeout 1000 action notify
mgcp package-capability rtp-package
mgcp package-capability sst-package
mgcp package-capability pre-package
no mgcp package-capability res-package
no mgcp timer receive-rtcp
mgcp sdp simple
mgcp fax t38 gateway force
mgcp rtp payload-type g726r16 static
!
mgcp profile default
!
sccp local GigabitEthernet0/1
sccp ccm 172.20.221.254 identifier 1 version 4.1
sccp
!
sccp ccm group 1
 associate ccm 1 priority 1
 associate profile 1 register mtp00127f283ef1
!
dspfarm profile 1 transcode
 codec g711ulaw
 codec g711alaw
 codec g729ar8
 codec g729abr8
 maximum sessions 10
 associate application SCCP
!
!
dial-peer voice 4151 pots
```

```
 port 0/1/0
!
dial-peer voice 999010 pots
 service mgcpapp
 port 0/1/0
!
dial-peer voice 1 pots
 service mgcpapp
!
dial-peer voice 2 pots
 service mgcpapp
 port 1/0/1:15
!
!
sip-ua
 disable-early-media 180
 retry options 0
!
!
gatekeeper
 shutdown
!
!
line con 0
 exec-timeout 600 0
 password cisco
 login
 stopbits 1
line aux 0
 stopbits 1
line vty 0 4
 exec-timeout 600 0
 password cisco
 login
!
```


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```
scheduler allocate 20000 1000
ntp clock-period 17178609
ntp server 192.168.240.254
!
end

Vindaloo#
```

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Appendix K
Configuration Files for Topology: SIP - CCM 6.0(1) - SIP

Introduction

This appendix includes configuration files for the Dialogic Brooktrout SR140 and the Cisco Media Gateway. Use these files to configure these systems.

SR140 Configuration Files on page 570

Cisco Gateway-Config on page 576

SR140 Configuration Files

The two configuration files below show the configuration of the Dialogic Brooktrout SR140 Software.

- btcall.cfg
- CallCtrl.cfg

btcall.cfg

```
 #Filenames may contain spaces if enclosed in double quotes ("")
  bft_rcv_cap 0
  bt_cparm BT_CPARM.CFG
  cabs 0
  call_control C:\FVD513\callctrl.cfg
#Other sample call ctrl config files are also in samples.cfg
  ced_timeout 4000
  country_code 0010
  ecm_enable 1
  eff_pt_caps 0
  error_mult 40
  error_thresh 3
  error_enable 1
  font_file ../bfv.api/fonts/ibmpcps.fz8 0
  font_file ../bfv.api/fonts/ibmpcps.fz8 255
  id_string
  line_compression 5
  max_width 0
  max_pagelist 30
  restrict_res 1
  subpwdsep 0
  tone
  v_timeout 60
  width_res_behavior 1
```


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```
max_timeout 0
badline_behavior 0
error_mult_rtp 200
min_length 0
fax_rtp_enable 1
v34_ci_enable 1
v34_2400_baud_ctrl 1
v34_enable 1
agc 1
dtmf_thresh 0
dtmf_hi_to_lo_twist_idle 2
dtmf_hi_to_lo_twist_play 4
dtmf_in_to_in_ratio_idle 16
dtmf_in_to_in_ratio_play 6
dtmf_in_to_out_ratio_idle 8
dtmf_in_to_out_ratio_play 2
dtmf_lo_to_hi_twist_idle 2
dtmf_lo_to_hi_twist_play 3
dtmf_min_off_idle 45
dtmf_min_off_play 45
dtmf_min_on_idle 30
dtmf_min_on_play 45
v_play_gain 0
silcompr_middle 1000
record_beep_dur 500
record_beep_freq 500
silcompr_start 500
answer_dropout 255
answer_silence_history 2010
answer_spike 45
digital_answer_cp 1
max_answer_analysis 3000
max_answer_silence 1005
max_answer_voice 2010
init_answer_silence 2010
```

```
  busy_dt_ct 1
  line_encoding 0
```

CallCtl.cfg

```
# callctrl.cfg
#
# Sample Call Control configuration file for Boston Bfv API.
#
# This is an all-in-one file that contains examples for several
# different types of configurations.  All of the configuration lines have
# been commented out.  You should uncomment the lines that are
# appropriate for your configuration.
#
# NOTE: Ensure that you use an absolute path for all the parameters that accept
#   file names. For example:
#   protocol_file=[INSTALL_LOCATION]/config/analog_loopstart_us.lec
#   where [INSTALL_LOCATION] is the location where your software is installed.
#
#   For instance if the install location is C:/Brooktrout/Boston. Then
#   protocol_file=C:/Brooktrout/Boston/config/analog_loopstart_us.lec
#
# Refer to the Call Control Configuration File section in the Brooktrout Fax
# and Voice API Programmer's Reference Manual for more information.



  l3l4_trace=none
  l4l3_trace=none
  api_trace=none
  internal_trace=none
  host_module_trace=none
```


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```
  ip_stack_trace=none
# Most of the time a path should be used for this file name.
  trace_file=ecc.log
  max_trace_files=1
  max_trace_file_size=100

[host_module.2]
  module_library=brktsip.dll
  enabled=true
[host_module.2/t38parameters]
  t38_fax_rate_management=transferredTCF
  t38_fax_udp_ec=t38UDPRedundancy
  rtp_ced_enable=true
  t38_max_bit_rate=14400
  media_renegotiate_delay_inbound=4000
  media_renegotiate_delay_outbound=-1
  t38_fax_fill_bit_removal=false
  t38_fax_transcoding_jbig=false
  t38_fax_transcoding_mmr=false
  t38_t30_fastnotify=false
  t38_UDPTL_redundancy_depth_control=5
  t38_UDPTL_redundancy_depth_image=2
[host_module.2/parameters]
  sip_Contact=0.0.0.0:0
  sip_default_gateway=0.0.0.0:0
  sip_description_URI=
  sip_email=
  sip_From=Anonymous <sip:no_from_info@anonymous.invalid>
  sip_Max-Forwards=70
  sip_max_sessions=256
  sip_phone=
  sip_proxy_server1=
  sip_proxy_server2=
  sip_proxy_server3=
  sip_proxy_server4=
```

```
  sip_registration_interval=60
  sip_registration_server1=
  sip_registration_server1_aor=
  sip_registration_server1_expires=3600
  sip_registration_server1_password=
  sip_registration_server1_username=
  sip_registration_server2=
  sip_registration_server2_aor=
  sip_registration_server2_expires=3600
  sip_registration_server2_password=
  sip_registration_server2_username=
  sip_registration_server3=
  sip_registration_server3_aor=
  sip_registration_server3_expires=3600
  sip_registration_server3_password=
  sip_registration_server3_username=
  sip_registration_server4=
  sip_registration_server4_aor=
  sip_registration_server4_expires=3600
  sip_registration_server4_password=
  sip_registration_server4_username=
  sip_Route=
  sip_session_description=
  sip_session_name=no_session_name
  sip_username=-
[module.41]
  model=SR140
  virtual=1
  exists=1
  vb_firm=C:\FVD513\fw\bostvb.dll
  channels=60
[module.41/ethernet.1]
  ip_interface={A3E5EAA4-8023-4927-84FB-4A7905FE3987}:0
  media_port_min=56000
  media_port_max=57000
```

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```
[module.41/host_cc.1]
  host_module=2
  number_of_channels=60
```

Cisco Gateway-Config

```
Vindaloo#show ver
Cisco IOS Software, 3800 Software (C3825-IPVOICE_IVS-M), Version 12.4(11)T3,
RELEASE SOFTWARE (fc4)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2007 by Cisco Systems, Inc.
Compiled Wed 11-Jul-07 20:47 by prod_rel_team

ROM: System Bootstrap, Version 12.3(11r)T1, RELEASE SOFTWARE (fc1)

Vindaloo uptime is 29 minutes
System returned to ROM by power-on
System image file is "flash:c3825-ipvoice_ivs-mz.124-11.T3.bin"

Cisco 3825 (revision 1.0) with 226304K/35840K bytes of memory.
Processor board ID FHK0847F0QC
2 Gigabit Ethernet interfaces
62 Serial interfaces
2 Channelized E1/PRI ports
2 Voice FXO interfaces
4 Voice FXS interfaces
DRAM configuration is 64 bits wide with parity enabled.
479K bytes of NVRAM.
62592K bytes of ATA System CompactFlash (Read/Write)

Configuration register is 0x2102

Vindaloo#show run
Building configuration...

Current configuration : 3341 bytes
!
version 12.4
```


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```
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname Vindaloo
!
boot-start-marker
boot system flash:c3745-ipvoicek9-mz.124-11.T3.bin
boot system flash:c3745-ipvoice-mz.124-3.bin
boot-end-marker
!
logging buffered 1000000
enable password cisco
!
no aaa new-model
no network-clock-participate slot 1
voice-card 0
 no dspfarm
!
voice-card 1
 dspfarm
!
ip cef
ip tcp synwait-time 13
!
!
no ip dhcp use vrf connected
ip dhcp excluded-address 192.168.10.0 192.168.10.60
ip dhcp excluded-address 192.168.11.0 192.168.11.10
!
ip dhcp pool hq-pool-phones
   network 192.168.10.0 255.255.255.0
   option 150 ip 192.168.10.50
   default-router 192.168.10.1
!
```

```
ip dhcp pool hq-pool-data
   network 192.168.11.0 255.255.255.0
   default-router 192.168.11.1
!
!
no ip domain lookup
ip host whiz 171.69.1.162
ip host dirt 171.69.1.129
ip host danube 171.69.17.14
ip host CM-VINDALOO 172.20.221.254
ip host CM-Pluto 172.20.238.254
ip host CM-MADRAS 172.20.237.254
ip host CM-MARS 172.20.231.254
ip name-server 172.20.221.254
ip name-server 172.20.238.254
ip name-server 172.20.237.254
ip dhcp-server 192.168.10.1
multilink bundle-name authenticated
!
isdn switch-type primary-net5
!
!
voice call carrier capacity active
!
voice service pots
!
voice service voip
 fax protocol t38 ls-redundancy 2 hs-redundancy 0 fallback none
 h323
  session transport udp
  h245 tunnel disable
 sip
!
!
voice class codec 1
```

```
 codec preference 1 g711alaw
!
!
!
voice class h323 1
  call start slow
!
!
!
!
!
!
!
!
!
!
!
!
!
!
controller E1 1/0/0
 pri-group timeslots 1-31
!
controller E1 1/0/1
 pri-group timeslots 1-31
!
!
!
!
interface GigabitEthernet0/0
 ip address 172.20.221.202 255.255.255.0
 duplex auto
 speed auto
 media-type rj45
!
```

```
interface GigabitEthernet0/1
 no ip address
 shutdown
 duplex auto
 speed auto
 media-type rj45
!
interface Serial1/0/0:15
 no ip address
 encapsulation hdlc
 isdn switch-type primary-net5
 isdn incoming-voice voice
 no cdp enable
!
interface Serial1/0/1:15
 no ip address
 encapsulation hdlc
 isdn switch-type primary-net5
 isdn incoming-voice voice
 no cdp enable
!
ip route 0.0.0.0 0.0.0.0 172.20.221.1
!
!
ip http server
!
dialer-list 1 protocol ip permit
!
!
!
control-plane
!
!
!
voice-port 0/1/0
```

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```
!
voice-port 0/1/1
!
voice-port 0/1/2
!
voice-port 0/1/3
!
voice-port 0/2/0
!
voice-port 0/2/1
!
voice-port 1/0/0:15
!
voice-port 1/0/1:15
!
!
no mgcp package-capability res-package
no mgcp package-capability fxr-package
no mgcp timer receive-rtcp
!
!
dial-peer cor custom
!
!
!
dial-peer voice 323254 voip
 destination-pattern 323254...
 voice-class h323 1
 session target ipv4:172.20.221.254
 session transport udp
 codec g711alaw
!
dial-peer voice 1000000 pots
 destination-pattern 10000[012][0-9]
 no digit-strip
```

```
 direct-inward-dial
 port 1/0/0:15
!
dial-peer voice 519254 voip
 destination-pattern 519254...
 session protocol sipv2
 session target ipv4:172.20.221.254
 session transport udp
 codec g711alaw
!
dial-peer voice 2000000 pots
 destination-pattern 20000[012][0-9]
 no digit-strip
 direct-inward-dial
 port 1/0/0:15
!
!
!
gatekeeper
 shutdown
!
!
line con 0
 exec-timeout 600 0
 password cisco
 login
 stopbits 1
line aux 0
 stopbits 1
line vty 0 4
 exec-timeout 600 0
 password cisco
 login
!
scheduler allocate 20000 1000
```

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```
!
end
```

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Appendix L
Configuration Files for Topology: SIP - CCM 6.0(1) - MGCP

Introduction

This appendix includes configuration files for the Dialogic Brooktrout SR140 and the Cisco Media Gateway. Use these files to configure these systems.

- *SR140 Configuration Files on page 586*
- *Cisco Gateway-Config on page 592*

SR140 Configuration Files

The two configuration files below show the configuration of the Dialogic Brooktrout SR140 Software.

- btcall.cfg
- CallCtrl.cfg

btcall.cfg

```
 #Filenames may contain spaces if enclosed in double quotes ("")
  bft_rcv_cap 0
  bt_cparm BT_CPARM.CFG
  cabs 0
  call_control C:\FVD513\callctrl.cfg
#Other sample call ctrl config files are also in samples.cfg
  ced_timeout 4000
  country_code 0010
  ecm_enable 1
  eff_pt_caps 0
  error_mult 40
  error_thresh 3
  error_enable 1
  font_file ../bfv.api/fonts/ibmpcps.fz8 0
  font_file ../bfv.api/fonts/ibmpcps.fz8 255
  id_string
  line_compression 5
  max_width 0
  max_pagelist 30
  restrict_res 1
  subpwdsep 0
  tone
  v_timeout 60
  width_res_behavior 1
```

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```
max_timeout 0
badline_behavior 0
error_mult_rtp 200
min_length 0
fax_rtp_enable 1
v34_ci_enable 1
v34_2400_baud_ctrl 1
v34_enable 1
agc 1
dtmf_thresh 0
dtmf_hi_to_lo_twist_idle 2
dtmf_hi_to_lo_twist_play 4
dtmf_in_to_in_ratio_idle 16
dtmf_in_to_in_ratio_play 6
dtmf_in_to_out_ratio_idle 8
dtmf_in_to_out_ratio_play 2
dtmf_lo_to_hi_twist_idle 2
dtmf_lo_to_hi_twist_play 3
dtmf_min_off_idle 45
dtmf_min_off_play 45
dtmf_min_on_idle 30
dtmf_min_on_play 45
v_play_gain 0
silcompr_middle 1000
record_beep_dur 500
record_beep_freq 500
silcompr_start 500
answer_dropout 255
answer_silence_history 2010
answer_spike 45
digital_answer_cp 1
max_answer_analysis 3000
max_answer_silence 1005
max_answer_voice 2010
init_answer_silence 2010
```

```
  busy_dt_ct 1
  line_encoding 0
```

CallCtl.cfg

```
# callctrl.cfg
#
# Sample Call Control configuration file for Boston Bfv API.
#
# This is an all-in-one file that contains examples for several
# different types of configurations.  All of the configuration lines have
# been commented out.  You should uncomment the lines that are
# appropriate for your configuration.
#
# NOTE: Ensure that you use an absolute path for all the parameters that accept
#   file names. For example:
#   protocol_file=[INSTALL_LOCATION]/config/analog_loopstart_us.lec
#   where [INSTALL_LOCATION] is the location where your software is installed.
#
#   For instance if the install location is C:/Brooktrout/Boston. Then
#   protocol_file=C:/Brooktrout/Boston/config/analog_loopstart_us.lec
#
# Refer to the Call Control Configuration File section in the Brooktrout Fax
# and Voice API Programmer's Reference Manual for more information.



