Application Note

# Nortel CS1000E Release 5.0 Using T1 QSIG to Cisco Unified Communications Manager 7.0

**November 07, 2008**

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## Introduction

- This application note describes the steps and configurations necessary for Nortel Communication Server (CS) 1000E release 5.0 PBX to interoperate with Cisco Unified Communications Manager (CUCM) release 7.0 using a Cisco 3825 T1 QSIG router as the Media Gateway Control Protocol (MGCP) gateway.
- The network topology diagram (Figure 1) shows the test setup for end-to-end interoperability with CUCM connected to the PBX via a 3825 T1 QSIG router link as the MGCP gateway.
- Connectivity is achieved by using the PRI QSIG T1 protocol type on the MGCP gateway and ISO QSIG switch type on the Nortel CS 1000E release 5.0 PBX.
- This application note uses the 3825 T1 voice gateway. However, other Cisco voice gateways are also an option to use since CUCM QSIG implementation does not depend on the physical interface.


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## Network Topology

**Figure 1.** Basic Call Setup

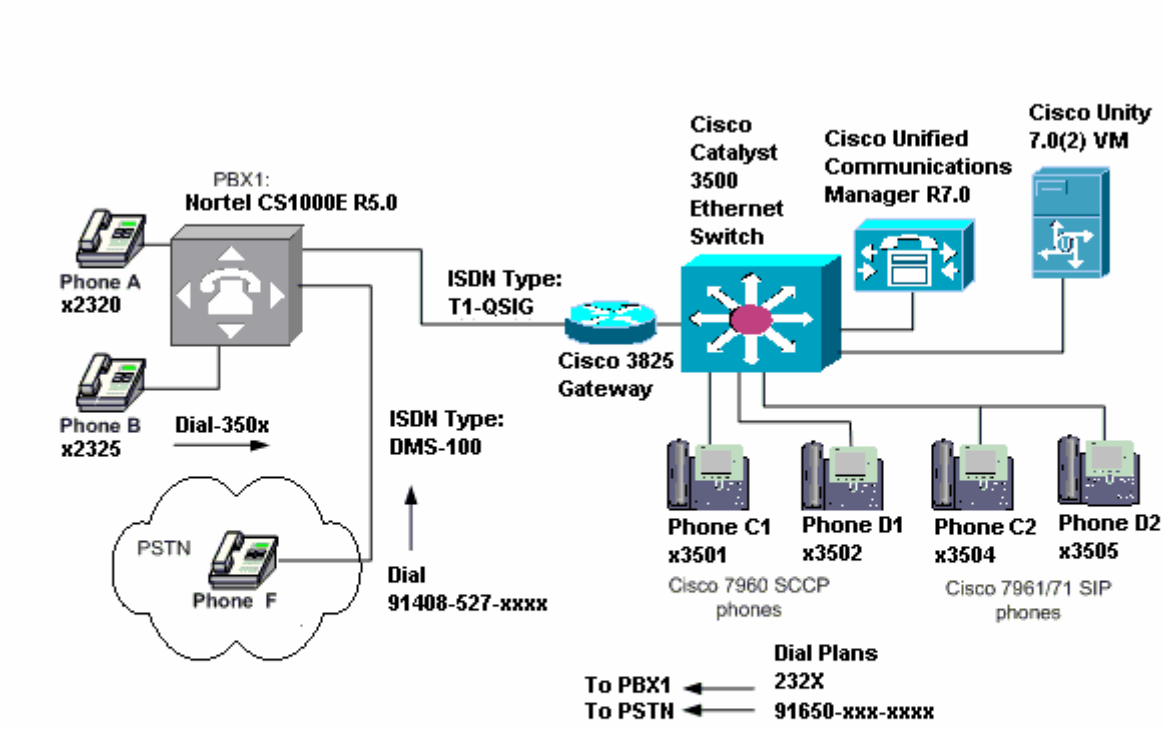


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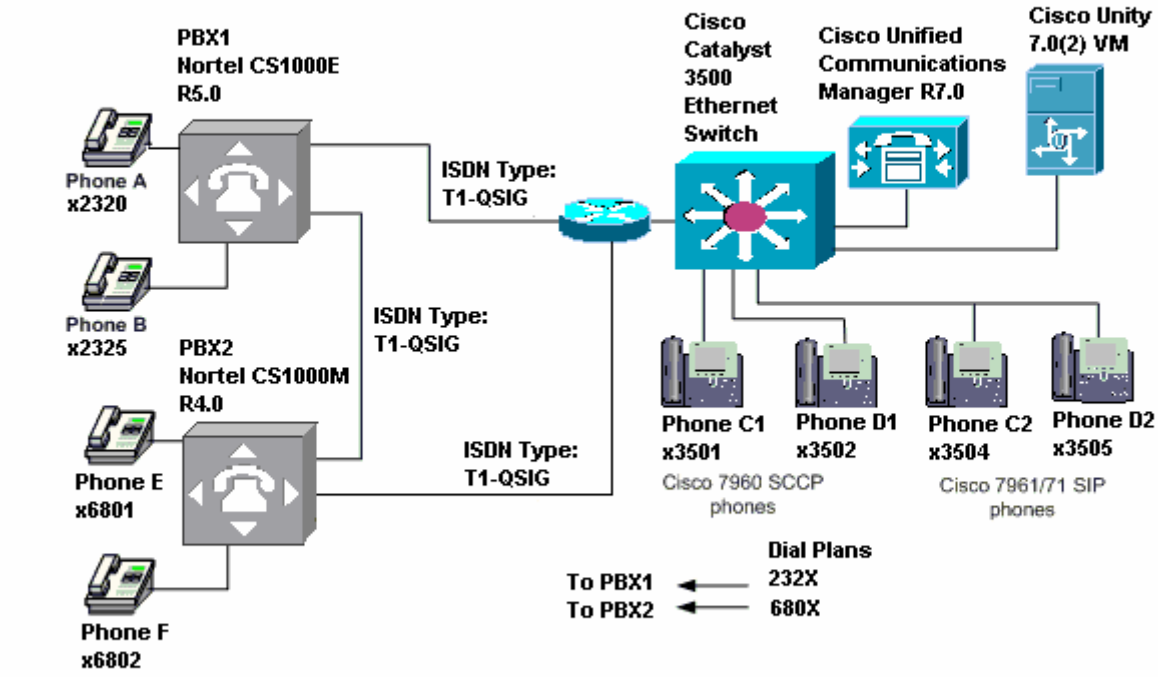
**Figure 2.** Call Setup for Path Replacement (Route Optimization) in 3 PINX Scenario




## Limitations

Call Forwarding by Join Notification

- For forwarded calls where the Nortel phone is the final destination, the calling name display depends on the class of service (CoS) setting of the terminating phone. With CLS = DNDD, the terminating phone displays the originating phone's name. With CLS = DNDA, the terminating phone displays the name of the forwarding or originally called party.

Busy Name Presentation

- Both the CUCM and the Nortel PBX send a "Busy Name" information element in the disconnect message to the originating side when receiving a call directed to a station that is currently in a busy state. However, CUCM does not support presentation of this information. The Nortel digital phone display does show the BUSY name information sent back by the CUCM if Call Completion on Busy Subscriber (CCBI) is DISABLED in the RCAP under LD 17. If CCBI is ENABLED, the digital/IP phone display shows the prompt "DESTINATION BUSY, ACTIVATE RING AGAIN?" to trigger the callback feature.

Call Forwarding (Diversion) by Reroute

