Spectrum Enterprise SIP Trunking Service
Cisco CUCM R11.0.1 with CUBE R11.5.0
IP PBX Configuration Guide

About Spectrum Enterprise:

Spectrum Enterprise is a division of Charter Communications following a merger with Time Warner Cable and acquisition of Bright House Networks. Spectrum Enterprise is a national provider of scalable, fiber technology solutions. The Spectrum Enterprise portfolio includes networking and managed services solutions, including Internet access, Ethernet and Managed Network Services, Voice, TV and Cloud solutions. Our industry-leading team of experts works closely with clients to achieve greater business success.

About this document:

Spectrum Enterprise assures IP PBX compatibility by conducting interoperability testing to ensure any potential compatibility issues have been resolved prior to installation. Please review the IP PBX configuration instructions in this guide prior to your installation date.

Be advised that this document may contain references to Charter or Charter Business. All references to Charter should be read as Spectrum Enterprise.

Thank you,

Spectrum Enterprise

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Cisco CUCM R11.0.1 with CUBE R11.5.0 IP PBX Configuration Guide

Charter COMMUNICATIONS

1 Introduction

The document describes how to configure the Cisco Unified Communication Manager (CUCM) R11.0.1 with the Cisco Unified Border Element (CUBE) R11.5.0 IP PBX to interoperate within the Charter network. It does not provide any information how to provision, configure or use the features of the IP PBX. Please refer to the documentation provided with the IP PBX or contact the vendor.

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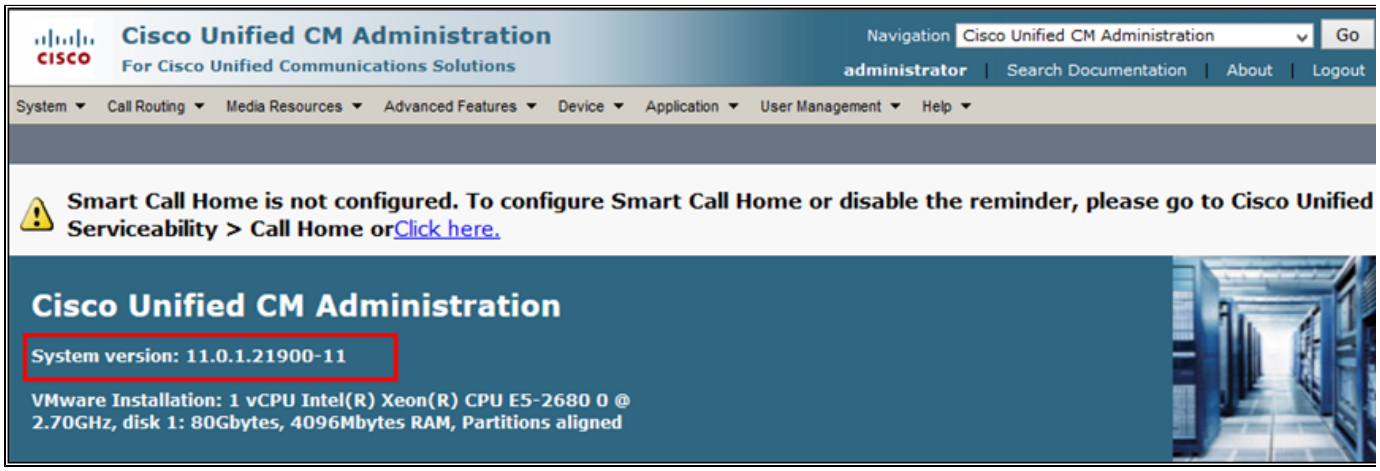
2 Configuring The Unified Communications Manager

2.1 Cisco UCM Version

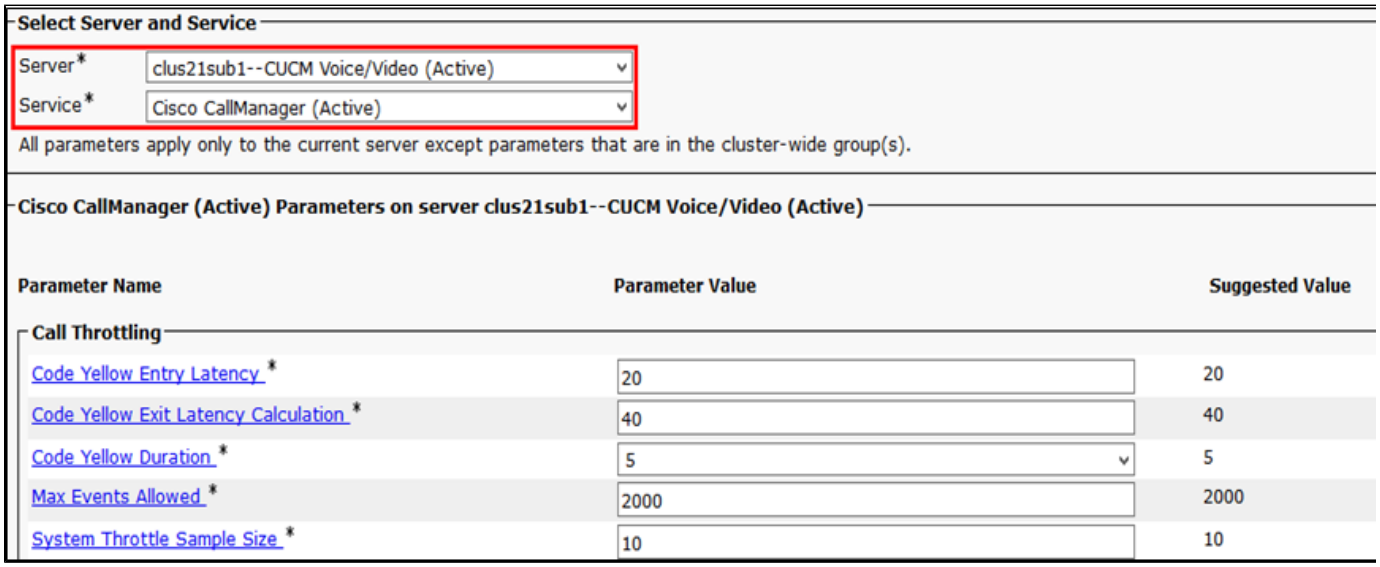


2.2 Cisco Call Manager Service Parameters

Follow the step-by-step procedure.