  l3l4_trace=none
  l4l3_trace=none
  api_trace=none
  internal_trace=none
  host_module_trace=none
```

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```
  ip_stack_trace=none
# Most of the time a path should be used for this file name.
  trace_file=ecc.log
  max_trace_files=1
  max_trace_file_size=100

[host_module.2]
  module_library=brktsip.dll
  enabled=true
[host_module.2/t38parameters]
  t38_fax_rate_management=transferredTCF
  t38_fax_udp_ec=t38UDPRedundancy
  rtp_ced_enable=true
  t38_max_bit_rate=14400
  media_renegotiate_delay_inbound=4000
  media_renegotiate_delay_outbound=-1
  t38_fax_fill_bit_removal=false
  t38_fax_transcoding_jbig=false
  t38_fax_transcoding_mmr=false
  t38_t30_fastnotify=false
  t38_UDPTL_redundancy_depth_control=5
  t38_UDPTL_redundancy_depth_image=2
[host_module.2/parameters]
  sip_Contact=0.0.0.0:0
  sip_default_gateway=0.0.0.0:0
  sip_description_URI=
  sip_email=
  sip_From=Anonymous <sip:no_from_info@anonymous.invalid>
  sip_Max-Forwards=70
  sip_max_sessions=256
  sip_phone=
  sip_proxy_server1=
  sip_proxy_server2=
  sip_proxy_server3=
  sip_proxy_server4=
```

```
  sip_registration_interval=60
  sip_registration_server1=
  sip_registration_server1_aor=
  sip_registration_server1_expires=3600
  sip_registration_server1_password=
  sip_registration_server1_username=
  sip_registration_server2=
  sip_registration_server2_aor=
  sip_registration_server2_expires=3600
  sip_registration_server2_password=
  sip_registration_server2_username=
  sip_registration_server3=
  sip_registration_server3_aor=
  sip_registration_server3_expires=3600
  sip_registration_server3_password=
  sip_registration_server3_username=
  sip_registration_server4=
  sip_registration_server4_aor=
  sip_registration_server4_expires=3600
  sip_registration_server4_password=
  sip_registration_server4_username=
  sip_Route=
  sip_session_description=
  sip_session_name=no_session_name
  sip_username=-
[module.41]
  model=SR140
  virtual=1
  exists=1
  vb_firm=C:\FVD513\fw\bostvb.dll
  channels=60
[module.41/ethernet.1]
  ip_interface={A3E5EAA4-8023-4927-84FB-4A7905FE3987}:0
  media_port_min=56000
  media_port_max=57000
```


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```
[module.41/host_cc.1]
  host_module=2
  number_of_channels=60
```

Cisco Gateway-Config

```
Vindaloo#sho ver
Cisco IOS Software, 3800 Software (C3825-IPVOICE_IVS-M), Version 12.4(11)T3,
RELEASE SOFTWARE (fc4)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2007 by Cisco Systems, Inc.
Compiled Wed 11-Jul-07 20:47 by prod_rel_team

ROM: System Bootstrap, Version 12.3(11r)T1, RELEASE SOFTWARE (fc1)

Vindaloo uptime is 1 day, 37 minutes
System returned to ROM by reload at 20:25:48 UTC Wed Sep 12 2007
System image file is "flash:c3825-ipvoice_ivs-mz.124-11.T3.bin"

Cisco 3825 (revision 1.0) with 226304K/35840K bytes of memory.
Processor board ID FHK0847F0QC
2 Gigabit Ethernet interfaces
62 Serial interfaces
2 Channelized E1/PRI ports
2 Voice FXO interfaces
4 Voice FXS interfaces
DRAM configuration is 64 bits wide with parity enabled.
479K bytes of NVRAM.
62592K bytes of ATA System CompactFlash (Read/Write)

Configuration register is 0x2102

Vindaloo#sho mgcp
MGCP Admin State ACTIVE, Oper State ACTIVE - Cause Code NONE
MGCP call-agent: CM-Vindaloo 2427 Initial protocol service is MGCP 0.1
MGCP validate call-agent source-ipaddr DISABLED
MGCP validate domain name DISABLED
MGCP block-newcalls DISABLED
```


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```
MGCP send SGCP RSIP: forced/restart/graceful/disconnected DISABLED
MGCP quarantine mode discard/step
MGCP quarantine of persistent events is ENABLED
MGCP dtmf-relay voip codec all mode out-of-band
MGCP dtmf-relay for voAAL2 is SDP controlled
MGCP voip modem passthrough disabled
MGCP voaal2 modem passthrough disabled
MGCP voip modem relay: Disabled
MGCP T.38 Named Signalling Event (NSE) response timer: 200
MGCP Network (IP/AAL2) Continuity Test timer: 200
MGCP 'RTP stream loss' timer disabled
MGCP request timeout 500
MGCP maximum exponential request timeout 4000
MGCP rtp unreachable timeout 1000 action notify
MGCP gateway port: 2427, MGCP maximum waiting delay 3000
MGCP restart delay 0, MGCP vad DISABLED
MGCP rtrcac DISABLED
MGCP system resource check DISABLED
MGCP xpc-codec: DISABLED, MGCP persistent hookflash: DISABLED
MGCP persistent offhook: ENABLED, MGCP persistent onhook: DISABLED
MGCP piggyback msg ENABLED, MGCP endpoint offset DISABLED
MGCP simple-sdp ENABLED
MGCP undotted-notation DISABLED
MGCP codec type g711ulaw, MGCP packetization period 20
MGCP JB threshold lwm 30, MGCP JB threshold hwm 150
MGCP LAT threshold lwm 150, MGCP LAT threshold hwm 300
MGCP PL threshold lwm 1000, MGCP PL threshold hwm 10000
MGCP CL threshold lwm 1000, MGCP CL threshold hwm 10000
MGCP playout mode is adaptive 60, 40, 200 in msec
MGCP Fax Playout Buffer is 300 in msec
MGCP media (RTP) dscp: ef, MGCP signaling dscp: af31
MGCP default package: trunk-package
MGCP supported packages: gm-package dtmf-package trunk-package line-package
                        hs-package rtp-package atm-package ms-package dt-package
                       mo-package mt-package sst-package fxr-package pre-package
```

```
                         md-package
MGCP Digit Map matching order: shortest match
SGCP Digit Map matching order: always left-to-right
MGCP VoAAL2 ignore-lco-codec DISABLED
MGCP T.38 Max Fax Rate is DEFAULT
MGCP T.38 Fax is ENABLED
MGCP T.38 Fax ECM is ENABLED
MGCP T.38 Fax NSF Override is DISABLED
MGCP T.38 Fax Low Speed Redundancy: 0
MGCP T.38 Fax High Speed Redundancy: 0
MGCP Fax relay SG3-to-G3: ENABLED
MGCP control bind :DISABLED
MGCP media bind :DISABLED
MGCP Upspeed payload type for G711ulaw: 0,  G711alaw: 8
MGCP Static payload type for G.726-16K codec
MGCP Dynamic payload type for G.726-24K codec
MGCP Dynamic payload type for G.Clear codec
MGCP Dynamic payload type for NSE is 100
MGCP Dynamic payload type for NTE is 99
MGCP rsip-range is enabled for TGCP only.
MGCP Comedia role is NONE
MGCP Comedia check media source is DISABLED
MGCP Comedia SDP force is DISABLED
MGCP Guaranteed scheduler time is DISABLED
MGCP DNS stale threshold is 30 seconds

Vindaloo#sho run
Building configuration...

Current configuration : 3504 bytes
!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
```

```
!
hostname Vindaloo
!
boot-start-marker
boot-end-marker
!
logging buffered 10000000
enable password cisco
!
no aaa new-model
no network-clock-participate slot 1
voice-card 0
 dspfarm
 dsp services dspfarm
!
voice-card 1
 dspfarm
!
ip cef
!
!
!
!
ip host CM-VINDALOO 172.20.221.254
ip host CM-MERCURY 172.20.215.254
ip host CM-PLUTO 172.20.238.254
ip host CM-MADRAS 172.20.237.254
ip host cm-venus 172.20.214.254
ip name-server 172.20.2.181
ip name-server 172.20.221.254
ip name-server 172.20.215.254
ip name-server 172.20.237.254
ip name-server 172.20.238.254
multilink bundle-name authenticated
!
```

```
isdn switch-type primary-net5
!
!
!
voice service voip
 fax protocol t38 ls-redundancy 2 hs-redundancy 0 fallback none
 h323
  session transport udp
  h245 tunnel disable
!
!
voice class codec 1
 codec preference 1 g711alaw
!
!
!
voice class h323 1
  call start slow
!
!
!
!
!
!
!
!
!
!
fax interface-type fax-mail
!
!
!
!
controller E1 1/0/0
 pri-group timeslots 1-31 service mgcp
```

```
!
controller E1 1/0/1
 pri-group timeslots 1-31 service mgcp
!
!
!
!
interface GigabitEthernet0/0
 ip address 172.20.221.202 255.255.255.0
 duplex auto
 speed auto
 media-type rj45
!
interface GigabitEthernet0/1
 ip address 172.20.237.202 255.255.255.0
 duplex auto
 speed auto
 media-type rj45
!
interface Serial1/0/0:15
 no ip address
 encapsulation hdlc
 isdn switch-type primary-net5
 isdn incoming-voice voice
 isdn bind-l3 ccm-manager
 no cdp enable
!
interface Serial1/0/1:15
 no ip address
 encapsulation hdlc
 isdn switch-type primary-qsig
 isdn timer T310 120000
 isdn protocol-emulate network
 isdn incoming-voice voice
 isdn bind-l3 ccm-manager
```

```
 no cdp enable
!
ip route 0.0.0.0 0.0.0.0 GigabitEthernet0/0
ip route 0.0.0.0 0.0.0.0 172.20.221.1
!
!
no ip http server
!
!
!
tftp-server flash:c3825-ipvoice-mz.124-3a.bin
!
control-plane
!
!
!
voice-port 0/1/0
!
voice-port 0/1/1
!
voice-port 0/1/2
!
voice-port 0/1/3
!
voice-port 0/2/0
!
voice-port 0/2/1
!
voice-port 1/0/0:15
!
voice-port 1/0/1:15
!
ccm-manager mgcp
ccm-manager music-on-hold
ccm-manager config server 172.20.221.254
```


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```
ccm-manager config
!
mgcp
mgcp call-agent CM-Vindaloo 2427 service-type mgcp version 0.1
mgcp dtmf-relay voip codec all mode out-of-band
mgcp rtp unreachable timeout 1000 action notify
mgcp package-capability rtp-package
mgcp package-capability sst-package
mgcp package-capability pre-package
no mgcp package-capability res-package
no mgcp timer receive-rtcp
mgcp sdp simple
mgcp fax t38 gateway force
mgcp rtp payload-type g726r16 static
!
mgcp profile default
!
sccp local GigabitEthernet0/1
sccp ccm 172.20.221.254 identifier 1 version 4.1
sccp
!
sccp ccm group 1
 associate ccm 1 priority 1
 associate profile 1 register mtp00127f283ef1
!
dspfarm profile 1 transcode
 codec g711ulaw
 codec g711alaw
 codec g729ar8
 codec g729abr8
 maximum sessions 10
 associate application SCCP
!
!
dial-peer voice 4151 pots
```

```
 port 0/1/0
!
dial-peer voice 999010 pots
 service mgcpapp
 port 0/1/0
!
dial-peer voice 1 pots
 service mgcpapp
!
dial-peer voice 2 pots
 service mgcpapp
 port 1/0/1:15
!
!
sip-ua
 disable-early-media 180
 retry options 0
!
!
gatekeeper
 shutdown
!
!
line con 0
 exec-timeout 600 0
 password cisco
 login
 stopbits 1
line aux 0
 stopbits 1
line vty 0 4
 exec-timeout 600 0
 password cisco
 login
!
```


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```
scheduler allocate 20000 1000
ntp clock-period 17178609
ntp server 192.168.240.254
!
end

Vindaloo#
```

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Appendix M
Service Activation and Service Parameters for CUCM Version 4.2(3)

Introduction

The appendix contains information for service activation and service parameters for the CUCM Version 4.2(3) to verify the configurations in this document.

Note: The default values support T.38 traffic. It is not necessary to change any fields to enable T.38 support on CUCM.

Configuring Service Activation

The following is the CUCM services used during this configuration verification

Not all setting are required for T.38 support.

➢ **Follow the steps below.**

1. Open the Cisco Unified Communications Manager 4.2.3.
2. From the Application menu, select Cisco Unified CallManager Serviceability.

Figure 496. CUCM Serviceability

The following screen appears.

Figure 497. Service Activation

3. From the Tool menu, select Service Activation.

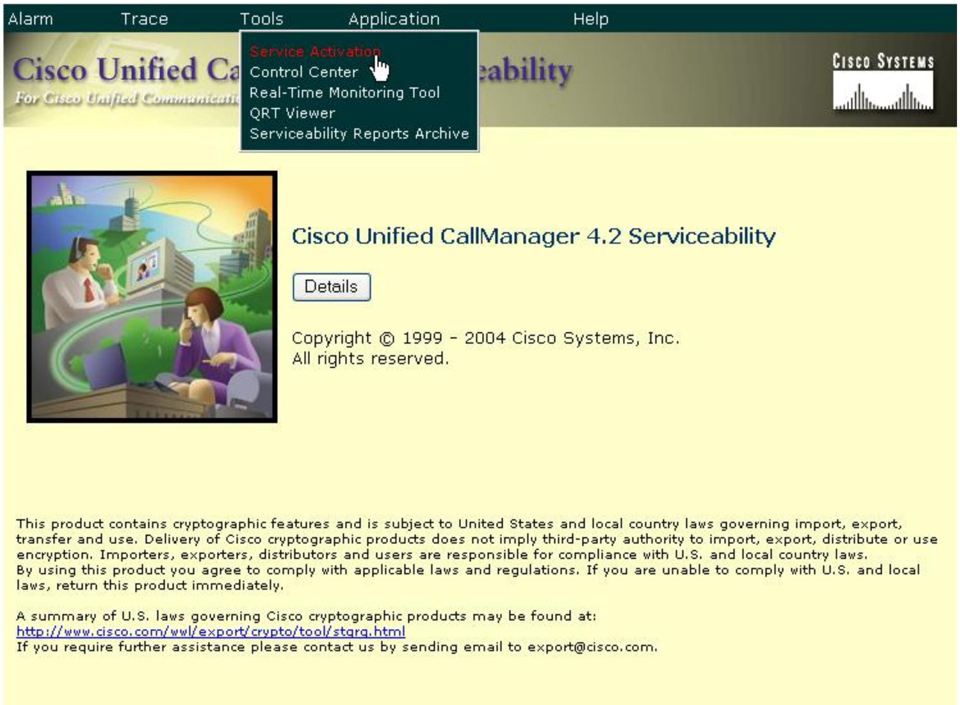

Figure 498. Service Activation

4. The following screen appears. Select your CUCM server in the left pane.

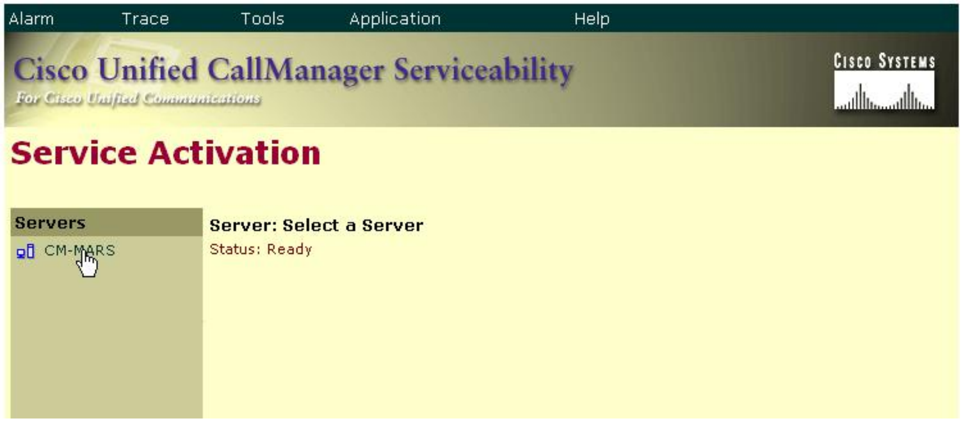

Figure 499. Select Server

The screen below appears. Complete the screen as indicated below.

