Application Note

Siemens HiPath 4000 Rel 3.0 to Cisco Unified Communications Manager 7.1(3) using Cisco Unified Communications Manager-Session Management Edition 7.1(3) using SIP

November 24, 2009 - Initial Version

Table of Contents

Introduction

- This application note describes the necessary steps and configurations for connectivity between Siemens HiPath 4000 release 3.0, and a Cisco Unified Communications Manager (Cisco UCM) version 7.1(3) with CiscoUnified Communications Manager-Session Management Edition (Cisco UCM-SME) Version 7.1.3.
- The network topology diagram (Figures 1) shows the test setup for end-to-end interoperability between Cisco Unified Communications Manager (Cisco UCM) Release 7.1 connected to the Siemens HiPath 4000 PBX via a Cisco Session Management Edition (SME) using SIP trunks. Features tested are basic call, 3-way (ad-hoc) conference, call transfer (attended and unattended), call forward (all, busy and no answer), hold/resume, fax transmission, and DTMF interworking. This test setup also includes a connection to a PSTN simulator, using SIP trunks. Cisco Unified Border Element (Cisco UBE) is used as a session border controller (SBC), providing demarcation, security, and interworking services between the customer's private network and the service provider's SIP network.
- During testing, a Cisco 3825 voice gateway was used to run the Cisco Unified Border Element features set. However other Cisco voice gateways can be used. The decision to choose the Cisco gateway model is left to the customer. The customer should choose a Cisco IOS gateway model based on the capabilities and the capacity that will be required based on the planned network deployment. Here is a list of Cisco IOS products capable of running Cisco UBE.

  http://www.cisco.com/en/US/products/ps10536/index.htmlCisco 2800 Series Integrated Services Routers
  Cisco 3800 Series Integrated Services Routers
  Cisco 3900 Series Integrated Services Routers
  Cisco 7200VXR Routers
  Cisco 7301 Routers
  Cisco AS5350XM Universal Gateway
  Cisco AS5400XM Universal Gateway

Network Topology

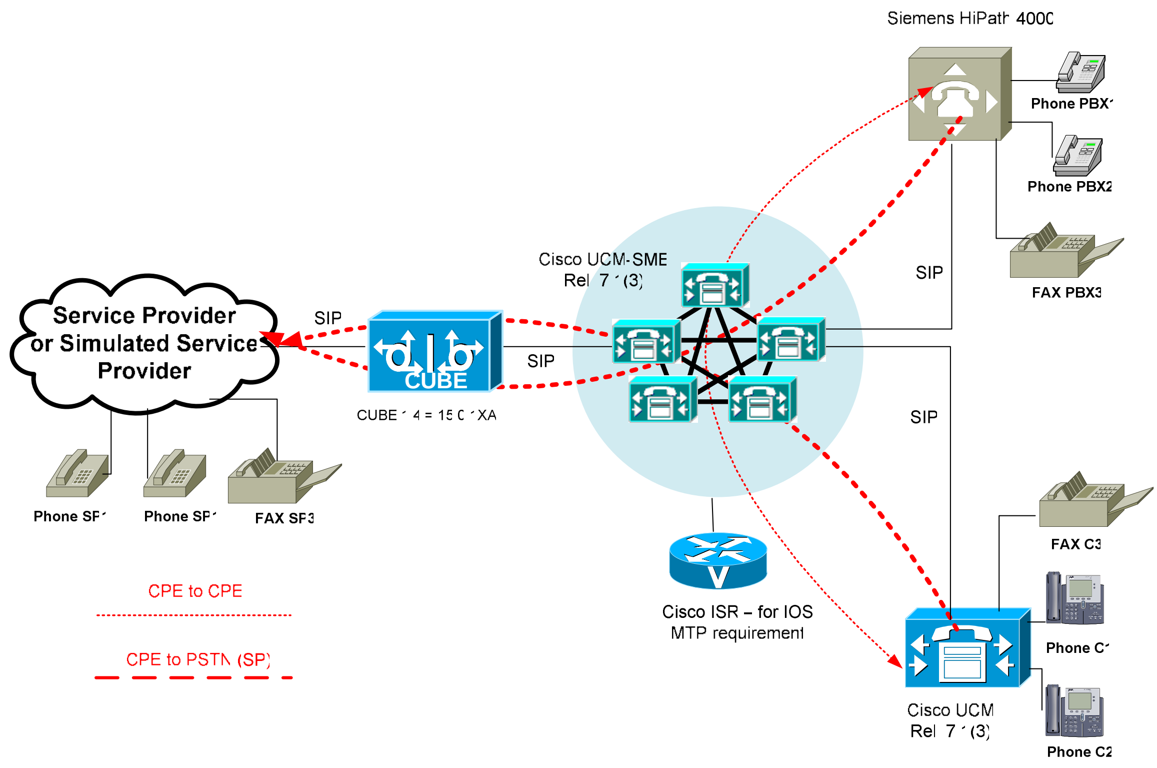


Figure 1. Basic Call Setup

Capabilities

- Voice/fax calls including supplementary services can be successfully established between endpoints controlled by the Siemens PBX and endpoints controlled by the Cisco Unified Communications Manager.
- Voice/fax calls including supplementary services can be successfully established between endpoints controlled by the Siemens PBX and the PSTN, using Cisco UBE as a session border controller.

Limitations

PBX

- Siemens PBX does not send calling name in the header P-Asserted identity, it only sends number.
- Siemens PBX does not send updated connected party information once call transfers are completed.
- Calls scenarios involving call hold/resume (i.e. call transfers, call conferences) from Cisco UCM endpoints fail to reconnect, unless MTP's are used. Siemens HiPath 4000 does not properly support SIP Call Hold:Cisco UCM sends mid-call INVITE with null IP address and "inactive" Media Atribute. Upon receiving mid-call INVITE placing call on hold, the Siemens PBX responds with a 200 OK with no SDP, causing Cisco UCM to fail to properly place call on hold. SIP trunks connecting SME to the Siemens HiPath 4000 must be configured with "Media Termination Point Required".
- Siemens HiPath 4000 does not support network/external call transfers (early attended) and network/external call forwards (unconditional, busy or no reply) over SIP trunks. When attempting early attended call transfers over SIP trunk, Siemens' phone display shows "Not Possible". The same behavior is also seen whenever trying to configure call forwarding to an external number reachable over SIP trunk. Also, testing indicates that Diversion headers sent inbound to the Siemens PBX are ignored, as calls forwarding to Siemens stations over SIP trunks do not display call forwarding information. These limitations prevent centralized voicemail services across SIP trunks.
- Siemens Hipath 4000 does not support T.38 fax relay. Upon receiving INVITE with SDP negotiating T.38 fax-relay, Siemens PBX responds with 488 Not Acceptable Media. On inbound fax calls, the Siemens PBX negotiates fax pass-through using G.711Alaw.

CUBE

- During call forward local (Unconditional, Busy or No reply) Originator do not update final destination number because CUBE generates the PA-ID information from the contact header and not from the information sent in PA-ID by CUCM or PBX.
- During call forward Network/External (Unconditional, Busy or No reply) Originator do not update final destination number because CUBE generates the PA-ID information from the contact header and not from the information sent in PA-ID by CUCM or PBX.

System Components

Hardware Components

- Cisco MCS 7800 Unified Communications Manager Appliance
- Cisco 3825 voice gateway
- 2 Cisco Unified IP phone 7960 configured as SCCP phones
- 2 Cisco Unified IP phone 7970 configured as SIP phones
- Siemens HiPath 4000 PBX
- 2 Siemens E Optiset advanced plus digital phones (Euro/US model)

Software Requirements

The following software is required:

- Cisco Unified Communications Manager Release 7.1
- Cisco IOS Release 15.0.1XA
- Siemens HiPath 4000 PBX Release 3.0

Features

This section lists supported and unsupported features.

Features Supported

- Basic calls (See Limitations section for details.)
- CLIP-Calling line (Number) identification presentation
- CLIR-Calling line (Number) identification restriction
- COLP-Connected line (Number) identification presentation
- COLR- Connected line (Number) identification restriction (See Limitations section for details.)
- Consultation transfer – Local and Network/External (See Limitations section for details.)
- Early Attended transfer – Local and Network/External (See Limitations section for details.)
- Call forward Local – Unconditional, Busy and No reply (See Limitations section for details.)
- Call forward Network/External – Unconditional, Busy and No reply (See Limitations section for details.)
- DTMF interworking
- Fax transmissions using G.711 pass-through

Features Not Supported (See limitations)

- CNIP-Calling name identification presentation
- CNIR-Calling name identification restriction

- CONP-Connected name identification presentation
- CONR- Connected name identification restriction
- Centralized Message center voicemail integration
- T.38 Fax Relay

Configuration

This section contains configuration menus and commands and describes configuration sequences and tasks.

Configuring the Siemens HiPath 4000 PBX

1. Add the new access code to Dialing Plans using WABE + LDPLN.
2. Add the new trunk group access code using BUEND.
3. Configure trunk using TDCSU.
4. Configure Class of Trunk using COT.
5. Configure Class of Parameter for device handler using COP.
6. Add the new trunk board using BCSU.
7. Configure Class of Service using COSSU.
8. Configure Gateway Board
9. Configure Gateway
10. Configure RICHT
11. Configure LCR Out-dial Rules using LODR.
12. Configure station for Name and Number restrictions
13. Enable In-Band DTMF signaling for the Digital Stations using SBCSU.
14. Configure Digital Station for MWI application.
15. Configure Message Center's Service Access Number for MWI application
16. Software release information
17. Configuring Siemens HiPath Assistant (Screen shots)
    - Siemens HiPath 4000 Assistant Version 3.0
    - Gateway configuration
    - SIP parameters
    - CODEC parameter configuration

DPLN

```
DIS-WABE:GEN;
H500:  AMO WABE  STARTED
  ------------------------------------------------------------------------------
  | DIGIT INTERPRETATION                   VALID FOR ALL DIAL PLANS            |
  ------------------------------------------------------------------------------
  |                 |    CALL PROGRESS STATE     |  DIGIT   | RESERVED/CONVERT |
  |      CODE       |            1 11111 11112 22| ANALYSIS | DNI/ADD-INFO     |
  |                 |0 12345 67890 12345 67890 12|  RESULT  | *=OWN NODE       |
  ------------------------------------------------------------------------------
  | 0               |. .**** ..*** **... ..... .*| CO       | R                |
  | 001    - 010    |* ..... ..... ..... ..... ..| NETRTE   |                  |
  | 111             |. .**** ***** **... ..... .*| TIE      |                  |
  | 1150   - 1159   |. .**** ***** **... ..... .*| STN      |                  |
  |                 |                            |          |DESTNO 111        |
  |                 |                            |          |DNNO    0-  0-111 |
  |                 |                            |          |PDNNO   0-  0-111 |
  | 12     - 15     |. .**** ***** **... ..... .*| TIE      |                  |
  | 21              |. ..... ..... ..... ....* ..| KNOVRKY  |                  |
  | 22              |. ..... ..... ..... ....* ..| DNDKY    |                  |
  | 222             |. .**** ***** **... ..... .*| TIE      |                  |
  | 23              |. ..... ..... ..... ....* ..| FWDKY    |                  |
  | 24              |. ..... ..... ..... ....* ..| MBKY     |                  |
  | 25              |. ..... ..... ..... ....* ..| MSGRKY   |                  |
  | 26              |. ..... ..... ..... ....* ..| DAKY     |                  |
  | 26              |. ....* ..... ..... ..... ..| DFFWDVCE |                  |
  | 27              |. ..... ..... ..... ....* ..| DSSKY    |                  |
  ------------------------------------------------------------------------------
  | DIGIT INTERPRETATION                   VALID FOR ALL DIAL PLANS            |
  ------------------------------------------------------------------------------
  |                 |    CALL PROGRESS STATE     |  DIGIT   | RESERVED/CONVERT |
  |      CODE       |            1 11111 11112 22| ANALYSIS | DNI/ADD-INFO     |
  |                 |0 12345 67890 12345 67890 12|  RESULT  | *=OWN NODE       |
  ------------------------------------------------------------------------------
  | 27              |. ....* ..... ....* ..... ..| AFWDVCE  |                  |
  | 28              |. ..... ..... ..... ....* ..| VCRKY    |                  |
  | 28              |. ....* ..... ..... ..... ..| DFWDVCE  |                  |
  | 29              |. ..... ..... ..... ....* ..| VCKY     |                  |
  | 30              |. ..... ..... ..... ....* ..| CONFKY   |                  |
  | 3000   - 3010   |. .**** ***** **... ..... .*| STN      |                  |
  |                 |                            |          |DESTNO  30        |
  |                 |                            |          |DNNO    0-  0- 30 |
  |                 |                            |          |PDNNO   0-  0-222 |
  | 3011   - 3020   |. .**** ***** **... ..... .*| STN      |                  |
  |                 |                            |          |DESTNO  31        |
  |                 |                            |          |DNNO    0-  0- 31 |
  |                 |                            |          |PDNNO   0-  0- 31 |
  | 3021   - 3030   |. .**** ***** **... ..... .*| STN      |                  |
  |                 |                            |          |DESTNO  32        |
  |                 |                            |          |DNNO    0-  0- 32 |
  |                 |                            |          |PDNNO   0-  0- 32 |
  ------------------------------------------------------------------------------
  | DIGIT INTERPRETATION                   VALID FOR ALL DIAL PLANS            |
  ------------------------------------------------------------------------------
  |                 |    CALL PROGRESS STATE     |  DIGIT   | RESERVED/CONVERT |
  |      CODE       |            1 11111 11112 22| ANALYSIS | DNI/ADD-INFO     |
  |                 |0 12345 67890 12345 67890 12|  RESULT  | *=OWN NODE       |
  ------------------------------------------------------------------------------
  | 3031   - 3040   |. .**** ***** **... ..... .*| STN      |                  |
  |                 |                            |          |DESTNO  33        |
  |                 |                            |          |DNNO    0-  0- 33 |
  |                 |                            |          |PDNNO   0-  0- 33 |
  | 3041   - 3050   |. .**** ***** **... ..... .*| STN      |                  |
  |                 |                            |          |DESTNO  35        |
  |                 |                            |          |DNNO    0-  0- 35 |
  |                 |                            |          |PDNNO   0-  0- 35 |
```

```
| 31             |. ..... ..... ..... ....* ..| NAMEKY   |                  |
| 32             |. ..... ..... ..... ....* ..| PARKKY   |                  |
| 33             |. ..... ..... ..... ....* ..| CCKY     |                  |
| 34             |. ..... ..... ..... ....* ..| HTKY     |                  |
| 35             |. ..... ..... ..... ....* ..| STKY     |                  |
| 36     - 37    |. .**** ..*** **... ..... .*| CO       |                  |
| 38             |. ..... ..... ..... ....* ..| TIMEKY   |                  |
| 39             |. .**** ***** **... ..... .*| TIE      |                  |
-------------------------------------------------------------------------------
| DIGIT INTERPRETATION                  VALID FOR ALL DIAL PLANS               |
-------------------------------------------------------------------------------
|                |    CALL PROGRESS STATE     |  DIGIT   | RESERVED/CONVERT |
|      CODE      |            1 11111 11112 22| ANALYSIS | DNI/ADD-INFO     |
|                |0 12345 67890 12345 67890 12|  RESULT  | *=OWN NODE       |
-------------------------------------------------------------------------------
| 4000   - 4050  |. .**** ***** **... ..... .*| STN      |                  |
|                |                            |          |DESTNO 111        |
|                |                            |          |DNNO    0-   0-111 |
|                |                            |          |PDNNO   0-   0-111 |
| 4051   - 4566  |. .**** ***** **... ..... .*| STN      |                  |
|                |                            |          |DESTNO 222        |
|                |                            |          |DNNO    0-   0-222 |
|                |                            |          |PDNNO   0-   0-222 |
| 4567           |. .**** ***** **... ..... .*| STN      |                  |
|                |                            |          |DESTNO  34        |
|                |                            |          |DNNO    0-   0- 34 |
|                |                            |          |PDNNO   0-   0-200 |
| 4568   - 4599  |. .**** ***** **... ..... .*| STN      |                  |
|                |                            |          |DESTNO 222        |
|                |                            |          |DNNO    0-   0-222 |
|                |                            |          |PDNNO   0-   0-222 |
-------------------------------------------------------------------------------
| DIGIT INTERPRETATION                  VALID FOR ALL DIAL PLANS               |
-------------------------------------------------------------------------------
|                |    CALL PROGRESS STATE     |  DIGIT   | RESERVED/CONVERT |
|      CODE      |            1 11111 11112 22| ANALYSIS | DNI/ADD-INFO     |
|                |0 12345 67890 12345 67890 12|  RESULT  | *=OWN NODE       |
-------------------------------------------------------------------------------
| 4600   - 4650  |. .**** ***** **... ..... .*| STN      |                  |
|                |                            |          |DESTNO  80        |
|                |                            |          |DNNO    0-   0- 80 |
|                |                            |          |PDNNO   0-   0- 80 |
| 4651   - 4999  |. .**** ***** **... ..... .*| STN      |                  |
|                |                            |          |DESTNO 222        |
|                |                            |          |DNNO    0-   0-222 |
|                |                            |          |PDNNO   0-   0-222 |
| 5000   - 5009  |. .**** ***** **... ..... .*| STN      |                  |
|                |                            |          |DESTNO   0        |
|                |                            |          |DNNO    0-   0-555*|
| 5010   - 5020  |. .**** ***** **... ..... .*| STN      | R                |
|                |                            |          |DESTNO   0        |
|                |                            |          |DNNO    0-   0-555*|
| 5021   - 5040  |. .**** ***** **... ..... .*| STN      |                  |
|                |                            |          |DESTNO   0        |
|                |                            |          |DNNO    0-   0-555*|
-------------------------------------------------------------------------------
| DIGIT INTERPRETATION                  VALID FOR ALL DIAL PLANS               |
-------------------------------------------------------------------------------
|                |    CALL PROGRESS STATE     |  DIGIT   | RESERVED/CONVERT |
|      CODE      |            1 11111 11112 22| ANALYSIS | DNI/ADD-INFO     |
|                |0 12345 67890 12345 67890 12|  RESULT  | *=OWN NODE       |
-------------------------------------------------------------------------------
| 5100   - 5109  |. .**** ***** **... ..... .*| STN      |                  |
|                |                            |          |DESTNO   0        |
|                |                            |          |DNNO    0-   0-555*|
| 5500   - 5501  |. .**** ***** **... ..... .*| STN      |                  |
|                |                            |          |DESTNO  56        |
|                |                            |          |DNNO    0-   0-560 |
|                |                            |          |PDNNO   0-   0-560 |
| 555            |. .**** ***** **... ..... .*| OWNNODE  |                  |
| 560            |. .**** ***** **... ..... .*| TIE      |                  |
| 570            |. .**** ***** **... ..... .*| TIE      |                  |
```

```
| 578             |. .**** ***** **... ..... .*| TIE      |                  |
| 59              |. .**** ***** **... ..... .*| TIE      |                  |
| 6000    - 6009  |. .**** ***** **... ..... .*| STN      |                  |
|                 |                            |          |DESTNO 111        |
|                 |                            |          |DNNO    0-   0-111 |
|                 |                            |          |PDNNO   0-   0-111 |
------------------------------------------------------------------------------
| DIGIT INTERPRETATION                  VALID FOR ALL DIAL PLANS              |
------------------------------------------------------------------------------
|                 |    CALL PROGRESS STATE     |  DIGIT   | RESERVED/CONVERT |
|      CODE       |            1 11111 11112 22| ANALYSIS | DNI/ADD-INFO     |
|                 |0 12345 67890 12345 67890 12|  RESULT  | *=OWN NODE       |
------------------------------------------------------------------------------
| 6123            |. .**** ***** **... ..... .*| STN      | R                |
|                 |                            |          |DESTNO   0        |
|                 |                            |          |DNNO    0-   0-555*|
| 62              |. ....* ..... ....* ..... ..| AFFWDVCE |                  |
| 7000    - 7002  |. .**** ***** **... ..... .*| STN      |                  |
|                 |                            |          |DESTNO  56        |
|                 |                            |          |DNNO    0-   0-560 |
|                 |                            |          |PDNNO   0-   0-560 |
| 8000    - 8050  |. .**** ***** **... ..... .*| STN      |                  |
|                 |                            |          |DESTNO 222        |
|                 |                            |          |DNNO    0-   0-222 |
|                 |                            |          |PDNNO   0-   0-222 |
| 8060            |. .**** ***** **... ..... .*| TIE      |                  |
| 8070            |. .**** ***** **... ..... .*| TIE      |                  |
| 8080            |. .**** ***** **... ..... .*| TIE      |                  |
| 8088            |. .**** ***** **... ..... .*| TIE      |                  |
------------------------------------------------------------------------------
| DIGIT INTERPRETATION                  VALID FOR ALL DIAL PLANS              |
------------------------------------------------------------------------------
|                 |    CALL PROGRESS STATE     |  DIGIT   | RESERVED/CONVERT |
|      CODE       |            1 11111 11112 22| ANALYSIS | DNI/ADD-INFO     |
|                 |0 12345 67890 12345 67890 12|  RESULT  | *=OWN NODE       |
------------------------------------------------------------------------------
| 8100    - 8109  |. .**** ***** **... ..... .*| STN      |                  |
|                 |                            |          |DESTNO  32        |
|                 |                            |          |DNNO    0-   0- 32 |
|                 |                            |          |PDNNO   0-   0- 32 |
| 8200    - 8209  |. .**** ..**. ..... ..... ..| PARK     |                  |
| 83              |. .**** ..*** **... ..... .*| SPDC1    |                  |
| 84              |. .**** ..*** **... ..... .*| SPDC2    |                  |
| 88              |. ..... ..*.. ..... ..... .*| SCONSI   | R                |
| 89              |. ..... ...*. ..... ..... ..| SCONSCO  | R                |
| 9               |. .**** ***** **... ..... .*| TIE      |                  |
| *13             |. ....* ..... ..... ..... ..| AHTVCE   |                  |
| *15             |. *.... ..**. ..... ..... .*| SPLIT    |                  |
| *16             |. ....* ..... ....* ..... ..| AREM     |                  |
| *17             |. *.... ..**. ..... ..... ..| TRACE    |                  |
| *18             |. ....* ..... ..... ..... ..| ACOSX    |                  |
| *19             |. *.... ..... ..... ..... ..| KNOVR    |                  |
| *20             |. ....* ..... ..... ..... ..| ADND     |                  |
------------------------------------------------------------------------------
| DIGIT INTERPRETATION                  VALID FOR ALL DIAL PLANS              |
------------------------------------------------------------------------------
|                 |    CALL PROGRESS STATE     |  DIGIT   | RESERVED/CONVERT |
|      CODE       |            1 11111 11112 22| ANALYSIS | DNI/ADD-INFO     |
|                 |0 12345 67890 12345 67890 12|  RESULT  | *=OWN NODE       |
------------------------------------------------------------------------------
| *25             |. ....* ..... ..... ..... ..| FWDTERM  |                  |
| *26             |. ....* ..... ..... ..... ..| DFFWDVCE |                  |
| *27             |. ....* ..... ....* ..... ..| AFWDVCE  |                  |
| *28             |. ....* ..... ..... ..... ..| DFWDVCE  |                  |
| *29             |. ....* ..... ....* ..... ..| AFFWDVCE |                  |
| *91             |. ....* ....* ..... ..... ..| MBOFF    |                  |
| #31             |. ....* ..... ....* ..... ..| AFFWDVCE |                  |
| #91             |. ....* ....* ..... ..... ..| MBON     |                  |
| ##27            |. ***** ..**. ..... ..... ..| MWACT    |                  |
| ##28            |. ....* ..... ..... ..... ..| MWANS    |                  |
| ##29            |. ....* ..... ..... ..... ..| MWCAN    |                  |
| ##30            |. ***** ****. ..*** .**** ..| MWCANORI |                  |
```

```
  | ##40   - ##49   |. .****  ..**. ..... ..... ..| PARK     |                   |
  ------------------------------------------------------------------------------

AMO-WABE -111       DIALLING PLANS, FEATURE ACCESS CODES
DISPLAY COMPLETED;
```

Dial Plan, DPLN

```
DISPLAY-LDPLN:TYPE=LDP,LDP="570"-"XXXXX";
H500:  AMO LDPLN STARTED
   +--------------+--------------------------------------------------+
   |              |                                                  |
   | DIPLNUM:    0|                                                  |
   | LDPNO  :   21| LDP : 570-XXXXX                                  |
   |              | SPC : 22                                         |
   |              | FDSFIELD : 0   SDSFIELD : 0   PINDP : N          |
   +------+-------+--------------------------------------------------+
   | DPLN | LROUTE| LAUTH                                            |
   |------+-------+--------------------------------------------------+
   |   0  |   570 | 1                                                |
   |   1  |   570 | 1                                                |
   |   2  |   570 | 1                                                |
   |   3  |   570 | 1                                                |
   |   4  |   570 | 1                                                |
   |   5  |   570 | 1                                                |
   |   6  |   570 | 1                                                |
   |   7  |   570 | 1                                                |
   |   8  |   570 | 1                                                |
   |   9  |   570 | 1                                                |
   |  10  |   570 | 1                                                |
   |  11  |   570 | 1                                                |
   |  12  |   570 | 1                                                |
   |  13  |   570 | 1                                                |
   |  14  |   570 | 1                                                |
   |  15  |   570 | 1                                                |
   +------+-------+--------------------------------------------------+

AMO-LDPLN-111       ADMINISTRATION LCR DIALPLAN
DISPLAY COMPLETED;
```

Trunk Group Access Code, BUEND

```
DIS-BUEND;
H500:  AMO BUEND STARTED
  TRUNK GROUPS (FORMAT=S)
  NO. NAME                CHARCON
    1 BRI ST1            (NEUTRAL)
    2 BRI ST2            (NEUTRAL)
    3 BRI ST3            (NEUTRAL)
    4 BRI ST4            (NEUTRAL)
   10 ANALOG TML2P       (NEUTRAL)
   20 PRI PSSV1          (NEUTRAL)
   21 PRI 2 PSSV1        (NEUTRAL)
   22 ECMA 1             (NEUTRAL)
   23 ECMA 2             (NEUTRAL)
   24 PRI ETSI           (NEUTRAL)
   25 PRI 2 ETSI         (NEUTRAL)
   26 PRI ECMA 3         (NEUTRAL)
   27 PRI ECMA 4         (NEUTRAL)
   30 CAS 1              (NEUTRAL)
   31 CAS 2              (NEUTRAL)
   50 E&M 1              (NEUTRAL)
   51 E&M1               (NEUTRAL)
   53 E&M 3              (NEUTRAL)
   60 DPNSS 1            (NEUTRAL)
   61 DPNSS2             (NEUTRAL)
   80 IP TRUNK GW1 SIP   (NEUTRAL)
```

```
    88 IP TRUNK GW2        (NEUTRAL)

AMO-BUEND-111       TRUNK GROUP
DISPLAY COMPLETED;
```

Trunk Configuration, TDCSU

```
DISPLAY-TDCSU:PEN1=1-1-103-0;
H500:  AMO TDCSU STARTED
  +------------------------ DIGITAL TRUNK (FORMAT=L) ------------------------+
  | DEV      = HG3550IP      PEN      =  1-01-103-0    TGRP     = 80         |
  |--------------------------------------------------------------------------|
  | PROTVAR  = PSS1V2        INS      = Y              SRCHMODE = DSC        |
  | COTNO    = 80            COPNO    = 80             DPLN     = 0          |
  | ITR      = 0             COS      = 66             LCOSV    = 1          |
  | LCOSD    = 1             CCT      =                DESTNO   = 111        |
  | SEGMENT  = 8             DEDSCC   =                DEDSVC   = NONE       |
  | FACILITY =               DITIDX   =                SRTIDX   =            |
  | TRTBL    = GDTR          SIDANI   = N              ATNTYP   = TIE        |
  | CBMATTR  = NONE          NWMUXTIM = 10             TCHARG   = N          |
  | SUPPRESS = 0             DGTPR    =                CHIMAP   = N          |
  | ISDNIP   =               ISDNNP   =                                      |
  | PNPL2P   =               PNPL1P   =                PNPAC    =            |
  | TRACOUNT = 31            SATCOUNT = MANY           NNO      = 111        |
  | ALARMNO  = 0             FIDX     = 1              CARRIER  = 1          |
  | ZONE     = EMPTY         COTX     = 80             FWDX     = 10         |
  | DOMTYPE  =               DOMAINNO =                TPROFNO  =            |
  | INIGHT   =                                         CCHDL    = SIDEA      |
  | UUSCCX   = 16            UUSCCY   = 8              FNIDX    = 1          |
  | CLASSMRK = EC     & G711                           SRCGRP   =            |
  | TCCID    = IP TR1 SIP                                                    |
  |--------------------------------------------------------------------------|
  | BCNEG    = N             BCGR     = 1              LWPAR    = 0          |
  | LWPP     = 0             LWLT     = 0              LWPS     = 0          |
  | LWR1     = 0             LWR2     = 0                                    |
  | DMCALLWD = N             DMCSEC   = N              VNNO     =            |
  | SVCDOM   =                                                               |
  | BCHAN    =  1 && 30                                                      |
  |                                                                          |
  +--------------------------------------------------------------------------+
  AMOUNT OF B-CHANNELS IN THIS DISPLAY-OUTPUT: 30

AMO-TDCSU-111       DIGITAL TRUNKS
DISPLAY COMPLETED;
```

Class of Trunk, COT

```
DIS-COT:80;
H500:  AMO COT   STARTED

   COT:  80  INFO:
   DEVICE: INDEP        SOURCE: DB
   PARAMETER:
        PRIORITY FOR AC WILL BE DETERMINED FROM MESSAGE               PRI
        RECALL IF USER HANGS UP IN CONSULTATION CALL                  RCL
        TRUNK CALL TRANSFER                                           XFER
        CHANGEOVER FROM HOLD TO RING TONE                             CHRT
        KNOCKING OVERRIDE POSSIBLE                                    KNOR
        CALL EXTEND FOR BUSY, RING OR CALL STATE                      CEBC
        NETWORKWIDE AUTOMATIC CALLBACK ON BUSY                        CBBN
        NETWORKWIDE AUTOMATIC CALLBACK ON FREE                        CBFN
        NETWORKWIDE CALL FORWARDING PERMITTED                         FWDN
        NETWORKWIDE FORWARDING NO-ANSWER                              FNAN
        REGISTRATION OF IMPLAUSIBLE EVENTS                            IEVT
        DON'T RELEASE CALL TO BUSY HUNT GROUP                         BSHT
        CAMP-ON ON DID CALLS                                          KNDI
        CAMP-ON AFTER EXTENSION OF INCOMING TRUNK CALLS               KNEX
```

```
        END-OF-DIAL FOR BLOCK IS SET                               BLOC
        EMERGENCY OVERRIDE/DISCONNECT VIA S0/S2 LINE               PROV
        ACTIVATE TRANSIT COUNTER ADMINISTRATION FOR S0/S2 LINE     ATRS
        CONNECTION TO ROUTE OPTIMIZATION NODE                      ROPT
        TSC-SIGNALING FOR NETWORKWIDE FEATURES (MANDATORY)         TSCS
        INCOMING CDR ACTIVATE PER TRUNK                            ICZO
        TRUNK SENDS CALL CHARGES TO ORIGINATING NODE NUMBER        TRSC
        CALL FORWARDING PROGRAMING FOR OTHER SUBSCRIBERS           CFOS
        CALL FORWARDING VALIDATION PROCEDURES POSSIBLE             CFVA
        PIN NETWORKWIDE POSSIBLE                                   PINR
        AOC PER CALL (AUTOMATICAL OR ON REQUEST), MAND. CORNET-NQ  AOCC
        CDR FOR BREAK OUT TO CARRIER                               CDBO
        AUTOM.DTMF CONVERSION ON INCOM.CALL WHILE IN TALK STATE    AMFC
        SEND DIGITS VIA IN.BAND DTMF BEFORE ANSWER                 IBBA
        NO TONE                                                    NTON

AMO-COT  -111       CLASS OF TRUNK FOR CALL PROCESSING
DISPLAY COMPLETED;
```

Class of Parameter for Device Handler, COP

```
DIS-COP:80;
H500:  AMO COP   STARTED

   COP:  80  INFO:
   DEVICE: INDEP        SOURCE: DB
   PARAMETER:
        REGISTRATION OF LAYER 3 ADVISORIES                         L3AR
        REFLECT RESTART INDICATOR AND B-CHANNEL BY RESTART         RRST

AMO-COP  -111       CLASS OF PARAMETER FOR DEVICE HANDLER
DISPLAY COMPLETED;
```

Class of Service, COSSU

```
DISPLAY-COSSU:TYPE=COS,COS=66;
H500:  AMO COSSU STARTED
   +------+-----------------+---------------+-----------------+
   | COS  |      VOICE      |      FAX      |       DTE       |
   +------+-----------------+---------------+-----------------+
   |   66 |>                                                  |
   |      |          TA     |     NOCO      |      NOCO       |
   |      |      TNOTCR     |     NOTIE     |      NOTIE      |
   |      |      COSXCD     |               |                 |
   |      |         VCE     |               |                 |
   |      |      FWDNWK     |               |                 |
   |      |         TTT     |               |                 |
   |      |      FWDECA     |               |                 |
   +------+-----------------+---------------+-----------------+

AMO-COSSU-111       CLASSES OF SERVICE
DISPLAY COMPLETED;

DISPLAY-COSSU:TYPE=LCOSV,LCOSV=1;
H500:  AMO COSSU STARTED
   +----+----------------------------------------------------------------+-----+
   |LCOS|                             LAUTH                              |COPIN|
   |  V |        1         2         3         4         5         6     |     |
   |    |1234567890123456789012345678901234567890123456789012345678901234|     |
   |    |>SERVICE INFORMATION                                            |     |
   +----+----+----|----+----|----+----|----+----|----+----|----+----|----+-----+
   |   1|X...............................................................|  0  |
   |    |>LCR ATTENDANT FOR VOICE                                        |     |
   +----+----------------------------------------------------------------+-----+

AMO-COSSU-111       CLASSES OF SERVICE
DISPLAY COMPLETED;
```

```
DISPLAY-COSSU:TYPE=LCOSD,LCOSD=1;
H500:  AMO COSSU STARTED
   +----+-----------------------------------------------------------------+-----+
   |LCOS|                             LAUTH                               |COPIN|
   |  D |         1         2         3         4         5         6     |     |
   |    |1234567890123456789012345678901234567890123456789012345678901234|     |
   |    |>SERVICE INFORMATION                                             |     |
   +----+----+----|----+----|----+----|----+----|----+----|----+----|----+-----+
   |   1|XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|  .  |
   |    |>LCR ATTENDANT FOR DATA                                          |     |
   +----+-----------------------------------------------------------------+-----+

AMO-COSSU-111       CLASSES OF SERVICE
DISPLAY COMPLETED;
```

Gateway Board configuration, STMIB

```
DISPLAY-STMIB;
H500:  AMO STMIB STARTED
+------------------------------------------------------------------------------+
  STMI2IGW BOARD DATA
+------------------------------------------------------------------------------+

+------------------------------------------------------------------------------+
  LTU = 1       SLOT = 103
+------------------------------------------------------------------------------+

  ETHERNET INTERFACE
  ------------------
  CUSIP      = 172.20.188.253
  SNETMASK   = 255.255.255.0
  DGWIP      = 172.20.188.1
  VLAN       = NO
  VLANID     = 0

  GLOBAL DATA
  -----------
  IDLE CODE PATTERN = 213

  CONSTANT VALUES:
  OPMODE = 1  DATA_VALID = YES
  TRKPROT = SIP

  PRIMARY AND SECONDARY GATEKEEPER
  --------------------------------
  PRIGKIP    =
  PRIGKPN    = 1719
  PRIGKID1   = PRIMARYRASMANAGERID
  PRIGKID2   =
  SECGKIP    =
  SECGKPN    = 1719
  SECGKID1   = SECONDARYRASMANAGERID
  SECGKID2   =
  TIMTOLIVE = 120

  MANAGEMENT STATION AND BACK-UP SERVER
  ------------------------------------
  MGNTIP     =
  MGNTPN     =
  BUSIP      =
  BUSPN      =

  DMC DATA
  --------
  DMCCONN    = 0

  WBM LOGIN DATA
  --------------
  LOGINWBM   = HP4K-DEVEL   ROLE   = ENGR
```

```
  LOGINWBM  = HP4K-SU      ROLE  = SU
  LOGINWBM  = HP4K-ADMIN   ROLE  = ADMIN
  LOGINWBM  = HP4K-READER  ROLE  = READONLY

  GATEWAY DATA
  ------------
  GWID1     = Gateway2_1_SIP
  GWID2     =

  H.235 SECURITY DATA
  -------------------
  GLOBID1   = siemensGateway2003
  GLOBID2   =
  TIMEWIN   = 90
  GLOBPW    =
242-191-30-119-188-83-173-161-43-0-70-36-218-74-169-221-78-102-174-170
  H235SEC   = NO

  LEGK DATA
  ------------------
  GWNO      = 1
  GWDIRNO   = 8080
  REGEXTGK  = NO

  SIP SUBSCRIBER
  ---------------

  SIP TRUNKING DATA FOR  ERH
  ---------------------------
  GWAUTREQ    = NO
  GWSECRET    = *****
  GWUSERID    =
  GWREALM     =

  SIP TRUNKING DATA FOR  SSA
  ---------------------------
  SIPREG      = NO
  REGIP1      = 0.0.0.0
  REGPORT1    = 5060
  REGIP2      = 0.0.0.0
  REGPORT2    = 5060
  REGTIME     = 120

  SNMP CONFIGURATION DATA
  -----------------------
  CS1   = "public"
  CS2   = ""

AMO-STMIB-111       CONFIGURATION OF HG35XX AND HG35XX-2 BOARDS
DISPLAY COMPLETED;
```

Gateway configuration, GKREG

```
DIS-GKREG;
H500:  AMO GKREG STARTED
+------------------------------------------------------------------------------+
| GWNO      1                GWATTR   INTGW    REGGW    HG3550V2 SIP            |
| GWIPADDR  172.20 .188.253           GWDIRNO  8080                            |
| DIPLNUM  0          DPLN 0                                                   |
| LAUTH     1                                                                  |
| GATEWAY REGISTERED: YES                                                      |
| IP GATEWAY IS CONFIGURED   BY  GKREG                                         |
| INFO:                                                                        |
+------------------------------------------------------------------------------+
| GWNO      2                GWATTR   INTGW    REGGW    HG3550V2               |
| GWIPADDR  172.20 .188.254           GWDIRNO  8088                            |
| DIPLNUM  0          DPLN 0                                                   |
| LAUTH     1                                                                  |
| GATEWAY REGISTERED: NO                                                       |
| IP GATEWAY IS CONFIGURED   BY  GKREG                                         |
```

```
| INFO:                                                                         |
+-------------------------------------------------------------------------------+
| GWNO      3               GWATTR   EXTGW    HG3550V2 SIP                      |
| GWIPADDR  172.20 .109.203          GWDIRNO  5060                              |
| DIPLNUM  0          DPLN 0                                                    |
| LAUTH     1                                                                   |
| GATEWAY REGISTERED: NO                                                        |
| IP GATEWAY IS CONFIGURED   BY  GKREG                                          |
| INFO:                                                                         |
+-------------------------------------------------------------------------------+

AMO-GKREG-111       GATEKEEPER REGISTRY
DISPLAY COMPLETED;
```

RICHT

```
DISPLAY-RICHT:MODE=LRTE,LRTE=570;
H500:  AMO RICHT STARTED
+-------------------------------------------------------------------+
| LRTE = 570    NAME = IP TO GW3 SIP    (NEUTRAL)  LSVC = ALL       |
| DNNO =1 -1  -80  PDNNO =       0                                  |
| ROUTOPT = NO     REROUT = YES   PLB = YES    FWDBL = NO           |
| DTMFCNV = FIX     DTMFDSP = WITHOUT DTMFTEXT =                    |
| DTMFPULS = PP80  BUGS = LIN  ROUTATT = NO       MAINGRP =   39    |
| EMCYRTT = NO       CONFTONE = NO   RERINGRP = NO   RTENO =   39   |
| INFO =                                                            |
| NOPRCFWD = NO                                                     |
| NITO = NO                                                         |
| CLNAMEDL = NO                                                     |
| FWDSWTCH = NO                                                     |
| LINFEMER = NO                                                     |
+-------------------------------------------------------------------+
| TGRP =  80  LDAT  IP TRUNK GW1 SIP   (NEUTRAL)  SUBGROUP =   23   |
+-------------------------------------------------------------------+

AMO-RICHT-111       TRUNK ROUTING
DISPLAY COMPLETED;
```

LCR Out-dial Rules, LODR

```
DISPLAY-LODR:ODR=1;
H500:  AMO LODR  STARTED
   +--------------------------------------------------------+
   |  ODR     POSITION  CMD         PARAMETER               |
   +---------+----------------------------------------------+
   |    1    |      1    ECHO        1                       |
   |         |      2    END                                 |
   +---------+----------------------------------------------+
H03: THE NEXT FREE ODR IS 3

AMO-LODR -111       ADMINISTRATION OF LCR OUTDIAL RULES
DISPLAY COMPLETED;

DISPLAY-LDAT:LROUTE=570;
DISPLAY-LDAT:LROUTE=570;
H500:  AMO LDAT  STARTED
+-----------------------------------------------------------------------------------+
| LROUTE = 570   LDPLN        NAME = IP TO GW3 SIP             SERVICE =  ALL     |
| TYPE = LCR                                   DNNO OF ROUTE  = 1 -1  -80         |
| SERVICE INFO =                                                                    |
+------+-----+-----+----+-----+----------+-----------+----------+-------+-------+
|      |     |     |    |     | SCHEDULE | CARRIER   |          |       |       |
|LRTEL | LVAL|TGRP | ODR|LAUTH| ABCDEFGH |       ZONE|    LATTR | LDSRT|COTIDX |
```

```
+-------+-----+-----+----+-----+-----------+-----------+----------+-------+-------+
|      1|    1|   80| 570| 1   | ********* | 1    EMPTY|      NONE |       | 0     |
|       +-------------------------------------------------------------------------+
|       |        GW1 =     3-0      GW2 =               GW3 =                      |
|       |               GW4 =              GW5 =                                  |
+---------------------------------------------------------------------------------+

AMO-LDAT -111       LCR-DIRECTIONS
DISPLAY COMPLETED;
```

In-Band DTMF signaling:

In order to enable In-band DTMF signaling on digital stations for Voicemail applications, the station configuration has to be changed so that the parameter DTMFCTRD=Y.