Steps	Action
1	Navigate to **System > Service Parameters**
2	Select Server* : **Clus21Sub1 - - CUCM Voice/Video (Active)**
3	Select Service* : **Cisco Call Manager (Active)**

4	All other fields are set to default values
5	Go to the next table

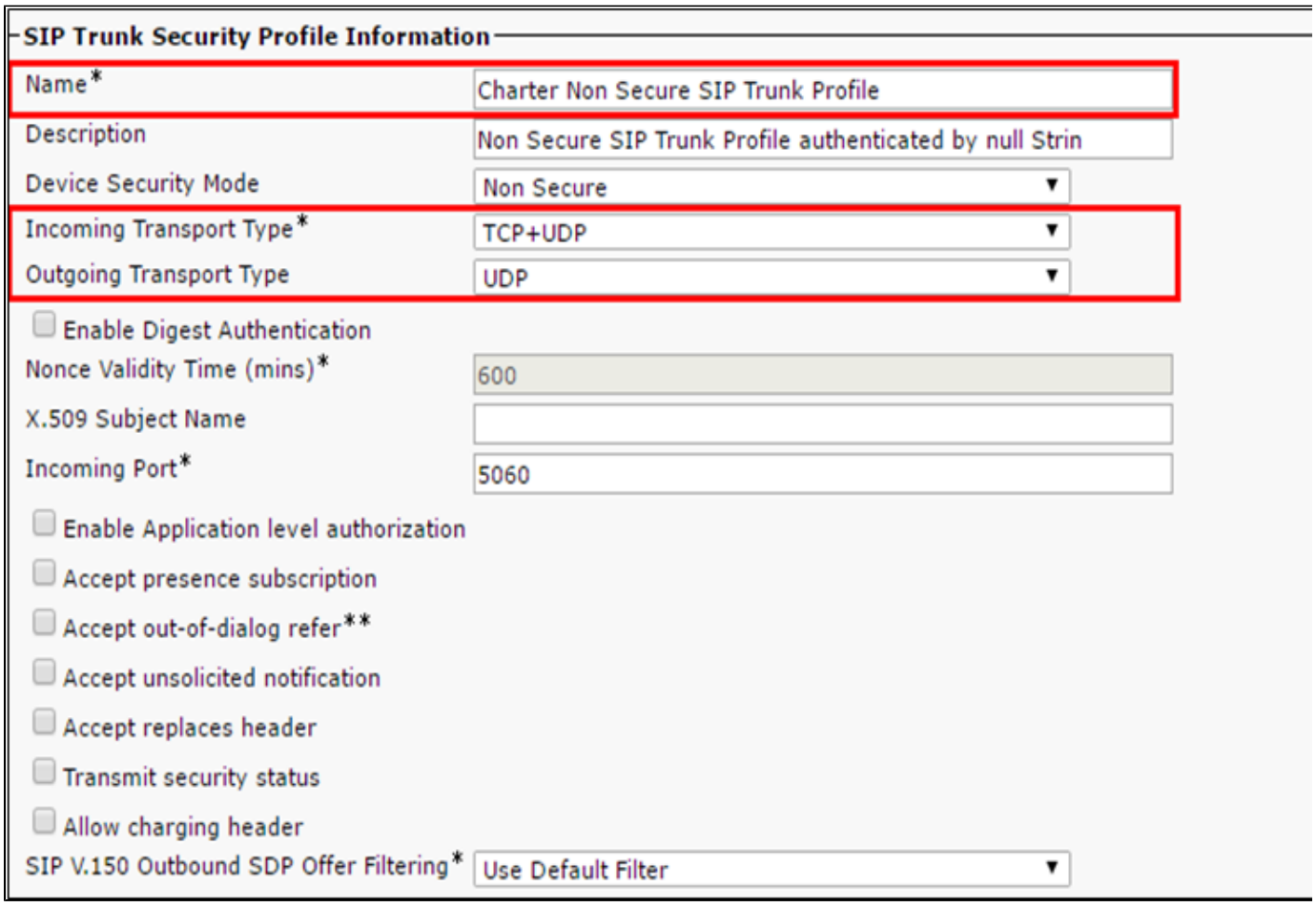


3. Off-net Calls via Charter SIP Trunk

Off-net calls are served by SIP trunks configured between CIsco UCM and Charter Network and calls are routed via Cisco UBE.

4. SIP Trunk Security Profile

Steps	Action	Description
6	Navigate to **System > Security > SIP Trunk Security Profile**	
7	Name* : **Charter Non Secure SIP Trunk Profile**	
8	Description: **non Secure SIP Trunk Profile authenticated by null String**	
9	Incoming Transport Type: **TCP + UDP**	
10	Outgoing Transport Type: **UDP**	SIP trunks to Charter SBC should use UDP as a transport protocol for SIP. This is configured using SIP Trunk Security profile, which is later assigned to the SIP trunk itself.
11	Go to the next table	