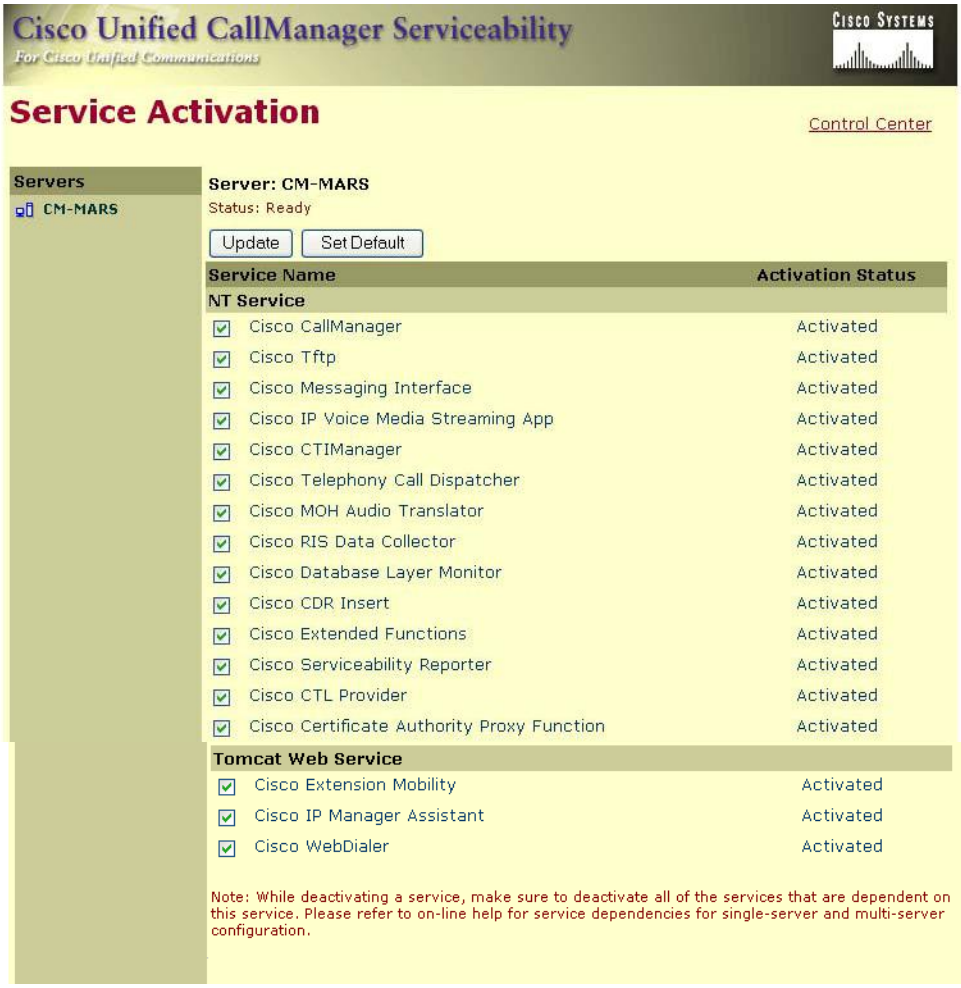

Figure 500. Service Activation Data

5. Click Save.

Configuring Service Parameters

➢ **Follow the steps below to configure service parameters for CUCM version 4.2.3.**

1. From the System menu, select Service Parameters.

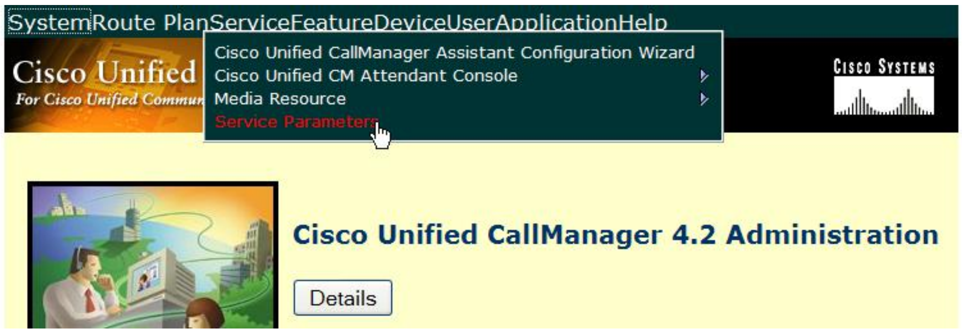

Figure 501. Service Parameters

2. Select the Server.

Figure 502. Server

3. Select the Cisco CallManager service.

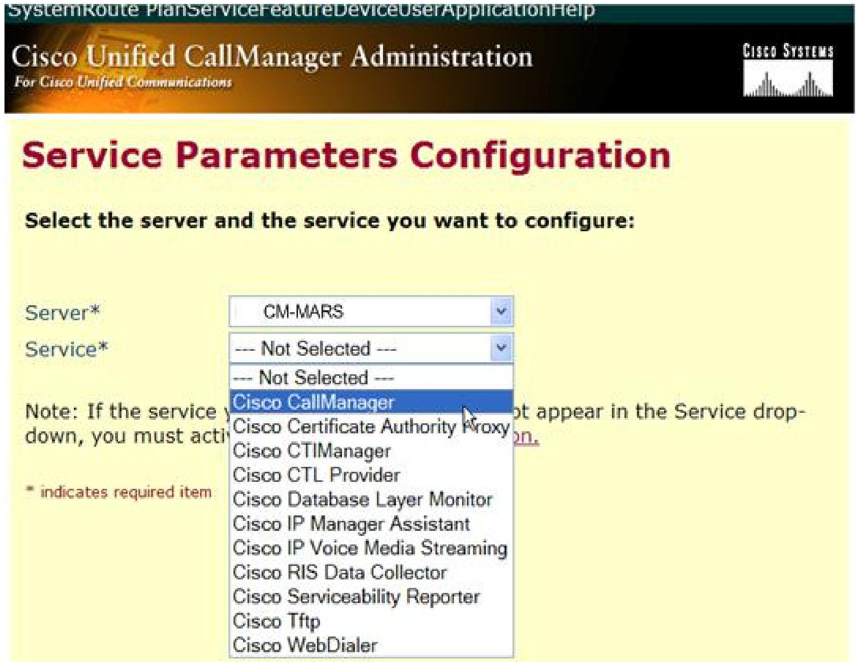

Figure 503. CallManager Service

The screen on the following pages appears with the service parameters and suggested values to use in your configuration.

System

Parameter Name	Parameter Value	Suggested Value
CDR Enabled Flag*	False	False
CDR Log Calls with Zero Duration Flag*	False	False
Digit Analysis Complexity*	StandardAnalysis	StandardAnalysis
Database Debounce Timer (sec)*	0	0
Maximum Phone Fallback Queue Depth*	10	10
Maximum Number of Registered Devices*	5000	5000
Enable TCP KeepAlives For SSAPI Interface*	False	False
ProgLogs Trace File Path*	C:\Program Files\Cisco\Trace\Pr	C:\Program Files\Cisco\Trace\ProgLogs\

Some parameters in this group are hidden, click on Advanced button to see hidden parameters

SDL Trace

Parameter Name	Parameter Value	Suggested Value
SDL Trace Data Flags*	0x00000111	0x00000111
SDL Trace Flush Immediately*	True	True
SDL Trace Data Size*	0	0
SDL Trace Flag*	False	True
SDL TraceType Flags*	0x8000EB15	0x8000EB15
SDL XML Trace Flag*	False	False

Some parameters in this group are hidden, click on Advanced button to see hidden parameters

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Clusterwide Parameters (Device - General)		
Parameter Name	**Parameter Value**	**Suggested Value**
Call Diagnostics Enabled*	False	False
Show Line Group Member DN in finalCalledPartyNumber CDR Field*	False	False
CTI New Call Accept Timer (sec)*	4	4
CTI Generate Digits Interval (msec)*	250	250
CTI Dial Digits Interval (msec)*	250	250
CTI Extends Dialed Digits After Forward*	True	True
Retain Media on Disconnect with PI for Active Call*	False	False
Station and Backup Server KeepAlive Interval (sec)*	60	60
Station KeepAlive Interval (sec)*	30	30
Status Enquiry Poll Flag*	False	False
Strip # Sign from Called Party Number*	True	True
T301 Timer (msec)*	180000	180000
T302 Timer (msec)*	15000	15000
T303 Timer (msec)*	4000	4000
T304 Timer (msec)*	30000	30000
T305 Timer (msec)*	30000	30000
T306 Timer (msec)*	30000	30000
T308 Timer (msec)*	4000	4000
T309 Timer (msec)*	90000	90000
T310 Timer (msec)*	60000	60000

T313 Timer (msec)*	4000	4000
T316 Timer (msec)*	120000	120000
T317 Timer (msec)*	100000	100000
T321 Timer (msec)*	30000	30000
T322 Timer (msec)*	4000	4000
Tone on Hold Timer (sec)*	10	10
Unknown Caller ID Flag*	True	True
Call Classification*	OffNet	OffNet
Always Display Original Dialed Number*	False	False
Some parameters in this group are hidden, click on Advanced button to see hidden parameters		
Clusterwide Parameters (Device - Phone)		
Parameter Name	**Parameter Value**	**Suggested Value**
Always Use Prime Line*	False	False
Always Use Prime Line for Voice Message*	False	False
Builtin Bridge Enable*	Off	Off
Device Mobility Mode*	Off	Off
Auto Answer Timer (sec)*	1	1
Extension Display on Cisco IP Phone Model 7910*	False	False
Alternate Idle Phone Auto Answer Behavior*	False	False
Hold Type*	False	False
Line State Update Enabled*	True	True
Off-hook to First Digit Timer (msec)*	15000	15000
Override Auto Answer If Speaker Is Disabled*	True	True

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Some parameters in this group are hidden, click on Advanced button to see hidden parameters

Clusterwide Parameters (Device - PRI and MGCP Gateway)

Parameter Name	Parameter Value	Suggested Value
Calling Party Number Screening Indicator*	CallManager sets the screening indicator value - Default setting	CallManager sets the screening indicator value - Default setting
Clear Calls Flag When Datalink Is Down*	True	True
Device Status Poll Interval (msec)*	3000	3000
Disable Alerting Progress Indicator*	False	False
Discard Non Inband Progress in Overlap Sending*	False	False
Disable Resume from Shared-line MGCP FXS Port*	True	True
DTMF Silence Tone Flag*	False	False
Enable Display IE in Codeset 6*	False	False
Enable Sending PRI NI2 Service Message*	False	False
Flash Hook Duration (msec)*	500	500
Gateway KeepAlive Timer (sec)*	25	25
Gateway Poll Timer (sec)*	10	10
Location In PRI Progress Indicator IE (User Side Only)*	Use the Network Side PRI progress indicator IE	Use the Network Side PRI progress indicator IE
Matching Calling Party with Attendant Flag*	False	False
MGCP Database Query Delay Timer (msec)*	1000	1000
MGCP FXS On-Hook Pending Timer (sec)*	3	3
MGCP Response Timer (sec)*	30	30

MGCP Timer (sec)*	3	3
Numbering Plan Info*	1	1
Overlap Receiving Flag for PRI*	True	True
Port Release Timer (sec)*	0	0
SMDI Call Delay Timer (sec)*	0	0
Stable in State 4 Flag*	False	False
Suppress Out-of-Channels Alarms*	True	True
I-Frame Timer (msec)*	2000	2000
User-to-User IE Status*	False	False
Convert European Progress Message to Alerting*	False	False
Enable DMS PRI Notify Message from User to Network*	True	True
Digital and Analog Ports Enabled*	True	True
Some parameters in this group are hidden, click on Advanced button to see hidden parameters		
Clusterwide Parameters (Device - H323)		
Parameter Name	**Parameter Value**	**Suggested Value**
Accept Unknown TCP Connection*	False	False
BRQ Enabled*	False	False
Call Present Disconnect Flag*	False	False
Check Progress Indicator Before Establishing Media*	False	False
H225 Block Setup Destination*	True	False
H225 DB Retry Timer (sec)*	0	0

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H225 Device Connect Timer*	0	0
H225 DTMF Duration (msec)*	100	100
H225 TspReq Retry*	2	2
H225 Intercluster Call Throttle Timer*	30	30
H225 T301 Timer (msec)*	180000	180000
H225 T302 Timer (msec)*	15000	15000
H225 T303 Timer (msec)*	4000	4000
H225 T304 Timer (msec)*	30000	30000
H225 T305 Timer (msec)*	30000	30000
H225 T310 Timer (msec)*	60000	60000
H225 TCP Timer (sec)*	5	5
H245 TCS Timeout*	10	10
H323 Calling Party Number Screening Indicator*	Calling number screened and passed	Calling number screened and passed
Tone on Connect*	False	False
RAS ARQ Timer (sec)*	3	3
RAS BRQ Timer (sec)*	3	3
RAS DRQ Timer (sec)*	3	3
RAS RRQ Timer (sec)*	3	3
Ras URQ Timer (sec)*	3	3
Retry Count for ARQ*	2	2
Retry Count for BRQ*	2	2
Retry Count for DRQ*	2	2
Retry Count for RRQ*	2	2

Retry Count for URQ*	1	1
Send Product ID and Version ID*	False	False
Send Progress Timer (msec)*	3000	3000
Send H225 User Info Message*	User Info for Call Progress Tone	User Info for Call Progress Tone
Status Enquiry Poll Timer (msec)*	10000	10000
Device Name of GK-controlled Trunk That Will Use Port 1720*	None	None
Host Name/IP Address of GK That Will Use RAS UDP Port 1719*	None	None
Fail Call If MTP Allocation Fails*	False	False
Overlap Receiving Flag for H.323*	False	False

Some parameters in this group are hidden, click on Advanced button to see hidden parameters

Clusterwide Parameters (Device - SIP)

Parameter Name	Parameter Value	Suggested Value
Retry Count for SIP Bye*	10	10
Retry Count for SIP Cancel*	10	10
Retry Count for SIP Invite*	6	6
Retry Count for SIP PRACK*	6	6
Retry Count for SIP Rel1XX*	10	10
Retry Count for SIP Response*	6	6
SIP Connect Timer (msec)*	500	500
SIP Disconnect Timer (msec)*	500	500
SIP Expires Timer (msec)*	180000	180000

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Retry Count for SIP PRACK*	6	6
Retry Count for SIP Rel1XX*	10	10
Retry Count for SIP Response*	6	6
SIP Connect Timer (msec)*	500	500
SIP Disconnect Timer (msec)*	500	500
SIP Expires Timer (msec)*	180000	180000
SIP PRACK Timer (msec)*	500	500
SIP Rel1XX Timer (msec)*	500	500
SIP Trying Timer (msec)*	500	500
SIP Default Telephony Event Payload Type*	101	101
SIP Rel1XX Enabled*	False	False
SIP Min-SE Value (sec) *	1800	1800

Clusterwide Parameters (Feature - General)

Parameter Name	Parameter Value	Suggested Value
Call Park Display Timer (sec)*	10	10
Call Park Reversion Timer (sec)*	60	60
Maximum Call Duration Timer (min)*	720	720
Maximum Hold Duration Timer (min)*	360	360
Party Entrance Tone*	True	True
Suppress MOH to Conference Bridge*	True	True

Message Waiting Indicator Inbound Calling Search Space	< None >	
Message Waiting Indicator APDU Digit Translation CSS	< None >	
Multiple Tenant MWI Modes*	False	False
Block OffNet To OffNet Transfer*	False	False
Drop Ad Hoc Conference*	Never	Never
Advanced Ad Hoc Conference Enabled*	False	False

Some parameters in this group are hidden, click on Advanced button to see hidden parameters

Clusterwide Parameters (Feature - Forward)

Parameter Name	Parameter Value	Suggested Value
Forward Maximum Hop Count*	12	12
Forward No Answer Timer (sec)*	12	12
Max Forward Hops to DN*	12	12
Retain Forward Information*	False	False
Forward By Reroute Enabled*	False	False
Transform Forward by Reroute Destination*	True	True
Always Forward Switch Voice Mail Calls*	True	True
Forward By Reroute T1 Timer (sec)*	10	10
Include Original Called Info for Q.SIG Call Diversions*	Only after the first diversion	Only after the first diversion
Max Forward Unregistered Hops to DN*	0	0

Some parameters in this group are hidden, click on Advanced button to see hidden parameters

Clusterwide Parameters (Feature - Hold Reversion)

Parameter Name	Parameter Value	Suggested Value
Hold Reversion Duration (sec)*	0	0
Hold Reversion Notification Interval (sec)*	30	30

Clusterwide Parameters (Feature - Multilevel Precedence and Preemption)

Parameter Name	Parameter Value	Suggested Value
Locations-based MLPP Enable*	False	False
Executive Override Call Preemptable*	False	False

Clusterwide Parameters (Feature - Path Replacement)

Parameter Name	Parameter Value	Suggested Value
Path Replacement Enabled*	False	False
Path Replacement on Tromboned Calls*	True	True
Start Path Replacement Minimum Delay Time (sec)*	0	0
Start Path Replacement Maximum Delay Time (sec)*	0	0
Path Replacement T1 Timer (sec)*	30	30
Path Replacement T2 Timer (sec)*	15	15
Path Replacement PINX ID		
Path Replacement Calling Search Space	< None >	

Clusterwide Parameters (Feature - Call Back)

Parameter Name	Parameter Value	Suggested Value
Call Back Enabled Flag*	True	True
Call Back Notification Audio File Name*	CallBack.raw	CallBack.raw
Connection Proposal Type*	Connection Retention	Connection Retention
Connection Response Type*	Default to Connection Retention	Default to Connection Retention
Call Back Request Protection T1 Timer (sec)*	10	10
Call Back Recall T3 Timer (sec)*	20	20
Call Back Calling Search Space	< None >	
No Path Reservation*	True	True
Set Private Numbering Plan for Call Back*	False	False