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- Nortel CS 1000E does not initiate a call diversion by reroute to deflect a call that is meant for a local station programmed to forward all calls to another station within the network. Thus, although the call was completed, no reroute was done during the call. Nortel CS 1000E, however, will respond to a call reroute message sent by another node and respond by initiating a new SETUP message to an alternate route.

Path Replacement for Call Diversion by Forward

- As of the publication of this application note, the Nortel CS 1000M PBX release 5.0 did not initiate Path Replacement Proposal for diverted calls in a call-forward scenario to optimize the path for a call that is meant for a CUCM station programmed to forward all calls to another Nortel station within the network. Thus, although the call was completed, no Path Replacement Proposal was sent by the Nortel server during the call. The Nortel server, however, will respond to a Path Replacement Proposal message sent by another node by initiating a new SETUP message to an alternate route.
- As a workaround, in cases where the Path Replacement is not initiated by the PBX, call forward by reroute may be used on CUCM 7.0 instead of Path Replacement. This will enable the optimal use of path between the originating station and terminating station by using one call leg instead of two call legs.
- Path Replacement for Call Diversion by Forward did work in previous tests using Nortel Meridian 1 PBX release 25.15, Nortel Meridian 1 PBX release 25.40, and CUCM 5.0. A call was placed from a station on Nortel Meridian 1 PBX release 25.15 to a station on CUCM, which forwarded to a station on Nortel Meridian 1 PBX release 25.40. The Nortel Meridian 1 PBX release 25.15 proposed Path Replacement and an optimized path was used for that call. The Nortel CS 1000E PBX used for this test may not have the appropriate patch to fix this bug.

## System Components

### Hardware Requirements

The following hardware is required:

- Cisco Catalyst 3500
- Cisco 3825 router with VWIC2-2MFT-T1/E1 on NM-HDV
- CUCM server
- Cisco Unified IP phones 7960 and 7961
- Nortel CS 1000E PBX

### Software Requirements

The following software is required:

- CUCM Release 7.0
- Nortel CS 1000E PBX Release 5.0
- Cisco IOS Release 12.4

## Features

This section lists supported and unsupported features.