Name and Number Restrictions:

To use Name and Number Restrictions, the station configuration should be changed so that the parameter SSTNO=Y, (Secret Station Number must be set to Yes).

```
DISPLAY-SBCSU:5002;
H500:  AMO SBCSU STARTED

 ---------------------------- USER DATA ---------------------------------------
  STNO    =5002       OPT     =OPTI       COS1    =2          DPLN    =1
  MAINO   =5002       CONN    =DIR        COS2    =2          ITR     =1
  PEN     = 1- 3- 31-  2                  LCOSV1  =6          COSX    =0
  INS     =Y          ASYNCT  =500        LCOSV2  =6
                      PERMACT =           LCOSD1  =6
  SSTNO   =Y          EXTBUS  =           LCOSD2  =6          CBKBMAX =5
  TRACE   =N                                                  RCBKB   =N
  ALARMNO =0          DFSVCANA=           SPDI    =0          RCBKNA  =N
  HMUSIC  =0          FLASH   =           SPDC1   =           CBKNAMB =Y
  PMIDX   =1                              SPDC2   =
                                                              COMGRP  =0
  SECR    =N          DIGNODIS=N          DSSTNA  =N
  STD     =55         CALLOG  =NONE       DSSTNB  =Y          TEXTSEL =ENGLISH

  REP     =0          OPTICOM =N          OPTIUSB :           VPI     =
  IDCR    =N          OPTICA  =1          OPTIS0A :0          VCI     =
  APPM    =           OPTIDA  =1          OPTISPA :0          PATTERN =
                                          OPTIABA :0

  DCFWBUSY=N          HEADSET =N          APMOBUSR=           APICLASS=
  DNIDSP  =N          HSKEY   =NORMAL     IPCODEC =           SECAPPL =
  DTMFBLK =N                              IPPASSW =
  DTMFCTRD=Y          BASICSVC=
  DVCFIG  =OPTISET    TSI     =1          SPROT   =           SOPTIDX =
                                          DPROT   =           DOPTIDX =
                                          FPROT   =           FOPTIDX =
 ------------------- ACTIVATION IDENTIFIERS FOR FEATURES ----------------------
                      HTOS    :N          DND     :N
                      HTOD    :N          VCP     :Y          TWLOGIN :N
                      HTOF    :N          CWT     :N
 ------------------- FEATURES AND GROUP MEMBERSHIPS ---------------------------
  PUGR    :           ESSTN   :
  KEYSYS  :N          NOPTNO  :
  SRCGRP  :(1 )       TCLASS  : 0
  HUNT CD :N
 ------------------- SUBSCRIBER ATTRIBUTES (AMO SDAT) -------------------------
  NONE
 ------------------------------------------------------------------------------

AMO-SBCSU-111       STATION AND S0-BUS CONFIGURATION OF SWITCHING UNIT
DISPLAY COMPLETED;
```

Configure Digital Station for MWI Application:

To get the MWI light to work, the station configuration should be changed so that the parameter PMIDX (phoneMail Index parameter) needs to point to the IDX identifier that identifies the Message Center's Service Access Number.

```
DIS-SBCSU:5002;
H500:  AMO SBCSU STARTED

 --------------------------- USER DATA ---------------------------------------
  STNO    =5002       OPT     =OPTI       COS1    =2          DPLN    =1
  MAINO   =5002       CONN    =DIR        COS2    =2          ITR     =1
  PEN     = 1- 3- 31-  2                  LCOSV1  =6          COSX    =0
  INS     =Y          ASYNCT  =500        LCOSV2  =6
                      PERMACT =           LCOSD1  =6
  SSTNO   =N          EXTBUS  =           LCOSD2  =6          CBKBMAX =5
  TRACE   =N                                                  RCBKB   =N
  ALARMNO =0          DFSVCANA=           SPDI    =0          RCBKNA  =N
  HMUSIC  =0          FLASH   =           SPDC1   =           CBKNAMB =Y
  PMIDX   =1                              SPDC2   =
                                                              COMGRP  =0
  SECR    =N          DIGNODIS=N          DSSTNA  =N
  STD     =55         CALLOG  =NONE       DSSTNB  =Y          TEXTSEL =ENGLISH

  REP     =0          OPTICOM =N          OPTIUSB :           VPI     =
  IDCR    =N          OPTICA  =1          OPTIS0A :0          VCI     =
  APPM    =           OPTIDA  =1          OPTISPA :0          PATTERN =
                                          OPTIABA :0

  DCFWBUSY=N          HEADSET =N          APMOBUSR=           APICLASS=
  DNIDSP  =N          HSKEY   =NORMAL     IPCODEC =           SECAPPL =
  DTMFBLK =N                              IPPASSW =
  DTMFCTRD=Y          BASICSVC=
  DVCFIG  =OPTISET    TSI     =1          SPROT   =           SOPTIDX =
                                          DPROT   =           DOPTIDX =
                                          FPROT   =           FOPTIDX =
 ------------------- ACTIVATION IDENTIFIERS FOR FEATURES ---------------------
                      HTOS    :N          DND     :N
                      HTOD    :N          VCP     :Y          TWLOGIN :N
                      HTOF    :N          CWT     :N
 ------------------- FEATURES AND GROUP MEMBERSHIPS --------------------------
  PUGR    :           ESSTN   :
  KEYSYS  :N          NOPTNO  :
  SRCGRP  :(1 )       TCLASS  : 0
  HUNT CD :N
 ------------------- SUBSCRIBER ATTRIBUTES (AMO SDAT) ------------------------
  NONE
 -----------------------------------------------------------------------------

AMO-SBCSU-111       STATION AND S0-BUS CONFIGURATION OF SWITCHING UNIT
DISPLAY COMPLETED;
```

Configure Message Center's Service Access Number for MWI Application:

Since the MWI was tested with the Message Center integrated on Cisco Unified Communication Manager side, the PBX needs to configure an identifier for the Message Center's Service Access Number in order for the MWI light to work. Without this identifier the MWI light will not work.

```
ADD-RICHT:MODE=PM,IDX=1,SAN=6999;
H500: AMO RICHT STARTED
AMO-RICHT-111 TRUNK ROUTING
ADD COMPLETED;

DISPLAY-RICHT:MODE=PM;
DISPLAY-RICHT:MODE=PM;
H500:  AMO RICHT STARTED
+------+----------------------+------------------------------+--------+
| IDX  |         SAN          |             NAME             |  TYPE  |
+------+----------------------+------------------------------+--------+
|     1|6999                  |                              |OTHER   |
```

```
+------+---------------------+-----------------------------+--------+

AMO-RICHT-111       TRUNK ROUTING
DISPLAY COMPLETED;
```

Configure Digital Station's Class of Service for Mailbox MWI application

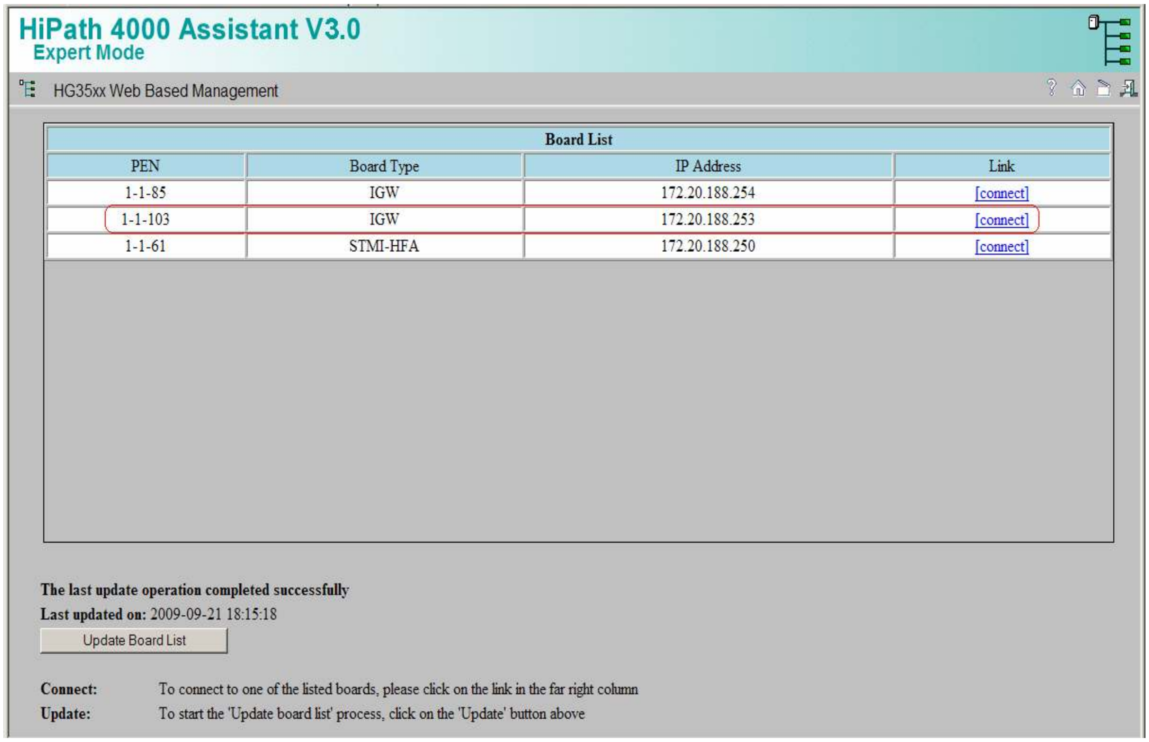
```
DISPLAY-COSSU:TYPE=COS,COS=2,FORMAT=L;
H500:  AMO COSSU STARTED
   +------+-----------------+---------------+-----------------+
   | COS  |       VOICE     |      FAX      |       DTE       |
   +------+-----------------+---------------+-----------------+
   |    2 |>                                                  |
   |      |            TA   |      NOCO     |         TA      |
   |      |         TSUID   |     NOTIE     |     TNOTCR      |
   |      |        TNOTCR   |     BASIC     |      BASIC      |
   |      |          CDRS   |               |                 |
   |      |          CDRC   |               |                 |
   |      |        CDRIND   |               |                 |
   |      |        CDRINT   |               |                 |
   |      |        COSXCD   |               |                 |
   |      |            MB   |               |                 |
   |      |          DATA   |               |                 |
   |      |          CFNR   |               |                 |
   |      |           VCE   |               |                 |
   |      |          SPKR   |               |                 |
   |      |        FWDNWK   |               |                 |
   |      |        RERING   |               |                 |
   |      |           MSN   |               |                 |
   |      |           CFB   |               |                 |
   |      |        FWDDIR   |               |                 |
   |      |        FWDBAS   |               |                 |
   |      |        FWDECA   |               |                 |
   |      |        FWDEXT   |               |                 |
   |      |          CCBS   |               |                 |
   |      |            CW   |               |                 |
   |      |        GRPCAL   |               |                 |
   |      |         SUTVA   |               |                 |
   +------+-----------------+---------------+-----------------+

AMO-COSSU-111       CLASSES OF SERVICE
DISPLAY COMPLETED;

DISPLAY-PERSI:TYPE=NAME,STNO=5002;
H500:  AMO PERSI STARTED
+--------+------------------------------------------+---------------------------+
| STNO   |    CHRISTIAN AND SURNAME         CHARCON |   ORGANIZATIONAL UNIT     |
+--------+------------------------------------------+---------------------------+
|        |                                          |                           |
| 5002   | HIPATH DT2*                              |                           |
|        |                                          |                           |
+--------+------------------------------------------+---------------------------+

AMO-PERSI-111       PERSONAL IDENTIFICATION DATA
DISPLAY COMPLETED;
```

Siemens HiPath 4000 Software Release

```
DISPLAY-DBC:VERBOSE=N;
H500:  AMO DBC   STARTED
+-------------------------------------------------------------------------------+
| SYSTEM CLASSIFICATION   : SYSTEM 80            (H80    )                      |
| HARDWARE ASSEMBLY       : EXTENDED COMPACT CXE (CXE     )                     |
| OPERATING MODE          : SIMPLEX                                             |
| RESTART TYPE            : SYM                                                 |
```

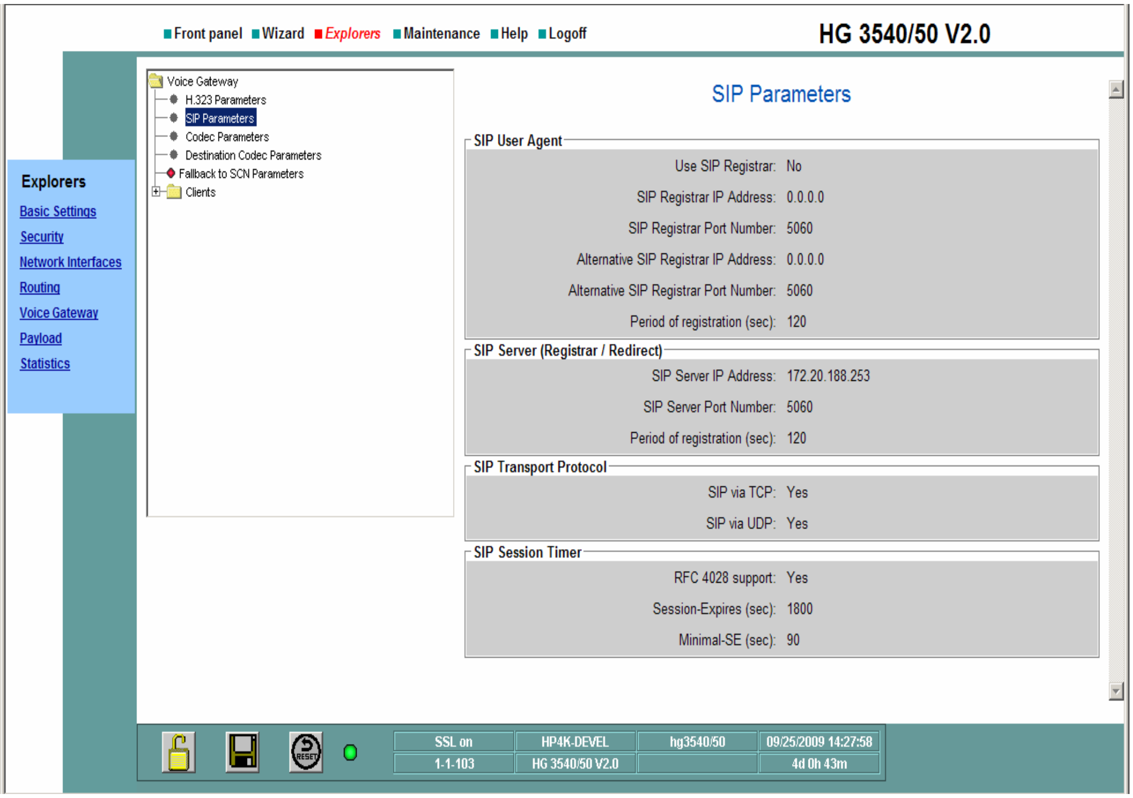
```
| HW-ARCHITECTURE          : 4300                                              |
| HW-ARCHITECTURE TYPE     : 2                                                 |
|                                                                              |
| 'NO OF' HW VALUES                                                            |
|   LTG'S      :    1  LTU'S          :  4  LOG.LINES : 12000  MTS BD /GSN:   1 |
|   SIUP'S/LTU:     4  TMD24'S PER LTU:  4  PHYS.PORTS:  6000  HWY /MTS BD:  64 |
|   HDLC /DCL :     5  PBC /DCL       :  1  PBC'S     :    17                  |
| LOG. SIU LINES           :   26                                              |
| LOG. CONF LINES          :   35                                              |
| LOG. DCL LINES           :   36                                              |
| DB DIMENSIONING-NAME     : SMALL            CONF-TABLE VERSION:   1          |
| DB SUSY'S:                                                                   |
|   SWITCH NUMBER : L31903Q1930A00001                                          |
| LOCATION          : CUSTOMER                                                 |
| BAPPL             : BSMONO                                                   |
| DBAPPL            : DBSMALL                                                  |
| SYSTEM_ID         :                                                          |
|                                                                              |
| OVERLAY RESOURCES IN ADP:                                                    |
|   SLOTS        : 1000   MEMORY SPACE : 2000 KB                               |
| OVERLAY RESOURCES IN SWU:                                                    |
|   SLOTS        : 1000   MEMORY SPACE : 2000 KB                               |
| OVERLAY RESOURCES BEI MONO PROCESSING:                                       |
|   SLOTS        :  400   MEMORY SPACE : 3000 KB                               |
+------------------------------------------------------------------------------+

AMO-DBC  -111       DATABASE CONFIGURATION
DISPLAY COMPLETED;


DISPLAY-VEGAS:LIST=LONG;
H500:  AMO VEGAS STARTED
     SYSTEM NO.        AMO   APS NO.            START           USER     STATUS
SWU: L31903Q1930A00001 REGEN P30252B4500B00108 07.06.09  22:01 CDBR     FREE
      SWU RES CODE APS: P30252B4500S00108   (DIR FILE:  :PDS:APSI/PS/S0-EM0SC)
      SWU AMO CODE APS: P30252B4500B00108   (DIR FILE:  :PDS:APSI/PS/B0-EM0BC)
      SWU AMO TEXT APS: P30252B4500B00108   (DIR FILE:  :PDS:APSI/PS/B0-EM0BC)
      BREAK MARK  : NO
      RESERVATION : NO
ADS: L31903Q1930A00001 REGEN P30252B4500A00108 07.06.09  22:02 CDBR     FREE
      ADS RES CODE APS: P30252B4500D00108   (DIR FILE:  :PDS:APSI/PS/D0-EM0DC)
      ADS AMO CODE APS: P30252B4500A00108   (DIR FILE:  :PDS:APSI/PS/A0-EM0AC)
      ADS AMO TEXT APS: P30252B4500A00108   (DIR FILE:  :PDS:APSI/PS/A0-EM0AC)
      BREAK MARK  : NO
      RESERVATION : NO

AMO-VEGAS-111       ADMIN. OF DATABASE GENERATION RUNS ON SUPPORT SYSTEM
DISPLAY COMPLETED;


DISPLAY-APS:ANS=Y,TYPE=PSALL,SP="Y0-EM0YC";
H500:  AMO APS   STARTED
ADINIT STARTED
PROGRAM SYSTEM           : Y0-EM0YC
VERSION NUMBER           : 10
CORRECTION VERSION NUMBER : 001
PART NUMBER              : P30252N4508BH5402|V3.0 R8.2.54
PROGRAM SYSTEM WITH CODE SUBSYSTEMS
INTERFACE VERSION:
PROGRAM SYSTEM DOES NOT CONTAIN ANY INTERFACE VERSIONS

ADINIT COMPLETED
STATUS  =  H'0000
AMO-APS  -111       SOFTWARE LOAD UPGRADE
DISPLAY COMPLETED;
```

HiPath 4000 AssistantVersion 3.0

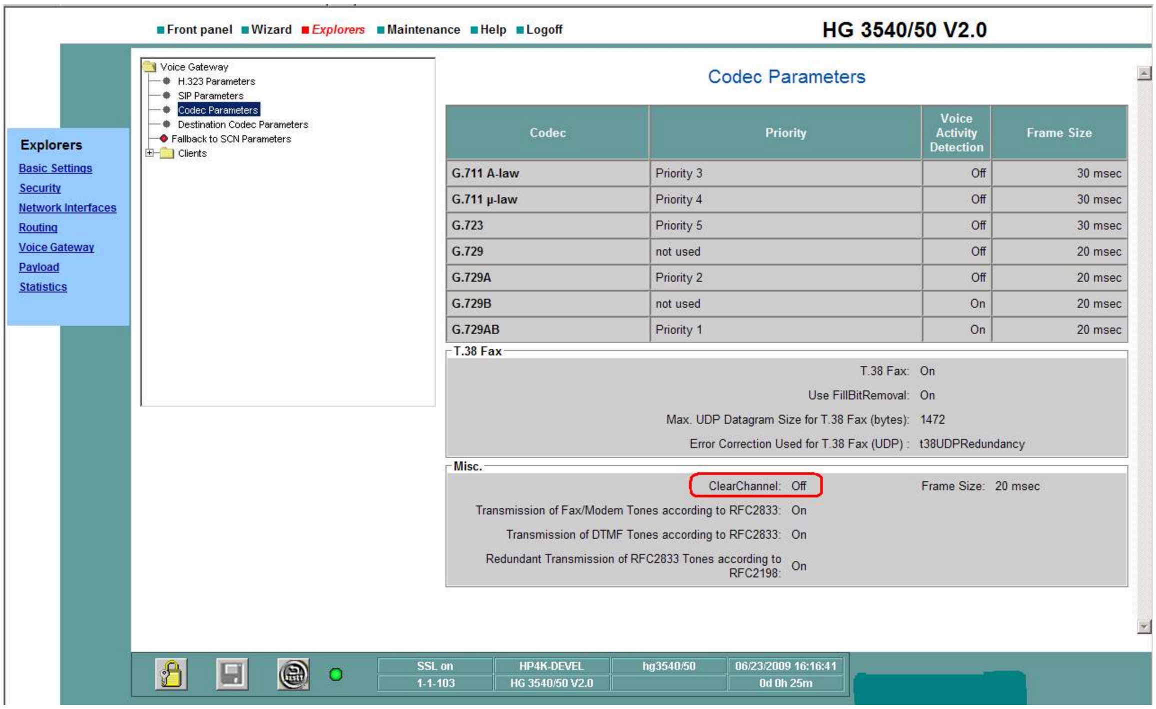


Gateway Configuration

SIP Parameters



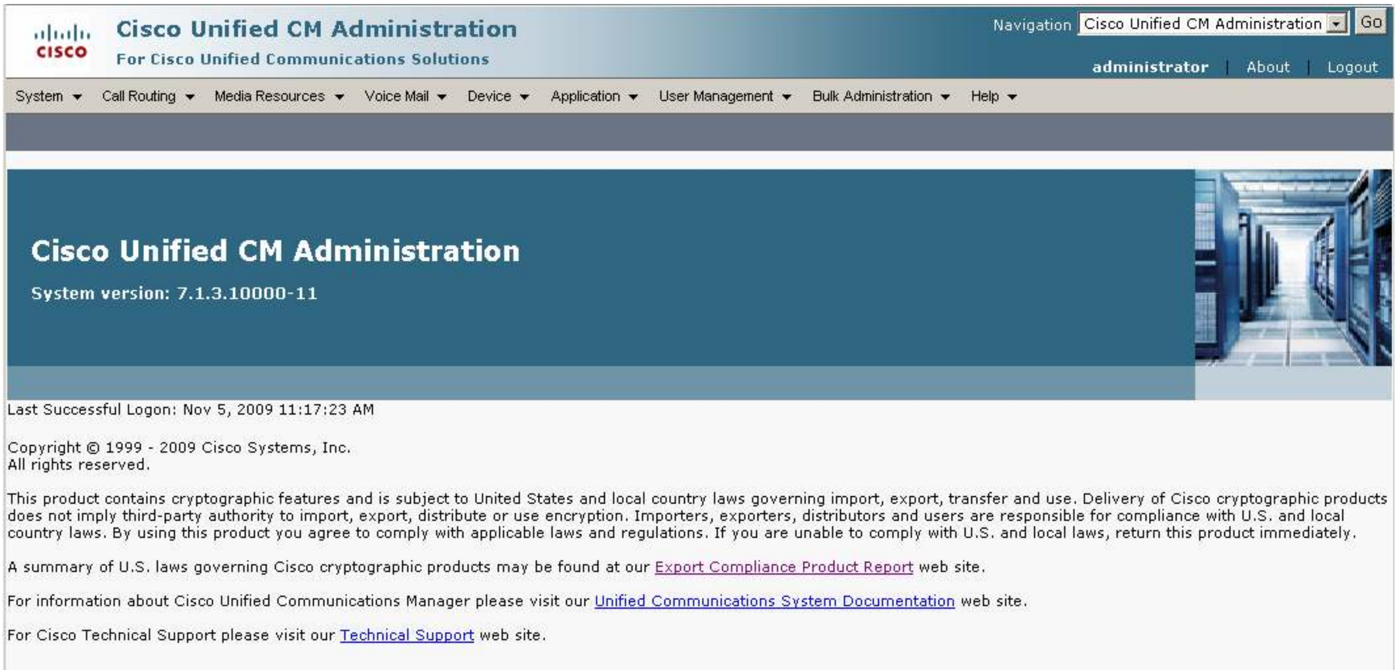
CODEC parameter configuration



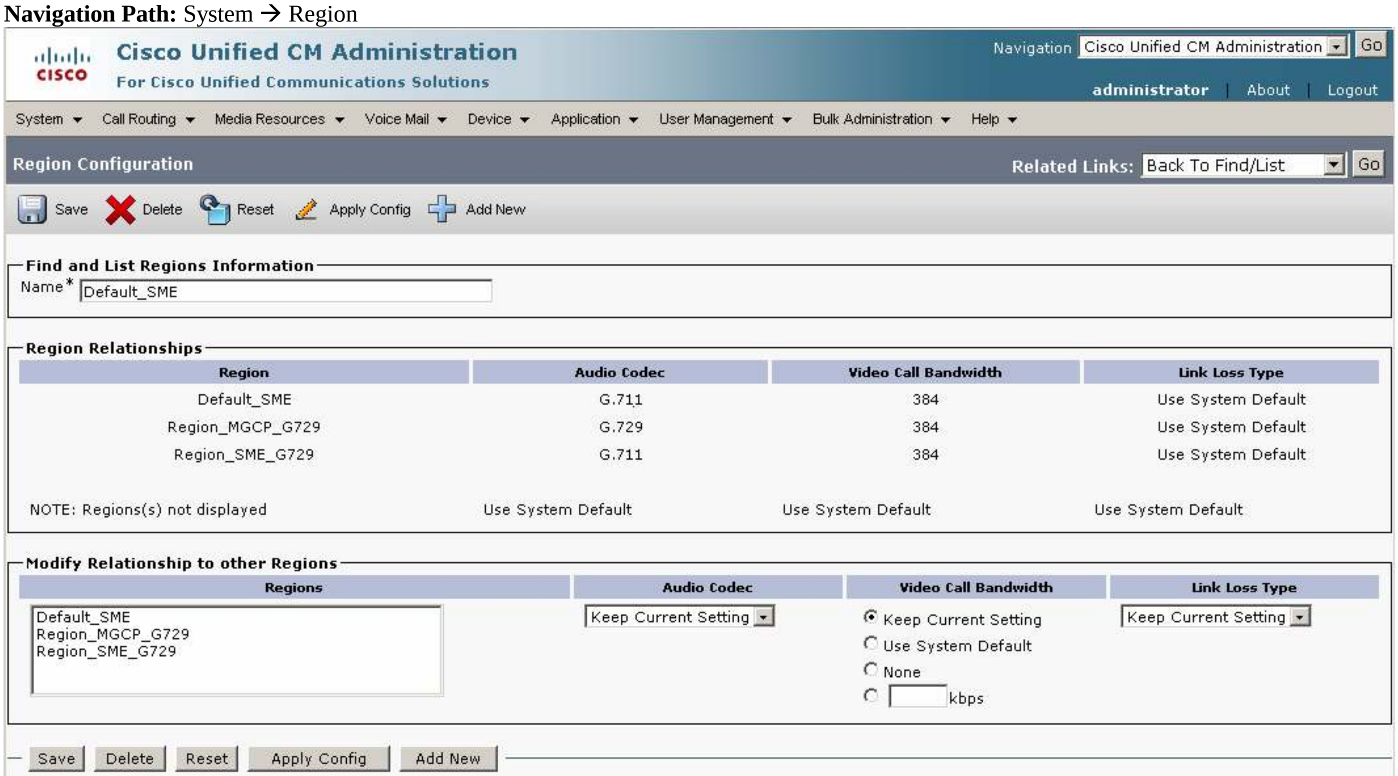
Configuring the Cisco Session Manager

1. Cisco Session Manager Version
2. Device pool and Region mapping configuration
3. Media Termination Point configuration
4. Media Resource Group configuration
5. Media Resource Group List configuration
6. Dual SIP Trunks configuration overview
7. G.711 SIP trunk configuration to Siemens
8. G.729 SIP trunk configuration to Siemens
9. G.711 SIP trunk configuration to CUCM
10. G.729 SIP trunk configuration to CUCM
11. G.711 SIP trunk configuration to SP
12. G.729 SIP trunk configuration to SP
13. Route Group configuration to Siemens
14. Route Group configuration to CUCM
15. Route Group configuration to SP
16. Route List configuration to Siemens
17. Route List configuration to CUCM
18. Route List configuration to SP
19. Route Pattern configuration to Siemens
20. Route Pattern configuration to CUCM
21. Route Pattern configuration to SP
22. Translation Pattern configuration (From Avaya towards SP)
23. Translation Pattern configuration (From SP towards Avaya/CUCM)

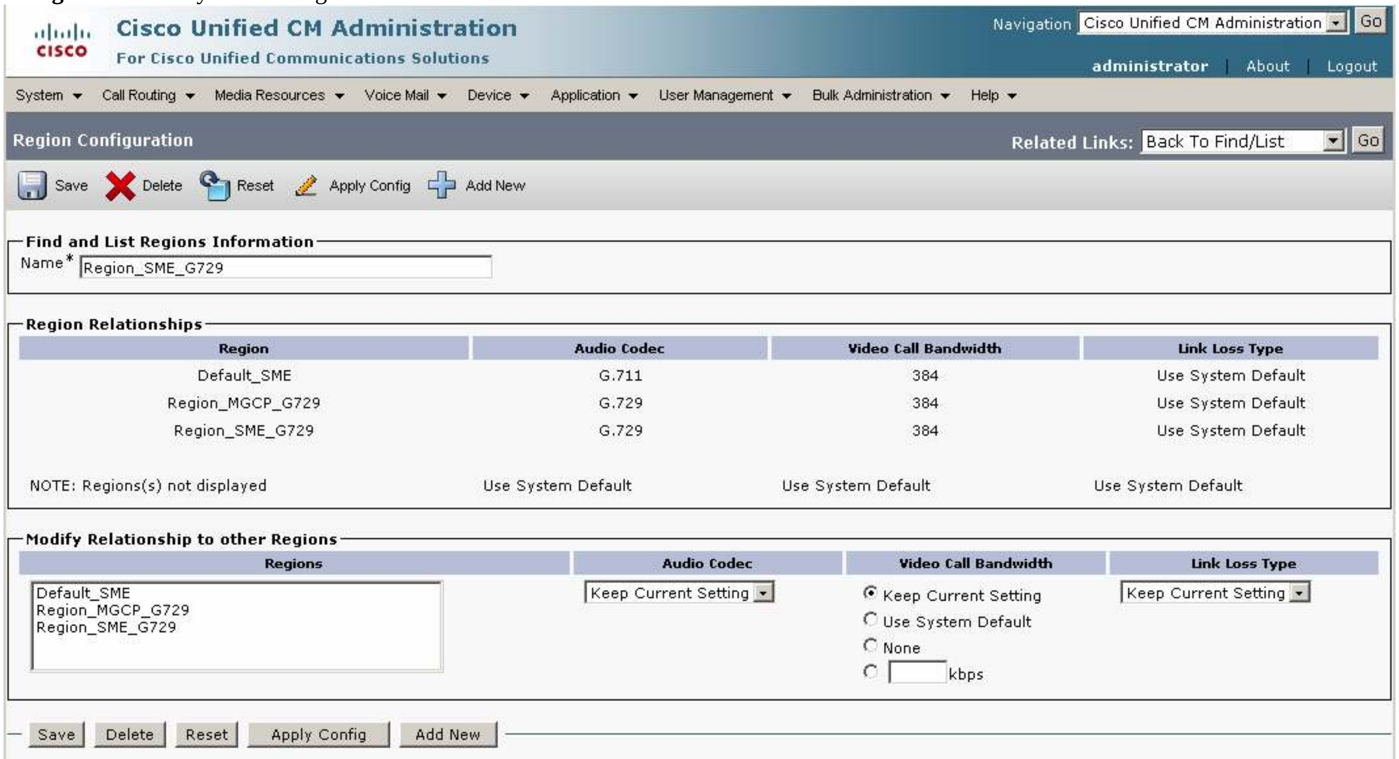
Cisco Session Manager Version



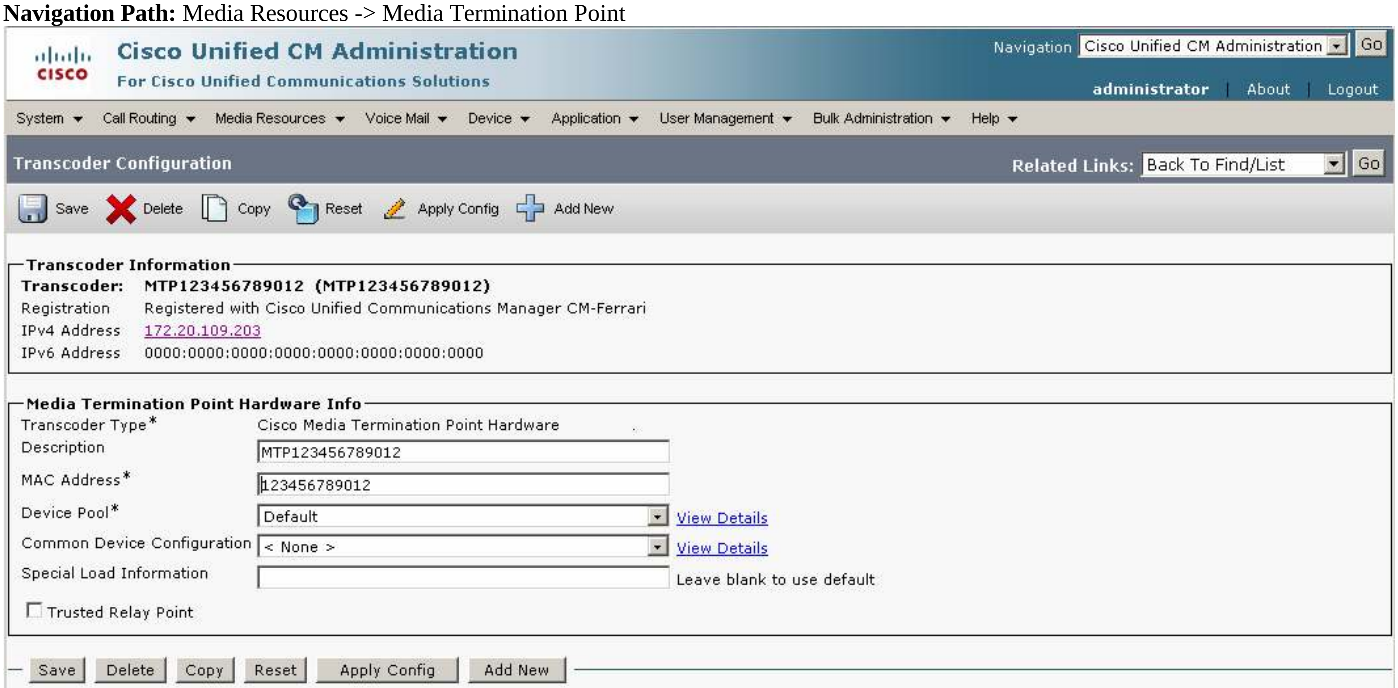
Configuration of Device Pool to Region mapping (Page 1 of 2)
Navigation Path: System → Region



Configuration of Device Pool to Region mapping (Page 2 of 2)
Navigation Path: System → Region



Configuration of the Media Termination Point
Navigation Path: Media Resources -> Media Termination Point

