Application Note

Cisco Unified Communications Manager Release 6.0 - PBX Interoperability: Nortel CS1000M Release 4.0 Using SIP Trunk.

August 1, 2007 Initial Version

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Introduction

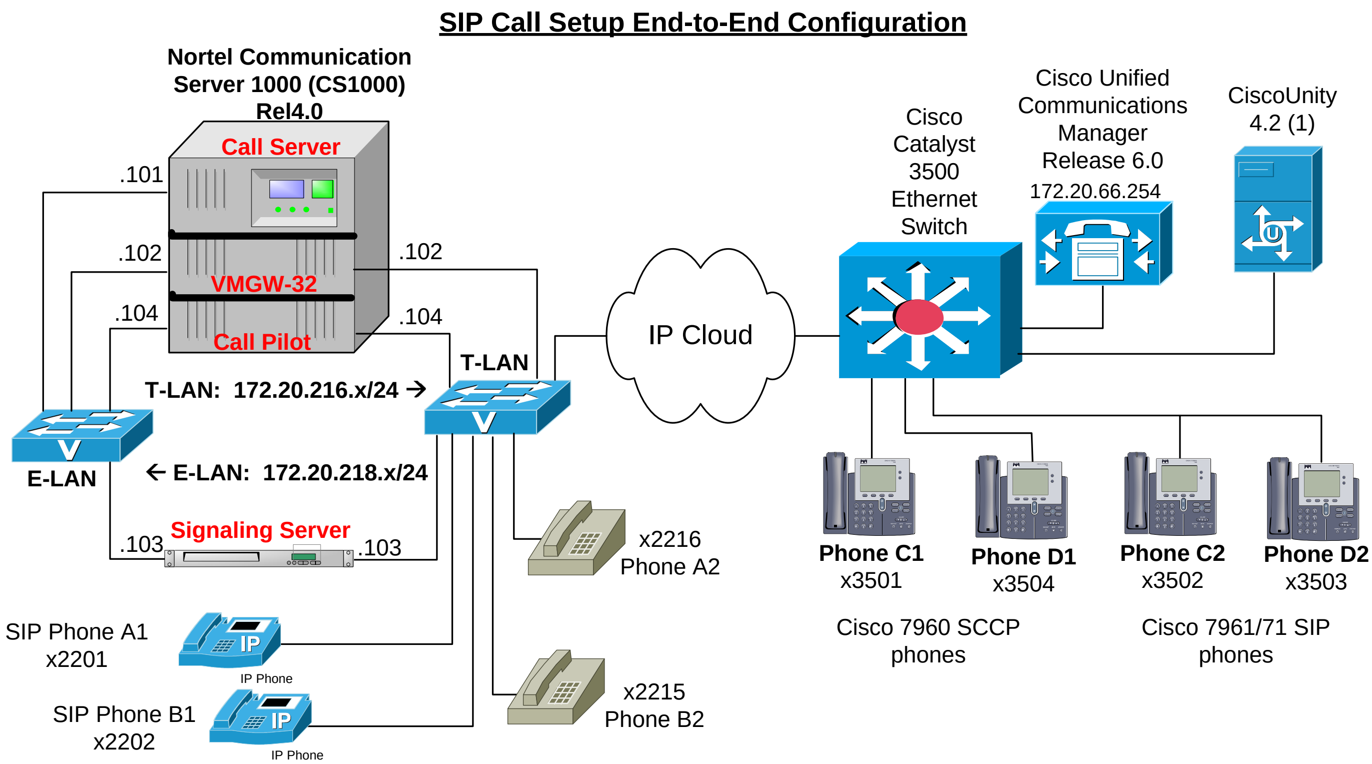
The purpose of this document is to detail the steps and configurations necessary for Cisco Unified Communications Manager 6.0 to interoperate with the Nortel Communication Server 1000M (CS1000M) running software release 4.0

The following items were tested:

1. SIP and SCCP phone registration to the Cisco Unified Communications Manager
2. Basic call between the two systems and verification of voice path
3. CLIP/CLIR/CNIP/CNIR features - Calling Party Name and Number delivery (Allowed and Restricted)
4. COLP/CONP/COLR/CONR features - Connected Name and Number delivery (Allowed and Restricted)
5. Call Transfer (Blind, Attended, Early Attended)
6. Call Forwarding (CFA - Call Forward All, CFB - Call Forward Busy, CFNA - Call Forward No Answer)
7. Hold and Resume with Music On-Hold
8. Voice Messaging and MWI activation-deactivation
9. DTMF-relay (RFC2833, SIP INFO, or KPML)

Network Topology

Figure 1. Network Topology or Test Setup



Limitations

For Nortel CS1000M and Cisco Unified Communications Manager (CUCM) to interoperate with each other (Basic Call and/or Supplementary features), the CUCM "Media Termination Point Required" box must be checked under the SIP Trunk configuration. This causes the CUCM SIP trunk to support Early Offer (SIP Invite with SDP) by pre-allocating MTP resources. The Nortel PBX requires early offer to set its media attribute to send/receive mode. If this box is not checked, CUCM will do delay offer (SIP Invite without SDP, SDP included in 200 ACK message instead). The Nortel PBX responds to delay offer by setting its media attribute to receive only mode. Thus, although calls are completed, there is one way audio from Cisco to Nortel.

The method used by each system to pass the phone name and number information across the SIP trunk is different. Cisco Unified Communications Manager used the "Remote-Party-Id" field while Nortel CS1000M used the "P-Asserted-Id" field. Since both parties do not support each other method, they used the information from the SIP From header as the calling party name and number information

For features such as CLIR, CNIR, COLR and CONR, both systems set the SIP FROM: header to be "Anonymous" and have the proper restricion set with the RPID and PAI fields. Since both parties do not support each other method, they used the information within the SIP FROM: header instead which is "Anonymous". Cisco Unified Communications Manager use "Remote-Party-Id" and "Privacy" whereas Nortel use "P-Asserted-Id" and "Privacy".

Both systems support Attended and Early Attended Call Transfer feature. However, they are not able to update the phone displays properly after the transfer is completed. This is due to the differences between the two systems method of passing the name and number information across SIP Trunk.

Both Nortel phones and Cisco Unified Communications Manager TNP phones (7961, 7970, 7971 and 7911) phones do not support SIP Blind Call Transfer.

Both systems support Call Forwarding (CFU, CFB, and CFNA) features. However, they are not able to update the phone displays properly after forwarding the call. This is due to the differences between the two systems method of passing the name and number information.

Call Completion (Callback) is not a supported feature on either systems using standard SIP protocol.

Voice Messaging does not work across SIP Trunk between CUCM and Nortel CS1000M PBX. The CUCM uses the SIP Diversion header to pass the redirect information across the SIP Trunk to the system that hosts the VM system. On the other hand, Nortel uses the SIP History-Info field. Due to the difference in the method of sending redirect information, the voice mail system cannot recognize a forwarded call and thus, will treat the call as a direct access call. As a result, Cisco Unity and/or Nortel Call Pilot will not work as a centralized voice mail system for both systems. Each voice mail system (Cisco Unity or Nortel Call Pilot) cannot have subscribers belonging to the one another. For example, Cisco Unity can be a voice mail system for Cisco Unified Communications Manager subscribers but not Nortel CS1000M subscribers using SIP Trunk.

MWI Activation and De-activation message do not work across SIP Trunk. The CUCM uses SIP Notify message for MWI notification. However, Nortel does not support this method.

End-to-end DTMF relay signaling does not work between the two systems and are incompatible with one another. The CUCM supports both RFC2833 and KPML methods of DTMF-relay. As of Release 4.0, the Nortel CS1000 uses SIP INFO message to relay DTMF.

System Components

Hardware Requirements

Cisco Unified Communications Manager MCS -7835H server,

Unity server MCS-7835H

Catalyst switch 3560 PoE-48

Cisco 7971, 7961 and 7960 IP phones

Nortel CS1000M

Nortel digital (2616) and IP (i2004, i2002) phones

Software Requirements

Cisco Unified Communications Manager Release 6.0.1

Cisco Unity Release 4.2(1)

CS1000M Release 4.0

Features

CLIP-Calling Line (Number) Identification Presentation (Please see the Limitation section)

CLIR-Calling Line (Number) Identification Restriction (Please see the Limitation section)

CNIP-Calling Name Identification Presentation (Please see the Limitation section)

CNIR-Calling Name Identification Restriction (Please see the Limitation section)

Alerting Name (Please see the Limitation section)

Attended Call Transfer (Please see the Limitation section)

Early Attended Call Transfer (Please see the Limitation section)

CFU-Call Forwarding Unconditional (Please see the Limitation section)

CFB-Call Forwarding Busy (Please see the Limitation section)

CFNA-Call Forwarding No Answer (Please see the Limitation section)

COLP-Connected Line (Number) Identification Presentation (Please see the Limitation section)

COLR- Connected Line (Number) Identification Restriction (Please see the Limitation section)

CONP-Connected Name Identification Presentation (Please see the Limitation section)

CONR-Connected Name Identification Restriction (Please see the Limitation section)

Hold and Resume

Conference Call (Please see the Limitation section)

Features Not Supported

MWI- Message Waiting Indication (lamp ON, lamp OFF) across the SIP Trunk

Call Completion (Callback; Automatic Callback)

Blind Call Transfer

DTMF-relay

Configuration

Configuring the Nortel Communication Server 1000 PBX

Call Server Setup via SSC Card Console

1. LD 17 – Configure the IP D-channel (signaling channel) between the Call Server and the Signaling Server
2. LD 97 – Configure the Super-loop for the Virtual Trunks
3. LD 14 – Configure the SIP Virtual Trunks to the Signaling Server
4. LD 14 – Configure the Virtual Gateway Trunks
5. LD 11 – Configure for the Virtual lines for the Nortel IP phone (i200x series)
6. LD 16 – Configure the SIP route
7. LD 86 – Configure the Route List Block for the Virtual Trunk route

8. LD 87 – Configure CDP steering codes
9. LD 21 – List Trunk Member

Signaling Server Setup via the Nortel Element Manager

1. Configure the Zones
2. Configure a new IP Telephony Node summary
3. Configure the Node section
4. Configure the VGW and IP phone codec profile section
5. Configure the Quality of Service (QoS) section
6. Configure LAN Configuration section
7. Configure the SIP GW Setting section
8. Configure the Card section for the MC-32 VGMC card section
9. Configure the Signaling Server section

NRS (Network Routing Server)

1. Configure the System Wide Settings
2. Configure the NRS Server Settings
3. Configure a Service Domain
4. Configure a L1 Domain (UDP)
5. Configure a L0 Domain (CDP)
6. Configure a SIP gateway
7. Configure the Routing Entries

Configuring the Nortel Communication Server 1000 (CS1000)

Call Server Setup:

1. LD 17 – Configure the IP D-channel (signaling channel) between the Call Server and the Signaling Server

```
>ld 22
PT2000

REQ  prt
TYPE adan dch 3

ADAN     DCH 3
  CTYP DCIP
  DES  IP_Trunk_DCH
  USR  ISLD
  ISLM 4000
  SSRC 1800
  OTBF 32
  NASA NO
  IFC  SL1
  CNEG 1
  RLS  ID  4
  RCAP ND2
  MBGA NO
  H323
    OVLR NO
    OVLS NO
```

2. LD 97 – Configure the Super-loop for the Virtual Trunks

```
>ld 97
SCSYS000
```

MEM AVAIL: (U/P): 2854769   USED U P: 182454 59352   TOT: 3096575
DISK RECS AVAIL: 1152
REQ prt
TYPE supl
SUPL

SUPL SUPT SLOT XPEC0   XPEC1

000 STD LEFT 01 0 1 -- - -
004 STD LEFT 02 0 1 -- - -
008 STD LEFT 03 0 1 -- - -
012 STD LEFT 04 0 1 -- - -
016 STD LEFT 05 0 1 -- - -
032 STD LEFT 06 0 3 -- - -
036 STD LEFT 07 0 3 -- - -
040 STD LEFT 08 0 3 -- - -
044 STD LEFT 10 0 3 -- - -
048 STD LEFT 09 0 3 -- - -
064 STD LEFT 11 0 3 -- - -
068 STD LEFT 12 0 3 -- - -
072 STD LEFT 13 0 3 -- - -
096 VIRTUAL CARDS 61 - 64 81 - 84
100 VIRTUAL CARDS 65 - 68 85 - 88
128 STD LEFT 32 0 1 33 2 3
132 STD LEFT 34 0 1 35 2 3
136 STD LEFT 36 0 1 37 2 3
140 STD LEFT 38 0 1 39 2 3
144 STD LEFT 40 0 1 41 2 3
148 STD LEFT 42 0 1 43 2 3
152 STD LEFT 44 0 1 45 2 3
156 STD LEFT 46 0 1 47 2 3

3. LD 14 – Configure the SIP Virtual Trunks to the Signaling Server (One trunk = one line connection)

>ld 20
REQ: prt
TYPE: tnb
TN   62 0 0 0   **➔ SIP Virtual trunk to Signaling Server**
DATE
PAGE
DES

DES SIP_IP_VTRK
TN   062 0 00 00 VIRTUAL
TYPE IPTI
CDEN 8D
CUST 0
XTRK VTRK
ZONE 000
LDOP BOP
TIMP 600
BIMP 600
AUTO_BIMP NO
TRK ANLG
NCOS 0
RTMB 10 1
CHID 1
TGAR 1
STRI/STRO IMM IMM

SUPN YES
AST NO
IAPG 0
CLS CTD DTN WTA LPR APN THFD
    P10 NTC MID
TKID
AACR NO
DATE 25 FEB 2005

NACT

4. LD 14 – Configure the Virtual Gateway Trunks (up to 32 trunks per MC-32)

   >ld 20
   REQ: prt
   TYPE: tnb
   TN   3
   CDEN
   CUST
   DATE
   PAGE
   DES

   DES 192.168.1.2
   TN   003 0 00 00 **➔ 1st channel define on the gateway**
   TYPE VGW
   CUST 0
   XTRK MC32
   ZONE 000

   DES 192.168.1.2
   TN   003 0 00 01 **➔ 2nd channel define on the gateway**
   TYPE VGW
   CUST 0
   XTRK MC32
   ZONE 000

5. LD 11 – Configure for the Virtual lines for the Nortel IP phones (phone A and phone B)

Phone A1 (i2004)

>ld 11
SL1000
MEM AVAIL: (U/P): 2854769   USED U P: 182454 59352   TOT: 3096575
DISK RECS AVAIL: 1152
DIGITAL TELEPHONES AVAIL: 6   USED: 2   TOT: 8
IP USERS AVAIL: 6   USED: 2   TOT: 8
BASIC IP USERS AVAIL: 7   USED: 1   TOT: 8
ACD AGENTS AVAIL: 10   USED: 0   TOT: 10
PCA AVAIL: 0   USED: 0   TOT: 0
AST   AVAIL: 1   USED: 0   TOT: 1
TNS   AVAIL: 2405   USED: 95   TOT: 2500
DATA PORTS AVAIL: 2500   USED: 0   TOT: 2500

REQ: prt
TYPE: tnb

TN   61 0 0 02

```
DATE
PAGE
DES

DES  I2004
TN   061 0 00 02  VIRTUAL
TYPE I2004
CDEN 8D
CUST 0
ZONE 000
FDN
TGAR 1
LDN  NO
NCOS 0
SGRP 0
RNPG 0
SCI  0
SSU
LNRS 16
XLST
CLS  CTD FBA WTA LPR MTD FNA HTA TDD HFD CRPD
    MWA LMPN RMMD SMWD AAD IMD XHD IRA NID OLD VCE DRG1
    POD DSX VMD CMSD SLKD CCSD SWD LNA CNDA
    CFTA SFD MRD DDV CNIA CDCA MSID DAPA BFED RCBD
    ICDD CDMD LLCN MCTD CLBD AUTU
    GPUD DPUD DNDA CFXA ARHD CLTD ASCD
    CPFA CPTA ABDD CFHD FICD NAID BUZZ AGRD MOAD
    AHD DDGA NAMA
    DRDD EXR0
    USRD ULAD RTDD RBDD RBHD PGND OCBD FLXD FTTC DNDY DNO3 MCBN
    VOLA VOUD CDMR
CPND_LANG ENG
RCO  0
EFD
HUNT
EHT
LHK  0
LPK  1
PLEV 02
CSDN
AST
IAPG 0
AACS NO
ITNA NO
DGRP
MLWU_LANG 0
DNDR 0
KEY  00 SCR 2201 0     MARP
       CPND
         NAME ZEUS_2201
         XPLN 8
         DISPLAY_FMT FIRST,LAST
    01
    02
    03 MIK
    04 MCK
    05
    06
    07
```

08
09
10
11
12
13
14
15
16 MWK 2500
17 TRN
18 AO6
19 CFW 16 2500
20 RGA
21 PRK
22 RNP
23
24 PRS
25 CHG
26 CPN
27
28
29
30
31
DATE 24 MAY 2006
NACT

Phone A2 (2616):

REQ: prt
TYPE: 2616

TN 1 0
DATE
PAGE
DES

DES CS101A
TN 001 0 00 03
TYPE 2616
CDEN 8D
CUST 0
AOM 0
FDN
TGAR 1
LDN NO
NCOS 0
SGRP 0
RNPG 0
0 I
SSU
XLST
CLS CTD **FBA** WTA LPR MTD **FNA HTA** ADD HFD
MWA LMPN RMMD SMWD AAD IMD XHD IRD NID OLD VCE DRG1
POD DSX VMD CMSD SLKD CCSD SWD LND **CNDA**
CFTA SFD MRD DDV CNID CDCA MSID DAPA BFED RCBD
ICDD CDMD LLCN MCTD CLBD AUTU

GPUD DPUD **DNDA CFXA** ARHD CLTD ASCD
CPFA CPTA ABDD CFHD FICD NAID BUZZ AGRD MOAD AHD
DDGA NAMA
DRDD EXR0
USRD ULAD RTDD RBDD RBHD PGND OCBD FLXD FTTC DNDY DNO3 MCBN CDMR
CPND_LANG ENG
RCO 0
EFD
HUNT
EHT
LHK 0
PLEV 02
CSDN
AST
IAPG 0
AACS NO
ITNA NO
DGRP
MLWU_LANG 0
DNDR 0
KEY 00 SCR 2216 0 MARP
CPND
NAME ZEUS_2216
XPLN 9
DISPLAY_FMT FIRST,LAST
01
02
03 CFW 4 6100
04 AO6
05 TRN
06
07
08
09
10
11
12
13 MIK
14 MCK
15 RGA
DATE 25 MAY 2006

NACT

Phone B1 (i2002):

REQ: prt
TYPE: tnb
TN 61 0 0 1
DATE
PAGE
DES

DES I2002
TN 061 0 00 01 VIRTUAL
TYPE I2002
CDEN 8D
CUST 0

ZONE 000
FDN
TGAR 1
LDN NO
NCOS 0
SGRP 0
RNPG 0
SCI 0
SSU
LNRS 16
XLST
CLS CTD **FBA** WTA LPR MTD **FNA HTA** TDD HFD CRPD
    MWA LMPN RMMD SMWD AAD IMD XHD IRA NID OLD VCE DRG1
    POD DSX VMD CMSD SLKD CCSD SWD LNA **CNDA**
    CFTA SFD MRD DDV **CNIA** CDCA MSID DAPA BFED RCBD
    ICDD CDMD LLCN MCTD CLBD AUTU
    GPUD DPUD **DNDA CFXA** ARHD CLTD ASCD
    CPFA CPTA ABDD CFHD FICD NAID BUZZ AGRD MOAD AHD
    DDGA NAMA
    DRDD EXR0
    USRD ULAD RTDD RBDD RBHD PGND OCBD FLXD FTTC DNDY DNO3 MCBN
    VOLA VOUD CDMR
CPND_LANG ENG
RCO 0
EFD
HUNT
EHT
LHK 0
LPK 1
PLEV 02
CSDN
AST
IAPG 0
AACS NO
ITNA NO
DGRP
MLWU_LANG 0
DNDR 0
KEY 00 SCR 2202 0   MARP
      CPND
        NAME ZEUS_2202
        XPLN 8
        DISPLAY_FMT FIRST,LAST
    01
    02
    03 MIK
    04 MCK
    05
    06
    07
    08
    09
    10
    11
    12
    13
    14
    15
    16 MWK 6100

17 TRN
18 AO6
19 CFW 16 6100
20 RGA
21 PRK
22 RNP
23
24 PRS
25 CHG
26 CPN
27
28
29
30
31
DATE 24 MAY 2006
NACT

Phone B2 (2616):

REQ PRT
TYPE: 2616
TN 1 1
DATE
PAGE
DES

DES CS101A
TN 001 0 00 02
TYPE 2616
CDEN 8D
CUST 0
AOM 0
FDN
TGAR 1
LDN NO
NCOS 0
SGRP 0
RNPG 0
SCI 0
SSU
XLST
CLS CTD **FBA** WTA LPR MTD FND **HTA** ADD HFD
DRG1MWA LMPN RMMD SMWD AAD IMD XHD IRD NID OLD VCE
POD DSX VMD CMSD SLKD CCSD SWD LND **CNDA**
CFTD SFD MRD DDV **CNIA** CDCA MSID DAPA BFED RCBD
ICDD CDMD LLCN MCTD CLBD AUTU
GPUD DPUD DNDA **CFXA** ARHD CLTD ASCD
CPFA CPTA ABDD CFHD FICD NAID BUZZ AGRD MOAD AHD
DDGA NAMA
DRDD EXR0
CDMRUSRD ULAD RTDD RBDD RBHD PGND OCBD FLXD FTTC DNDY DNO3 MCBN
CPND_LANG ENG
RCO 0
HUNT
LHK 0
PLEV 02
CSDN

AST
IAPG 0
AACS NO
ITNA NO
DGRP
MLWU_LANG 0
DNDR 0
KEY 00 SCR 2215 0 MARP
CPND
NAME ZEUS_2215
XPLN 7
DISPLAY_FMT FIRST,LAST
01
02
03 CFW 4 2500
04 AO6
05 TRN
06
07
08
09
10
11
12
13
14
15 RGA
DATE 4 MAY 2006

NACT

6. LD 16 – Configure the SIP route

>ld 21
PT1000

REQ: prt
TYPE: rdb
CUST 0
ROUT 10

TYPE RDB
CUST 00
DMOD
ROUT 10
DES SIP_TIE
TKTP TIE
NPID_TBL_NUM 0
ESN NO
CNVT NO
SAT NO
RCLS EXT
VTRK YES
ZONE 000
PCID SIP
CRID YES
NODE 101
DTRK NO

ISDN YES
MODE ISLD
DCH 3
IFC SL1
PNI 00001
NCNA YES
NCRD YES
TRO NO
FALT NO
CTYP UKWN
INAC NO
ISAR NO
DAPC NO
PTYP ATT
AUTO NO
DNIS NO
DCDR NO
ICOG IAO
SRCH LIN
TRMB YES
STEP
ACOD 2310
TCPP NO
TARG 01
CLEN 1
BILN NO
OABS
INST
ANTK
SIGO STD
STYP SDAT
ICIS YES
TIMR ICF 512
OGF 512
EOD 13952
DSI 34944
NRD 10112
DDL 70
ODT 4096
RGV 640
GRD 896
SFB 3
NBS 2048
NBL 4096

IENB 5

PAGE 002

TFD 0
VSS 0
VGD 6
SST 5 0
NEDC ORG
FEDC ORG
CPDC NO
DLTN NO
HOLD 02 02 40

SEIZ 02 02
SVFL 02 02
DRNG NO
CDR NO
VRAT NO
MUS NO
MANO NO
FRL 0 0
FRL 1 0
FRL 2 0
FRL 3 0
FRL 4 0
FRL 5 0
FRL 6 0
FRL 7 0
OHQ NO
OHQT 00
CBQ NO
AUTH NO
TTBL 0
ATAN NO
OHTD NO
PLEV 2
ALRM NO
ART 0
SGRP 0
AACR NO

REQ:

7. LD 86 – Configure the Route List Block for the Virtual Trunk route

>ld 86
ESN000

MEM AVAIL: (U/P): 2819994 USED U P: 223389 69576 TOT: 3112959
DISK RECS AVAIL: 1152
REQ prt
CUST 0
FEAT rlb
RLI 10

RLI 10
ENTR 0
LTER NO
ROUT 10
TOD 0 ON 1 ON 2 ON 3 ON
4 ON 5 ON 6 ON 7 ON
VNS NO
SCNV NO
CNV NO
EXP NO
FRL 0
DMI 0
ISDM 0
FCI 0
FSNI 0
SBOC NRR
IDBB DBD

IOHQ NO
OHQ NO
CBQ NO

ISET 0
NALT 5
MFRL 0
OVLL 0

8. LD 87 – Configure CDP steering codes

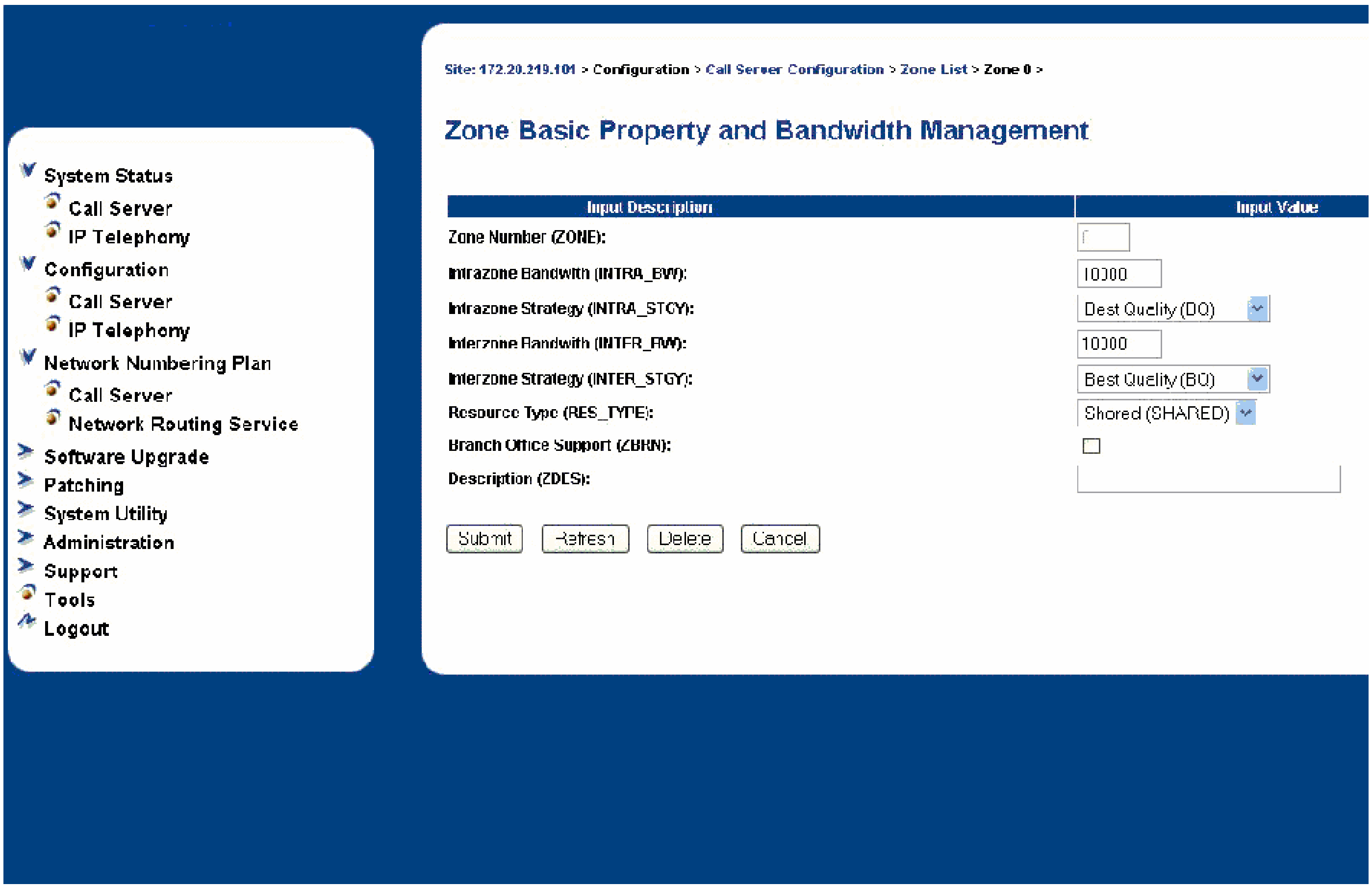
```
>ld 87
ESN000

MEM AVAIL: (U/P): 2819994    USED U P: 223389 69576    TOT: 3112959
DISK RECS AVAIL: 1152
REQ  prt
CUST 0
FEAT cdp
TYPE dsc
DSC
DSC  600                    → 600x Route to CCM extension, sent out via SIP route
FLEN 0
DSP  LSC
RLI  10                     → SIP Route List which point to Rout 10
NPA
NXX
DSC  610                    → 610x Route to Unity VM send out via SIP route
FLEN 0
DSP  LSC
RLI  10                     → SIP Route List which point to Rout 10
NPA
NXX
```

9. LD 21 – List Trunk Members

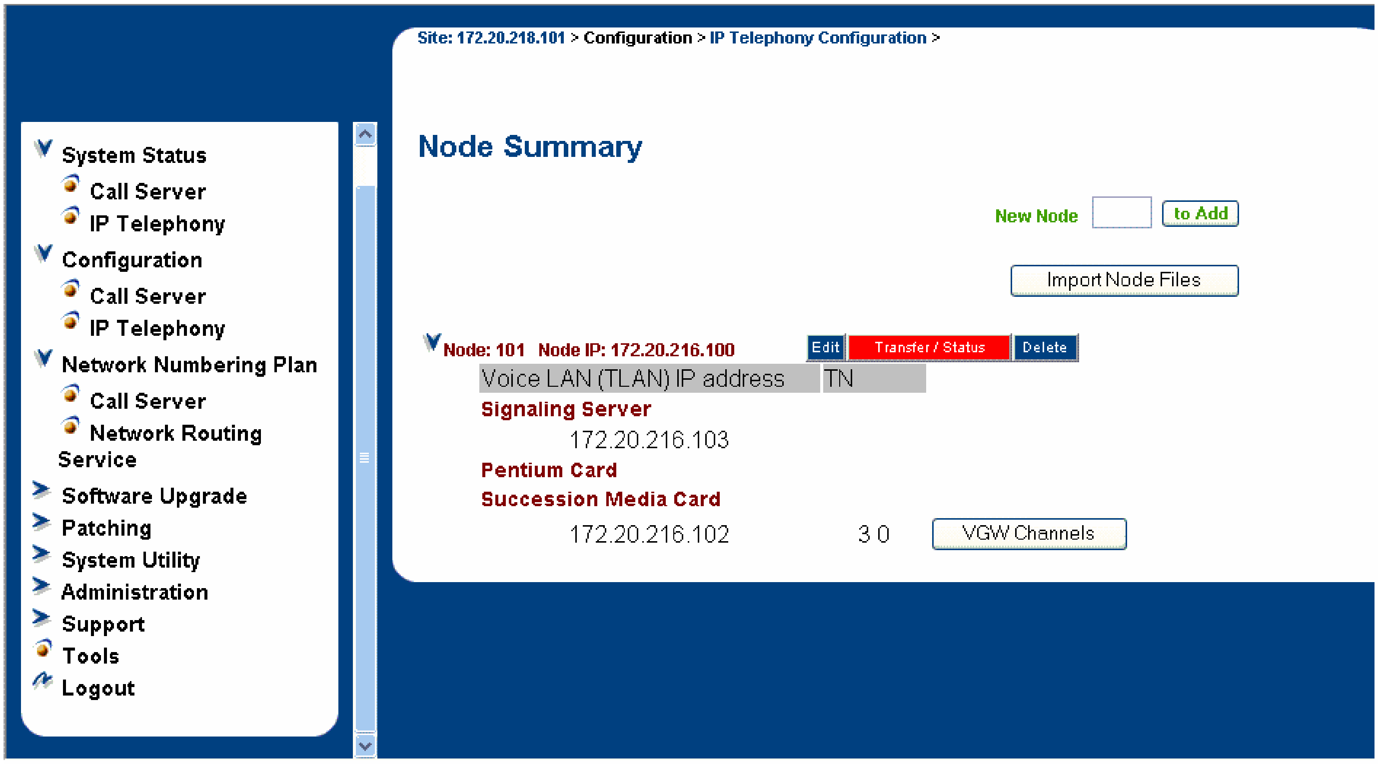
```
>Ld 21
PT1000

REQ: ltm
CUST 0
ROUT 10

TYPE TLST
TKTP TIE
ROUT 10
DES  SIP_TIE
TN  062 0 00 00 MBER  1  SIP_IP_VTRK
TN  062 0 00 01 MBER  2  SIP_IP_VTRK
TN  062 0 00 02 MBER  3  SIP_IP_VTRK
TN  062 0 00 03 MBER  4  SIP_IP_VTRK
TN  062 0 00 04 MBER  5  SIP_IP_VTRK
TN  062 0 00 05 MBER  6  SIP_IP_VTRK
TN  062 0 00 06 MBER  7  SIP_IP_VTRK
TN  062 0 00 07 MBER  8  SIP_IP_VTRK
```

Signaling Server Setup:

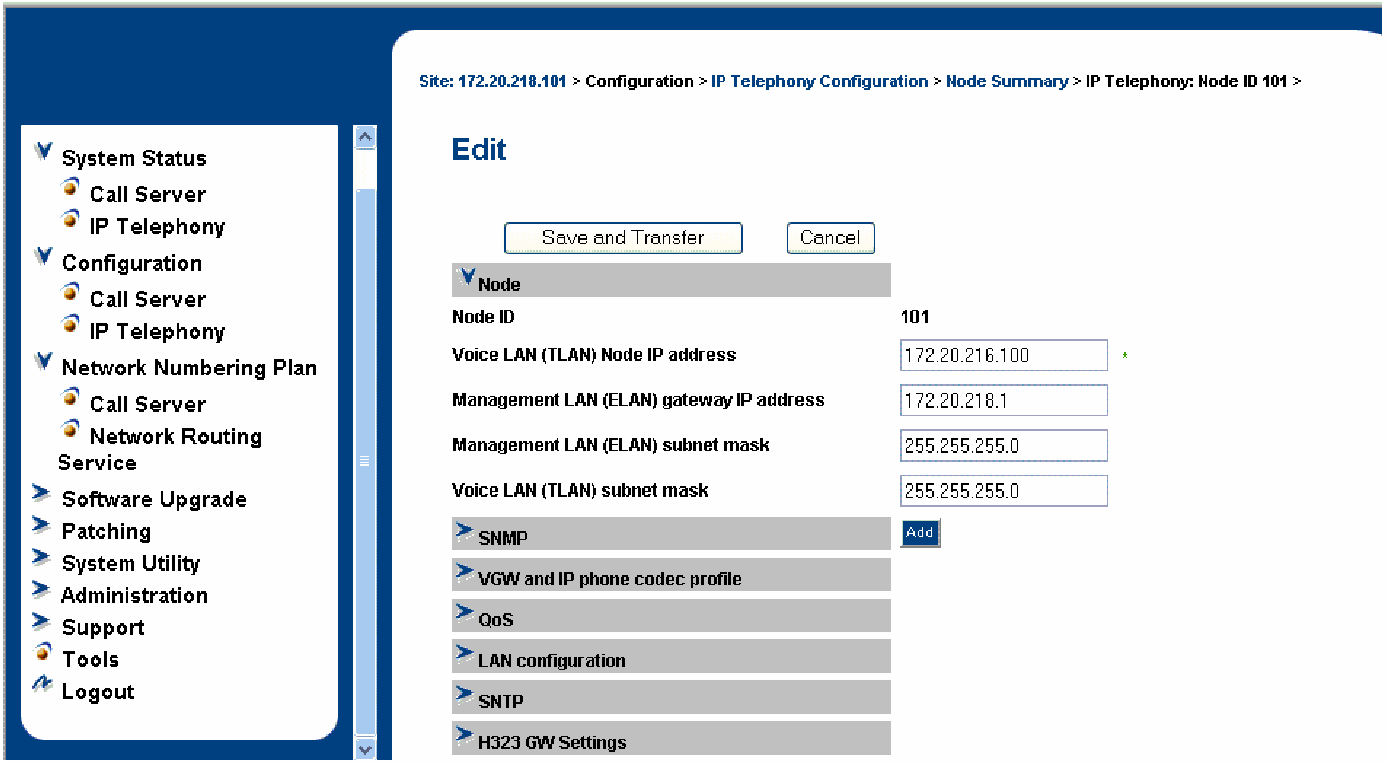
10. Configure the Zones



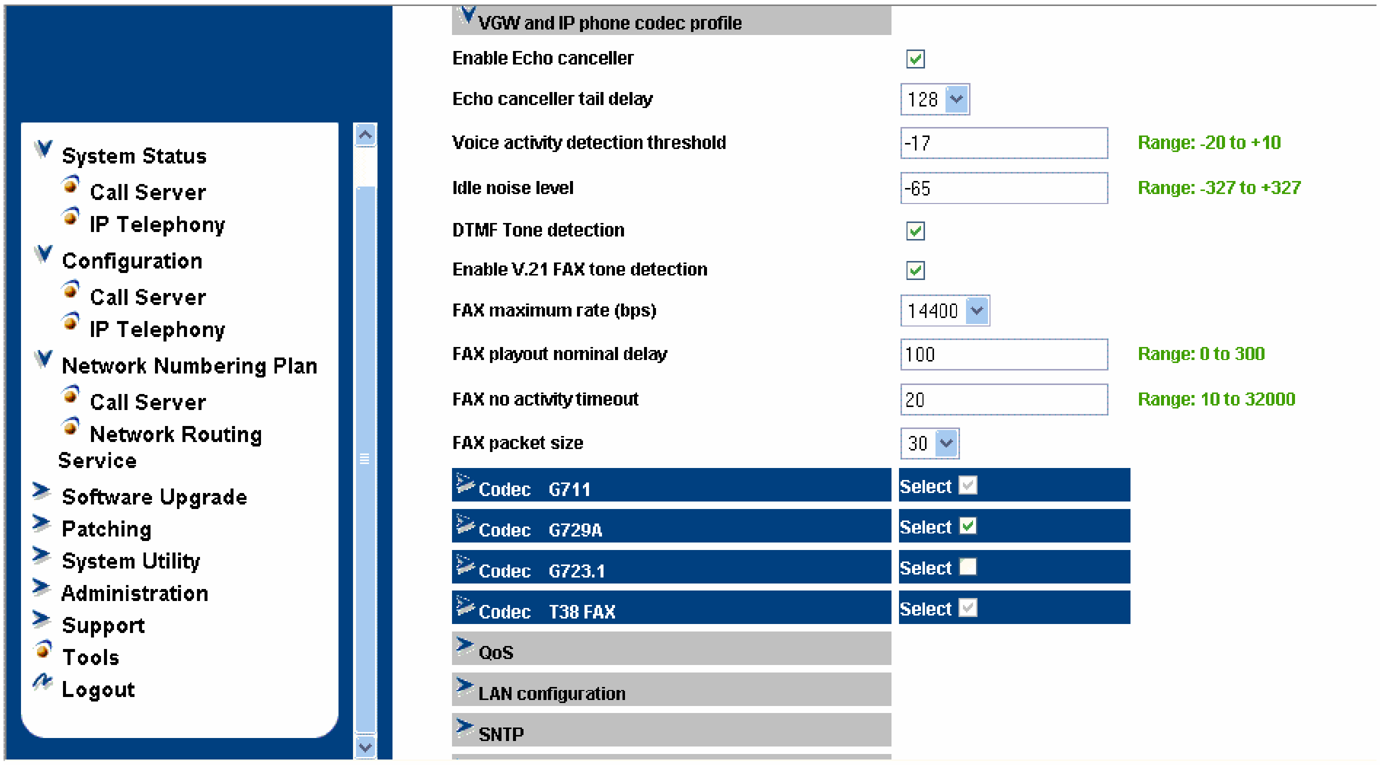
11. Configure a new IP Telephony Node summary