### Features Supported

- CLIP: Calling line (number) identification presentation.
- CLIR: Calling line (number) identification restriction.
- CNIP: Calling name identification presentation.
- CNIR: Calling name identification restriction.

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- COLP: Connected line (number) identification presentation.
- COLR: Connected line (number) identification restriction.
- CONP: Connected name identification presentation.
- CONR: Connected name identification restriction.
- Sending Alerting Name.
- Sending Busy Name—See the Limitations section on page 4.
- CT: Call Transfer by Join.
- CFU: Call Forwarding Unconditional (by Join)—See the Limitations section for caveats on display.
- CFB: Call Forwarding Busy (by Join)—See the Limitations section for caveats on display.
- CNFR: Call Forwarding No Reply (by Join)—See the Limitations section for caveats on display.
- CFU: Call Forwarding Unconditional (by Reroute)—See the Limitations section.
- CFB: Call Forwarding Busy (by Reroute)—See the Limitations section.
- CFNR: Call Forwarding No Reply (by Reroute)—See the Limitations section.
- Call Back/CCBS: Call Completion to Busy Subscriber.
- Call Back/CCNR: Call Completion No Reply.
- ANF-PR: Additional Network Feature Path Replacement (for Call Transfer by join).
- ANF-PR: Additional Network Feature Path Replacement (for Call Diversion by forward switching)—See Limitations section.
- ANF-PR: Additional Network Feature Path Replacement (for Trombone connection).
- MWI: Message Waiting Indication (lamp ON, lamp OFF).
- IDivert to voice mail

## Configuration

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

### Configuring the Nortel CS 1000E PBX with Software Release 5.0

Configure in the following sequence:

1. The common equipment.
2. The D-channel.
3. The route data block.
4. The trunk data block.
5. The coordinated dialing plan.
6. The digital station phone.

**Configuring the Nortel CS 1000E IP PBX**

COMMON EQUIPMENT CONFIGURATION (LD 17)

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```
>ld 22
PT2000

REQ  prt
TYPE cequ

CEQU
  MPED 8D
  TERM
  REMO
  TERD
  REMD
  TERQ
  REMQ
  SUPL V000 V020
  SUPC
  SUPF
  XCT
  CONF
  MGTDS       IPMG  IPMG_TYPE
        100  000  0   MGC
        102  000  0   MGC
  MGCONF      IPMG  PORTS  IPMG_TYPE
        101  000  0   30    MGC
        103  000  0   30    MGC
  MFSD * 100 * 102

  DLOP  NUM DCH FRM TMDI LCMT YALM T1TE TRSH MG_CARD
   PRI  011 24  ESF NO   B8S  FDL  -    00 000  0  01
      012 24  ESF NO   B8S  FDL  -    00 000  0  02
  PRI2       MG_CARD
     014    000  0  04
  DTI2        MG_CARD
  MISP        MG_CARD
  EXT0  3PE
  EXT1  3PE
  MCFN  011 MB
```

D-CHANNEL CONFIGURATION (LD 17)

```
LD 22
REQ  prt
TYPE adan
ADAN     DCH 11
  CTYP MSDL
  MG_CARD  000  0  01
  PORT 1
  DES  T1QSIG
  USR  PRI
  DCHL 11
  OTBF 32
  PARM RS422  DTE
  DRAT 64KC
  CLOK EXT
```

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```
  IFC  ISGF
    PINX_CUST 0
    ISDN_MCNT 300
  CLID OPT0
  CO_TYPE  STD
  SIDE USR
  CNEG 1
  RLS  ID  **
  RCAP COLP NDI CCBI CCNI PRI DV3I CTI  QMWI
  PR_TRIGS DIV 2 3
         CNG 2 3
         CTR2 2 3
  PR_RTN NO
  MBGA NO
  OVLR YES
  DIDD 0
  OVLS NO
  T310 120
  T200 3
  T203 10
  N200 3
  N201 260
  K    7
ADAN     DCH 12
  CTYP MSDL
  MG_CARD  000  0  02
  PORT 1
  DES  T1QSIG
  USR  PRI
  DCHL 12
  OTBF 32
  PARM RS422  DTE
  DRAT 64KC
  CLOK EXT
  IFC  ISGF
    PINX_CUST 0
    ISDN_MCNT 300
  CLID OPT0
  CO_TYPE  STD
  SIDE NET
  CNEG 1
  RLS  ID  **
  RCAP COLP NDI CCBI CCNI PRI DV3I CTI  QMWI
  PR_TRIGS DIV 2 3
         CNG 2 3
         CTR2 2 3
  PR_RTN NO
  MBGA NO
  OVLR YES
  DIDD 0
  OVLS NO
  T310 120
  T200 3
```