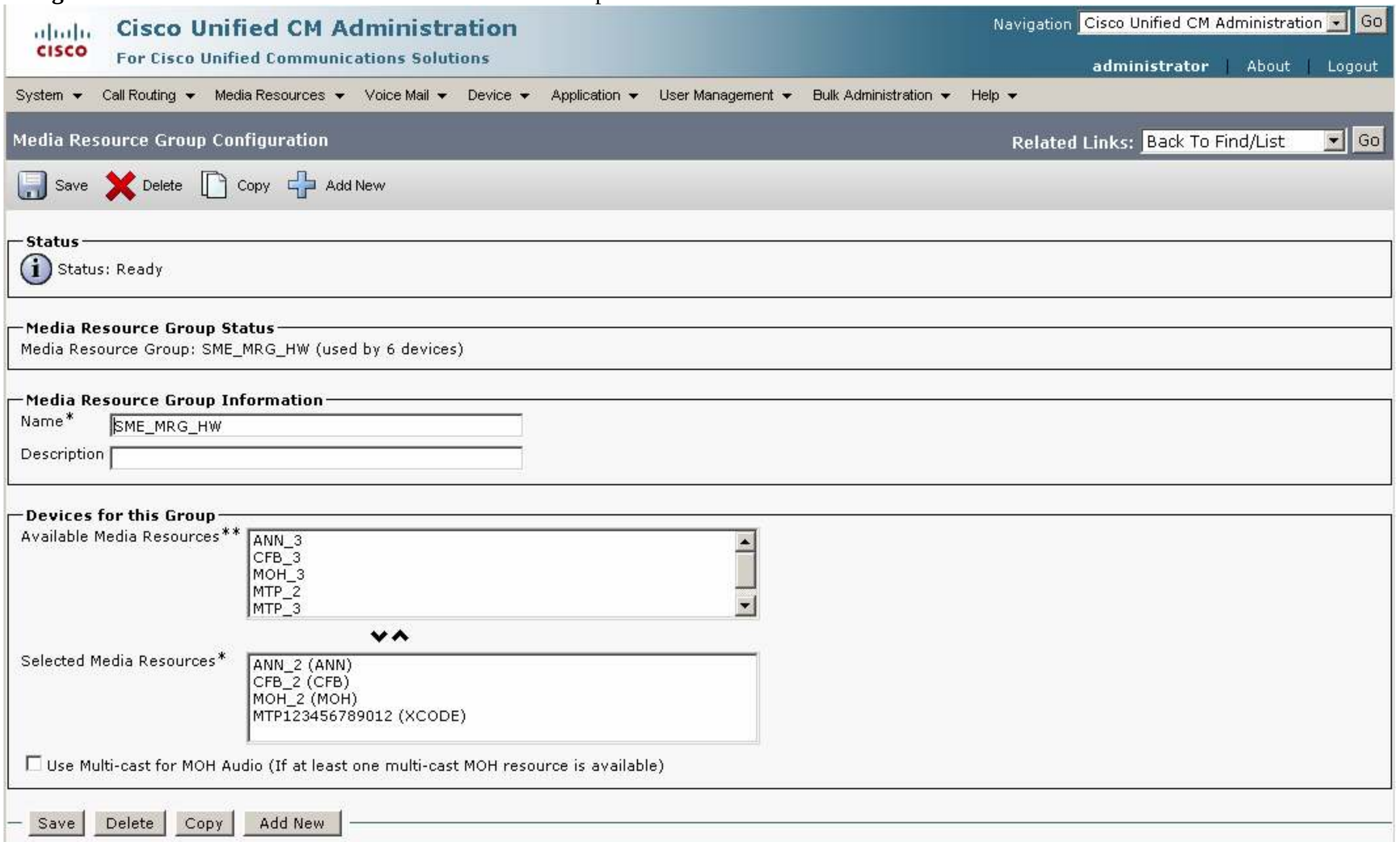


<u>MTP configuration:</u>

```
sccp local GigabitEthernet0/0
sccp ccm 172.20.109.252 identifier 1 version 7.0
sccp
!
sccp ccm group 1
 bind interface GigabitEthernet0/0
 associate ccm 1 priority 1
 associate profile 50 register mtp123456789012
!
dspfarm profile 50 transcode
 codec g711ulaw
 codec g711alaw
 codec g729ar8
 codec g729abr8
 codec ilbc
 codec g723r63
 codec g723r53
 codec g729r8
 codec g729br8
 codec pass-through
 maximum sessions 10
 associate application SCCP
```

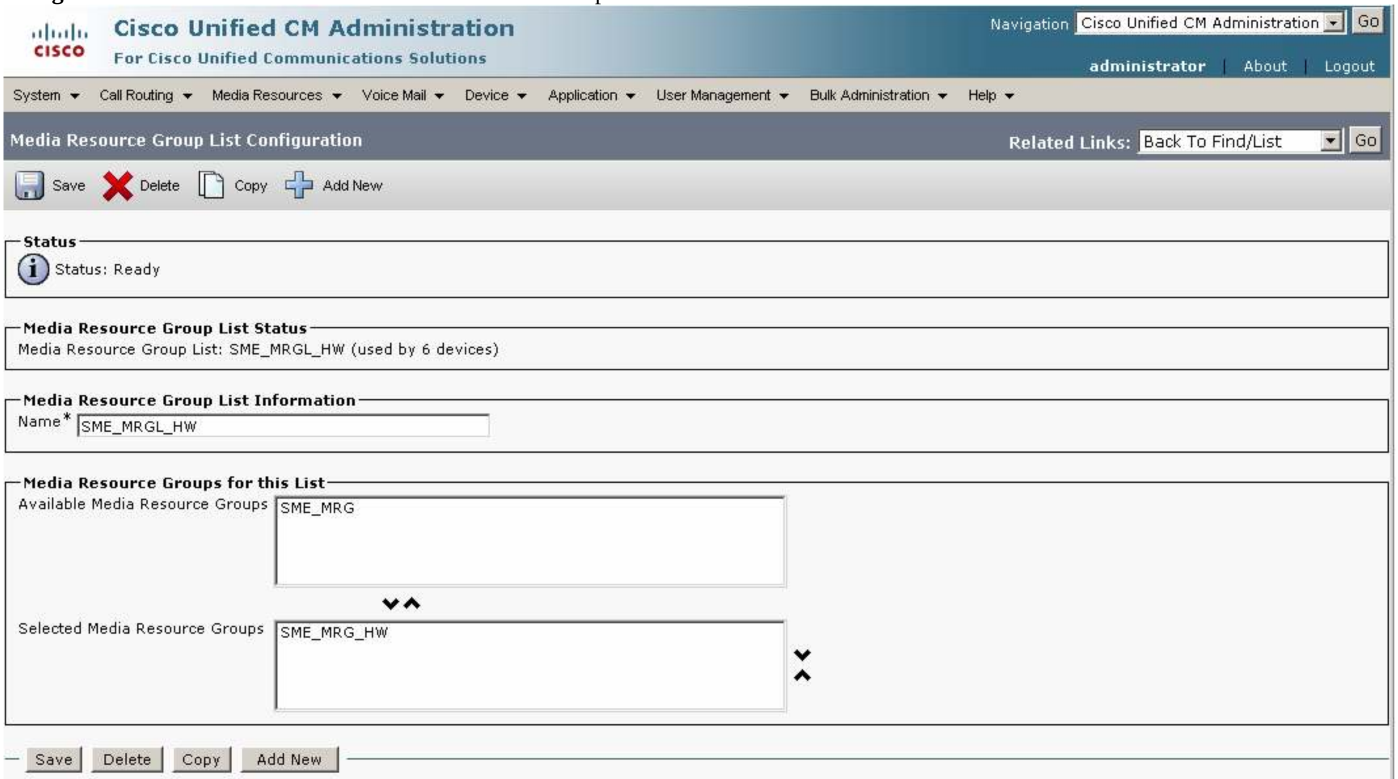
Configuration of the Media Resource Group

Navigation Path: Media Resources -> Media Resource Group

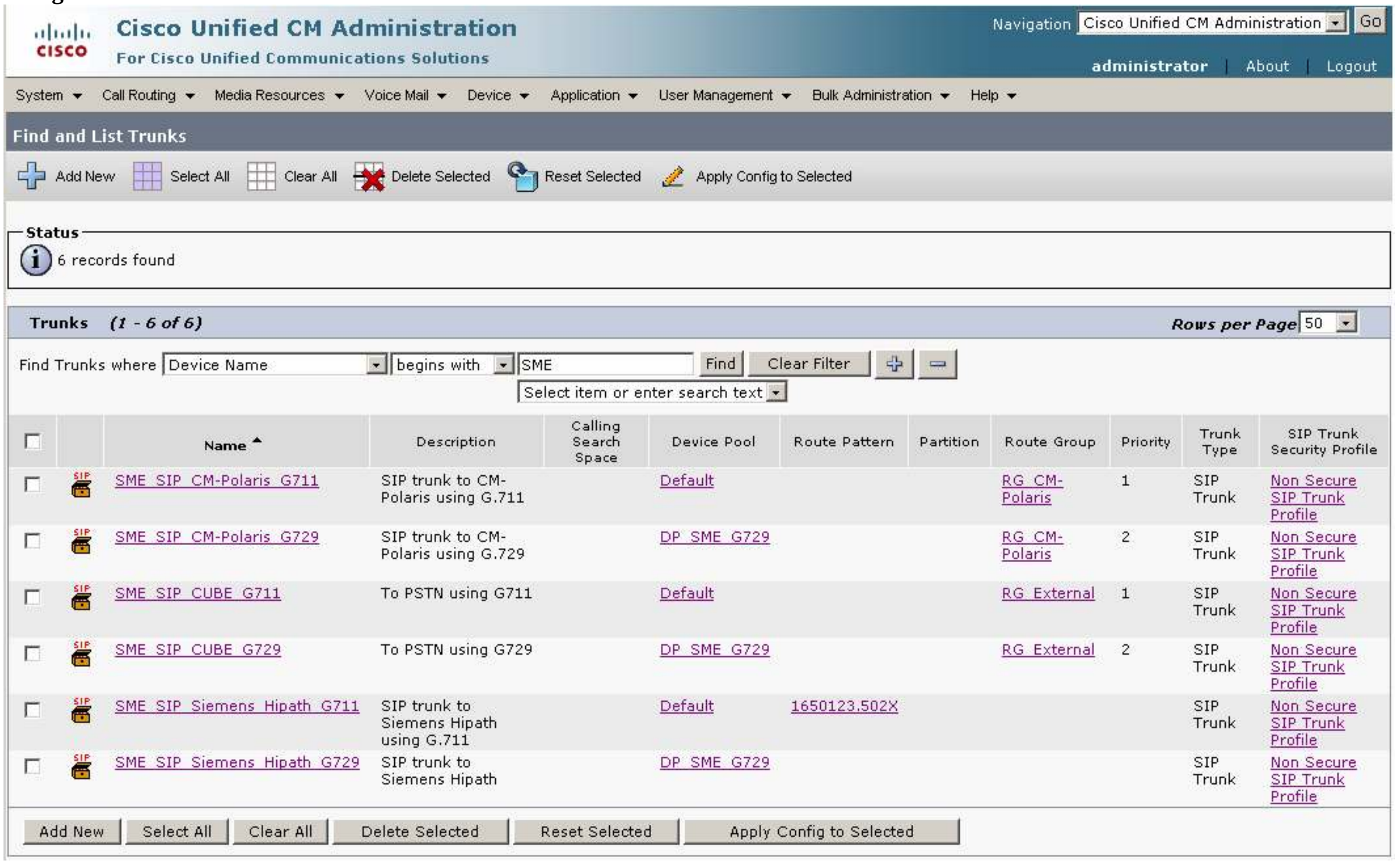


Configuration of the Media Resource Group List

Navigation Path: Media Resources -> Media Resource Group List



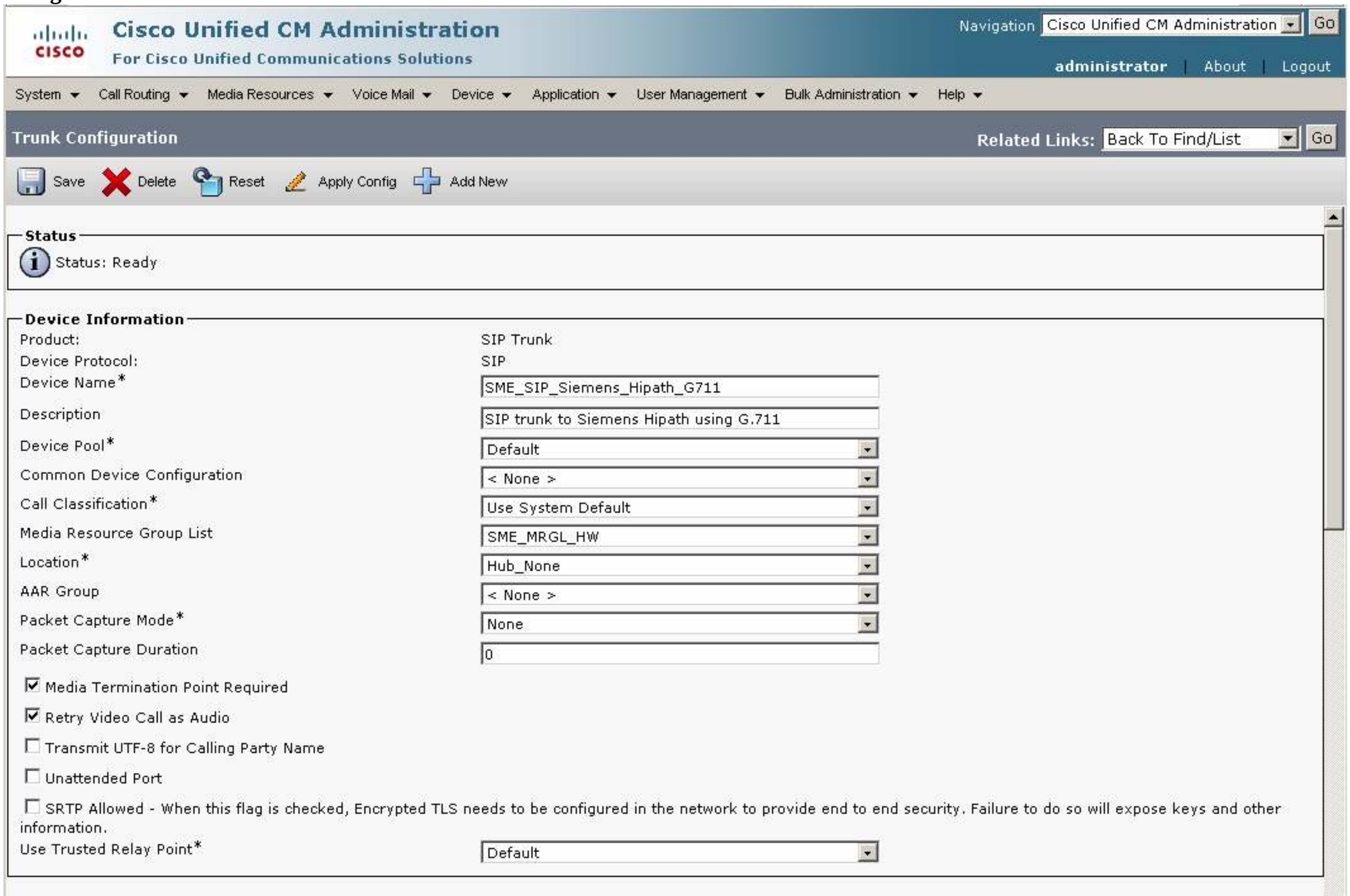
Configuration of Dual SIP trunks - Overview
Navigation Path: Device -> Trunk



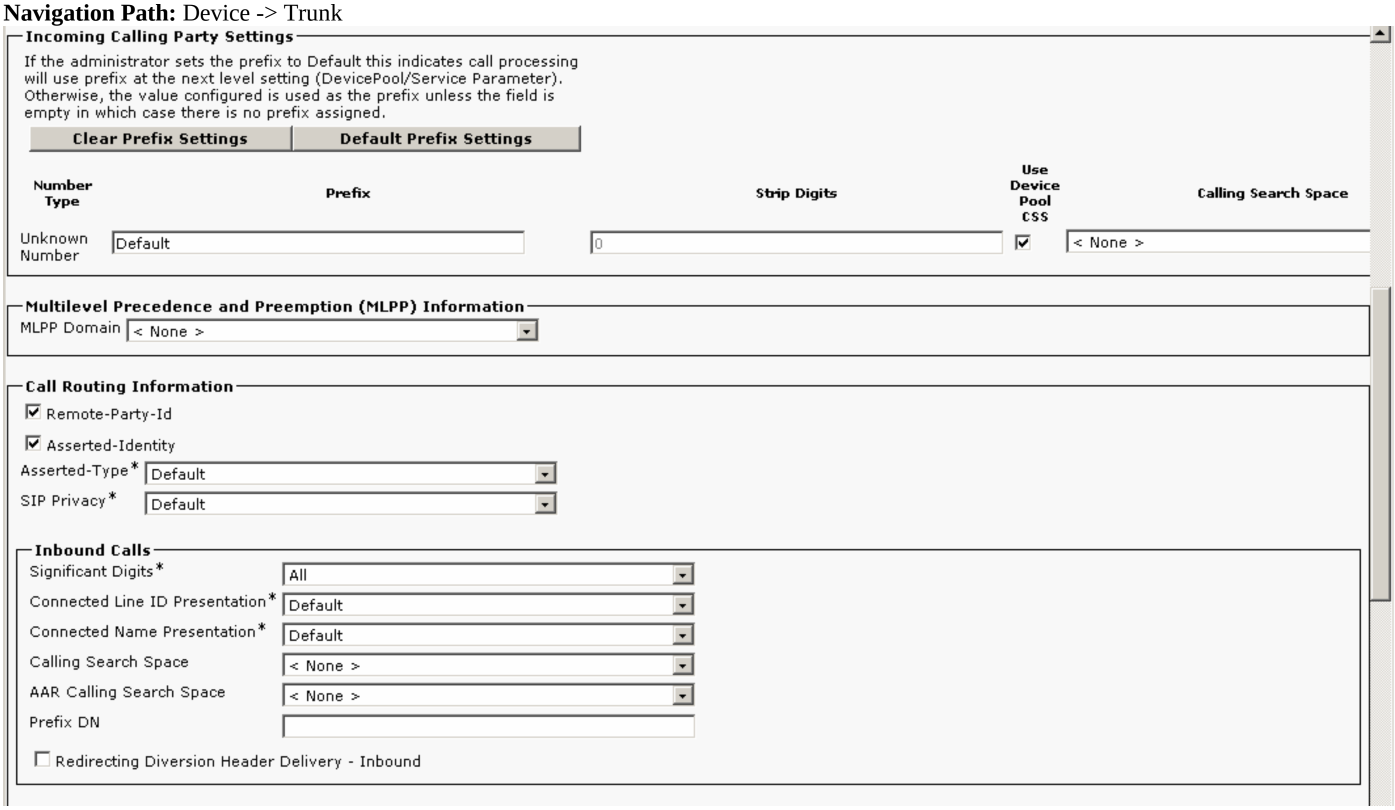
Name	Description	Calling Search Space	Device Pool	Route Pattern	Partition	Route Group	Priority	Trunk Type	SIP Trunk Security Profile
SME_SIP_CM-Polaris_G711	SIP trunk to CM-Polaris using G.711		Default			RG_CM-Polaris	1	SIP Trunk	Non Secure SIP Trunk Profile
SME_SIP_CM-Polaris_G729	SIP trunk to CM-Polaris using G.729		DP_SME_G729			RG_CM-Polaris	2	SIP Trunk	Non Secure SIP Trunk Profile
SME_SIP_CUBE_G711	To PSTN using G711		Default			RG_External	1	SIP Trunk	Non Secure SIP Trunk Profile
SME_SIP_CUBE_G729	To PSTN using G729		DP_SME_G729			RG_External	2	SIP Trunk	Non Secure SIP Trunk Profile
SME_SIP_Siemens_Hipath_G711	SIP trunk to Siemens Hipath using G.711		Default	1650123.502X				SIP Trunk	Non Secure SIP Trunk Profile
SME_SIP_Siemens_Hipath_G729	SIP trunk to Siemens Hipath		DP_SME_G729					SIP Trunk	Non Secure SIP Trunk Profile

Note: When SIP trunks are configured with "Media Termination Point Required", CUCM performs SIP Early Media on outbound calls, advertising only the codec selected in parameter "MTP Preferred Originating Codec". When Route Groups are configured with multiple SIP trunks performing SIP Early Media, outbound calls will advertise only the codec associated with the first choice trunk within the Route Group. If the first choice SIP trunk is the one configured for G.711 codec, all outbound calls will be placed using G.711 codec. Because of this, it is recommended that whenever "Media Termination Point Required" must be used (as with the Siemens HiPath 4000), and both G.711 and G.729 outbound calls must be supported, SIP trunks should not be configured in Route Groups. Instead, configure two different Route Patterns: one for G.711-only outbound calls (with the G.711-configured SIP trunk as its Gateway), and one for G.729-only calls (with the G.729-configured SIP trunk as its Gateway).

Configuration of Dual SIP trunks to Siemens – G.711 (Page 1 of 3)
Navigation Path: Device -> Trunk

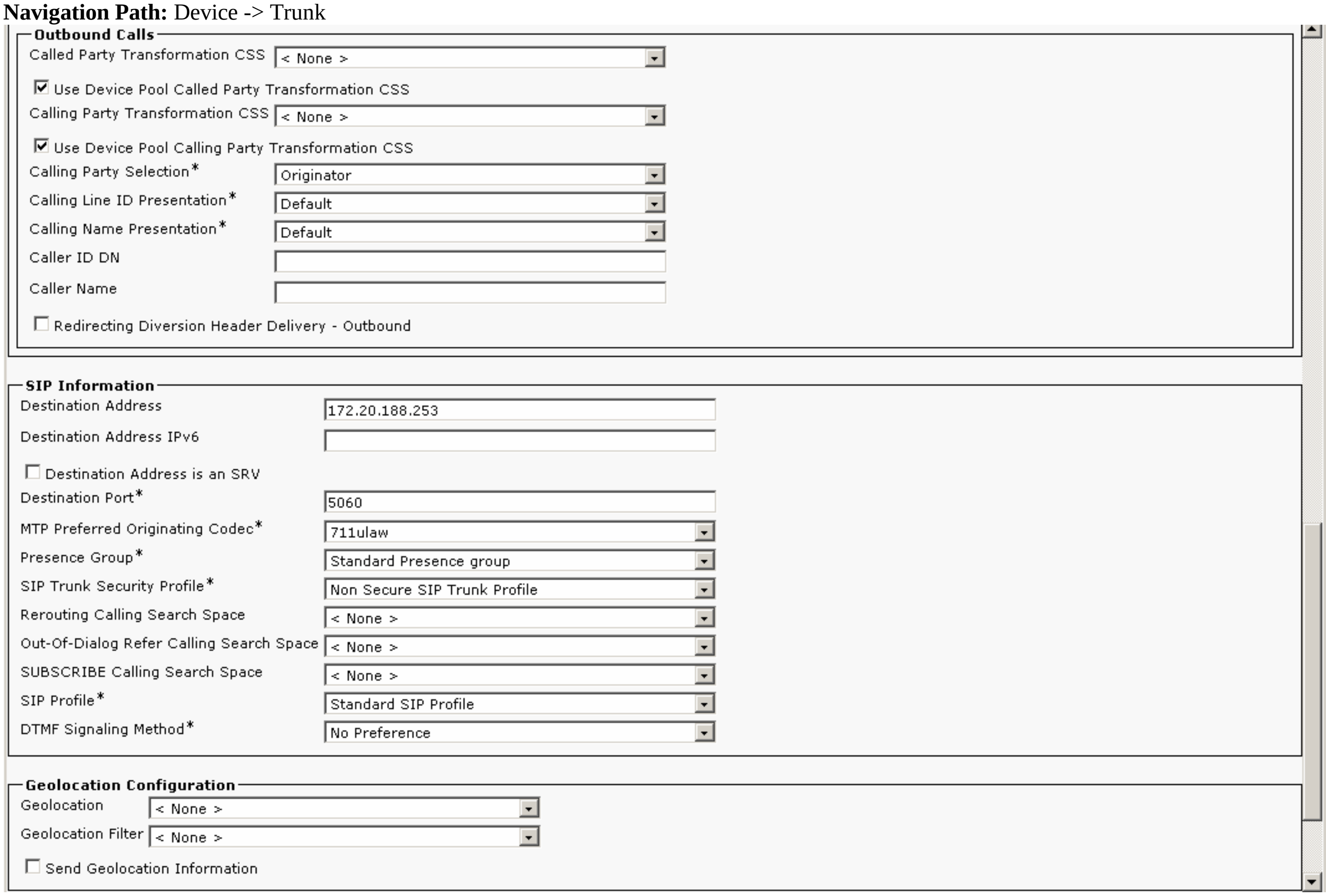


Configuration of Dual SIP trunks to Siemens – G.711 (Page 2 of 3)
Navigation Path: Device -> Trunk

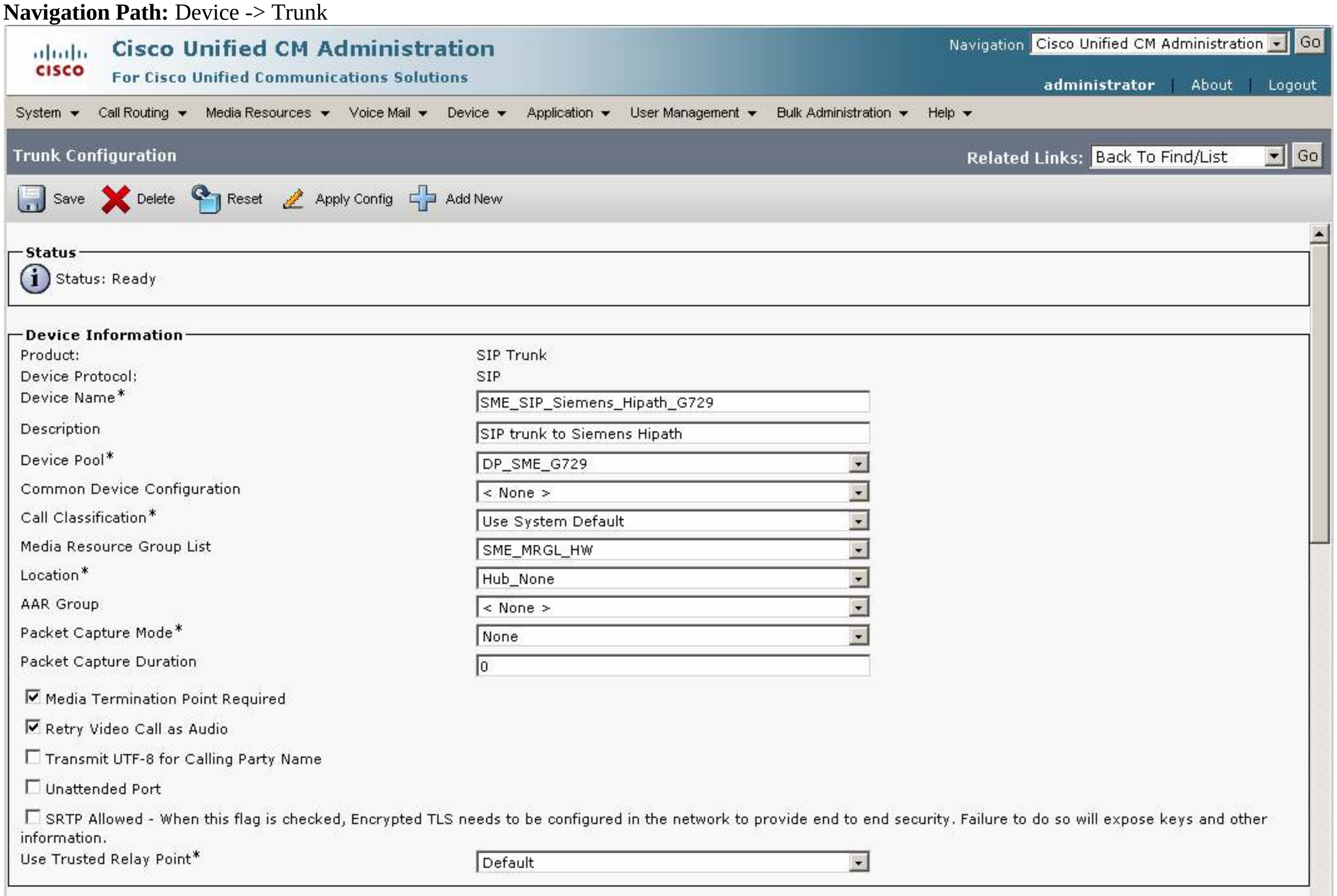


Configuration of Dual SIP trunks to Siemens – G.711 (Page 3 of 3)

Navigation Path: Device -> Trunk

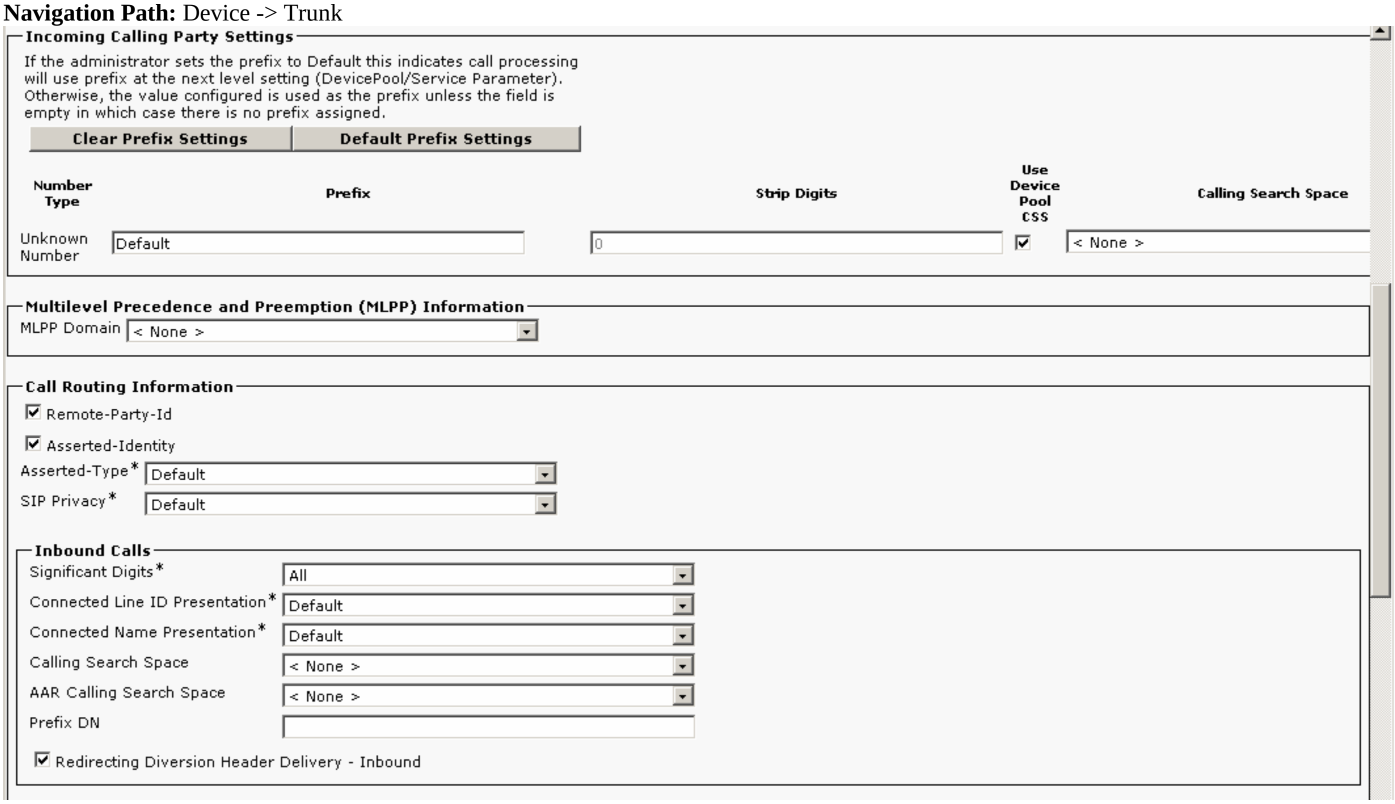


Configuration of Dual SIP trunks to Siemens – G.729 (Page 1 of 3)
Navigation Path: Device -> Trunk

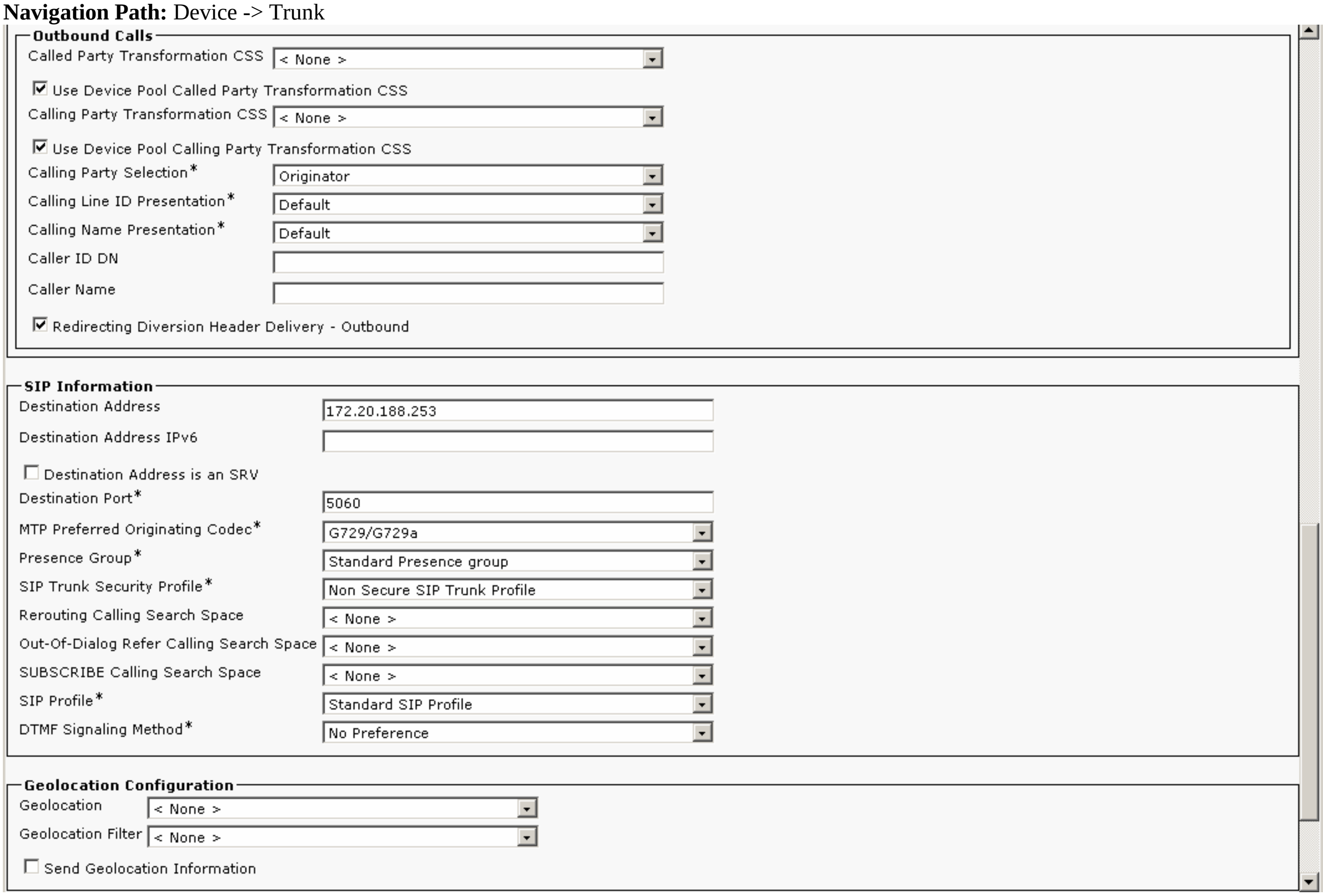


Configuration of Dual SIP trunks to Siemens – G.729 (Page 2 of 3)

Navigation Path: Device -> Trunk



Configuration of Dual SIP trunks to Siemens – G.729 (Page 3 of 3)
Navigation Path: Device -> Trunk



Outbound Calls

Called Party Transformation CSS	< None >
☑ Use Device Pool Called Party Transformation CSS	
Calling Party Transformation CSS	< None >
☑ Use Device Pool Calling Party Transformation CSS	
Calling Party Selection*	Originator
Calling Line ID Presentation*	Default
Calling Name Presentation*	Default
Caller ID DN	
Caller Name	
☑ Redirecting Diversion Header Delivery - Outbound	

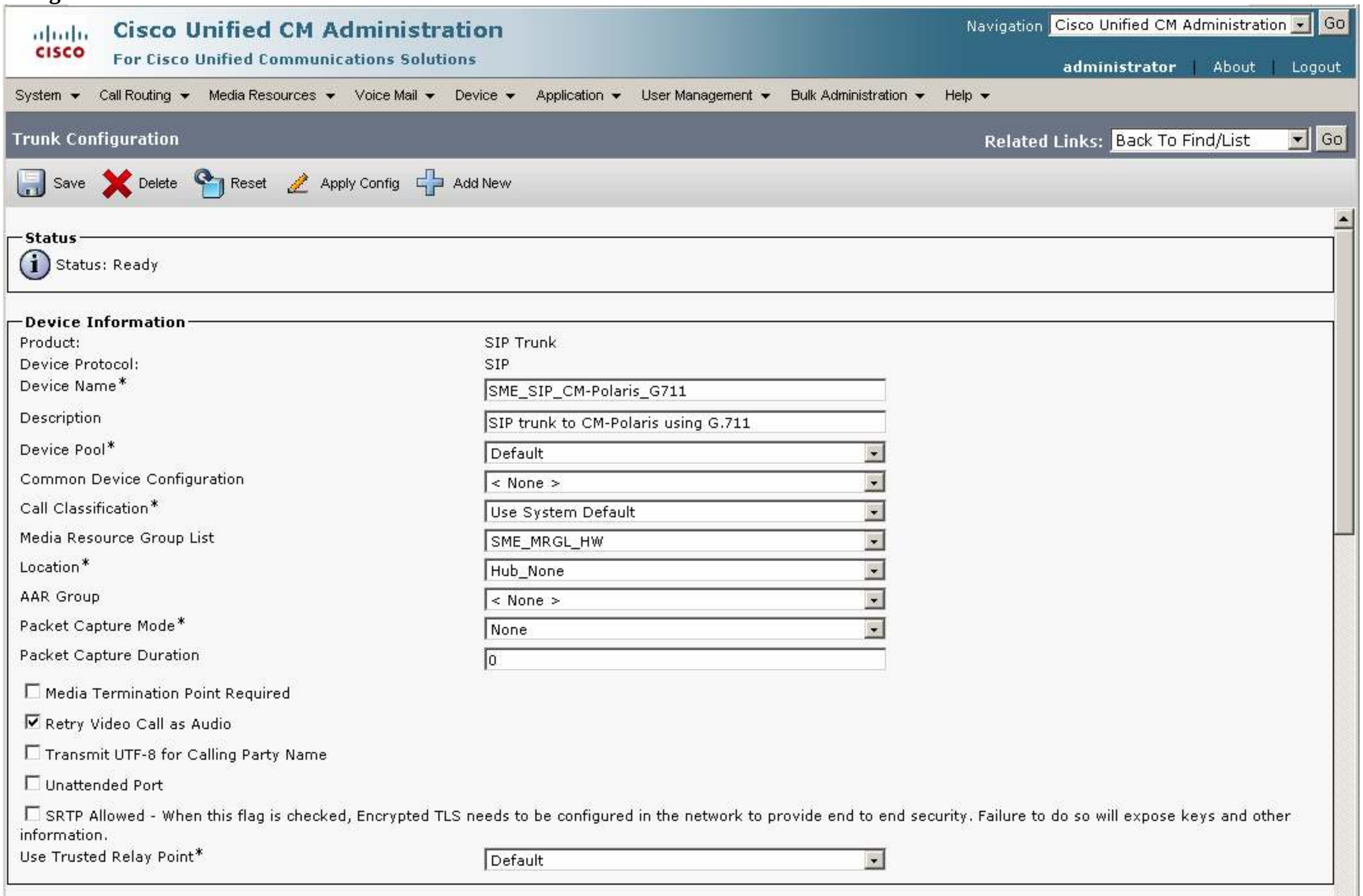
SIP Information

Destination Address	172.20.188.253
Destination Address IPv6	
☐ Destination Address is an SRV	
Destination Port*	5060
MTP Preferred Originating Codec*	G729/G729a
Presence Group*	Standard Presence group
SIP Trunk Security Profile*	Non Secure SIP Trunk Profile
Rerouting Calling Search Space	< None >
Out-Of-Dialog Refer Calling Search Space	< None >
SUBSCRIBE Calling Search Space	< None >
SIP Profile*	Standard SIP Profile
DTMF Signaling Method*	No Preference