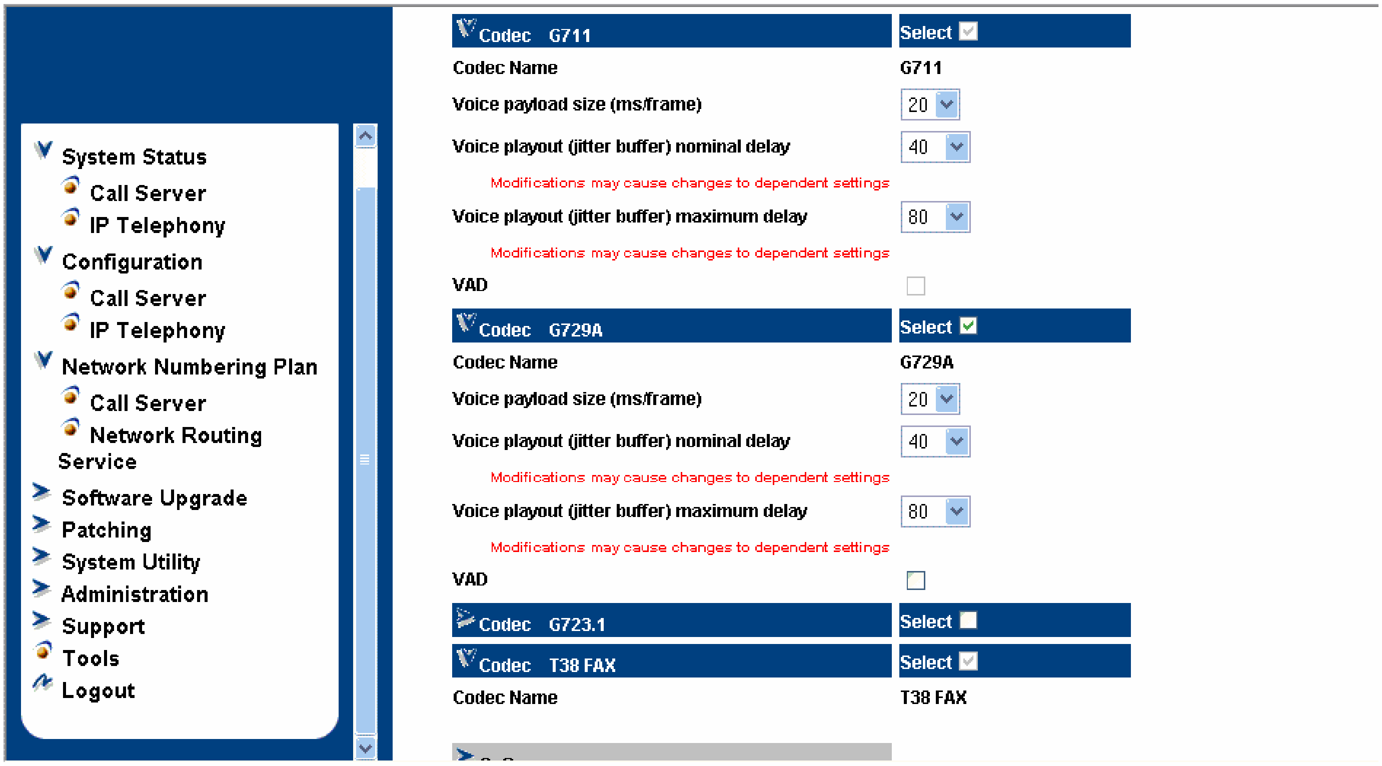


12. Configure the Node section

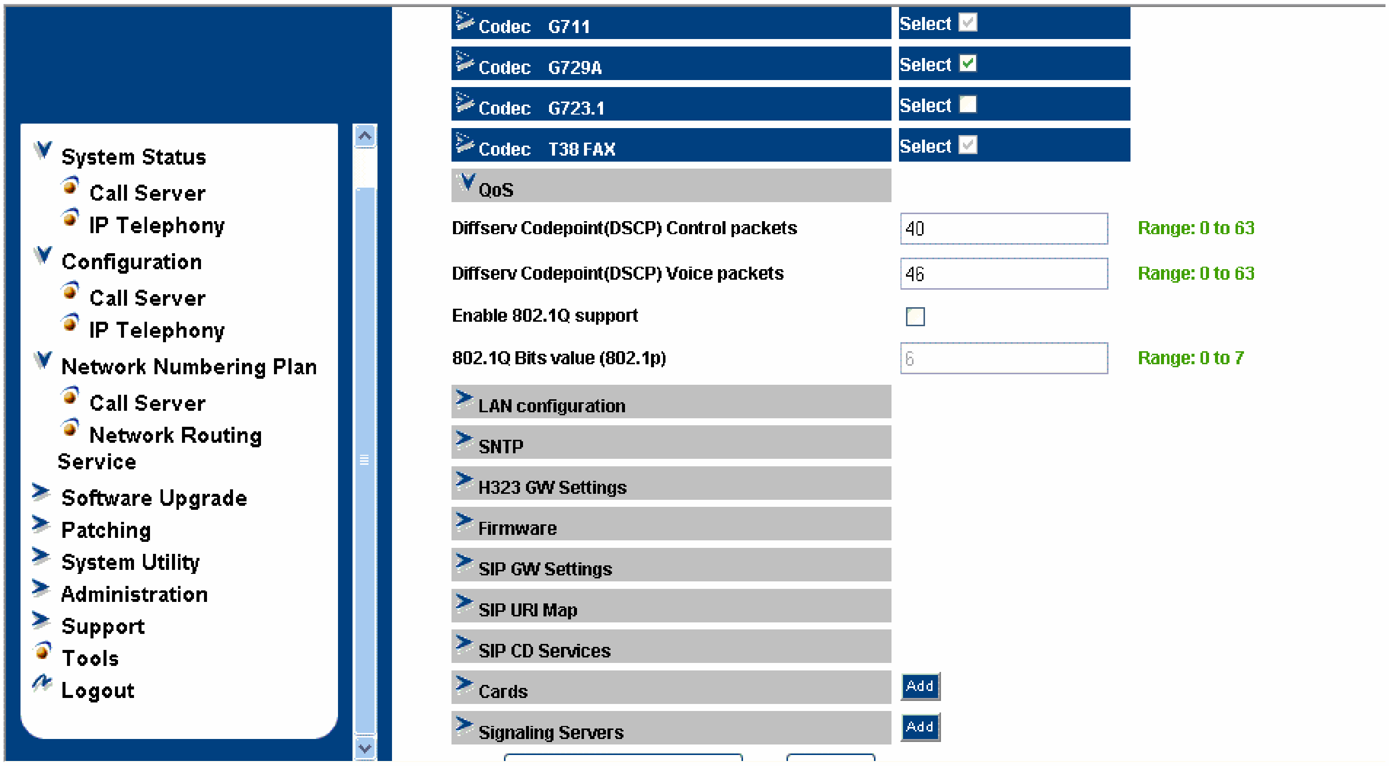


13. Configure the VGW and IP phone codec profile section

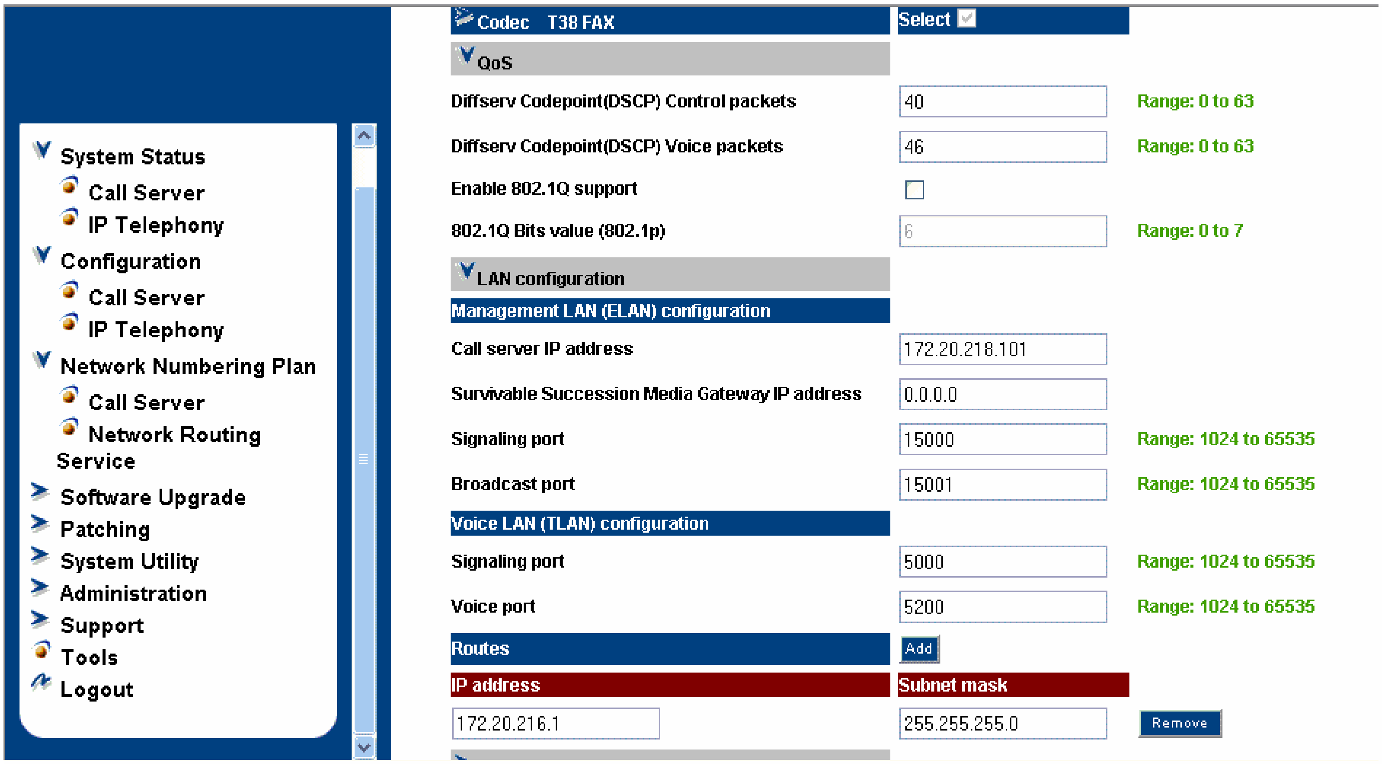



System Status
Call Server
IP Telephony
Configuration
Call Server
IP Telephony
Network Numbering Plan
Call Server
Network Routing Service
Software Upgrade
Patching
System Utility
Administration
Support
Tools
Logout
Codec G711
Select
Codec Name
G711
Voice payload size (ms/frame)
20
Voice playout (jitter buffer) nominal delay
40
Modifications may cause changes to dependent settings
Voice playout (jitter buffer) maximum delay
80
Modifications may cause changes to dependent settings
VAD
Codec G729A
Select
Codec Name
G729A
Voice payload size (ms/frame)
20
Voice playout (jitter buffer) nominal delay
40
Modifications may cause changes to dependent settings
Voice playout (jitter buffer) maximum delay
80
Modifications may cause changes to dependent settings
VAD
Codec G723.1
Select
Codec T38 FAX
Select
Codec Name
T38 FAX

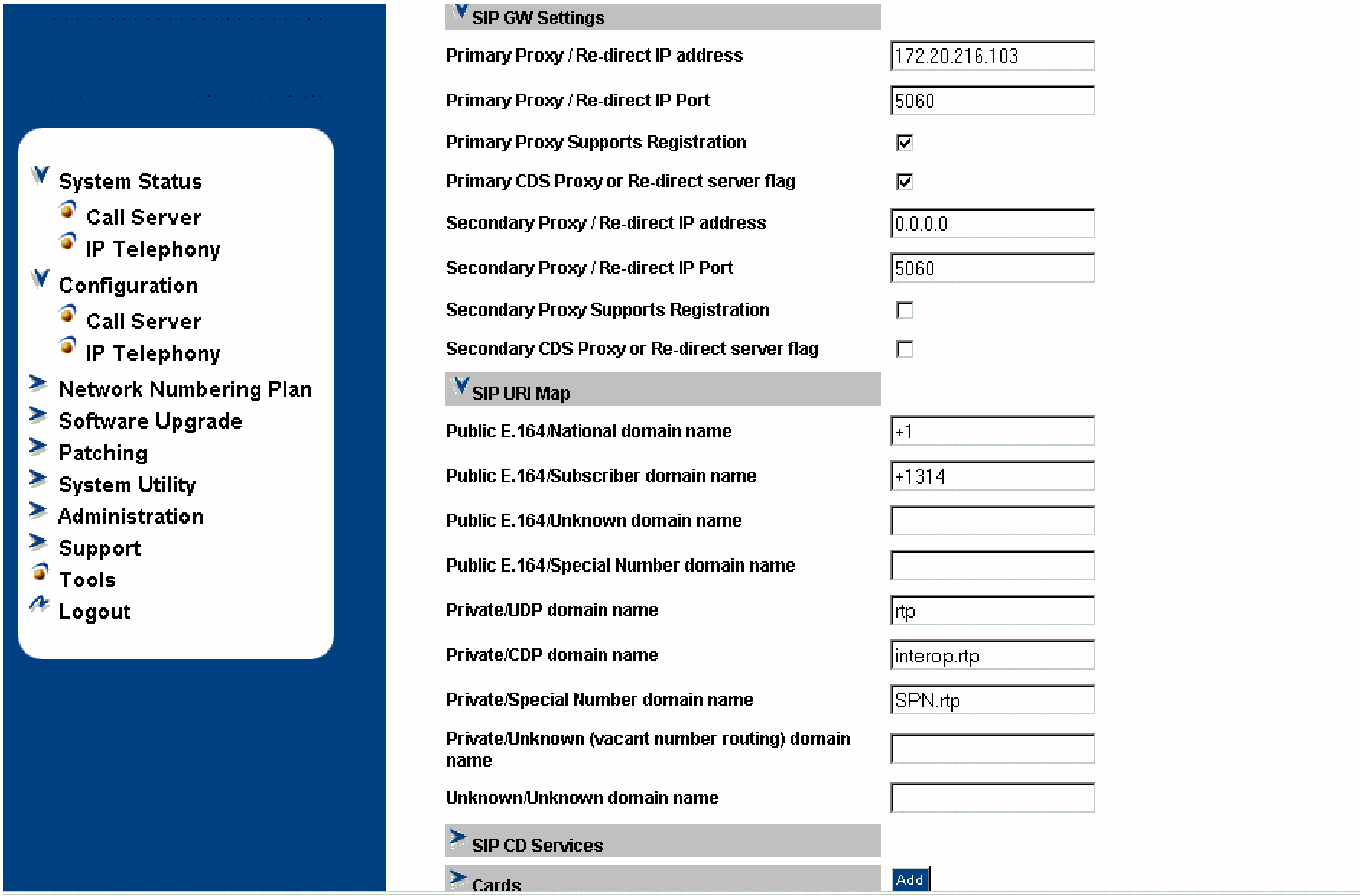
14. Configure the QoS section



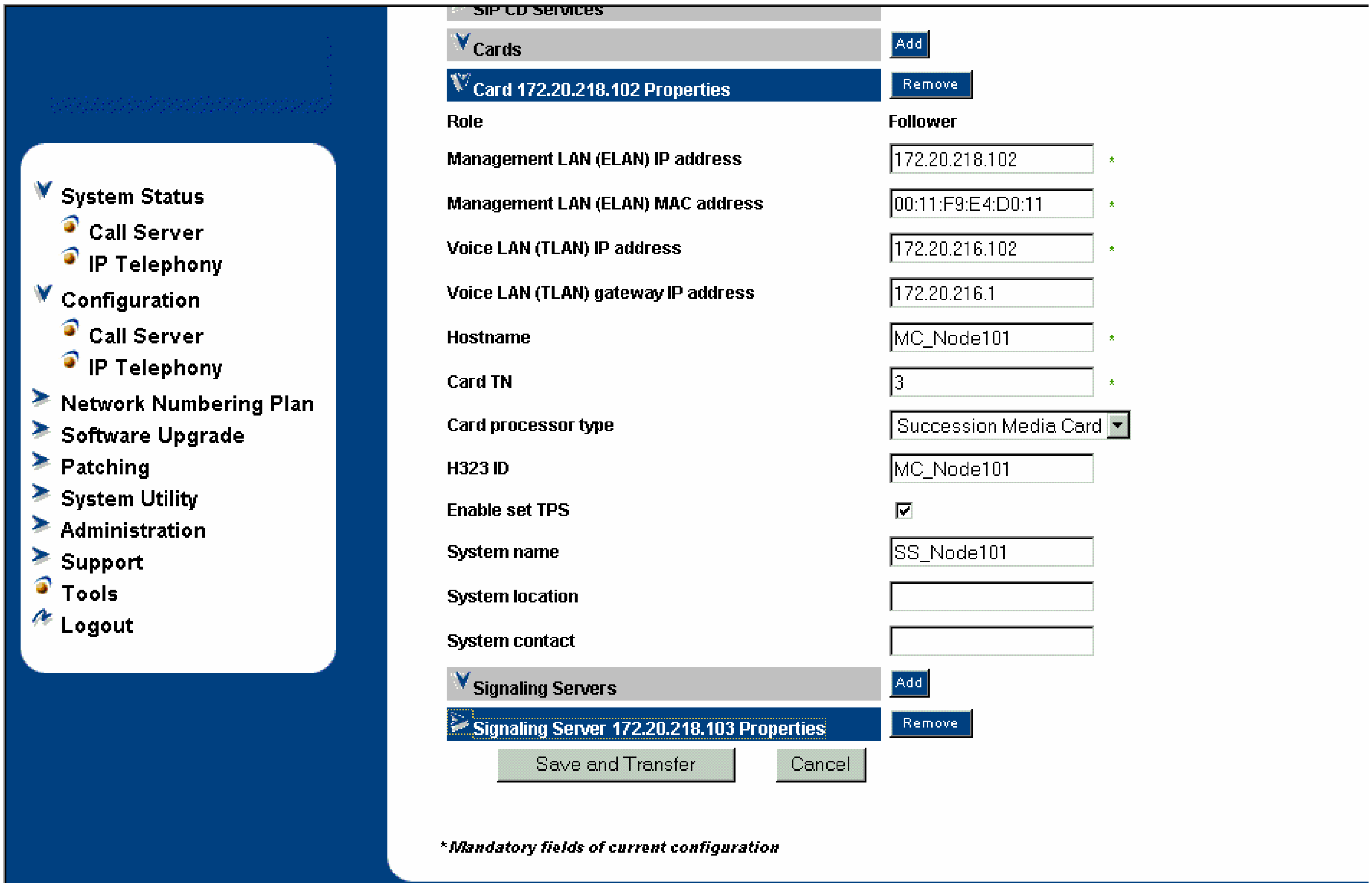
15. Configure LAN Configuration section



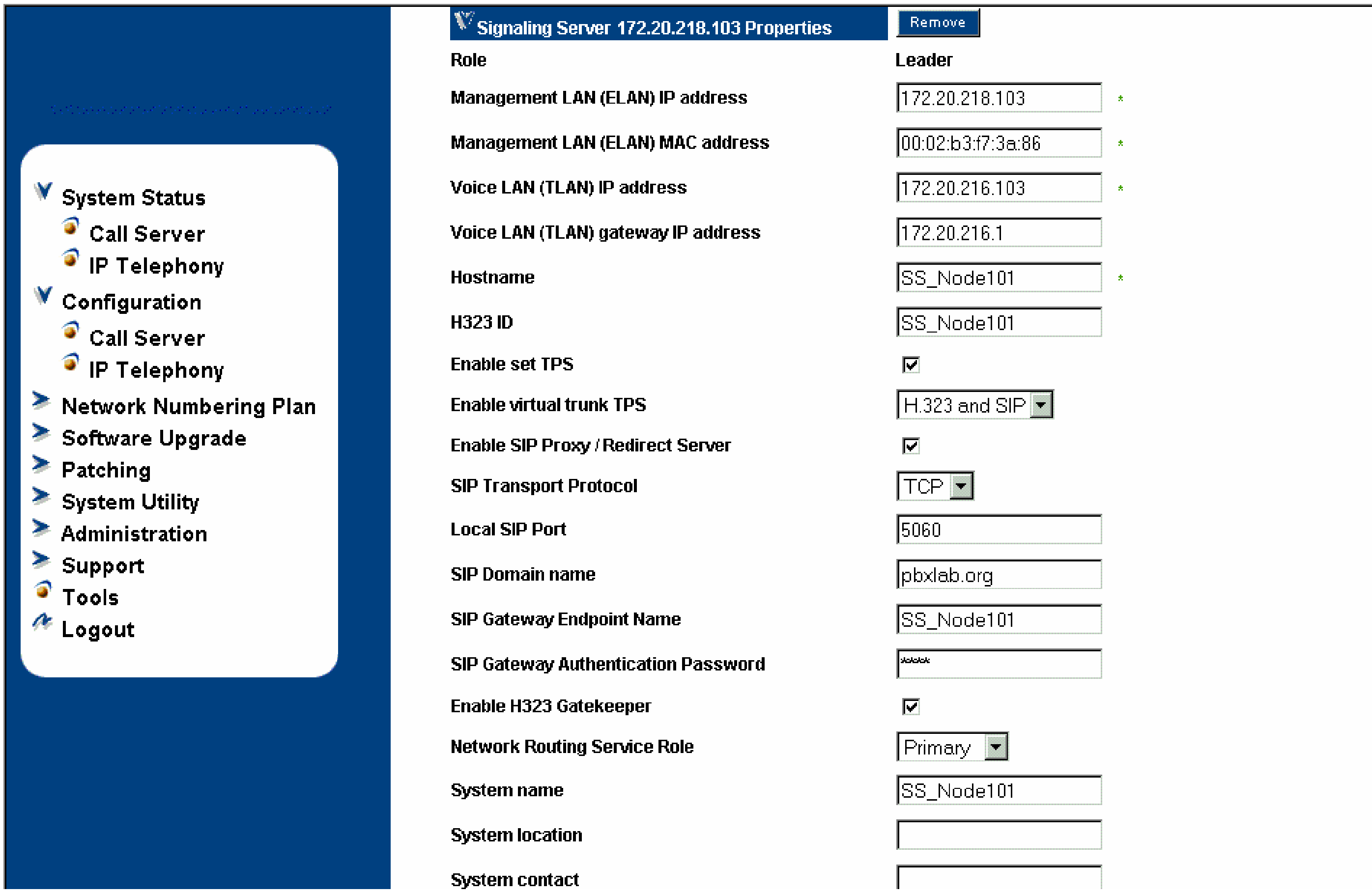
16. Configure the SIP GW Setting section



17. Configure the Card section for the MC-32 VGMC card section

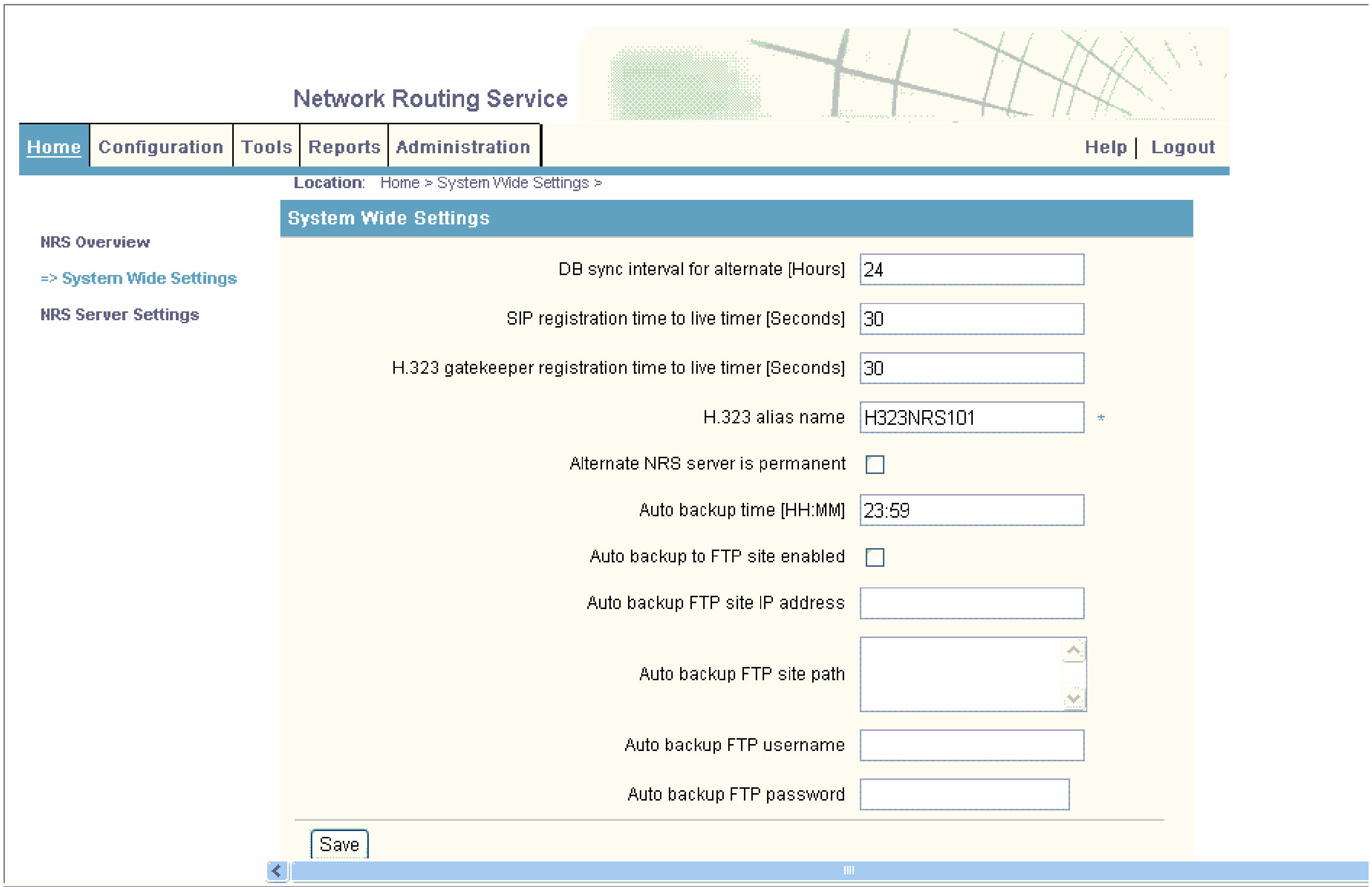


18. Configure the Signaling Server section

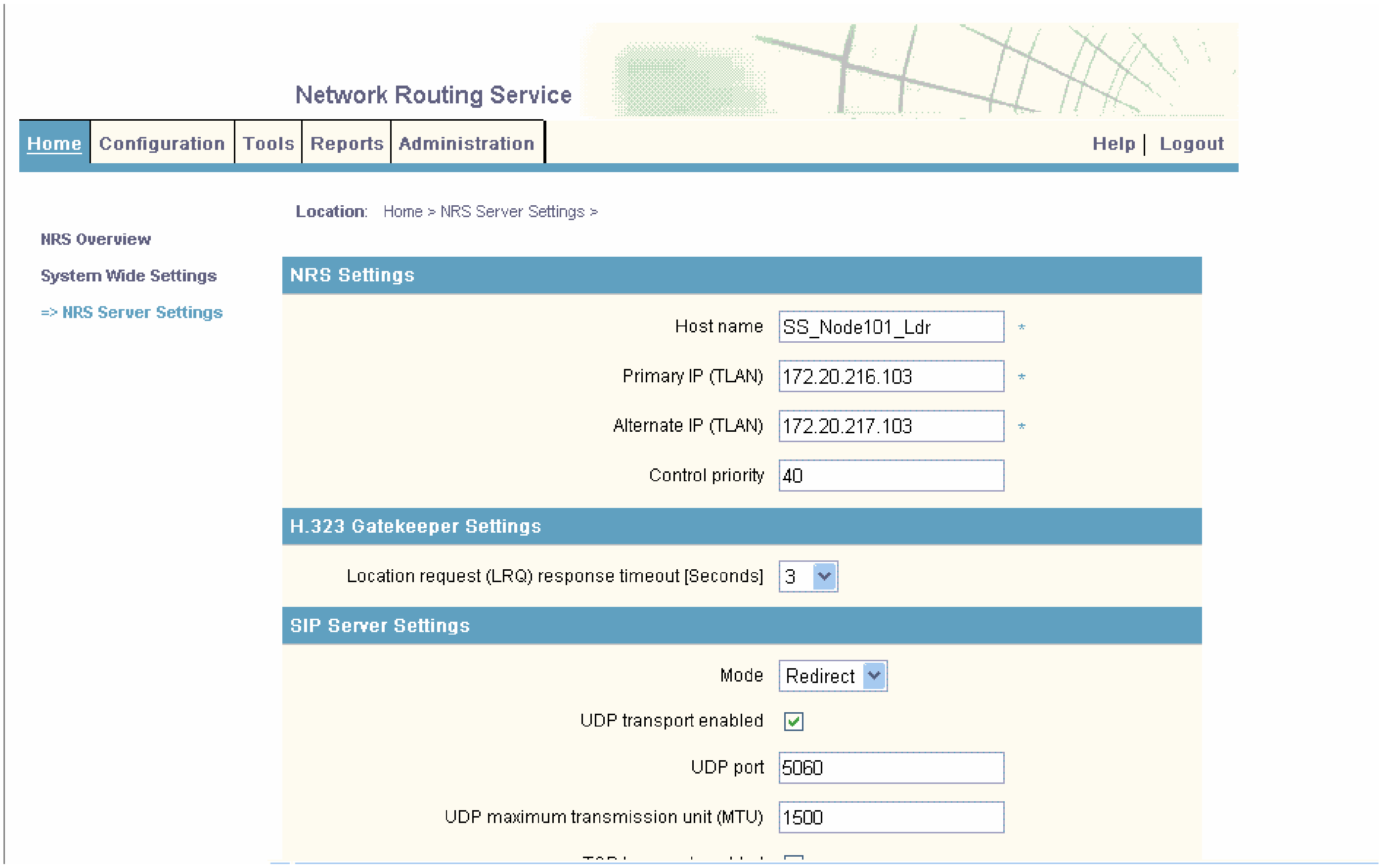


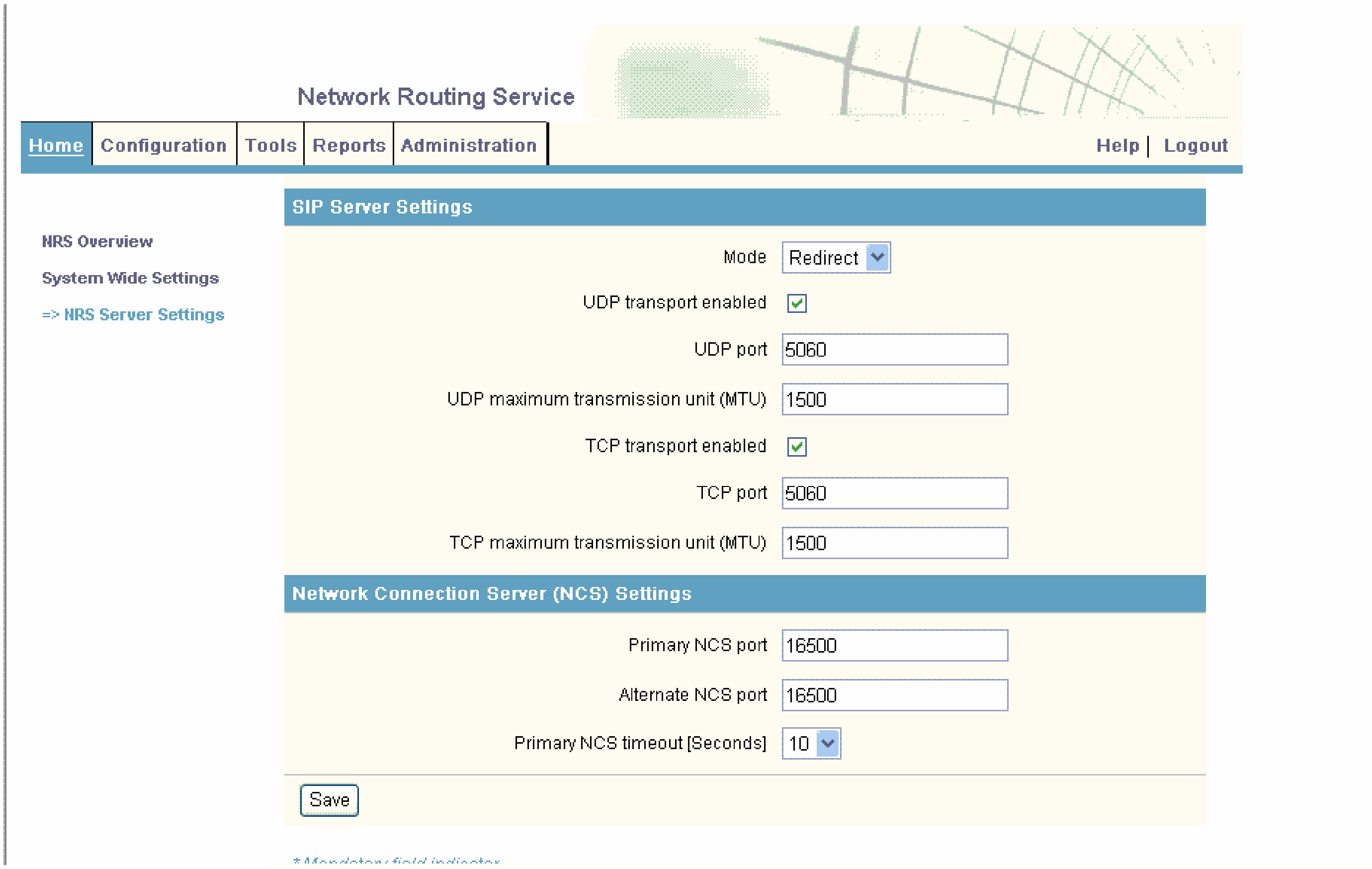
Network Routing Server Setup:

19. Configure the System Wide Settings

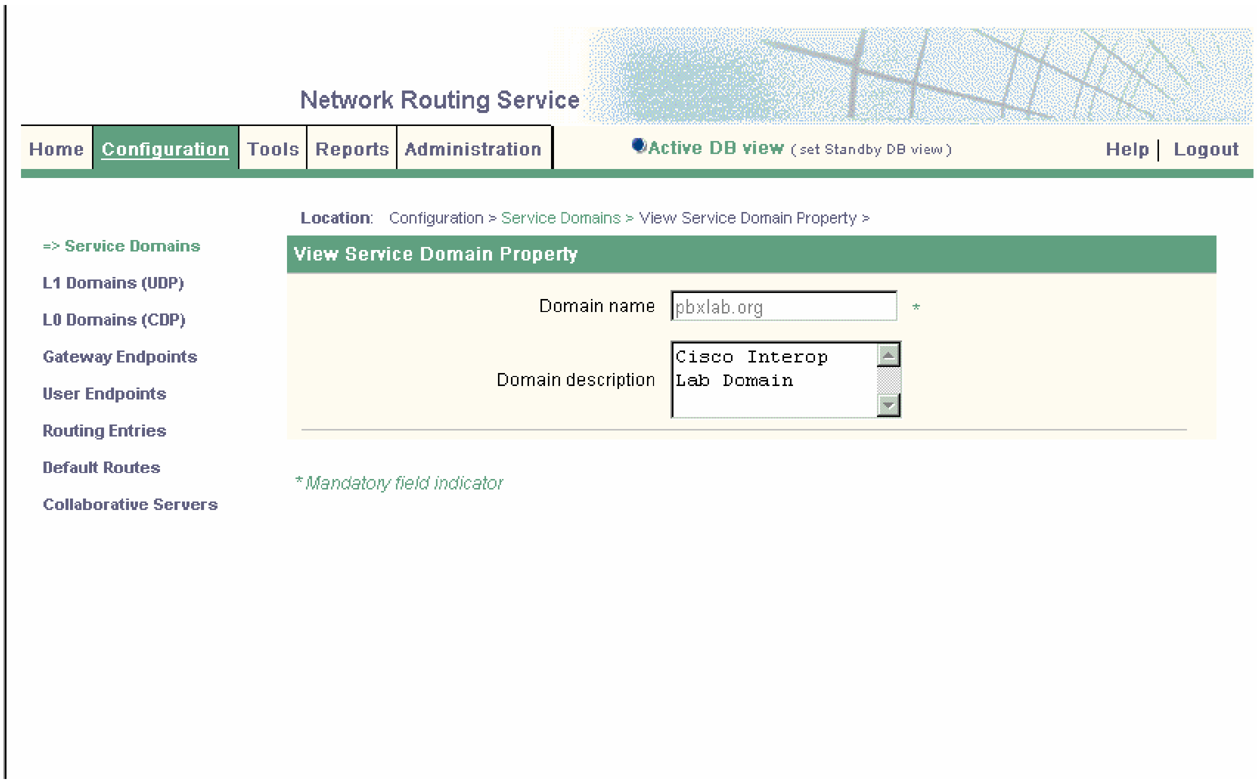


20. Configure the NRS Server Settings

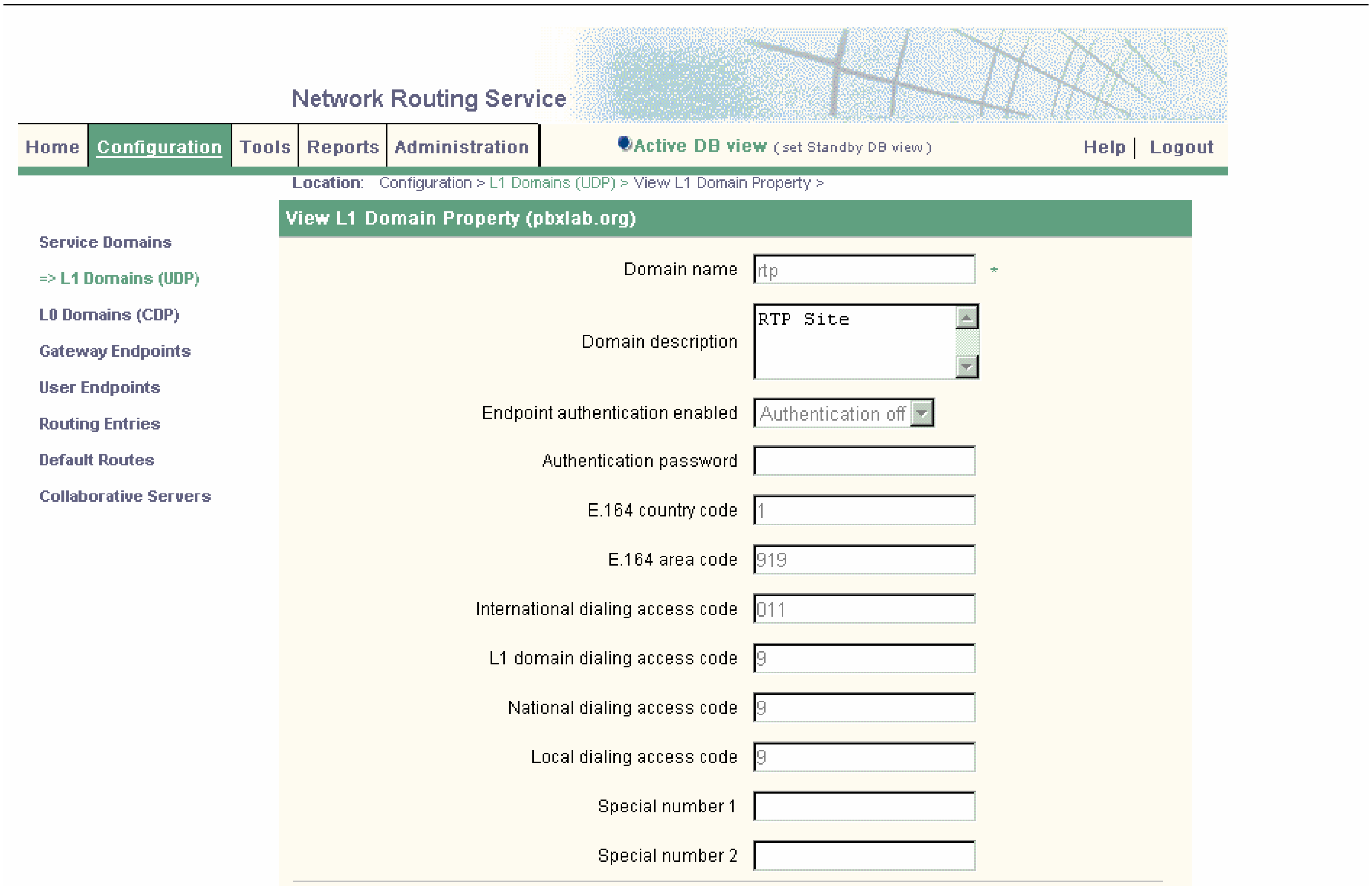



Network Routing Service
Home
Configuration
Tools
Reports
Administration
Help
Logout
NRS Overview
System Wide Settings
=> NRS Server Settings
SIP Server Settings
Mode
Redirect
UDP transport enabled
UDP port
5060
UDP maximum transmission unit (MTU)
1500
TCP transport enabled
TCP port
5060
TCP maximum transmission unit (MTU)
1500
Network Connection Server (NCS) Settings
Primary NCS port
16500
Alternate NCS port
16500
Primary NCS timeout [Seconds]
10
Save