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T203 10
N200 3
N201 260
K 7

REQ

ROUTE DATA BLOCK CONFIGURATION (LD 16)
>LD 21
PT1000

REQ: PRT
TYPE: RDB
CUST 0
ROUT 101

**TYPE RDB**
CUST 00
ROUT 101
DES T1QSIG
TKTP TIE
M911P NO
ESN NO
CNVT NO
SAT NO
RCLS EXT
VTRK NO
NODE
DTRK YES
BRIP NO
DGTP PRI
ISDN YES
MODE PRA
IFC ISGF
SBN NO
PNI 00001
NCNA NO
NCRD NO
CHTY BCH
CTYP UKWN
INAC NO
ISAR NO
CPFXS YES
DAPC NO
INTC NO
DSEL VOD
PTYP PRI
AUTO NO
DNIS NO
DCDR NO
ICOG IAO
SRCH RRB
TRMB YES

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STEP
ACOD 704
TCPP NO
TARG 01
CLEN 1
BILN NO
OABS
INST
ANTK
SIGO STD
ICIS YES
TIMR ICF  512
    OGF  512
    EOD  13952
    NRD  10112
    DDL  70
    ODT  4096
    RGV  640
    GRD  896
    SFB  3
    NBS  2048
    NBL  4096

    IENB  5
    TFD  0
    VSS  0

PAGE 002

    VGD  6
DRNG NO
CDR  NO
VRAT NO
MUS  NO
OHQ  NO
OHQT 00
CBQ  NO
AUTH NO
TDET NO
TTBL 0
ATAN NO
PLEV 2
ALRM NO
ART  0
SGRP 0
ARDN NO
AACR NO

REQ: PRT
TYPE: RDB
CUST 0
ROUT 102

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**TYPE RDB**
CUST 00
ROUT 102
DES  T1QSIG
TKTP TIE
M911P NO
ESN  NO
CNVT NO
SAT  NO
RCLS EXT
VTRK NO
NODE
DTRK YES
BRIP NO
DGTP PRI
ISDN YES
    MODE PRA
    IFC  ISGF
    SBN  NO
    PNI  00001
    NCNA NO
    NCRD NO
    CHTY BCH
    CTYP UKWN
    INAC NO
    ISAR NO
    CPFXS YES
    DAPC NO
    INTC NO
DSEL VOD
PTYP PRI
AUTO NO
DNIS NO
DCDR NO
ICOG IAO
SRCH RRB
TRMB YES
STEP
ACOD 705
TCPP NO
TARG 01
CLEN 1
BILN NO
OABS
INST
ANTK
SIGO STD
ICIS YES
TIMR ICF  512
    OGF  512
    EOD  13952
    NRD  10112

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DDL 70
ODT 4096
RGV 640
GRD 896
SFB 3
NBS 2048
NBL 4096

IENB 5
TFD 0
VSS 0

PAGE 002

VGD 6
DRNG NO
CDR NO
VRAT NO
MUS NO
OHQ NO
OHQT 00
CBQ NO
AUTH NO
TDET NO
TTBL 0
ATAN NO
PLEV 2
ALRM NO
ART 0
SGRP 0
ARDN NO
AACR NO

REQ:

TRUNK DATA BLOCK CONFIGURATION (LD 14)
> ld 20

PT0000
REQ: prt
**TYPE: tnb**
TN 011 1
DATE
PAGE
DES

DES T1QSIG
TN 011 01 VIRTUAL
TYPE TIE
CDEN SD
CUST 0
TRK PRI

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PDCA 1
PCML MU
NCOS 0
RTMB 101 1
B-CHANNEL SIGNALING
TGAR 0
AST  NO
IAPG 0
CLS  UNR DTN CND ECD WTA LPR APN THFD HKD SPCD
    P10 VNL
TKID
AACR NO
DATE  6 JUN 2008

NACT
REQ: prt
TYPE: tnb
TN   012 1
DATE
PAGE
DES

DES  T1QSIG
TN   012 01  VIRTUAL
TYPE TIE
CDEN SD
CUST 0
TRK  PRI
PDCA 1
PCML MU
NCOS 0
RTMB 102 1
B-CHANNEL SIGNALING
TGAR 1
AST  NO
IAPG 0
CLS  UNR DTN CND ECD WTA LPR APN THFD HKD SPCD
    P10 VNL
TKID
AACR NO
DATE  6 JUN 2008