Geolocation Configuration

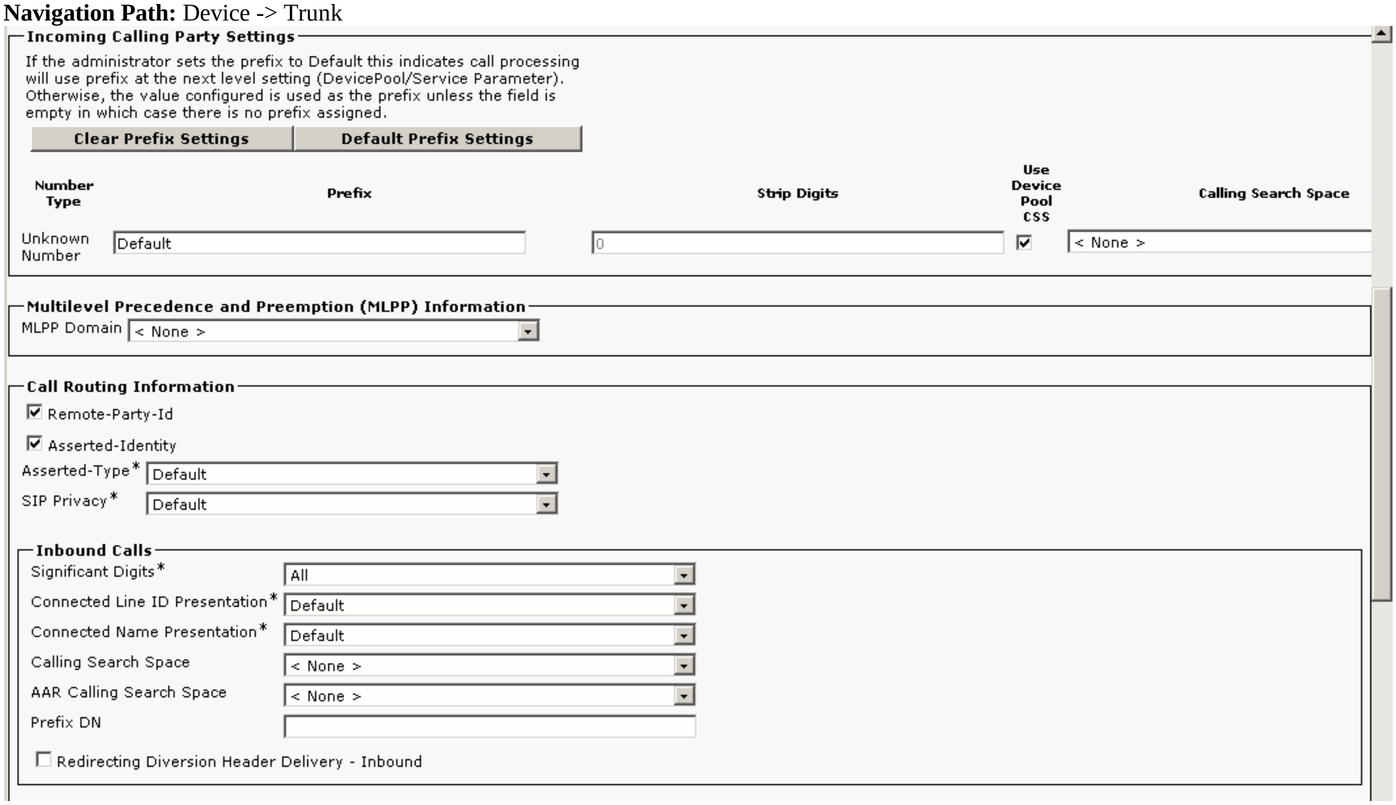
Geolocation	< None >
Geolocation Filter	< None >
☐ Send Geolocation Information	

Configuration of Dual SIP trunks to CUCM – G.711 (Page 1 of 3)
Navigation Path: Device -> Trunk

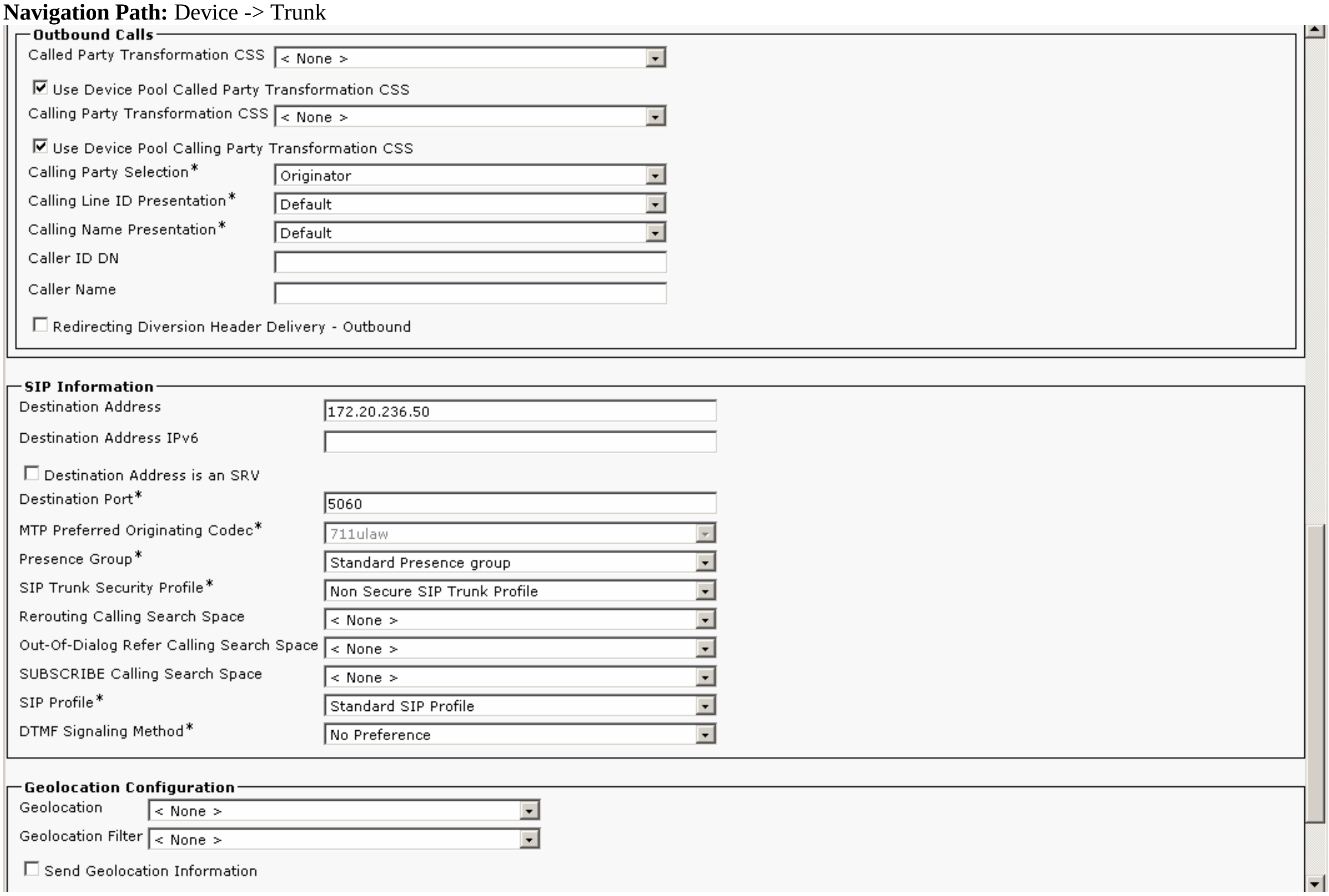


Configuration of Dual SIP trunks to CUCM – G.711 (Page 2 of 3)

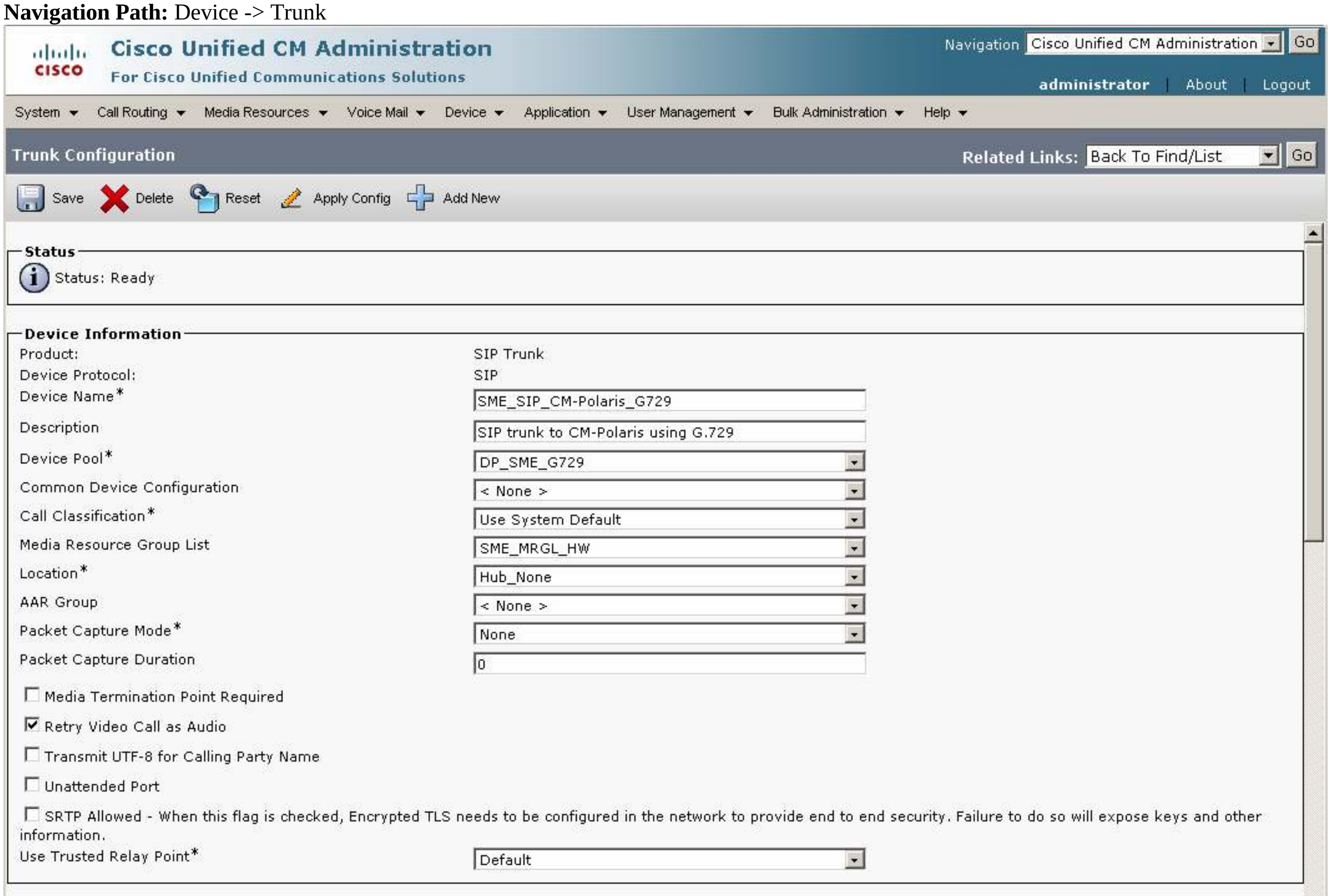
Navigation Path: Device -> Trunk



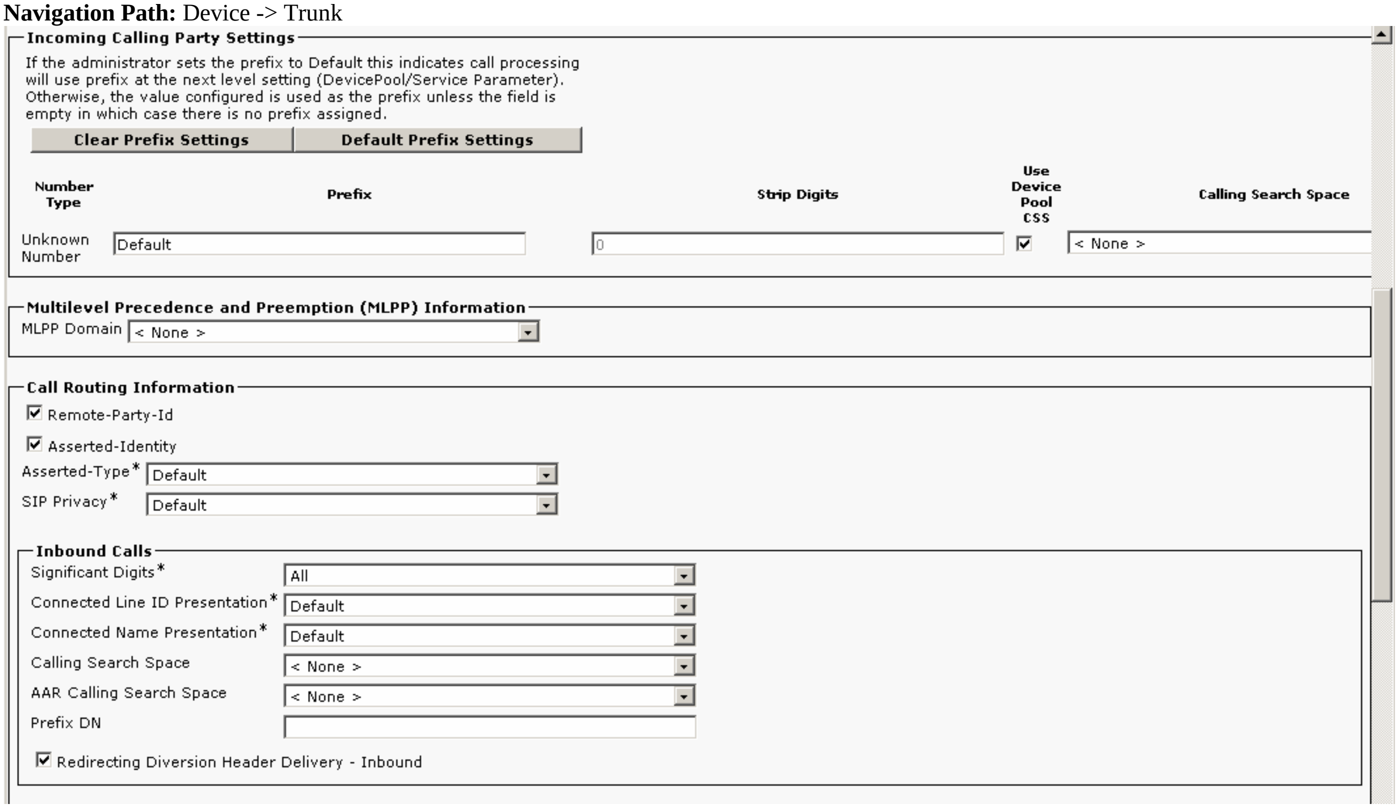
Configuration of Dual SIP trunks to CUCM – G.711 (Page 3 of 3)
Navigation Path: Device -> Trunk



Configuration of Dual SIP trunks to CUCM – G.729 (Page 1 of 3)
Navigation Path: Device -> Trunk

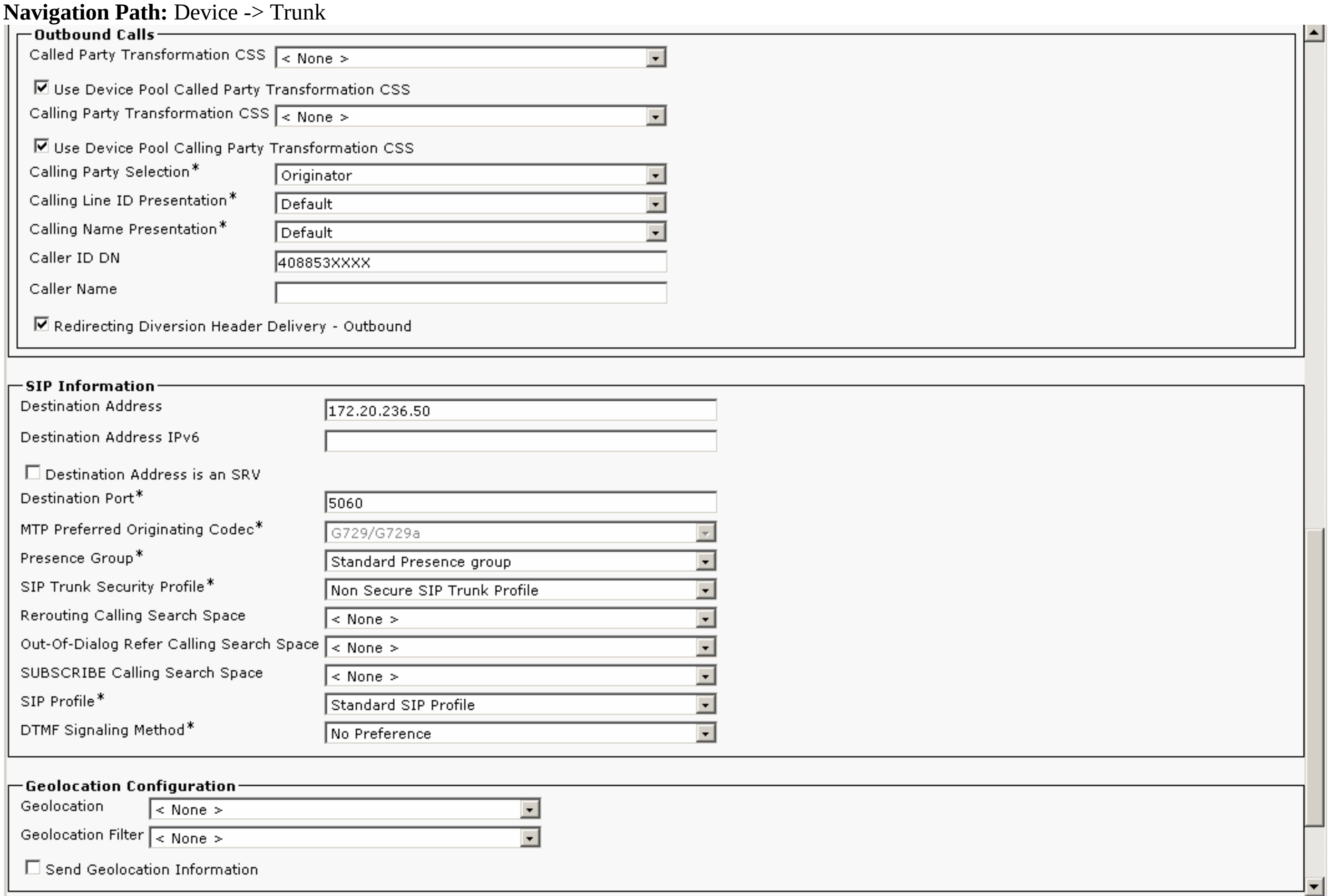


Configuration of Dual SIP trunks to CUCM – G.729 (Page 2 of 3)
Navigation Path: Device -> Trunk



Configuration of Dual SIP trunks to CUCM – G.729 (Page 3 of 3)

Navigation Path: Device -> Trunk



Outbound Calls

Called Party Transformation CSS	< None >
☑ Use Device Pool Called Party Transformation CSS	
Calling Party Transformation CSS	< None >
☑ Use Device Pool Calling Party Transformation CSS	
Calling Party Selection*	Originator
Calling Line ID Presentation*	Default
Calling Name Presentation*	Default
Caller ID DN	408853XXXX
Caller Name	
☑ Redirecting Diversion Header Delivery - Outbound	

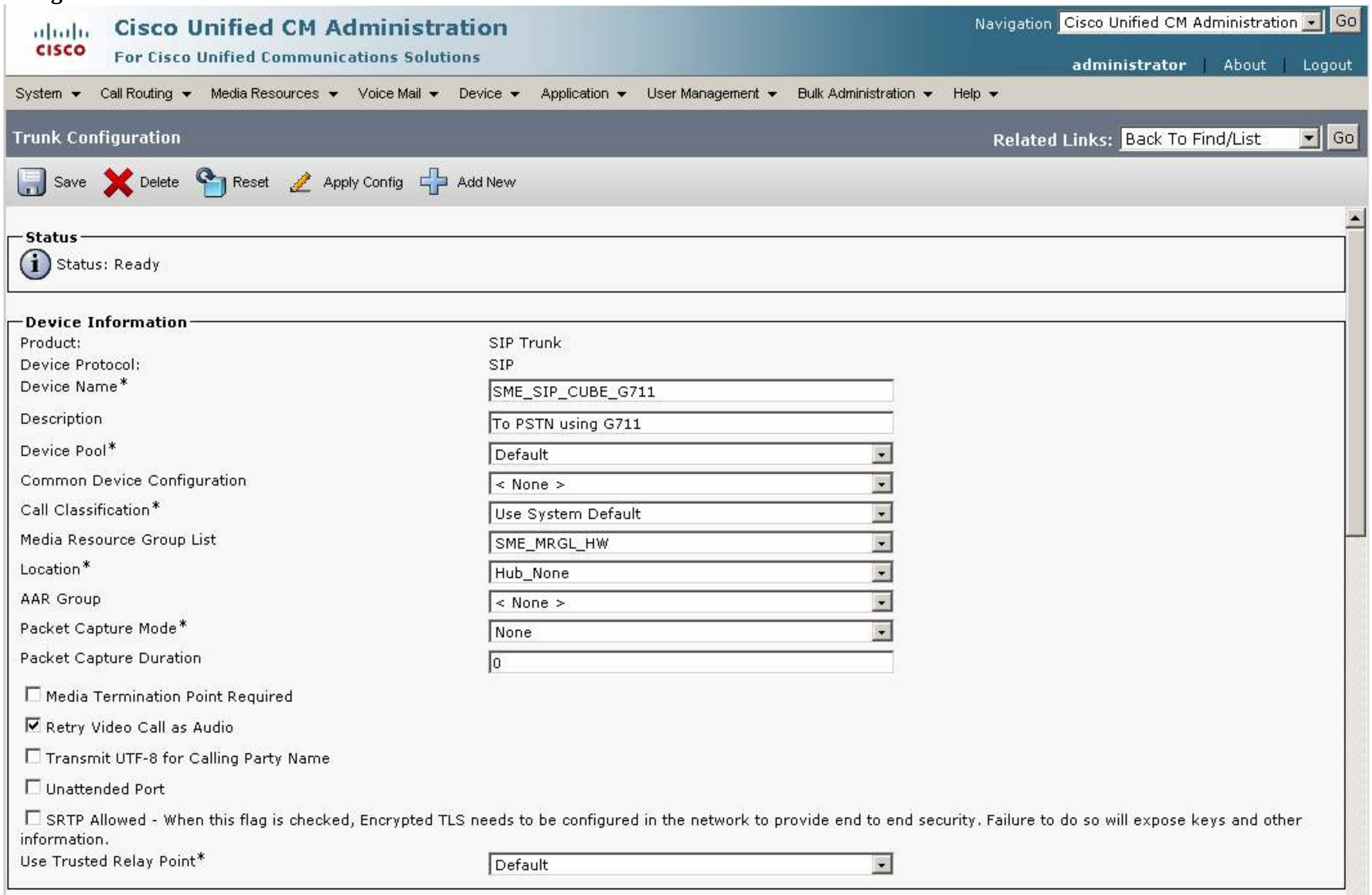
SIP Information

Destination Address	172.20.236.50
Destination Address IPv6	
☐ Destination Address is an SRV	
Destination Port*	5060
MTP Preferred Originating Codec*	G729/G729a
Presence Group*	Standard Presence group
SIP Trunk Security Profile*	Non Secure SIP Trunk Profile
Rerouting Calling Search Space	< None >
Out-Of-Dialog Refer Calling Search Space	< None >
SUBSCRIBE Calling Search Space	< None >
SIP Profile*	Standard SIP Profile
DTMF Signaling Method*	No Preference

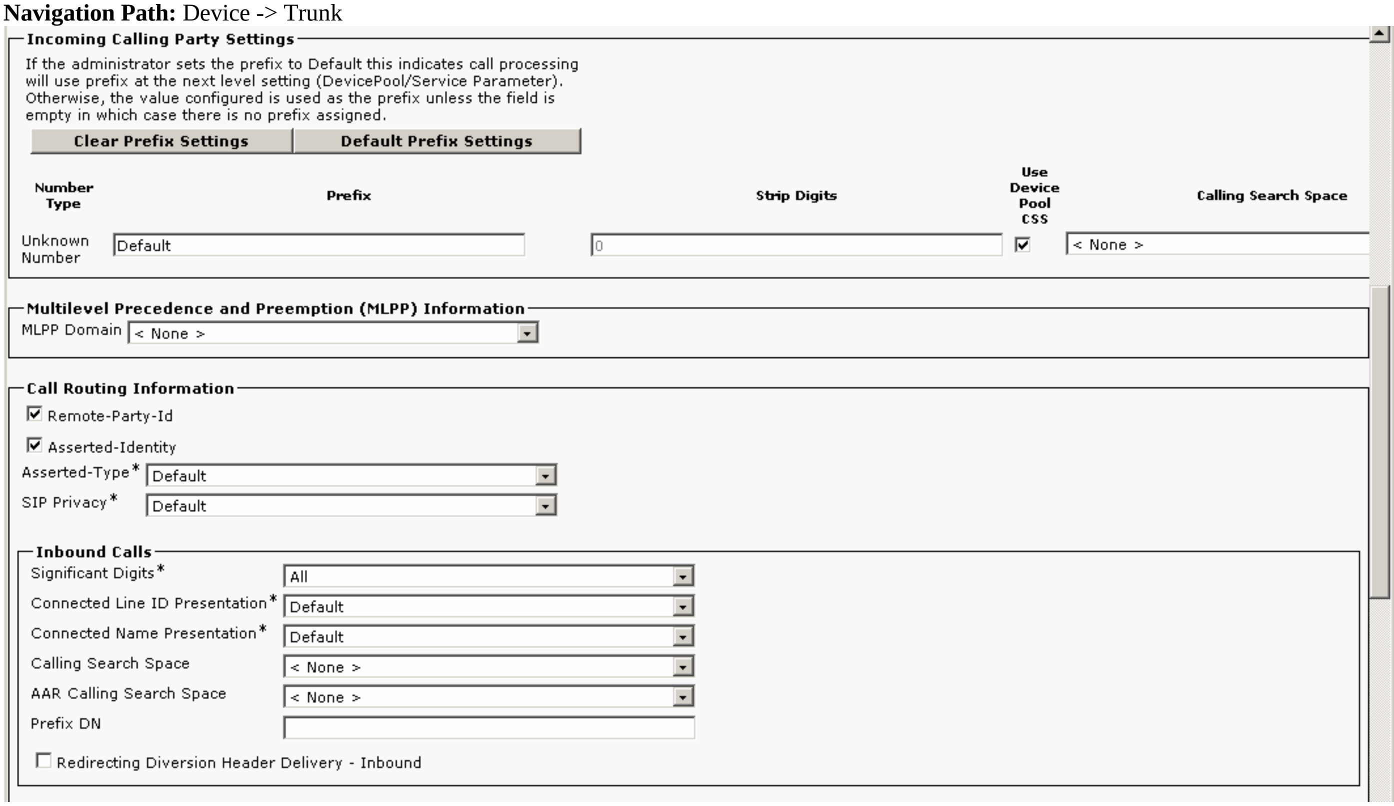
Geolocation Configuration

Geolocation	< None >
Geolocation Filter	< None >
☐ Send Geolocation Information	

Configuration of Dual SIP trunks to PSTN – G.711 (Page 1 of 3)
Navigation Path: Device -> Trunk

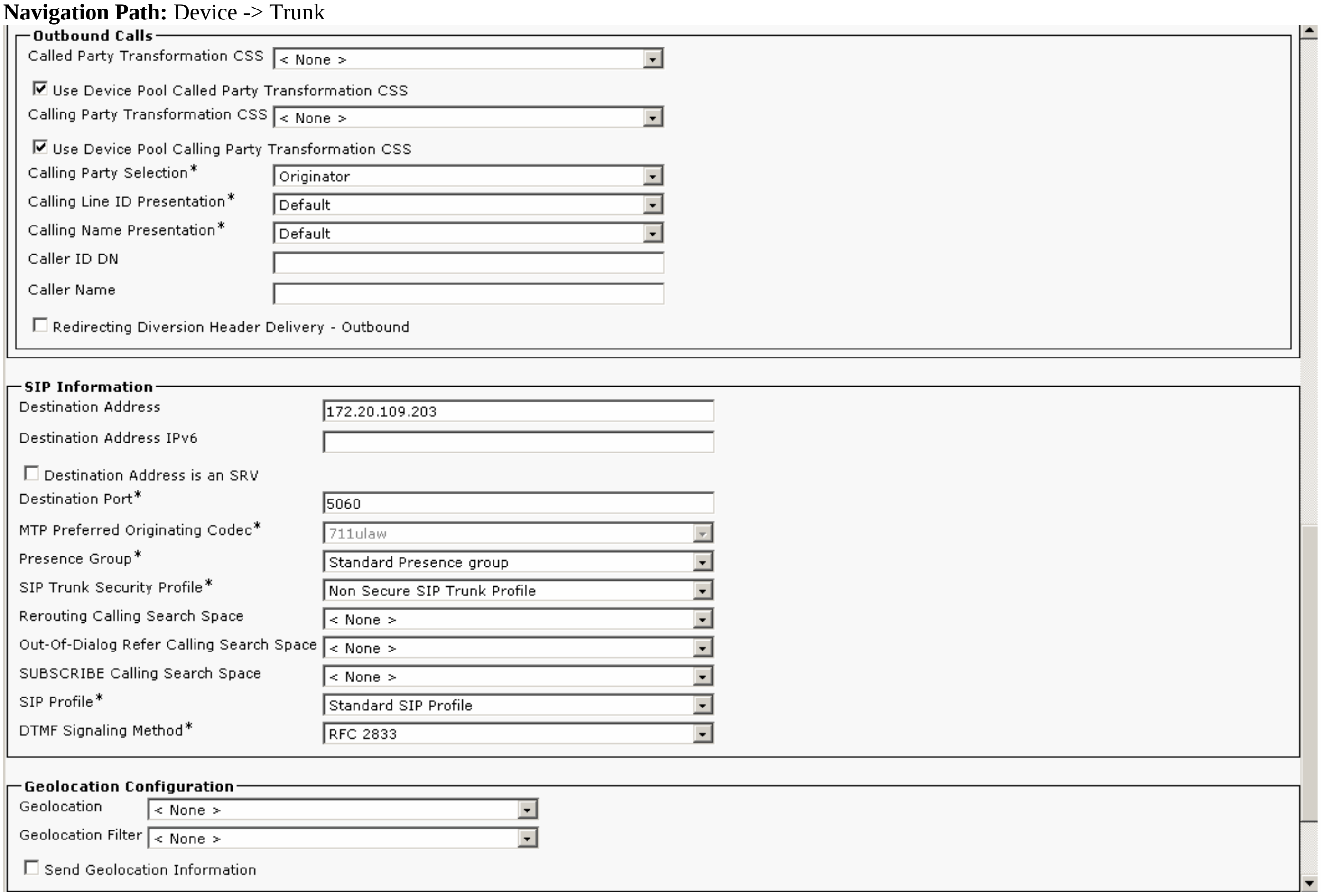


Configuration of Dual SIP trunks to PSTN – G.711 (Page 2 of 3)
Navigation Path: Device -> Trunk

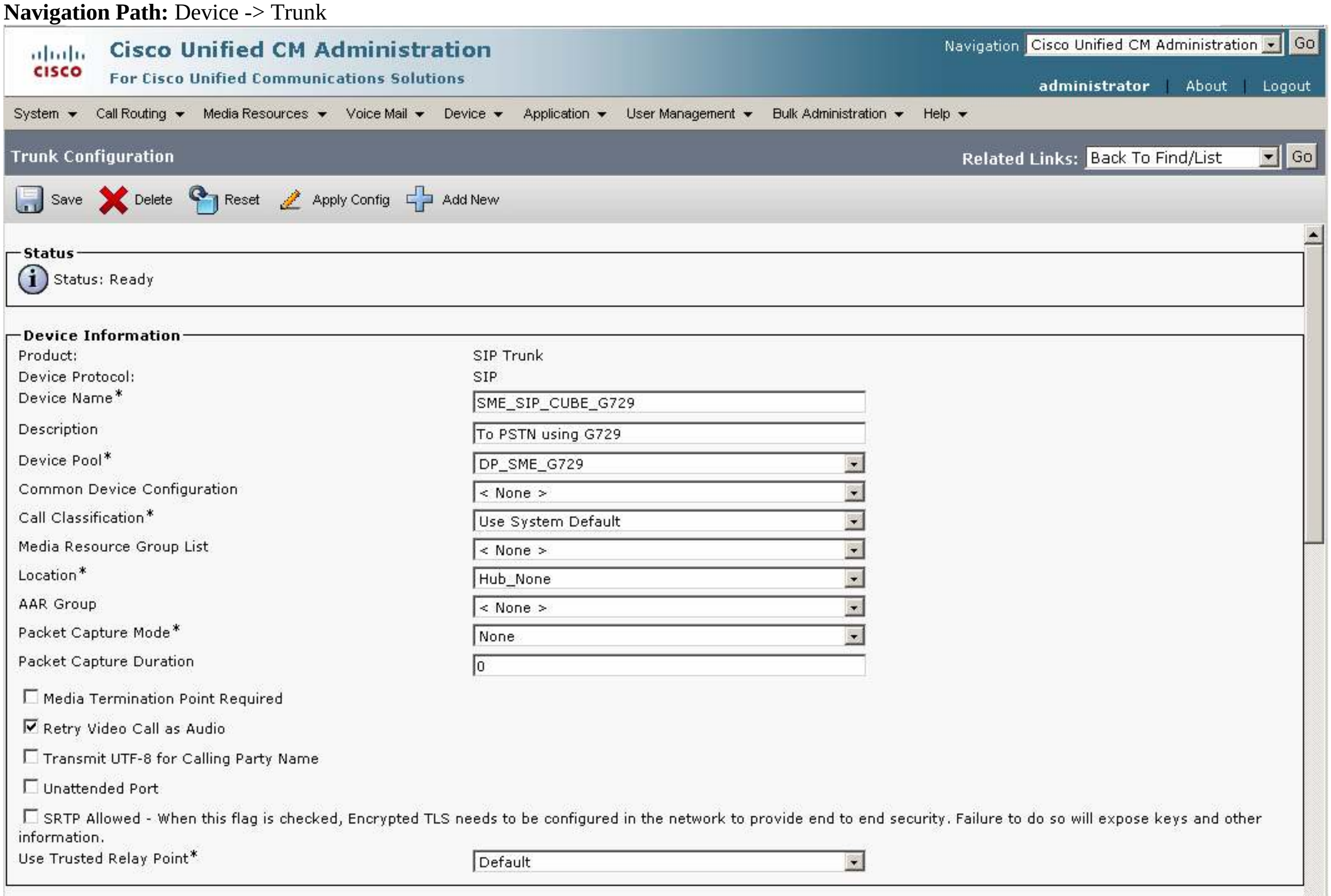


Configuration of Dual SIP trunks to PSTN – G.711 (Page 3 of 3)

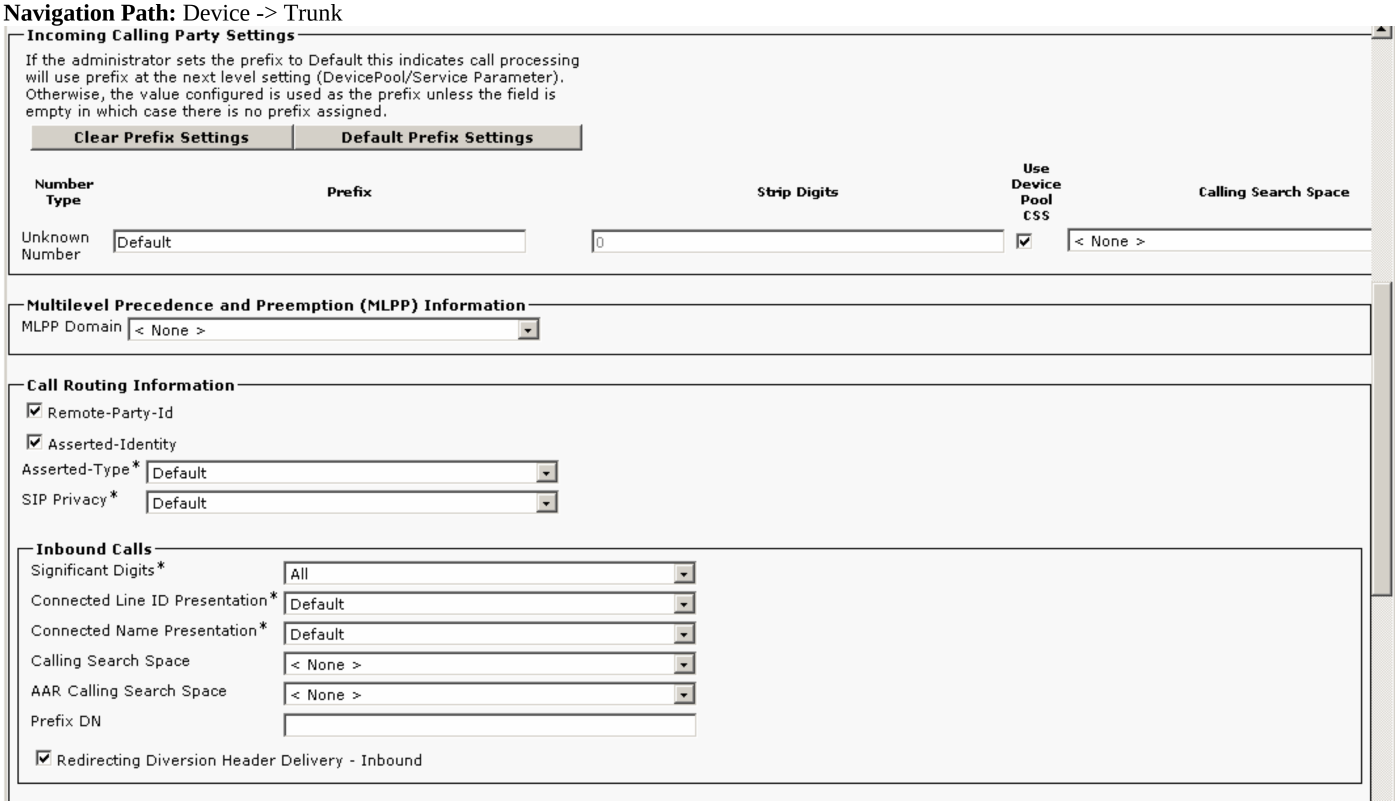
Navigation Path: Device -> Trunk



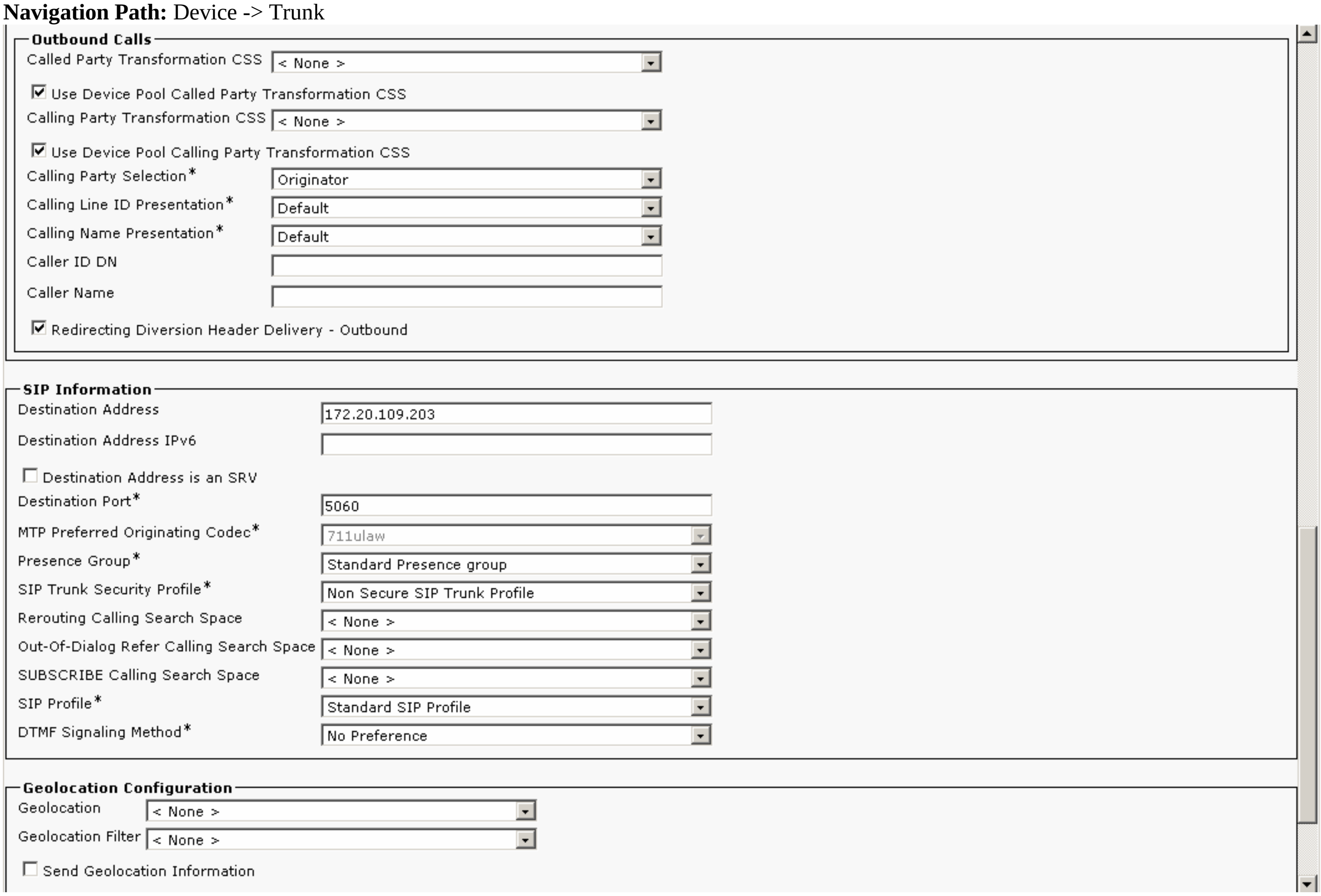
Configuration of Dual SIP trunks to PSTN – G.729 (Page 1 of 3)
Navigation Path: Device -> Trunk