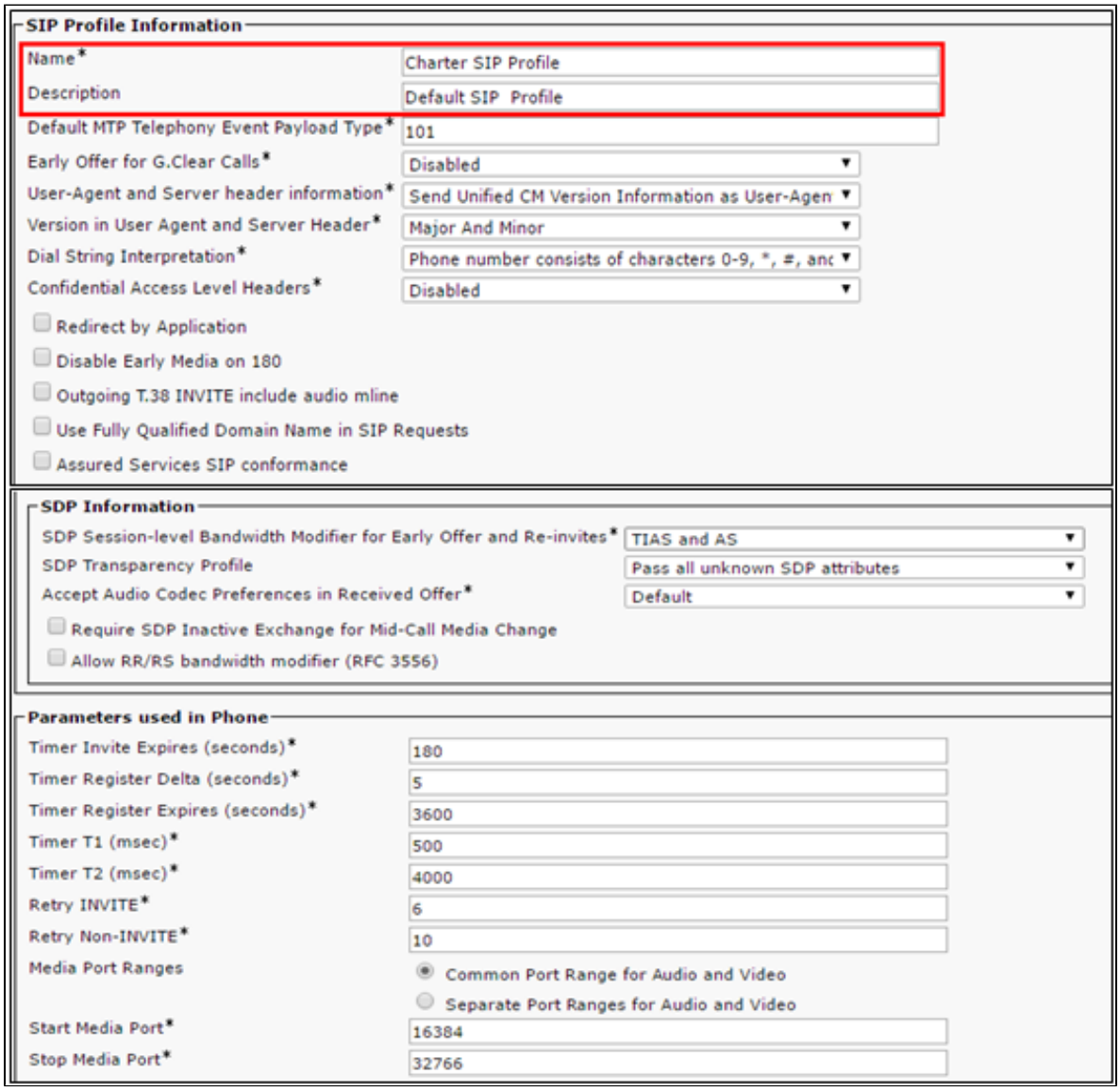


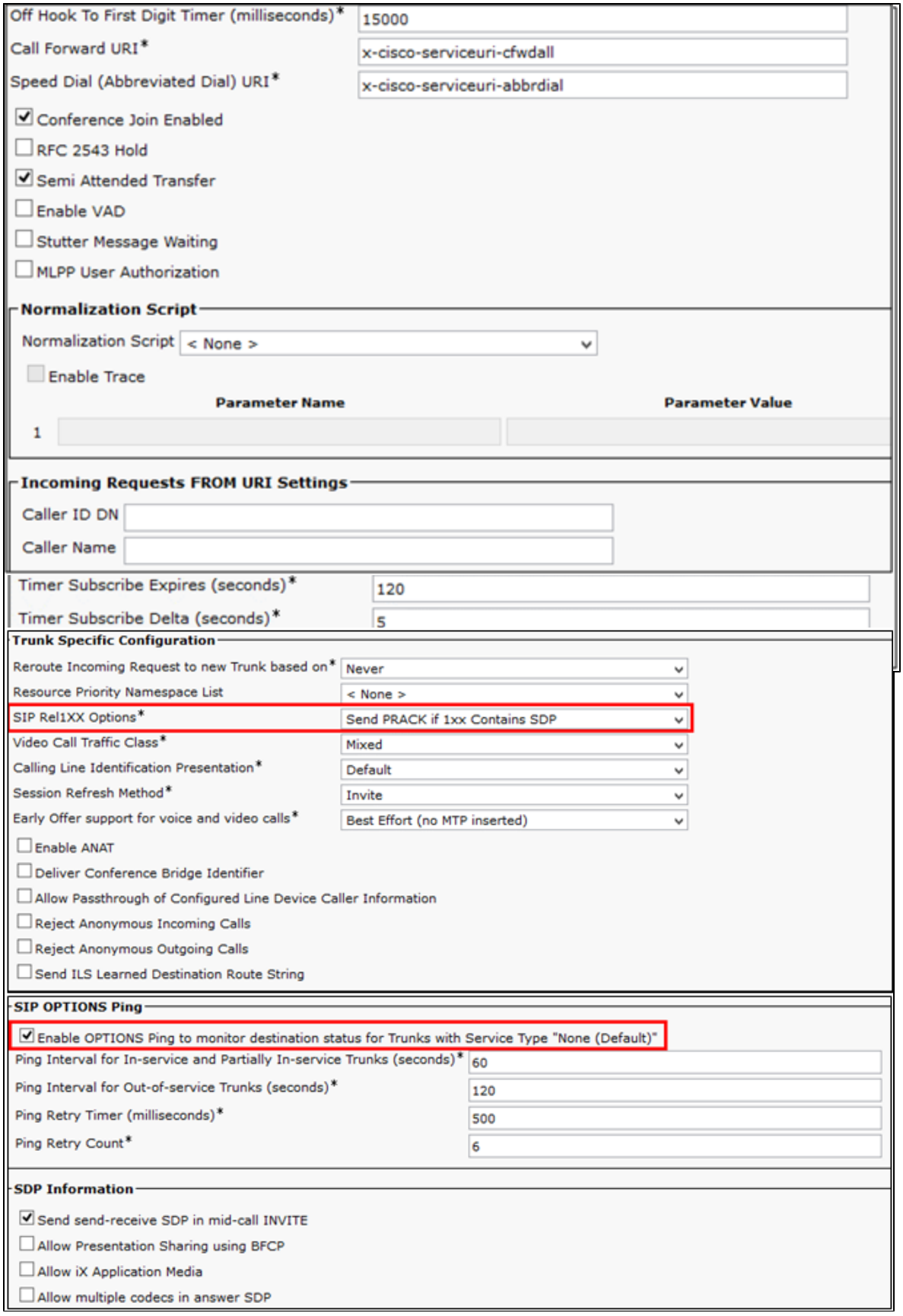
5.SIP Profile Configuration

SIP Profile will be later associated with the SIP trunk.

Steps	Action	Description
12	Navigate to **Device > Device Settings > SIP Profile**	
13	Name* : **Charter SIP Profile**	
14	Description: **Default SIP Profile**	
15	Default MTP telephony Event Payload Type: **101**	RFC2833 DTMF payload type
16	SIP Rel1XX Options: **Send PRACK for 1xx Messages**	Enable Provisional Acknowledgements (Reliable 100 messages)
17	Ping Interval for In-service and Partially In-service Trunks (seconds): **60**	OPTIONS message parameters- interval time
18	Ping Interval for Out-of-service Trunks (seconds): **120**	OPTIONS message parameters- interval time