NACT

ROUTE LIST BLOCK (LD 86)
>ld 86
ESN000

MEM AVAIL: (U/P): 99165874    USED U P: 5049349 54598    TOT: 104269821
DISK SPACE NEEDED: 47 KBYTES

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REQ  prt
CUST 0
**FEAT rlb**
RLI  1

RLI  1
ENTR 0
LTER NO
ROUT 101
TOD  0 ON  1 ON  2 ON  3 ON
    4 ON  5 ON  6 ON  7 ON
VNS  NO
CNV  NO
EXP  NO
FRL  0
DMI  0
FCI  0
FSNI 0
SBOC NRR
IDBB DBD
IOHQ NO
OHQ  NO
CBQ  NO

ISET 0
NALT 5
MFRL 0
OVLL 0

MEM AVAIL: (U/P): 99165874    USED U P: 5049349 54598    TOT: 104269821
DISK SPACE NEEDED: 47 KBYTES
REQ  prt
CUST 0
FEAT rlb
RLI  2

RLI  2
ENTR 0
LTER NO
ROUT 102
TOD  0 ON  1 ON  2 ON  3 ON
    4 ON  5 ON  6 ON  7 ON
VNS  NO
CNV  NO
EXP  NO
FRL  0
DMI  0
FCI  0
FSNI 0
SBOC NRR
IDBB DBD
IOHQ NO

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OHQ  NO
CBQ  NO

ISET 0
NALT 5
MFRL 0
OVLL 0

MEM AVAIL: (U/P): 99165874  USED U P: 5049349 54598  TOT: 104269821
DISK SPACE NEEDED: 47 KBYTES
REQ

COORDINATED DIALING PLAN (LD 87)
>LD 87
ESN000

MEM AVAIL: (U/P): 99166898  USED U P: 5049015 53908  TOT: 104269821
DISK SPACE NEEDED: 46 KBYTES
REQ  PRT
CUST 0
FEAT CDP
**TYPE DSC**
DSC  350
DSC  350
FLEN 0
DSP  LSC
RLI  1
NPA
NXX

MEM AVAIL: (U/P): 99166898  USED U P: 5049015 53908  TOT: 104269821
DISK SPACE NEEDED: 46 KBYTES
REQ  prt
CUST 0
FEAT cdp
TYPE dsc
DSC  680
DSC  680
FLEN 0
DSP  LSC
RLI  2
NPA
NXX

STATION PHONE CONFIGURATION (LD 11)
>ld 11
SL1000
MEM AVAIL: (U/P): 99166898  USED U P: 5049015 53908  TOT: 104269821
DISK SPACE NEEDED: 46 KBYTES
DIGITAL TELEPHONES  AVAIL:  5  USED:  3  TOT:  8
IP USERS  AVAIL:  18  USED:  6  TOT:  24

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BASIC IP USERS AVAIL: 7 USED: 1 TOT: 8
TEMPORARY IP USERS AVAIL: 0 USED: 0 TOT: 0
ACD AGENTS AVAIL: 10 USED: 0 TOT: 10
PCA AVAIL: 4 USED: 1 TOT: 5
AST AVAIL: 4 USED: 1 TOT: 5
SIP CONVERGED DESKTOPS AVAIL: 0 USED: 0 TOT: 0
SIP CTI TR87 AVAIL: 4 USED: 1 TOT: 5
TNS AVAIL: 32549 USED: 211 TOT: 32760
DATA PORTS AVAIL: 32760 USED: 0 TOT: 32760

IP PHONE LINE
REQ: prt
**TYPE: 2004p2**

TN 020 0 00 03
DATE
PAGE
DES
MODEL_NAME
EMULATED
KEM_RANGE

DES CS2320
TN 020 0 00 03 VIRTUAL
TYPE 2004P2
CDEN 8D
CTYP XDLC
CUST 0
NUID
NHTN
CFG_ZONE 000
CUR_ZONE 000
ERL 0
ECL 0
FDN 3503
TGAR 0
LDN NO
NCOS 0
SGRP 0
RNPG 0
SCI 0
SSU
XLST
CLS UNR FBA WTA LPR MTD FNA HTA TDD HFA CRPD
MWA LMPN RMMD SMWD AAD IMD XHD IRD NID OLD VCE DRG1
POD DSX VMD SLKD CCSD SWD LND CNDA
CFTD 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
USMD USRD ULAD RTDD RBDD RBHD PGND FLXD FTTC DNDN DNO3 MCBN