Configuration of Dual SIP trunks to PSTN – G.729 (Page 2 of 3)
Navigation Path: Device -> Trunk

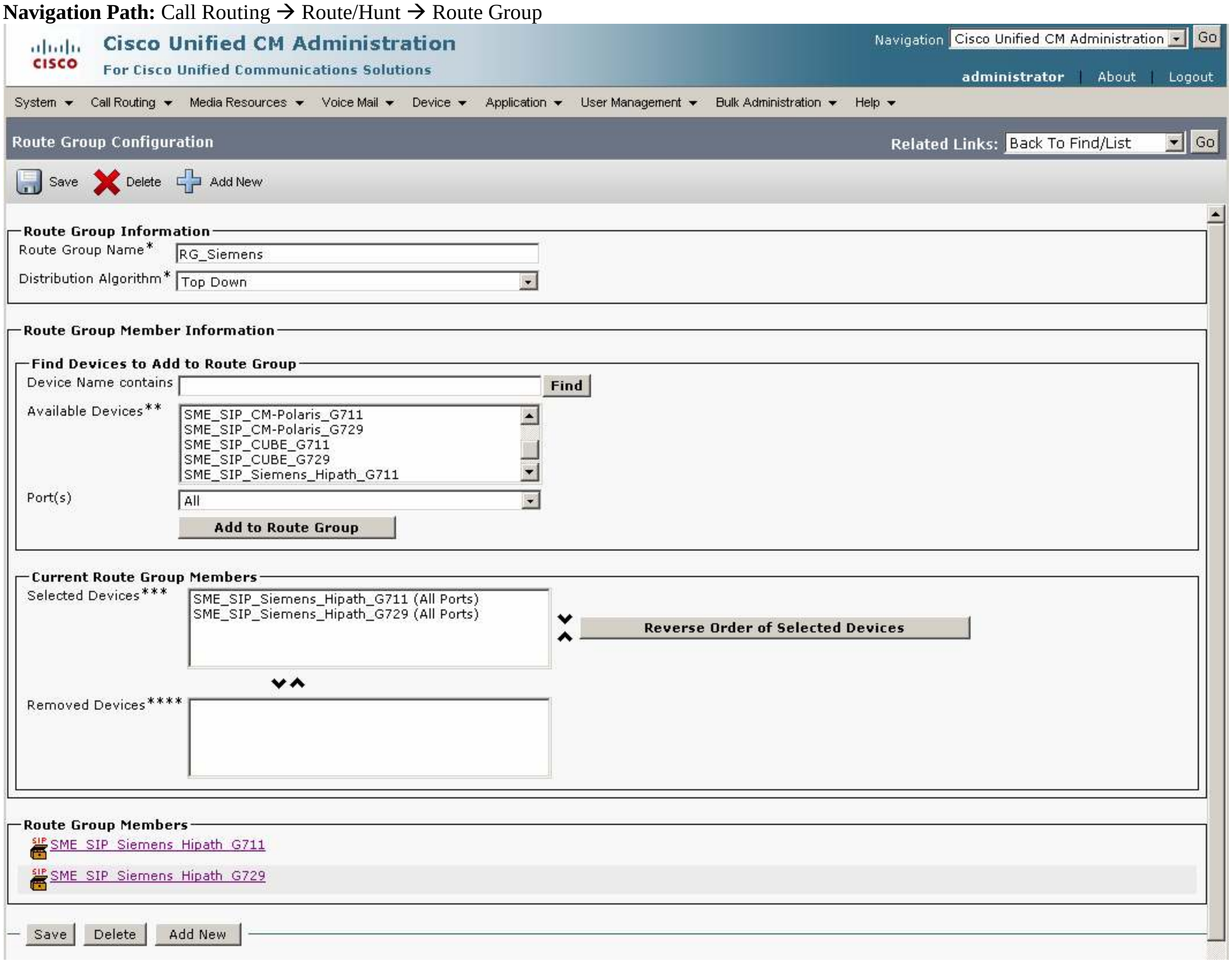


Configuration of Dual SIP trunks to PSTN – G.729 (Page 3 of 3)
Navigation Path: Device -> Trunk

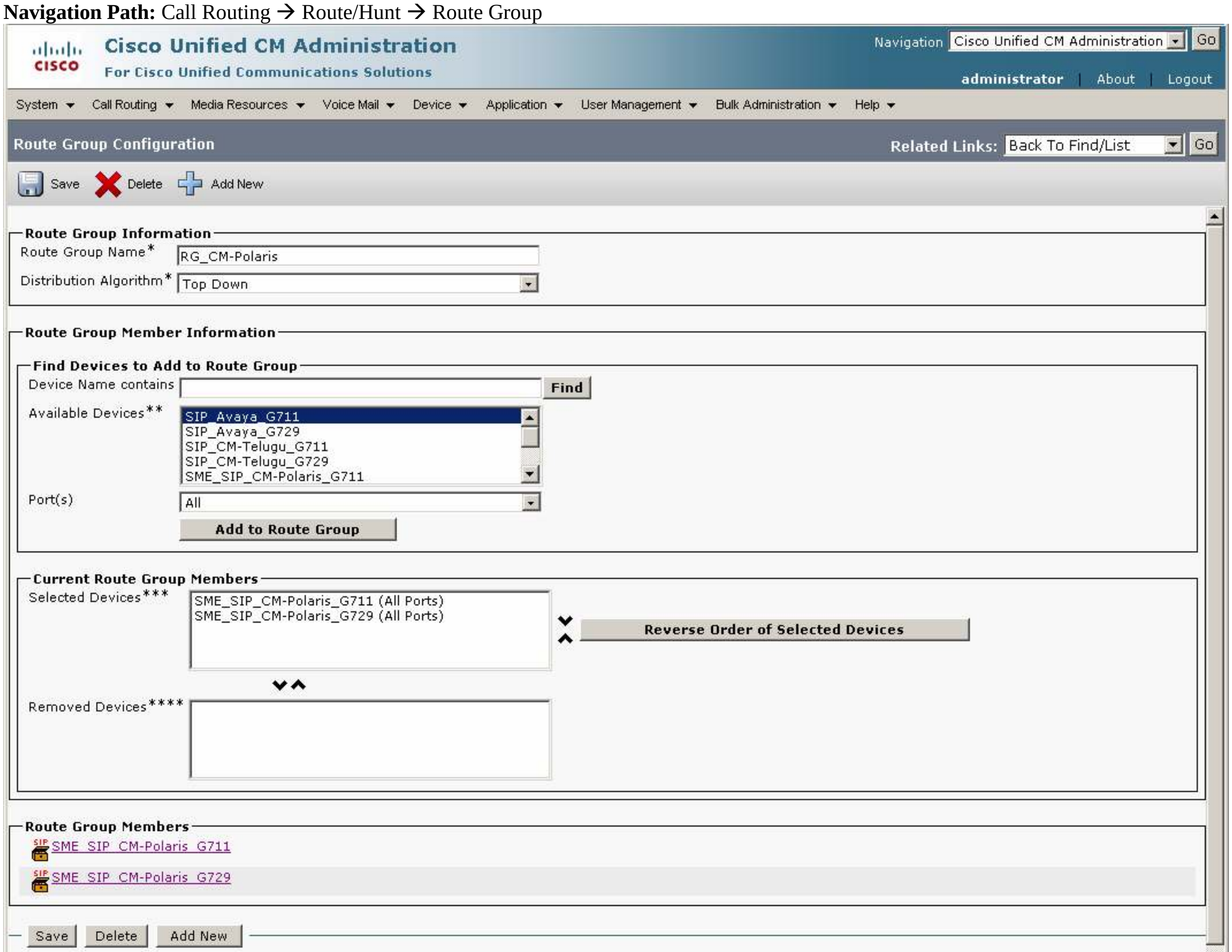


Configuration of Route Groups – To Siemens PBX

Navigation Path: Call Routing → Route/Hunt → Route Group

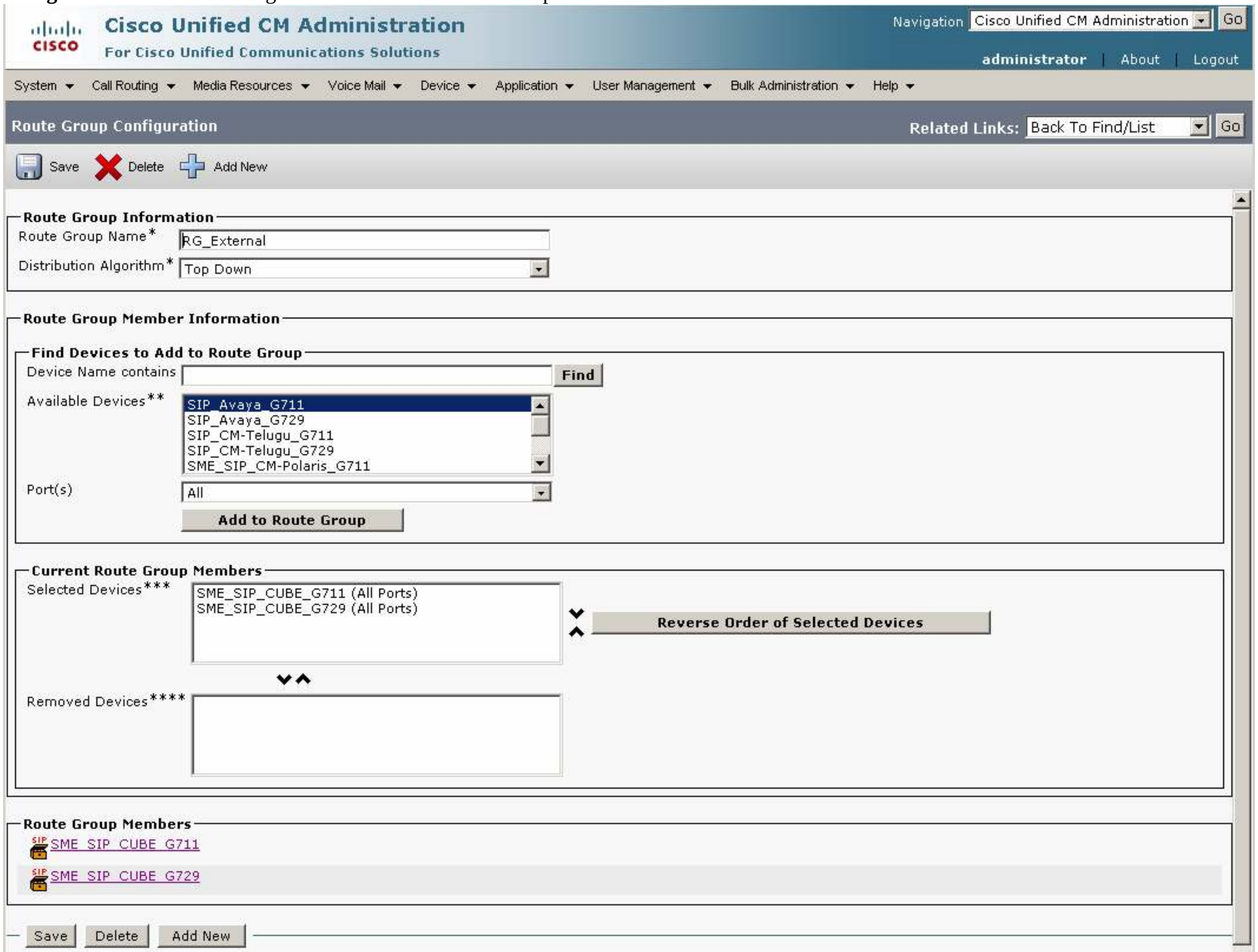


Configuration of Route Groups – To CUCM
Navigation Path: Call Routing → Route/Hunt → Route Group

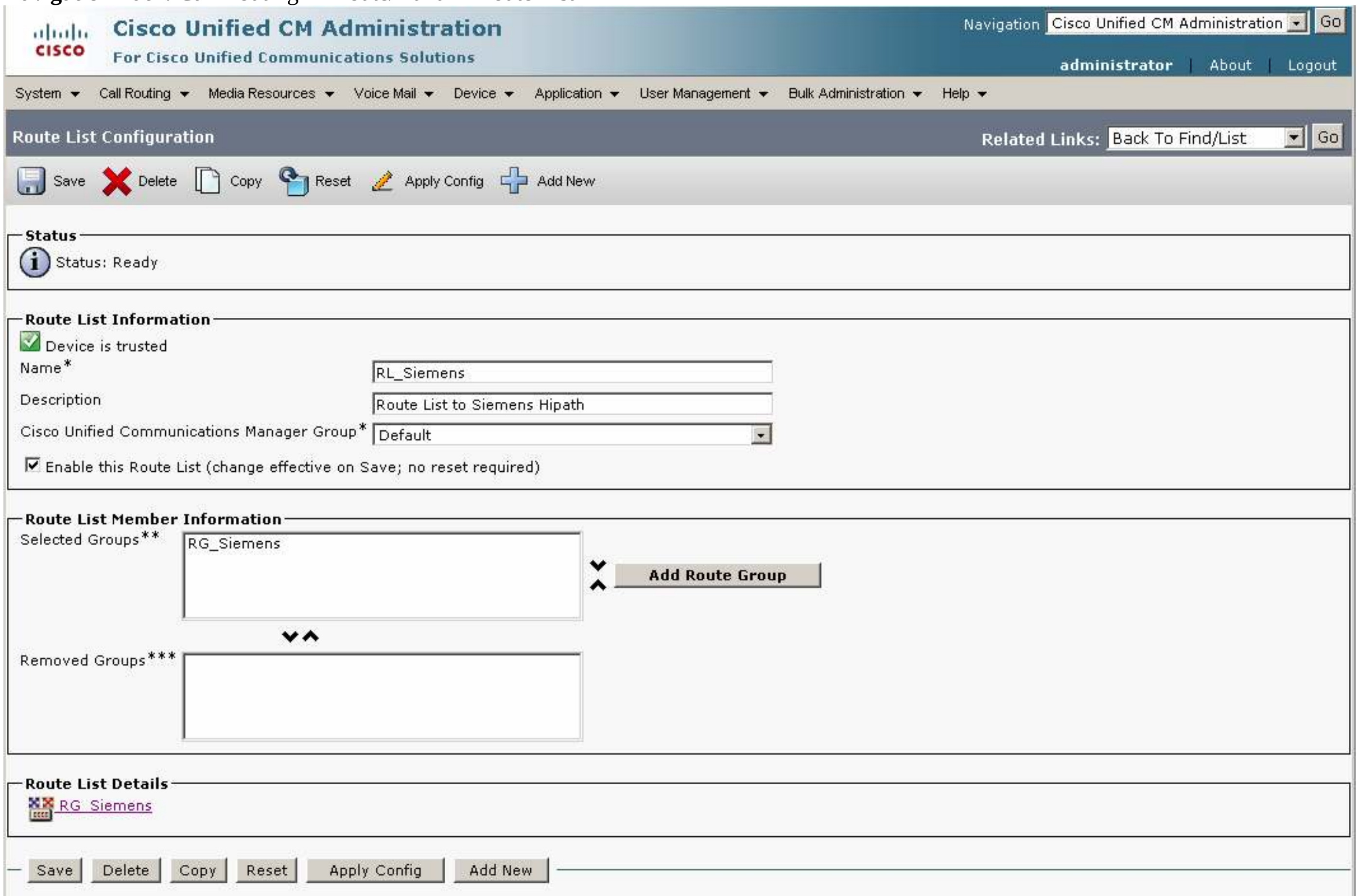


Configuration of Route Groups – To PSTN

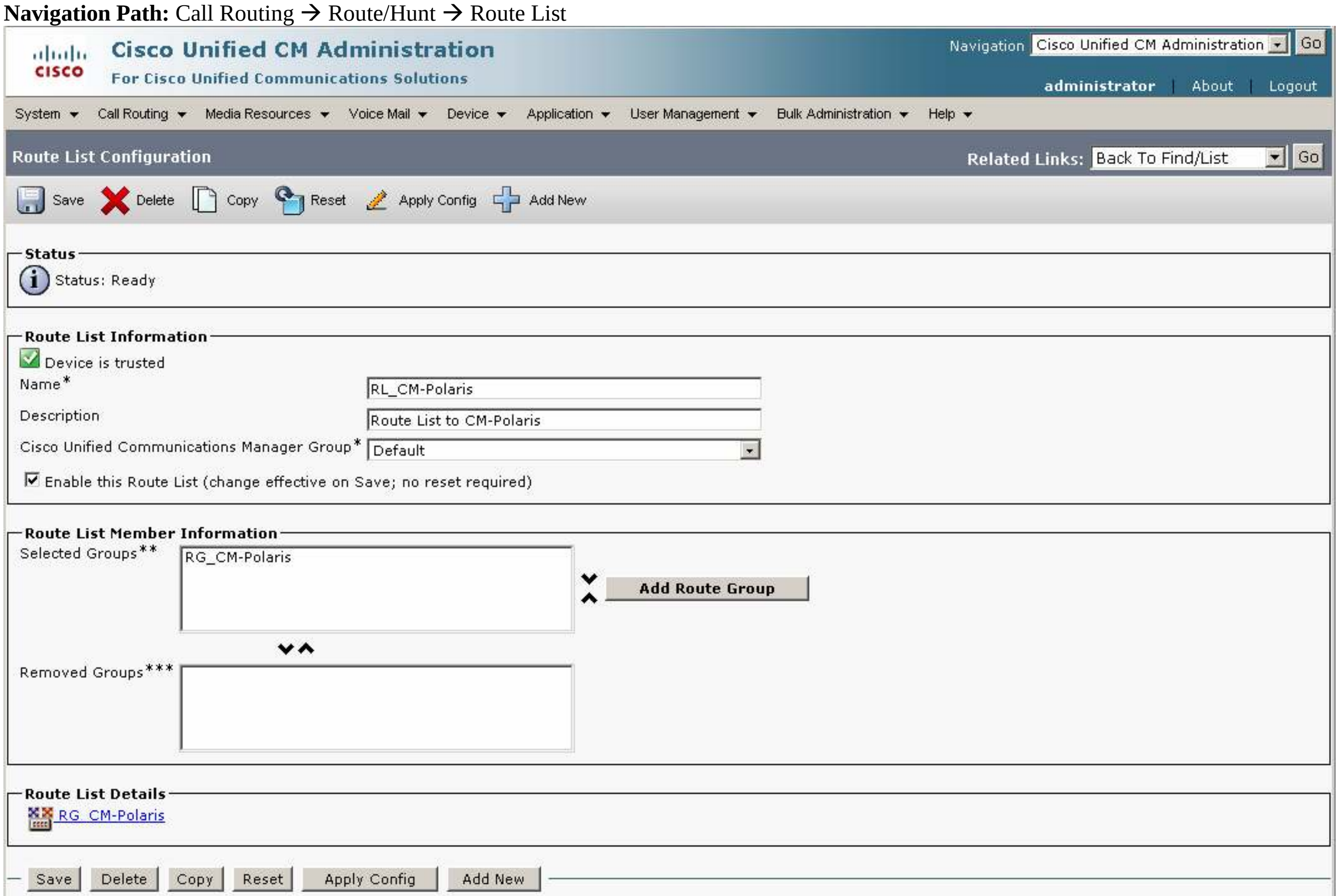
Navigation Path: Call Routing → Route/Hunt → Route Group



Configuration of Route Lists – To Siemens PBX
Navigation Path: Call Routing → Route/Hunt → Route List

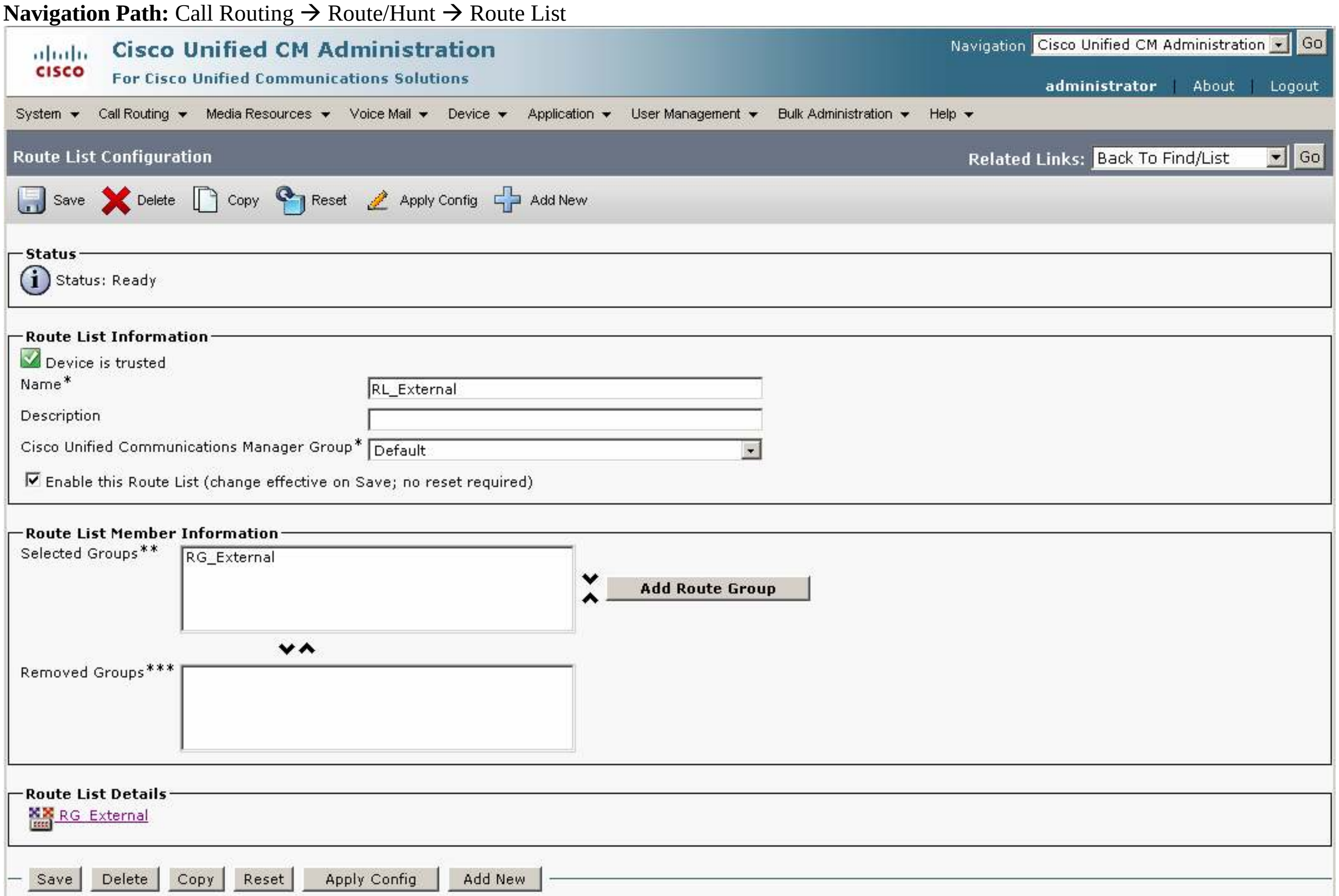


Configuration of Route Lists – To CUCM
Navigation Path: Call Routing → Route/Hunt → Route List



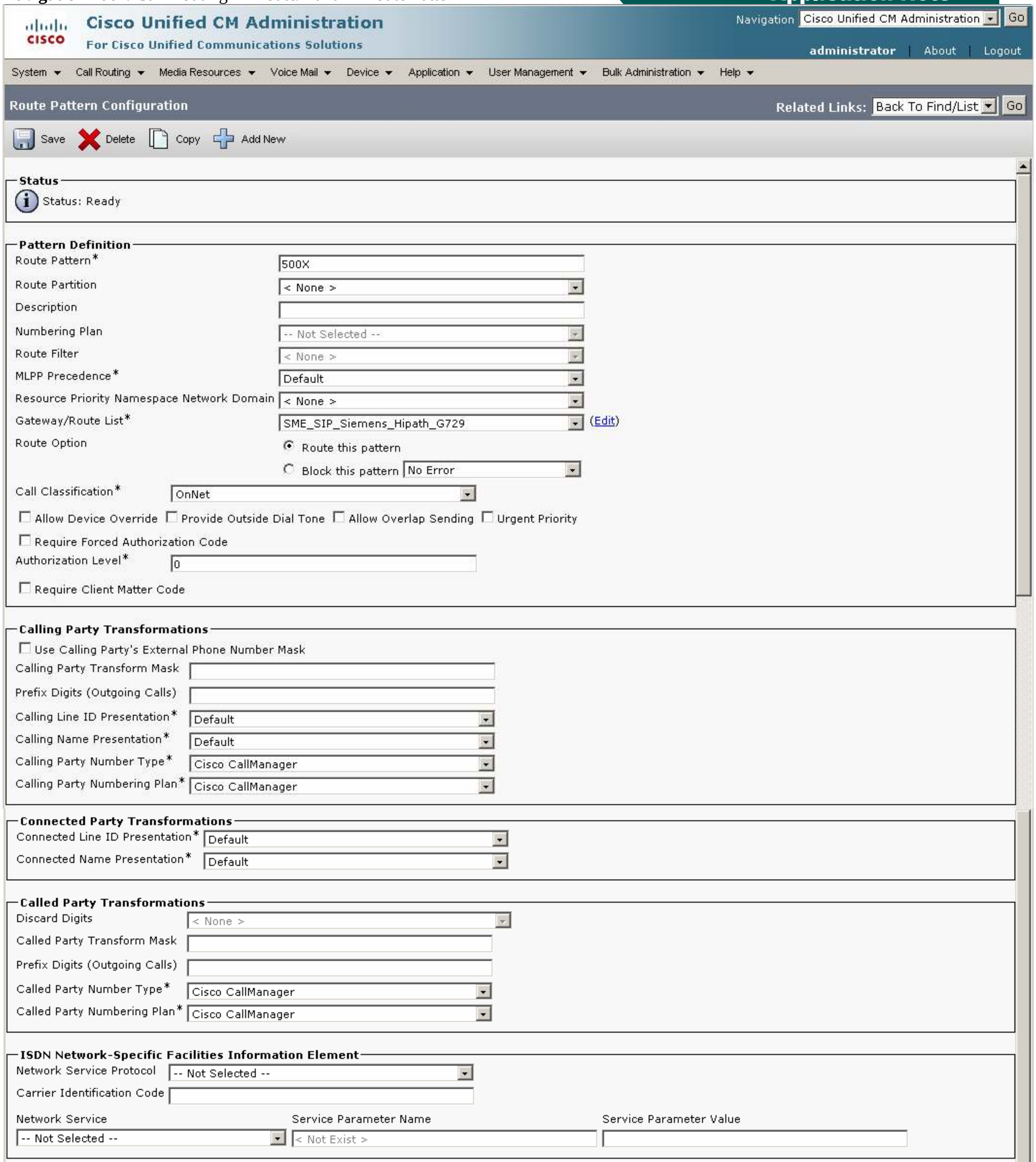
Configuration of Route Lists – To PSTN

Navigation Path: Call Routing → Route/Hunt → Route List



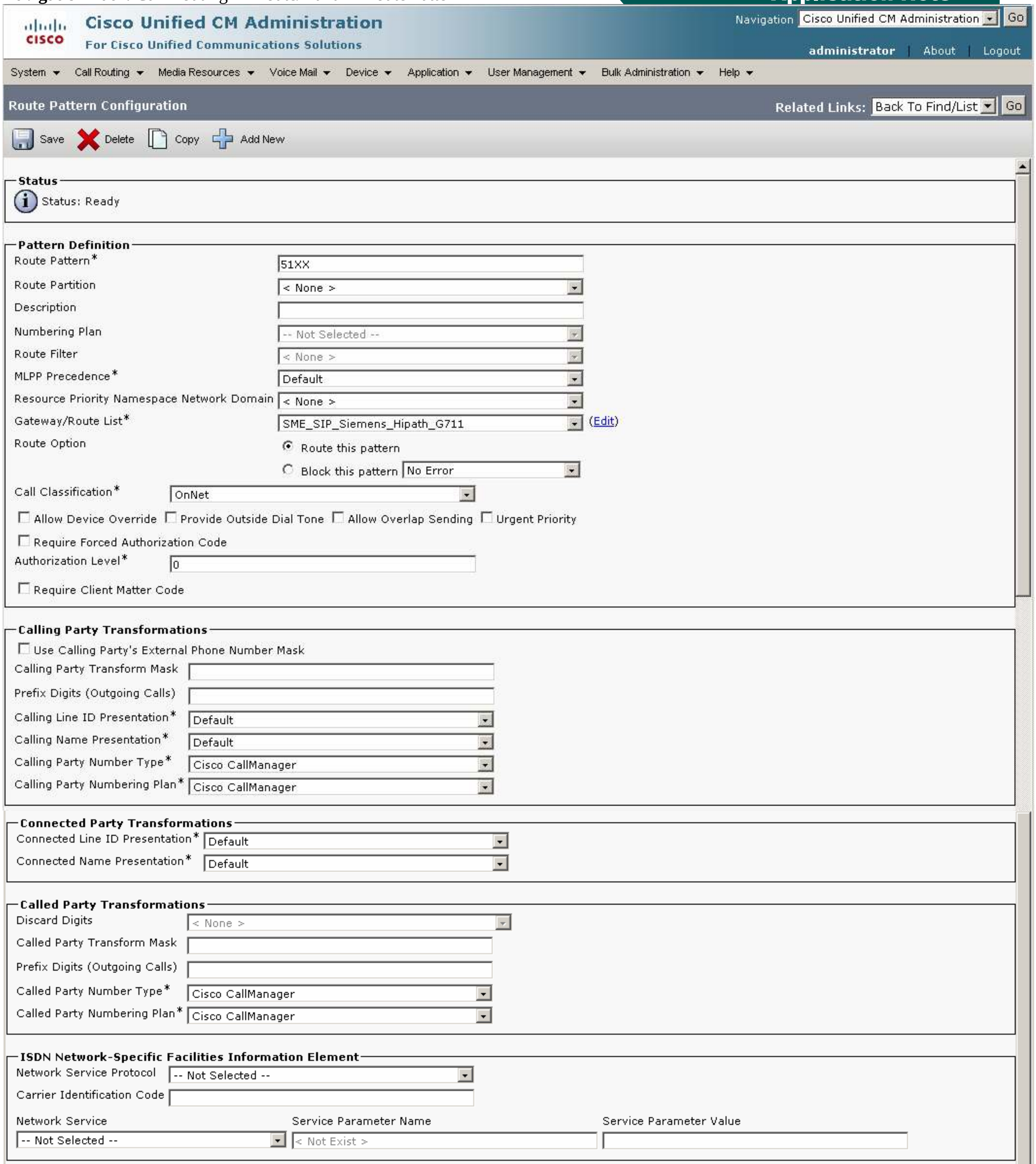
Configuration of Route Patterns – To Siemens PBX (Extensions and other endpoints using G.729 codec)

Navigation Path: Call Routing → Route/Hunt → Route Pattern



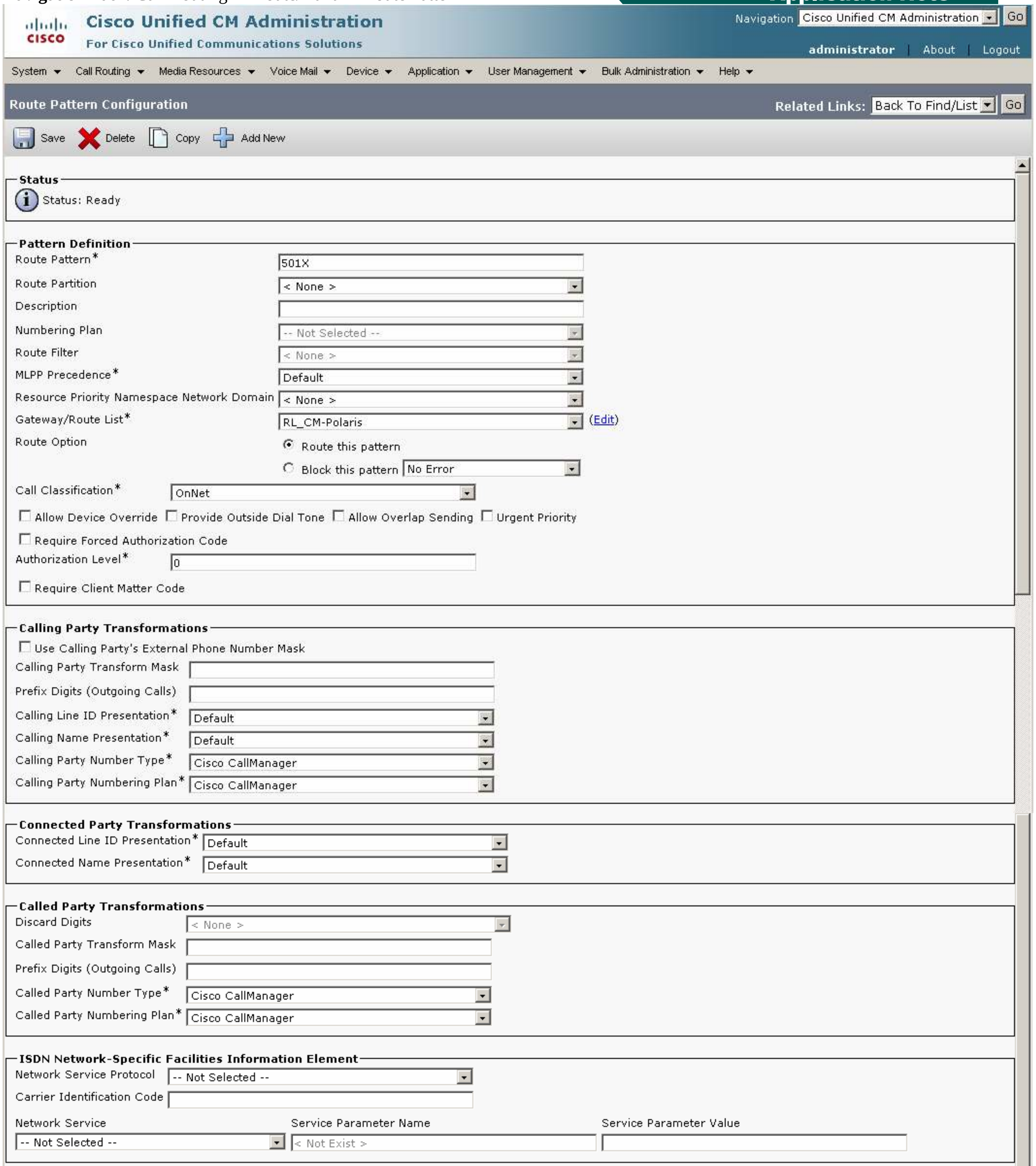
Configuration of Route Patterns – To Siemens PBX (Fax/Modem lines using G.711 codec)

Navigation Path: Call Routing → Route/Hunt → Route Pattern



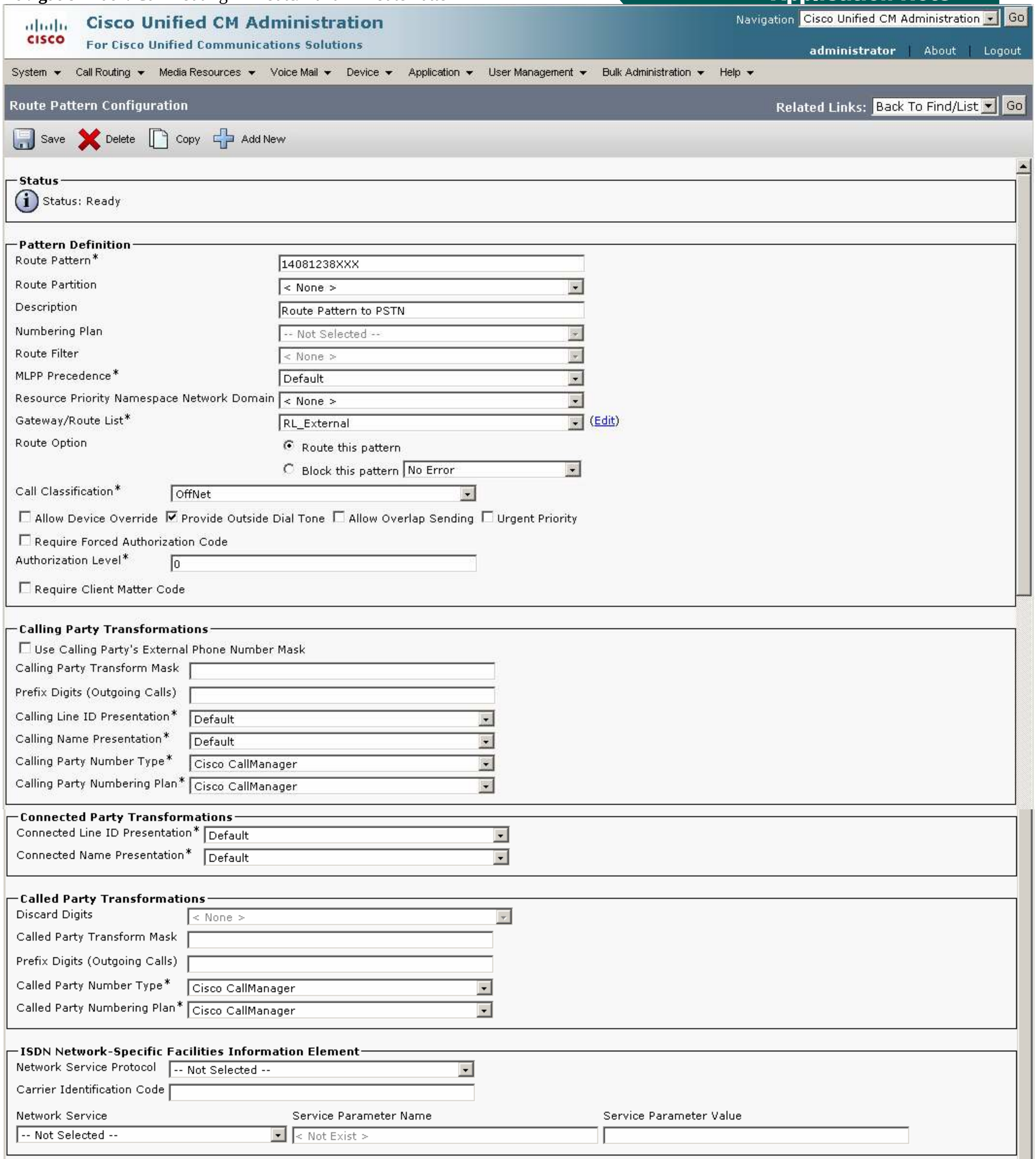
Configuration of Route Patterns – To CUCM