19	Go to next table	

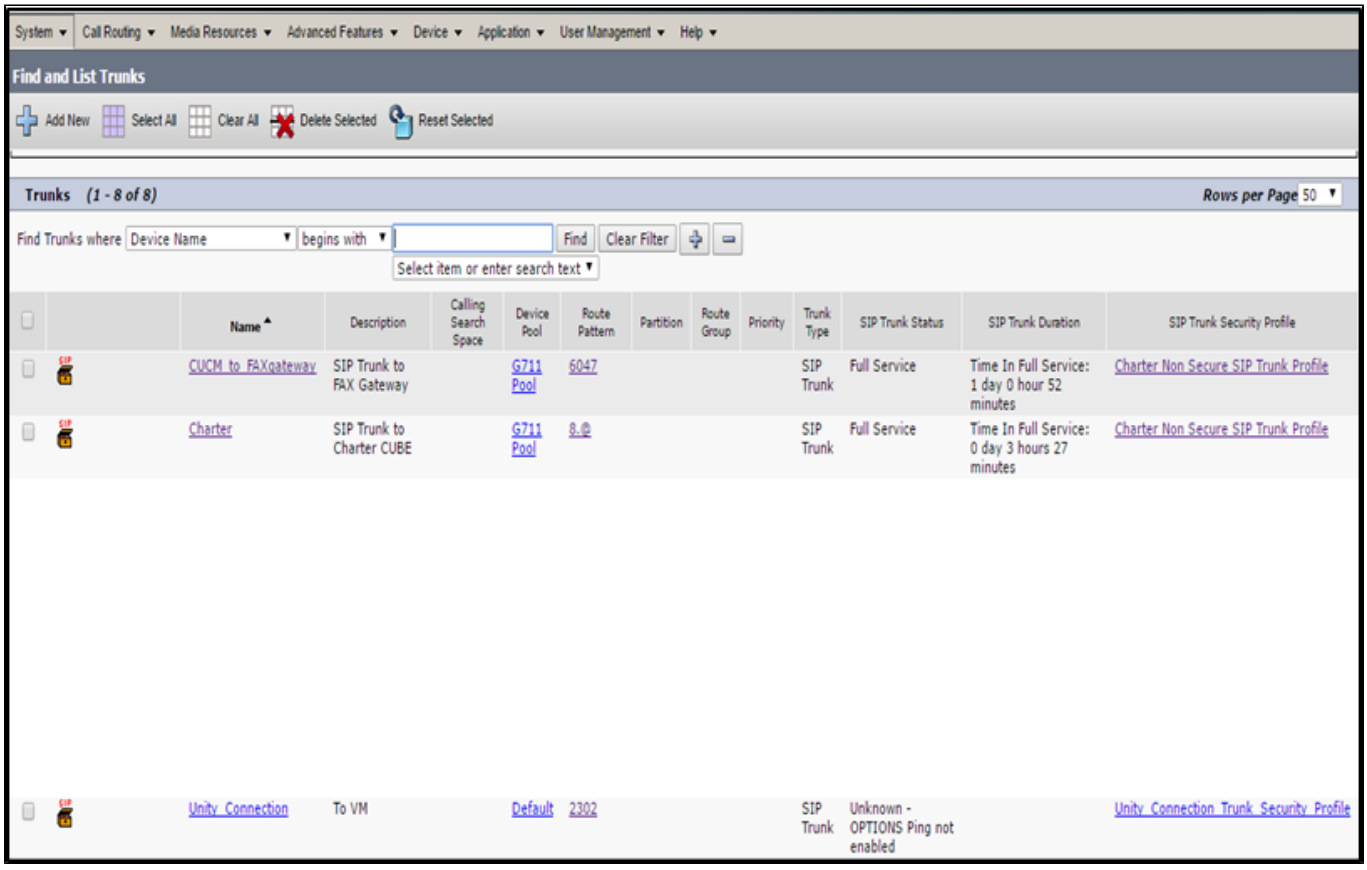


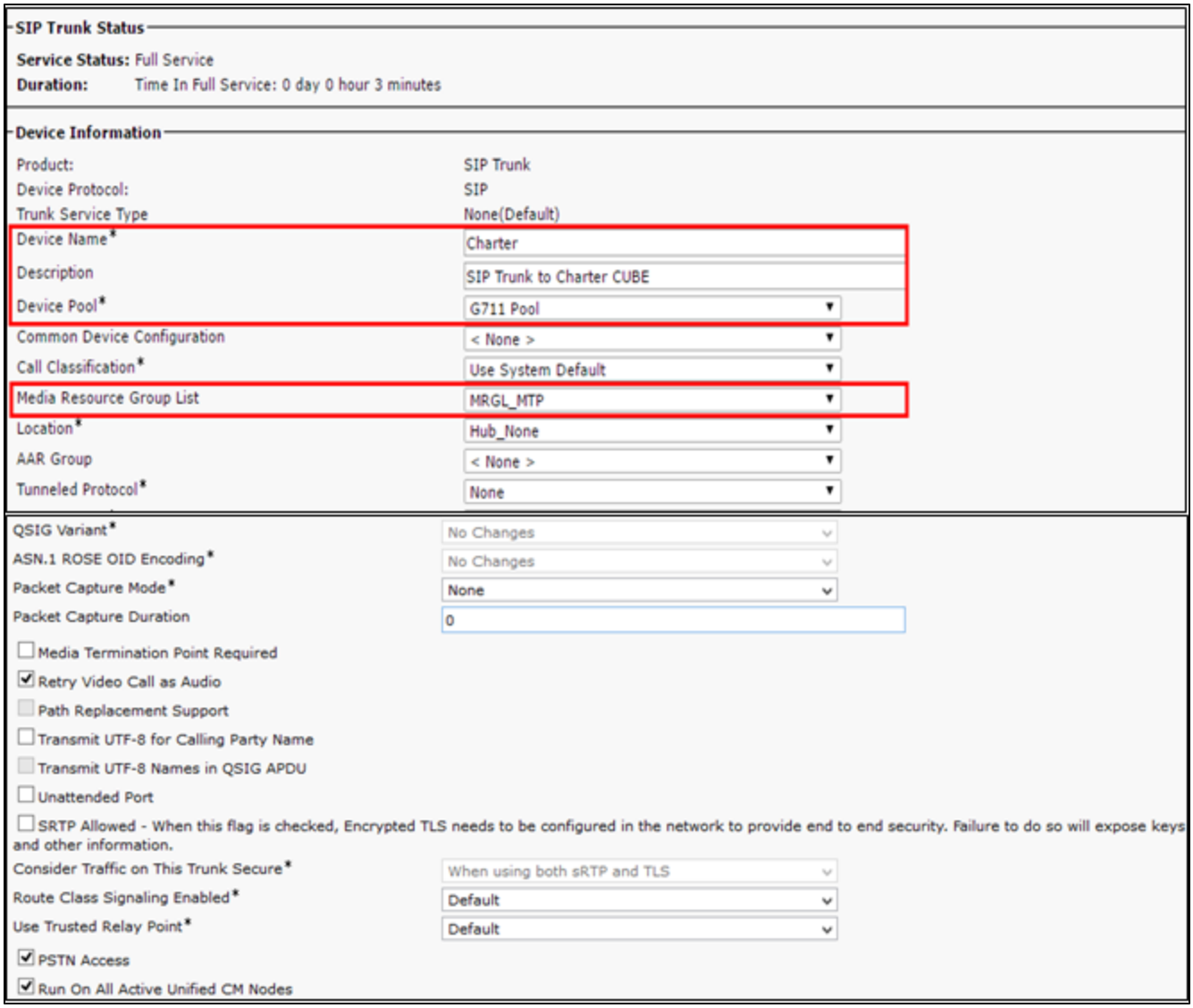


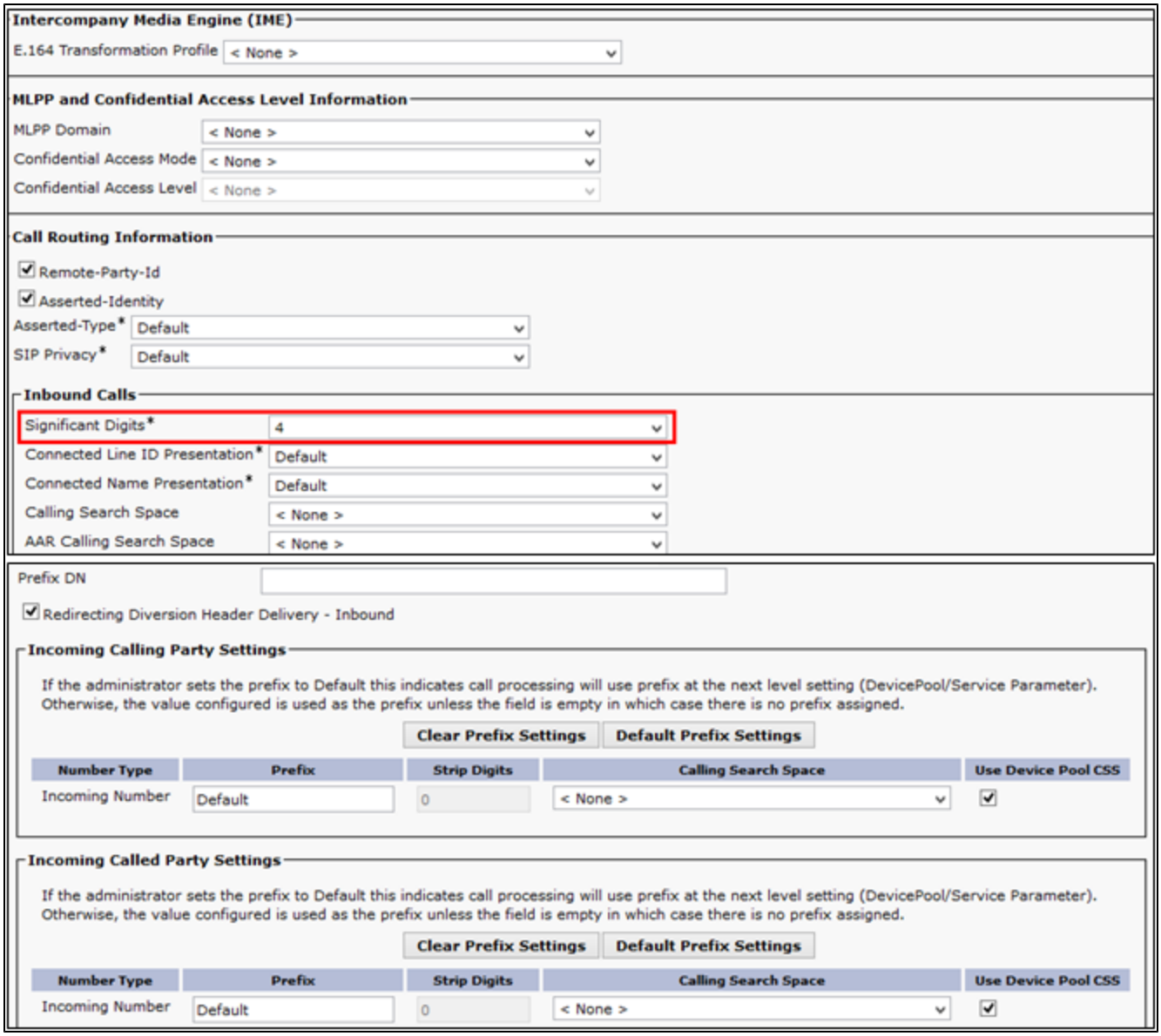
6.SIP Trunk Configuration

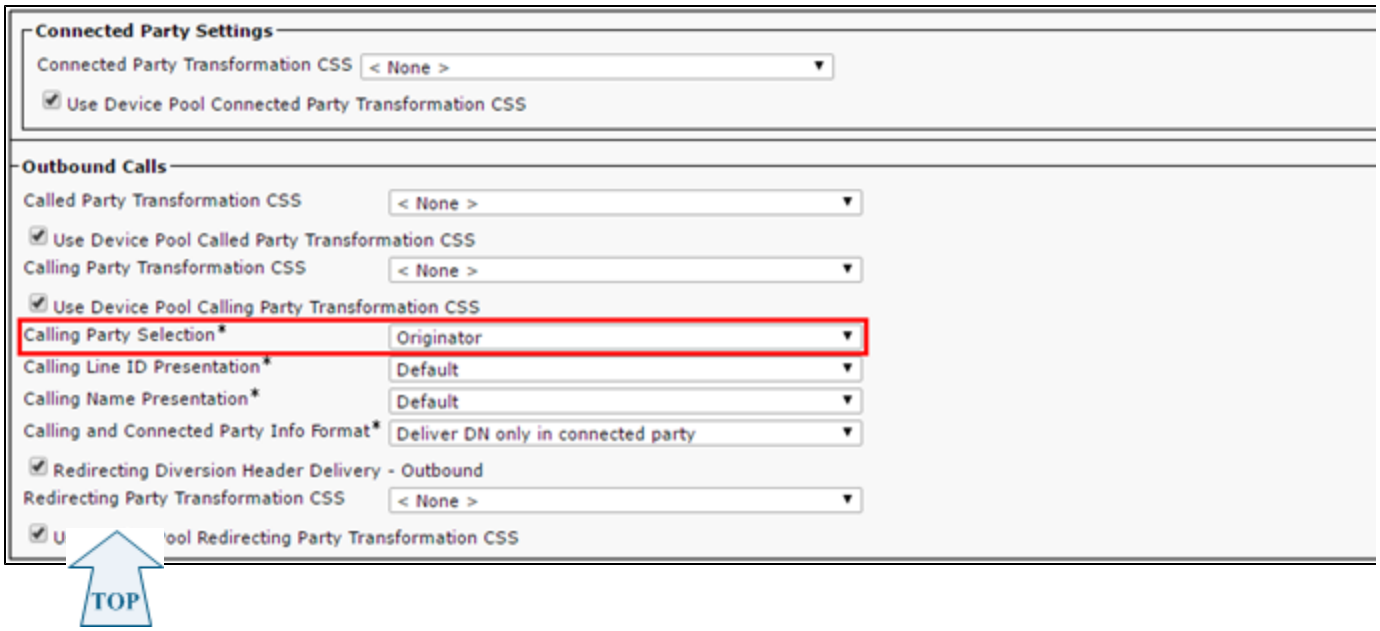
Create SIP Trunks to Cisco UBE.

Steps	Action	Description
20	Navigate to **Device > Trunk**	
21	Device Name: **Charter**	Name for the trunk
22	Device Pool: **G711 Pool**	Default Device Pool is used for this trunk
23	Media Resource Group List: **MRGL_MTP**	MRG with resources. ANN, CFB, MOH and MTP
24	Significant Digits: **4**	4 digits Extension for all CPE phones
25	Destination Address: **10.80.11.10**	IP address of the Cisco UBE Virtual LAN
26	SIP Trunk Security Profile: **Charter Non Secure SIP Trunk Profile**	SIP Trunk Security Profile configured earlier
27	SIP Profile: **Charter SIP Profile**	SIP Profile configured earlier
28	Go to next table	