Clusterwide Parameters (Feature - Call Pickup)

Parameter Name	Parameter Value	Suggested Value
Auto Call Pickup Enabled*	False	False
Call Pickup Locating Timer (sec)*	1	1

Clusterwide Parameters (Route Plan)

Parameter Name	Parameter Value	Suggested Value
Stop Routing on Out of Bandwidth Flag*	False	False
Stop Routing on Unallocated Number Flag*	True	True
Stop Routing on User Busy Flag*	True	True

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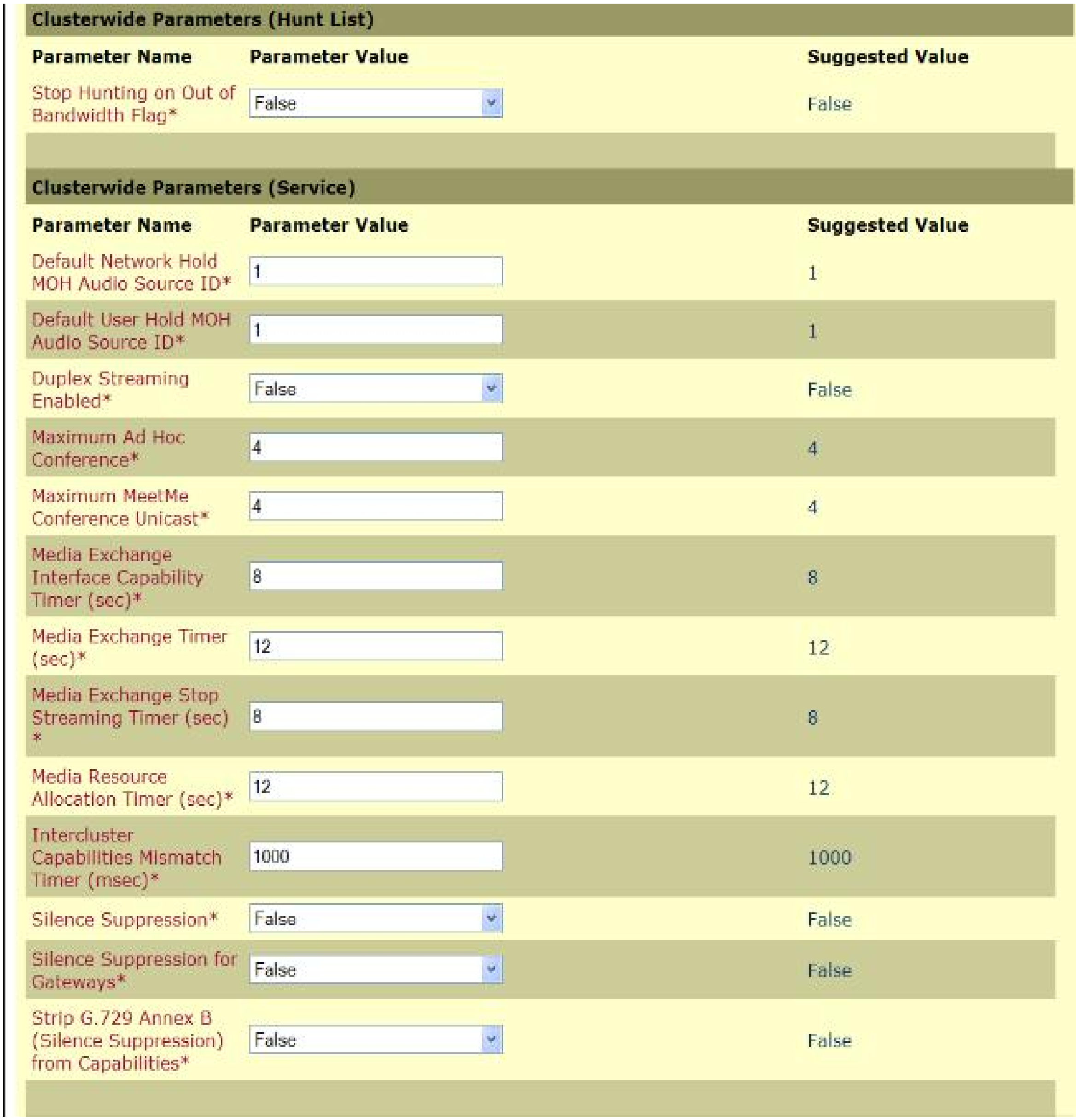

Clusterwide Parameters (Hunt List)

Parameter Name	Parameter Value	Suggested Value
Stop Hunting on Out of Bandwidth Flag*	False	False

Clusterwide Parameters (Service)

Parameter Name	Parameter Value	Suggested Value
Default Network Hold MOH Audio Source ID*	1	1
Default User Hold MOH Audio Source ID*	1	1
Duplex Streaming Enabled*	False	False
Maximum Ad Hoc Conference*	4	4
Maximum MeetMe Conference Unicast*	4	4
Media Exchange Interface Capability Timer (sec)*	8	8
Media Exchange Timer (sec)*	12	12
Media Exchange Stop Streaming Timer (sec) *	8	8
Media Resource Allocation Timer (sec)*	12	12
Intercluster Capabilities Mismatch Timer (msec)*	1000	1000
Silence Suppression*	False	False
Silence Suppression for Gateways*	False	False
Strip G.729 Annex B (Silence Suppression) from Capabilities*	False	False

Clusterwide Parameters (System - General)		
Parameter Name	**Parameter Value**	**Suggested Value**
Always Use Dial Tone Setting*	Default	Default
Call Control Initialization Timer (sec)*	90	90
Calling Search Space Initialization Timer (sec)*	900	900
Digit Analysis Initialization Timer (sec)*	900	900
Database Initialization Timer (sec)*	900	900
Device Initialization Timer (sec)*	360	360
Digit Analysis Timer (sec)*	6	6
Directory Initialization Timer (sec)*	90	90
Media Initialization Timer (sec)*	90	90
Route Plan Initialization Timer (sec)*	600	600
Supplementary Services Initialization Timer (sec)*	900	900
Statistics Enabled*	True	True
Time Of Day Initialization Timer (sec)*	900	900
Some parameters in this group are hidden, click on Advanced button to see hidden parameters		

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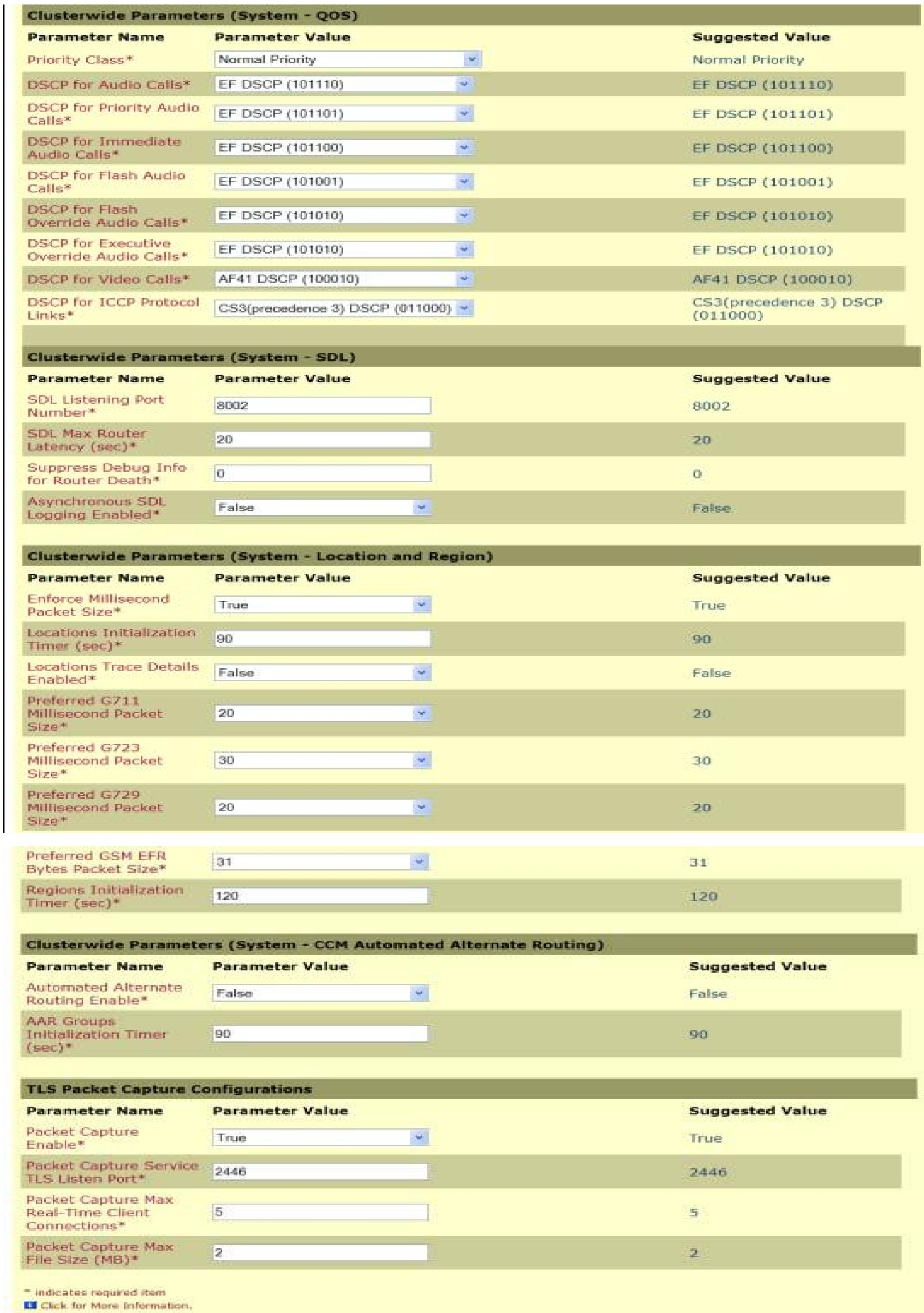

Clusterwide Parameters (System - QOS)		
Parameter Name	**Parameter Value**	**Suggested Value**
Priority Class*	Normal Priority	Normal Priority
DSCP for Audio Calls*	EF DSCP (101110)	EF DSCP (101110)
DSCP for Priority Audio Calls*	EF DSCP (101101)	EF DSCP (101101)
DSCP for Immediate Audio Calls*	EF DSCP (101100)	EF DSCP (101100)
DSCP for Flash Audio Calls*	EF DSCP (101001)	EF DSCP (101001)
DSCP for Flash Override Audio Calls*	EF DSCP (101010)	EF DSCP (101010)
DSCP for Executive Override Audio Calls*	EF DSCP (101010)	EF DSCP (101010)
DSCP for Video Calls*	AF41 DSCP (100010)	AF41 DSCP (100010)
DSCP for ICCP Protocol Links*	CS3(precedence 3) DSCP (011000)	CS3(precedence 3) DSCP (011000)

Clusterwide Parameters (System - SDL)		
Parameter Name	**Parameter Value**	**Suggested Value**
SDL Listening Port Number*	8002	8002
SDL Max Router Latency (sec)*	20	20
Suppress Debug Info for Router Death*	0	0
Asynchronous SDL Logging Enabled*	False	False

Clusterwide Parameters (System - Location and Region)		
Parameter Name	**Parameter Value**	**Suggested Value**
Enforce Millisecond Packet Size*	True	True
Locations Initialization Timer (sec)*	90	90
Locations Trace Details Enabled*	False	False
Preferred G711 Millisecond Packet Size*	20	20
Preferred G723 Millisecond Packet Size*	30	30
Preferred G729 Millisecond Packet Size*	20	20
Preferred GSM EFR Bytes Packet Size*	31	31
Regions Initialization Timer (sec)*	120	120

Clusterwide Parameters (System - CCM Automated Alternate Routing)		
Parameter Name	**Parameter Value**	**Suggested Value**
Automated Alternate Routing Enable*	False	False
AAR Groups Initialization Timer (sec)*	90	90

TLS Packet Capture Configurations		
Parameter Name	**Parameter Value**	**Suggested Value**
Packet Capture Enable*	True	True
Packet Capture Service TLS Listen Port*	2446	2446
Packet Capture Max Real-Time Client Connections*	5	5
Packet Capture Max File Size (MB)*	2	2

* indicates required item
Click for More Information.

Figure 504. Service Parameter values

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Appendix N
Service Activation and Service Parameters for CUCM Version 5.04

Introduction

The appendix contains information for service activation and service parameters for the CUCM Version 5.0(4) to verify the configurations in this document.

Note: The default values support T.38 traffic. It is not necessary to change any fields to enable T.38 support on CUCM.

Configuring Service Activation

The following is CCM services used during this configuration verification

Not all setting are required for T.38 support.

➢ **Follow the steps below.**

1. Open the Cisco Unified Communications Manager 5.0(4).
2. From the Tool menu, select Service Activation.

Figure 505. Service Activation

The following screen appears.

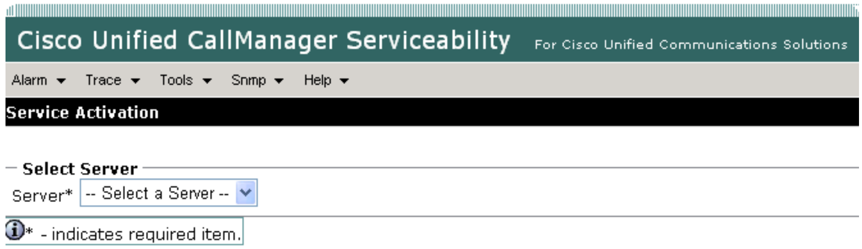


Figure 506. Select Server

3. Select your CUCM server.

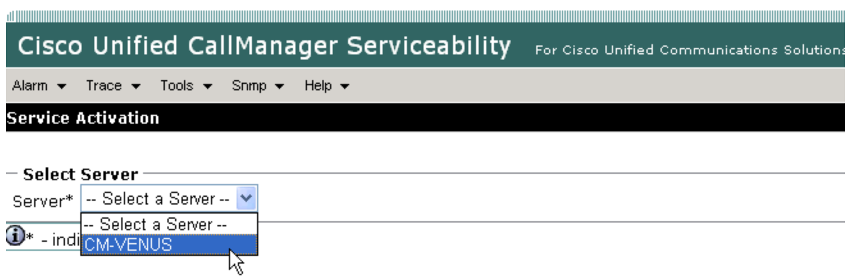
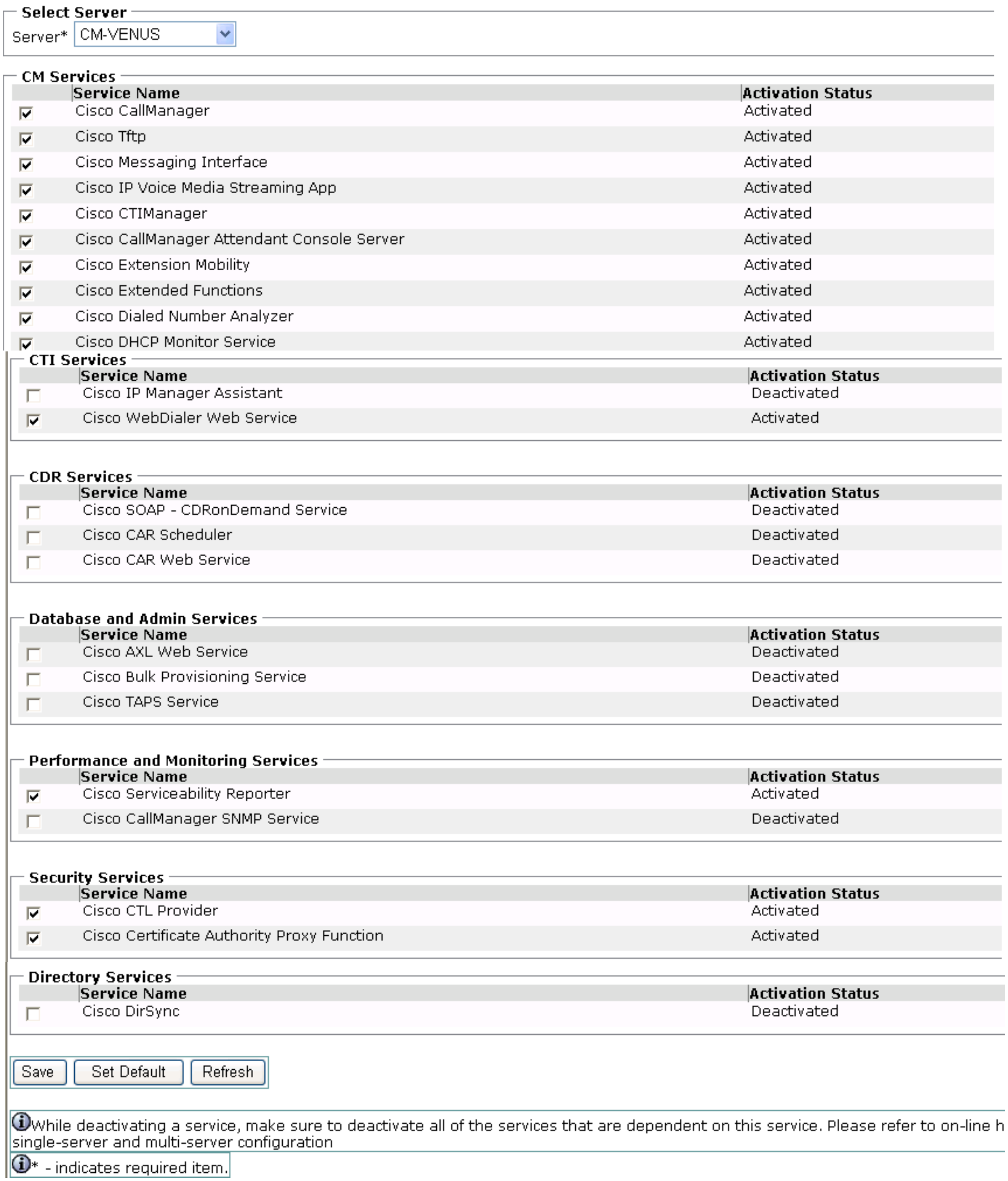


Figure 507. Server

The screen below appears. Complete the screen as indicated below.