Navigation Path: Call Routing → Route/Hunt → Route Pattern



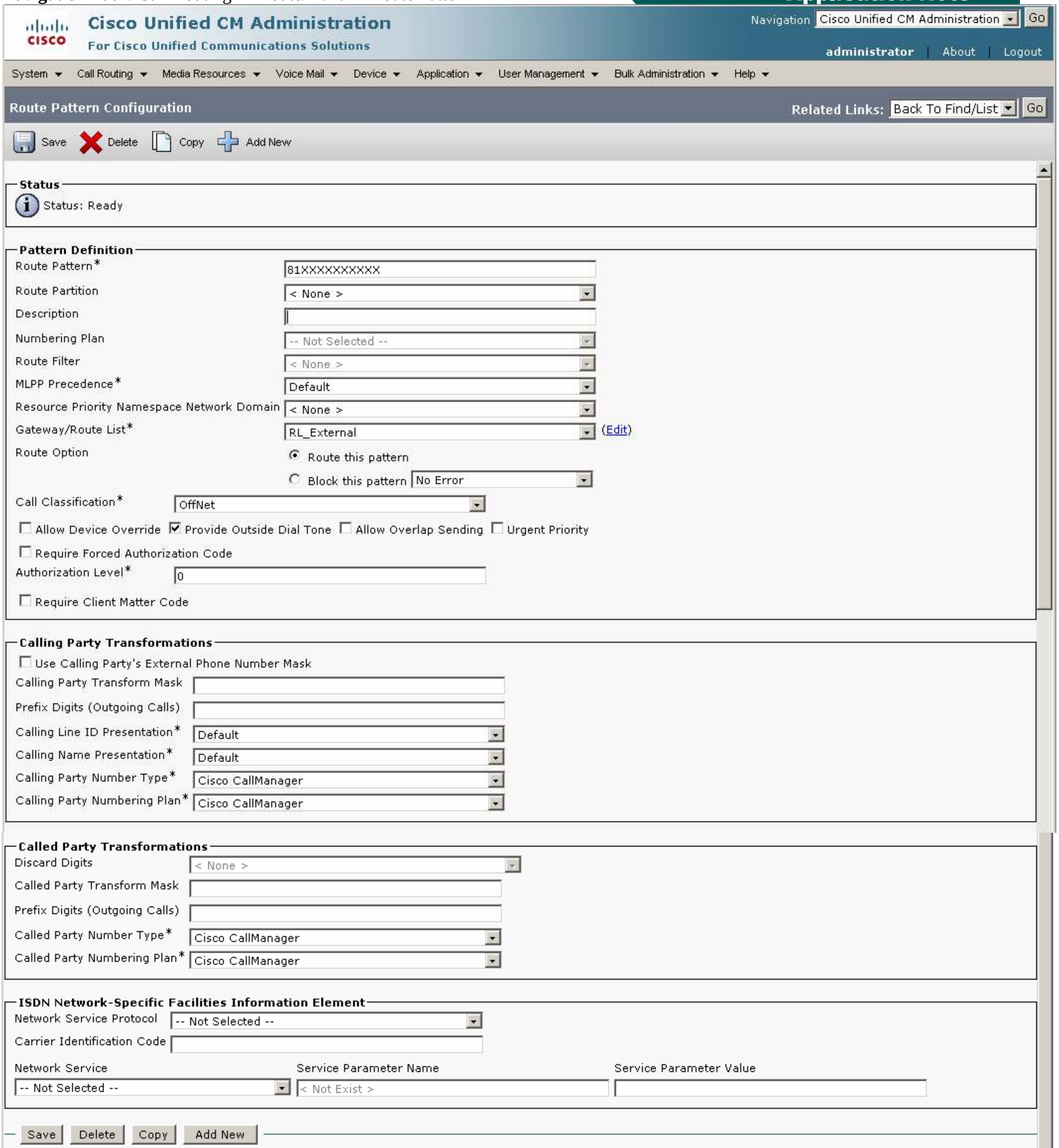
Configuration of Route Patterns – To PSTN (G.729 and/or G.711 calls)

Navigation Path: Call Routing → Route/Hunt → Route Pattern



Configuration of Route Patterns – To PSTN (G.711 only calls)

Navigation Path: Call Routing → Route/Hunt → Route Pattern



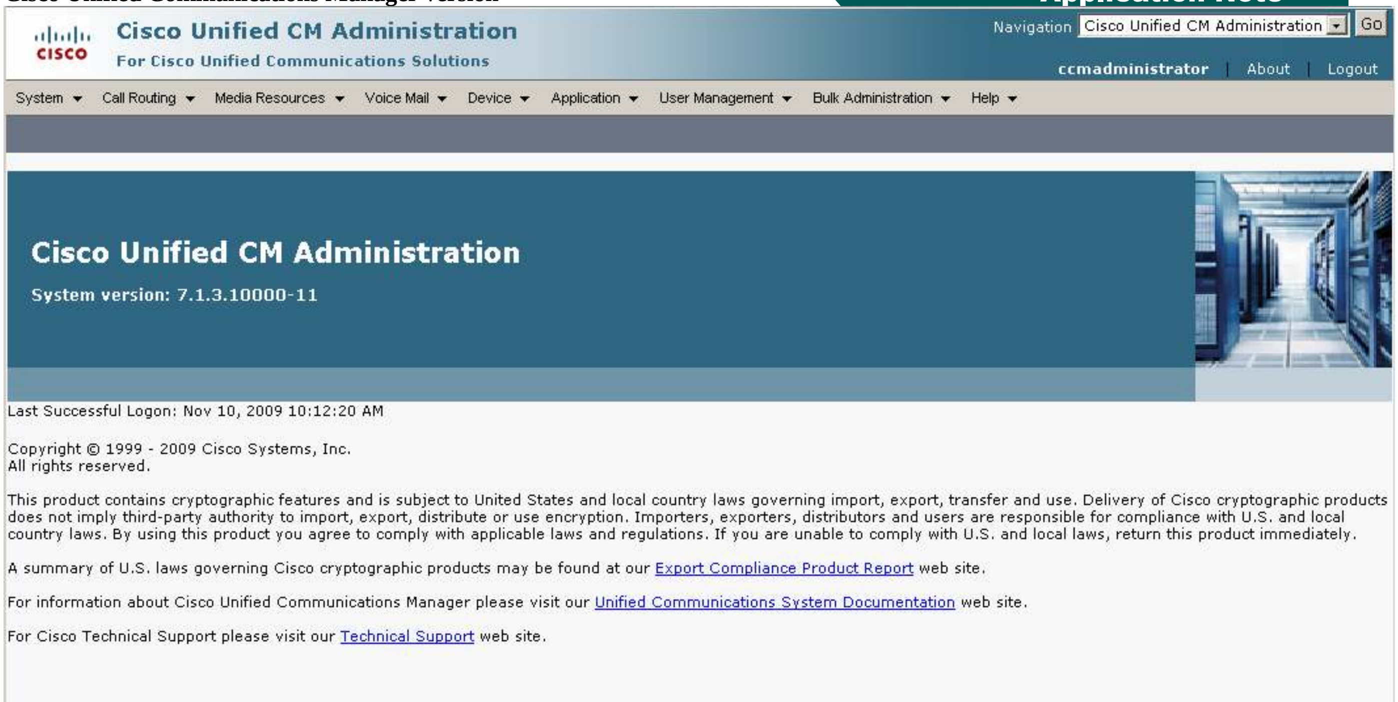
Note: This example shows an optional Route Pattern configured for G.711-only outbound calls. Typically, this would be used for fax/modem transmissions, when G.711 codec is required for successful transmission. When fax/modem calls must be placed, using this example "8" must be dialed before the 10-digit telephone number, instead of the standard outside dial

access code "9". Alternatively, a Route Pattern not requiring having to dial a different leading digit can be implemented. This Route Pattern is configured using a unique Route Partition, with parameter "Called Party Transformations Prefix Digit (Outgoing Calls)" configured with a prefix digit (using the CUBE example configuration shown in the previous pages, this prefix would be "8") . This partition is then assigned to a Calling Search Space that is assigned to fax machines/modems. When an outside telephone number is dialed using lines associated with this newly-created Calling Search Space, the Route Pattern assigned to this different partition is used in place of the standard outside dial access Route Pattern. Also, to ensure that inbound fax/modem calls are established using G.711, configure SIP trunks and/or MGCP/H.323 gateways supporting fax/modems into a Region using G.711 codec.

Configuring the Cisco Unified Communications Manager

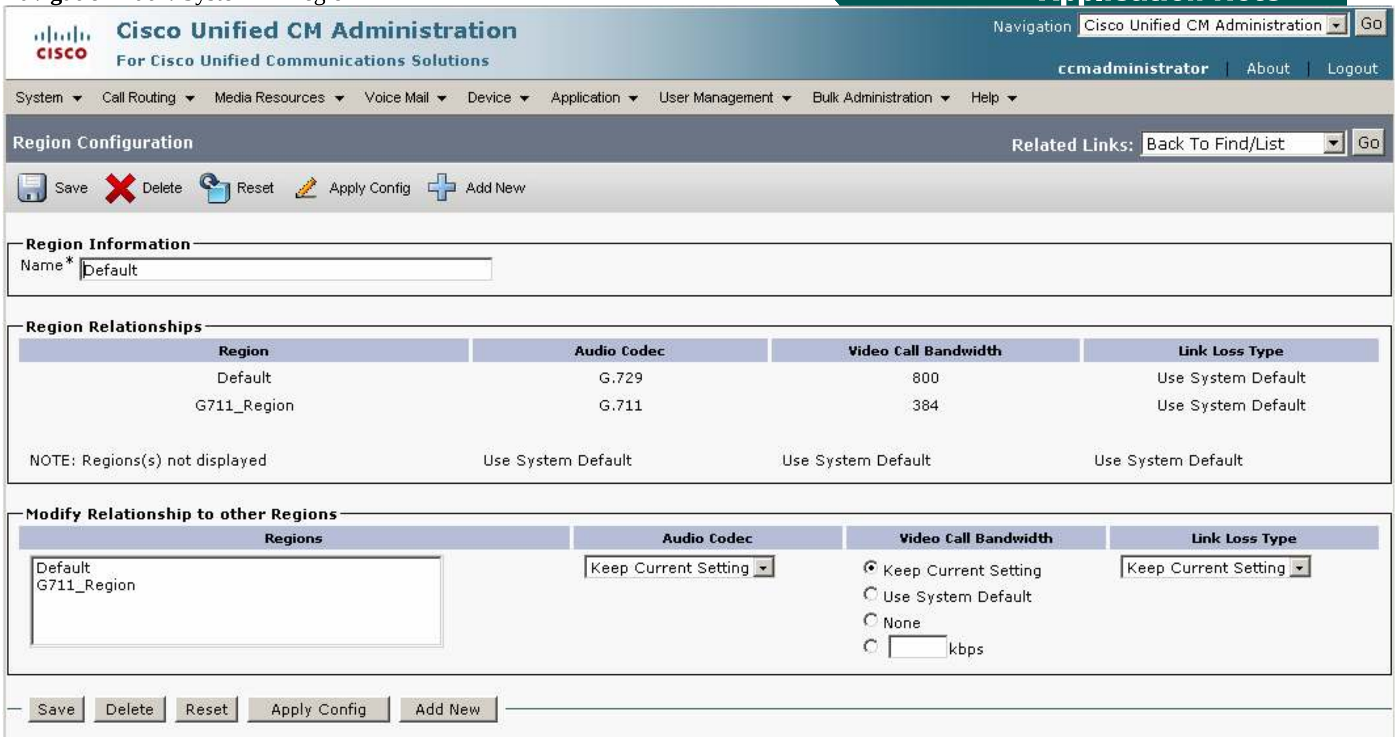
1. Cisco Unified Communications Manager Version
2. Device pool and Region mapping configuration
3. Conference Bridge configuration
4. Media Resource Group configuration
5. Media Resource Group List configuration
6. Cisco IP Phone 7960 SCCP Configuration
7. Cisco IP Phone 7960 SIP Configuration
8. SIP Trunks configuration overview
9. SIP Trunk configuration to IOS GW
10. G.711 SIP Trunk configuration to SME
11. G.729 SIP Trunk configuration to SME
12. Route Pattern configuration to IOS GW
13. Route Group configuration to SME
14. Route List configuration to SME
15. Route Pattern configuration to SP
16. Route Pattern configuration to Avaya
17. Route Pattern configuration to Avaya FAX
18. Calling Line ID restriction configuration

Cisco Unified Communications Manager version



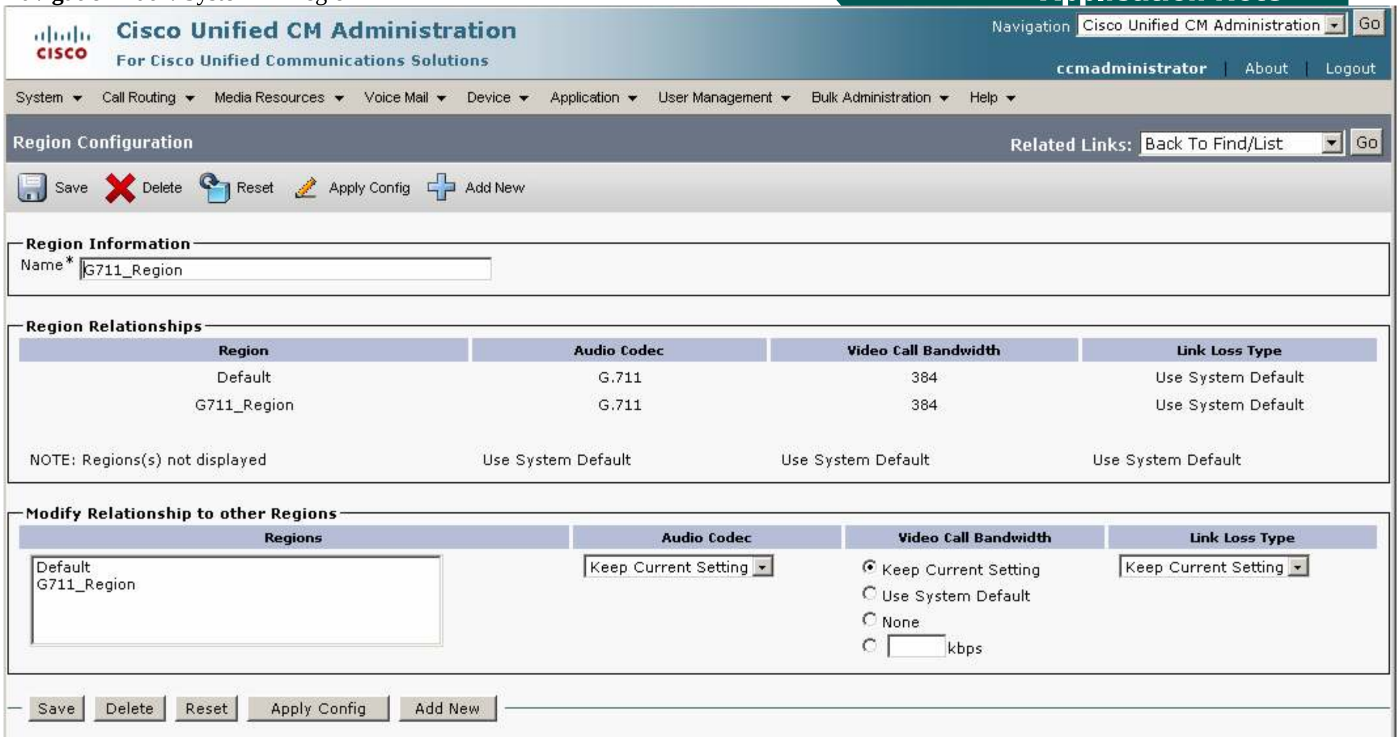
Configuration of Device Pool to Region mapping (Page 1 of 2)

Navigation Path: System → Region



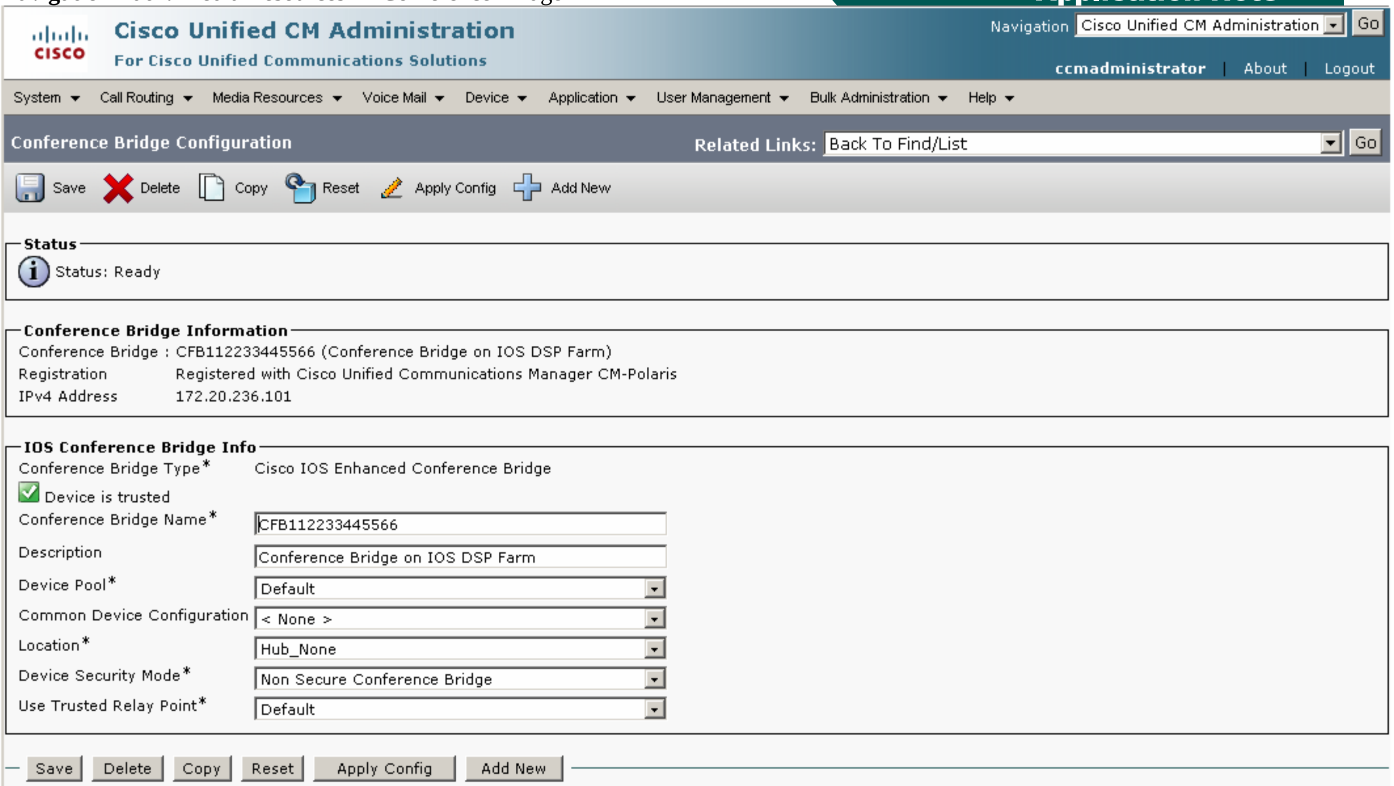
Configuration of Device Pool to Region mapping (Page 2 of 2)

Navigation Path: System → Region



Configuration of Conference Bridge

Navigation Path: Media Resources → Conference Bridge

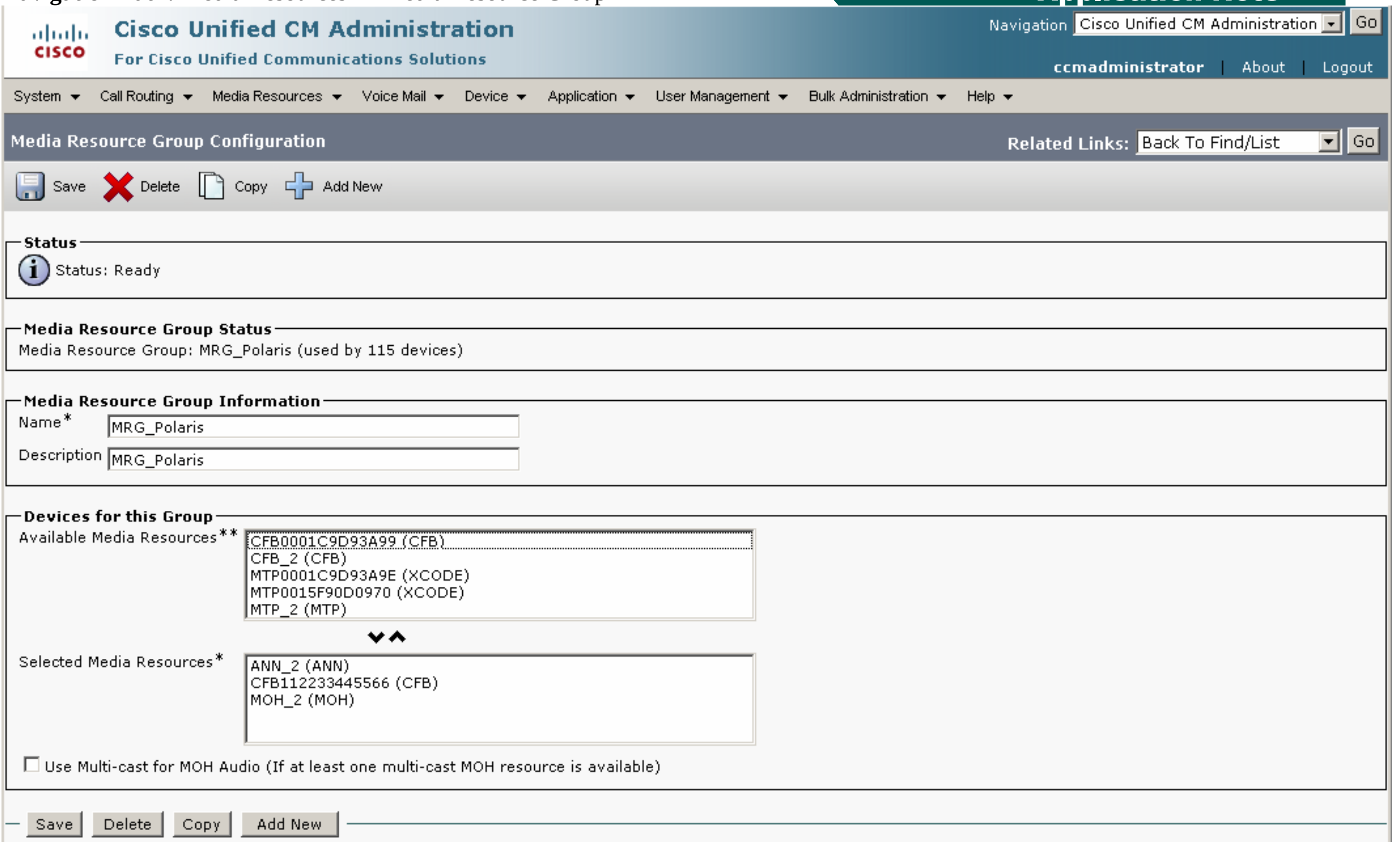


<u>Conference Bridge configuration:</u>

```
sccp local GigabitEthernet0/0
sccp ccm 172.20.236.50 identifier 1 version 7.0
sccp
!
sccp ccm group 1
 bind interface GigabitEthernet0/0
 associate ccm 1
 priority 1
 associate profile 98 register cfb112233445566
!
dspfarm profile 98 conference
 codec g729r8
 codec g711ulaw
 maximum sessions 8
 associate application SCCP
```

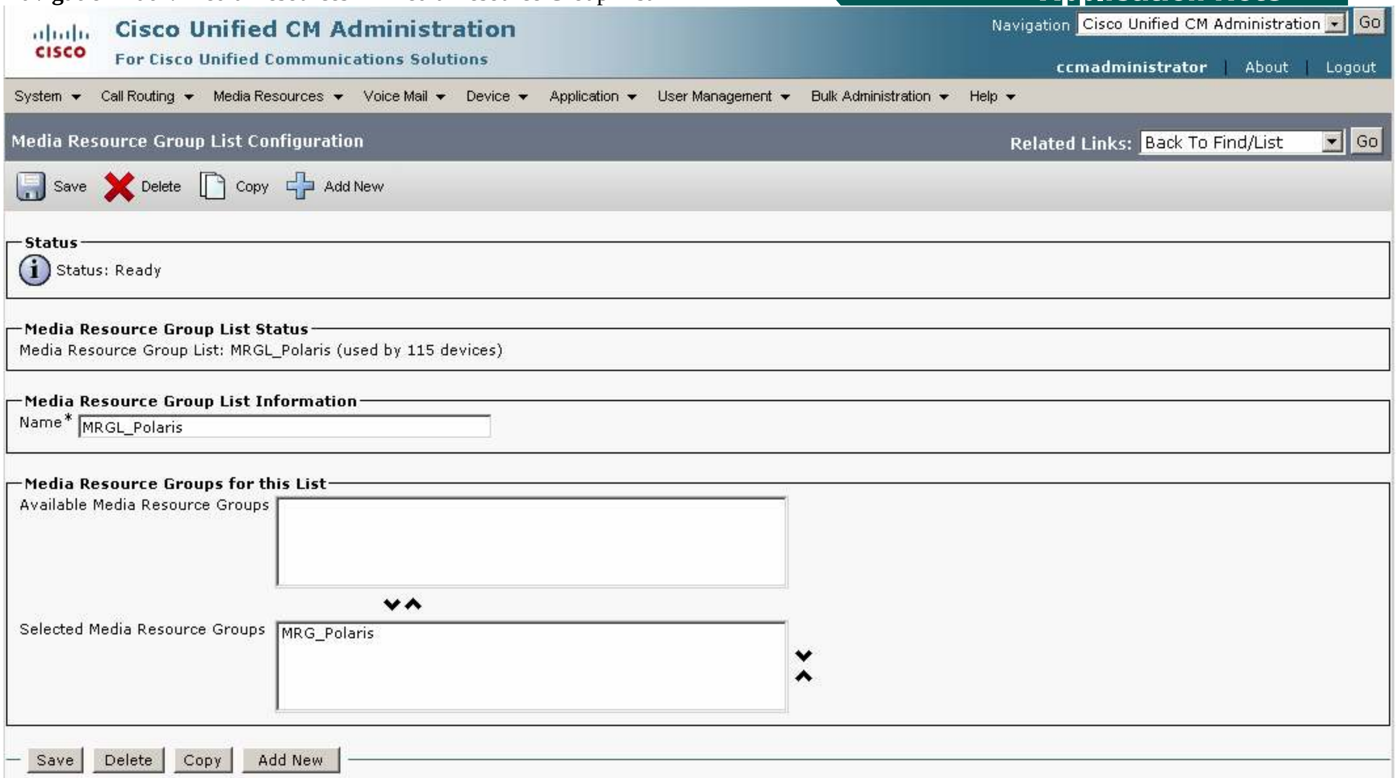
Configuration of Media Resource Group

Navigation Path: Media Resources → Media Resource Group



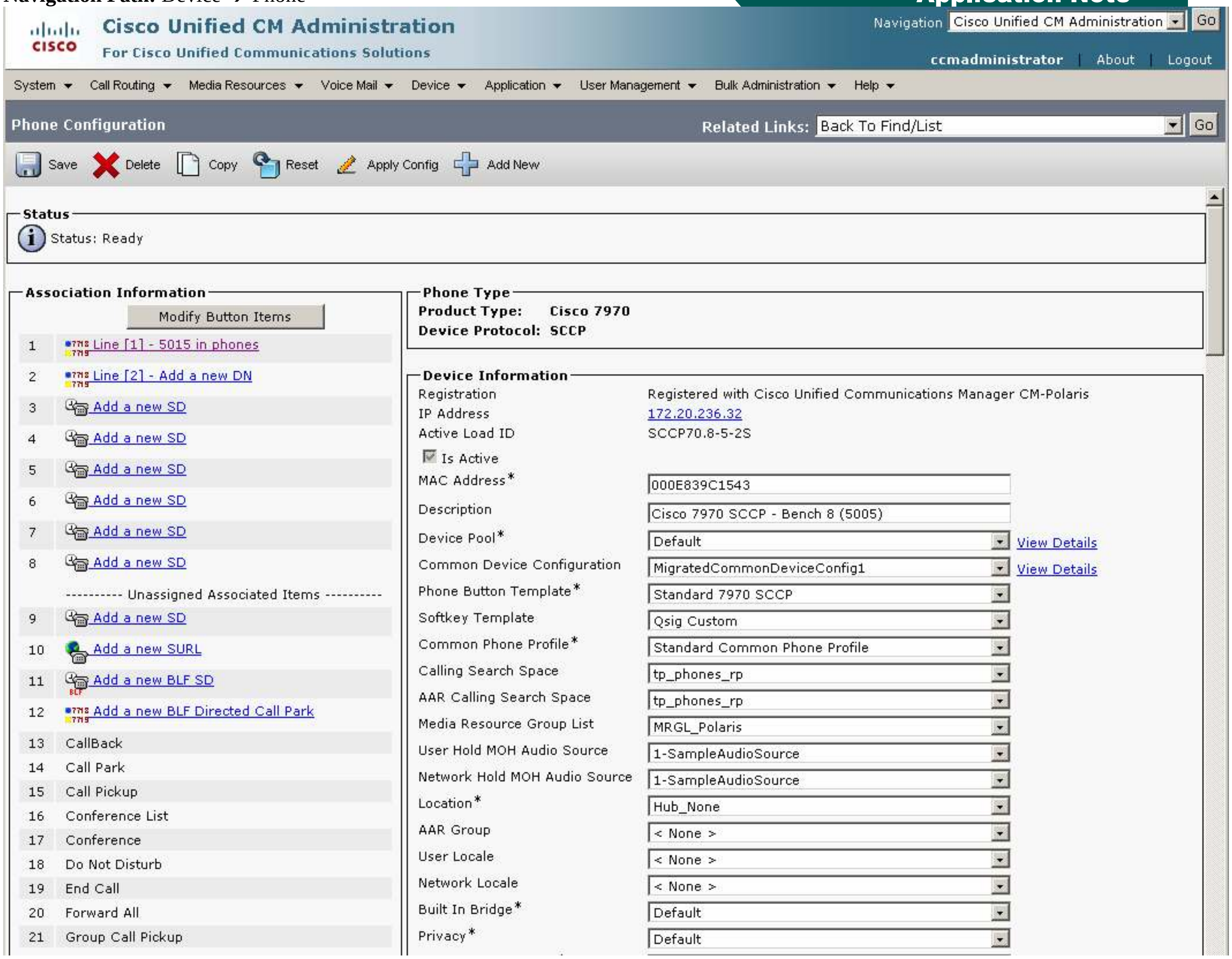
Configuration of Media Resource Group List

Navigation Path: Media Resources → Media Resource Group List



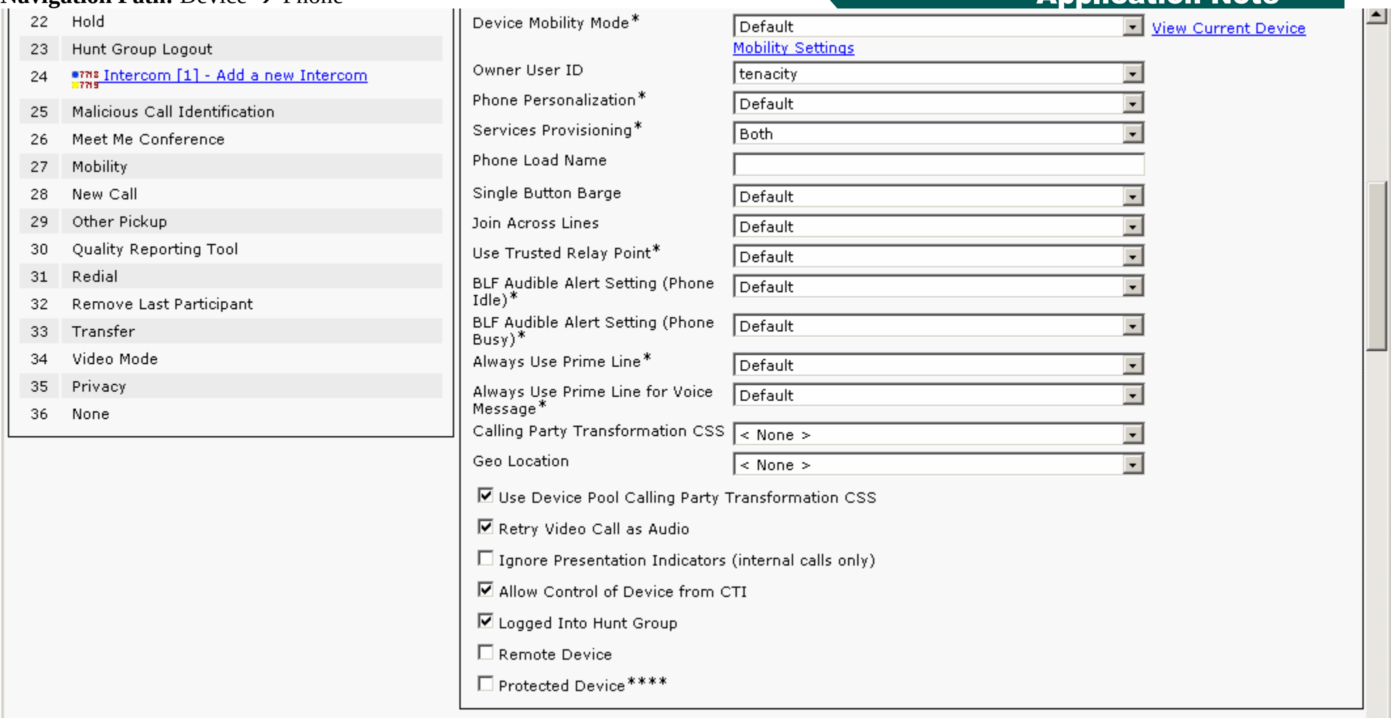
Configuration of Cisco SCCP 7970 Phone (Page 1 of 5)

Navigation Path: Device → Phone



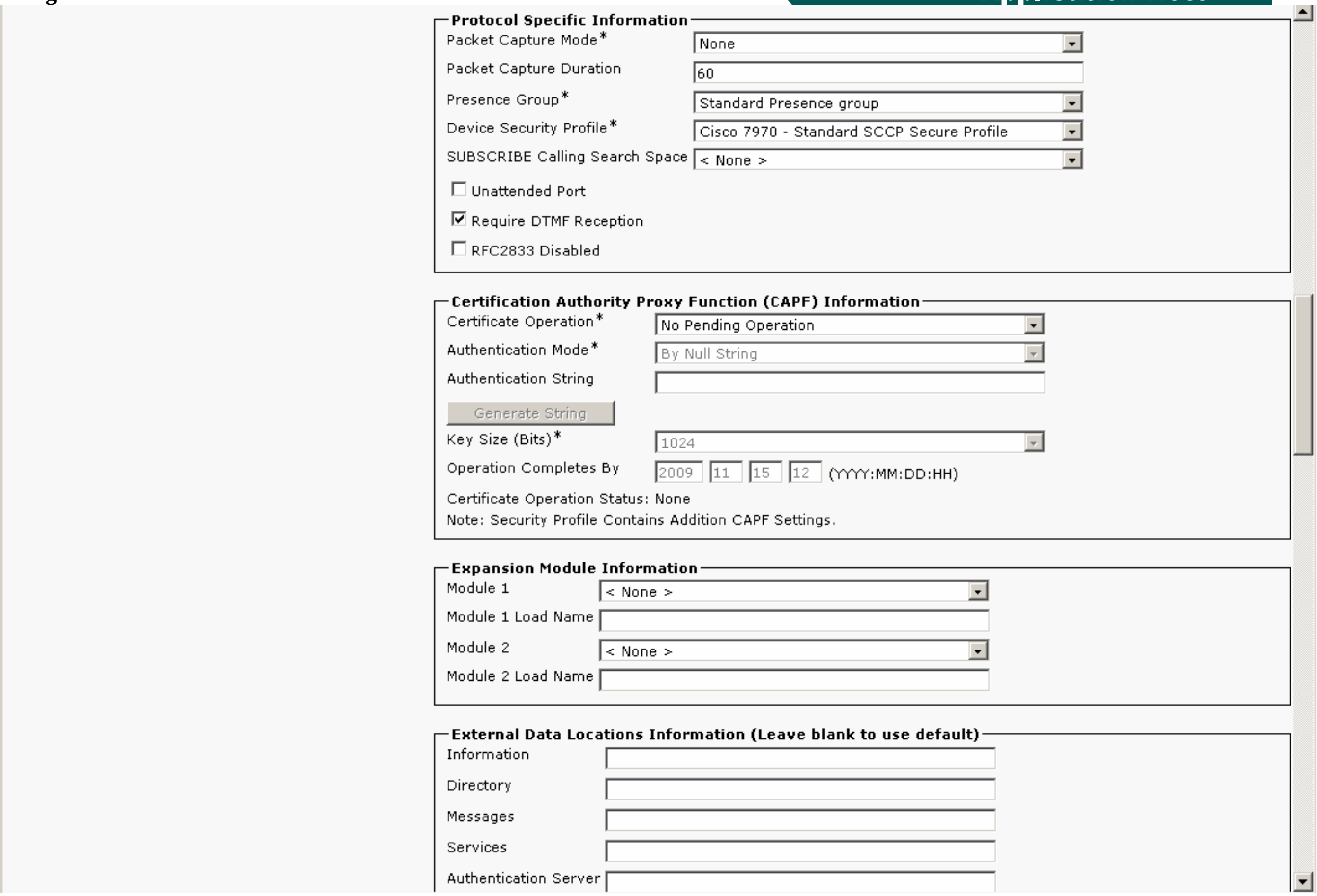
Configuration of Cisco SCCP 7970 Phone (Page 2 of 5)