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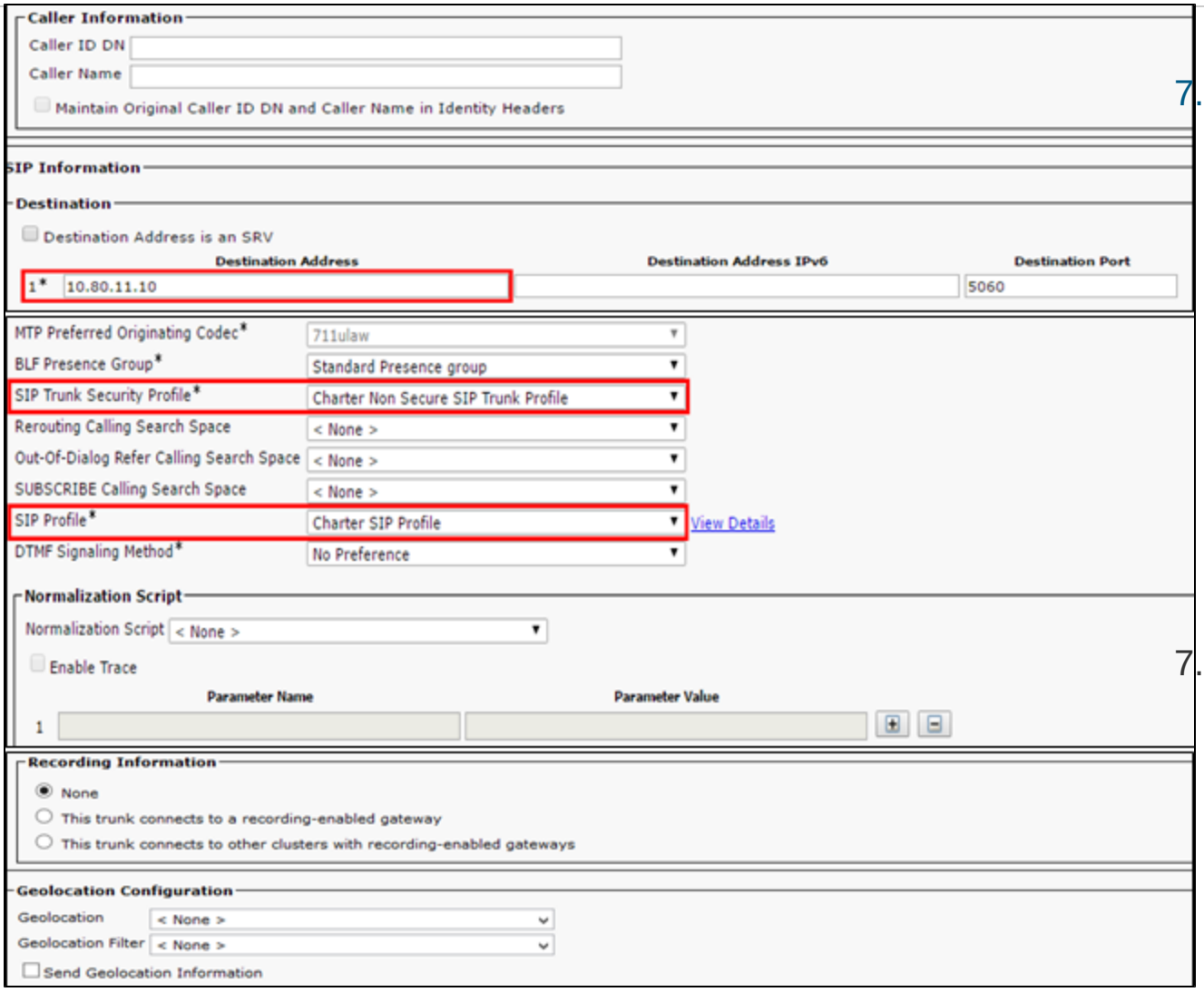


7. Dial Plan

7.1 Route Pattern Configuration

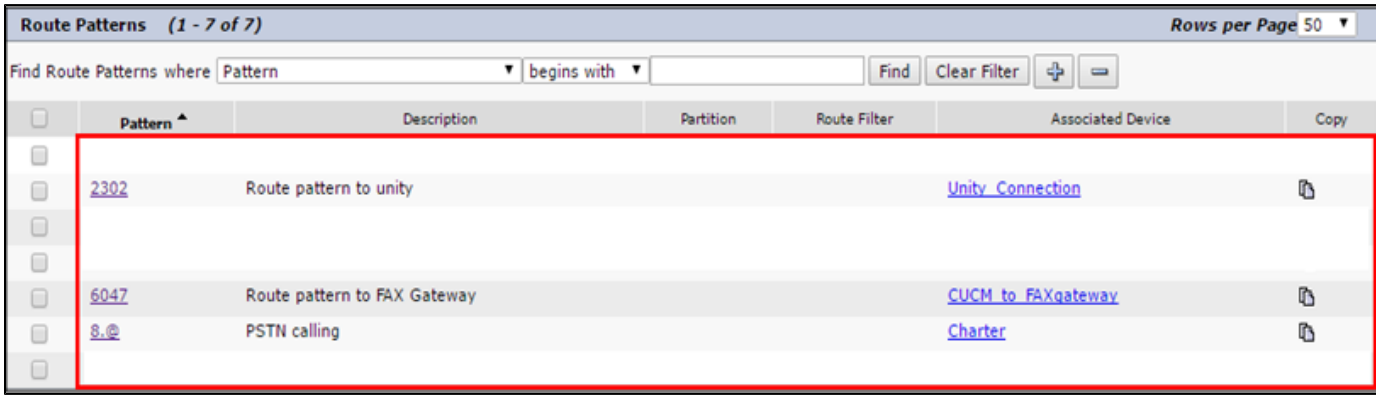
Navigate: **Call routing > Route/Hunt > Route Pattern**

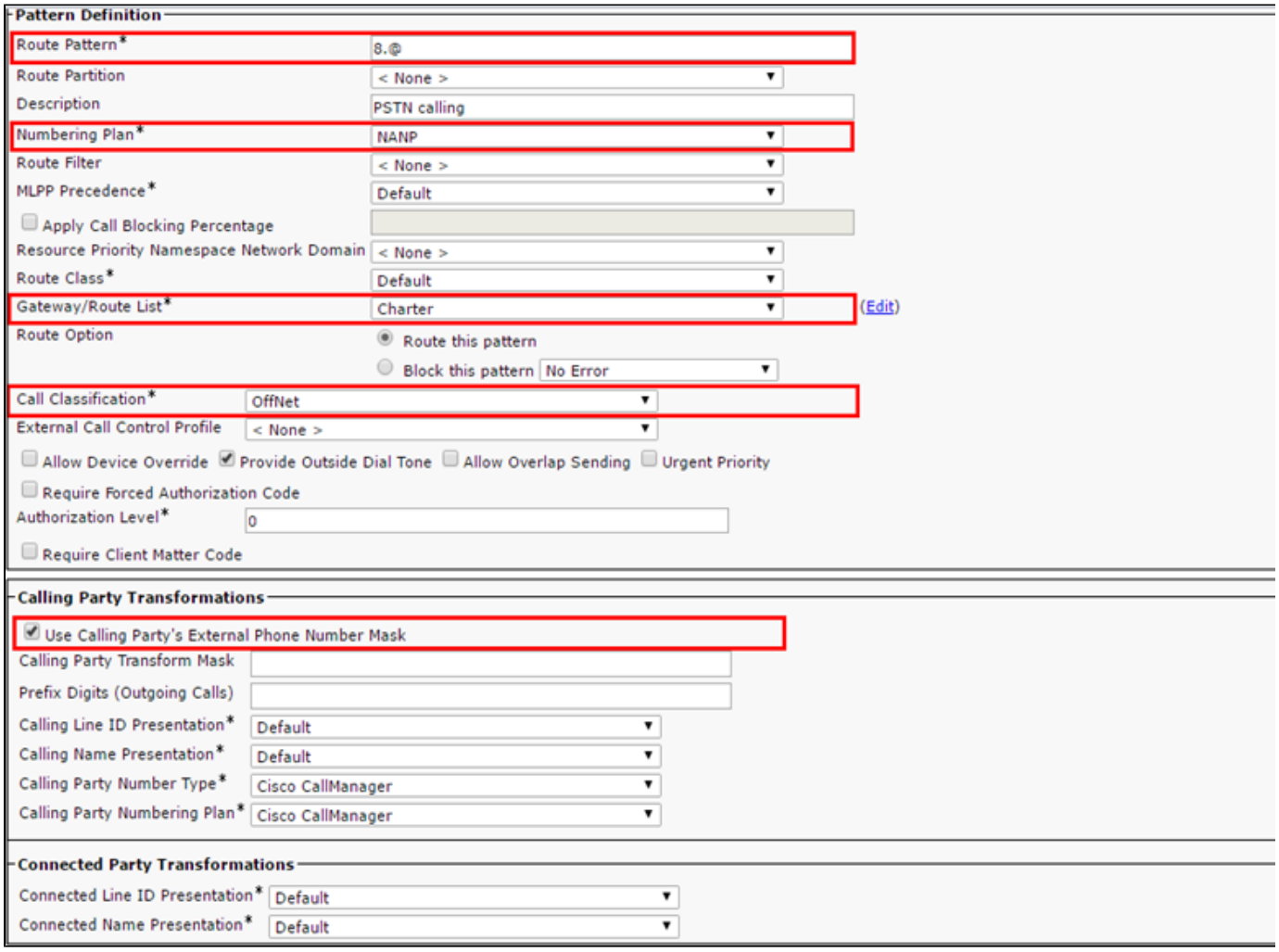
Route patterns are configured as below:

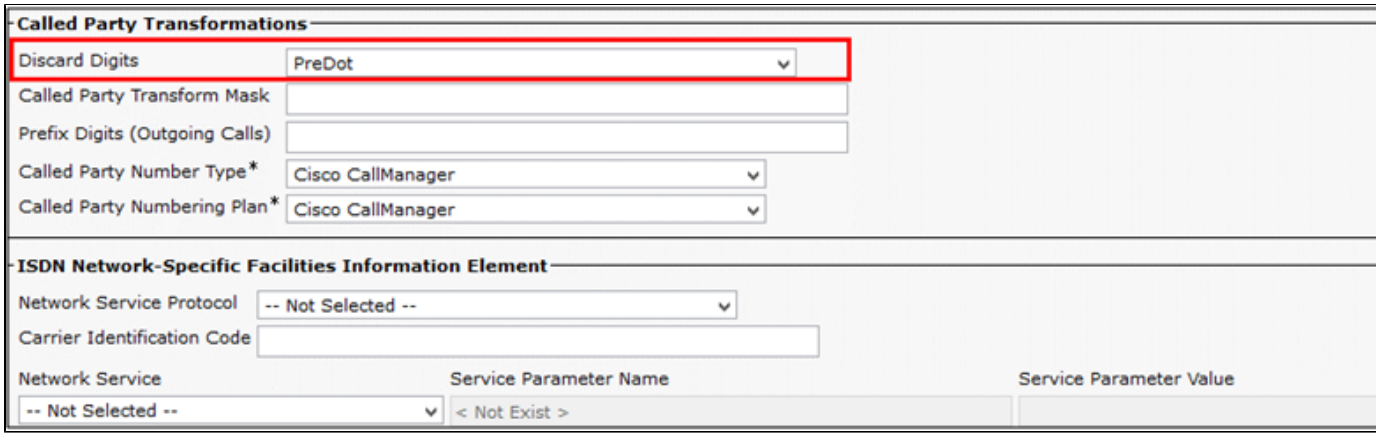
- Cisco IP phone dial “8”.1+10 digits number to access PSTN via Cisco UBE
  - “8” is removed before sending to Cisco UBE
  - For FAX call, Access Code “8”+ 1+10 digits number is used at Cisco Fax gateway
    - “8” is removed at Cisco UCM
    - The rest of the number is sent to Cisco UBE to Charter network
    - Incoming fax call to 6047 will be sent to Cisco Fax gateway

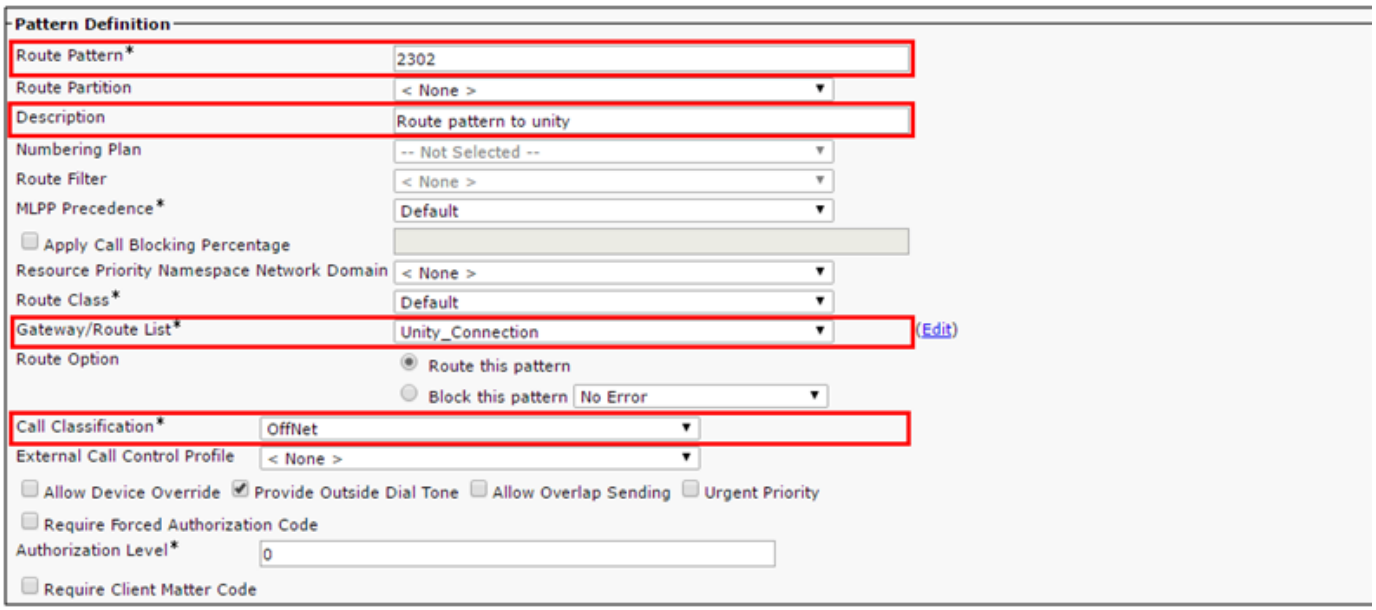
Steps	Action	Description
29	Navigate to **Call routing > route/hunt > Route Pattern**	
30	Route Pattern: **8.@ for Voice & International Calls, 6047 for Fax Call and 2302 for Unity Connection**	Specify appropriate Route Pattern
31	Gateway/Route List: **Charter for Route Pattern 8.@, 6047 for SIP Trunk To Fax Gateway and 2032 for Unity Connection**	SIP Trunk name configured earlier