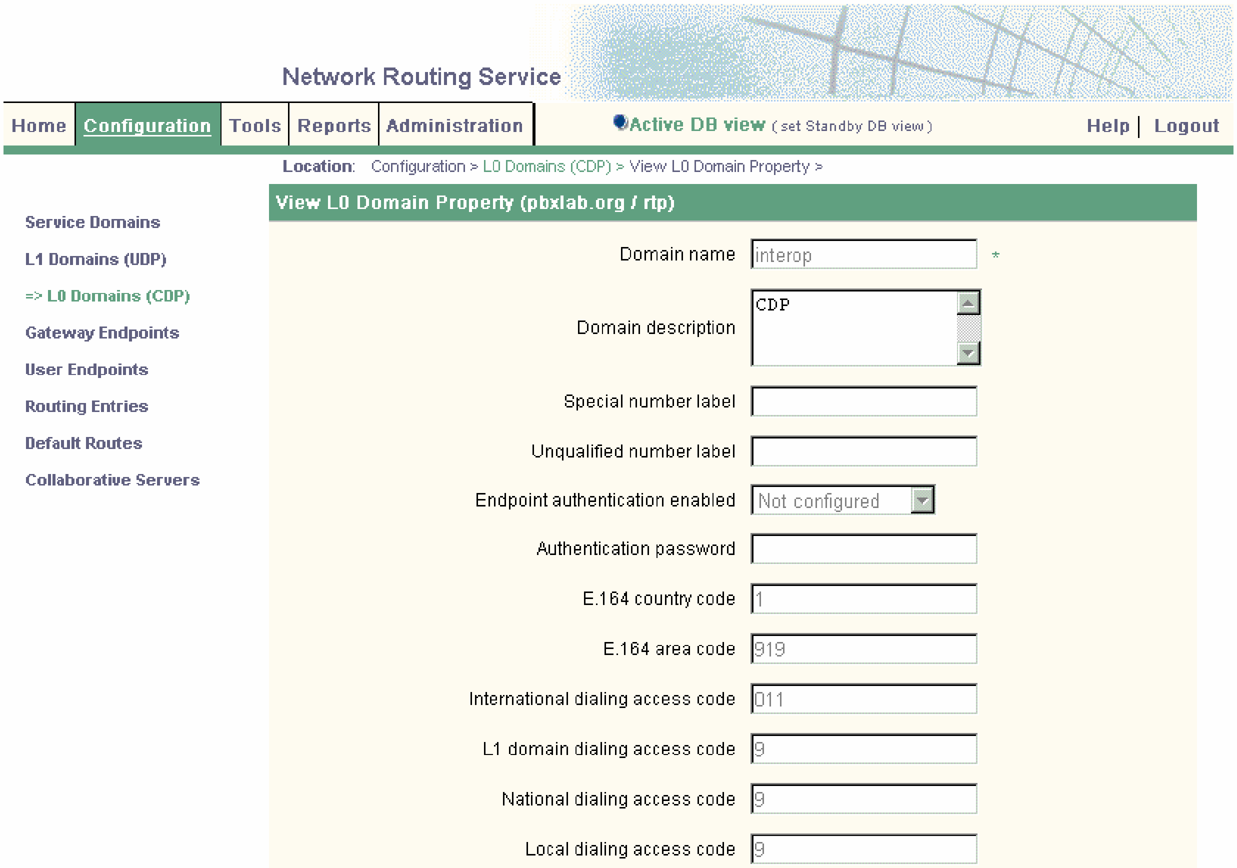
21. Configure a Service Domain



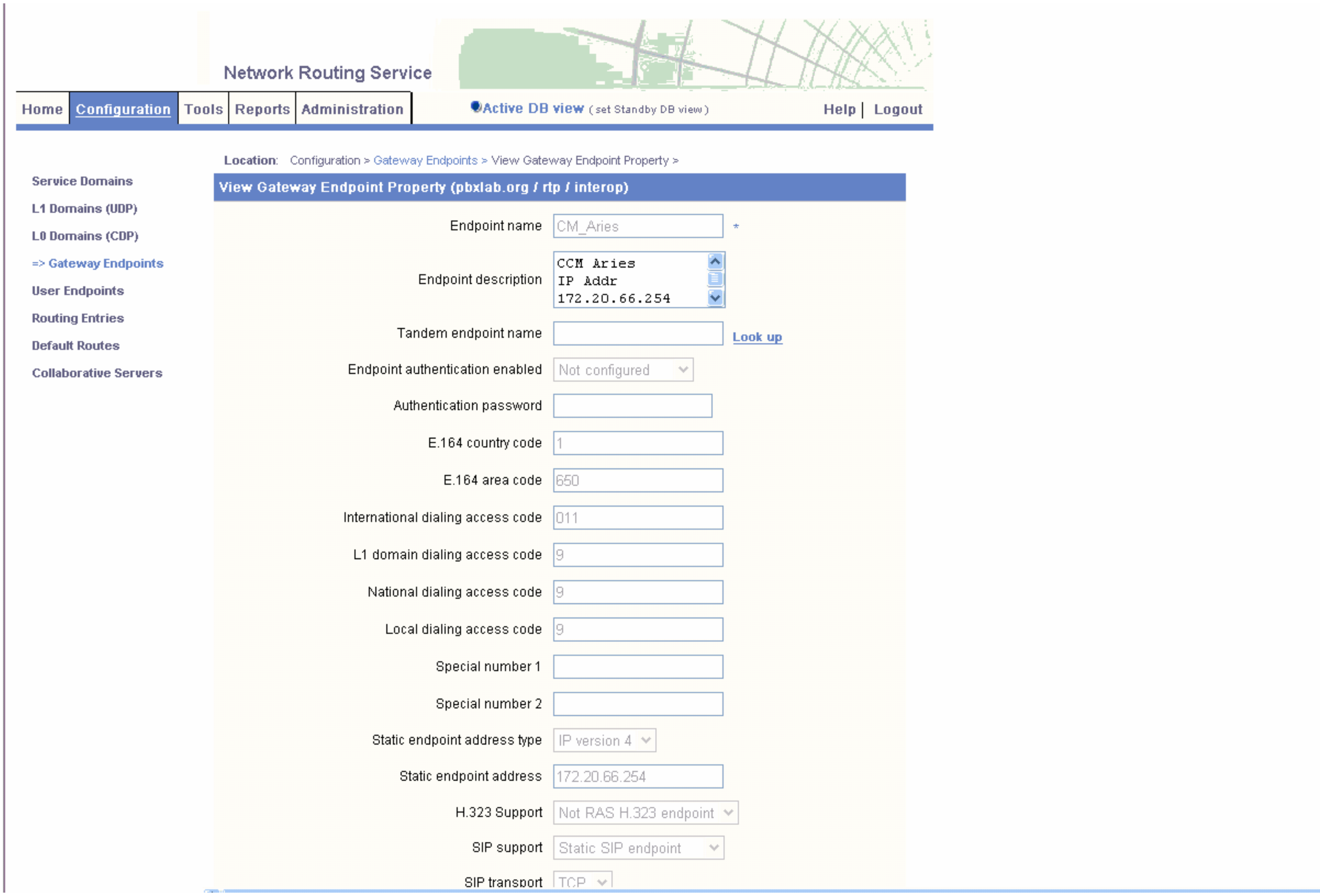
22. Configure a L1 Domain (UDP)

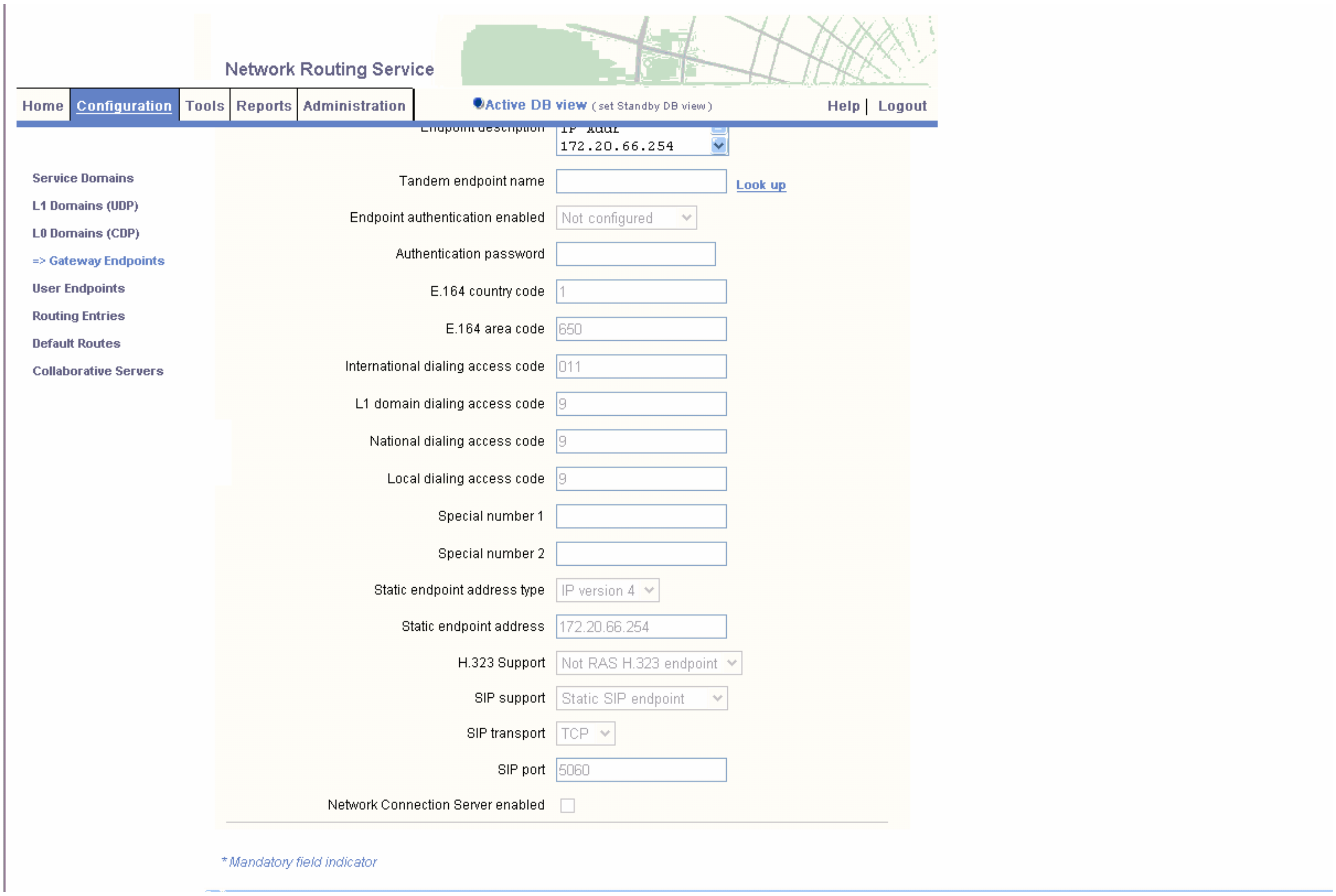


23. Configure a L0 Domain (CDP)

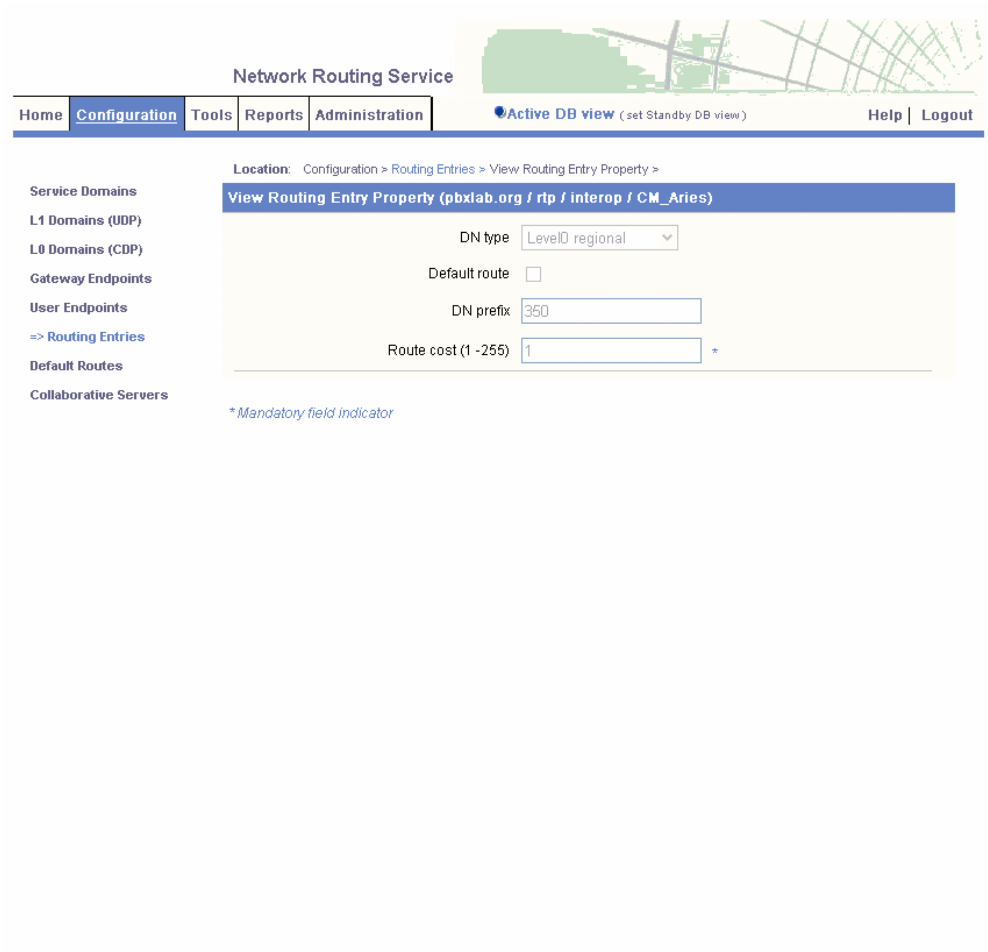


24. Configure a SIP gateway



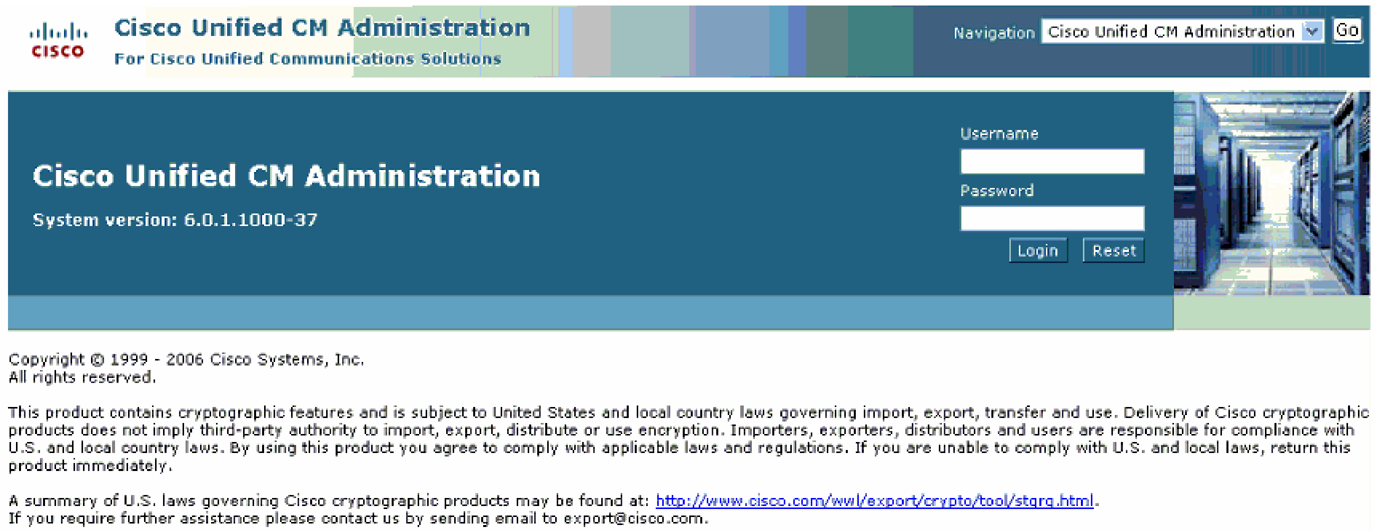

Network Routing Service
Home
Configuration
Tools
Reports
Administration
Active DB view (set Standby DB view)
Help
Logout
Service Domains
L1 Domains (UDP)
L0 Domains (CDP)
=> Gateway Endpoints
User Endpoints
Routing Entries
Default Routes
Collaborative Servers
Endpoint description
IP Addr
172.20.66.254
Tandem endpoint name
Look up
Endpoint authentication enabled
Not configured
Authentication password
E.164 country code
1
E.164 area code
650
International dialing access code
011
L1 domain dialing access code
9
National dialing access code
9
Local dialing access code
9
Special number 1
Special number 2
Static endpoint address type
IP version 4
Static endpoint address
172.20.66.254
H.323 Support
Not RAS H.323 endpoint
SIP support
Static SIP endpoint
SIP transport
TCP
SIP port
5060
Network Connection Server enabled
* Mandatory field indicator

25. Configure the Routing Entries

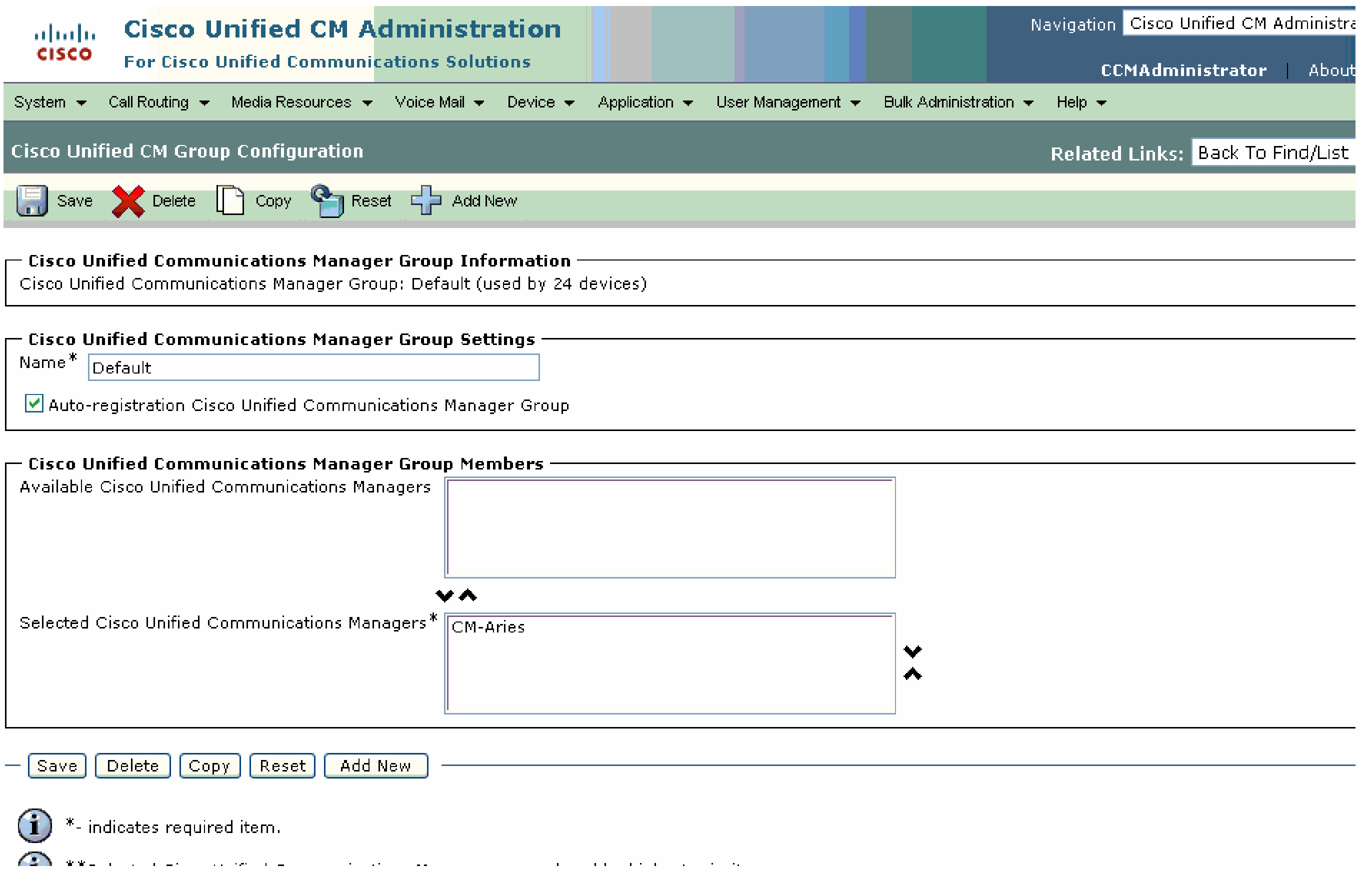


Configuring Cisco Unified Communications Manager

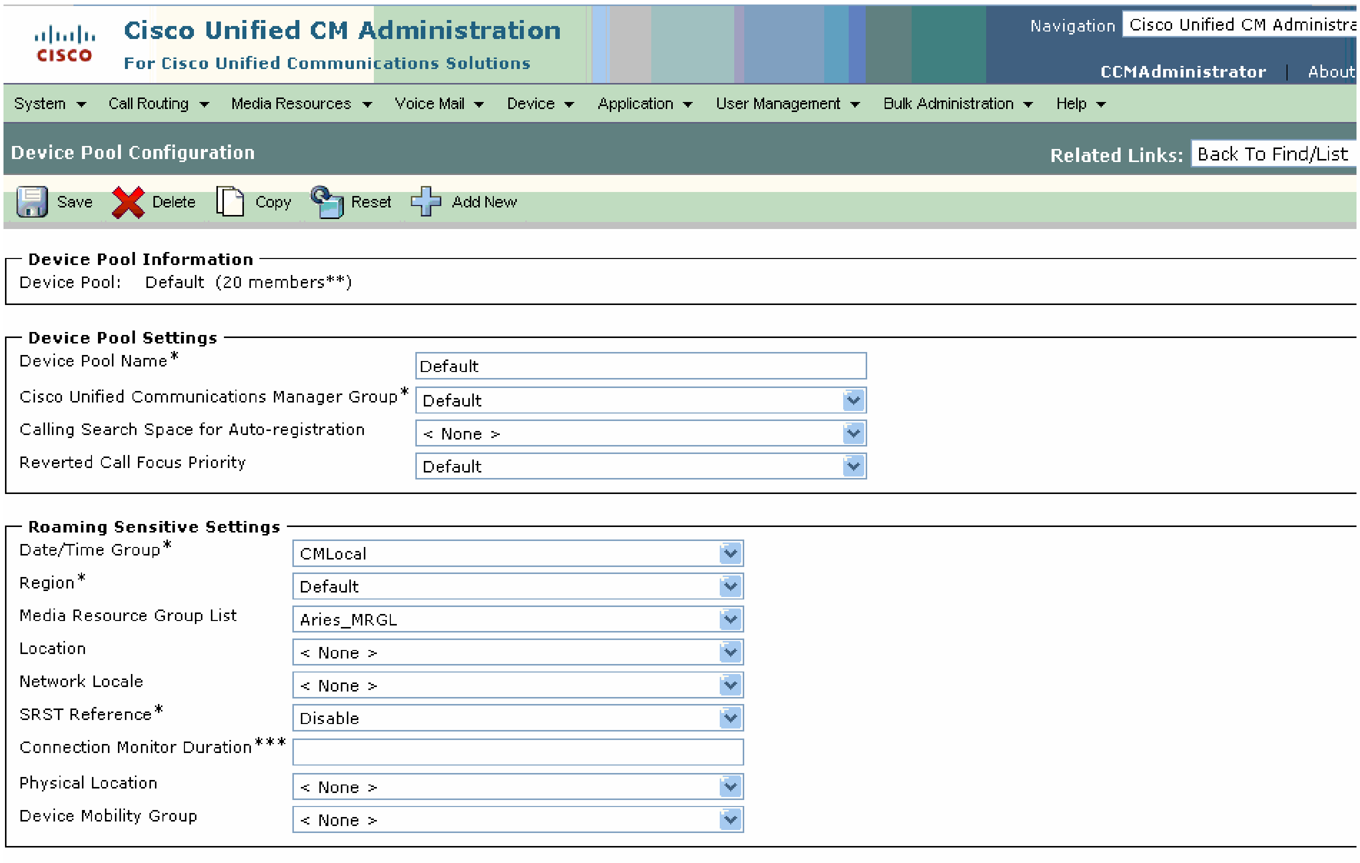
Cisco Unified Communications Manager Software Version

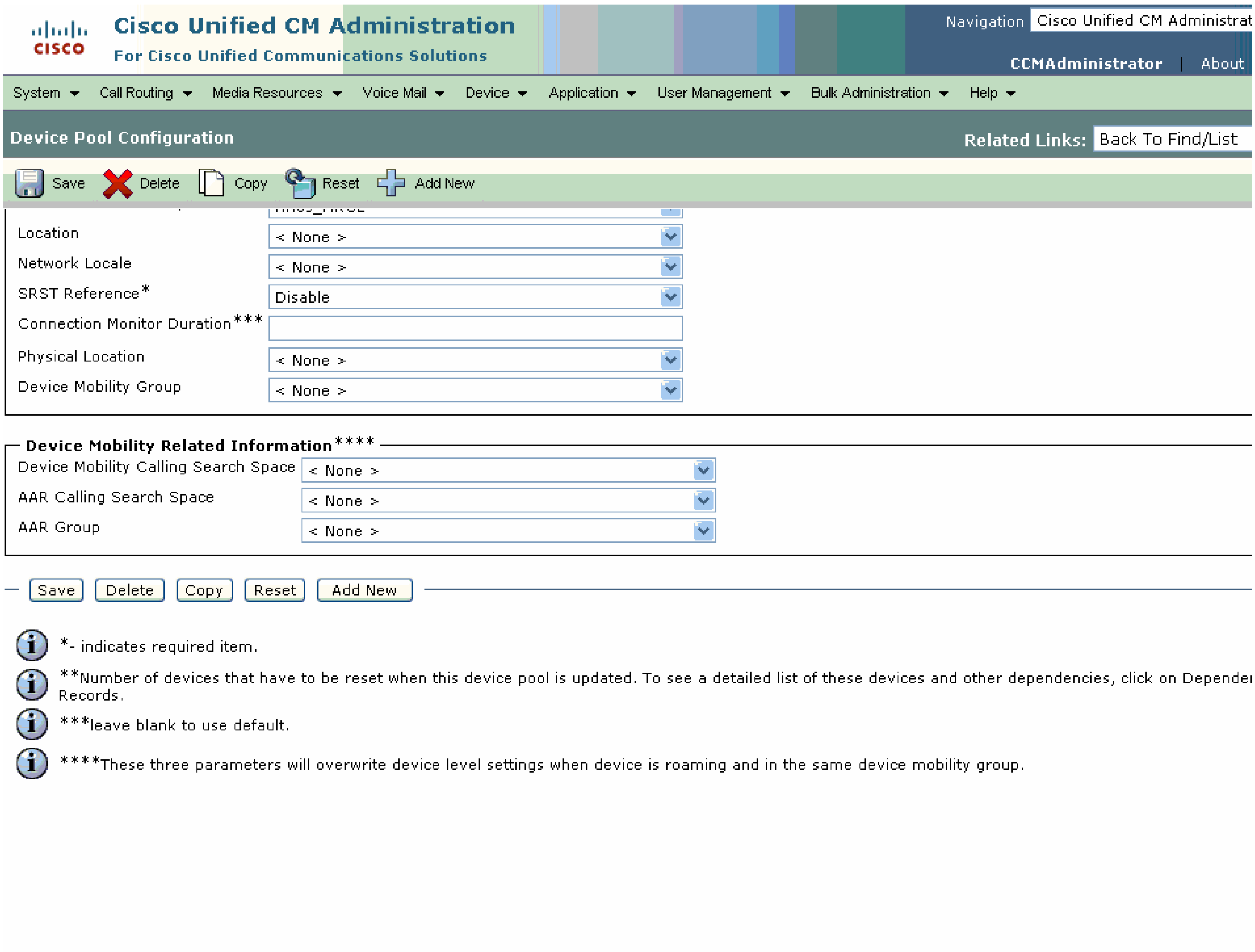


Cisco Unified Communications Manager Group Configuration



Cisco Unified Communications Manager Default Device Pool Configuration

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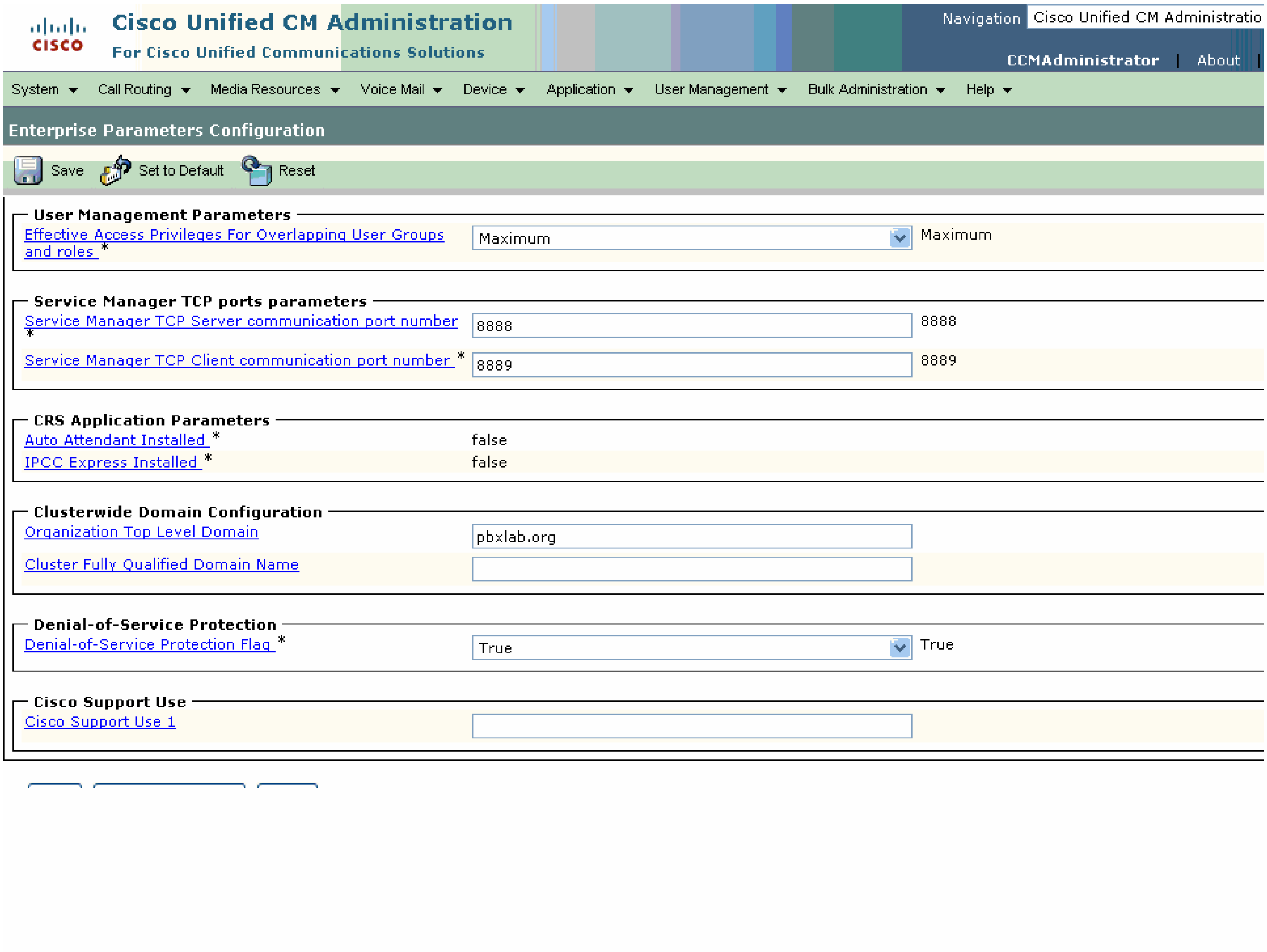
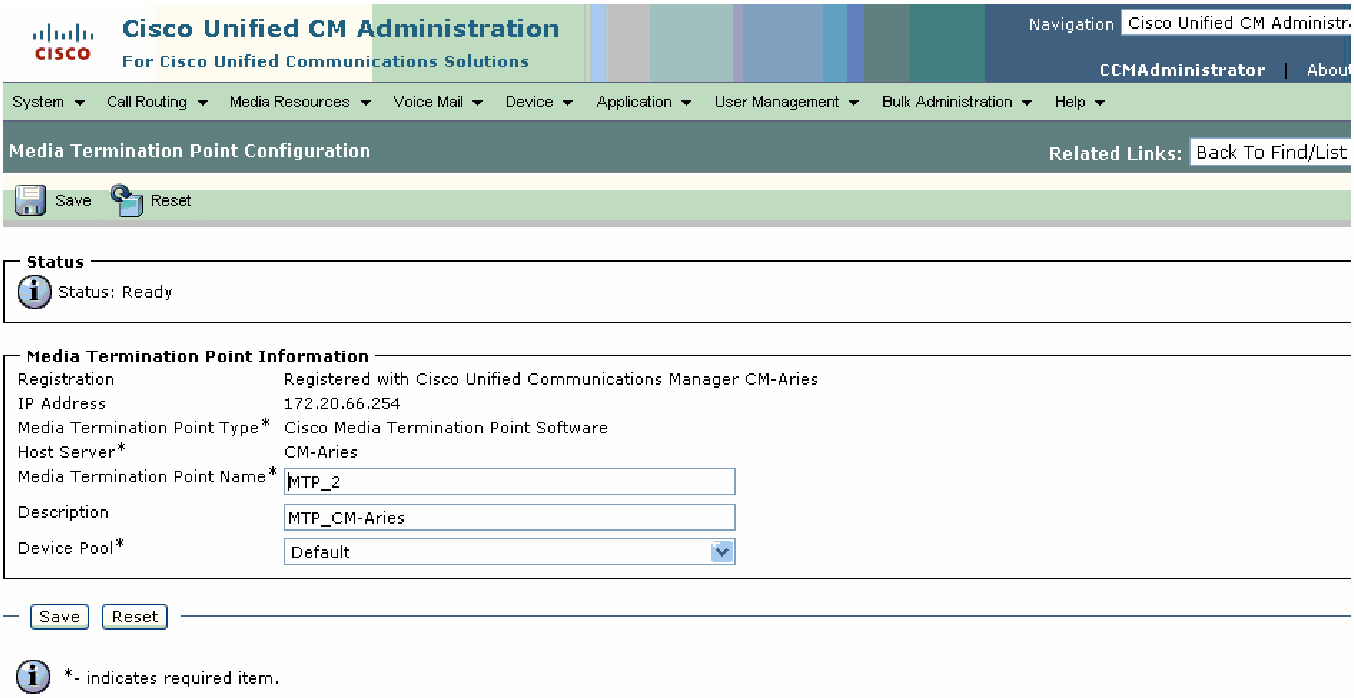
Related Links:
Back To Find/List
Save
Delete
Copy
Reset
Add New
Location
< None >
Network Locale
< None >
SRST Reference*
Disable
Connection Monitor Duration***
Physical Location
< None >
Device Mobility Group
< None >
Device Mobility Related Information****
Device Mobility Calling Search Space
< None >
AAR Calling Search Space
< None >
AAR Group
< None >
Save
Delete
Copy
Reset
Add New
*- indicates required item.
**Number of devices that have to be reset when this device pool is updated. To see a detailed list of these devices and other dependencies, click on Depende
Records.
***leave blank to use default.
****These three parameters will overwrite device level settings when device is roaming and in the same device mobility group.

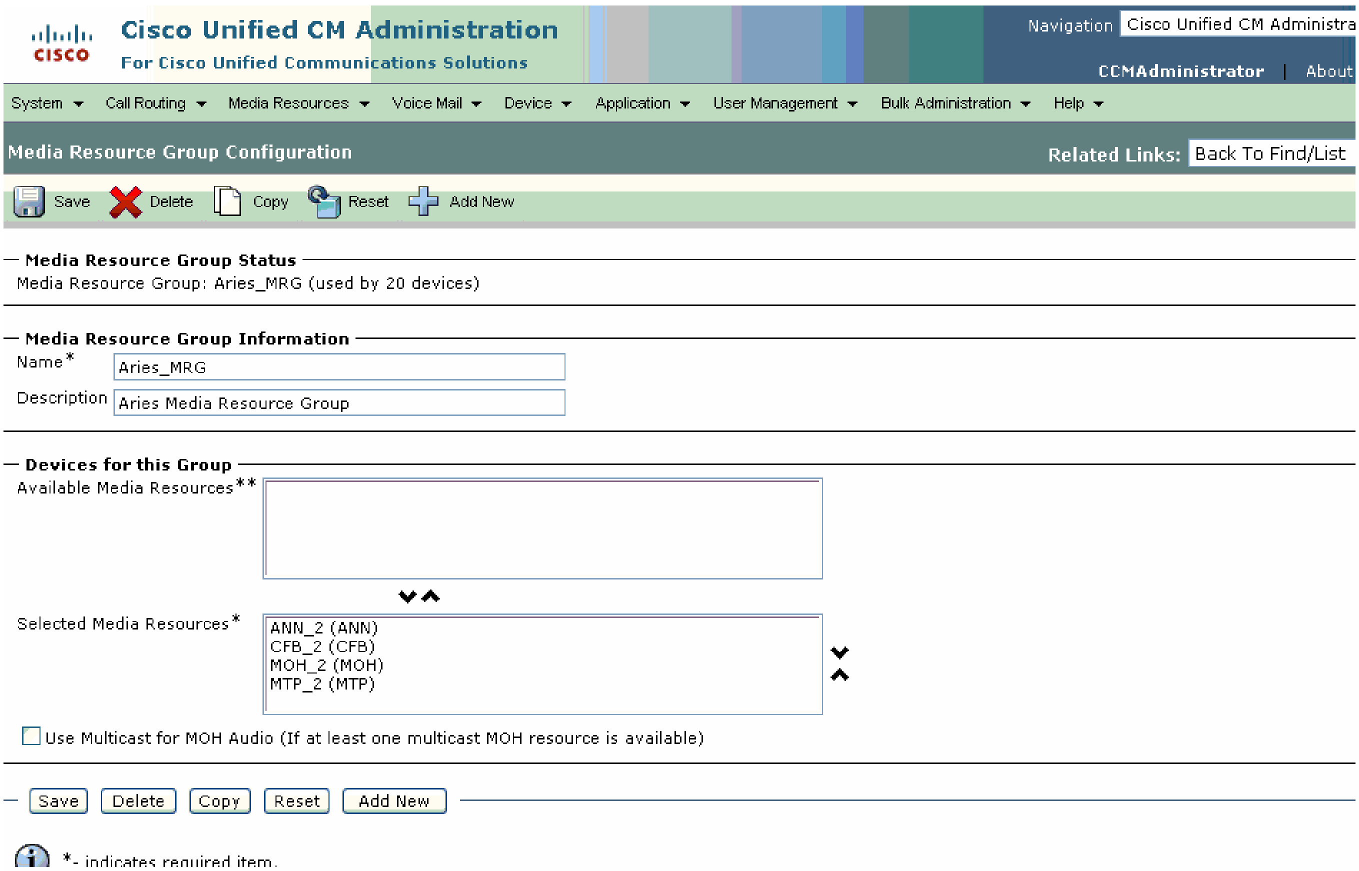
Cisco Unified Communications Manager Enterprise Parameters (Organization Top Level Domain) Configuration



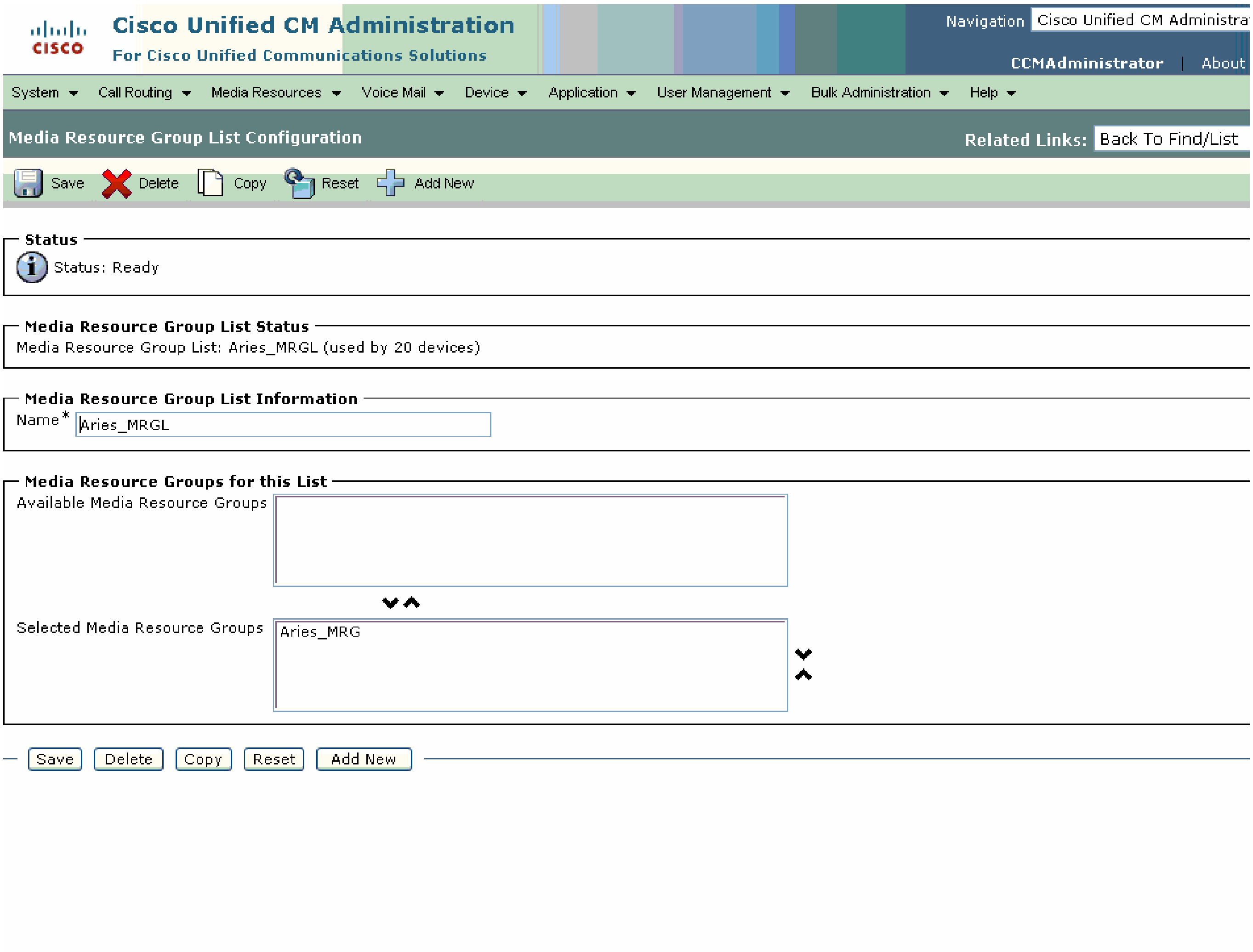
Cisco Unified Communications Manager Media Termination Point Configuration