Navigation Path: Device → Phone

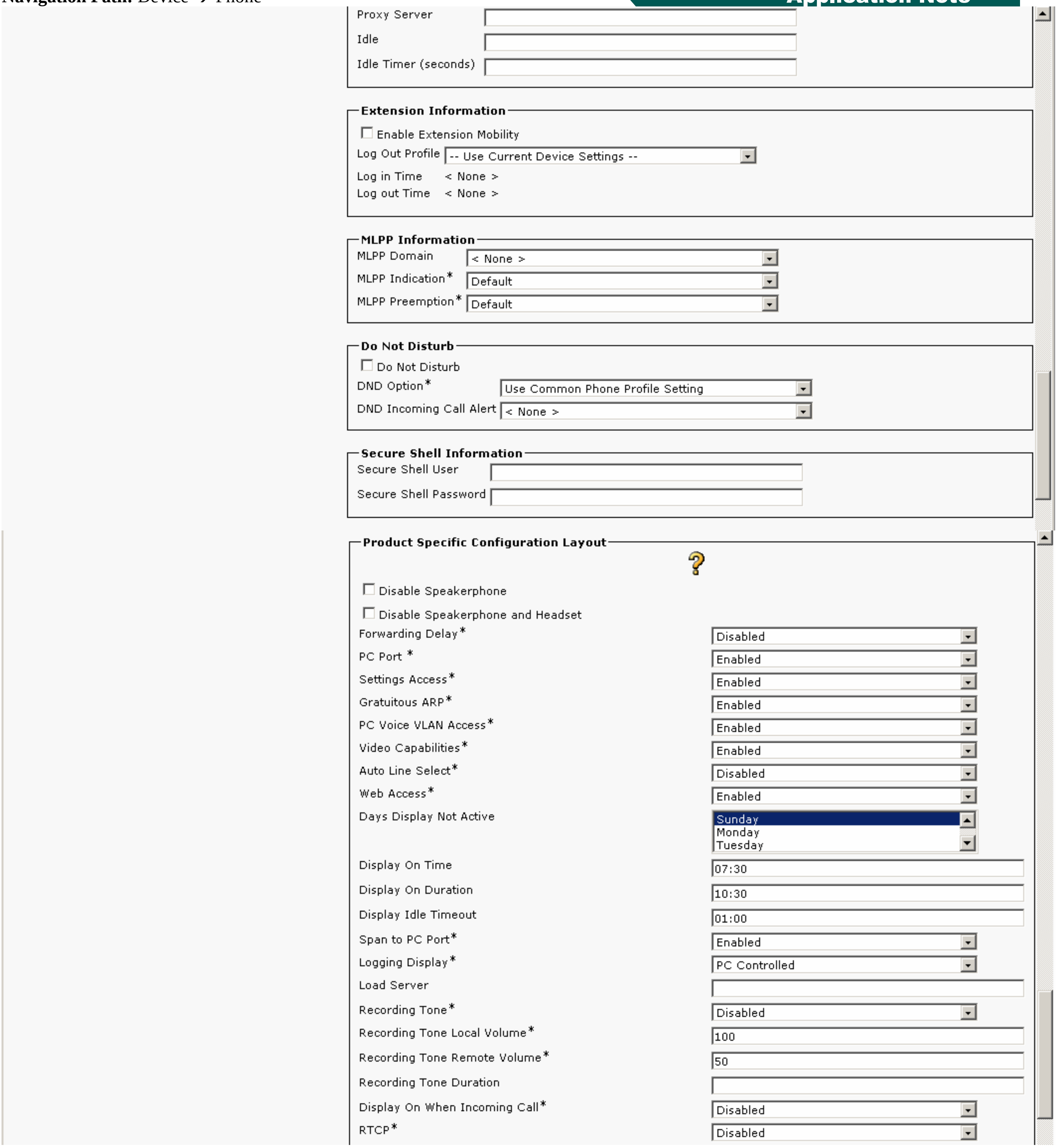


Configuration of Cisco SCCP 7970 Phone (Page 3 of 5)

Navigation Path: Device → Phone

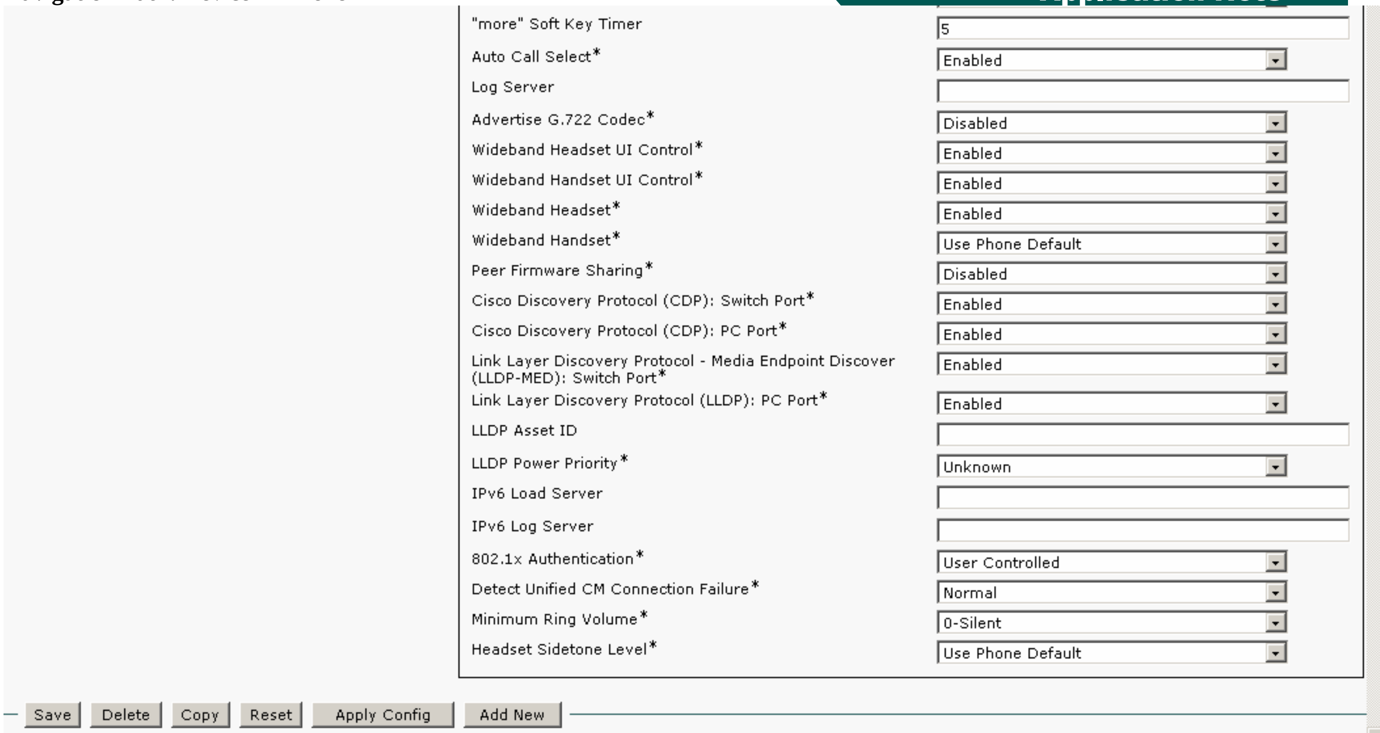


Configuration of Cisco SCCP 7970 Phone (Page 4 of 5)
Navigation Path: Device → Phone



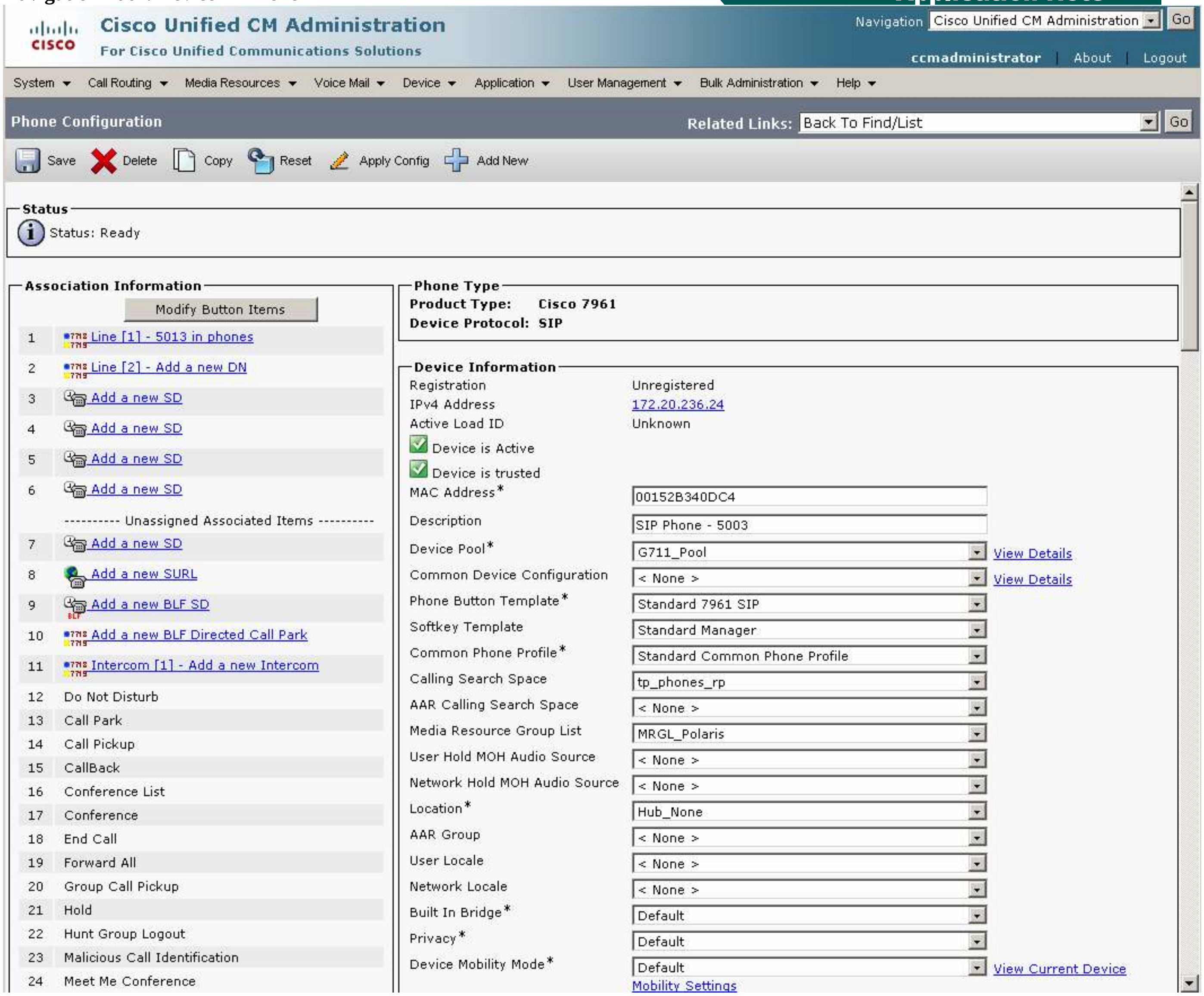
Configuration of Cisco SCCP 7970 Phone (Page 5 of 5)

Navigation Path: Device → Phone



Configuration of Cisco SIP 7961 Phone (Page 1 of 4)

Navigation Path: Device → Phone



Configuration of Cisco SIP 7961 Phone (Page 2 of 4)

Navigation Path: Device → Phone

25	Mobility
26	New Call
27	Other Pickup
28	Quality Reporting Tool
29	Redial
30	Remove Last Participant
31	Transfer
32	Privacy
33	None

Owner User ID	< None >
Phone Suite*	Default
Services Provisioning*	Default
Phone Load Name	SIP41.8-5-2S
Single Button Barge	Default
Join Across Lines	Default
Use Trusted Relay Point*	Default
BLF Audible Alert Setting (Phone Idle)*	Default
BLF Audible Alert Setting (Phone Busy)*	Default
Always Use Prime Line*	Default
Always Use Prime Line for Voice Message*	Default
Calling Party Transformation CSS	< None >
Geolocation	< None >

- [x] Use Device Pool Calling Party Transformation CSS
- [ ] Ignore Presentation Indicators (internal calls only)
- [x] Allow Control of Device from CTI
- [x] Logged Into Hunt Group
- [ ] Remote Device
- [ ] Protected Device****

Protocol Specific Information

Packet Capture Mode*	None
Packet Capture Duration	0
Presence Group*	Standard Presence group
SIP Dial Rules	< None >
MTP Preferred Originating Codec*	711ulaw
Device Security Profile*	Cisco 7961 - Standard SIP Non-Secure Profile
Rerouting Calling Search Space	< None >
SUBSCRIBE Calling Search Space	< None >
SIP Profile*	Standard SIP Profile
Digest User	< None >

- [ ] Media Termination Point Required
- [ ] Unattended Port
- [ ] Require DTMF Reception

Certification Authority Proxy Function (CAPF) Information

Certificate Operation*	No Pending Operation
Authentication Mode*	By Null String
Authentication String	

Generate String

Key Size (Bits)*	1024
Operation Completes By	2009 11 20 12 (YYYY:MM:DD:HH)

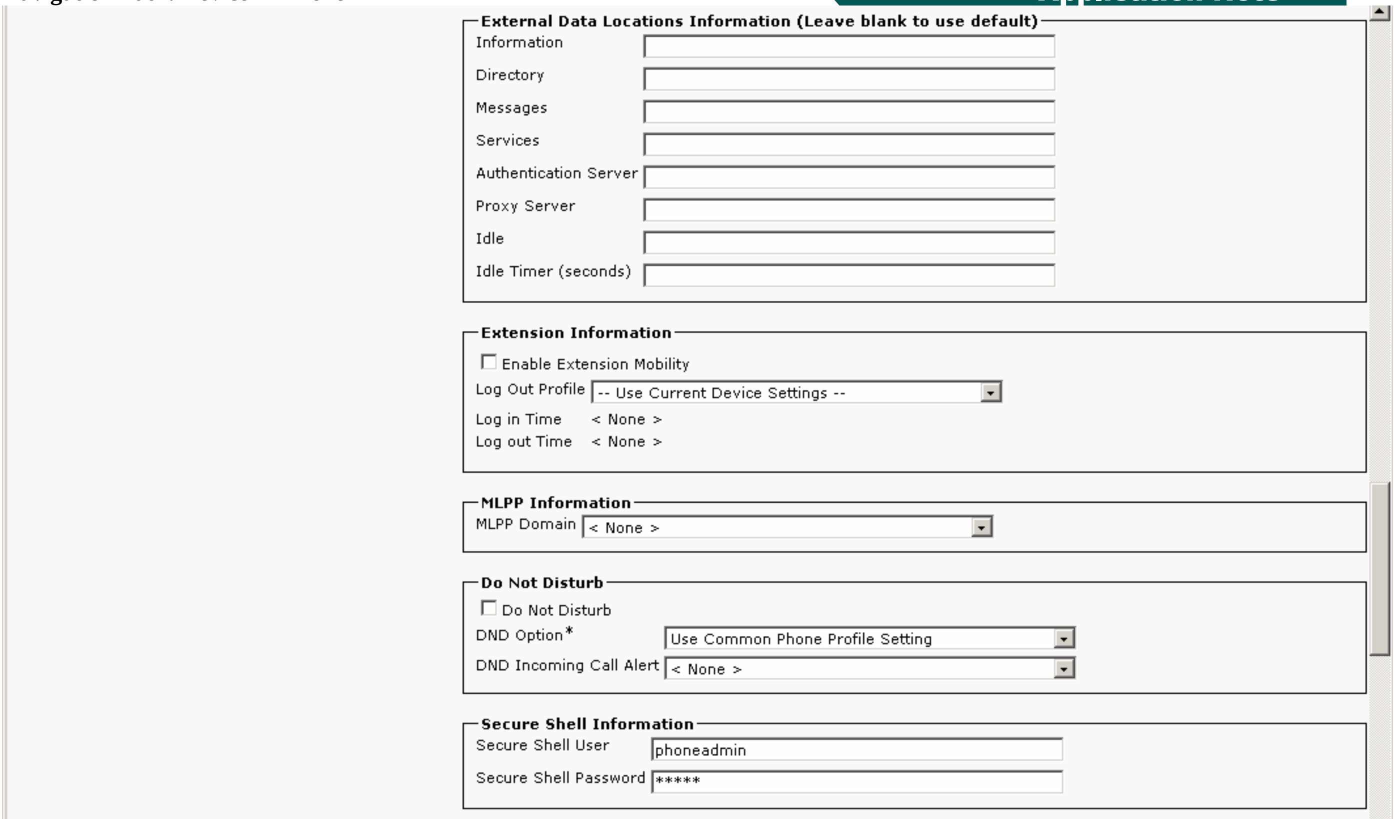
Certificate Operation Status: None

Note: Security Profile Contains Addition CAPF Settings.

Expansion Module Information

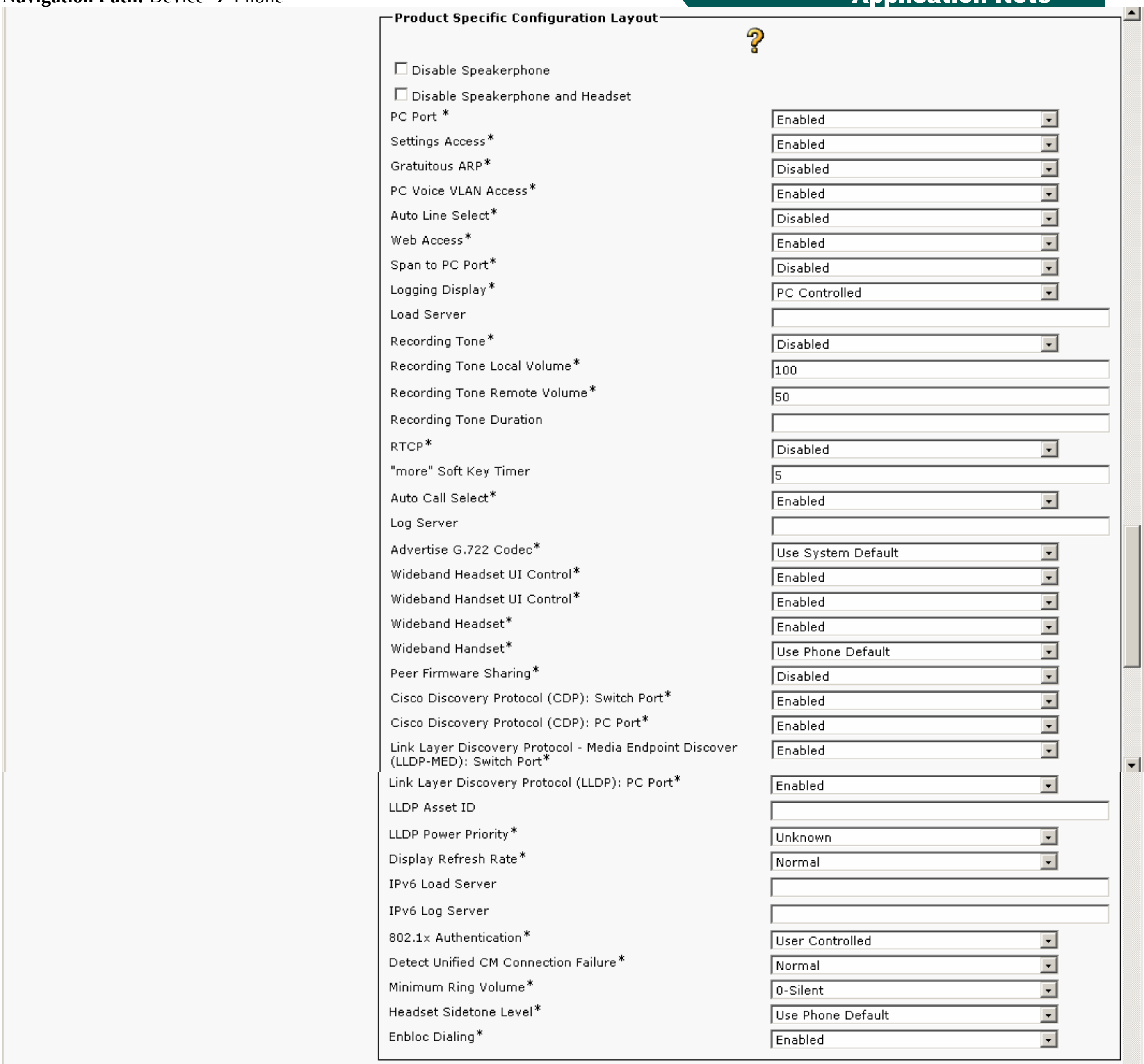
Module 1	< None >
Module 1 Load Name	
Module 2	< None >
Module 2 Load Name	

Configuration of Cisco SIP 7961 Phone (Page 3 of 4)
Navigation Path: Device → Phone



Configuration of Cisco SIP 7961 Phone (Page 4 of 4)

Navigation Path: Device → Phone



Product Specific Configuration Layout

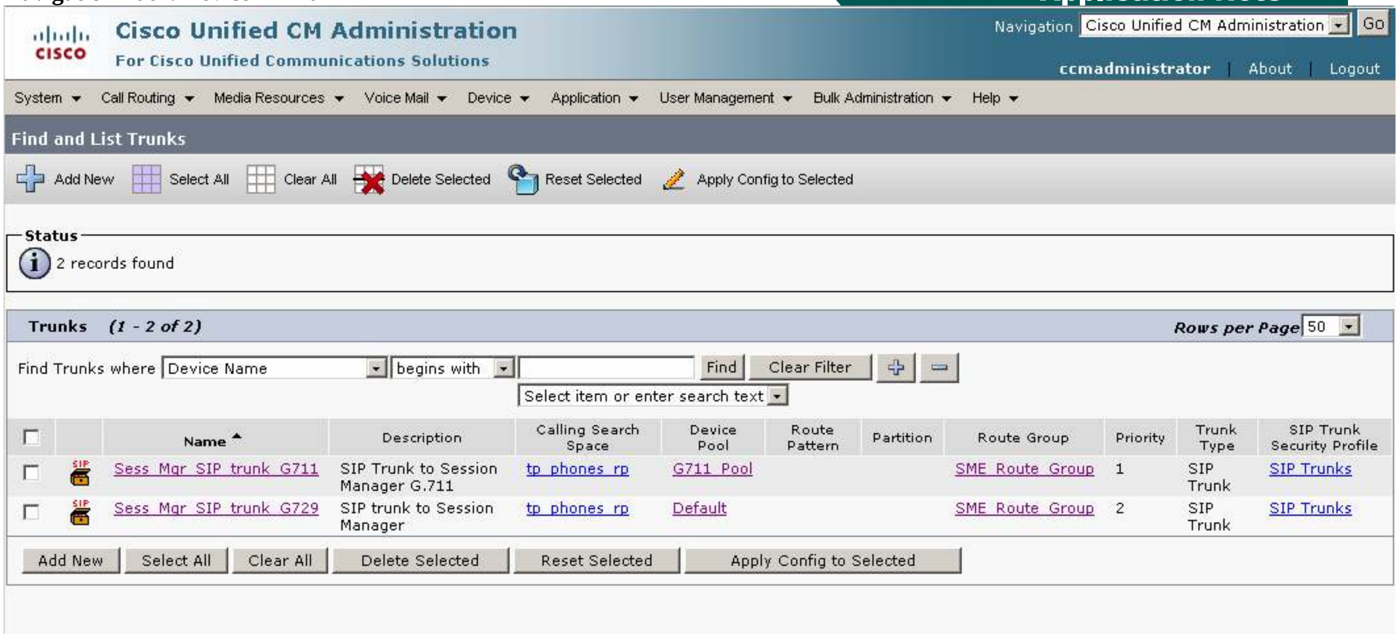
☐ Disable Speakerphone

☐ Disable Speakerphone and Headset

PC Port *	Enabled
Settings Access*	Enabled
Gratuitous ARP*	Disabled
PC Voice VLAN Access*	Enabled
Auto Line Select*	Disabled
Web Access*	Enabled
Span to PC Port*	Disabled
Logging Display*	PC Controlled
Load Server	
Recording Tone*	Disabled
Recording Tone Local Volume*	100
Recording Tone Remote Volume*	50
Recording Tone Duration	
RTCP*	Disabled
"more" Soft Key Timer	5
Auto Call Select*	Enabled
Log Server	
Advertise G.722 Codec*	Use System Default
Wideband Headset UI Control*	Enabled
Wideband Handset UI Control*	Enabled
Wideband Headset*	Enabled
Wideband Handset*	Use Phone Default
Peer Firmware Sharing*	Disabled
Cisco Discovery Protocol (CDP): Switch Port*	Enabled
Cisco Discovery Protocol (CDP): PC Port*	Enabled
Link Layer Discovery Protocol - Media Endpoint Discover (LLDP-MED): Switch Port*	Enabled
Link Layer Discovery Protocol (LLDP): PC Port*	Enabled
LLDP Asset ID	
LLDP Power Priority*	Unknown
Display Refresh Rate*	Normal
IPv6 Load Server	
IPv6 Log Server	
802.1x Authentication*	User Controlled
Detect Unified CM Connection Failure*	Normal
Minimum Ring Volume*	0-Silent
Headset Sidetone Level*	Use Phone Default
Enbloc Dialing*	Enabled

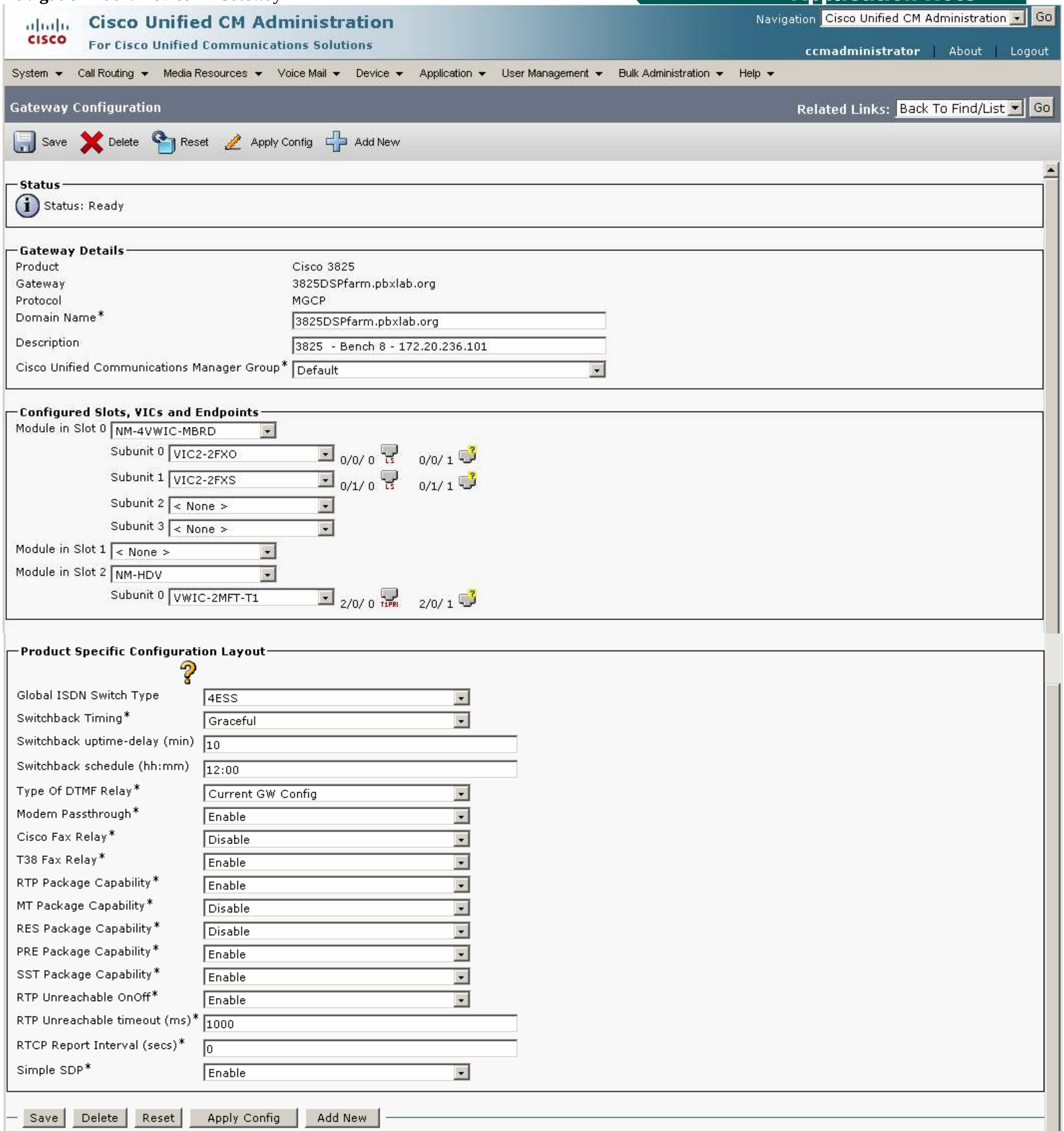
Configuration of Dual SIP trunks to SME - Overview

Navigation Path: Device → Trunk



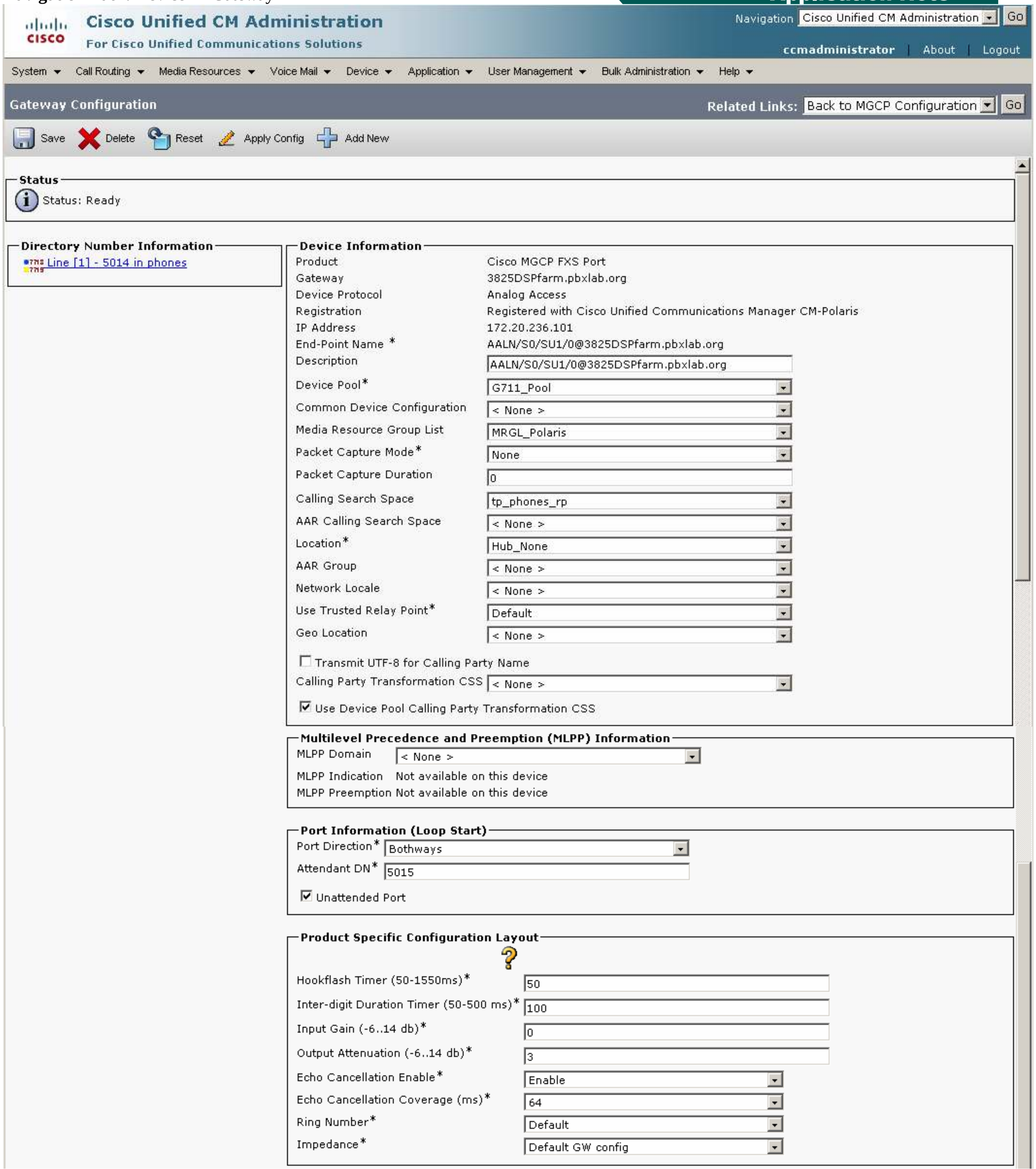
Configuration of FAX Gateway (Page 1 of 2)

Navigation Path: Device → Gateway



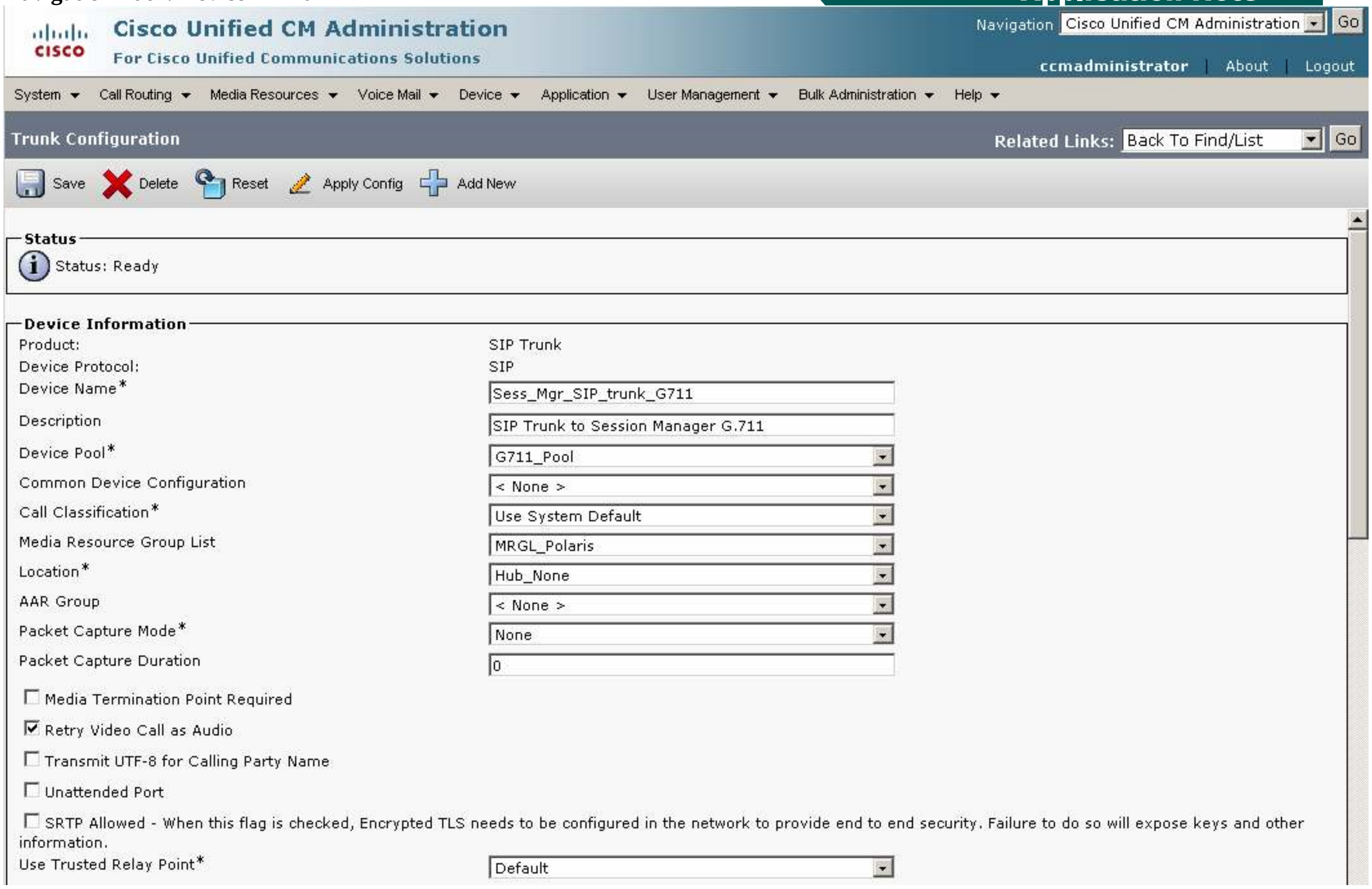
Configuration of FAX Gateway Analog Endpoint (Page 2 of 2)

Navigation Path: Device → Gateway



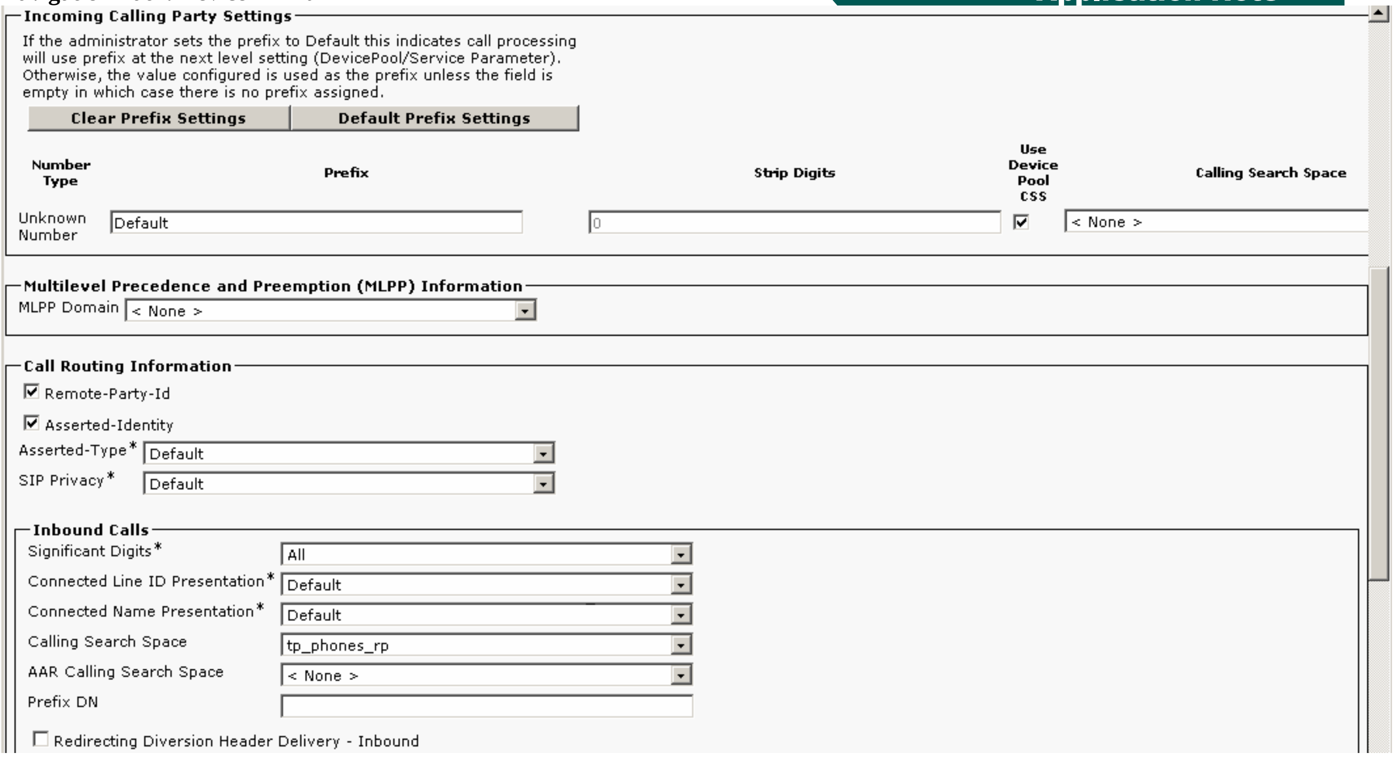
Configuration of SIP trunk to SME – G.711 (Page 1 of 3)