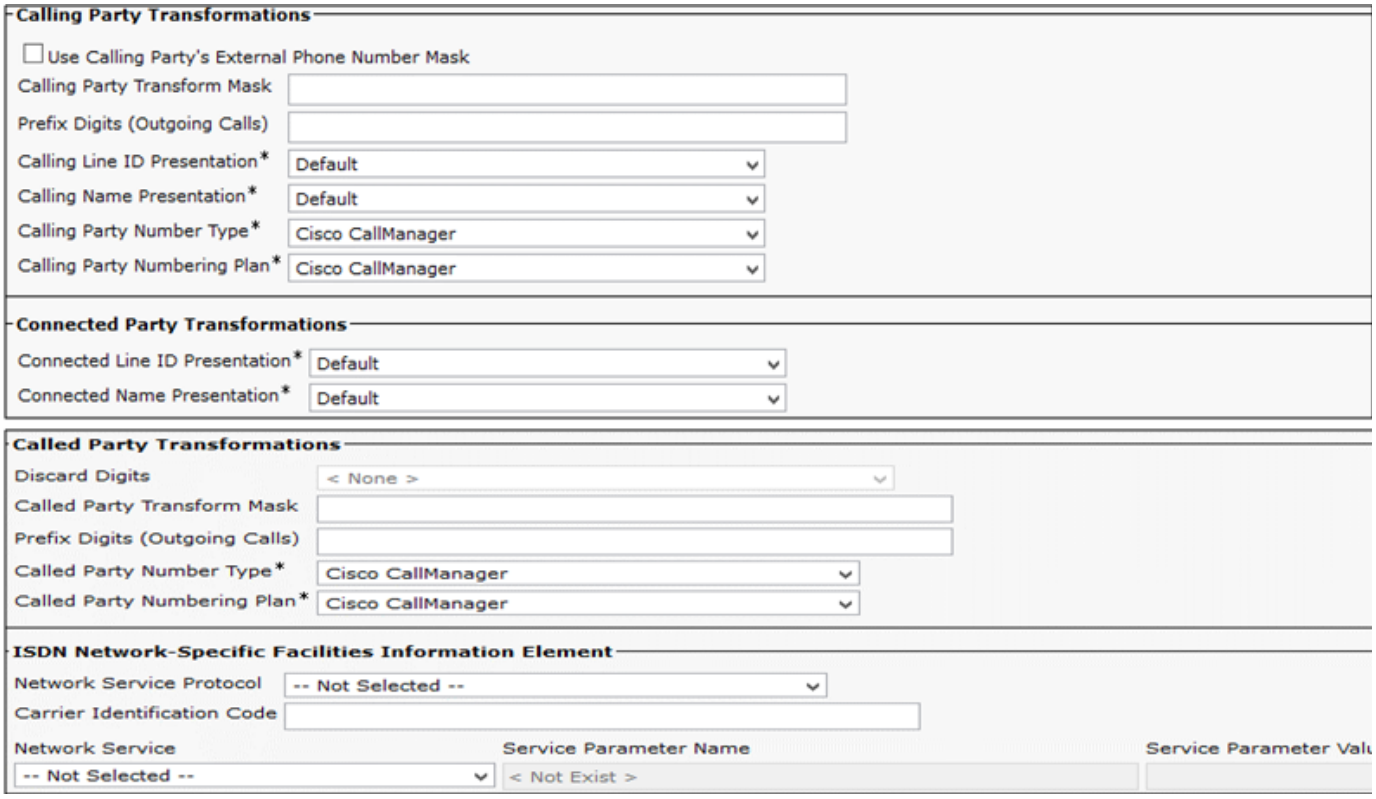
32	Numbering Plan: **NANP for Route Pattern 8.@**	North American Numbering Plan
33	Call Classification: **OffNet for Route Pattern 8.@, 6047 and 2032**	Restrict the transferring of an external call to an external device
34	Discard Digits: **PreDot for Route Pattern 8@.**	Specifies how to modify digit before they are sent to Charter network
35	Procedure Complete	

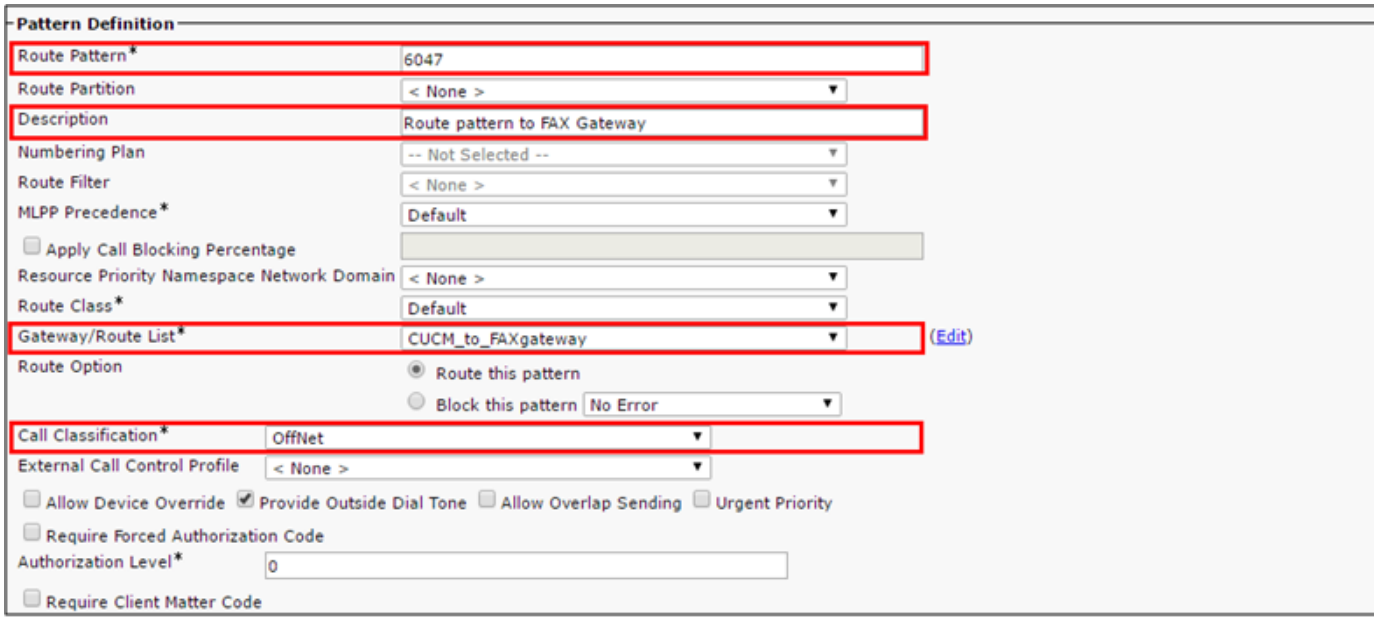












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