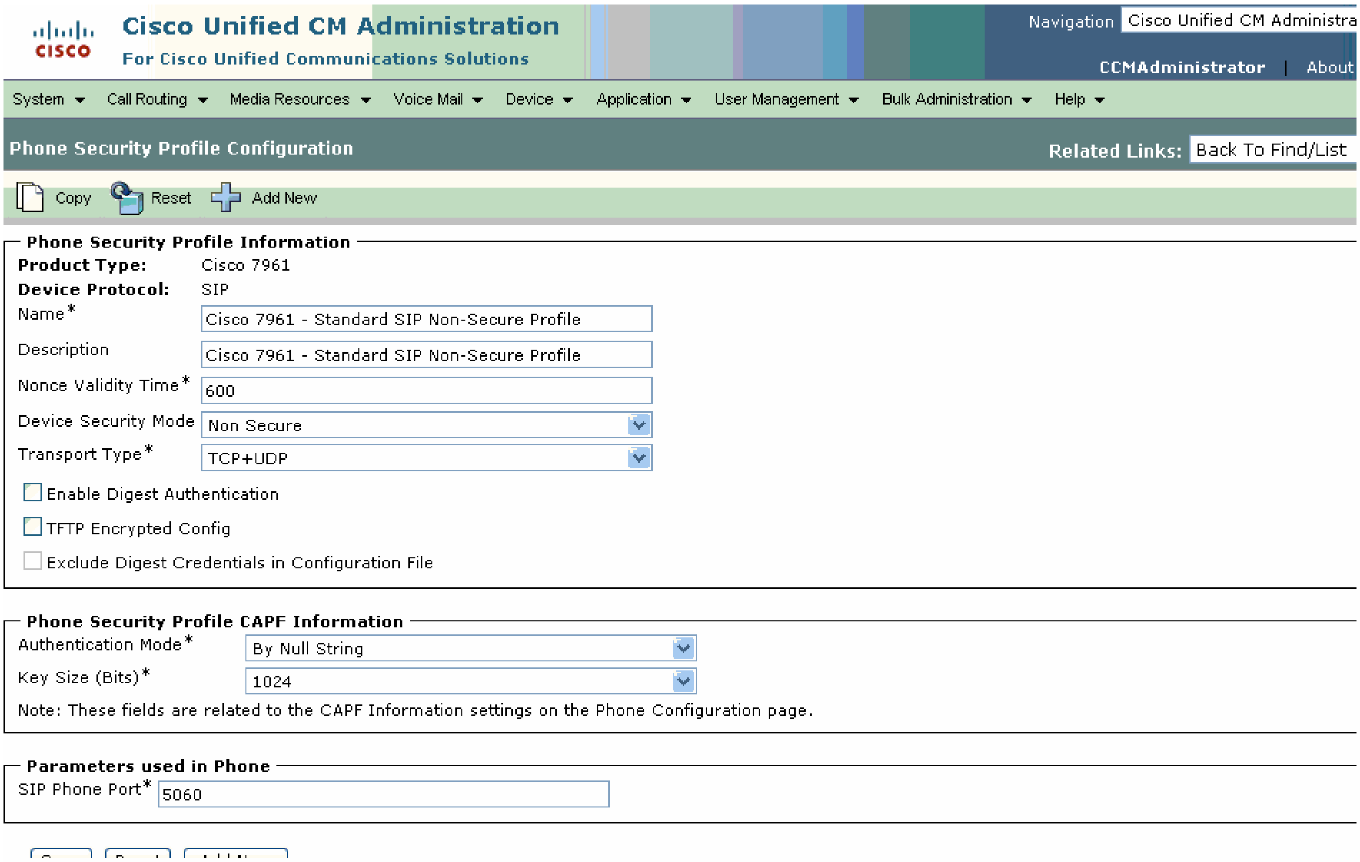
Cisco Unified Communications Manager Media Resource Group Configuration



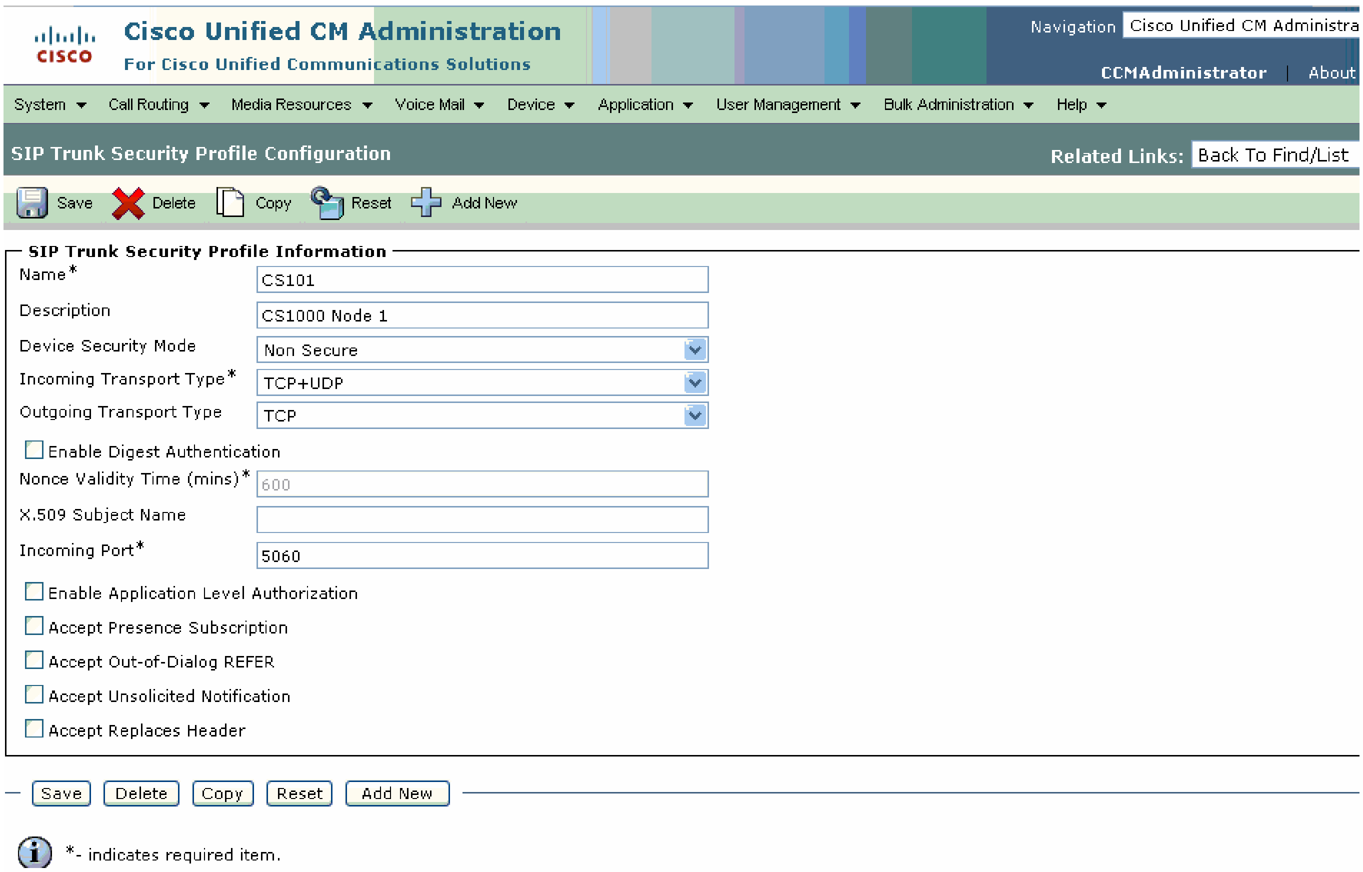
Cisco Unified Communications Manager Media Resource Group List Configuration



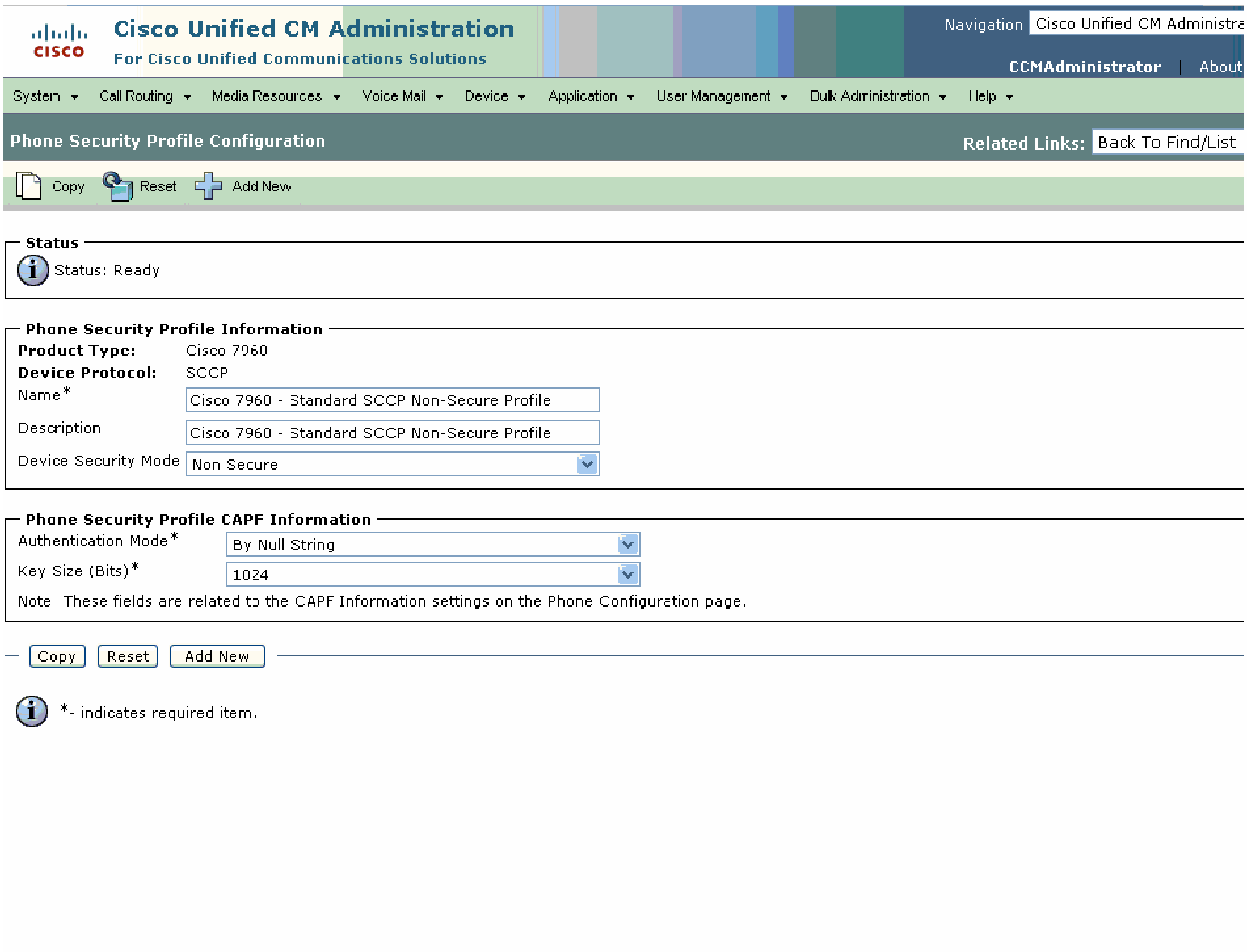
Cisco Unified Communications Manager SIP Phone Security Profile Configuration



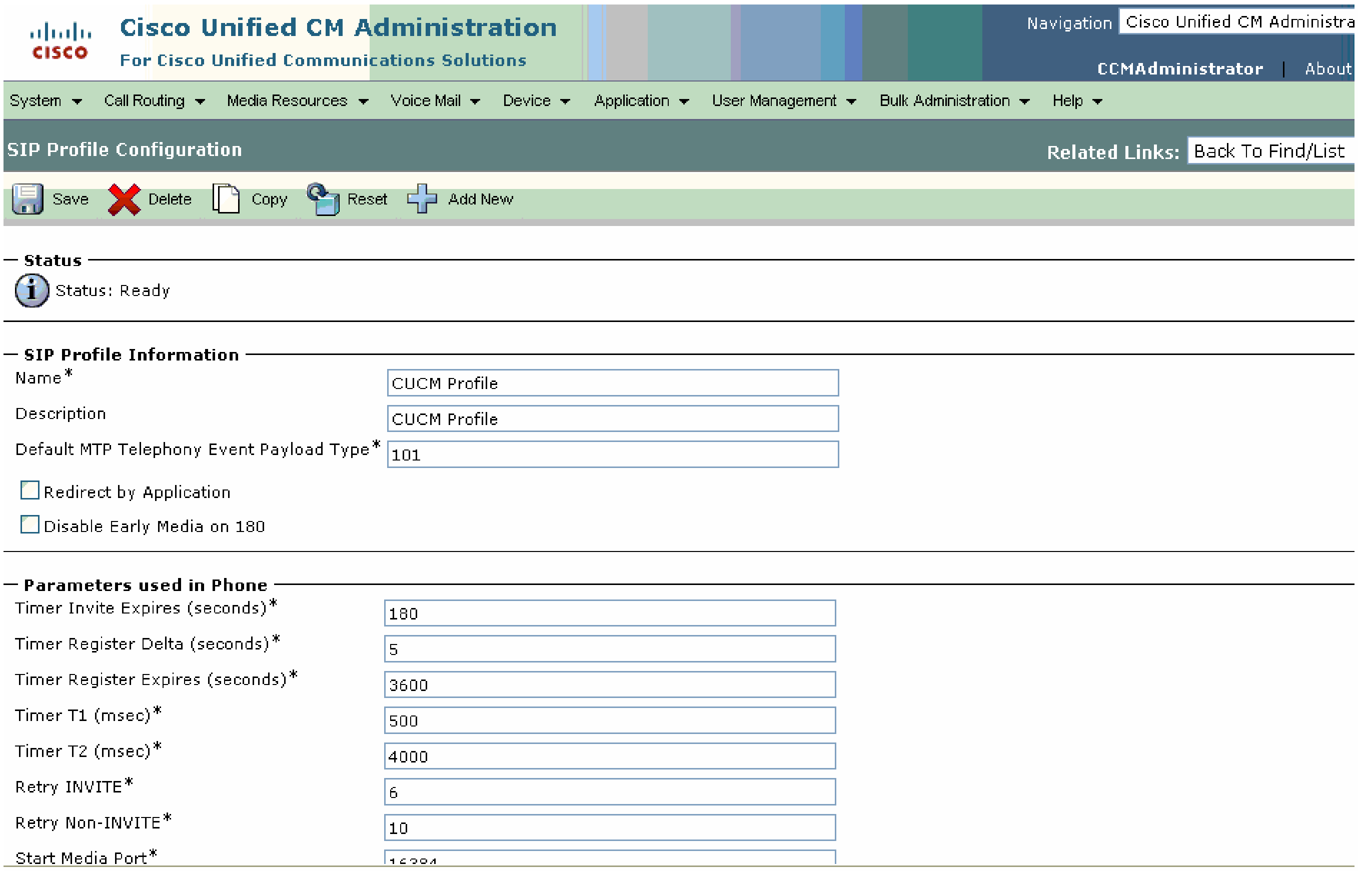
Cisco Unified Communications Manager SIP Trunk Security Profile Configuration

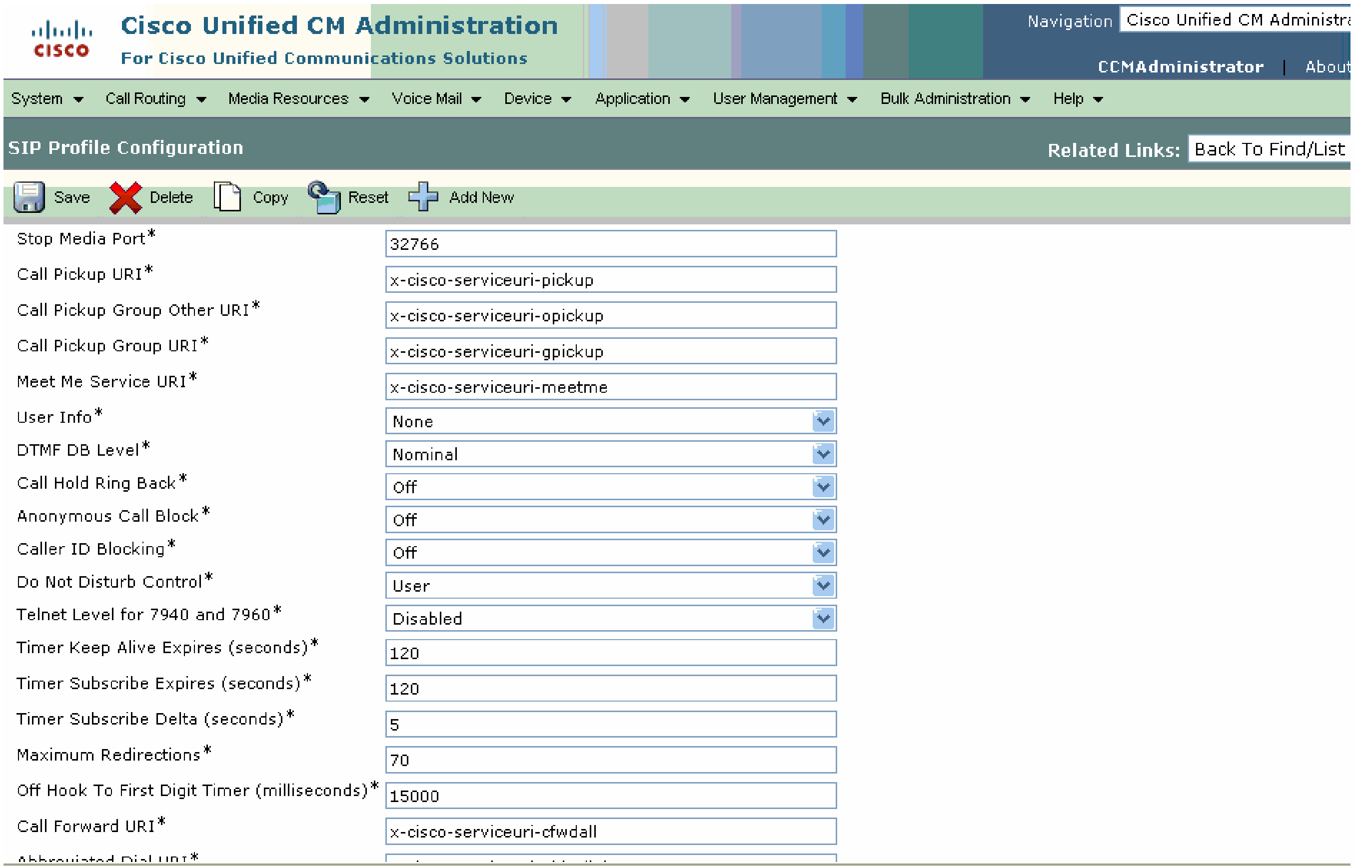


Cisco Unified Communications Manager SCCP Security Profile Configuration



Cisco Unified Communications Manager SIP Profile for Nortel CS1000M PBX Configuration




Cisco Unified CM Administration
For Cisco Unified Communications Solutions
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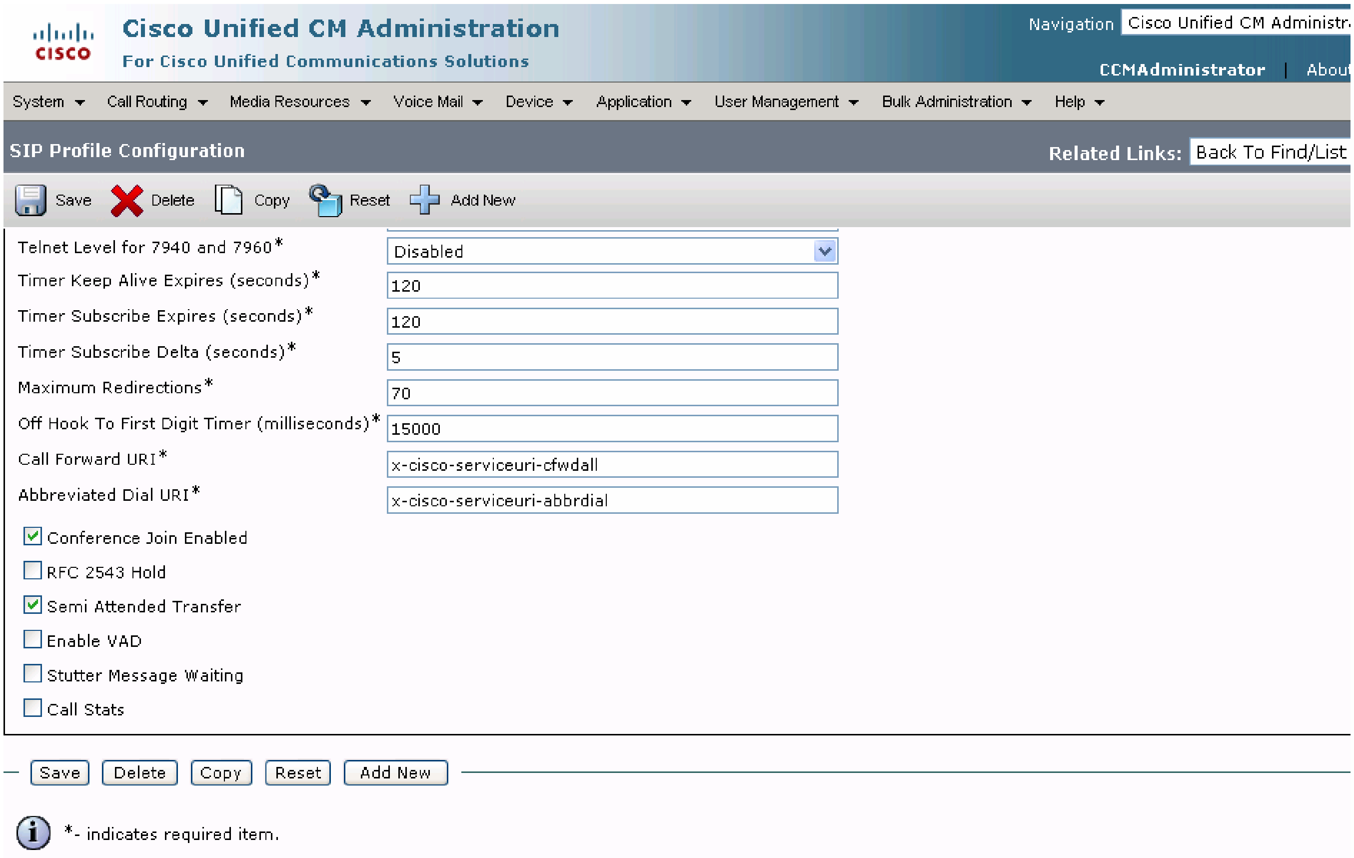
CCMAdministrator | About
System Call Routing Media Resources Voice Mail Device Application User Management Bulk Administration Help
SIP Profile Configuration
Related Links: Back To Find/List
Save Delete Copy Reset Add New
Stop Media Port* 32766
Call Pickup URI* x-cisco-serviceuri-pickup
Call Pickup Group Other URI* x-cisco-serviceuri-opickup
Call Pickup Group URI* x-cisco-serviceuri-gpickup
Meet Me Service URI* x-cisco-serviceuri-meetme
User Info* None
DTMF DB Level* Nominal
Call Hold Ring Back* Off
Anonymous Call Block* Off
Caller ID Blocking* Off
Do Not Disturb Control* User
Telnet Level for 7940 and 7960* Disabled
Timer Keep Alive Expires (seconds)* 120
Timer Subscribe Expires (seconds)* 120
Timer Subscribe Delta (seconds)* 5
Maximum Redirections* 70
Off Hook To First Digit Timer (milliseconds)* 15000
Call Forward URI* x-cisco-serviceuri-cfwdall



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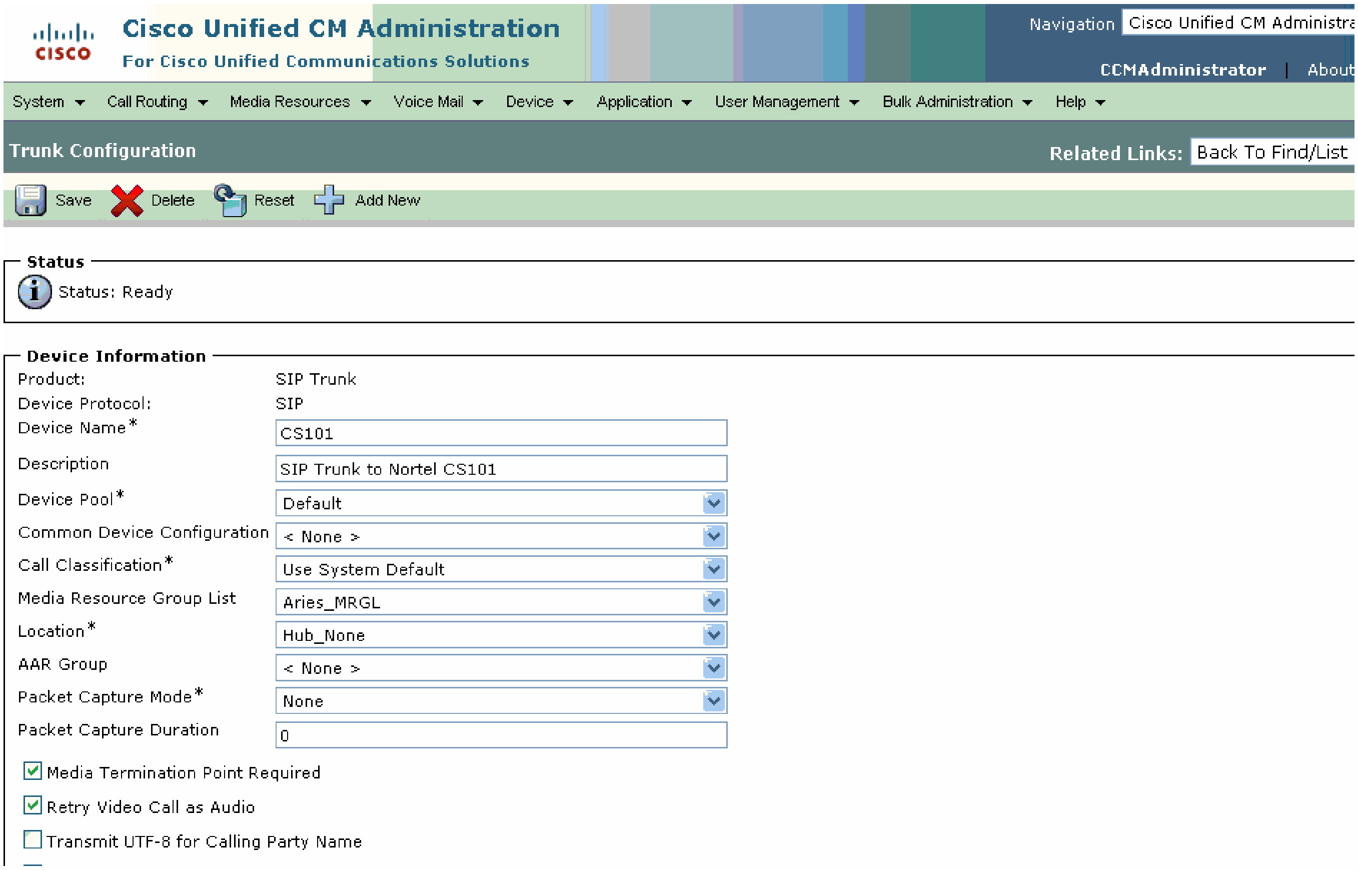
Add New
Telnet Level for 7940 and 7960*
Disabled
Timer Keep Alive Expires (seconds)*
120
Timer Subscribe Expires (seconds)*
120
Timer Subscribe Delta (seconds)*
5
Maximum Redirections*
70
Off Hook To First Digit Timer (milliseconds)*
15000
Call Forward URI*
x-cisco-serviceuri-cfwdall
Abbreviated Dial URI*
x-cisco-serviceuri-abbrdial
Conference Join Enabled
RFC 2543 Hold
Semi Attended Transfer
Enable VAD
Stutter Message Waiting
Call Stats
Save
Delete
Copy
Reset
Add New
*- indicates required item.


Cisco Unified CM Administration
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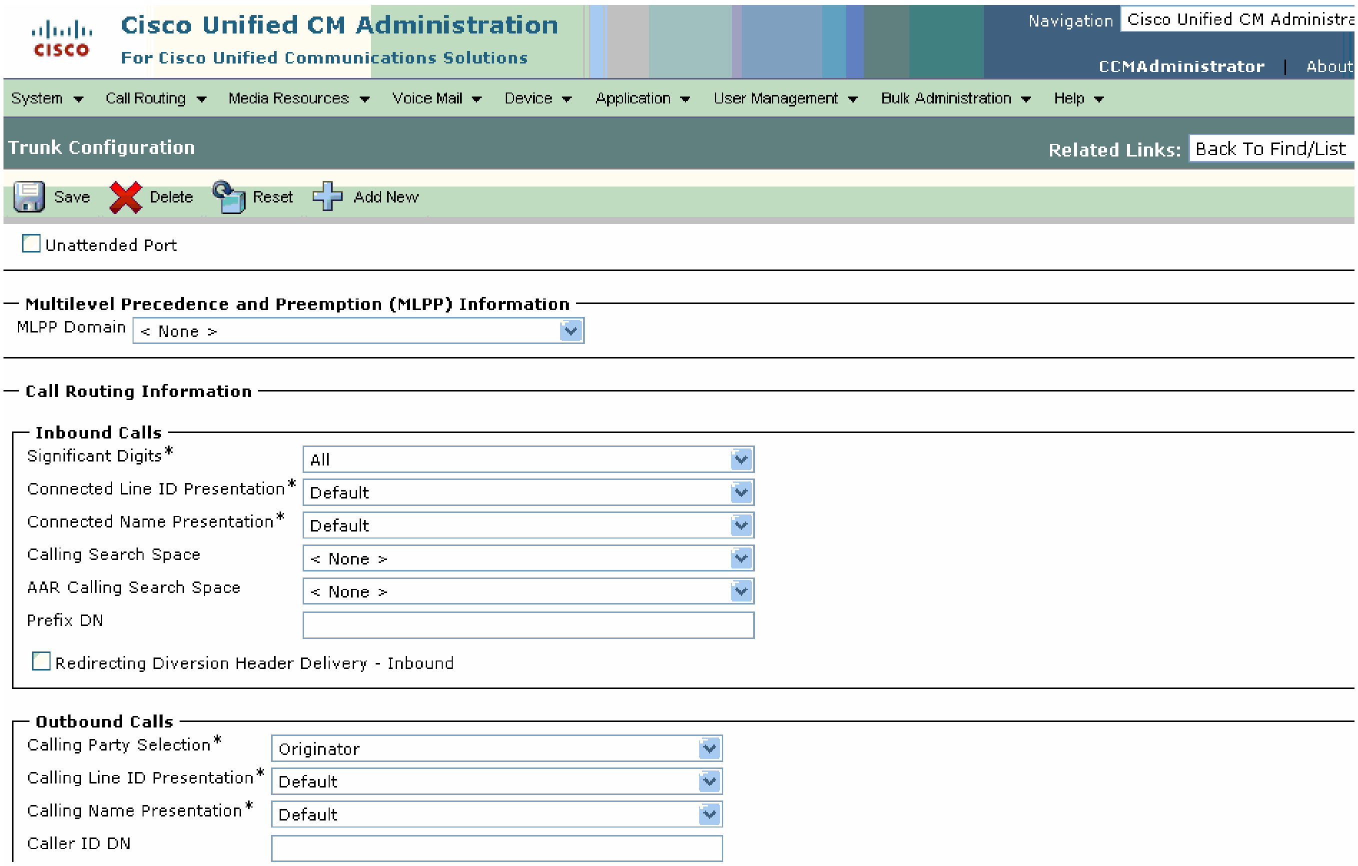
System Call Routing Media Resources Voice Mail Device Application User Management Bulk Administration Help
Trunk Configuration
Related Links: Back To Find/List
Save Delete Reset Add New
Status
Status: Ready
Device Information
Product: SIP Trunk
Device Protocol: SIP
Device Name* CS101
Description SIP Trunk to Nortel CS101
Device Pool* Default
Common Device Configuration < None >
Call Classification* Use System Default
Media Resource Group List Aries_MRGL
Location* Hub_None
AAR Group < None >
Packet Capture Mode* None
Packet Capture Duration 0
Media Termination Point Required
Retry Video Call as Audio
Transmit UTF-8 for Calling Party Name



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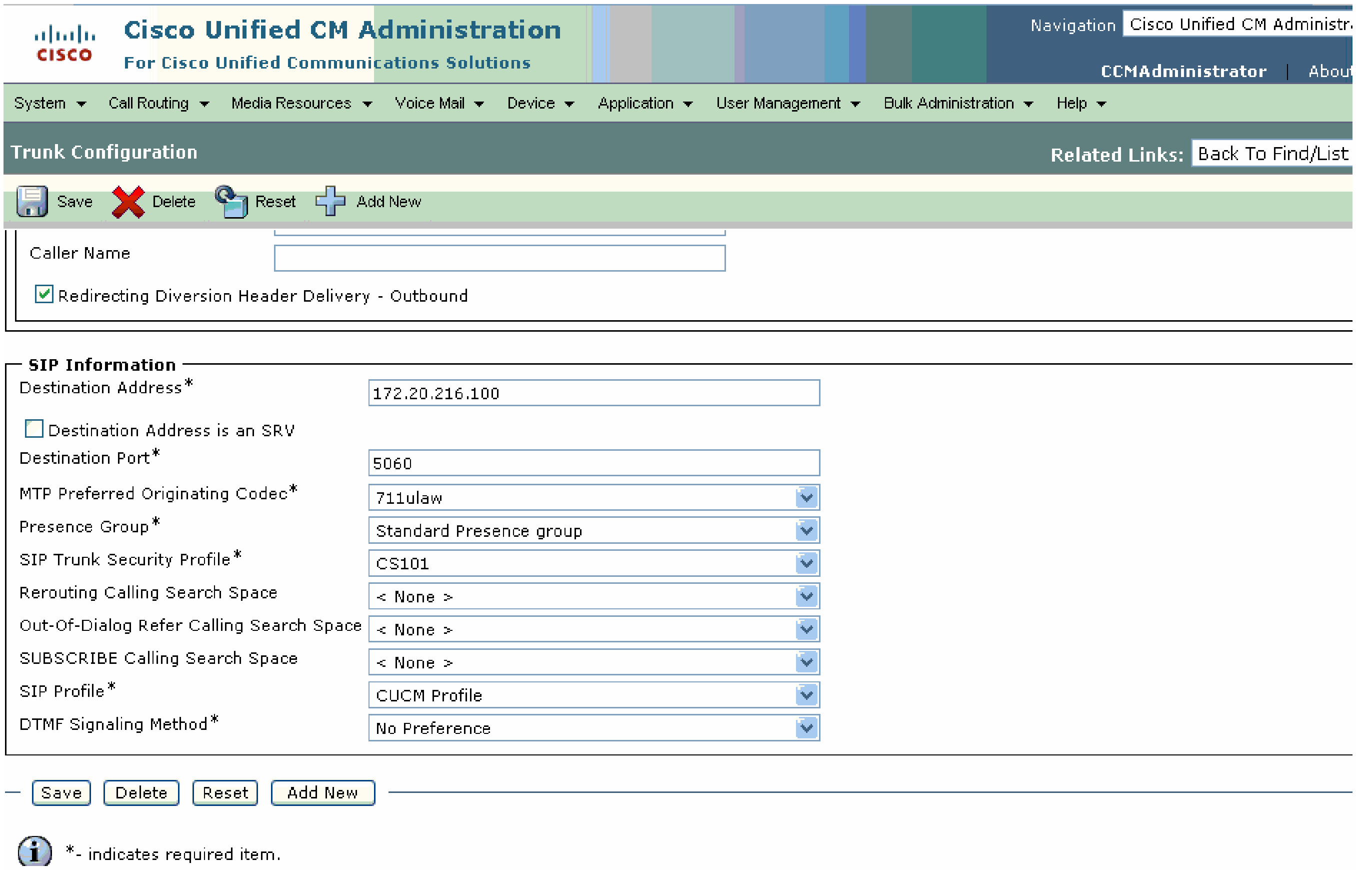
Reset
Add New
Unattended Port
Multilevel Precedence and Preemption (MLPP) Information
MLPP Domain < None >
Call Routing Information
Inbound Calls
Significant Digits* All
Connected Line ID Presentation* Default
Connected Name Presentation* Default
Calling Search Space < None >
AAR Calling Search Space < None >
Prefix DN
Redirecting Diversion Header Delivery - Inbound
Outbound Calls
Calling Party Selection* Originator
Calling Line ID Presentation* Default
Calling Name Presentation* Default
Caller ID DN


Cisco Unified CM Administration
For Cisco Unified Communications Solutions
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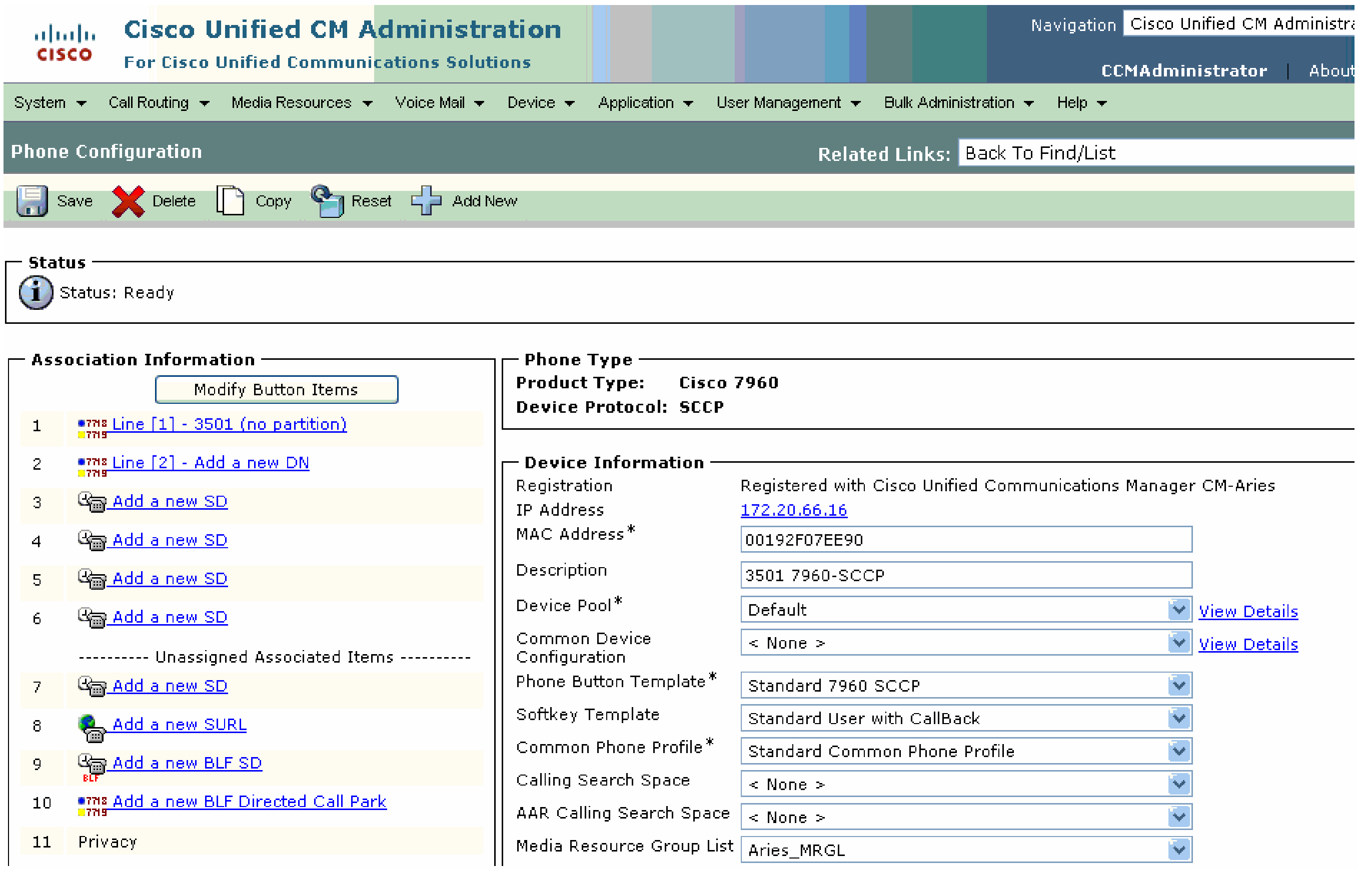
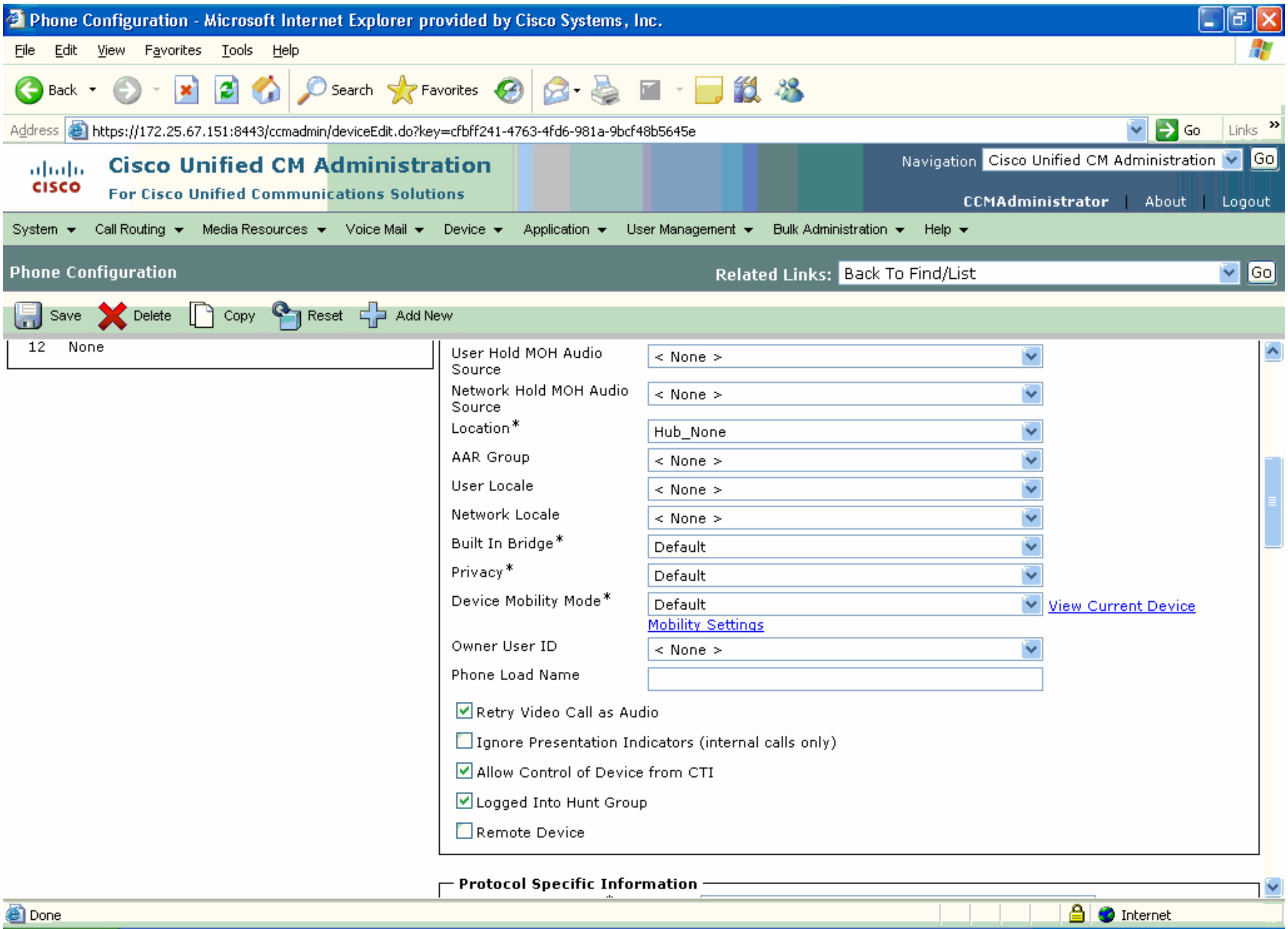
Trunk Configuration
Related Links: Back To Find/List
Save Delete Reset Add New
Caller Name
Redirecting Diversion Header Delivery - Outbound
SIP Information
Destination Address*
172.20.216.100
Destination Address is an SRV
Destination Port*
5060
MTP Preferred Originating Codec*
711ulaw
Presence Group*
Standard Presence group
SIP Trunk Security Profile*
CS101
Rerouting Calling Search Space
< None >
Out-Of-Dialog Refer Calling Search Space
< None >
SUBSCRIBE Calling Search Space
< None >
SIP Profile*
CUCM Profile
DTMF Signaling Method*
No Preference
Save Delete Reset Add New
*- indicates required item.