Navigation Path: Device → Trunk



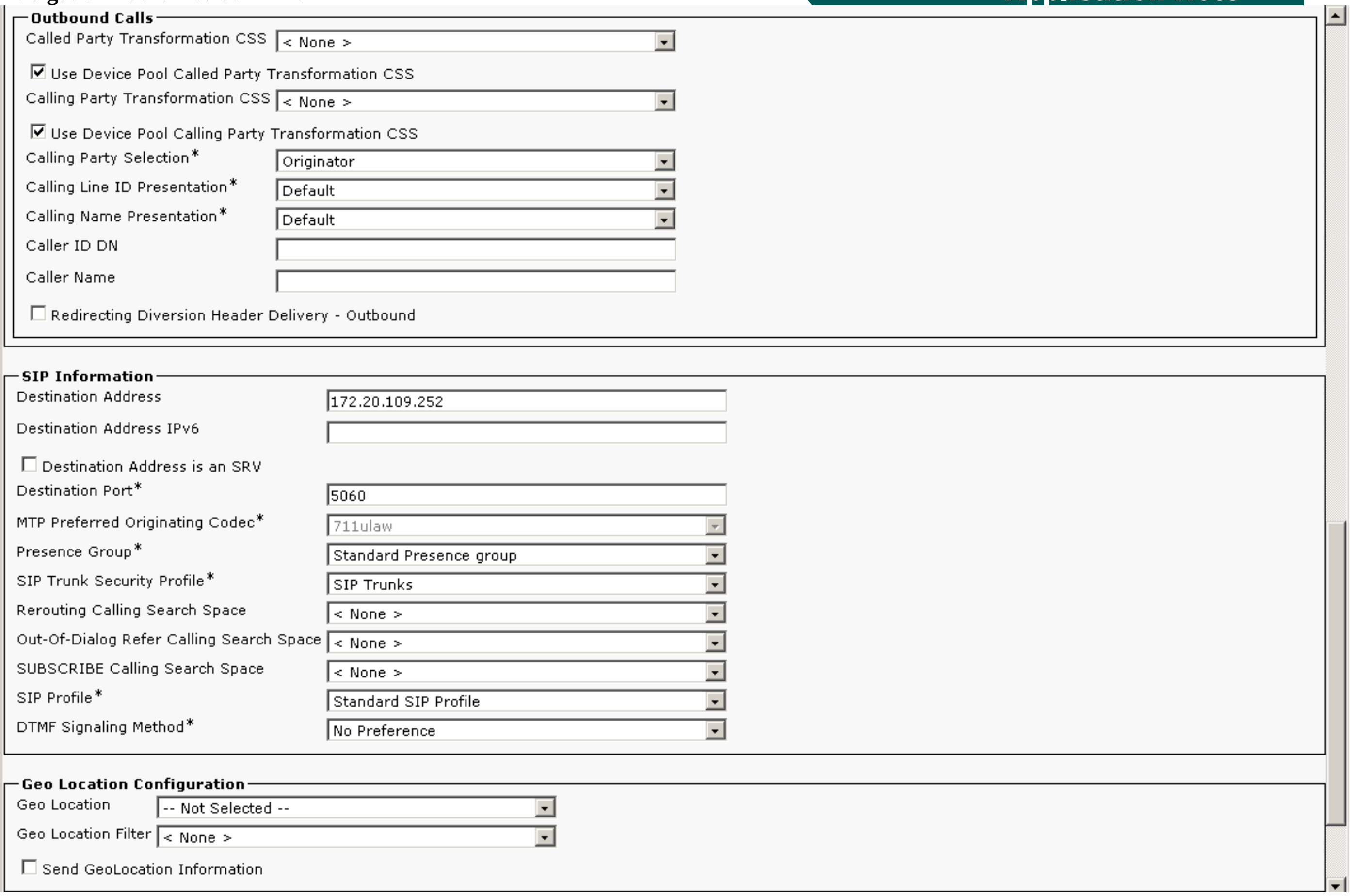
Configuration of SIP trunk to SME – G.711 (Page 2 of 3)

Navigation Path: Device → Trunk



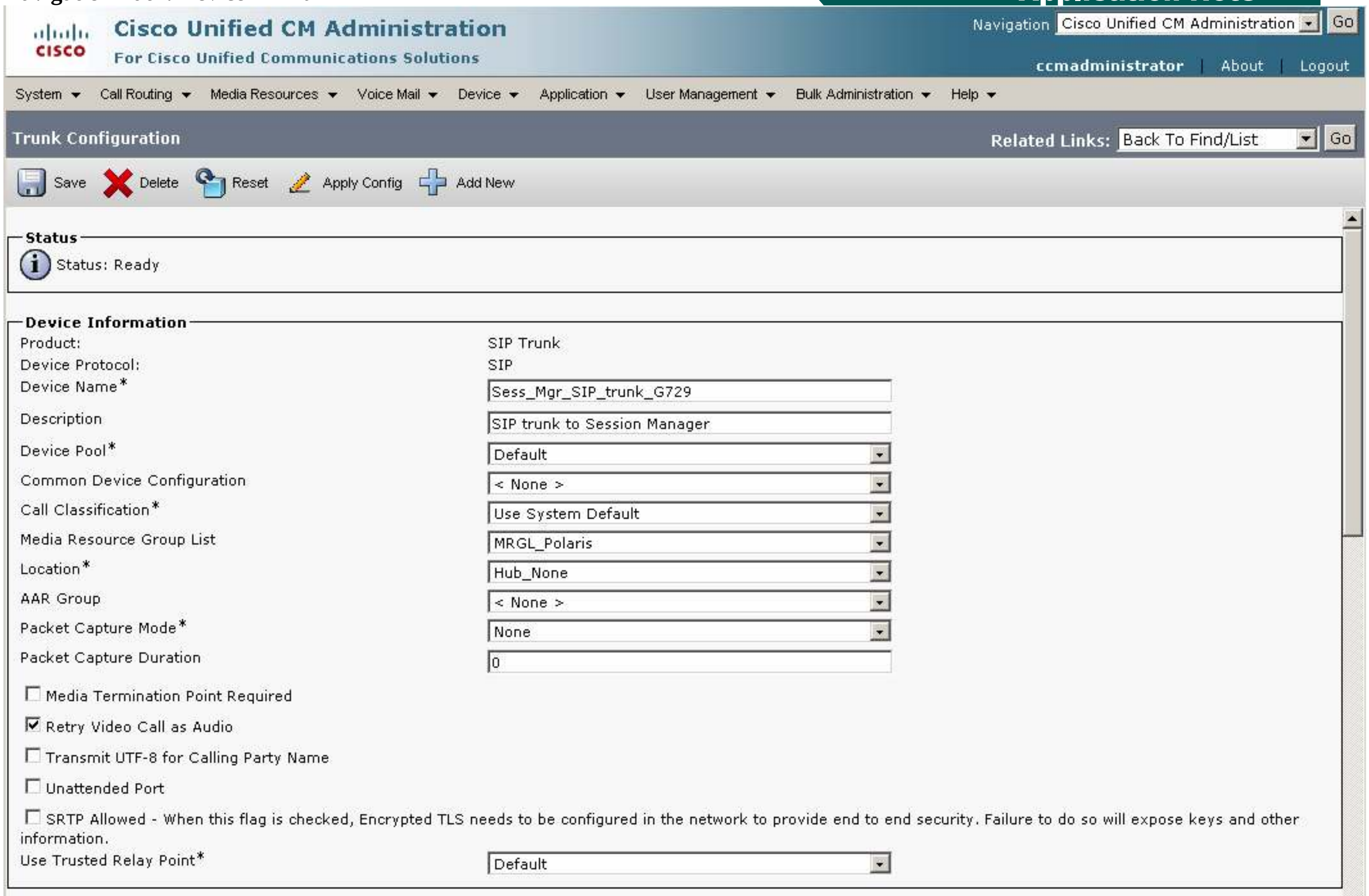
Configuration of SIP trunk to SME – G.711 (Page 3 of 3)

Navigation Path: Device → Trunk



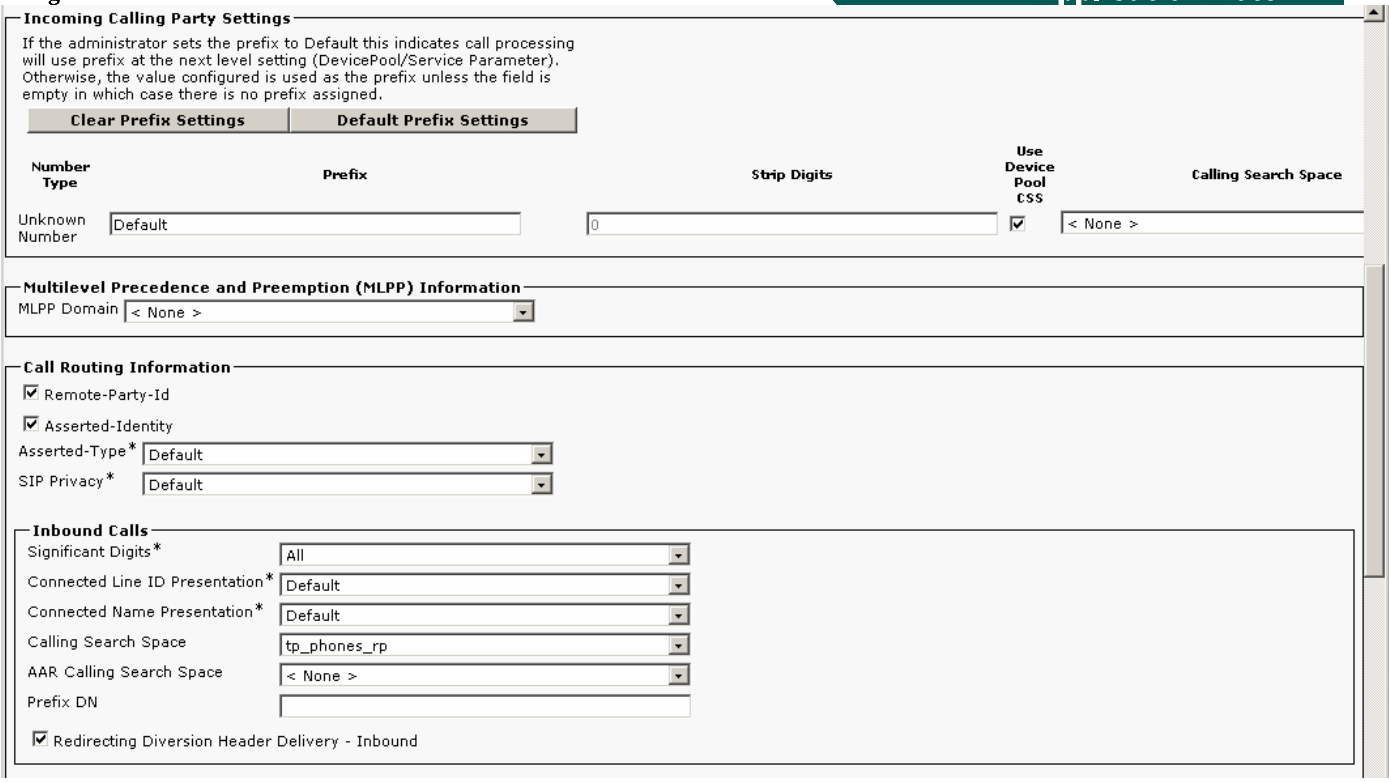
Configuration of SIP trunk to SME – G.729 (Page 1 of 3)

Navigation Path: Device → Trunk



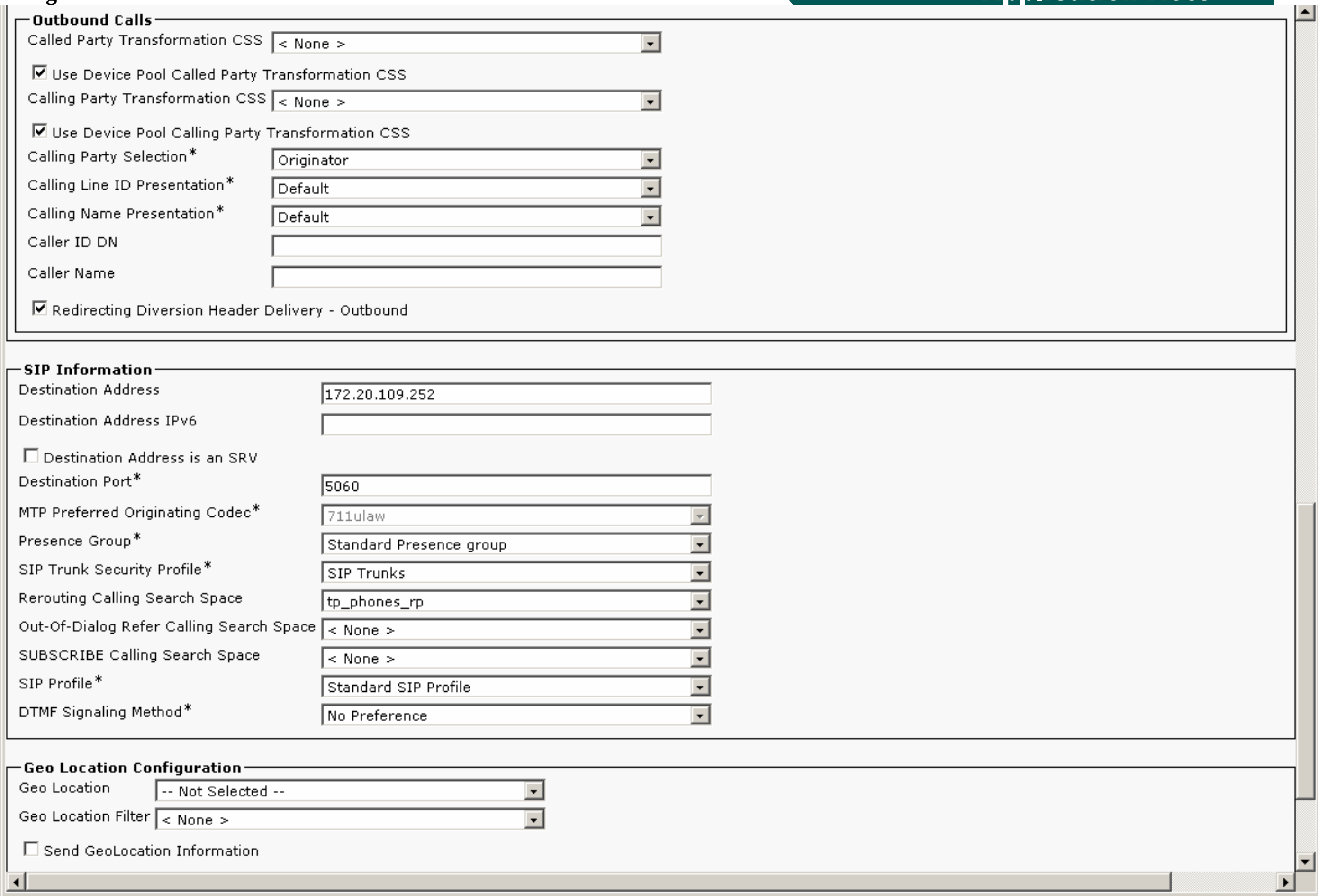
Configuration of SIP trunk to SME – G.729 (Page 2 of 3)

Navigation Path: Device → Trunk



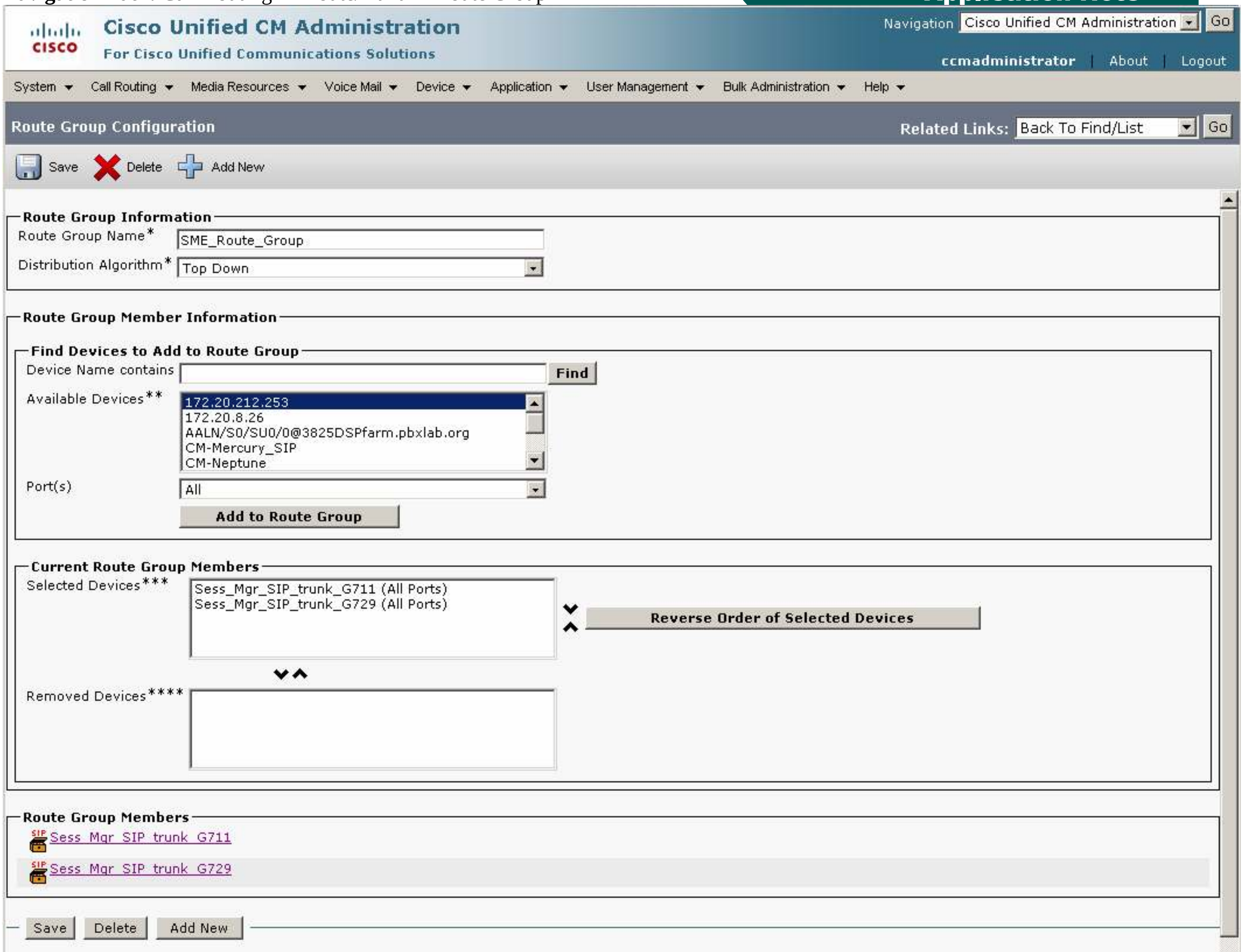
Configuration of SIP trunk to SME – G.729 (Page 3 of 3)

Navigation Path: Device → Trunk



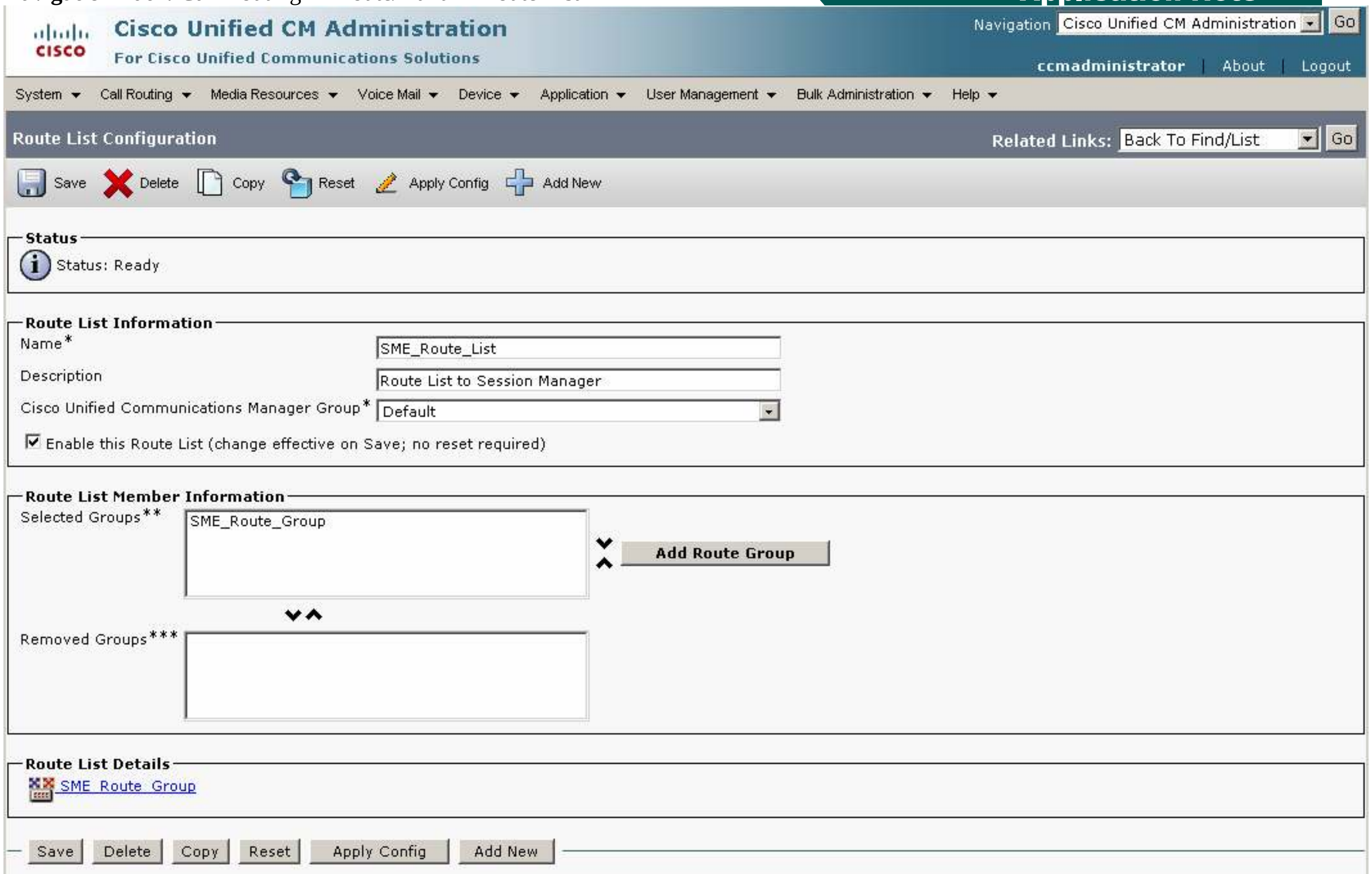
Configuration of Route Group to SME

Navigation Path: Call Routing → Route/Hunt → Route Group



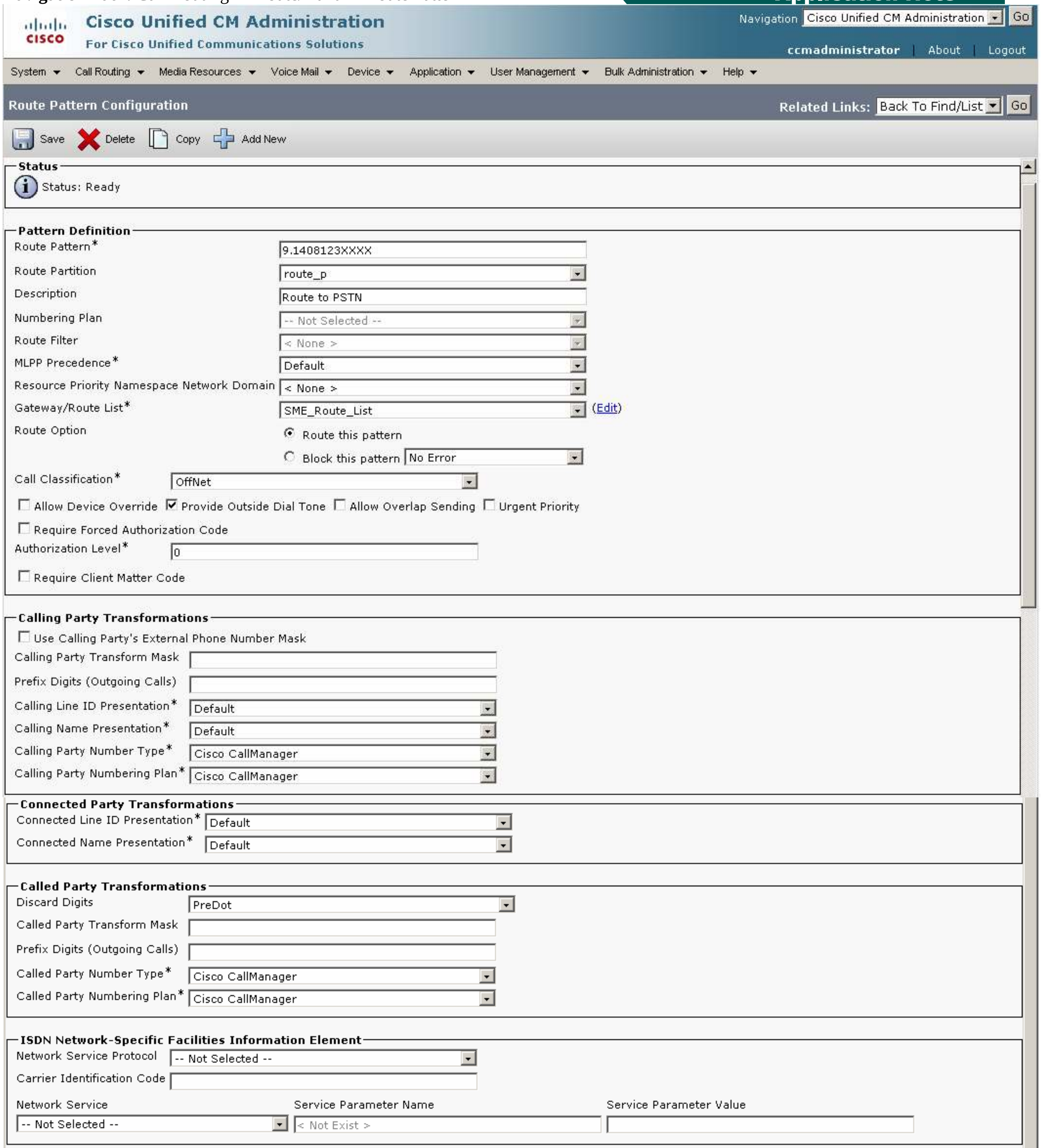
Configuration of Route List to SME

Navigation Path: Call Routing → Route/Hunt → Route List



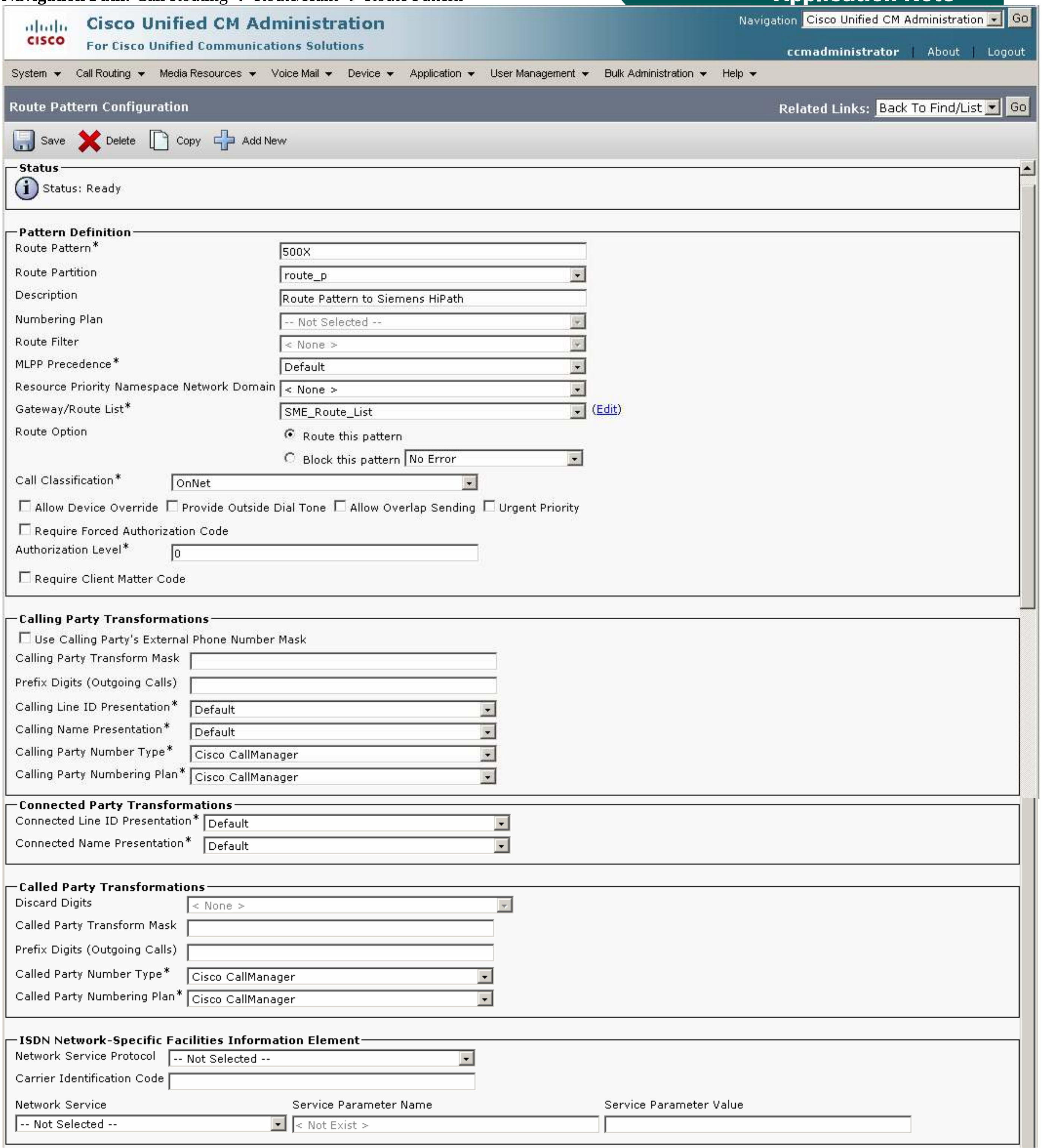
Configuration of Route Pattern to PSTN through SME

Navigation Path: Call Routing → Route/Hunt → Route Pattern



Configuration of Route Patterns to Siemens PBX through SME

Navigation Path: Call Routing → Route/Hunt → Route Pattern



Configuring CUBE

CUBE#**show version**
Cisco IOS Software, 3800 Software (C3845-ADVENTERPRISEK9-M), Version 15.0(1)XA, RELEASE SOFTWARE (fc2)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2009 by Cisco Systems, Inc.
Compiled Thu 22-Oct-09 03:08 by prod_rel_team

ROM: System Bootstrap, Version 12.4(13r)T10, RELEASE SOFTWARE (fc1)

IOSGW_SM uptime is 2 days, 23 hours, 19 minutes
System returned to ROM by power-on
System image file is "flash:c3845-adventerprisek9-mz.150-1.XA.bin"

Cisco 3845 (revision 1.0) with 484351K/39936K bytes of memory.
Processor board ID FHK1240F25Z
2 Gigabit Ethernet interfaces
1 Virtual Private Network (VPN) Module
2 Voice FXS interfaces
DRAM configuration is 64 bits wide with parity enabled.
479K bytes of NVRAM.
125440K bytes of ATA System CompactFlash (Read/Write)

License Info:

License UDI:

\---
Device#   PID   SN
\---
*0   CISCO3845-MB   FOC12391507

Configuration register is 0x2102

CUBE#**show run**
Building configuration...

Current configuration : 5346 bytes
!
! Last configuration change at 19:28:46 UTC Thu Oct 22 2009
!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname CUBE

```
!
boot-start-marker
boot system flash c3845-ipvoice_ivs-mz.124-24.6.13.PIA12
boot-end-marker
!
!card type command needed for slot 1
logging buffered 100000
enable secret 5 $1$v.Z3$YVkreNYDyhm388NGF3f1u0
!
no aaa new-model
network-clock-participate slot 1
!
ip source-route
ip cef
!
no ip domain lookup
no ipv6 cef
multilink bundle-name authenticated
!
voice-card 0
!
voice-card 1
 dspfarm
 dsp services dspfarm
!
voice service voip
 address-hiding
 allow-connections sip to sip
 fax protocol t38 version 0 ls-redundancy 0 hs-redundancy 0 fallback pass-through g711ulaw[1]
 sip
  bind control source-interface GigabitEthernet0/0
  bind media source-interface GigabitEthernet0/0
  header-passing error-passthru
  asserted-id pai[2]
  no update-callerid
  midcall-signaling passthru
  privacy-policy passthru[3]
  g729 annexb-all
!
voice class codec 1
 codec preference 1 g729r8
 codec preference 2 g711ulaw
!
voice translation-rule 1[4]
```

---

[1] This command enables router to up speed to t38. To pass-through G711, the command has to be changed to "fax protocol pass-through g711ulaw"

[2] This command enables router to send P-Asserted ID within the SIP Message Header. Alternatively, this command can also be applied to individual dial-peers (voice-class sip asserted-id pai)

[3] This command enables router to transparently pass through all received Privacy values. Alternatively, this command can also be applied to individual dial-peers (voice-class sip privacy-policy passthru)

```
 rule 1 /81/ /1\1/
!
!
voice translation-profile outbound_g711[5]
 translate called 1
!
license udi pid CISCO3845-MB sn FOC12391507
archive
 log config
  hidekeys
!
interface GigabitEthernet0/0
 ip address 172.20.109.203 255.255.255.0
 duplex auto
 speed auto
 media-type rj45
!
interface GigabitEthernet0/1
 no ip address
 duplex auto
 speed auto
 media-type rj45
!
ip forward-protocol nd
!
no ip http server
ip route 0.0.0.0 0.0.0.0 172.20.109.1
!
control-plane
!
voice-port 0/0/0
 timeouts ringing infinity
 station-id number 14081238004
 caller-id enable
!
voice-port 0/0/1
!
mgcp fax t38 ecm
mgcp behavior g729-variants static-pt
!
sccp local GigabitEthernet0/0
!
dial-peer voice 1408 voip
 description Towards PSTN
 destination-pattern 14081238...
 session protocol sipv2
 session target ipv4:172.20.8.46
 incoming called-number 1408T
 voice-class codec 1
 voice-class sip early-offer forced
 dtmf-relay rtp-nte
```

---

[4] This translation rule is used on dial-peer 9001 (outgoing G.711-only calls) to strip the prefix “8” (sent by CUCM to match a different dial-peer whenever G.711-only calls are placed) from the telephone number

[5] This translation profile, containing the previously-defined translation rule, is assigned to the dial-peer used to place outbound G.711-only calls (dial-peer 9001 in this configuration example)

```
 fax-relay ecm disable
 fax-relay sg3-to-g3
 fax rate 14400
 fax protocol t38 version 0 ls-redundancy 0 hs-redundancy 0 fallback pass-through g711ulaw[1]
!
dial-peer voice 1510 voip
 description Towards SME
 destination-pattern 15101234...
 session protocol sipv2
 session target ipv4:172.20.109.252
 incoming called-number 1510T
 dtmf-relay rtp-nte
 fax-relay ecm disable
 fax-relay sg3-to-g3
 fax rate 14400
 fax protocol t38 version 0 ls-redundancy 0 hs-redundancy 0 fallback pass-through g711ulaw[1]
!
dial-peer voice 9001 voip[6]
  translation-profile outgoing outbound_g711
  destination-pattern 81..........
  codec g711ulaw
  voice-class sip early-offer forced
  session protocol sipv2
  session target sip-server
  dtmf-relay rtp-nte
  fax-relay ecm disable
  fax-relay sg3-to-g3
  fax rate 14400
  fax protocol t38 version 0 ls-redundancy 0 hs-redundancy 0 fallback pass-through g711ulaw[1]
!
gateway
 timer receive-rtp 600
!
sip-ua
!
gatekeeper
 shutdown
!
telephony-service
 sdspfarm units 1
 sdspfarm transcode sessions 4
 sdspfarm tag 1 mtp001122334455
 max-ephones 10
 max-dn 10
 ip source-address 172.20.109.203 port 2000
 max-conferences 12 gain -6
 transfer-system full-consult
 transfer-pattern ....
 create cnf-files version-stamp Jan 01 2002 00:00:00
!
line con 0
line aux 0
line vty 0 4
```

[6] This dial-peer (optional) is used for outbound G.711-only calls. Typically used for fax/modem transmissions. It matches a Route Pattern configured in CUCM/SME, which sends a prefix (in this example "8") along with the telephone number string

```
 password cisco
 login
!
exception data-corruption buffer truncate
scheduler allocate 20000 1000
end
```

Acronyms

Acronym	Definitions
ANF-PR	Additional Network Feature Path Replacement
AOC	Advice-of-charge. Information element is sent with the connection setup information for incoming Euro-ISDN connections. The AOC IE is used for call charge calculation.
CUCM	Cisco Unified Communications Manager
CCBS	Call Completion to Busy Subscriber
CCNR	Call Completion on No Reply
CFB	Call Forwarding on Busy
CFNR	Call Forwarding No Reply
CFU	Call Forwarding Unconditional
CLIP	Calling Line (Number) Identification Presentation
CLIR	Calling Line (Number) Identification Restriction
CNIP	Calling Name Identification Presentation
CNIR	Calling Name Identification Restriction
COLP	Connected Line (Number) Identification Presentation
COLR	Connected Line (Number) Identification Restriction
CONP	Connected Name Identification Presentation
CONR	Connected Name Identification Restriction
CT	Call Transfer
MWI	Message Waiting Indicator
PSTN	Public Switched Telephone Network

THE SPECIFICATIONS AND INFORMATION REGARDING THE PRODUCTS IN THIS MANUAL ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL STATEMENTS, INFORMATION, AND RECOMMENDATIONS IN THIS MANUAL ARE BELIEVED TO BE ACCURATE BUT ARE PRESENTED WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. USERS MUST TAKE FULL RESPONSIBILITY FOR THEIR APPLICATION OF ANY PRODUCTS.

IN NO EVENT SHALL CISCO OR ITS SUPPLIERS BE LIABLE FOR ANY INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOST PROFITS OR LOSS OR DAMAGE TO DATA ARISING OUT OF THE USE OR INABILITY TO USE THIS MANUAL, EVEN IF CISCO OR ITS SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Corporate Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 526-4100

European Headquarters

Cisco Systems International BV
HArlerbergpark
HArlerbergweg 13-19
1101 CH Amsterdam
The Netherlands
www-europe.cisco.com
Tel: 31 0 20 357 1000
Fax: 31 0 20 357 1100

Americas Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-7660
Fax: 408 527-0883

Asia Pacific Headquarters

Cisco Systems, Inc.
Capital Tower
168 Robinson Road
#22-01 to #29-01
Singapore 068912
www.cisco.com
Tel: +65 317 7777
Fax: +65 317 7799

Cisco Systems has more than 200 offices in the following countries and regions. Addresses, phone numbers, and fax numbers are listed on the Cisco Web site at www.cisco.com/go/offices.

Argentina • Australia • Austria • Belgium • Brazil • Bulgaria • Canada • Chile • China PRC • Colombia • Costa Rica • Croatia • Czech Republic • Denmark • Dubai, UAE • Finland • France • Germany • Greece • Hong Kong SAR • Hungary • India • Indonesia • Ireland • Israel • Italy • Japan • Korea • Luxembourg • Malaysia • Mexico • The Netherlands • New Zealand • Norway • Peru • Philippines • Poland • Portugal • Puerto Rico • Romania • Russia • Saudi Arabia • Scotland • Singapore • Slovakia • Slovenia • South Africa • Spain • Sweden • Switzerland • Taiwan • Thailand • Turkey Ukraine • United Kingdom • United States • Venezuela • Vietnam • Zimbabwe

Printed in the USA