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```
    VOLA VOUD CDMR ICRD MCDD T87D KEM2 MSNV FRA  PKCH
CPND_LANG ENG
RCO  0
HUNT 3503
LHK  0
PLEV 02
DANI NO
AST
IAPG 0
AACS NO
ITNA NO
DGRP
MLWU_LANG 0
MLNG ENG
DNDR 0
KEY  00 SCR 2320 0     MARP
       CPND
         NAME test20
         XPLN 13
         DISPLAY_FMT FIRST,LAST
    01
    02
    03
    04
    05
    06
    07
    08
    09
    10
    11
    12
    13
    14
    15
    16
    17 TRN
    18 AO6
    19 CFW 16  3502
    20 RGA
    21 PRK
    22 RNP
    23
    24 PRS
    25 CHG
    26 CPN
    27
    28
    29
    30
    31
DATE 14 AUG 2008
NACT
```

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DIGITAL LINES
REQ: prt
**TYPE: 2616**
TN  000 0 07 00
DATE
PAGE
DES

DES  T2325
TN  000 0 07 00  VIRTUAL
TYPE 2616
CDEN 8D
CTYP XDLC
CUST 0
AOM  0
ERL  0
FDN  2325
TGAR 1
LDN  NO
NCOS 0
SGRP 0
RNPG 0
SCI  0
SSU
XLST
CLS  CTD FBA WTA LPR MTD FNA HTD ADD HFD
    MWA LMPN RMMD SMWD AAD IMD XHD IRD NID OLD VCE DRG1
    POD DSX VMD SLKD CCSD SWD LND CNDA
    CFTD SFD MRD DDV CNID CDCA MSID DAPA BFED RCBD
    ICDD CDMD LLCN MCTD CLBD AUTU
    GPUD DPUD DNDD CFXA ARHD CLTD ASCD
    CPFA CPTA ABDD CFHD FICD NAID BUZZ AGRD MOAD
    AHD DDGA NAMA
    DRDD EXR0
    USMD USRD ULAD RTDD RBDD RBHD PGND FLXD FTTC DNDY DNO3 MCBN
    CDMR MCDD T87D PKCH
CPND_LANG ENG
RCO  0
HUNT 2325
LHK  0
PLEV 02
DANI NO
AST
IAPG 0
AACS NO
ITNA NO
DGRP
MLWU_LANG 0
DNDR 0
KEY  00 SCR 2325 0     MARP
      CPND
        NAME test2335

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```
      XPLN 13
      DISPLAY_FMT FIRST,LAST
   01
   02
   03 CFW 4  3502
   04 AO6
   05 TRN
   06
   07
   08
   09
   10
   11
   12
   13
   14
   15
DATE 14 AUG 2008
NACT
```

SOFTWARE RELEASE (LD 22)

```
>ld 22
PT2000

REQ  iss

VERSION 4021
RELEASE 5
ISSUE 00 W  +
IDLE_SET_DISPLAY NORTEL

IPMG  TYPE CSP/SW MSP  APP  FPGA BOOT   DBL1     DBL2

 0 0 MGC    AD31 AA06 AA04 AA12 AD27 DSP1AA07      N/A
```

FEATURES / PACKAGES INSTALLED (LD 22)

```
LD 22
REQ..prt
TYPE pkg
OPTF              1
CUST              2
CDR               4
CTY               5
RAN               7
TAD               8
DNDI              9
EES              10
INTR             11
ANI              12
ANIR             13
BRTE              14
DNDG              16
MSB               17
```

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SS25 18
DDSP 19
ODAS 20
DI 21
CHG 23
CAB 24
BAUT 25
CASM 26
CASR 27
BQUE 28
NTRF 29
NCOS 32
CPRK 33
SSC 34
IMS 35
UST 35
UMG 35
ROA 36
NSIG 37
MCBQ 38
NSC 39
BACD 40
ACDB 41
ACDC 42
LMAN 43
MUS 44
ACDA 45
MWC 46
AAB 47
GRP 48
NFCR 49
ACDD 50
LNK 51
FCA 52
SR 53
AA 54
HIST 55
AOP 56
BARS 57
NARS 58
CDP 59
PQUE 60
FCBQ 61
OHQ 62
NAUT 63
SNR 64
TDET 65
NXFR 67
HOT 70
DHLD 71
LSEL 72
SS5 73
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PBXI 75
DLDN 76
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OOD 79
SCI 80
CCOS 81
CDRQ 83
TENS 86
FTDS 87
DSET 88
TSET 89
LNR 90
DLT2 91
PXLT 92
SUPV 93
CPND 95
DNIS 98
BGD 99
RMS 100
MR 101
AWU 102
PMSI 103
LLC 105
MCT 107
ICDR 108
APL 109
TVS 110
TOF 111
IDC 113
AUXS 114
DCP 115
PAGT 116
CBC 117
CCDR 118
EMUS 119
PLDN 120
SCMP 121
FTC 125
BKI 127
DTI2 129
TBAR 132
ENS 133
FFC 139
DCON 140
MPO 141
ISDN 145
PRA 146
ISL 147
NTWK 148
IEC 149
DNXP 150
CDRE 151
FXS 152