Cisco Unified Communications Manager SCCP Phone Level Configuration




Phone Configuration - Microsoft Internet Explorer provided by Cisco Systems, Inc.
File Edit View Favorites Tools Help
Back Search Favorites
Address https://172.25.67.151:8443/ccmadmin/deviceEdit.do?key=cfbff241-4763-4fd6-981a-9bcf48b5645e
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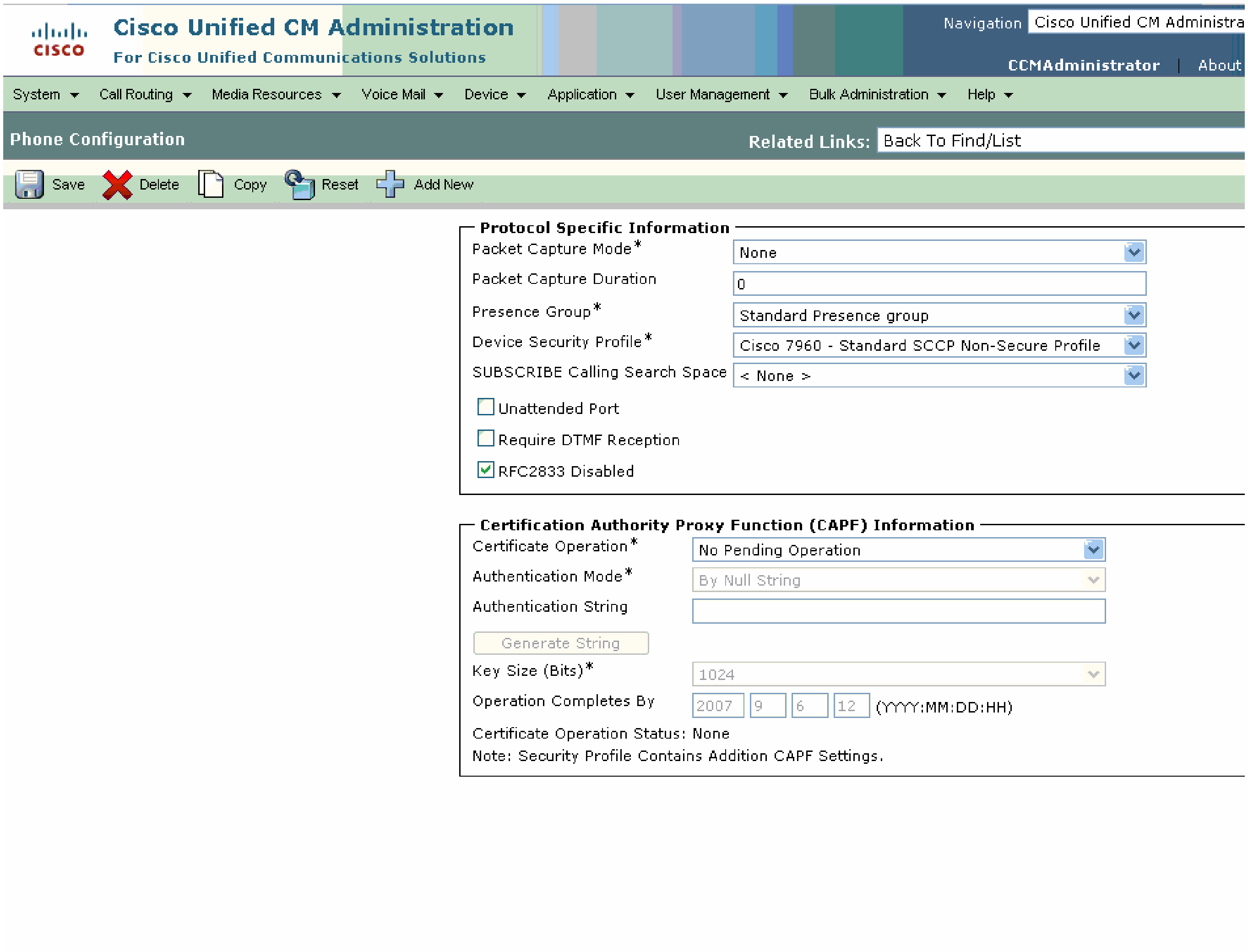
Phone Configuration
Related Links: Back To Find/List Go
Save Delete Copy Reset Add New
12 None
User Hold MOH Audio Source < None >
Network Hold MOH Audio Source < None >
Location* Hub_None
AAR Group < None >
User Locale < None >
Network Locale < None >
Built In Bridge* Default
Privacy* Default
Device Mobility Mode* Default View Current Device Mobility Settings
Owner User ID < None >
Phone Load Name
Retry Video Call as Audio
Ignore Presentation Indicators (internal calls only)
Allow Control of Device from CTI
Logged Into Hunt Group
Remote Device
Protocol Specific Information
Done
Internet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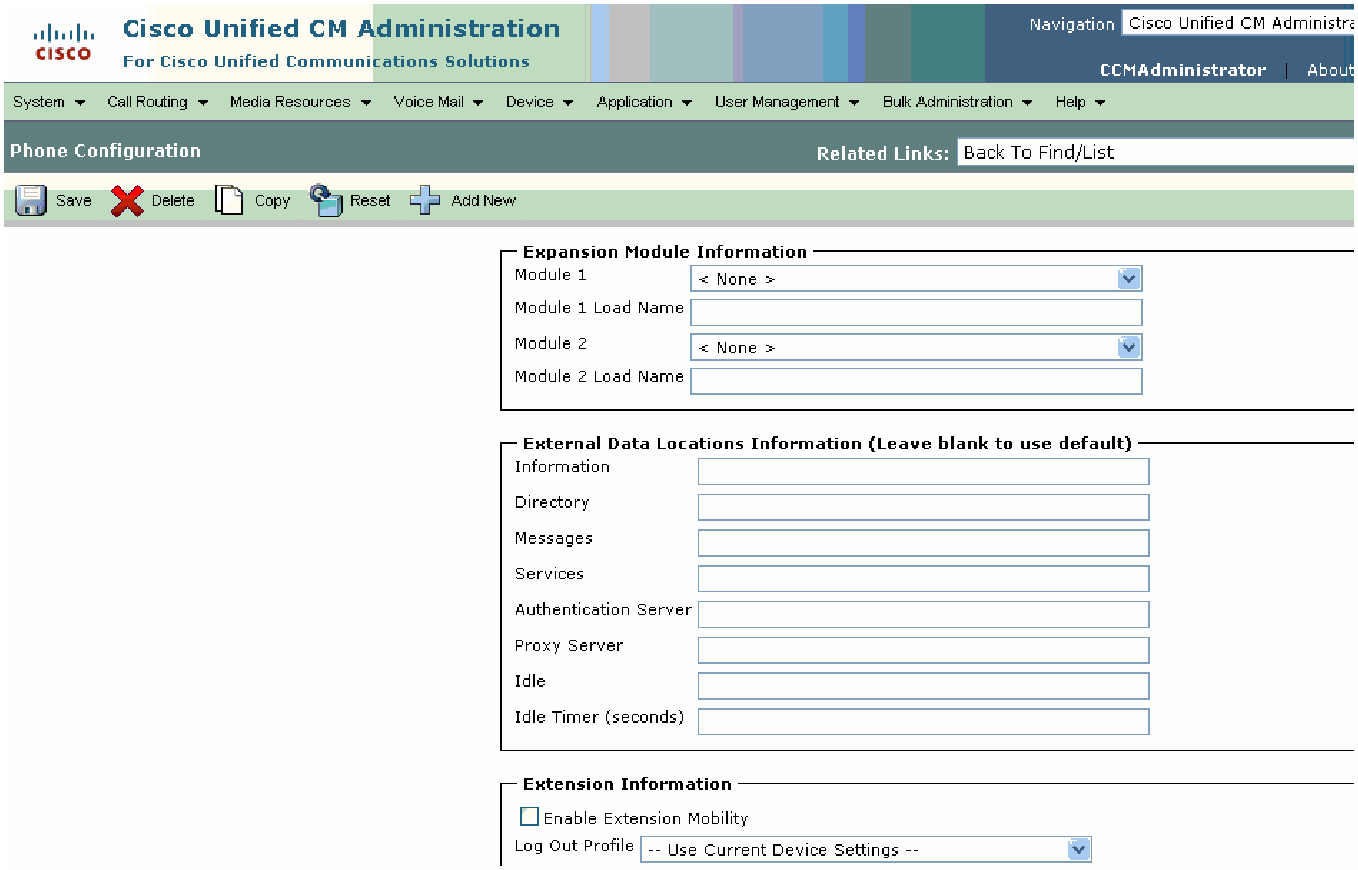
Phone Configuration
Related Links: Back To Find/List
Save Delete Copy Reset Add New
Protocol Specific Information
Packet Capture Mode* None
Packet Capture Duration 0
Presence Group* Standard Presence group
Device Security Profile* Cisco 7960 - Standard SCCP Non-Secure Profile
SUBSCRIBE Calling Search Space < None >
Unattended Port
Require DTMF Reception
RFC2833 Disabled
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 2007 9 6 12 (YYYY:MM:DD:HH)
Certificate Operation Status: None
Note: Security Profile Contains Addition CAPF Settings.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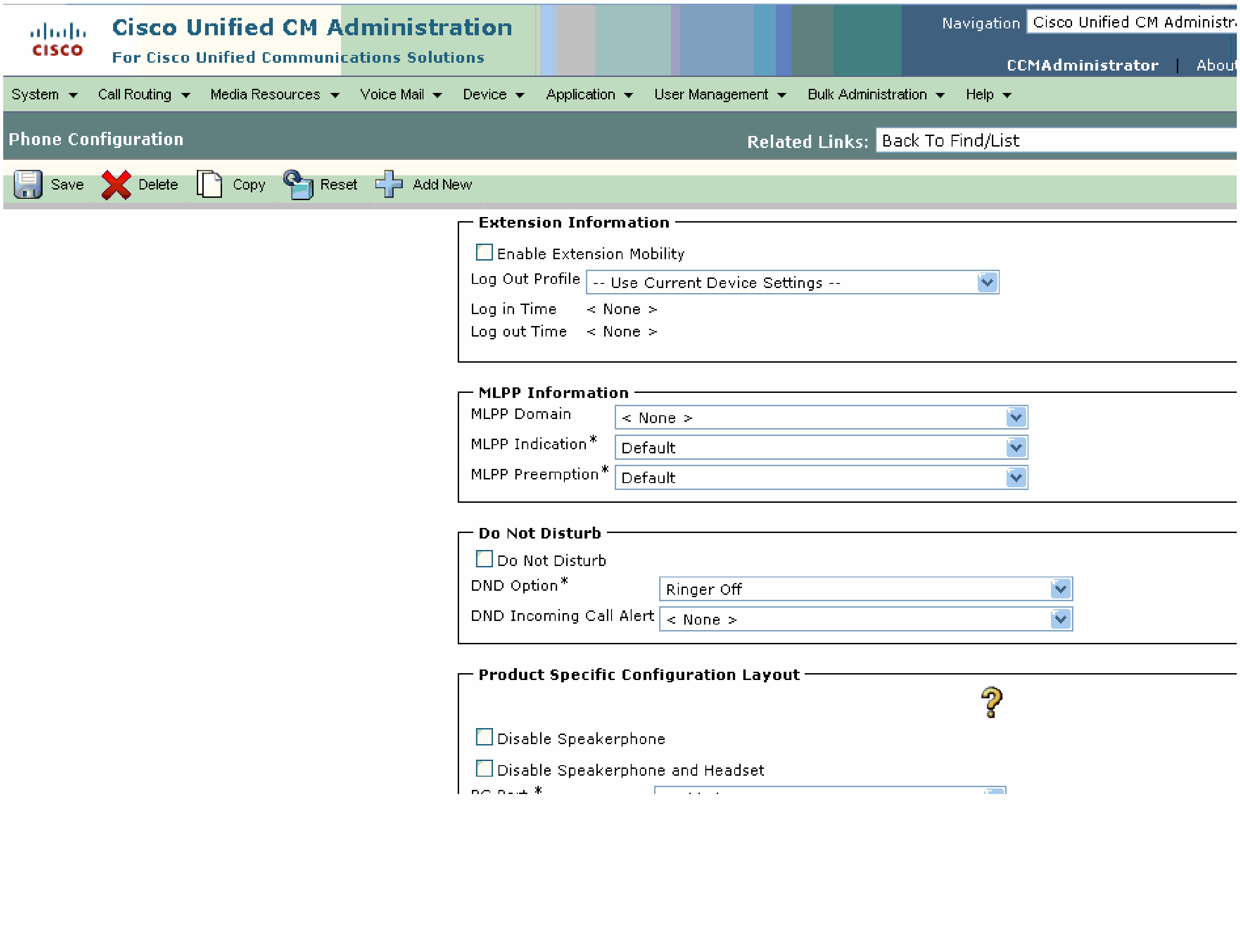
Related Links: Back To Find/List
Save Delete Copy Reset Add New
Expansion Module Information
Module 1 < None >
Module 1 Load Name
Module 2 < None >
Module 2 Load Name
External Data Locations Information (Leave blank to use default)
Information
Directory
Messages
Services
Authentication Server
Proxy Server
Idle
Idle Timer (seconds)
Extension Information
Enable Extension Mobility
Log Out Profile -- Use Current Device Settings --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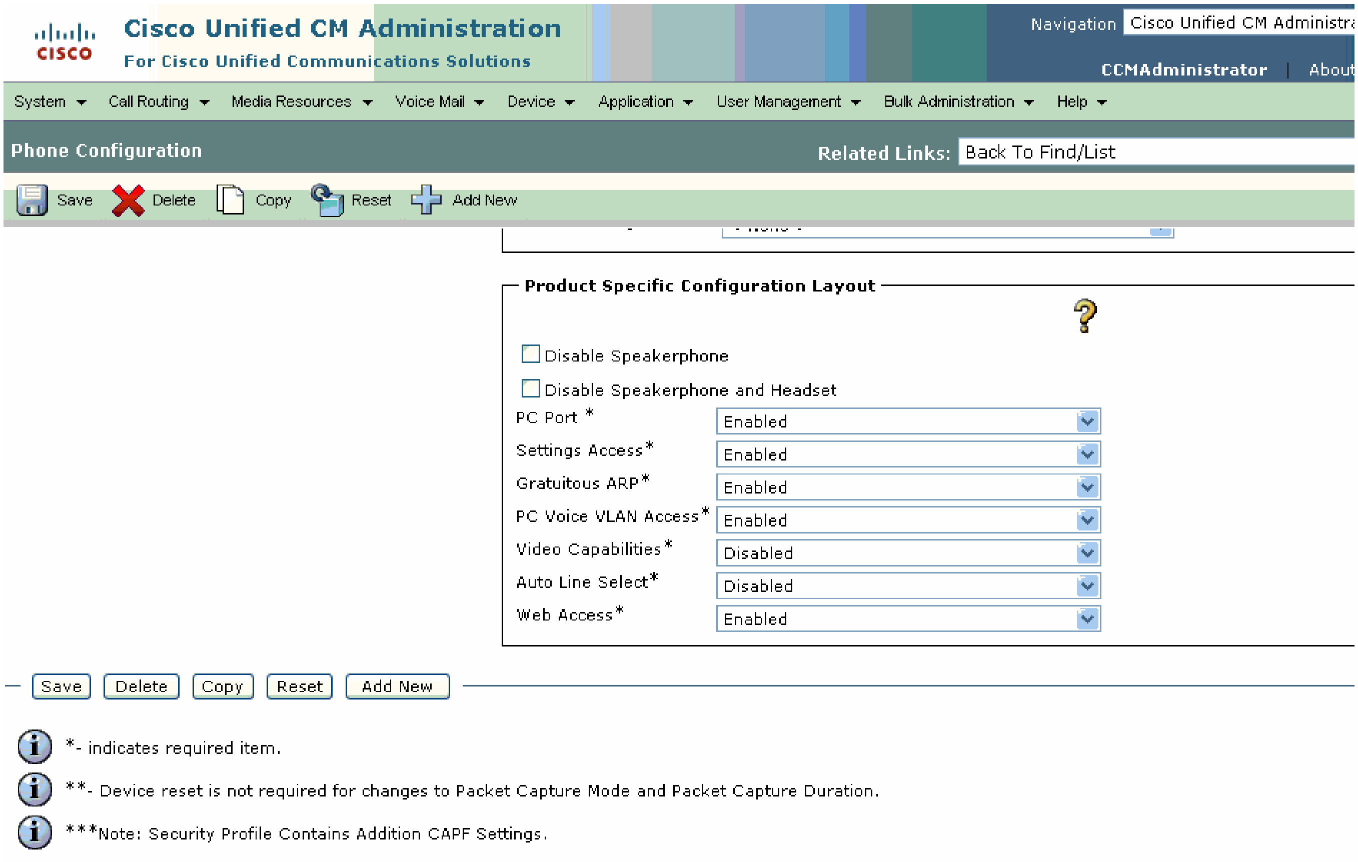
Related Links: Back To Find/List
Save Delete Copy Reset Add New
Extension Information
Enable Extension Mobility
Log Out Profile -- Use Current Device Settings --
Log in Time < None >
Log out Time < None >
MLPP Information
MLPP Domain < None >
MLPP Indication* Default
MLPP Preemption* Default
Do Not Disturb
Do Not Disturb
DND Option* Ringer Off
DND Incoming Call Alert < None >
Product Specific Configuration Layout
Disable Speakerphone
Disable Speakerphone and Headset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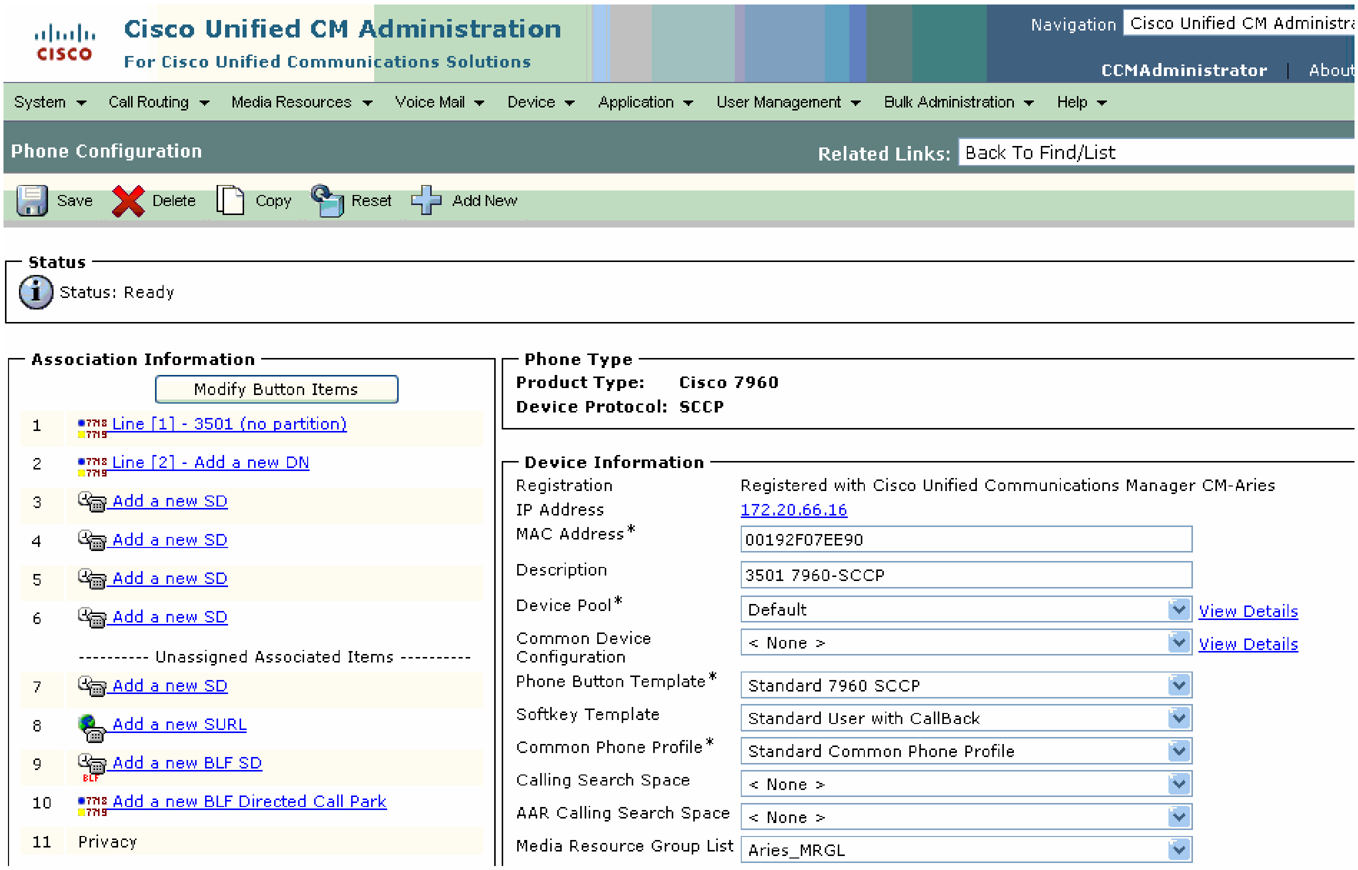
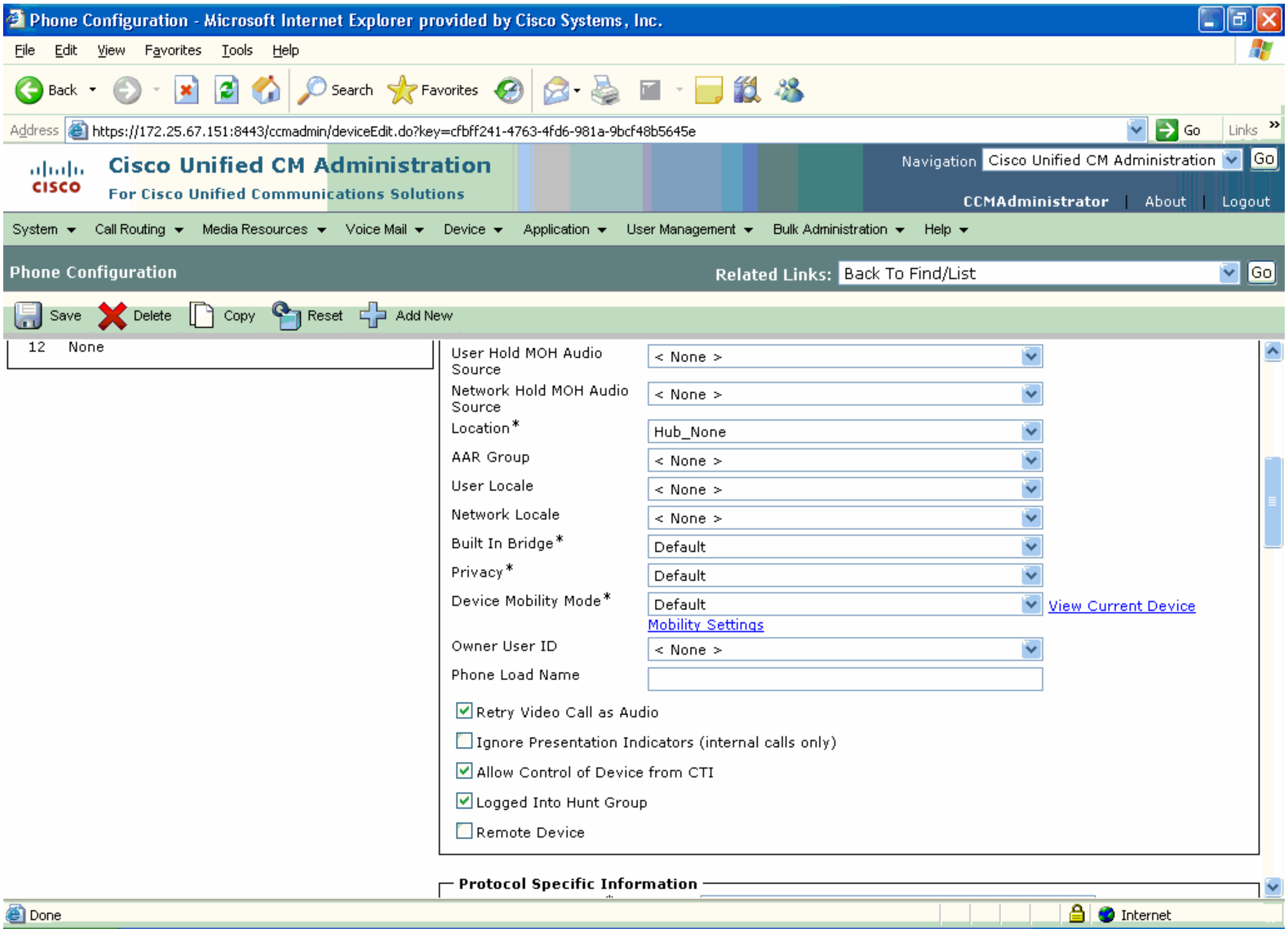
Product Specific Configuration Layout
Disable Speakerphone
Disable Speakerphone and Headset
PC Port *
Enabled
Settings Access*
Enabled
Gratuitous ARP*
Enabled
PC Voice VLAN Access*
Enabled
Video Capabilities*
Disabled
Auto Line Select*
Disabled
Web Access*
Enabled
Save
Delete
Copy
Reset
Add New
*- indicates required item.
**- Device reset is not required for changes to Packet Capture Mode and Packet Capture Duration.
***Note: Security Profile Contains Addition CAPF Settings.

Cisco Unified Communications Manager SCCP Phone Directory Number (Ext 3501) Level Configuration





Phone Configuration - Microsoft Internet Explorer provided by Cisco Systems, Inc.
File Edit View Favorites Tools Help
Back Search Favorites
Address https://172.25.67.151:8443/ccmadmin/deviceEdit.do?key=cfbff241-4763-4fd6-981a-9bcf48b5645e
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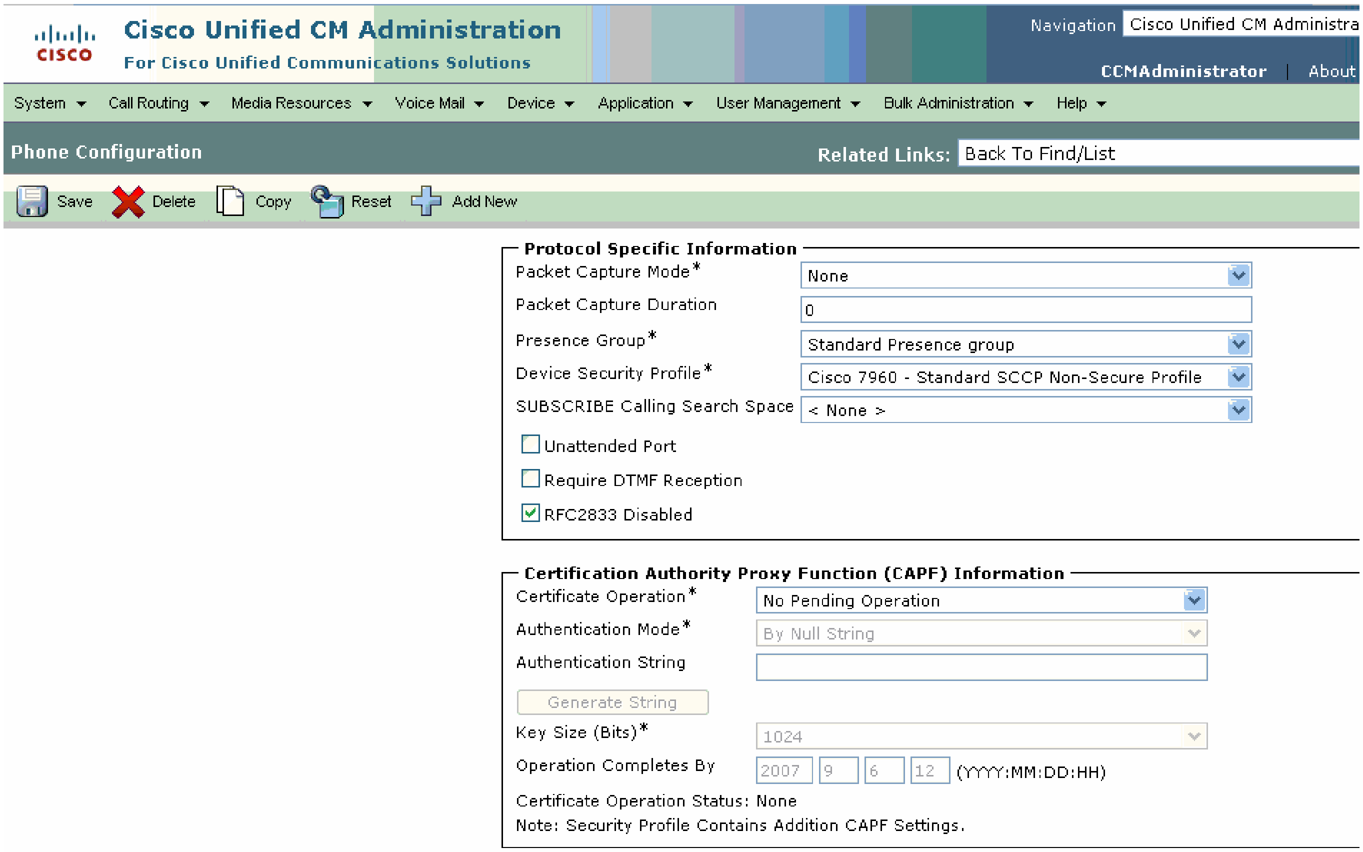
Phone Configuration
Related Links: Back To Find/List Go
Save Delete Copy Reset Add New
12 None
User Hold MOH Audio Source < None >
Network Hold MOH Audio Source < None >
Location* Hub_None
AAR Group < None >
User Locale < None >
Network Locale < None >
Built In Bridge* Default
Privacy* Default
Device Mobility Mode* Default View Current Device Mobility Settings
Owner User ID < None >
Phone Load Name
Retry Video Call as Audio
Ignore Presentation Indicators (internal calls only)
Allow Control of Device from CTI
Logged Into Hunt Group
Remote Device
Protocol Specific Information
Done
Internet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Related Links: Back To Find/List
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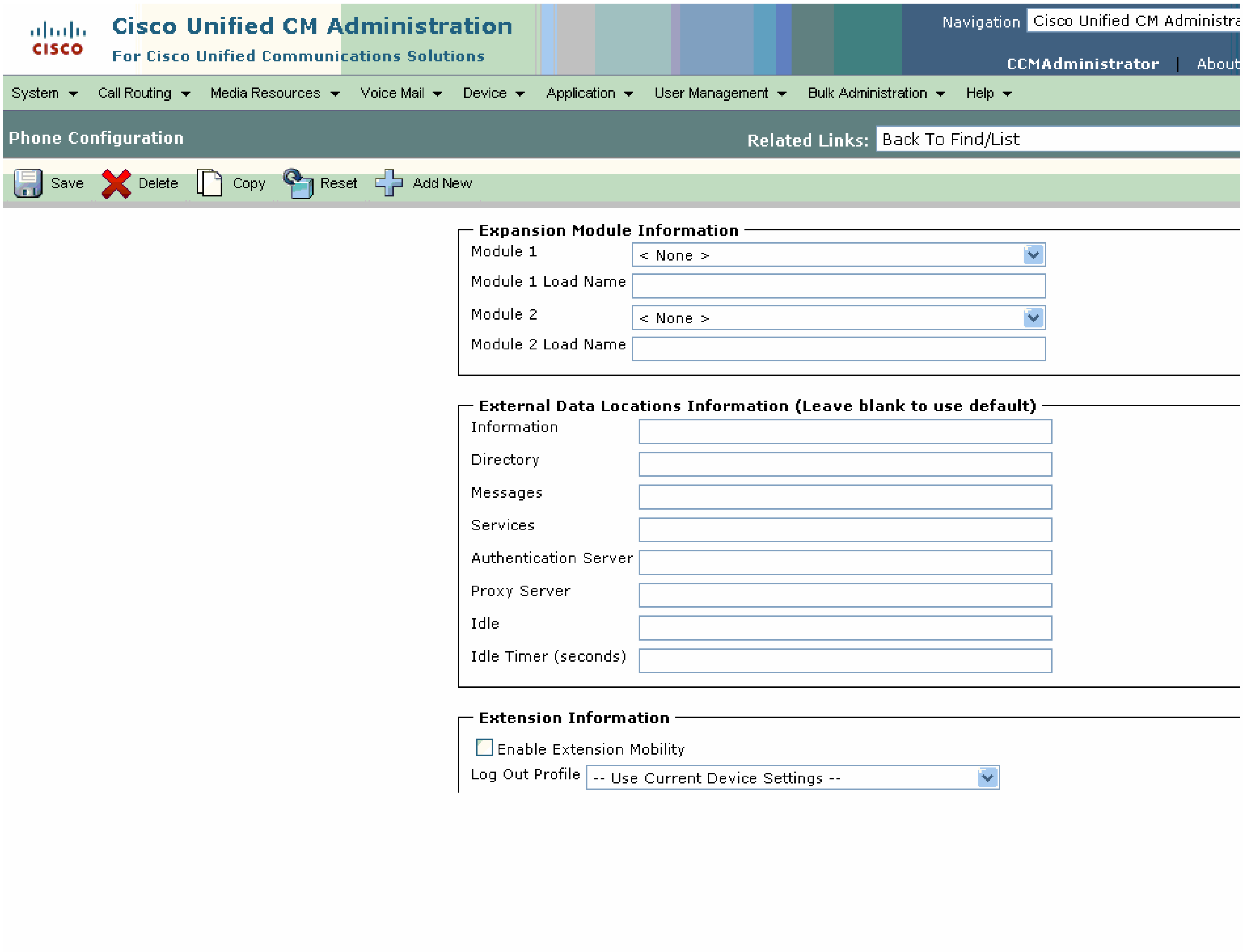
Protocol Specific Information
Packet Capture Mode* None
Packet Capture Duration 0
Presence Group* Standard Presence group
Device Security Profile* Cisco 7960 - Standard SCCP Non-Secure Profile
SUBSCRIBE Calling Search Space < None >
Unattended Port
Require DTMF Reception
RFC2833 Disabled
Certification 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 2007 9 6 12 (YYYY:MM:DD:HH)
Certificate Operation Status: None
Note: Security Profile Contains Addition CAPF Settings.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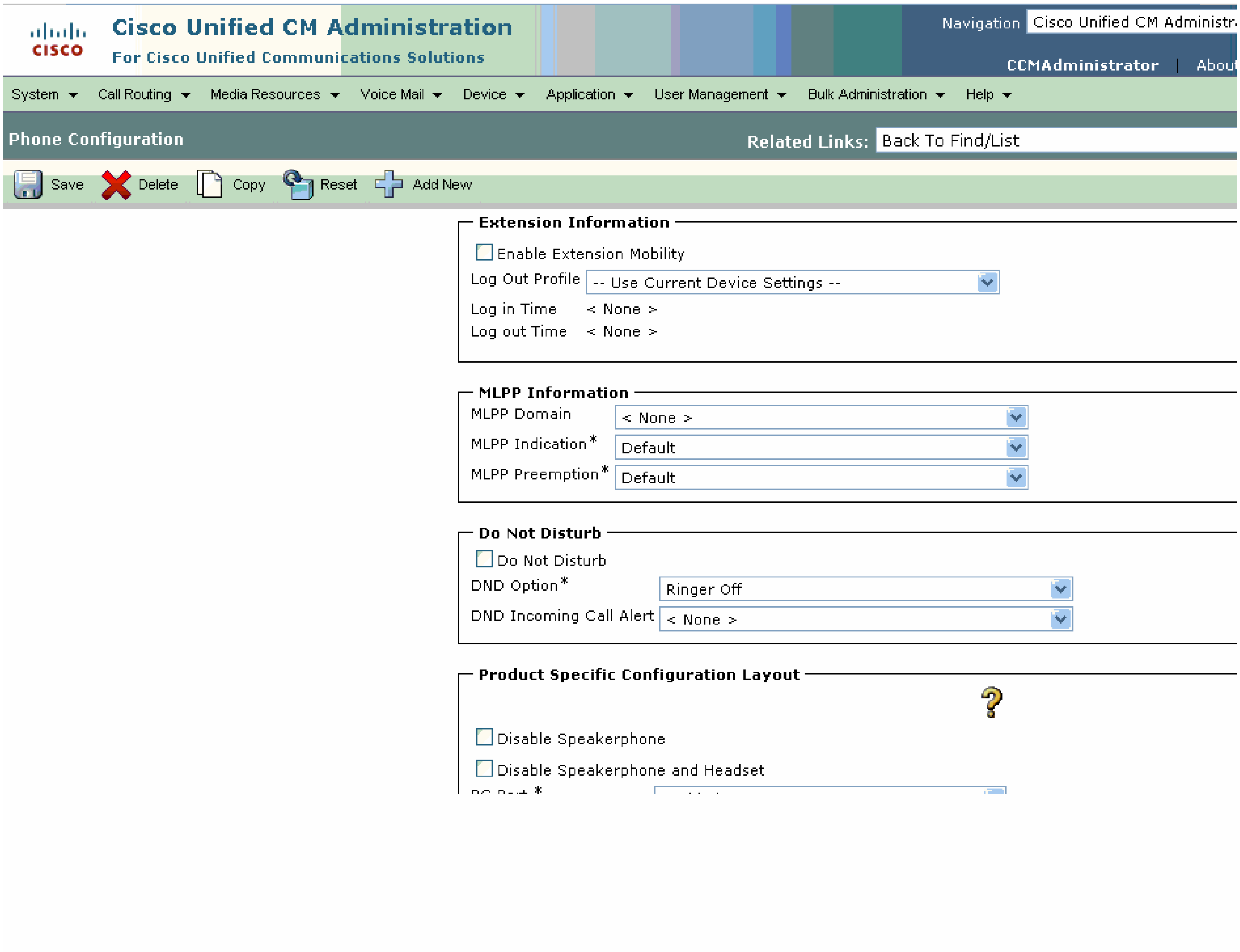
Phone Configuration
Related Links: Back To Find/List
Save Delete Copy Reset Add New
Expansion Module Information
Module 1 < None >
Module 1 Load Name
Module 2 < None >
Module 2 Load Name
External Data Locations Information (Leave blank to use default)
Information
Directory
Messages
Services
Authentication Server
Proxy Server
Idle
Idle Timer (seconds)
Extension Information
Enable Extension Mobility
Log Out Profile -- Use Current Device Settings --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Copy
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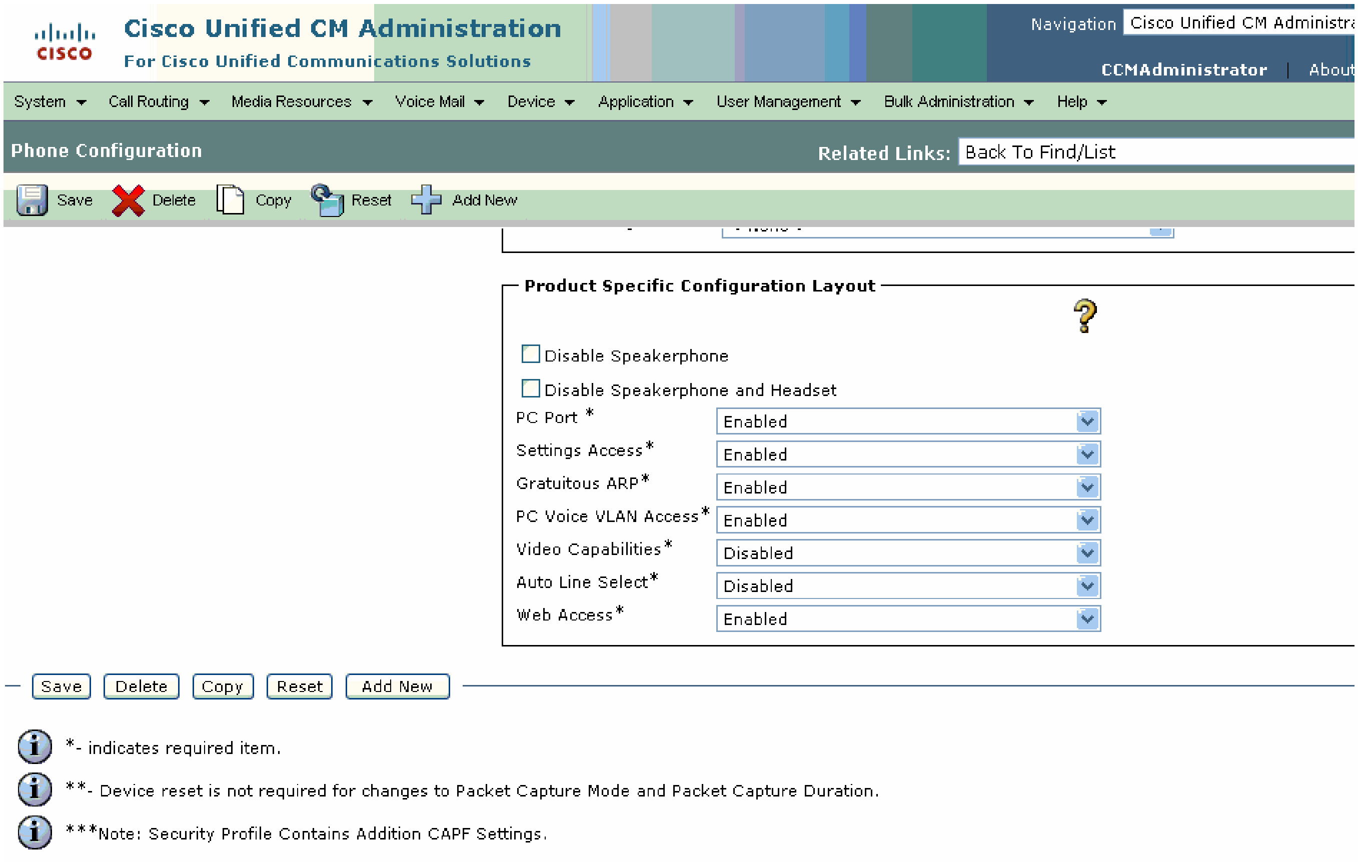
Add New
Extension Information
Enable Extension Mobility
Log Out Profile
-- Use Current Device Settings --
Log in Time
< None >
Log out Time
< None >
MLPP Information
MLPP Domain
< None >
MLPP Indication*
Default
MLPP Preemption*
Default
Do Not Disturb
Do Not Disturb
DND Option*
Ringer Off
DND Incoming Call Alert
< None >
Product Specific Configuration Layout
Disable Speakerphone
Disable Speakerphone and Headset