Select Server

Server* CM-VENUS

CM Services

	Service Name	Activation Status
☑	Cisco CallManager	Activated
☑	Cisco Tftp	Activated
☑	Cisco Messaging Interface	Activated
☑	Cisco IP Voice Media Streaming App	Activated
☑	Cisco CTIManager	Activated
☑	Cisco CallManager Attendant Console Server	Activated
☑	Cisco Extension Mobility	Activated
☑	Cisco Extended Functions	Activated
☑	Cisco Dialed Number Analyzer	Activated
☑	Cisco DHCP Monitor Service	Activated

CTI Services

	Service Name	Activation Status
☐	Cisco IP Manager Assistant	Deactivated
☑	Cisco WebDialer Web Service	Activated

CDR Services

	Service Name	Activation Status
☐	Cisco SOAP - CDRonDemand Service	Deactivated
☐	Cisco CAR Scheduler	Deactivated
☐	Cisco CAR Web Service	Deactivated

Database and Admin Services

	Service Name	Activation Status
☐	Cisco AXL Web Service	Deactivated
☐	Cisco Bulk Provisioning Service	Deactivated
☐	Cisco TAPS Service	Deactivated

Performance and Monitoring Services

	Service Name	Activation Status
☑	Cisco Serviceability Reporter	Activated
☐	Cisco CallManager SNMP Service	Deactivated

Security Services

	Service Name	Activation Status
☑	Cisco CTL Provider	Activated
☑	Cisco Certificate Authority Proxy Function	Activated

Directory Services

	Service Name	Activation Status
☐	Cisco DirSync	Deactivated

Save | Set Default | Refresh

While deactivating a service, make sure to deactivate all of the services that are dependent on this service. Please refer to on-line h single-server and multi-server configuration

* - indicates required item.

Figure 508. Service Activation Data

4. Click Save.

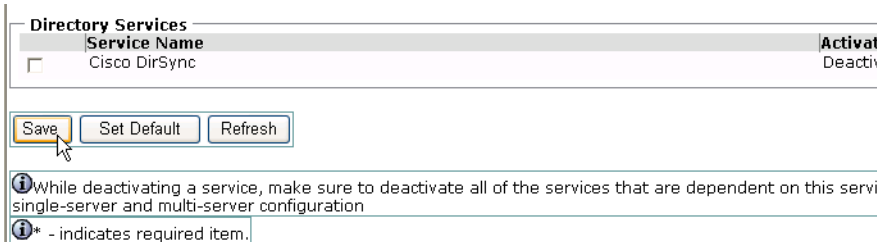


Figure 509. Save

Configuring Service Parameters

➢ **Follow the steps below to configure service parameters for CUCM version 5.0(4).**

1. From the System menu, select Service Parameters.

Figure 510. Service Parameters

The following screen appears.

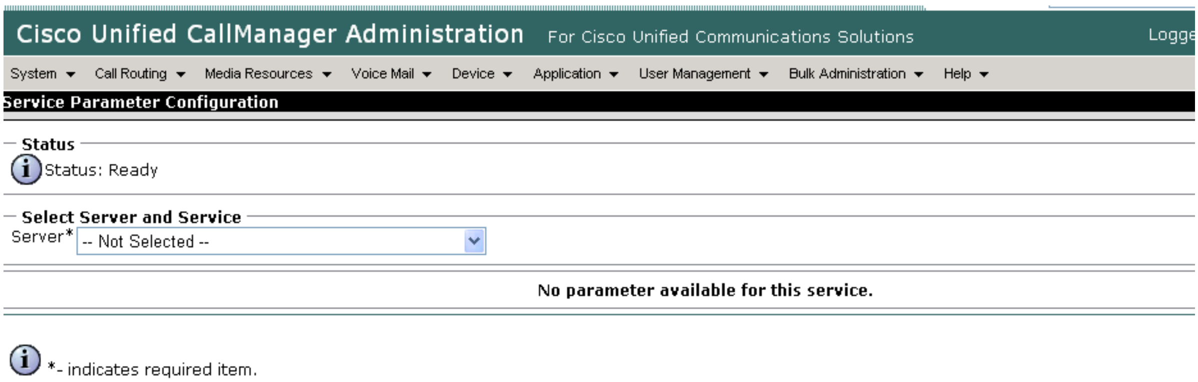


Figure 511. Service Parameter Information

2. Select the Server.

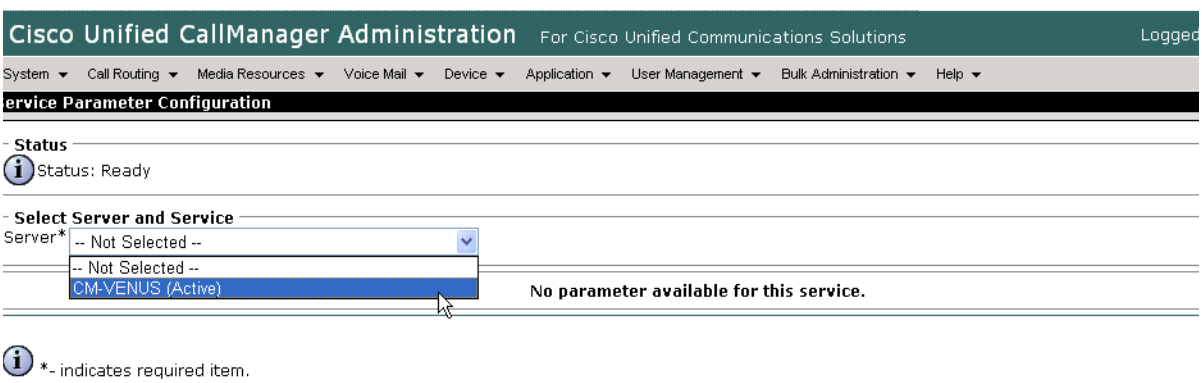
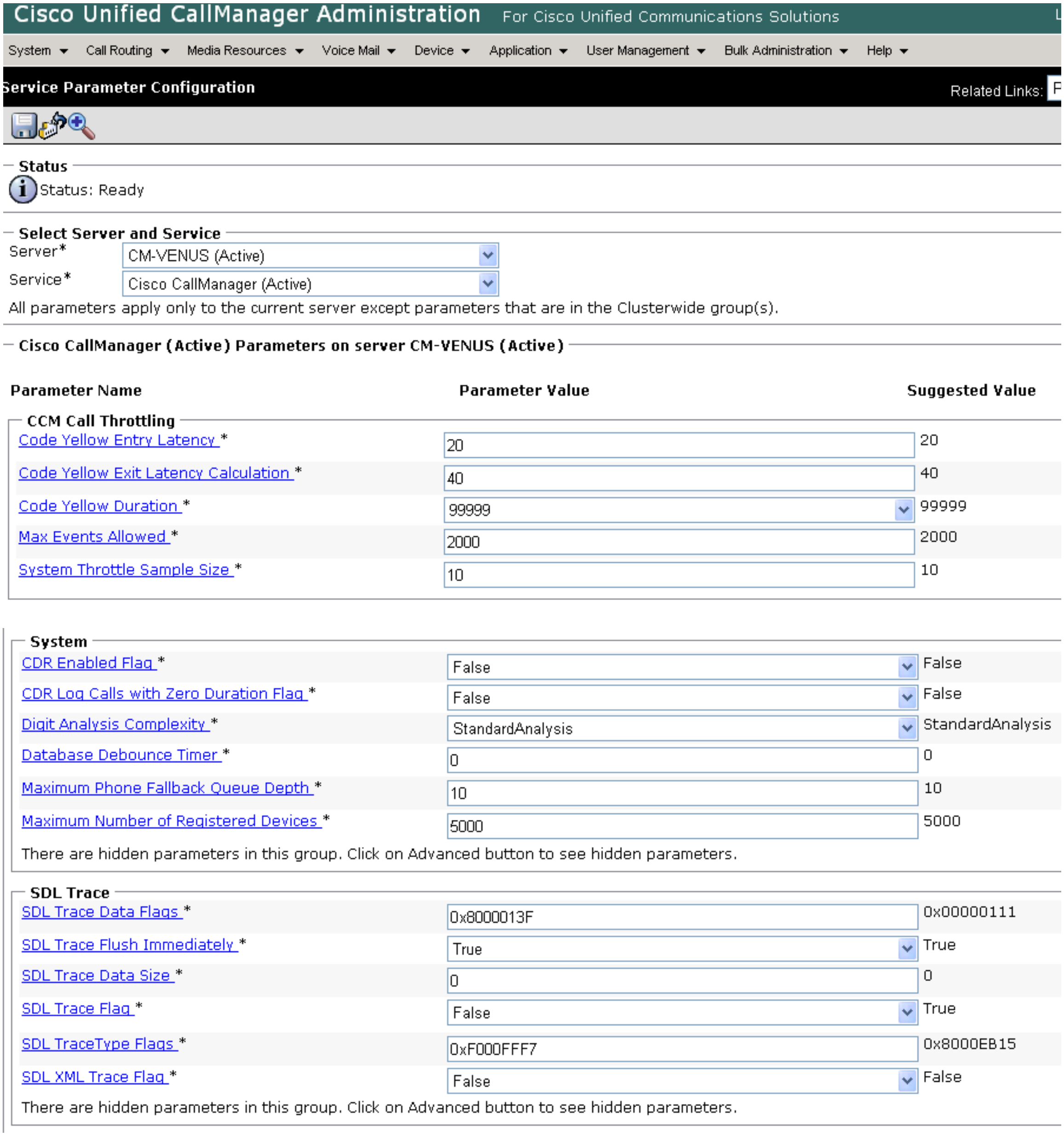


Figure 512. Server

The screen on the following pages appears with the service parameters and suggested values to use in your configuration.


Cisco Unified CallManager Administration For Cisco Unified Communications Solutions

System Call Routing Media Resources Voice Mail Device Application User Management Bulk Administration Help

Service Parameter Configuration Related Links:

Status

Status: Ready

Select Server and Service

Server* CM-VENUS (Active)

Service* Cisco CallManager (Active)

All parameters apply only to the current server except parameters that are in the Clusterwide group(s).

Cisco CallManager (Active) Parameters on server CM-VENUS (Active)

Parameter Name	Parameter Value	Suggested Value
CCM Call Throttling		
Code Yellow Entry Latency *	20	20
Code Yellow Exit Latency Calculation *	40	40
Code Yellow Duration *	99999	99999
Max Events Allowed *	2000	2000
System Throttle Sample Size *	10	10
System		
CDR Enabled Flag *	False	False
CDR Log Calls with Zero Duration Flag *	False	False
Digit Analysis Complexity *	StandardAnalysis	StandardAnalysis
Database Debounce Timer *	0	0
Maximum Phone Fallback Queue Depth *	10	10
Maximum Number of Registered Devices *	5000	5000
There are hidden parameters in this group. Click on Advanced button to see hidden parameters.		
SDL Trace		
SDL Trace Data Flags *	0x8000013F	0x00000111
SDL Trace Flush Immediately *	True	True
SDL Trace Data Size *	0	0
SDL Trace Flag *	False	True
SDL TraceType Flags *	0xF000FFF7	0x8000EB15
SDL XML Trace Flag *	False	False
There are hidden parameters in this group. Click on Advanced button to see hidden parameters.		

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Clusterwide Parameters (Device - General)

Call Diagnostics Enabled *	Disabled	Disabled
CTI New Call Accept Timer *	4	4
CTI Generate Digits Interval *	250	250
CTI Dial Digits Interval *	250	250
Retain Media on Disconnect with PI for Active Call *	False	False
Station and Backup Server KeepAlive Interval *	60	60
Station KeepAlive Interval *	30	30
Status Enquiry Poll Flag *	False	False
Strip # Sign from Called Party Number *	True	True
T301 Timer *	180000	180000
T302 Timer *	15000	15000
T303 Timer *	4000	4000
T304 Timer *	30000	30000
T305 Timer *	30000	30000
T306 Timer *	30000	30000
T308 Timer *	4000	4000
T309 Timer *	90000	90000
T310 Timer *	60000	60000
T313 Timer *	4000	4000
T316 Timer *	120000	120000
T317 Timer *	100000	100000
T321 Timer *	30000	30000
T322 Timer *	4000	4000
Tone on Hold Timer *	10	10
Unknown Caller ID Flag *	True	True
Call Classification *	OffNet	OffNet

There are hidden parameters in this group. Click on Advanced button to see hidden parameters.

Clusterwide Parameters (Device - Phone)

Always Use Prime Line *	False	False
Always Use Prime Line for Voice Message *	False	False
Builtin Bridge Enable *	Off	Off
Auto Answer Timer *	1	1
Extension Display on Cisco IP Phone Model 7910 *	False	False
Alternate Idle Phone Auto Answer Behavior *	False	False
Hold Type *	False	False
Line State Update Enabled *	True	True
Off-hook to First Digit Timer *	15000	15000

Forced Authorization Code Prompt Text *	Enter Authorization Code	Enter Authorization Code
Client Matter Code Prompt Text *	Enter Client Matter Code	Enter Client Matter Code
AAR Network Congestion Rerouting Text *	Network Congestion. Rerouting.	Network Congestion. Rerouting.
Ring Setting of Busy Station Policy *	Only Apply Ring Setting of Busy Station When Incoming Call Arri	Only Apply Ring Setting of Busy Sta Incoming Call Arrives
Transfer On-hook Enabled *	False	False
Ring Setting of Busy Station *	Beep Only	Beep Only
Ring Setting of Idle Station *	Ring	Ring
Privacy Setting *	True	True
SIP Station KeepAlive Interval *	120	120
SIP Station Realm *	ccmsipline	ccmsipline
Speed Dial Await Further Digits *	False	False
Display CTI Route Point Name or DN *	False	False

There are hidden parameters in this group. Click on Advanced button to see hidden parameters.

Clusterwide Parameters (Device - PRI and MGCP Gateway)

Calling Party Number Screening Indicator *	CallManager sets the screening indicator value - Default setting	CallManager sets the screening inc Default setting
Clear Calls Flag When Datalink Is Down *	True	True
Device Status Poll Interval *	3000	3000
Disable Alerting Progress Indicator *	False	False
Discard Non Inband Progress in Overlap Sending *	False	False
Disable Resume from Shared-line MGCP FXS Port *	True	True
DTMF Silence Tone Flag *	False	False
Enable Display IE in Codeset 6 *	False	False
Enable Sending PRI NI2 Service Message *	False	False
Flash Hook Duration *	500	500
Gateway Poll Timer *	10	10
Location In PRI Progress Indicator IE (User Side Only) *	Use the Network Side PRI progress indicator IE	Use the Network Side PR
Matching Calling Party with Attendant Flag *	False	False
MGCP Database Query Delay Timer *	1000	1000
MGCP FXS On-Hook Pending Timer *	3	3
MGCP Response Timer *	30	30
MGCP Timer *	3	3
Numbering Plan Info *	1	1
Overlap Receiving Flag for PRI *	True	True
Port Release Timer *	0	0
SMDI Call Delay Timer *	0	0
Stable in State 4 Flag *	False	False
Suppress Out-of-Channels Alarms *	True	True
I-Frame Timer *	2000	2000

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User-to-User IE Status *	False	False
Convert European Progress Message to Alerting *	False	False
Enable DMS PRI Notify Message from User to Network *	True	True

There are hidden parameters in this group. Click on Advanced button to see hidden parameters.