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PRI2 154
ACNT 155
THF 157
FGD 158
NAS 159
FNP 160
ISDN_INTL_SUP 161
SAR 162
MINT 163
LAPW 164
GPRI 167
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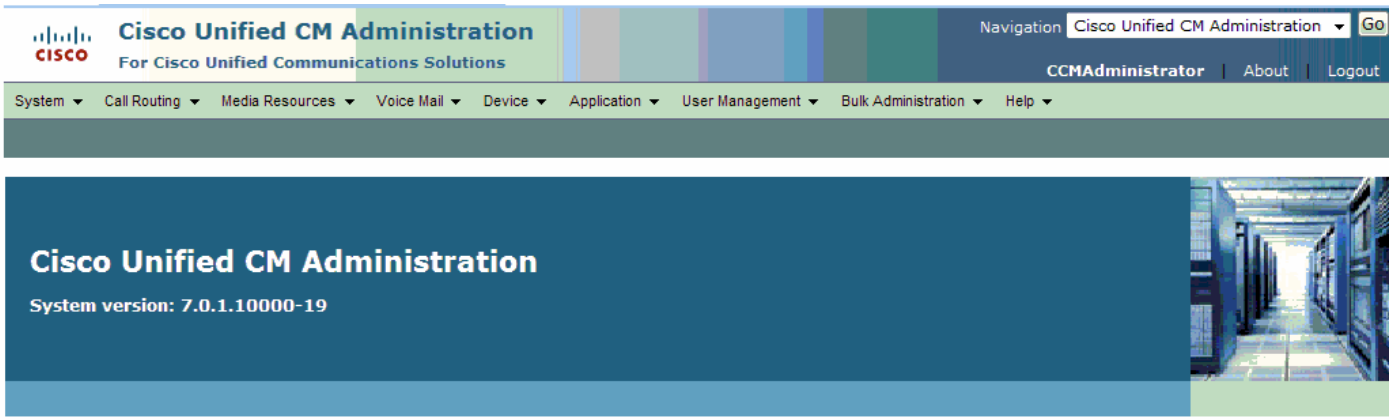
**Configuring Cisco Unified Communications Manager**

CUCM Software Version 7.0

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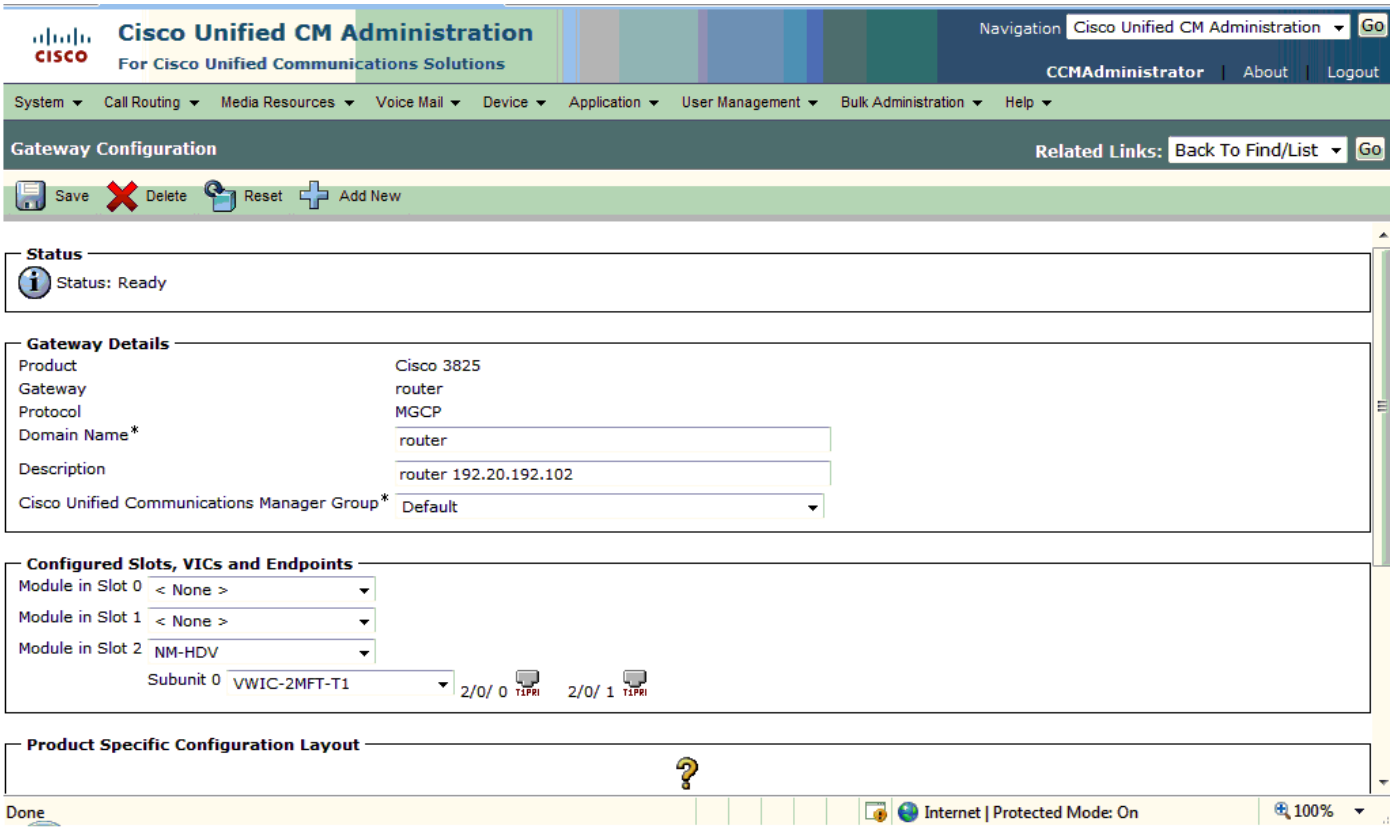
If you require further assistance please contact us by sending email to export@cisco.com.