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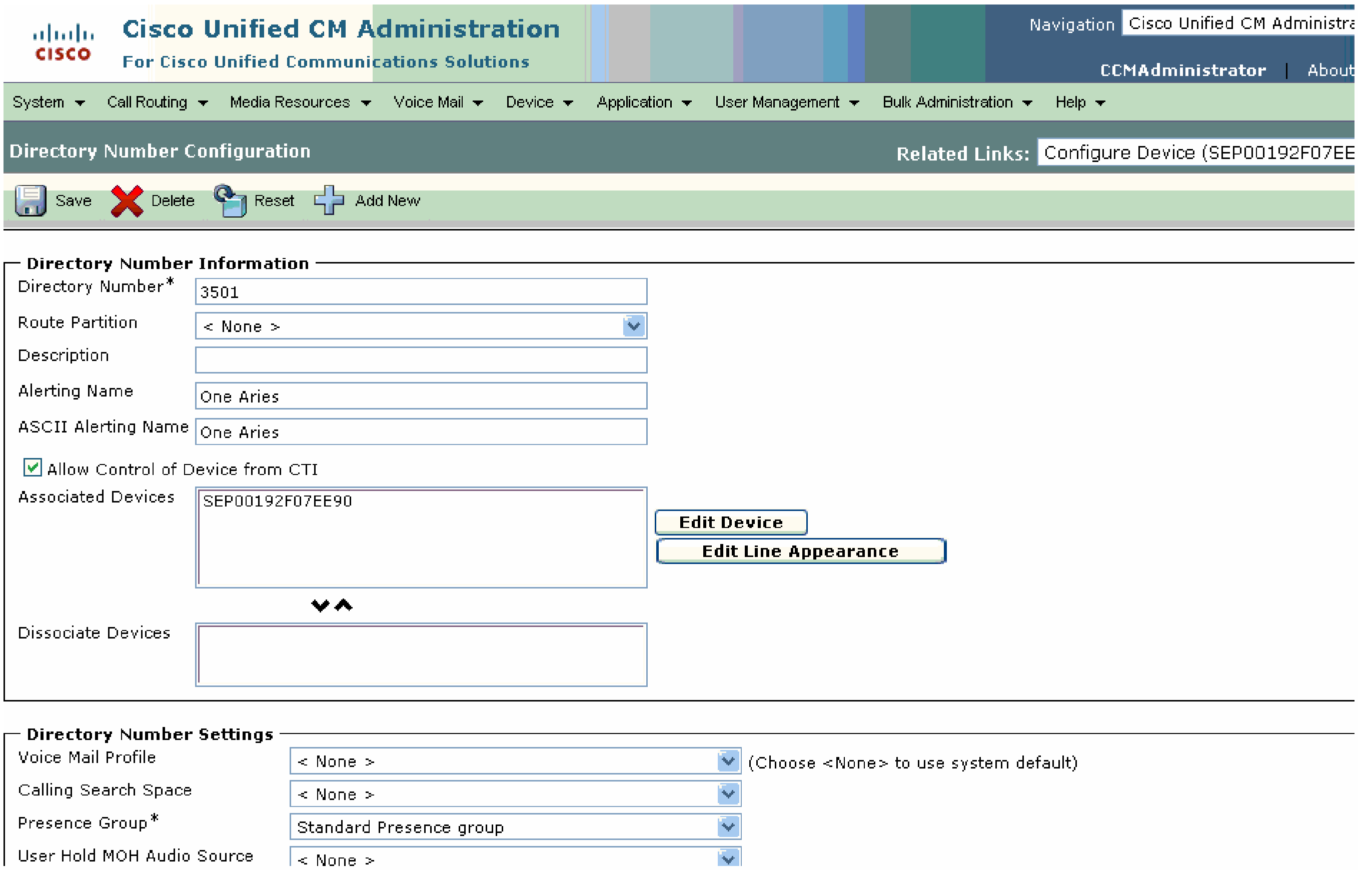
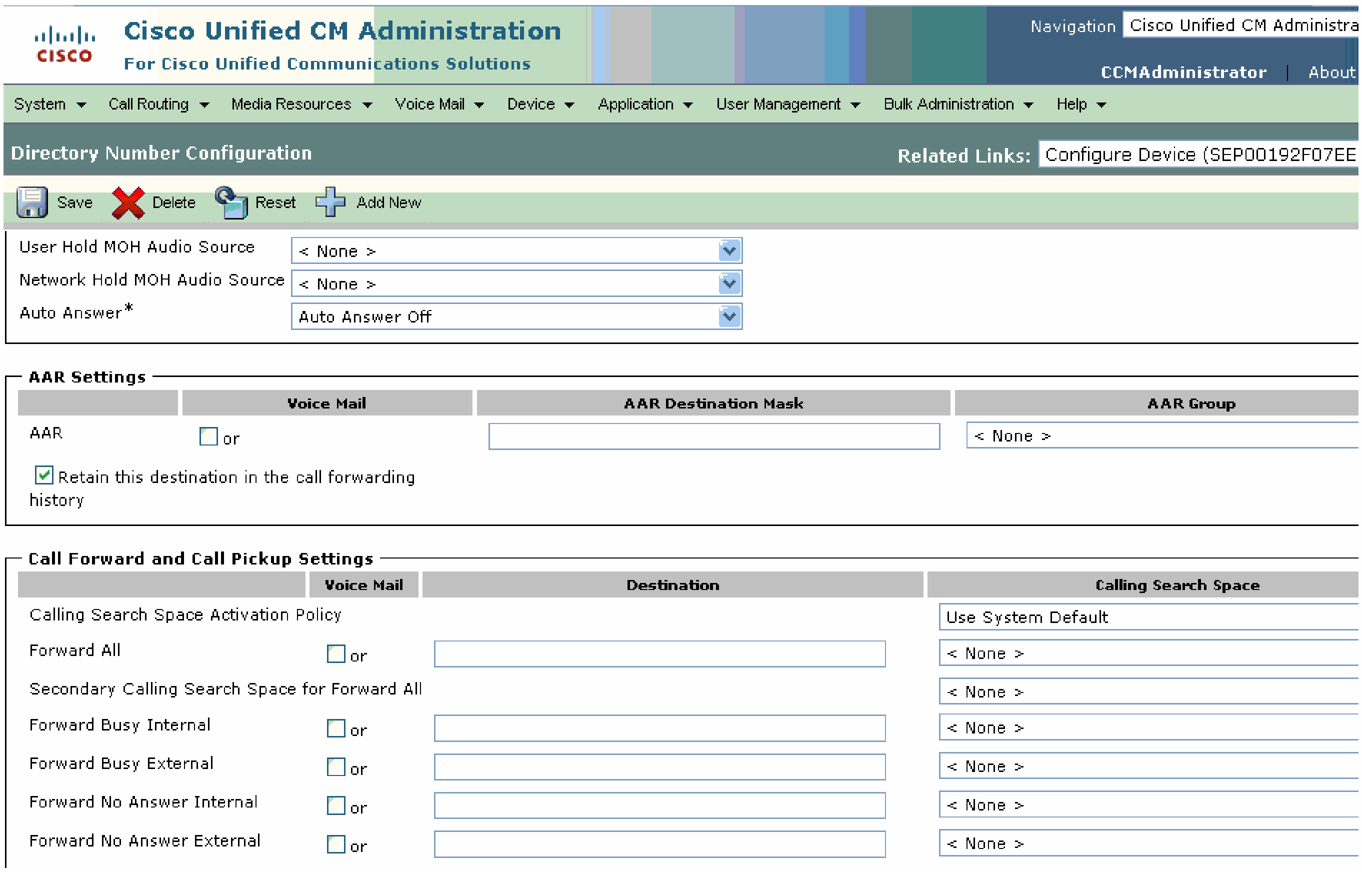
Product Specific Configuration Layout
Disable Speakerphone
Disable Speakerphone and Headset
PC Port * Enabled
Settings Access* Enabled
Gratuitous ARP* Enabled
PC Voice VLAN Access* Enabled
Video Capabilities* Disabled
Auto Line Select* Disabled
Web Access* Enabled
Save
Delete
Copy
Reset
Add New
*- indicates required item.
**- Device reset is not required for changes to Packet Capture Mode and Packet Capture Duration.
***Note: Security Profile Contains Addition CAPF Settings.

Cisco Unified Communications Manager SCCP Phone Directory Number (Ext 3501) Level Configuration

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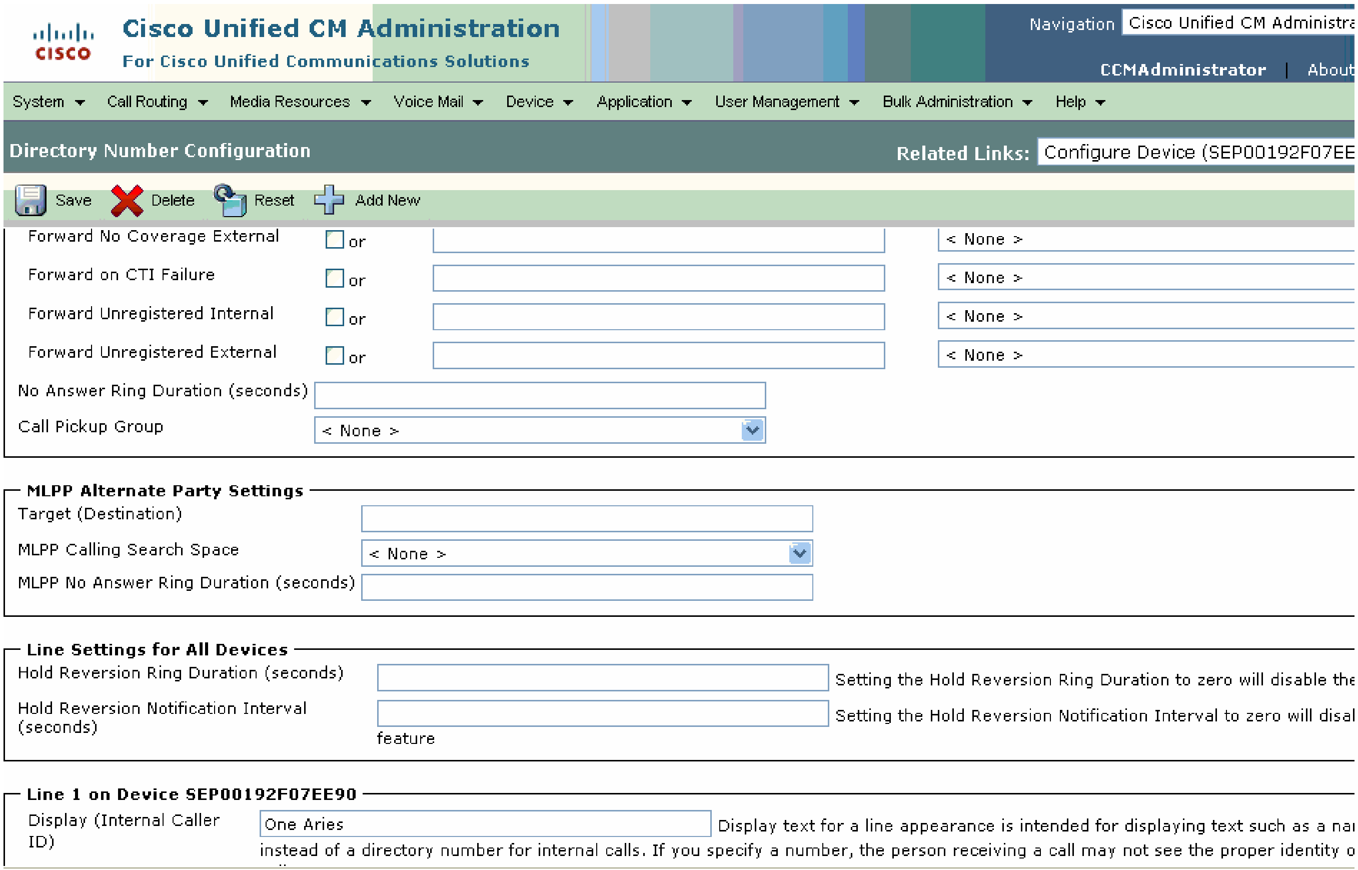
Directory Number Configuration
Related Links: Configure Device (SEP00192F07EE
Save Delete Reset Add New
User Hold MOH Audio Source
< None >
Network Hold MOH Audio Source
< None >
Auto Answer*
Auto Answer Off
AAR Settings
Voice Mail
AAR Destination Mask
AAR Group
AAR
or
< None >
Retain this destination in the call forwarding history
Call Forward and Call Pickup Settings
Voice Mail
Destination
Calling Search Space
Calling Search Space Activation Policy
Use System Default
Forward All
or
< None >
Secondary Calling Search Space for Forward All
< None >
Forward Busy Internal
or
< None >
Forward Busy External
or
< None >
Forward No Answer Internal
or
< None >
Forward No Answer External
or
< None >



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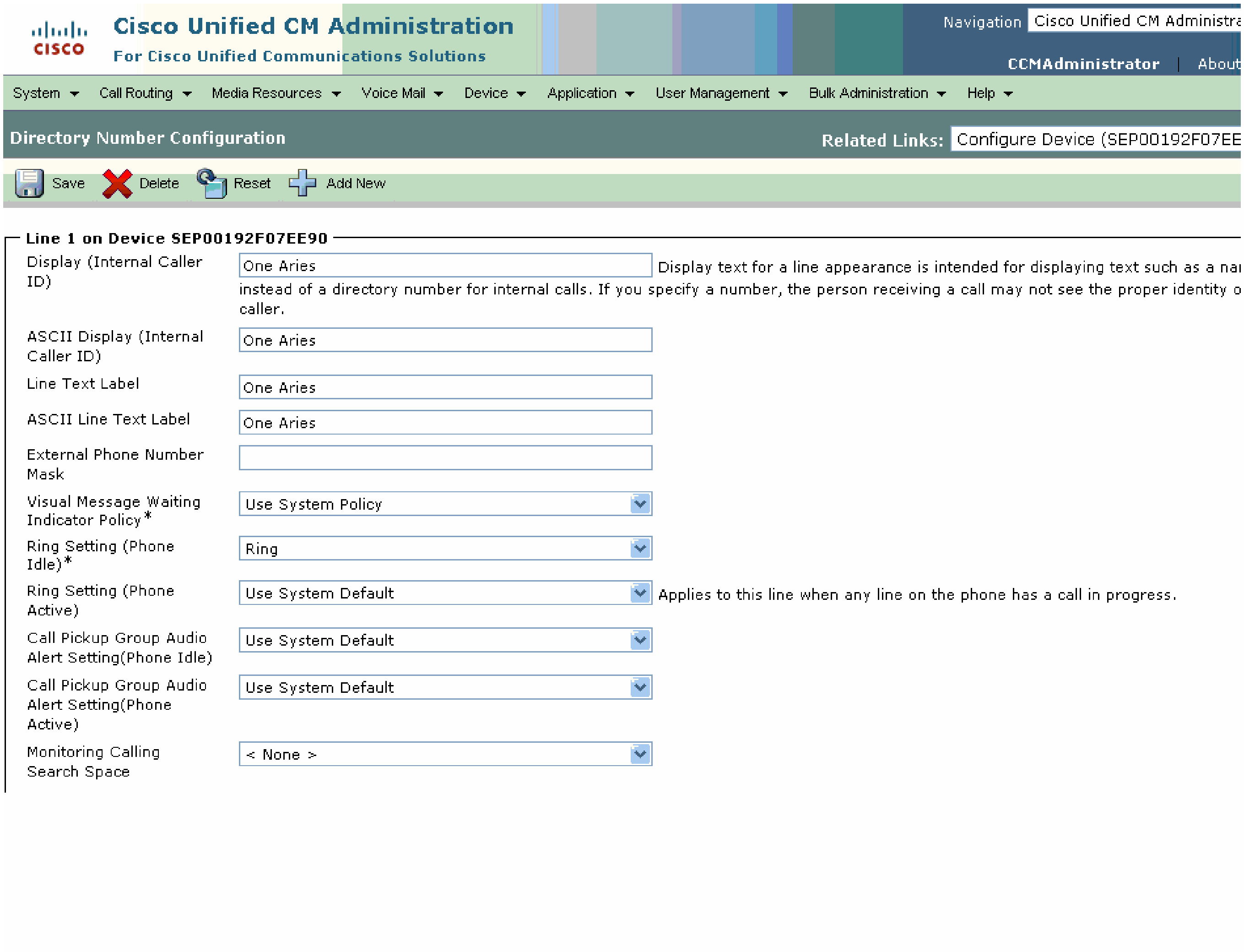
Save
Delete
Reset
Add New
Forward No Coverage External
or
< None >
Forward on CTI Failure
or
< None >
Forward Unregistered Internal
or
< None >
Forward Unregistered External
or
< None >
No Answer Ring Duration (seconds)
Call Pickup Group
< None >
MLPP Alternate Party Settings
Target (Destination)
MLPP Calling Search Space
< None >
MLPP No Answer Ring Duration (seconds)
Line Settings for All Devices
Hold Reversion Ring Duration (seconds)
Setting the Hold Reversion Ring Duration to zero will disable the
Hold Reversion Notification Interval (seconds)
Setting the Hold Reversion Notification Interval to zero will disal
feature
Line 1 on Device SEP00192F07EE90
Display (Internal Caller ID)
One Aries
Display text for a line appearance is intended for displaying text such as a nai
instead of a directory number for internal calls. If you specify a number, the person receiving a call may not see the proper identity o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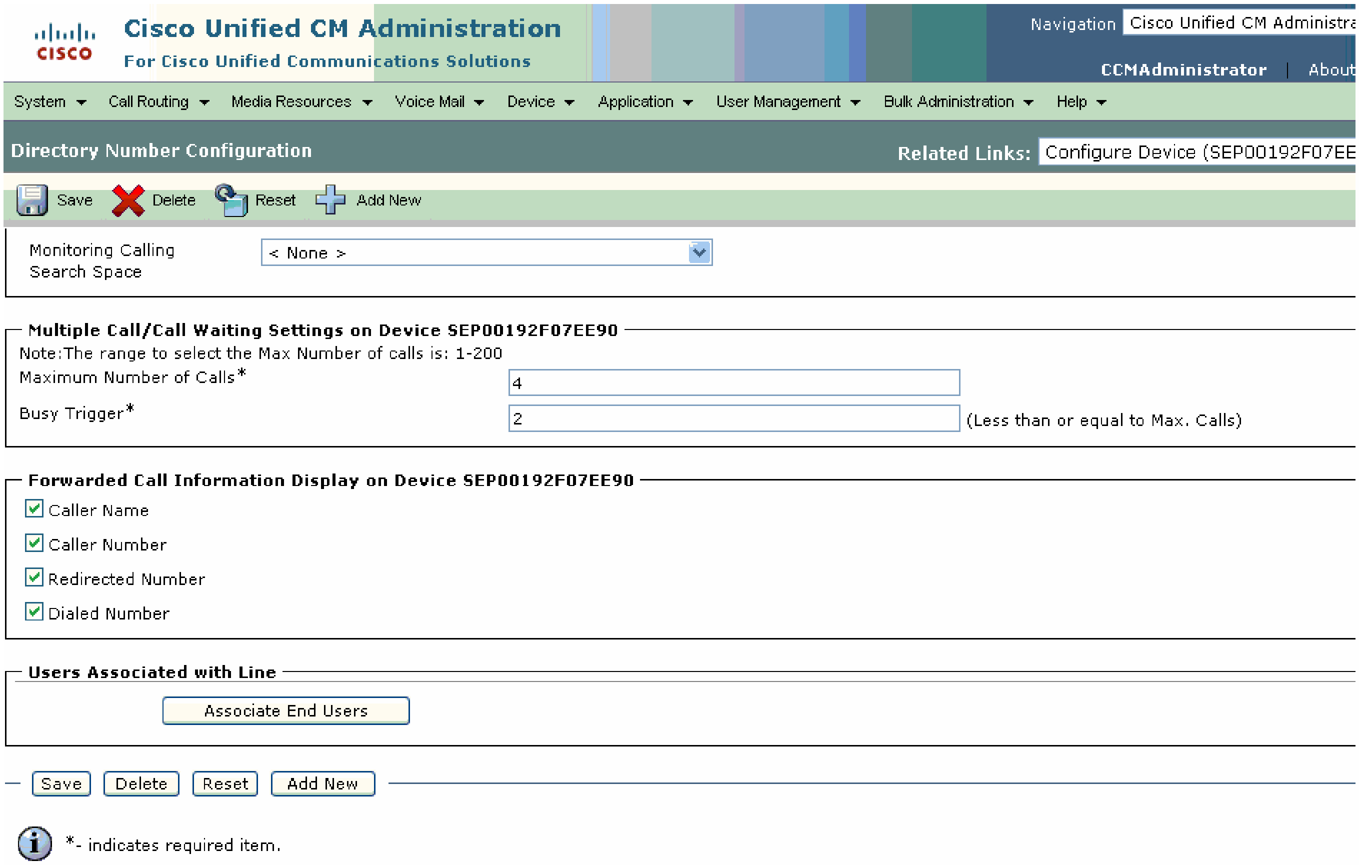
Related Links: Configure Device (SEP00192F07EE
Save Delete Reset Add New
Line 1 on Device SEP00192F07EE90
Display (Internal Caller ID)
One Aries
Display text for a line appearance is intended for displaying text such as a nai instead of a directory number for internal calls. If you specify a number, the person receiving a call may not see the proper identity o caller.
ASCII Display (Internal Caller ID)
One Aries
Line Text Label
One Aries
ASCII Line Text Label
One Aries
External Phone Number Mask
Visual Message Waiting Indicator Policy*
Use System Policy
Ring Setting (Phone Idle)*
Ring
Ring Setting (Phone Active)
Use System Default
Applies to this line when any line on the phone has a call in progress.
Call Pickup Group Audio Alert Setting(Phone Idle)
Use System Default
Call Pickup Group Audio Alert Setting(Phone Active)
Use System Default
Monitoring Calling Search Space
< None >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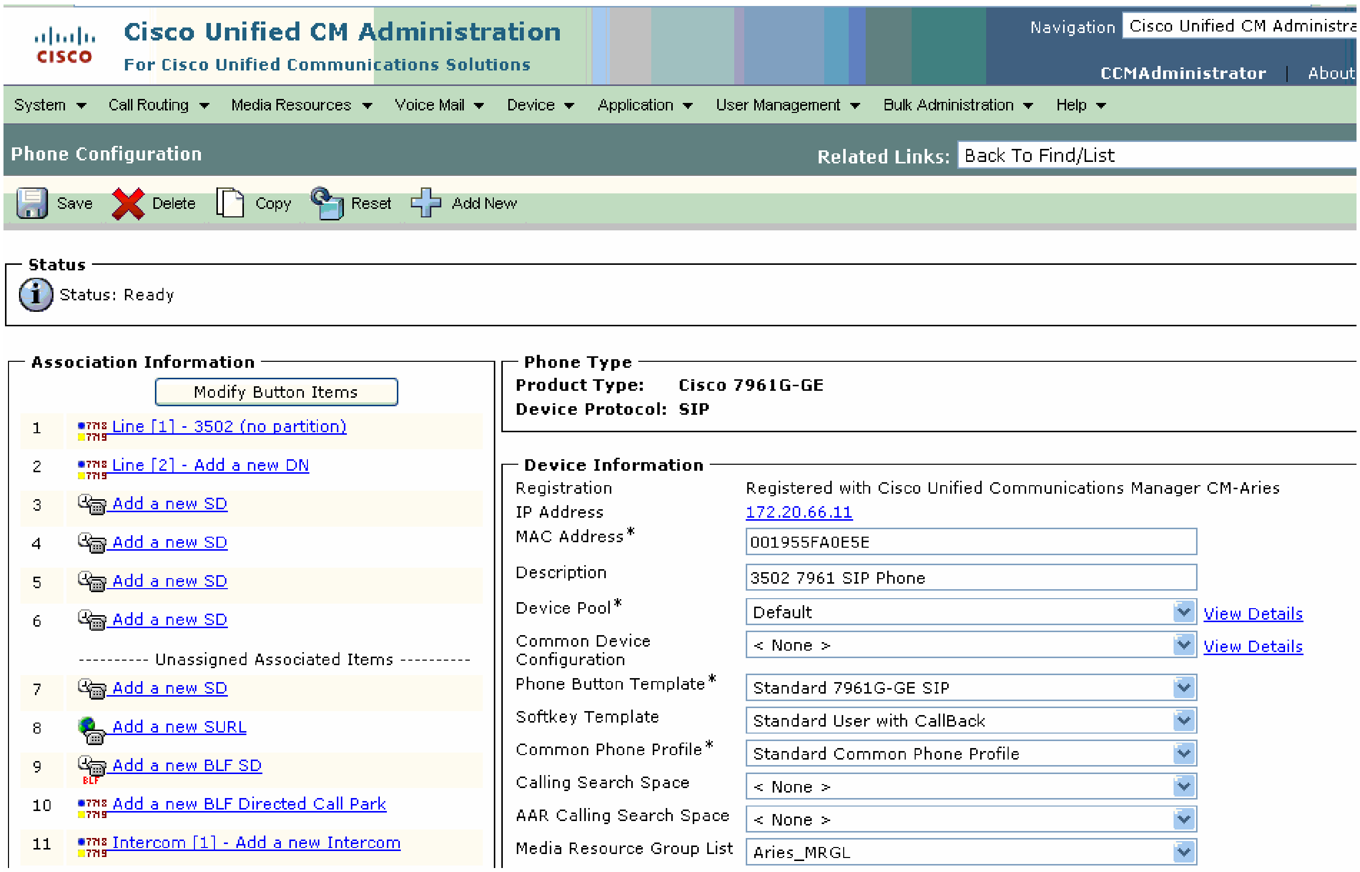
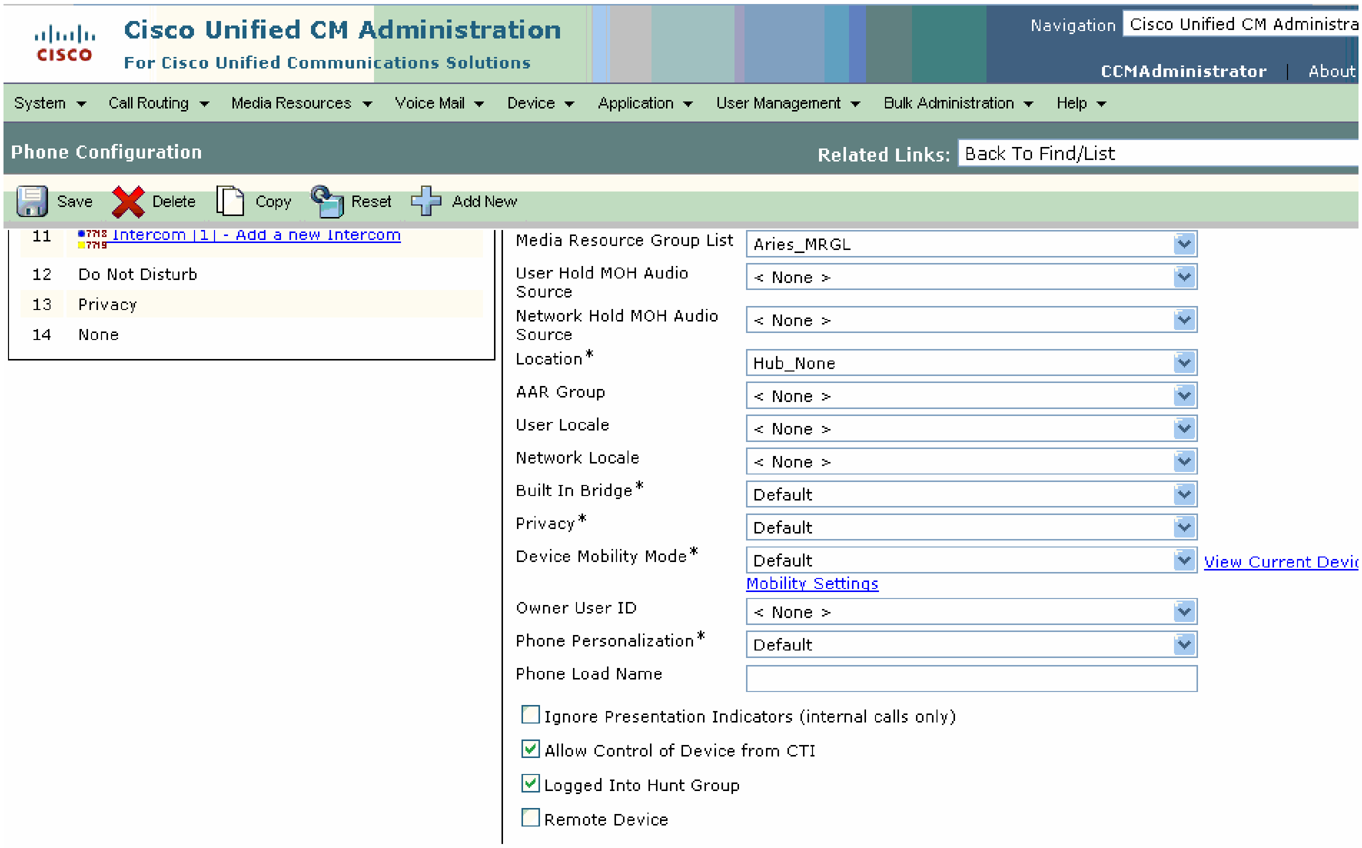
Related Links: Configure Device (SEP00192F07EE
Save Delete Reset Add New
Monitoring Calling Search Space
< None >
Multiple Call/Call Waiting Settings on Device SEP00192F07EE90
Note:The range to select the Max Number of calls is: 1-200
Maximum Number of Calls*
4
Busy Trigger*
2
(Less than or equal to Max. Calls)
Forwarded Call Information Display on Device SEP00192F07EE90
Caller Name
Caller Number
Redirected Number
Dialed Number
Users Associated with Line
Associate End Users
Save Delete Reset Add New
*- indicates required item.

Cisco Unified Communications Manager SIP Phone Level Configuration

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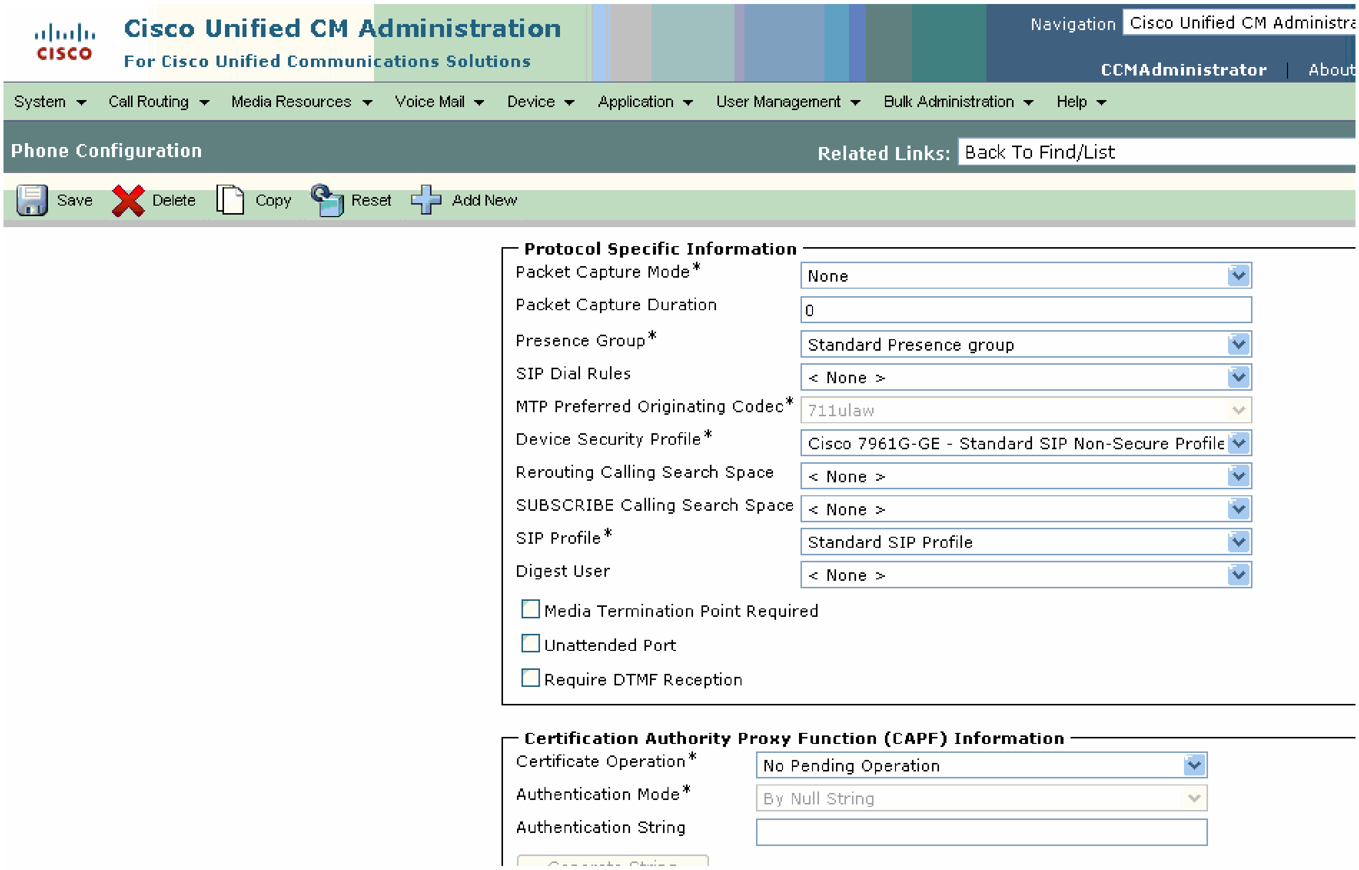
Related Links: Back To Find/List
Save Delete Copy Reset Add New
11 Intercom [1] - Add a new Intercom
12 Do Not Disturb
13 Privacy
14 None
Media Resource Group List Aries_MRGL
User Hold MOH Audio Source < None >
Network Hold MOH Audio Source < None >
Location* Hub_None
AAR Group < None >
User Locale < None >
Network Locale < None >
Built In Bridge* Default
Privacy* Default
Device Mobility Mode* Default View Current Devic
Mobility Settings
Owner User ID < None >
Phone Personalization* Default
Phone Load Name
Ignore Presentation Indicators (internal calls only)
Allow Control of Device from CTI
Logged Into Hunt Group
Remote Device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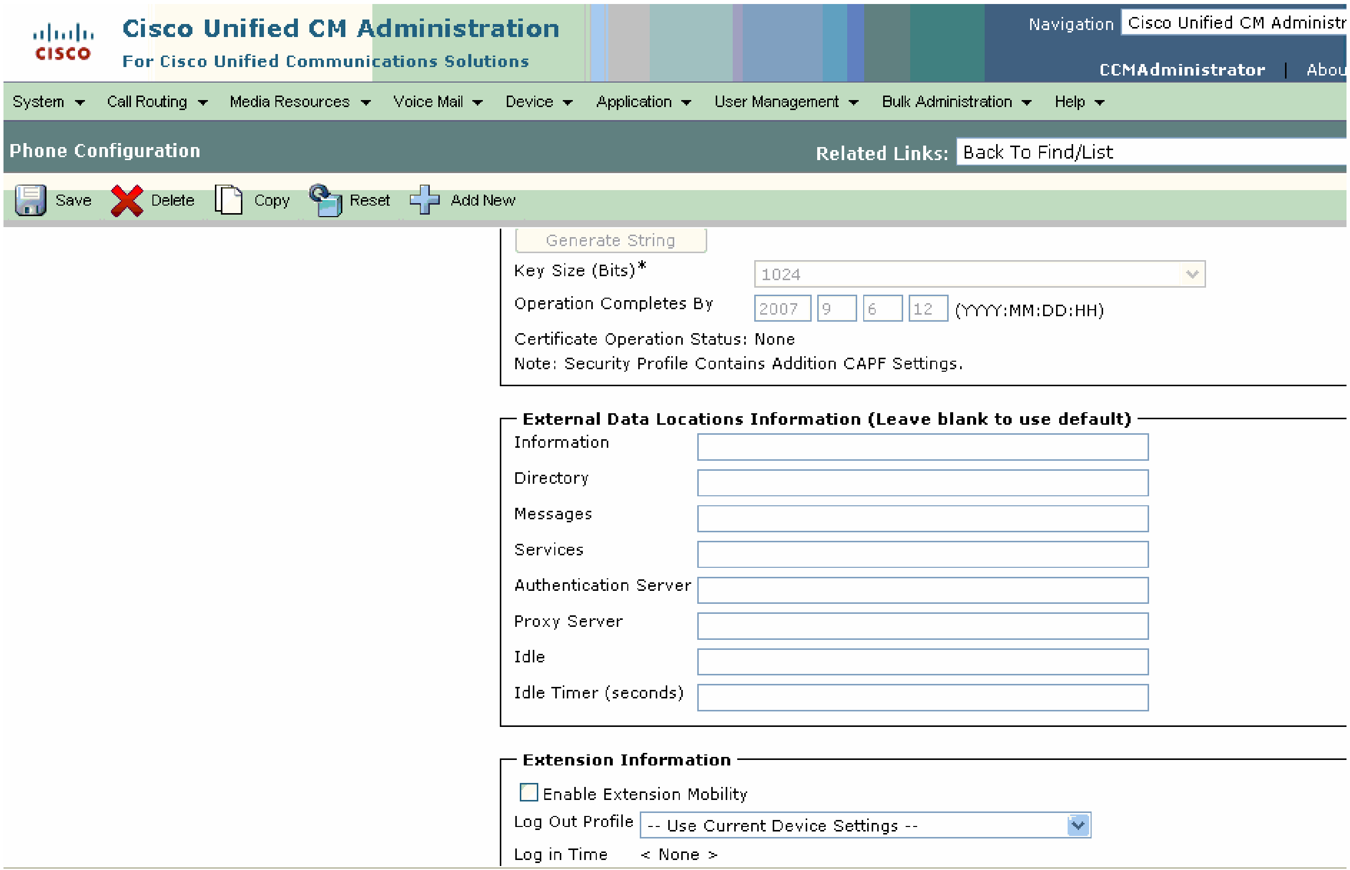
Phone Configuration
Related Links: Back To Find/List
Save Delete Copy Reset Add New
Protocol Specific Information
Packet Capture Mode* None
Packet Capture Duration 0
Presence Group* Standard Presence group
SIP Dial Rules < None >
MTP Preferred Originating Codec* 711ulaw
Device Security Profile* Cisco 7961G-GE - 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