Clusterwide Parameters (Device - H323)

Accept Unknown TCP Connection *	False	False
BRQ Enabled *	False	False
Call Present Disconnect Flag *	False	False
Check Progress Indicator Before Establishing Media *	False	False
H225 Block Setup Destination *	False	False
H225 DB Retry Timer *	0	0
H225 Device Connect Timer *	0	0
H225 DTMF Duration *	100	100
H225 TspReq Retry *	2	2
H225 Intercluster Call Throttle Timer *	30	30
H225 T301 Timer *	180000	180000
H225 T302 Timer *	15000	15000
H225 T303 Timer *	4000	4000
H225 T304 Timer *	30000	30000
H225 T305 Timer *	30000	30000
H225 T310 Timer *	60000	60000
H225 TCP Timer *	5	5
H245 TCS Timeout *	10	10
H323 Calling Party Number Screening Indicator *	Calling number screened and passed	Calling number screen
Tone on Connect *	False	False
RAS ARQ Timer *	3	3
RAS BRQ Timer *	3	3
RAS DRQ Timer *	3	3
RAS RRQ Timer *	3	3
Ras URQ Timer *	3	3
Retry Count for ARQ *	2	2
Retry Count for BRQ *	2	2
Retry Count for DRQ *	2	2
Retry Count for RRQ *	2	2
Retry Count for URQ *	1	1
Send Product ID and Version ID *	False	False

Device Name of GK-controlled Trunk That Will Use Port 1720 *	None	None
Host Name/IP Address of GK That Will Use RAS UDP Port 1719 *	None	None
Fail Call If MTP Allocation Fails *	False	False

There are hidden parameters in this group. Click on Advanced button to see hidden parameters.

Clusterwide Parameters (Device - SIP)

Retry Count for SIP Bye *	10	10
Retry Count for SIP Cancel *	10	10
Retry Count for SIP Invite *	6	6
Retry Count for SIP PRACK *	6	6
Retry Count for SIP Rel1XX *	10	10
Retry Count for SIP Response *	6	6
SIP Connect Timer *	500	500
SIP Disconnect Timer *	500	500
SIP Expires Timer *	180000	180000
SIP PRACK Timer *	500	500
SIP Rel1XX Timer *	500	500
SIP Trying Timer *	500	500
SIP Rel1XX Enabled *	False	False
SIP Min-SE Value *	240	1800
SIPS URI Handling *	Reject	Reject
SIP statistics Periodic update Timer *	2	2
SIP Session Expires Timer *	1800	1800
SIP Trunk TspReg Retry *	2	2
SIP TCP Timer *	5	5
Send SIP Multicast TTL in SDP *	False	False

Clusterwide Parameters (Feature - General)

Call Park Display Timer *	10	10
Call Park Reversion Timer *	60	60
Maximum Call Duration Timer *	720	720
Maximum Hold Duration Timer *	360	360
Party Entrance Tone *	True	True
Suppress MOH to Conference Bridge *	True	True
Message Waiting Lamp Policy *	Primary Line - Light and Prompt	Primary Line - Light anc
Message Waiting Indicator Inbound Calling Search Space	< None >	
Multiple Tenant MWI Modes *	False	False
MWI Non Message Center Signaling Call Duration *	0	0
Message Waiting Indicator APDU Digit Translation CSS	< None >	
Block OffNet To OffNet Transfer *	False	False
Drop Ad Hoc Conference *	Never	Never

Clusterwide Parameters (Feature - Forward)

Forward Maximum Hop Count *	12	12
Forward No Answer Timer *	12	12
Max Forward Hops to DN *	12	12
Retain Forward Information *	True	False
Forward By Reroute Enabled *	False	False
Transform Forward by Reroute Destination *	True	True
Always Forward Switch Voice Mail Calls *	True	True
Forward By Reroute T1 Timer *	10	10
Include Original Called Info for Q.SIG Call Diversions *	Only after the first diversion	Only after the first dive

There are hidden parameters in this group. Click on Advanced button to see hidden parameters.

Clusterwide Parameters (Feature - Call Pickup)

Auto Call Pickup Enabled *	False	False
Call Pickup Locating Timer *	1	1
Call Pickup No Answer Timer *	12	12

Clusterwide Parameters (Feature - Refer)

Validate Refer-to URI *	Validate Except for Anonymous Users	Validate Except for Ano

Clusterwide Parameters (Feature - Replaces)

Block OffNet To OffNet Replaces *	False	False

Clusterwide Parameters (Feature - Redirection [3xx])

Redirection Ring No Answer Reversion Timer *	24	24
Maximum Redirection Count *	70	70

Clusterwide Parameters (Feature - Multilevel Precedence and Preemption)

Locations-based MLPP Enable *	False	False
Executive Override Call Preemptable *	False	False

Clusterwide Parameters (Feature - Path Replacement)

Path Replacement Enabled *	False	False
Path Replacement on Tromboned Calls *	True	True
Start Path Replacement Minimum Delay Time *	0	0
Start Path Replacement Maximum Delay Time *	0	0
Path Replacement T1 Timer *	30	30
Path Replacement T2 Timer *	15	15
Path Replacement PINX ID		
Path Replacement Calling Search Space	< None >	

Clusterwide Parameters (Feature - Call Back)

Call Back Enabled Flag *	True	True
Call Back Notification Audio File Name *	CallBack.raw	CallBack.raw
Connection Proposal Type *	Connection Retention	Connection Retention
Connection Response Type *	Default to Connection Retention	Default to Connection Retentior
Call Back Request Protection T1 Timer *	10	10
Call Back Recall T3 Timer *	20	20
Call Back Calling Search Space	< None >	
No Path Reservation *	True	True
Set Private Numbering Plan for Call Back *	False	False

Clusterwide Parameters (Route Plan)

Stop Routing on Out of Bandwidth Flag *	False	False
Stop Routing on Unallocated Number Flag *	True	True
Stop Routing on User Busy Flag *	True	True

Clusterwide Parameters (Hunt List)

Stop Hunting on Out of Bandwidth Flag *	False	False

Clusterwide Parameters (Service)

Default Network Hold MOH Audio Source ID *	1	1
Default User Hold MOH Audio Source ID *	1	1
Duplex Streaming Enabled *	False	False
Maximum Ad Hoc Conference *	4	4
Maximum MeetMe Conference Unicast *	4	4
Media Exchange Interface Capability Timer *	8	8
Media Exchange Timer *	12	12
Media Exchange Stop Streaming Timer *	8	8
Media Resource Allocation Timer *	12	12
Intercluster Capabilities Mismatch Timer *	1000	1000
Silence Suppression *	False	False
Silence Suppression for Gateways *	False	False
Strip G.729 Annex B (Silence Suppression) from Capabilities *	False	False

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Clusterwide Parameters (System - General)

Always Use Dial Tone Setting *	Default	Default
Max Simultaneous Cisco CallManager Initializations *	0	0
Restart Cisco CallManager on Initialization Exception *	True	True
Call Control Initialization Timer *	90	90
Calling Search Space Initialization Timer *	900	900
Digit Analysis Initialization Timer *	900	900
Database Initialization Timer *	900	900
Device Initialization Timer *	360	360
Digit Analysis Timer *	6	6
Directory Initialization Timer *	90	90
Media Initialization Timer *	90	90
Route Plan Initialization Timer *	600	600
Supplementary Services Initialization Timer *	900	900
Statistics Enabled *	True	True
Time Of Day Initialization Timer *	900	900

There are hidden parameters in this group. Click on Advanced button to see hidden parameters.

Clusterwide Parameters (System - QOS)

Priority Class *	Normal Priority	Normal Priority
DSCP for Audio Calls *	EF DSCP (101110)	EF DSCP (101110)
DSCP for Video Calls *	AF41 DSCP (100010)	AF41 DSCP (100010)
DSCP for Audio Calls when RSVP Fails *	default DSCP (000000)	default DSCP (000000)
DSCP for Video Calls when RSVP Fails *	default DSCP (000000)	default DSCP (000000)
DSCP for ICCP Protocol Links *	CS3(precedence 3) DSCP (011000)	CS3(precedence 3) DSCI

Clusterwide Parameters (System - SDL)

SDL Listening Port Number *	8002	8002
SDL Max Router Latency *	20	20
Suppress Debug Info for Router Death *	0	0
Asynchronous SDL Logging Enabled *	False	False

Clusterwide Parameters (System - Location and Region)

Enforce Millisecond Packet Size *	True	True
Locations Initialization Timer *	90	90
Locations Trace Details Enabled *	False	False
Preferred G711 Millisecond Packet Size *	20	20
Preferred G723 Millisecond Packet Size *	30	30
Preferred G729 Millisecond Packet Size *	20	20
Preferred GSM EFR Bytes Packet Size *	31	31
Regions Initialization Timer *	120	120
Intraregion Audio Codec Default *	G711	G711
Interregion Audio Codec Default *	G729	G729
Intraregion Video Call Bandwidth Default *	384	384
Interregion Video Call Bandwidth Default *	384	384

Clusterwide Parameters (System - CCM Automated Alternate Routing)

Automated Alternate Routing Enable *	False	False
AAR Groups Initialization Timer *	90	90

Clusterwide Parameters (System - RSVP)

Default inter-location RSVP Policy *	No Reservation	No Reservation
RSVP Retry Timer *	60	60
Mandatory RSVP Mid-call Retry Counter *	3	1
Mandatory RSVP mid call error handle option *	Call becomes best effort	Call becomes best effort
RSVP Video Tspec Burst Size Factor *	5	5
MLPP EXECUTIVE_OVERRIDE To RSVP Priority Mapping *	65535	65535
MLPP FLASH_OVERRIDE To RSVP Priority Mapping *	65534	65534
MLPP FLASH To RSVP Priority Mapping *	65533	65533
MLPP IMMEDIATE To RSVP Priority Mapping *	65532	65532
MLPP PL_PRIORITY To RSVP Priority Mapping *	65531	65531
MLPP PL_ROUTINE To RSVP Priority Mapping *	65530	65530
RSVP Audio Application ID *	AudioStream	AudioStream
RSVP Video Application ID *	VideoStream	VideoStream
QoS Policy Initialization Timer *	120	120
RSVP Session Manager Initialization Timer *	120	120

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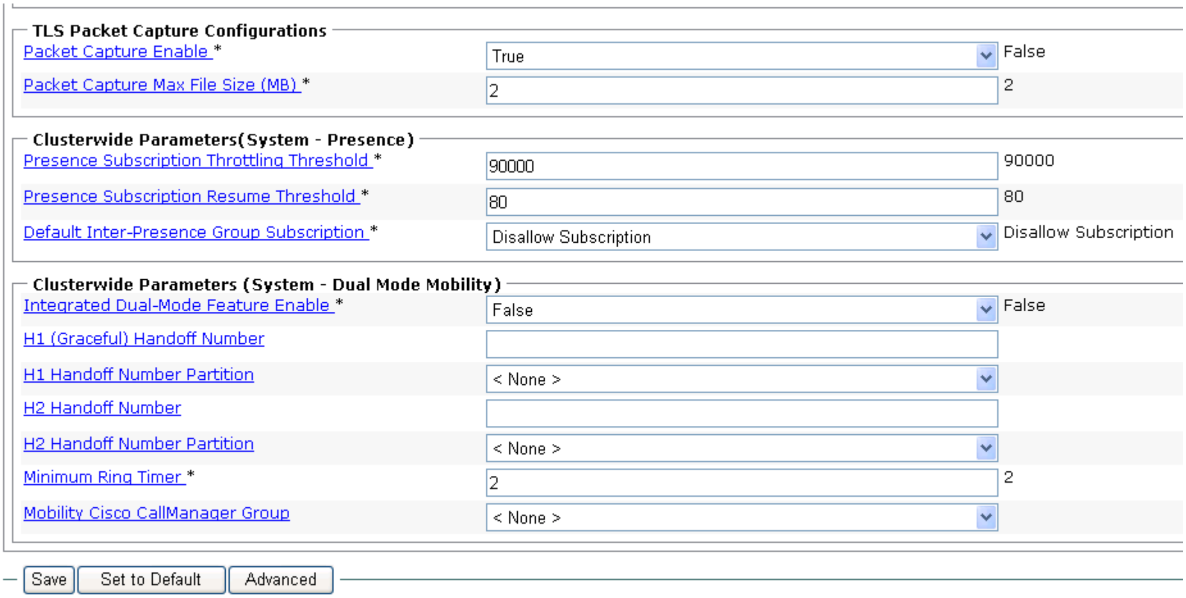

3. Click **Save**.

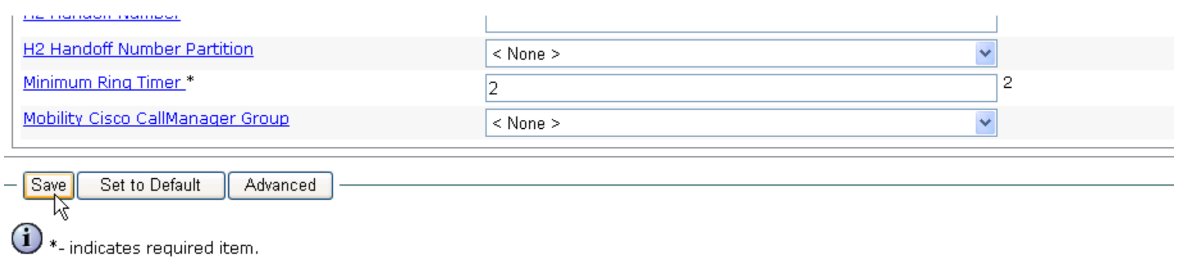

Figure 513. Save

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Appendix O
Service Activation and Service Parameters for CUCM Version 6.0(1)

Introduction

The appendix contains information for service activation and service parameters for the CUCM Version 6.0(1) to verify the configurations in this document.

Note: The default values support T.38 traffic. It is not necessary to change any fields to enable T.38 support on CUCM.

Configuring Service Activation

The following is CCM services used during this configuration verification

Not all setting are required for T.38 support.

➢ **Follow the steps below.**

1. Open the Cisco Unified Communications Manager 6.0(1).
2. From the Tool menu, select Service Activation.

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3. The following screen appears. Select the services as indicated.