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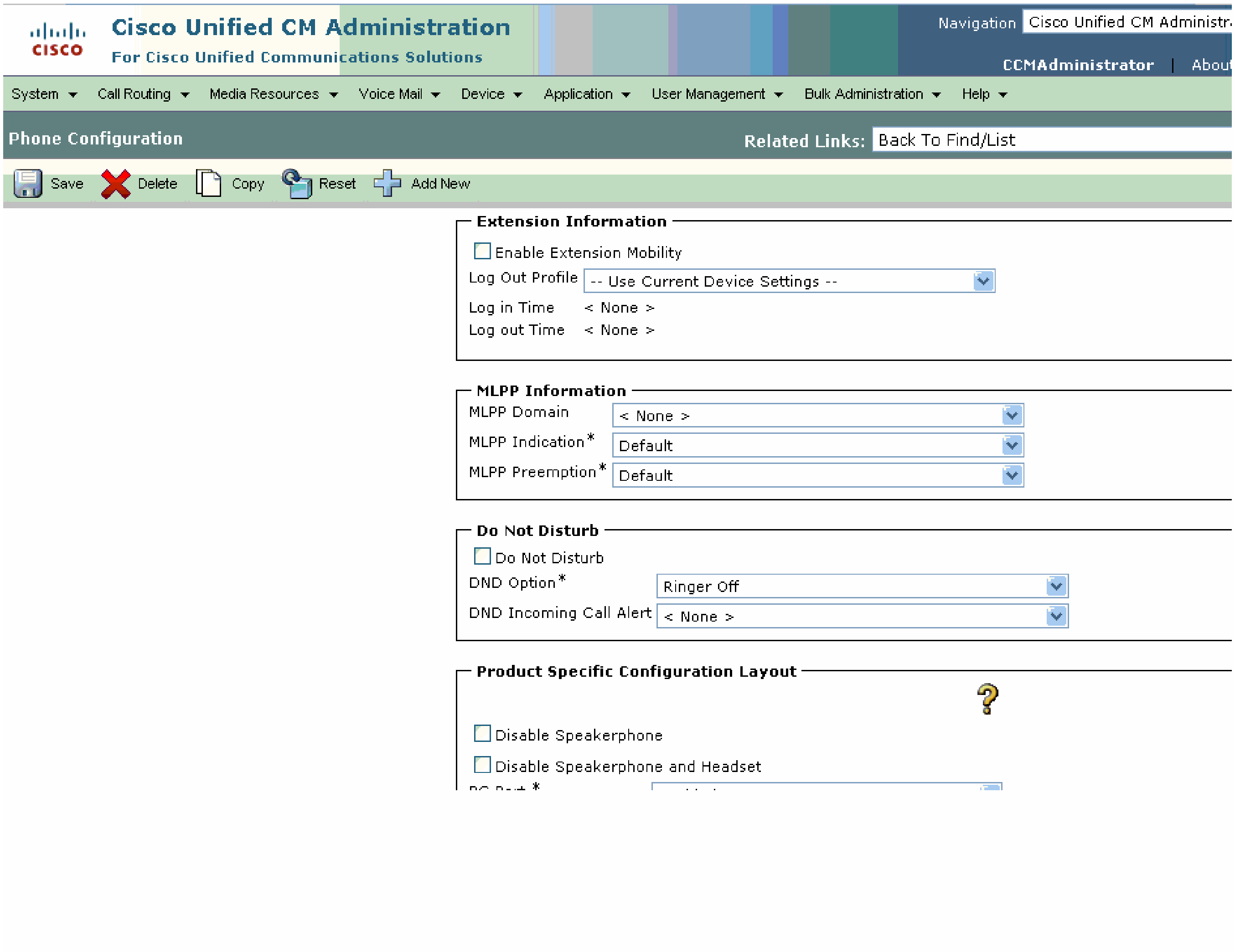
Save
Delete
Copy
Reset
Add New
Generate String
Key Size (Bits)*
1024
Operation Completes By
2007
9
6
12
(YYYY:MM:DD:HH)
Certificate Operation Status: None
Note: Security Profile Contains Addition CAPF Settings.
External Data Locations Information (Leave blank to use default)
Information
Directory
Messages
Services
Authentication Server
Proxy Server
Idle
Idle Timer (seconds)
Extension Information
Enable Extension Mobility
Log Out Profile
-- Use Current Device Settings --
Log in Time
< None >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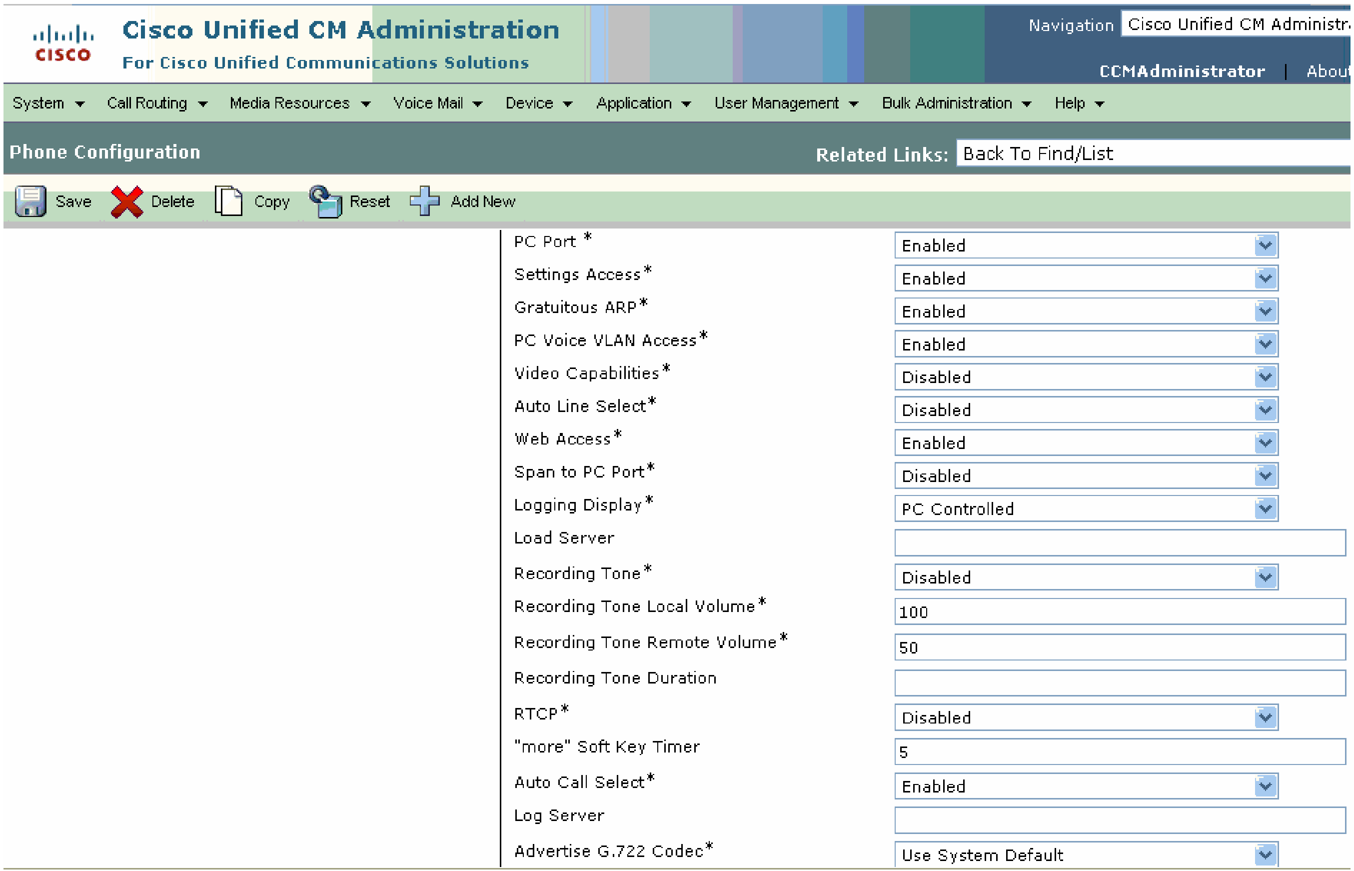
Reset
Add New
Extension Information
Enable Extension Mobility
Log Out Profile -- Use Current Device Settings --
Log in Time < None >
Log out Time < None >
MLPP Information
MLPP Domain < None >
MLPP Indication* Default
MLPP Preemption* Default
Do Not Disturb
Do Not Disturb
DND Option* Ringer Off
DND Incoming Call Alert < None >
Product Specific Configuration Layout
Disable Speakerphone
Disable Speakerphone and Headset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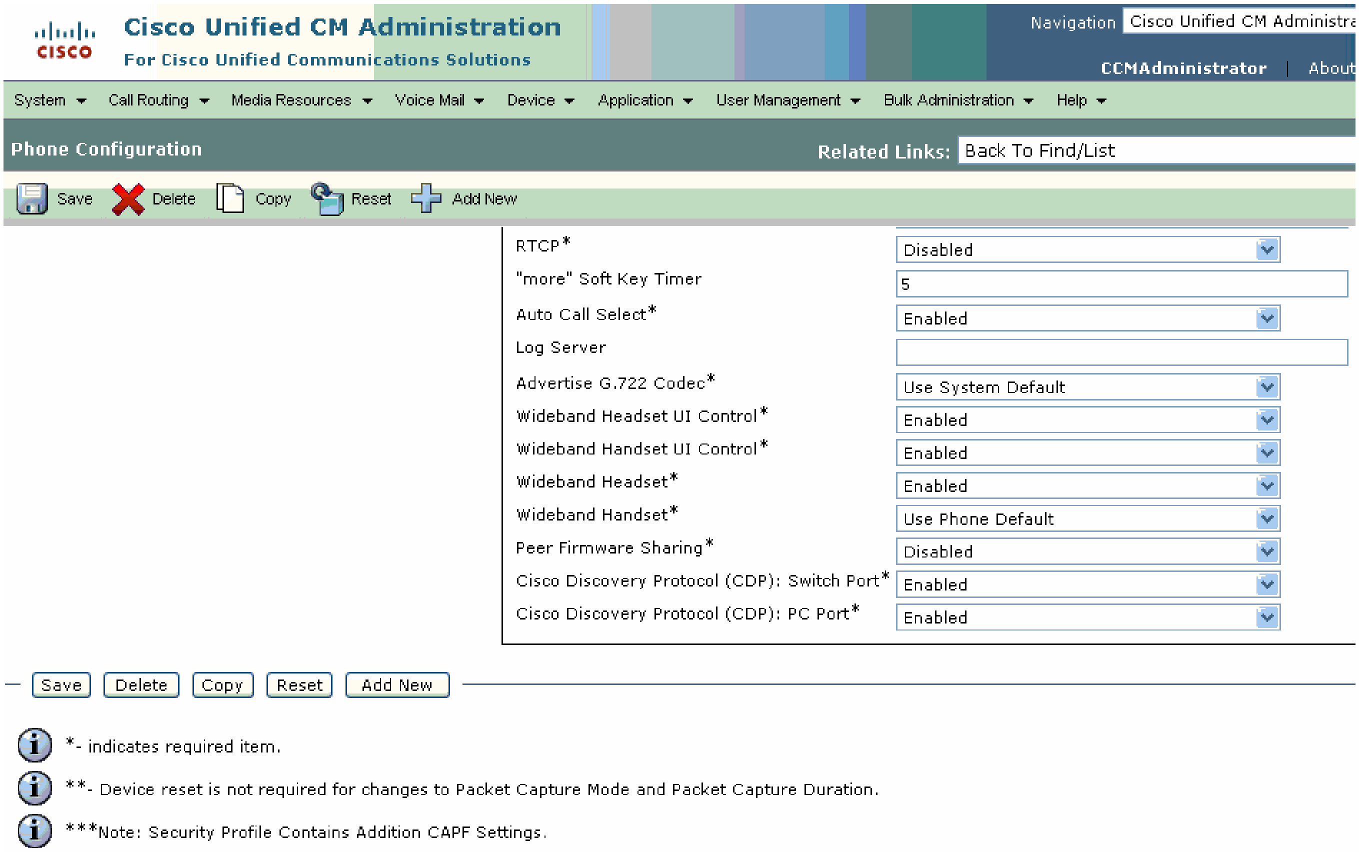
Add New
PC Port * Enabled
Settings Access* Enabled
Gratuitous ARP* Enabled
PC Voice VLAN Access* Enabled
Video Capabilities* Disabled
Auto Line Select* Disabled
Web Access* Enabled
Span to PC Port* Disabled
Logging Display* PC Controlled
Load Server
Recording Tone* Disabled
Recording Tone Local Volume* 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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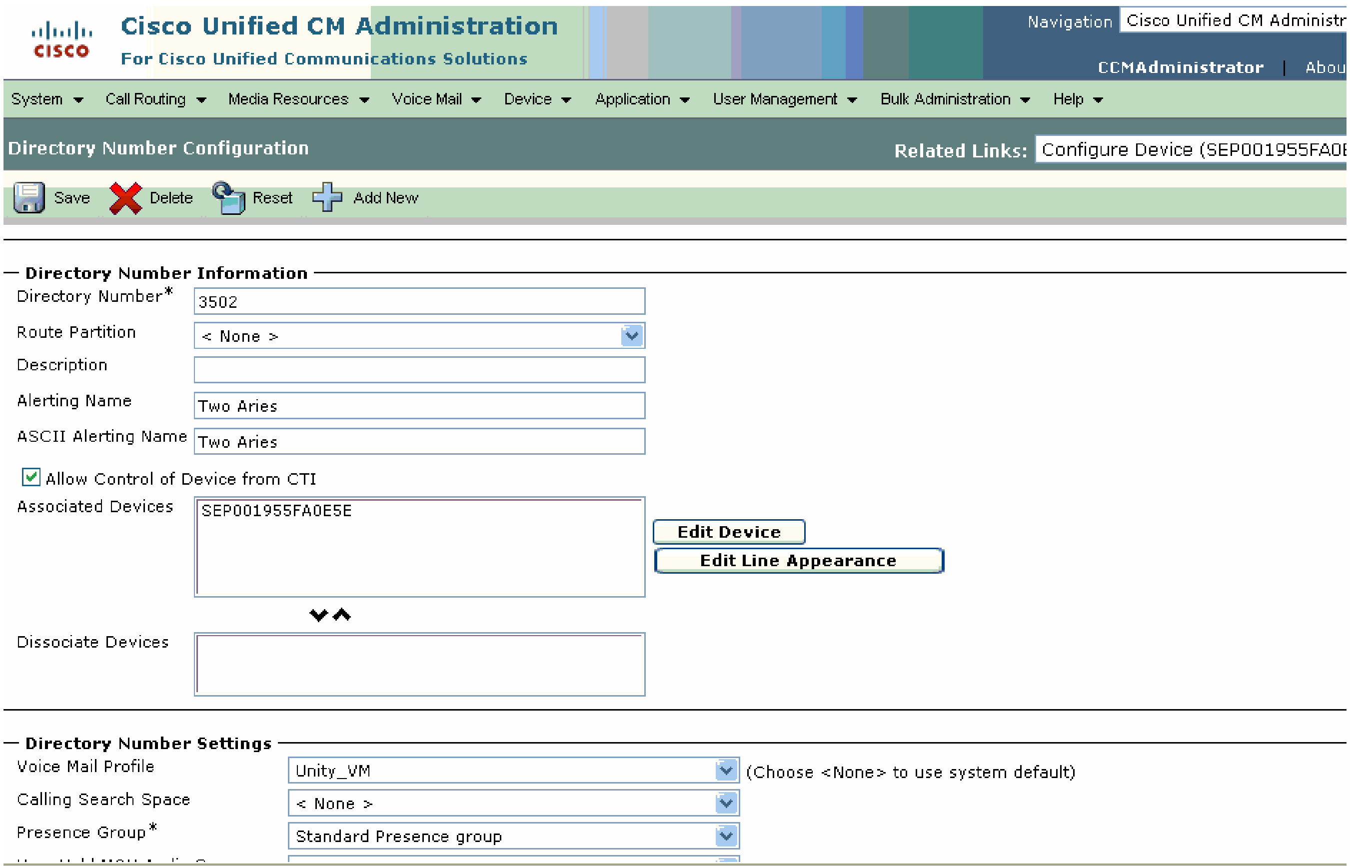
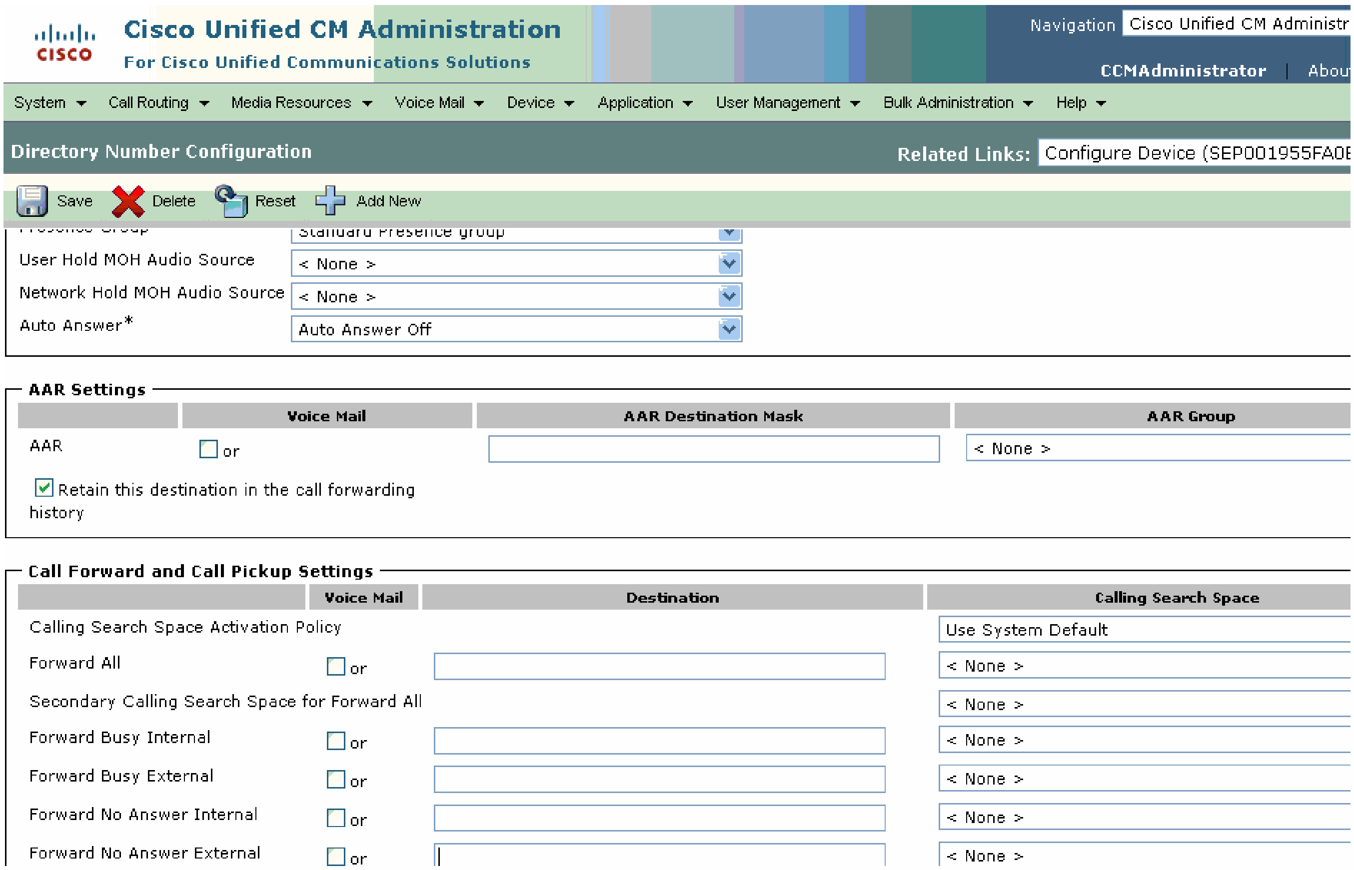
RTCP* Disabled
"more" Soft Key Timer 5
Auto Call Select* Enabled
Log Server
Advertise G.722 Codec* Use System Default
Wideband Headset UI Control* Enabled
Wideband Handset UI Control* Enabled
Wideband Headset* Enabled
Wideband Handset* Use Phone Default
Peer Firmware Sharing* Disabled
Cisco Discovery Protocol (CDP): Switch Port* Enabled
Cisco Discovery Protocol (CDP): PC Port* Enabled
Save Delete Copy Reset Add New
*- indicates required item.
**- Device reset is not required for changes to Packet Capture Mode and Packet Capture Duration.
***Note: Security Profile Contains Addition CAPF Settings.

Cisco Unified Communications Manager SIP Phone Directory Number (Ext 3502) Level Configuration

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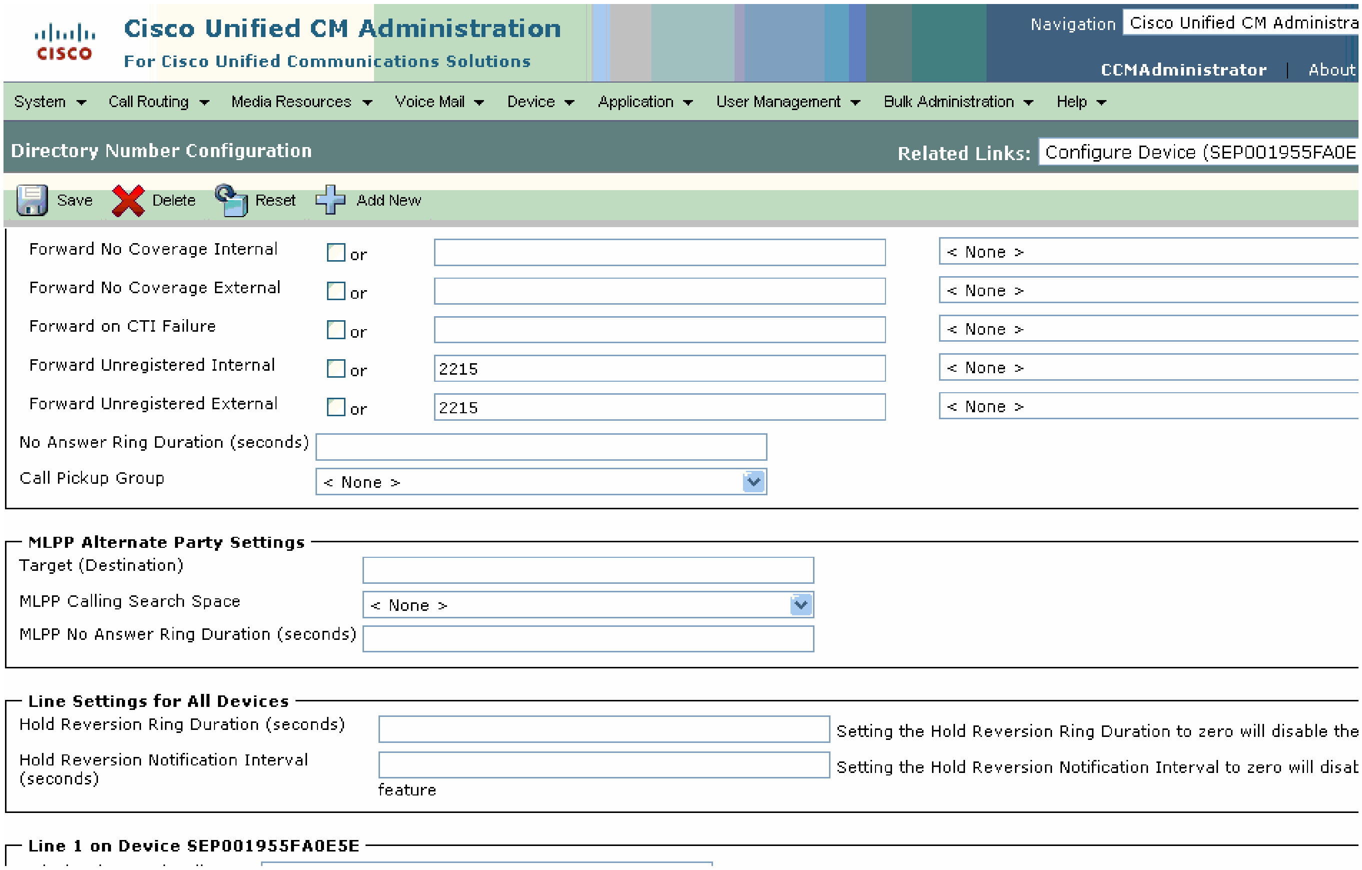
Directory Number Configuration
Related Links: Configure Device (SEP001955FA0E
Save Delete Reset Add New
User Hold MOH Audio Source
< None >
Network Hold MOH Audio Source
< None >
Auto Answer*
Auto Answer Off
AAR Settings
Voice Mail
AAR Destination Mask
AAR Group
AAR
or
< None >
Retain this destination in the call forwarding history
Call Forward and Call Pickup Settings
Voice Mail
Destination
Calling Search Space
Calling Search Space Activation Policy
Use System Default
Forward All
or
< None >
Secondary Calling Search Space for Forward All
< None >
Forward Busy Internal
or
< None >
Forward Busy External
or
< None >
Forward No Answer Internal
or
< None >
Forward No Answer External
or
< None >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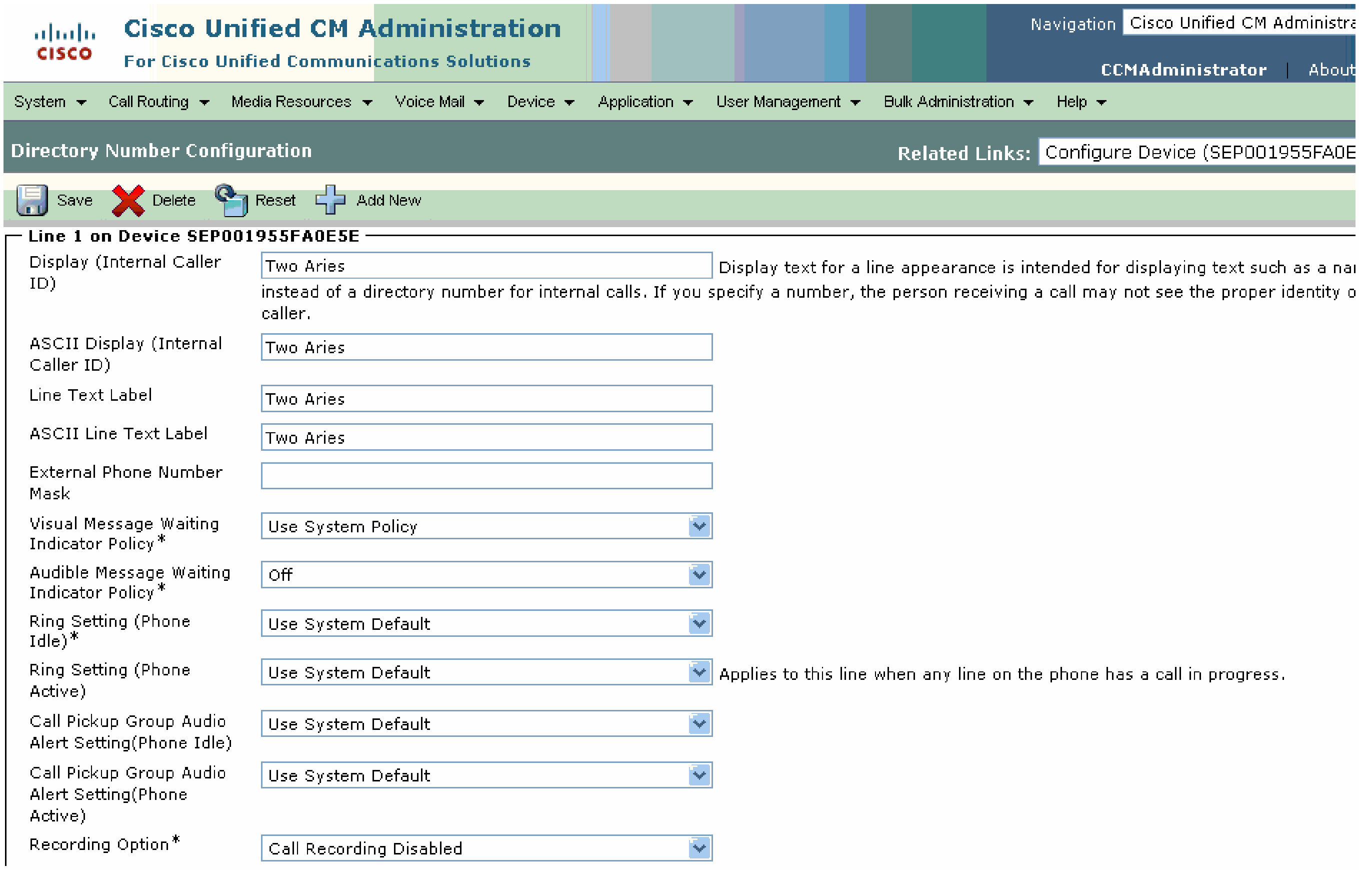
Save Delete Reset Add New
Forward No Coverage Internal or < None >
Forward No Coverage External or < None >
Forward on CTI Failure or < None >
Forward Unregistered Internal or 2215 < None >
Forward Unregistered External or 2215 < None >
No Answer Ring Duration (seconds)
Call Pickup Group < None >
MLPP Alternate Party Settings
Target (Destination)
MLPP Calling Search Space < None >
MLPP No Answer Ring Duration (seconds)
Line Settings for All Devices
Hold Reversion Ring Duration (seconds) Setting the Hold Reversion Ring Duration to zero will disable the
Hold Reversion Notification Interval (seconds) Setting the Hold Reversion Notification Interval to zero will disab
feature
Line 1 on Device SEP001955FA0E5E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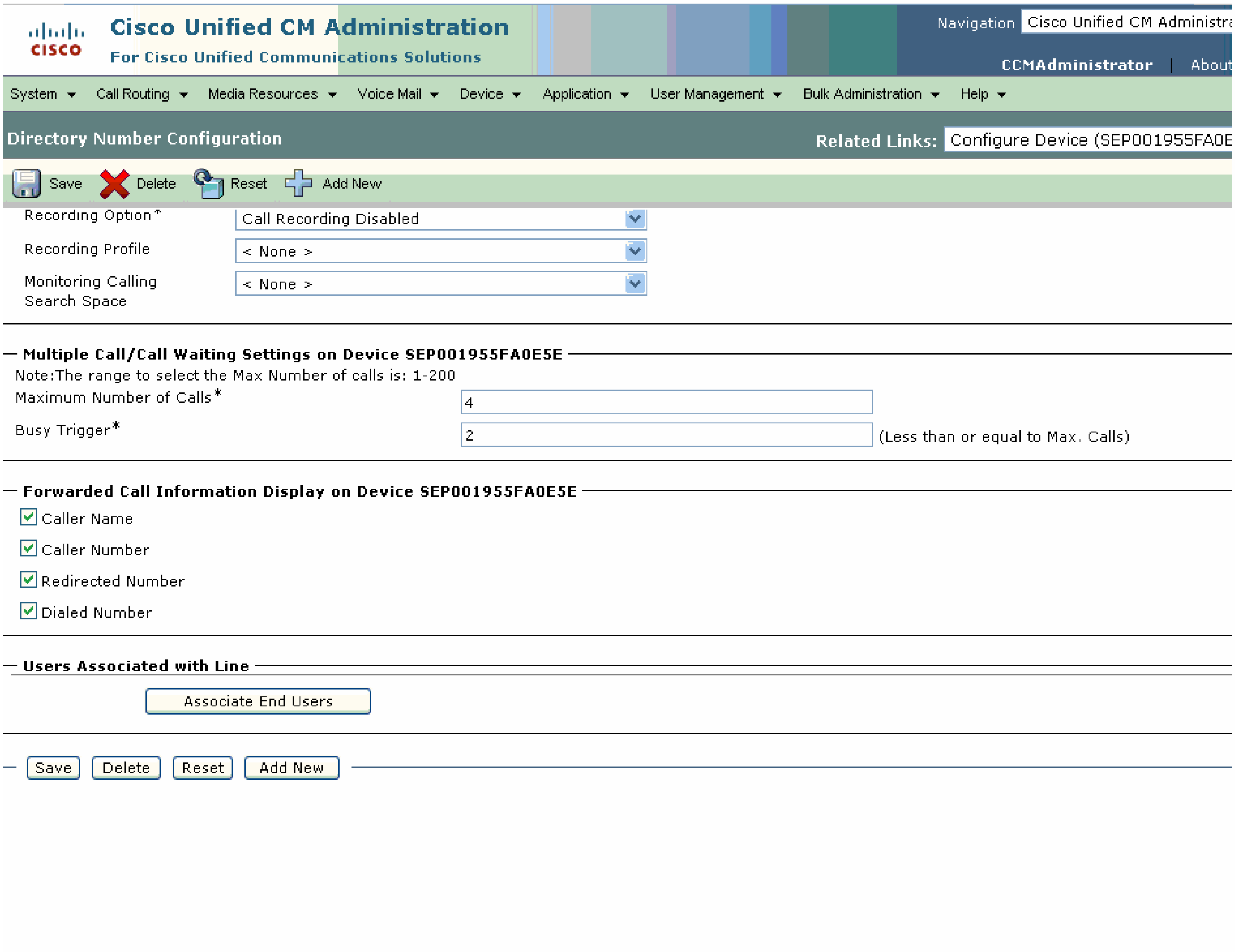
Related Links: Configure Device (SEP001955FA0E
Save Delete Reset Add New
Line 1 on Device SEP001955FA0E5E
Display (Internal Caller ID)
Two Aries
Display text for a line appearance is intended for displaying text such as a nai instead of a directory number for internal calls. If you specify a number, the person receiving a call may not see the proper identity o caller.
ASCII Display (Internal Caller ID)
Two Aries
Line Text Label
Two Aries
ASCII Line Text Label
Two Aries
External Phone Number Mask
Visual Message Waiting Indicator Policy*
Use System Policy
Audible Message Waiting Indicator Policy*
Off
Ring Setting (Phone Idle)*
Use System Default
Ring Setting (Phone Active)
Use System Default
Applies to this line when any line on the phone has a call in progress.
Call Pickup Group Audio Alert Setting(Phone Idle)
Use System Default
Call Pickup Group Audio Alert Setting(Phone Active)
Use System Default
Recording Option*
Call Recording Disabled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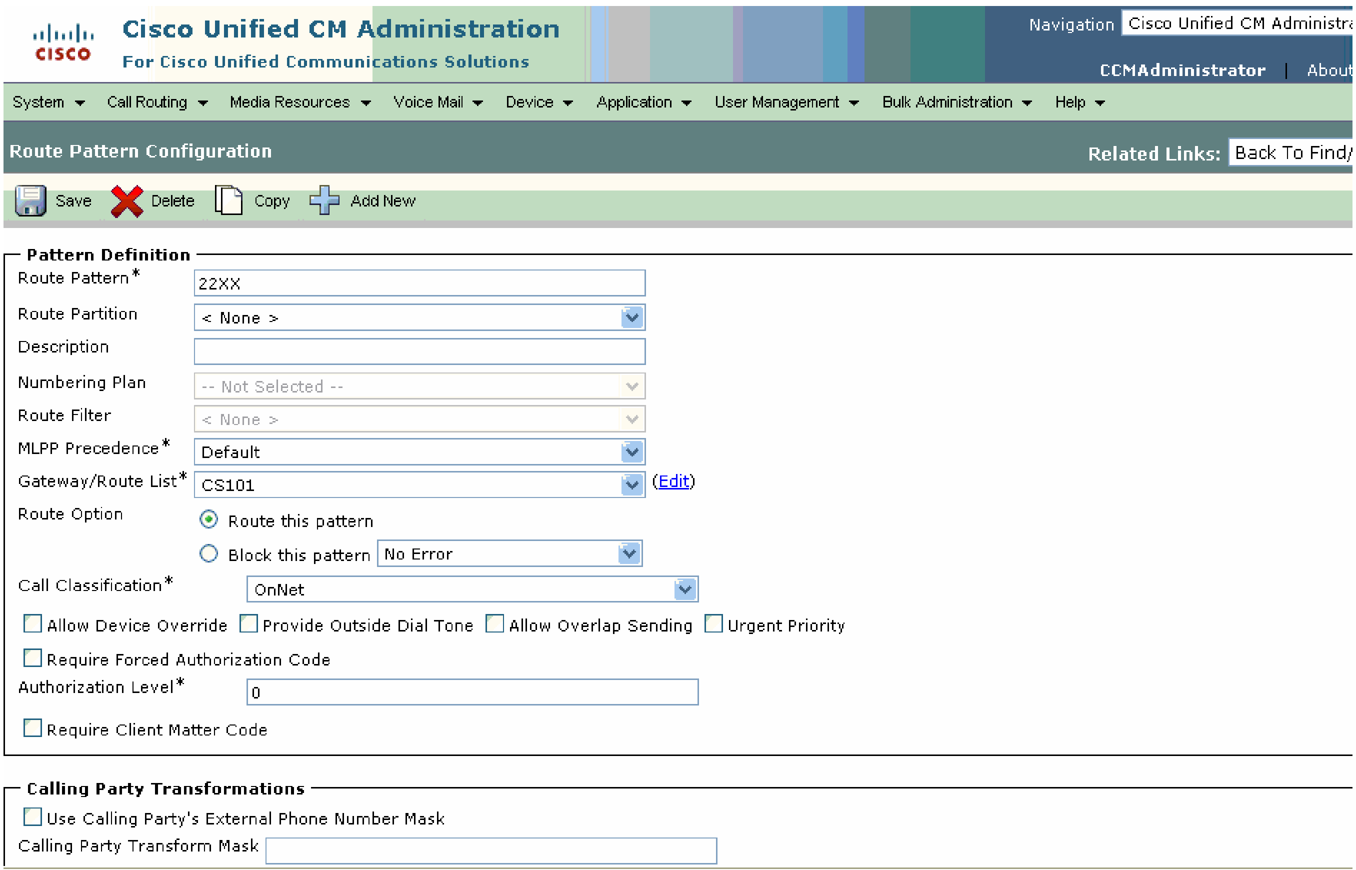
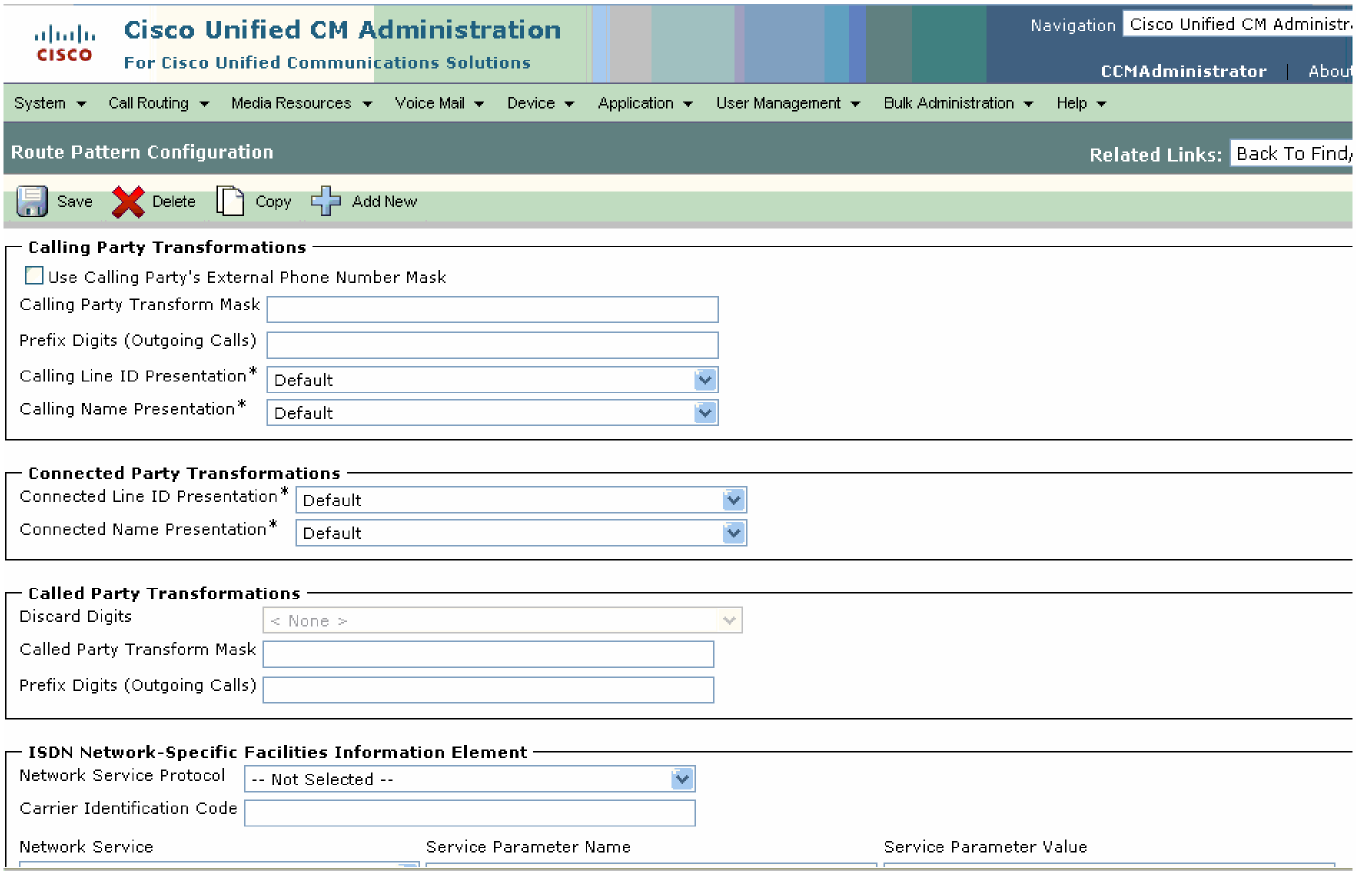
Related Links: Configure Device (SEP001955FA0E
Save Delete Reset Add New
Recording Option*
Call Recording Disabled
Recording Profile
< None >
Monitoring Calling Search Space
< None >
Multiple Call/Call Waiting Settings on Device SEP001955FA0E5E
Note:The range to select the Max Number of calls is: 1-200
Maximum Number of Calls*
4
Busy Trigger*
2
(Less than or equal to Max. Calls)
Forwarded Call Information Display on Device SEP001955FA0E5E
Caller Name
Caller Number
Redirected Number
Dialed Number
Users Associated with Line
Associate End Users
Save Delete Reset Add New

Cisco Unified Communications Manager Route Pattern (22XX) to Nortel PBX extensions Configuration





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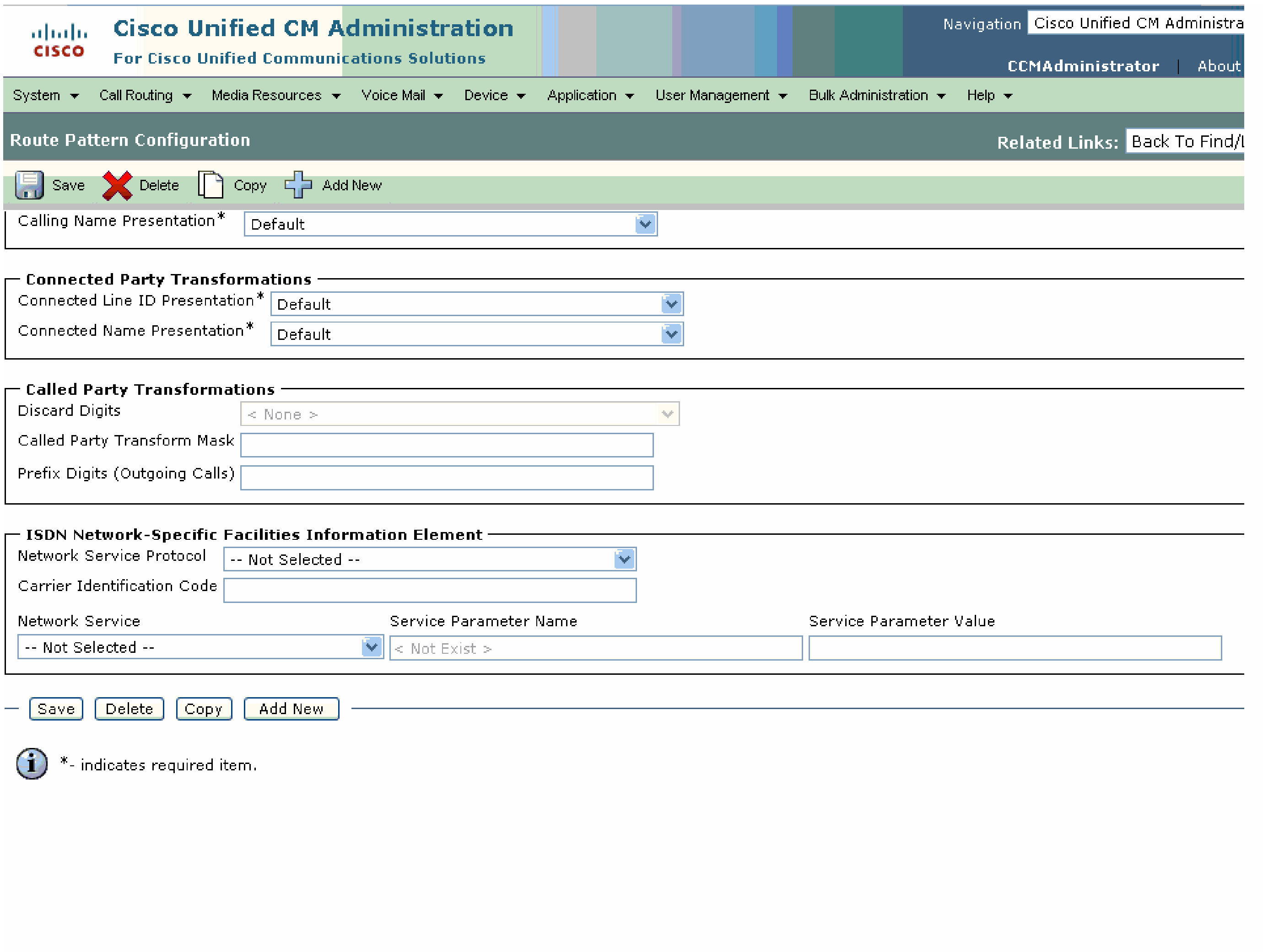
Use Calling Party's External Phone Number Mask
Calling Party Transform Mask
Prefix Digits (Outgoing Calls)
Calling Line ID Presentation*
Default
Calling Name Presentation*
Default
Connected Party Transformations
Connected Line ID Presentation*
Default
Connected Name Presentation*
Default
Called Party Transformations
Discard Digits
< None >
Called Party Transform Mask
Prefix Digits (Outgoing Calls)
ISDN Network-Specific Facilities Information Element
Network Service Protocol
-- Not Selected --
Carrier Identification Code
Network Service
Service Parameter Name
Service Parameter Value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Related Links: Back To Find/L
Save Delete Copy Add New
Calling Name Presentation* Default
Connected Party Transformations
Connected Line ID Presentation* Default
Connected Name Presentation* Default
Called Party Transformations
Discard Digits < None >
Called Party Transform Mask
Prefix Digits (Outgoing Calls)
ISDN Network-Specific Facilities Information Element
Network Service Protocol -- Not Selected --
Carrier Identification Code
Network Service
Service Parameter Name
Service Parameter Value
-- Not Selected --
< Not Exist >
Save Delete Copy Add New
*- indicates required item.