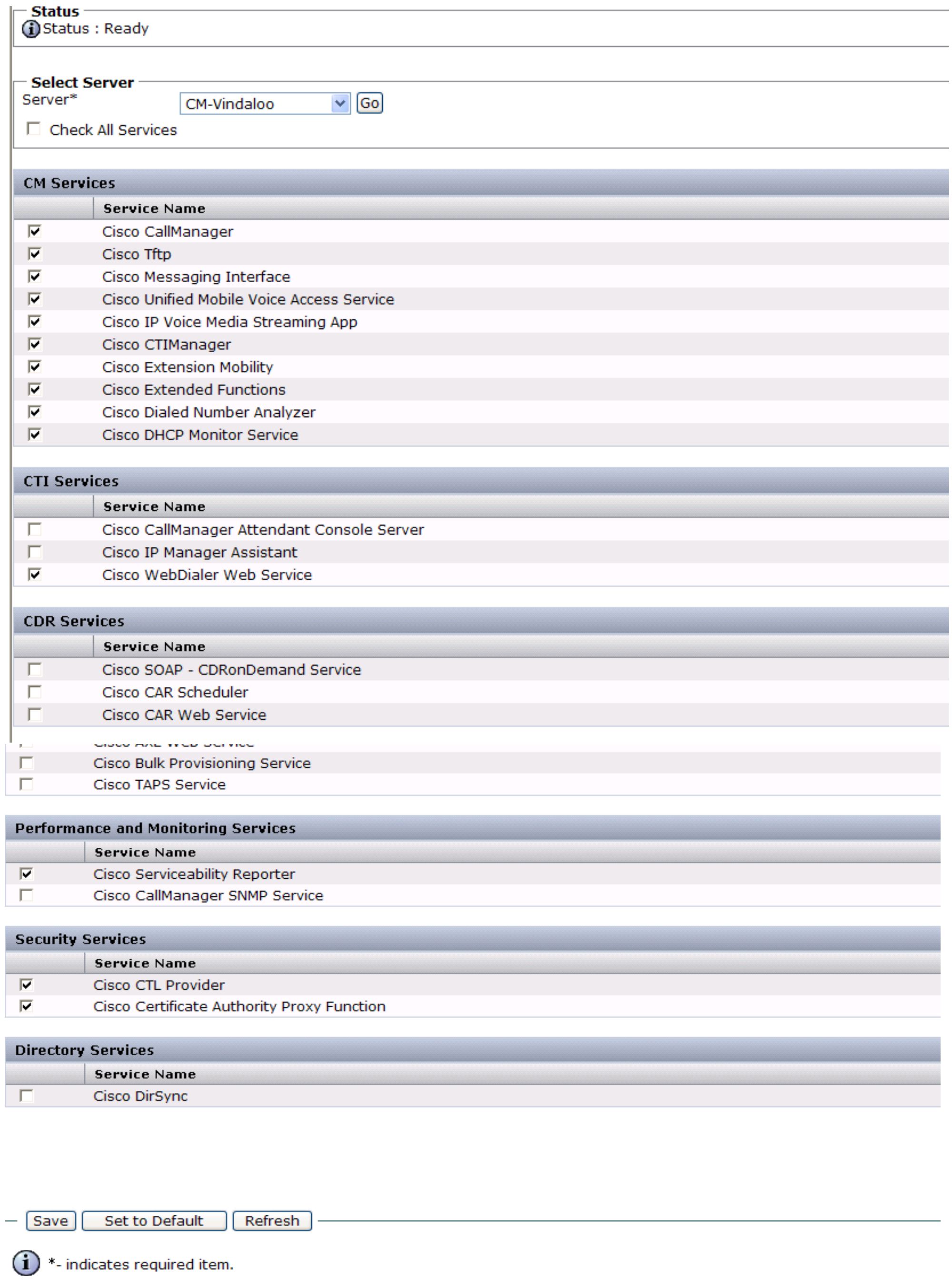


Figure 514. Service Activation

Configuring System Service Parameters

➢ **Follow the steps below to configure service parameters for CUCM version 6.0(1).**

1. From the System menu, select Service Parameters.

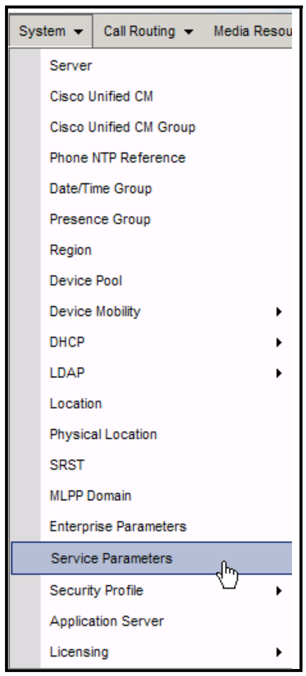


Figure 515. Service Parameters

2. Click Advanced.

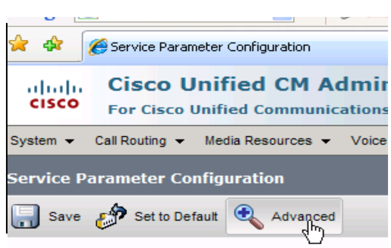
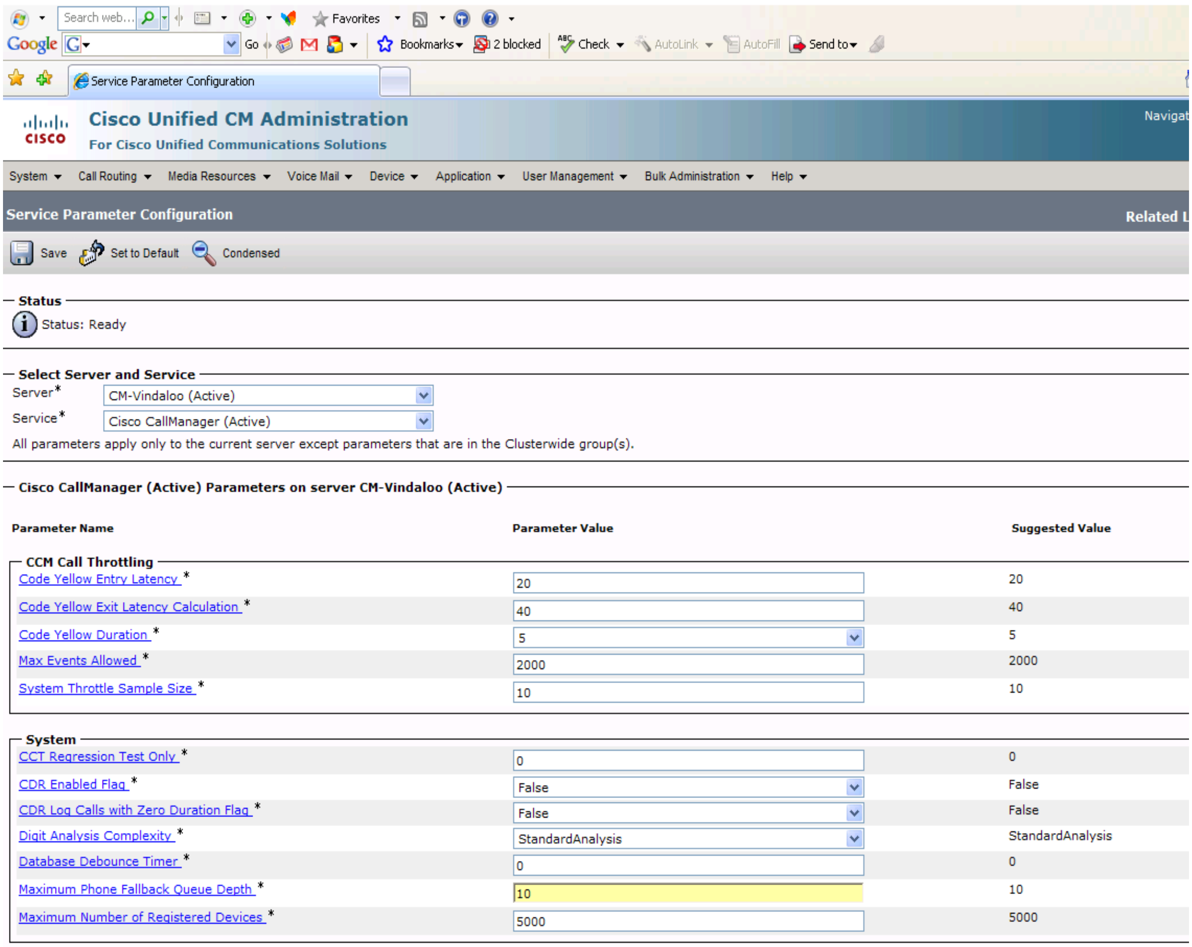


Figure 516. Advanced button

The screen on the following pages appears with the service parameters and suggested values to use in your configuration

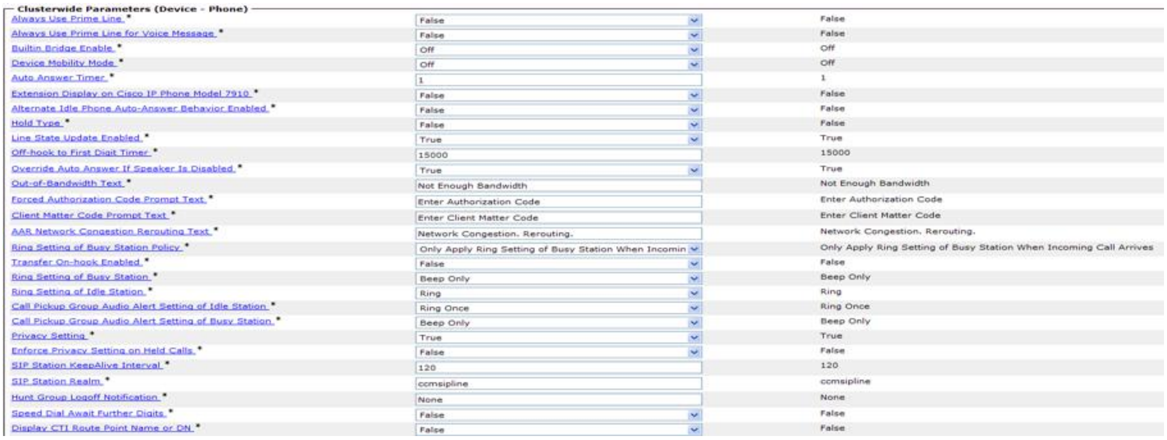


SDL Trace

SDL Trace Data Flags *	0x8000013F	0x00000111
SDL Trace Flush Immediately *	False	False
SDL Trace Data Size *	0	0
SDL Trace Flag *	False	True
SDL Trace Max File Size *	2	
SDL Trace Total Number of Files *	375	
SDL TraceType Flags *	0xF102FFF7	0x8000EB15
SDL XML Trace Flag *	False	False

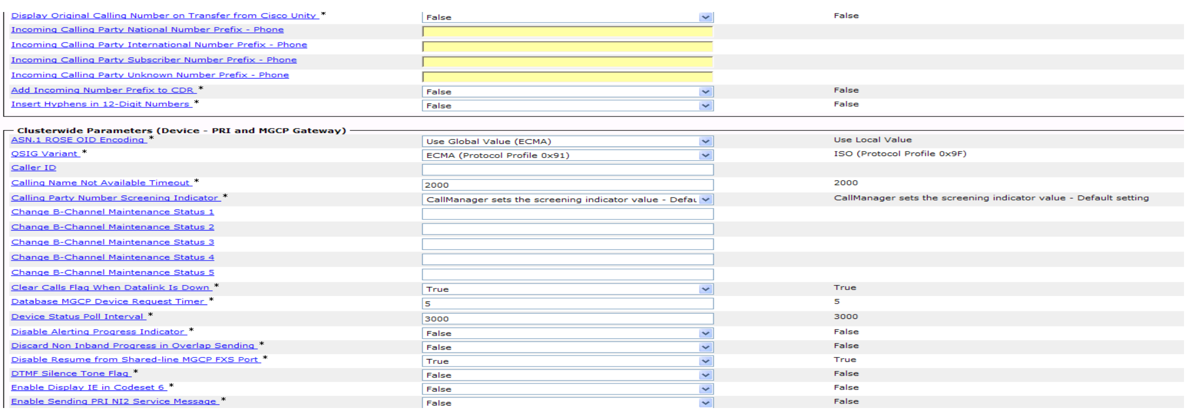
Clusterwide Parameters (Device - General)

Call Diagnostics Enabled *	Disabled	Disabled
Display FAC in CDR *	False	False
Show Line Group Member DN in finalCalledPartyNumber CDR Field *	False	False
CTI New Call Accept Timer *	4	4
CTI Generate Digits Interval *	250	250
CTI Dial Digits Interval *	250	250
CTI Await Further Digits *	False	False
Disable Nonregistered SCCP KeepAlives *	True	True
Retain Media on Disconnect with PI for Active Call *	False	False
Station and Backup Server KeepAlive Interval *	60	60
Station KeepAlive Interval *	30	30
Status Enquiry Poll Flag *	False	False
Strip # Sign from Called Party Number *	True	True
T301 Timer *	180000	180000
T302 Timer *	15000	15000
T303 Timer *	4000	4000
T304 Timer *	30000	30000
T305 Timer *	30000	30000
T306 Timer *	30000	30000
T308 Timer *	4000	4000
T309 Timer *	90000	90000
T310 Timer *	60000	60000
T313 Timer *	4000	4000
T316 Timer *	120000	120000
T317 Timer *	100000	100000
T321 Timer *	30000	30000
T322 Timer *	4000	4000
Tone on Hold Timer *	10	10
Unknown Caller ID		
Unknown Caller ID Flag *	True	True
Unknown Caller ID Text		
Call Classification *	OffNet	OffNet
Always Display Original Dialed Number *	False	False
Out of Bandwidth Cause Code Substitution *	34	34



Clusterwide Parameters (Device - Phone)

Always Use Prime Line *	False	False
Always Use Prime Line for Voice Message *	False	False
Builtin Bridge Enable *	Off	Off
Device Mobility Mode *	Off	Off
Auto Answer Timer *	1	1
Extension Display on Cisco IP Phone Model 7910 *	False	False
Alternate Idle Phone Auto-Answer Behavior Enabled *	False	False
Hold Type *	False	False
Line State Update Enabled *	True	True
Off-hook to First Digit Timer *	15000	15000
Override Auto Answer If Speaker Is Disabled *	True	True
Out-of-Bandwidth Text *	Not Enough Bandwidth	Not Enough Bandwidth
Forced Authorization Code Prompt Text *	Enter Authorization Code	Enter Authorization Code
Client Matter Code Prompt Text *	Enter Client Matter Code	Enter Client Matter Code
AAR Network Congestion Rerouting Text *	Network Congestion. Rerouting.	Network Congestion. Rerouting.
Ring Setting of Busy Station Policy *	Only Apply Ring Setting of Busy Station When Incomin	Only Apply Ring Setting of Busy Station When Incoming Call Arrives
Transfer On-hook Enabled *	False	False
Ring Setting of Busy Station *	Beep Only	Beep Only
Ring Setting of Idle Station *	Ring	Ring
Call Pickup Group Audio Alert Setting of Idle Station *	Ring Once	Ring Once
Call Pickup Group Audio Alert Setting of Busy Station *	Beep Only	Beep Only
Privacy Setting *	True	True
Enforce Privacy Setting on Held Calls *	False	False
SIP Station KeepAlive Interval *	120	120
SIP Station Realm *	ccmsipline	ccmsipline
Hunt Group Logoff Notification *	None	None
Speed Dial Await Further Digits *	False	False
Display CTI Route Point Name or DN *	False	False



Display Original Calling Number on Transfer from Cisco Unity *	False	False
Incoming Calling Party National Number Prefix - Phone		
Incoming Calling Party International Number Prefix - Phone		
Incoming Calling Party Subscriber Number Prefix - Phone		
Incoming Calling Party Unknown Number Prefix - Phone		
Add Incoming Number Prefix to CDR *	False	False
Insert Hyphens in 12-Digit Numbers *	False	False

Clusterwide Parameters (Device - PRI and MGCP Gateway)

ASN.1 ROSE OID Encoding *	Use Global Value (ECMA)	Use Local Value
QSIG Variant *	ECMA (Protocol Profile 0x91)	ISO (Protocol Profile 0x9F)
Caller ID		
Calling Name Not Available Timeout *	2000	2000
Calling Party Number Screening Indicator *	CallManager sets the screening indicator value - Defau	CallManager sets the screening indicator value - Default setting
Change B-Channel Maintenance Status 1		
Change B-Channel Maintenance Status 2		
Change B-Channel Maintenance Status 3		
Change B-Channel Maintenance Status 4		
Change B-Channel Maintenance Status 5		
Clear Calls Flag When Datalink Is Down *	True	True
Database MGCP Device Request Timer *	5	5
Device Status Poll Interval *	3000	3000
Disable Alerting Progress Indicator *	False	False
Discard Non Inband Progress in Overlap Sending *	False	False
Disable Resume from Shared-line MGCP FXS Port *	True	True
DTMF Silence Tone Flag *	False	False
Enable Display IE in Codeset 6 *	False	False
Enable Sending PRI NI2 Service Message *	False	False

Gateway Poll Timer *	10	10
Location In PRI Progress Indicator IE (User Side Only) *	Use the Network Side PRI progress indicator IE	Use the Network Side PRI progress indicator IE
Matching Calling Party with Attendant Flag *	False	False
MGCP Database Query Delay Timer *	1000	1000
MGCP FXS On-Hook Pending Timer *	3	3
MGCP Response Timer *	30	30
MGCP Timer *	3	3
MGCP Retry Timeout Handling *	Forceful Failover	Forceful Failover
Numbering Plan Info *	1	1
Overlap Receiving Flag for PRI *	True	True
Outgoing Media Connect Time for PRI *	Connect ASAP	Connect ASAP
Port Release Timer *	0	0
PRI 4ESS UUIE Device Type *	0	0
SMDI Call Delay Timer *	0	0
Stable in State 4 Flag *	False	False
Suppress Out-of-Channels Alarms *	True	True
I-Frame Timer *	2000	2000
Convert Progress to Disconnect for User Side PRI EURO *	False	False
User-to-User IE Status *	False	False
Convert European Progress Message to Alerting *	False	False
Enable DMS PRI Notify Message from User to Network *	True	True
Audit OOS Channels Interval *	10	10
Use * Key to Erase Dialed Digits During Hookflash Transfer *	True	True
Incoming Calling Party National Number Prefix - MGCP		
Incoming Calling Party International Number Prefix - MGCP		
Incoming Calling Party Subscriber Number Prefix - MGCP		
Incoming Calling Party Unknown Number Prefix - MGCP		
Digital and Analog Ports Enabled *	True	True

RAS RRQ Timer *	3	3
Ras URQ Timer *	3	3
Retry Count for ARQ *	2	2
Retry Count for BRQ *	2	2
Retry Count for DRQ *	2	2
Retry Count for RRQ *	2	2
Retry Count for URQ *	1	1
Send Product ID and Version ID *	False	False
Send Progress Timer *	3000	3000
Send H225 User Info Message *	User Info for Call Progress Tone	User Info for Call Progress Tone
Status Enquiry Poll Timer *	10000	10000
Device Name of GK-controlled Trunk That Will Use Port 1720 *	None	None
Host Name/IP Address of GK That Will Use RAS UDP Port 1719 *	None	None
Fail Call If MTP Allocation Fails *	False	False
Overlap Receiving Flag for H323 *	False	False