Acronyms

Acronym	Definitions
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
CUCM	Cisco Unified Communications Manager
DNS	Domain Name Server
FQDN	Fully Qualified Domain Name
MWI	Message Waiting Indicator
PSTN	Public Switched Telephone Network
SIP	Session Initiated Protocol

Important Information

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Test Results

Testing was performed by Filli Cruz (August 2007)

Table 1. Basic Calls (Enbloc Sending)

Calls Made	Call Comp.?	Calling Number Displayed on Final Destination?	Calling Name Displayed on Final Destination?	Called Number Displayed on Orig. Side?	Called Name Displayed on Orig. Side?
Phone A1 to Phone C1	Yes	Yes[1]	Yes[1]	Yes[2]	No
Phone A1 to Phone C2	Yes	Yes[1]	Yes[1]	Yes[2]	No
Phone C1 to Phone A1	Yes	Yes[1]	Yes[1]	Yes[2]	No
Phone C2 to Phone A1	Yes	Yes[1]	Yes[1]	Yes[2]	No
Phone A2 to Phone C1	Yes	Yes[1]	Yes[1]	Yes[2]	No
Phone A2 to Phone C2	Yes	Yes[1]	Yes[1]	Yes[2]	No
Phone C1 to Phone A2	Yes	Yes[1]	Yes[1]	Yes[2]	No
Phone C2 to Phone A2	Yes	Yes[1]	Yes[1]	Yes[2]	No

[1] Nortel use P-Asserted-Id (PAI) field to pass the name and number information across SIP Trunk while Cisco Unified Communications Manager (CUCM) uses the Remote-Party-Id (RPID).
[2] Original calling party phone display dialed number

Table 2. Basic Calls with Calling Name and Number Restrictions

Calls Made	Call Comp.?	Calling Number Restriction was honored at Final Destination?	Calling Name Restriction was honored at Final Destination?	Called Number Displayed on Orig. Side?	Called Name Displayed on Orig. Side?
Phone A1 to Phone C1 Phone A1 restricting Calling Name and Number	Yes	Yes[3]	Yes[3]	Yes[2]	No
Phone A1 to Phone C2 Phone A1 restricting Calling Name and Number	Yes	Yes[3]	Yes[3]	Yes[2]	No
Phone C1 to Phone A1 Phone C1 restricting Calling Name and Number	Yes	Yes[3]	Yes[3]	Yes[2]	No
Phone C2 to Phone A1 Phone C2 restricting Calling Name and Number	Yes	Yes[3]	Yes[3]	Yes[2]	No
Phone A2 to Phone C1 Phone A2 restricting Calling Name and Number	Yes	Yes[3]	Yes[3]	Yes[2]	No
Phone A2 to Phone C2 Phone A2 restricting Calling Name and Number	Yes	Yes[3]	Yes[3]	Yes[2]	No
Phone C1 to Phone A2 Phone C1 restricting Calling Name and Number	Yes	Yes[3]	Yes[3]	Yes[2]	No
Phone C2 to Phone A2 Phone C2 restricting Calling Name and Number	Yes	Yes[3]	Yes[3]	Yes[2]	No

[3] Nortel use P-Asserted-Id (PAI) field to pass the name and number information across SIP Trunk while Cisco Unified Communications Manager (CUCM) uses the Remote-Party-Id (RPID). When retricting calling and name and number, the Nortel sets privacy parameter in PAI field as USER versus NONE when name and number is allowed. On the other hand, CUCM sets privacy parameter in its RPID field as FULL when restricting name and number versus OFF when name and number is allowed. Due to this difference, both systems extracted the calling party name and number information from the SIP From header of the incoming SIP INVITE message which has <sip:anonymous@anonymous.invalid> from Nortel and <sip:anonymous@anonymous.ip address> .from CUCM.
For Nortel PBX name and number restriction, change the phone CLS setting to DDGD and NAMD under LD11. For CUCM name and number restriction, this is done on the SIP trunk.

Table 3. Basic Calls with Connected Name and Number Restrictions

Calls Made	Call Comp.?	Calling Number Displayed on Final Destination?	Calling Name Displayed on Final Destination?	Connected Number Restriction was honored at Orig. Side?	Connected Name Restriction was honored at Orig. Side?	Notes
Phone A1 to Phone C1 Phone C1 restricting Connected Name and Number	Yes	Yes	Yes	No[4]	No[4]	
Phone A1 to Phone C2 Phone C2 restricting Connected Name and Number	Yes	Yes	Yes	No[4]	No[4]	
Phone C1 to Phone A1 Phone A1 restricting Connected Name and Number	Yes	Yes	Yes	No[4]	No[4]	
Phone C2 to Phone A1 Phone A1 restricting Connected Name and Number	Yes	Yes	Yes	No[4]	No[4]	
Phone A2 to Phone C1 Phone C1 restricting Connected Name and Number	Yes	Yes	Yes	No[4]	No[4]	
Phone A2 to Phone C2 Phone C2 restricting Connected Name and Number	Yes	Yes	Yes	No[4]	No[4]	
Phone C1 to Phone A2 Phone A2 restricting Connected Name and Number	Yes	Yes	Yes	No[4]	No[4]	
Phone C2 to Phone A2 Phone A2 restricting Connected Name and Number	Yes	Yes	Yes	No[4]	No[4]	

[4] CUCM restriction is set under the SIP Trunk configuration. RPID privacy parameter is set to FULL. (Note: When name and number is allowed, privacy parameter is set to OFF). Nortel restriction is set under the phone CLS setting to DDGD and NAMD under LD11. PAI privacy parameter is set to USER. (Note: When name and number is allowed, privacy paramter is set to NONE). Due to the difference in the name and number delivery method, connected name and number restriction is not honored between the two systems.

Table 4. Alerting Name

Calls Made	Call Setup Comp.?	Alerting Name was sent by Final Destination during Alerting (ringing)?	Alerting Name was displayed on Orig. Side during Alerting (ringing)?
Phone A1 to Phone C1 **Phone C1 does not answer**	Yes	Yes	No[1]
Phone A1 to Phone C2 **Phone C2 does not answer**	Yes	Yes	No[1]
Phone C1 to Phone A1 **Phone A1 does not answer**	Yes	No[5]	No[1]
Phone C2 to Phone A1 **Phone A1 does not answer**	Yes	No[5]	No[1]
Phone A2 to Phone C1 **Phone C1 does not answer**	Yes	Yes	No[1]
Phone A2 to Phone C2 **Phone C2 does not answer**	Yes	Yes	No[1]
Phone C1 to Phone A2 **Phone A2 does not answer**	Yes	No[5]	No[1]
Phone C2 to Phone A2 **Phone A2 does not answer**	Yes	No[5]	No[1]

[5] Nortel does NOT send PAI information in its 180 Ringing packet back to CUCM

Table 5. Call Transfers (Attended Local Transfers)

Calls Made	Call Comp?	Orig. Calling Number Displayed on Final Dest. Phone?	Orig. Calling Name Displayed on Final Dest. Phone?	Called Number Display on Orig. phone Updated After Transfer?	Called Name Display on Orig. Phone Updated After Transfer?
Phone C1 to Phone A1 Xfr to Phone B1	Yes	Yes	Yes	No	No
Phone C1 to Phone A1 Xfr to Phone B2	Yes	Yes	Yes	No	No
Phone C2 to Phone A1 Xfr to Phone B1	Yes	Yes	Yes	No	No
Phone C2 to Phone A1 Xfr to Phone B2	Yes	Yes	Yes	No	No
Phone C1 to Phone A2 Xfr to Phone B1	Yes	Yes	Yes	No	No
Phone C1 to Phone A2 Xfr to Phone B2	Yes	Yes	Yes	No	No
Phone C2 to Phone A2 Xfr to Phone B1	Yes	Yes	Yes	No	No
Phone C2 to Phone A2 Xfr to Phone B2	Yes	Yes	Yes	No	No
Phone A1 to Phone C1 Xfr to Phone D1	Yes	Yes	Yes	No	No
Phone A1 to Phone C1 Xfr to Phone D2	Yes	Yes	Yes	No	No
Phone A1 to Phone C2 Xfr to Phone D1	Yes	Yes	Yes	No	No
Phone A1 to Phone C2 Xfr to Phone D2	Yes	Yes	Yes	No	No
Phone A2 to Phone C1 Xfr to Phone D1	Yes	Yes	Yes	No	No
Phone A2 to Phone C1 Xfr to Phone D2	Yes	Yes	Yes	No	No
Phone A2 to Phone C2 Xfr to Phone D1	Yes	Yes	Yes	No	No
Phone A2 to Phone C2 Xfr to Phone D2	Yes	Yes	Yes	No	No

Table 6. Call Transfers (Early Attended Local Transfers)

Calls Made	Call Comp?	Orig. Calling Number Displayed on Final Dest. Phone?	Orig. Calling Name Displayed on Final Dest. Phone?	Called Number Display on Orig. phone Updated After Transfer?	Called Name Display on Orig. Phone Updated After Transfer?
Phone C1 to Phone A1 Xfr to Phone B1	Yes	Yes	Yes	No	No
Phone C1 to Phone A1 Xfr to Phone B2	Yes	Yes	Yes	No	No
Phone C2 to Phone A1 Xfr to Phone B1	Yes	Yes	Yes	No	No
Phone C2 to Phone A1 Xfr to Phone B2	Yes	Yes	Yes	No	No
Phone C1 to Phone A2 Xfr to Phone B1	Yes	Yes	Yes	No	No
Phone C1 to Phone A2 Xfr to Phone B2	Yes	Yes	Yes	No	No
Phone C2 to Phone A2 Xfr to Phone B1	Yes	Yes	Yes	No	No
Phone C2 to Phone A2 Xfr to Phone B2	Yes	Yes	Yes	No	No
Phone A1 to Phone C1 Xfr to Phone D1	Yes	Yes	Yes	No	No
Phone A1 to Phone C1 Xfr to Phone D2	Yes	Yes	Yes	No	No
Phone A1 to Phone C2 Xfr to Phone D1	Yes	Yes	Yes	No	No
Phone A1 to Phone C2 Xfr to Phone D2	Yes	Yes	Yes	No	No
Phone A2 to Phone C1 Xfr to Phone D1	Yes	Yes	Yes	No	No
Phone A2 to Phone C1 Xfr to Phone D2	Yes	Yes	Yes	No	No
Phone A2 to Phone C2 Xfr to Phone D1	Yes	Yes	Yes	No	No
Phone A2 to Phone C2 Xfr to Phone D2	Yes	Yes	Yes	No	No

Table 7. Call Transfers (Blind Local)

Calls Made	Call Comp?	Orig. Calling Number Displayed on Final Dest. Phone?	Orig. Calling Name Displayed on Final Dest. Phone?	Called Number Display on Orig. phone Updated After Transfer?	Called Name Display on Orig. Phone Updated After Transfer?
Phone C1 to Phone A1 Xfr to Phone B1	N/A[6]				
Phone C1 to Phone A1 Xfr to Phone B2	N/A[6]				
Phone C2 to Phone A1 Xfr to Phone B1	N/A[6]				
Phone C2 to Phone A1 Xfr to Phone B2	N/A[6]				
Phone C1 to Phone A2 Xfr to Phone B1	N/A[6]				
Phone C1 to Phone A2 Xfr to Phone B2	N/A[6]				
Phone C2 to Phone A2 Xfr to Phone B1	N/A[6]				
Phone C2 to Phone A2 Xfr to Phone B2	N/A[6]				
Phone A1 to Phone C1 Xfr to Phone D1	N/A[6]				
Phone A1 to Phone C1 Xfr to Phone D2	N/A[6]				
Phone A1 to Phone C2 Xfr to Phone D1	Yes	Yes	Yes	No	No
Phone A1 to Phone C2 Xfr to Phone D2	Yes	Yes	Yes	No	No
Phone A2 to Phone C1 Xfr to Phone D1	N/A[6]				
Phone A2 to Phone C1 Xfr to Phone D2	N/A[6]				
Phone A2 to Phone C2 Xfr to Phone D1	Yes	Yes	Yes	No	No
Phone A2 to Phone C2 Xfr to Phone D2	Yes	Yes	Yes	No	No

[6] Nortel does not support Blind Call Transfer feature

Table 8. Call Transfers (Attended Network/External)

Calls Made	Call Comp.?	Orig. Calling Number Displayed on Final Dest. Phone?	Orig. Calling Name Displayed on Final Dest. Phone?	Called Number Display on Orig. Phone Updated After Transfer?	Called Name Display on Orig. Phone Updated After Transfer?
Phone C1 to Phone A1 Xfr to Phone D1	Yes	No	No	No	No
Phone C1 to Phone A1 Xfr to Phone D2	Yes	No	No	No	No
Phone C2 to Phone A1 Xfr to Phone D1	Yes	No	No	No	No
Phone C2 to Phone A1 Xfr to Phone D2	Yes	No	No	No	No
Phone C1 to Phone A2 Xfr to Phone D1	Yes	No	No	No	No
Phone C1 to Phone A2 Xfr to Phone D2	Yes	No	No	No	No
Phone C2 to Phone A2 Xfr to Phone D1	Yes	No	No	No	No
Phone C2 to Phone A2 Xfr to Phone D2	Yes	No	No	No	No
Phone A1 to Phone C1 Xfr to Phone B1	Yes	No	No	No	No
Phone A1 to Phone C1 Xfr to Phone B2	Yes	No	No	No	No
Phone A2 to Phone C1 Xfr to Phone B1	Yes	No	No	No	No
Phone A2 to Phone C1 Xfr to Phone B2	Yes	No	No	No	No
Phone A1 to Phone C2 Xfr to Phone B1	Yes	No	No	No	No
Phone A1 to Phone C2 Xfr to Phone B2	Yes	No	No	No	No
Phone A2 to Phone C2 Xfr to Phone B1	Yes	No	No	No	No
Phone A2 to Phone C2 Xfr to Phone B2	Yes	No	No	No	No

Table 9. Call Transfers (Early Attend Network/External)

Calls Made	Call Comp.?	Orig. Calling Number Displayed on Final Dest. Phone?	Orig. Calling Name Displayed on Final Dest. Phone?	Called Number Display on Orig. Phone Updated After Transfer?	Called Name Display on Orig. Phone Updated After Transfer?
Phone C1 to Phone A1 Xfr to Phone D1	Yes	No	No	No	No
Phone C1 to Phone A1 Xfr to Phone D2	Yes	No	No	No	No
Phone C2 to Phone A1 Xfr to Phone D1	Yes	No	No	No	No
Phone C2 to Phone A1 Xfr to Phone D2	Yes	No	No	No	No
Phone C1 to Phone A2 Xfr to Phone D1	Yes	No	No	No	No
Phone C1 to Phone A2 Xfr to Phone D2	Yes	No	No	No	No
Phone C2 to Phone A2 Xfr to Phone D1	Yes	No	No	No	No
Phone C2 to Phone A2 Xfr to Phone D2	Yes	No	No	No	No
Phone A1 to Phone C1 Xfr to Phone B1	Yes	No	No	No	No
Phone A1 to Phone C1 Xfr to Phone B2	Yes	No	No	No	No
Phone A2 to Phone C1 Xfr to Phone B1	Yes	No	No	No	No
Phone A2 to Phone C1 Xfr to Phone B2	Yes	No	No	No	No
Phone A1 to Phone C2 Xfr to Phone B1	Yes	No	No	No	No
Phone A1 to Phone C2 Xfr to Phone B2	Yes	No	No	No	No
Phone A2 to Phone C2 Xfr to Phone B1	Yes	No	No	No	No
Phone A2 to Phone C2 Xfr to Phone B2	Yes	No	No	No	No

Table 10. Call Transfers (Blind Network/Network)

Calls Made	Call Comp.?	Orig. Calling Number Displayed on Final Dest. Phone?	Orig. Calling Name Displayed on Final Dest. Phone?	Called Number Display on Orig. Phone Updated After Transfer?	Called Name Display on Orig. Phone Updated After Transfer?
Phone C1 to Phone A1 Xfr to Phone D1	N/A[6]				
Phone C1 to Phone A1 Xfr to Phone D2	N/A[6]				
Phone C2 to Phone A1 Xfr to Phone D1	N/A[6]				
Phone C2 to Phone A1 Xfr to Phone D2	N/A[6]				
Phone C1 to Phone A2 Xfr to Phone D1	N/A[6]				
Phone C1 to Phone A2 Xfr to Phone D2	N/A[6]				
Phone C2 to Phone A2 Xfr to Phone D1	N/A[6]				
Phone C2 to Phone A2 Xfr to Phone D2	N/A[6]				
Phone A1 to Phone C1 Xfr to Phone B1	N/A[6]				
Phone A1 to Phone C1 Xfr to Phone B2	N/A[6]				
Phone A2 to Phone C1 Xfr to Phone B1	N/A[6]				
Phone A2 to Phone C1 Xfr to Phone B2	N/A[6]				
Phone A1 to Phone C2 Xfr to Phone B1	Yes	Yes	Yes	No	No
Phone A1 to Phone C2 Xfr to Phone B2	Yes	Yes	Yes	No	No
Phone A2 to Phone C2 Xfr to Phone B1	Yes	Yes	Yes	No	No
Phone A2 to Phone C2 Xfr to Phone B2	Yes	Yes	Yes	No	No

Table 11. Call Forward Unconditional (Local)

Calls Made	Call Comp.?	Original Calling Number Displayed on Final Dest.?	Original Calling Name Displayed on Final Dest.?	Forwarding Called Number Displayed on Final Dest.?	Forwarding Called Name Displayed on Final Dest.?	Final Dest. Connected Number Updated at orig. Side?	Final Dest. "Connected Name" Updated at Orig. Side?
Phone C1 to Phone A1 -CFU to Phone B1	Yes	Yes	Yes	Yes	No	No	No
Phone C1 to Phone A1 -CFU to Phone B2	Yes	Yes	No	Yes	Yes	No	No
Phone C2 to Phone A1 -CFU to Phone B1	Yes	Yes	Yes	Yes	No	No	No
Phone C2 to Phone A1 -CFU to Phone B2	Yes	Yes	No	Yes	Yes	No	No
Phone C1 to Phone A2 -CFU to Phone B1	Yes	Yes	Yes	Yes	No	No	No
Phone C1 to Phone A2 -CFU to Phone B2	Yes	Yes	No	Yes	Yes	No	No
Phone C2 to Phone A2 -CFU to Phone B1	Yes	Yes	Yes	Yes	No	No	No
Phone C2 to Phone A2 -CFU to Phone B2	Yes	Yes	No	Yes	Yes	No	No
Phone A1 to Phone C1 -CFU to Phone D1	Yes	Yes	Yes	Yes	Yes	No	No
Phone A1 to Phone C1 -CFU to Phone D2	Yes	Yes	Yes	Yes	Yes	No	No
Phone A1 to Phone C2 -CFU to Phone D1	Yes	Yes	Yes	Yes	Yes	No	No
Phone A1 to Phone C2 -CFU to Phone D2	Yes	Yes	Yes	Yes	Yes	No	No
Phone A2 to Phone C1 -CFU to Phone D1	Yes	Yes	Yes	Yes	Yes	No	No
Phone A2 to Phone C1 -CFU to Phone D2	Yes	Yes	Yes	Yes	Yes	No	No
Phone A2 to Phone C2 -CFU to Phone D1	Yes	Yes	Yes	Yes	Yes	No	No
Phone A2 to Phone C2 -CFU to Phone D2	Yes	Yes	Yes	Yes	Yes	No	No

Table 12. Call Forward Busy (Local)

Calls Made	Call Comp.?	Original Calling Number Displayed on Final Dest.?	Original Calling Name Displayed on Final Dest.?	Forwarding Called Number Displayed on Final Dest.?	Forwarding Called Name Displayed on Final Dest.?	Final Dest. Connected Number Updated at orig. Side?	Final Dest. "Connected Name" Updated at Orig. Side?
Phone C1 to Phone A1 –CFB to Phone B1	Yes	Yes	Yes	Yes	No	No	No
Phone C1 to Phone A1 –CFB to Phone B2	Yes	Yes	No	Yes	Yes	No	No
Phone C2 to Phone A1 –CFB to Phone B1	Yes	Yes	Yes	Yes	No	No	No
Phone C2 to Phone A1 –CFB to Phone B2	Yes	Yes	No	Yes	Yes	No	No
Phone C1 to Phone A2 –CFB to Phone B1	Yes	Yes	Yes	Yes	No	No	No
Phone C1 to Phone A2 –CFB to Phone B2	Yes	Yes	No	Yes	Yes	No	No
Phone C2 to Phone A2 –CFB to Phone B1	Yes	Yes	Yes	Yes	No	No	No
Phone C2 to Phone A2 –CFB to Phone B2	Yes	Yes	No	Yes	Yes	No	No
Phone A1 to Phone C1 –CFB to Phone D1	Yes	Yes	Yes	Yes	Yes	No	No
Phone A1 to Phone C1 –CFB to Phone D2	Yes	Yes	Yes	Yes	Yes	No	No
Phone A1 to Phone C2 –CFB to Phone D1	Yes	Yes	Yes	Yes	Yes	No	No
Phone A1 to Phone C2 –CFB to Phone D2	Yes	Yes	Yes	Yes	Yes	No	No
Phone A2 to Phone C1 –CFB to Phone D1	Yes	Yes	Yes	Yes	Yes	No	No
Phone A2 to Phone C1 –CFB to Phone D2	Yes	Yes	Yes	Yes	Yes	No	No
Phone A2 to Phone C2 –CFB to Phone D1	Yes	Yes	Yes	Yes	Yes	No	No
Phone A2 to Phone C2 -CFB to Phone D2	Yes	Yes	Yes	Yes	Yes	No	No

Table 13. Call Forward No Answer (Local)

Calls Made	Call Comp.?	Original Calling Number Displayed on Final Dest.?	Original Calling Name Displayed on Final Dest.?	Forwarding Called Number Displayed on Final Dest.?	Forwarding Called Name Displayed on Final Dest.?	Final Dest. Connected Number Updated at orig. Side?	Final Dest. "Connected Name" Updated at Orig. Side?
Phone C1 to Phone A1 -CFNA to Phone B1	Yes	Yes	Yes	Yes	No	No	No
Phone C1 to Phone A1 –CFNA to Phone B2	Yes	Yes	No	Yes	Yes	No	No
Phone C2 to Phone A1 –CFNA to Phone B1	Yes	Yes	Yes	Yes	No	No	No
Phone C2 to Phone A1 –CFNA to Phone B2	Yes	Yes	No	Yes	Yes	No	No
Phone C1 to Phone A2 –CFNA to Phone B1	Yes	Yes	Yes	Yes	No	No	No
Phone C1 to Phone A2 -CFNA to Phone B2	Yes	Yes	No	Yes	Yes	No	No
Phone C2 to Phone A2 –CFNA to Phone B1	Yes	Yes	Yes	Yes	No	No	No
Phone C2 to Phone A2 –CFNA to Phone B2	Yes	Yes	No	Yes	Yes	No	No
Phone A1 to Phone C1 –CFNA to Phone D1	Yes	Yes	Yes	Yes	Yes	No	No
Phone A1 to Phone C1 –CFNA to Phone D2	Yes	Yes	Yes	Yes	Yes	No	No
Phone A1 to Phone C2 -CFNA to Phone D1	Yes	Yes	Yes	Yes	Yes	No	No
Phone A1 to Phone C2 –CFNA to Phone D2	Yes	Yes	Yes	Yes	Yes	No	No
Phone A2 to Phone C1 –CFNA to Phone D1	Yes	Yes	Yes	Yes	Yes	No	No
Phone A2 to Phone C1 –CFNA to Phone D2	Yes	Yes	Yes	Yes	Yes	No	No
Phone A2 to Phone C2 –CFNA to Phone D1	Yes	Yes	Yes	Yes	Yes	No	No
Phone A2 to Phone C2 –CFNA to Phone D2	Yes	Yes	Yes	Yes	Yes	No	No

Table 14. Call Forward Unconditional (Network/External)

Calls Made	Call Comp.?	Original Calling Number Displayed on Final Dest.?	Original Calling Name Displayed on Final Dest.?	Forwarding Called Number Displayed on Final Dest.?	Forwarding Called Name Displayed on Final Dest.?	Final Dest. Connected Number Updated at Orig. Side?	Final Dest. Connected Name Updated at Orig. Side?
Phone C1 to Phone A1 -CFU to Phone D1	Yes	Yes	Yes	No	No	No	No
Phone C1 to Phone A1 -CFU to Phone D2	Yes	Yes	Yes	No	No	No	No
Phone C2 to Phone A1 -CFU to Phone D1	Yes	Yes	Yes	No	No	No	No
Phone C2 to Phone A1 -CFU to Phone D2	Yes	Yes	Yes	No	No	No	No
Phone C1 to Phone A2 -CFU to Phone D1	Yes	Yes	Yes	No	No	No	No
Phone C1 to Phone A2 -CFU to Phone D2	Yes	Yes	Yes	No	No	No	No
Phone C2 to Phone A2 -CFU to Phone D1	Yes	Yes	Yes	No	No	No	No
Phone C2 to Phone A2 -CFU to Phone D2	Yes	Yes	Yes	No	No	No	No
Phone A1 to Phone C1 -CFU to Phone B1	Yes	Yes	Yes	No	No	No	No
Phone A1 to Phone C1 -CFU to Phone B2	Yes	Yes	Yes	No	No	No	No
Phone A2 to Phone C1 -CFU to Phone B1	Yes	Yes	Yes	No	No	No	No
Phone A2 to Phone C1 -CFU to Phone B2	Yes	Yes	Yes	No	No	No	No
Phone A1 to Phone C2 -CFU to Phone B1	Yes	Yes	Yes	No	No	No	No
Phone A1 to Phone C2 -CFU to Phone B2	Yes	Yes	Yes	No	No	No	No
Phone A2 to Phone C2 -CFU to Phone B1	Yes	Yes	Yes	No	No	No	No
Phone A2 to Phone C2 -CFU to Phone B2	Yes	Yes	Yes	No	No	No	No

Table 15. Call Forward Busy (Network/External)

Calls Made	Call Comp.?	Original Calling Number Displayed on Final Dest.?	Original Calling Name Displayed on Final Dest.?	Forwarding Called Number Displayed on Final Dest.?	Forwarding Called Name Displayed on Final Dest.?	Final Dest. Connected Number Updated at Orig. Side?	Final Dest. Connected Name Updated at Orig. Side?
Phone C1 to Phone A1 -CFU to Phone D1	Yes	Yes	Yes	No	No	No	No
Phone C1 to Phone A1 -CFU to Phone D2	Yes	Yes	Yes	No	No	No	No
Phone C2 to Phone A1 -CFU to Phone D1	Yes	Yes	Yes	No	No	No	No
Phone C2 to Phone A1 -CFU to Phone D2	Yes	Yes	Yes	No	No	No	No
Phone C1 to Phone A2 -CFU to Phone D1	Yes	Yes	Yes	No	No	No	No
Phone C1 to Phone A2 -CFU to Phone D2	Yes	Yes	Yes	No	No	No	No
Phone C2 to Phone A2 -CFU to Phone D1	Yes	Yes	Yes	No	No	No	No
Phone C2 to Phone A2 -CFU to Phone D2	Yes	Yes	Yes	No	No	No	No
Phone A1 to Phone C1 -CFU to Phone B1	Yes	Yes	Yes	No	No	No	No
Phone A1 to Phone C1 -CFU to Phone B2	Yes	Yes	Yes	No	No	No	No
Phone A2 to Phone C1 -CFU to Phone B1	Yes	Yes	Yes	No	No	No	No
Phone A2 to Phone C1 -CFU to Phone B2	Yes	Yes	Yes	No	No	No	No
Phone A1 to Phone C2 -CFU to Phone B1	Yes	Yes	Yes	No	No	No	No
Phone A1 to Phone C2 -CFU to Phone B2	Yes	Yes	Yes	No	No	No	No
Phone A2 to Phone C2 -CFU to Phone B1	Yes	Yes	Yes	No	No	No	No
Phone A2 to Phone C2 -CFU to Phone B2	Yes	Yes	Yes	No	No	No	No

Table 16. Call Forward No Reply by join (Network/External)

Calls Made	Call Comp.?	Original Calling Number Displayed on Final Dest.?	Original Calling Name Displayed on Final Dest.?	Forwarding Called Number Displayed on Final Dest.?	Forwarding Called Name Displayed on Final Dest.?	Final Dest. Connected Number Updated at Orig. Side?	Final Dest. Connected Name Updated at Orig. Side?
Phone C1 to Phone A1 -CFU to Phone D1	Yes	Yes	Yes	No	No	No	No
Phone C1 to Phone A1 -CFU to Phone D2	Yes	Yes	Yes	No	No	No	No
Phone C2 to Phone A1 -CFU to Phone D1	Yes	Yes	Yes	No	No	No	No
Phone C2 to Phone A1 -CFU to Phone D2	Yes	Yes	Yes	No	No	No	No
Phone C1 to Phone A2 -CFU to Phone D1	Yes	Yes	Yes	No	No	No	No
Phone C1 to Phone A2 -CFU to Phone D2	Yes	Yes	Yes	No	No	No	No
Phone C2 to Phone A2 -CFU to Phone D1	Yes	Yes	Yes	No	No	No	No
Phone C2 to Phone A2 -CFU to Phone D2	Yes	Yes	Yes	No	No	No	No
Phone A1 to Phone C1 -CFU to Phone B1	Yes	Yes	Yes	No	No	No	No
Phone A1 to Phone C1 -CFU to Phone B2	Yes	Yes	Yes	No	No	No	No
Phone A2 to Phone C1 -CFU to Phone B1	Yes	Yes	Yes	No	No	No	No
Phone A2 to Phone C1 -CFU to Phone B2	Yes	Yes	Yes	No	No	No	No
Phone A1 to Phone C2 -CFU to Phone B1	Yes	Yes	Yes	No	No	No	No
Phone A1 to Phone C2 -CFU to Phone B2	Yes	Yes	Yes	No	No	No	No
Phone A2 to Phone C2 -CFU to Phone B1	Yes	Yes	Yes	No	No	No	No
Phone A2 to Phone C2 -CFU to Phone B2	Yes	Yes	Yes	No	No	No	No

Table 17. Hold and Resume with MoH

Calls Made	Hold Work ?	MoH Heard ?	Resume Work ?
Phone C1 to Phone A1 **A1 perform Hold/Resume**	Yes	No[7]	Yes
Phone C1 to Phone A2 **A2 perform Hold/Resume**	Yes	No[7]	Yes
Phone C2 to Phone A1 **A1 perform Hold/Resume**	Yes	No[7]	Yes
Phone C2 to Phone A2 **A2 perform Hold/Resume**	Yes	No[7]	Yes
Phone A1 to Phone C1 **C1 perform Hold/Resume**	Yes	Yes	Yes
Phone A1 to Phone C2 **C2 perform Hold/Resume**	Yes	Yes	Yes
Phone A2 to Phone C1 **C1 perform Hold/Resume**	Yes	Yes	Yes
Phone A2 to Phone C2 **C2 perform Hold/Resume**	Yes	Yes	Yes

[7] Nortel PBX used is not equipped with MoH source

Table 18. Call Conferencing (Local)

Calls Made	Call Sustained?	Number Updated on the Remaining Parties When the Conferencing Phone Drops Out?	Name Updated on the Remaining Parties When the Conferencing Phone Drops Out?
Phone C1 call Phone A1, Phone A1 conf Phone B1	Yes	No[8]	No[8]
Phone C1 call Phone A2, Phone A2 conf Phone B2	Yes	No[8]	No[8]
Phone C2 call Phone A1, Phone A1 conf Phone B2	Yes	No[8]	No[8]
Phone C2 call Phone A2, Phone A2 conf Phone B1	Yes	No[8]	No[8]
Phone A1 call Phone C1, Phone C1 conf Phone D1	Yes	No[8]	No[8]
Phone A1 call Phone C2, Phone C2 conf Phone D2	Yes	No[8]	No[8]
Phone A2 call Phone C1, Phone C1 conf Phone D2	Yes	No[8]	No[8]
Phone A2 call Phone C2, Phone C2 conf Phone D1	Yes	No[8]	No[8]

[8] Name and number display updated on the conferenced party but not on original party display

Table 19. Call Conferencing (Network/External)

Calls Made	Call Sustained?	Number Updated on the Remaining Parties When the Conferencing Phone Drops Out?	Name Updated on the Remaining Parties When the Conferencing Phone Drops Out?
Phone C1 call Phone A1, Phone A1 conf Phone D1	Yes	No	No
Phone C1 call Phone A2, Phone A2 conf Phone D2	Yes	No	No
Phone C2 call Phone A1, Phone A1 conf Phone D2	Yes	No	No
Phone C2 call Phone A2, Phone A2 conf Phone D1	Yes	No	No
Phone A1 call Phone C1, Phone C1 conf Phone B1	Yes	No	No
Phone A1 call Phone C2, Phone C2 conf Phone B2	Yes	No	No
Phone A2 call Phone C1, Phone C1 conf Phone B2	Yes	No	No
Phone A2 call Phone C2, Phone C2 conf Phone B1	Yes	No	No

Table 20. VoiceMail Access, leave a message and SIP MWI Activate

Calls Made	Able to leave VM ?	MWI Message Sent?	MWI lamp turned ON?
Phone A1 call Phone C1 – CFU to Unity Phone A1 leaves a message for C1 Unity send MWI activate message to user C1	Yes	Yes	Yes
Phone A1 call Phone C2 – CFU to Unity Phone A1 leaves a message for C2 Unity send MWI activate message to user C2	Yes	Yes	Yes
Phone C1 call Phone A1 – CFU to Unity Phone C1 leaves a message for A1 Unity send MWI activate message to user A1	No[9], [10]	No[9, 10]	No[9, 10]
Phone C1 call Phone A2 – CFU to Unity Phone C1 leaves a message for A2 Unity send MWI activate message to user A2	No[9, 10]	No[9, 10]	No[9, 10]
Phone A1 call Phone D1 – CFU to 3rd party VM system Phone A leaves a message for D1 3rd party VM send MWI activate message to user D1	No[9, 10]	No[9, 10]	No[9, 10]
Phone A1 call Phone D2 – CFU to 3rd party VM system Phone A leaves a message for D2 3rd party VM send MWI activate message to user D2	No[9, 10]	No[9, 10]	No[9, 10]
Phone C2 call Phone B1 – CFU to 3rd party VM system Phone C2 leaves a message for B1 3rd party VM send MWI activate message to user B1	Yes	Yes	Yes
Phone C2 call Phone B2 – CFU to 3rd party VM system Phone C2 leaves a message for B2 3rd party VM send MWI activate message to user B2	Yes	Yes	Yes

[9] There is a difference in the method used by both systems in passing the REDIRECTING information across the SIP trunk.CUCM uses the SIP Diversion header whereas Nortel uses the History-Info field instead. Since the redirect information is not recognized, the caller will not get the called party personal greeting to leave a voice message. Due to this difference, Cisco Unity or Nortel Call Pilot will not work as a centralized voice mail system for both Cisco Unified CallManager and Nortel CS1000M subscribers. That is, each system's phone users can not be subscribed to the other system's voice mail system using the SIP Trunk. For example, Cisco Unity can be a message center for the Cisco Unified CallManager users but it can not be a message center for Nortel CS1000M users.

[10] There is a difference in the method used by both systems to relay DTMF. CUCM uses RFC2833 or KPML to transmit digits while the Nortel uses SIP INFO message for DTMF relay.

Table 21. VoiceMail Access, retrieve the message and SIP MWI Deactivate

Calls Made	Able to retrieve VM ?	MWI Message Sent?	MWI lamp turned OFF?
Phone C1 retrieve voice message from Unity Unity send MWI de-activate message to user C1	Yes	Yes	Yes
Phone C2 retrieve voice message from Unity Unity send MWI de-activate message to user C2	Yes	Yes	Yes
Phone A1 retrieve voice message from Unity Unity send MWI de-activate message to user A1	No[9, 10]	No[9, 10]	No[9, 10]
Phone A2 retrieve voice message from Unity Unity send MWI de-activate message to user A2	No[9, 10]	No[9, 10]	No[9, 10]
Phone D1 retrieve the message from 3rd party VM system 3rd party VM send MWI de-activate message to user D1	No[9, 10]	No[9, 10]	No[9, 10]
Phone D2 retrieve the message from 3rd party VM system 3rd party VM send MWI de-activate message to user D2	No[9, 10]	No[9, 10]	No[9, 10]
Phone B1 retrieve the message from 3rd party VM system 3rd party VM send MWI de-activate message to user B1	Yes	Yes	Yes
Phone B2 retrieve the message from 3rd party VM system 3rd party VM send MWI de-activate message to user B2	Yes	Yes	Yes