Clusterwide Parameters (Device - SIP)

Retry Count for SIP Bye *	10	10
Retry Count for SIP Cancel *	10	10
Retry Count for SIP Invite *	6	6
Retry Count for SIP PRACK *	6	6
Retry Count for SIP Rel1XX *	10	10
Retry Count for SIP Publish *	6	6
Retry Count for SIP Response *	6	6
SIP Connect Timer *	500	500
SIP Disconnect Timer *	500	500
SIP Expires Timer *	180000	180000
SIP PRACK Timer *	500	500

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SIP Rel1XX Timer *	500	500
SIP Trying Timer *	500	500
SIP Publish Timer *	500	500
SIP Rel1XX Enabled *	False	False
SIP Min-SE Value *	1800	1800
SIPS URI Handling *	Reject	Reject
SIP statistics Periodic update Timer *	2	2
SIP Session Expires Timer *	1800	1800
SIP Trunk TspReq Retry *	2	2
SIP TCP Timer *	5	5
SIP Station UDP Port Throttle Threshold *	50	50
SIP Trunk UDP Port Throttle Threshold *	150	200
Send SIP Multicast TTL in SDP *	False	False
Default PUBLISH Expiration Timer *	3600	3600
Minimum PUBLISH Expiration Timer *	60	60
CUP PUBLISH Trunk	< None >	
Multicast MOH Direction Attribute for SIP *	RecvOnly	RecvOnly

Clusterwide Parameters (Feature - General)

Call Park Display Timer *	10	10
Caller ID Display Priority Enabled *	True	True
Call Park Reversion Timer *	60	60
Maximum Call Duration Timer *	720	720
Maximum Hold Duration Timer *	360	360
Party Entrance Tone *	True	True
Suppress MOH to Conference Bridge *	True	True
Message Waiting Lamp Policy *	Primary Line - Light and Prompt	Primary Line - Light and Prompt
Audible Message Waiting Indication Policy *	OFF	OFF
Message Waiting Indicator Inbound Calling Search Space	< None >	

Multiple Tenant MWI Modes *	False	False
MWI Non Message Center Signaling Call Duration *	0	0
Message Waiting Indicator APDU Digit Translation CSS	< None >	
Block OffNet To OffNet Transfer *	False	False
Drop Ad Hoc Conference *	Never	Never
Advanced Ad Hoc Conference Enabled *	False	False
Non-linear Ad Hoc Conference Linking Enabled *	False	False

Clusterwide Parameters (Feature - Forward)

Forward Maximum Hop Count *	12	12
Forward No Answer Timer *	12	12
Max Forward Hops to DN *	12	12
Retain Forward Information *	False	False
Forward By Reroute Enabled *	True	False
Transform Forward by Reroute Destination *	True	True
Include Voice Mailbox Address in QSIG Call Diversion APDUs *	False	False
Copy QSIG DivertingNr to Redirecting Number *	False	False
Always Forward Switch Voice Mail Calls *	True	True
Forward By Reroute T1 Timer *	10	10
Include Original Called Info for Q.SIG Call Diversions *	Only after the first diversion	Only after the first diversion
Max Forward UnRegistered Hops to DN *	0	0
CFA CSS Activation Policy *	With Configured CSS	With Configured CSS

Clusterwide Parameters (Feature - Hold Reversion)

Hold Reversion Duration *	0	0
Hold Reversion Notification Interval *	30	30
CFA Destination Override *	False	False

Clusterwide Parameters (Feature - Hold Reversion)

Hold Reversion Duration *	0	0
Hold Reversion Notification Interval *	30	30
CFA Destination Override *	False	False

Clusterwide Parameters (Feature - Call Pickup)

Auto Call Pickup Enabled *	False	False
Call Pickup Locating Timer *	1	1
Call Pickup No Answer Timer *	12	12

Clusterwide Parameters (Feature - Refer)

Validate Refer-to URI *	Validate Except for Anonymous Users	Validate Except for Anonymous Users

Clusterwide Parameters (Feature - Replaces)

Block OffNet To OffNet Replaces *	False	False

Clusterwide Parameters (Feature - Redirection [3xx])

Redirection Ring No Answer Reversion Timer *	24	24
Maximum Redirection Count *	70	70

Clusterwide Parameters (Feature - Multilevel Precedence and Preemption)

Locations-based MLPP Enable *	False	False
Executive Override Call Preemptable *	False	False

Clusterwide Parameters (Feature - Path Replacement)

Path Replacement Enabled *	True	False
Path Replacement on Tromboned Calls *	True	True
Start Path Replacement Minimum Delay Time *	0	0
Start Path Replacement Maximum Delay Time *	0	0
Path Replacement T1 Timer *	30	30
Path Replacement T2 Timer *	15	15
Path Replacement PINX ID	4100	
Path Replacement Calling Search Space	< None >	

Clusterwide Parameters (Feature - Call Back)

Call Back Enabled Flag *	True	True
Call Back Notification Audio File Name *	CallBack.raw	CallBack.raw
Connection Proposal Type *	Connection Retention	Connection Retention
Connection Response Type *	Default to Connection Retention	Default to Connection Retention
Call Back Request Protection T1 Timer *	10	10
Call Back Recall T3 Timer *	20	20
Call Back Calling Search Space	< None >	
No Path Reservation *	True	True
Set Private Numbering Plan for Call Back *	False	False

Clusterwide Parameters (Feature - Call Recording)

Play Recording Notification Tone To Observed Target *	False	False
Play Recording Notification Tone To Observed Connected Parties *	False	False

Clusterwide Parameters (Feature - Monitoring)

Play Monitoring Notification Tone To Observed Target *	False	False
Play Monitoring Notification Tone To Observed Connected Parties *	False	False

Clusterwide Parameters (Route Plan)

Stop Routing on Out of Bandwidth Flag *	False	False
Stop Routing on Unallocated Number Flag *	True	True
Stop Routing on User Busy Flag *	True	True
Stop Routing on Q.931 Disconnect Cause Code		

Clusterwide Parameters (Hunt List)		
Stop Hunting on Out of Bandwidth Flag *	False	False

Clusterwide Parameters (Service)		
Default Network Hold MOH Audio Source ID *	1	1
Default User Hold MOH Audio Source ID *	1	1
Duplex Streaming Enabled *	False	False
Maximum Ad Hoc Conference *	4	4
Maximum MeetMe Conference Unicast *	4	4
Media Exchange Interface Capability Timer *	8	8
Media Exchange Timer *	12	12
Media Exchange Stop Streaming Timer *	8	8
Media Resource Allocation Timer *	12	12
Intercluster Capabilities Mismatch Timer *	1000	1000
Silence Suppression *	False	False
Silence Suppression for Gateways *	False	False
Strip G.729 Annex B (Silence Suppression) from Capabilities *	False	False

Clusterwide Parameters (System - General)		
Always Use Dial Tone Setting *	Default	Default
Restart Cisco CallManager on Initialization Exception *	True	True
Call Control Initialization Timer *	90	90
Calling Search Space Initialization Timer *	900	900
Digit Analysis Initialization Timer *	900	900
Database Initialization Timer *	900	900
Device Initialization Timer *	360	360
Dialing Forest Dump Enabled *	False	False
Bundle Outbound SCCP Messages Timer *	100	100
Digit Analysis Timer *	6	6
Directory Initialization Timer *	90	90
Media Initialization Timer *	90	90
Route Plan Initialization Timer *	600	600
Supplementary Services Initialization Timer *	900	900
Statistics Enabled *	True	True
Time Of Day Initialization Timer *	900	900
Device Registration/Unregistration Propagation Queue Depth *	25	25

Clusterwide Parameters (System - QOS)		
Priority Class *	Normal Priority	Normal Priority
DSCP for Audio Calls *	EF DSCP (101110)	EF DSCP (101110)
DSCP for Priority Audio Calls *	EF DSCP (101101)	EF DSCP (101101)
DSCP for Immediate Audio Calls *	EF DSCP (101100)	EF DSCP (101100)
DSCP for Flash Audio Calls *	EF DSCP (101001)	EF DSCP (101001)
DSCP for Flash Override Audio Calls *	EF DSCP (101010)	EF DSCP (101010)
DSCP for Executive Override Audio Calls *	EF DSCP (101010)	EF DSCP (101010)
DSCP for Video Calls *	AF41 DSCP (100010)	AF41 DSCP (100010)
DSCP for Audio Calls when RSVP Fails *	default DSCP (000000)	default DSCP (000000)
DSCP for Video Calls when RSVP Fails *	default DSCP (000000)	default DSCP (000000)
DSCP for ICCP Protocol Links *	CS3(precedence 3) DSCP (011000)	CS3(precedence 3) DSCP (011000)

Clusterwide Parameters (System - SDL)		
SDL Listening Port Number *	8002	8002
SDL Max Router Latency *	20	20
Suppress Debug Info for Router Death *	0	0
Asynchronous SDL Logging Enabled *	False	False

Clusterwide Parameters (System - Location and Region)

Enforce Millisecond Packet Size *	True	True
Locations Initialization Timer *	90	90
Locations Trace Details Enabled *	False	False
Preferred G.711 Millisecond Packet Size *	20	20
Preferred G.722 Millisecond Packet Size *	20	20
Preferred G.723 Millisecond Packet Size *	30	30
Preferred G.729 Millisecond Packet Size *	20	20
Preferred GSM EFR Bytes Packet Size *	31	31
G722 Codec Enabled *	Enabled for All Devices	Enabled for All Devices
iLBC Codec Enabled *	Enabled for All Devices	Enabled for All Devices
Regions Initialization Timer *	120	120
Intraregion Audio Codec Default *	G711/G722	G711/G722
Interregion Audio Codec Default *	G729	G729
Intraregion Video Call Bandwidth Default *	384	384
Interregion Video Call Bandwidth Default *	384	384
Link Loss Type Default *	Low Loss	Low Loss

Clusterwide Parameters (System - CCM Automated Alternate Routing)

Automated Alternate Routing Enable *	False	False
AAR Groups Initialization Timer *	90	90

Clusterwide Parameters (System - RSVP)

Default inter-location RSVP Policy *	No Reservation	No Reservation
RSVP Retry Timer *	60	60
Mandatory RSVP Mid-call Retry Counter *	1	1
Mandatory RSVP mid call error handle option *	Call becomes best effort	Call becomes best effort
RSVP Video Tspec Burst Size Factor *	5	5
MLPP EXECUTIVE_OVERRIDE To RSVP Priority Mapping *	65535	65535
MLPP FLASH_OVERRIDE To RSVP Priority Mapping *	65534	65534
MLPP FLASH To RSVP Priority Mapping *	65533	65533
MLPP IMMEDIATE To RSVP Priority Mapping *	65532	65532
MLPP PL_PRIORITY To RSVP Priority Mapping *	65531	65531
MLPP PL_ROUTINE To RSVP Priority Mapping *	65530	65530
RSVP Audio Application ID *	AudioStream	AudioStream
RSVP Video Application ID *	VideoStream	VideoStream
QoS Policy Initialization Timer *	120	120
RSVP Session Manager Initialization Timer *	120	120
RSVP Response Timer *	2	2

TLS Packet Capture Configurations

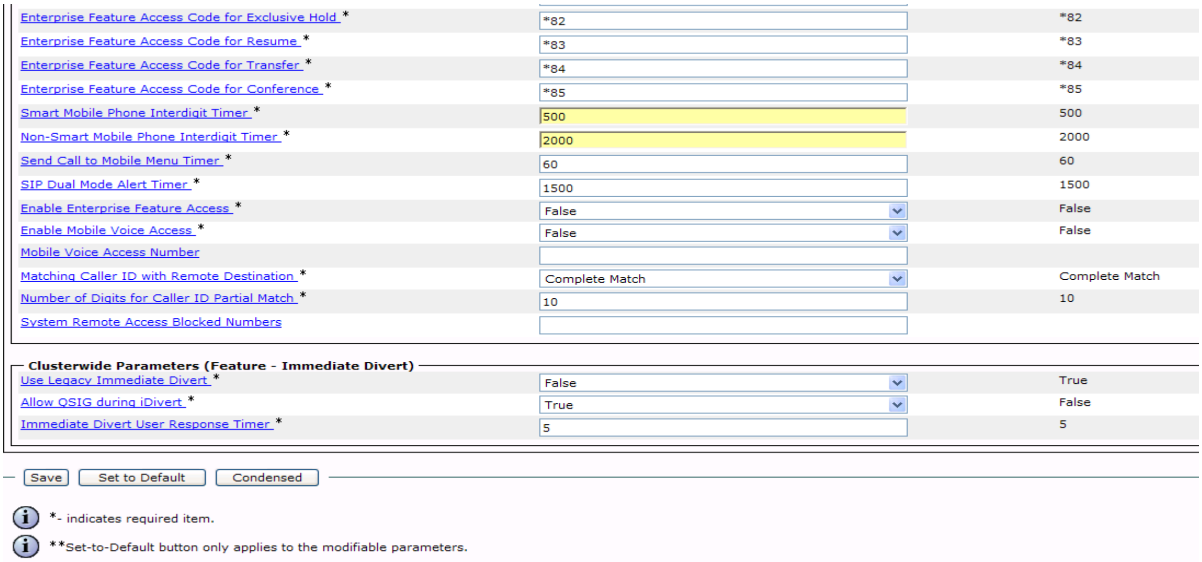
Packet Capture Enable *	False	False
Packet Capture Max File Size (MB) *	2	2

Clusterwide Parameters(System - Presence)

Presence Subscription Throttling Threshold *	15000	15000
Presence Subscription Resume Threshold *	80	80
Default Inter-Presence Group Subscription *	Disallow Subscription	Disallow Subscription
BLF Status Depicts DND *	False	False

Clusterwide Parameters (System - Mobility)

Enterprise Feature Access Code for Hold *	*81	*81
Enterprise Feature Access Code for Exclusive Hold *	*82	*82
Enterprise Feature Access Code for Resume *	*83	*83
Enterprise Feature Access Code for Transfer *	*84	*84
Enterprise Feature Access Code for Conference *	*85	*85



Enterprise Feature Access Code for Exclusive Hold *	*82	*82
Enterprise Feature Access Code for Resume *	*83	*83
Enterprise Feature Access Code for Transfer *	*84	*84
Enterprise Feature Access Code for Conference *	*85	*85
Smart Mobile Phone Interdigit Timer *	500	500
Non-Smart Mobile Phone Interdigit Timer *	2000	2000
Send Call to Mobile Menu Timer *	60	60
SIP Dual Mode Alert Timer *	1500	1500
Enable Enterprise Feature Access *	False	False
Enable Mobile Voice Access *	False	False
Mobile Voice Access Number		
Matching Caller ID with Remote Destination *	Complete Match	Complete Match
Number of Digits for Caller ID Partial Match *	10	10
System Remote Access Blocked Numbers		

Clusterwide Parameters (Feature - Immediate Divert)

Use Legacy Immediate Divert *	False	True
Allow QSIG during iDivert *	True	False
Immediate Divert User Response Timer *	5	5

Save | Set to Default | Condensed

*- indicates required item.

**Set-to-Default button only applies to the modifiable parameters.

Figure 517. Service Parameters - Suggested Values

3. Click Save.

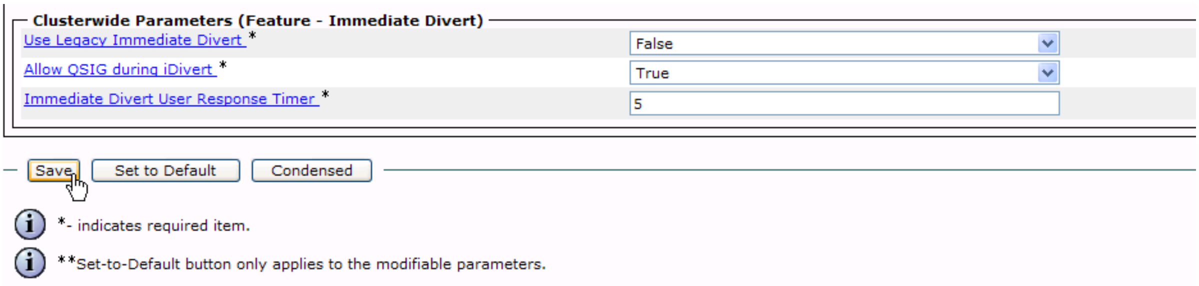


Figure 518. Save