CUCM Gateway Configuration

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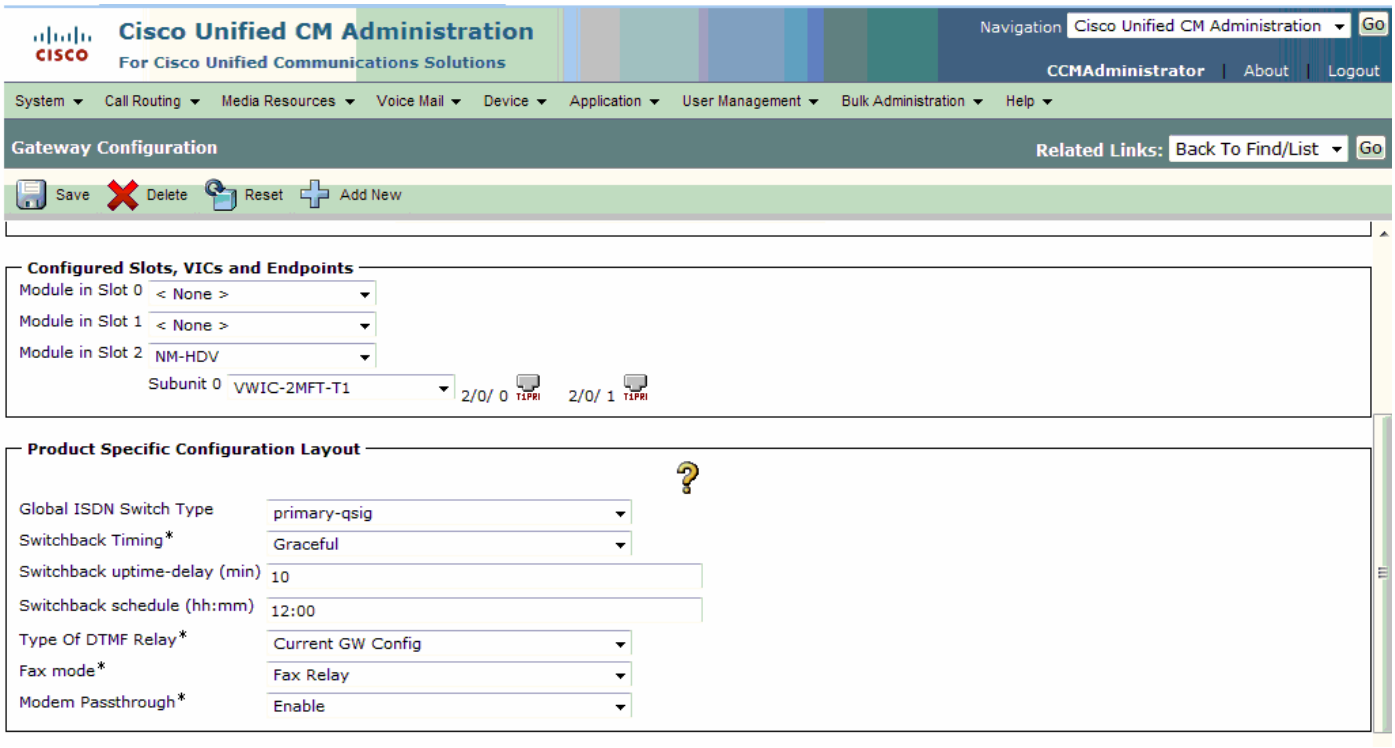


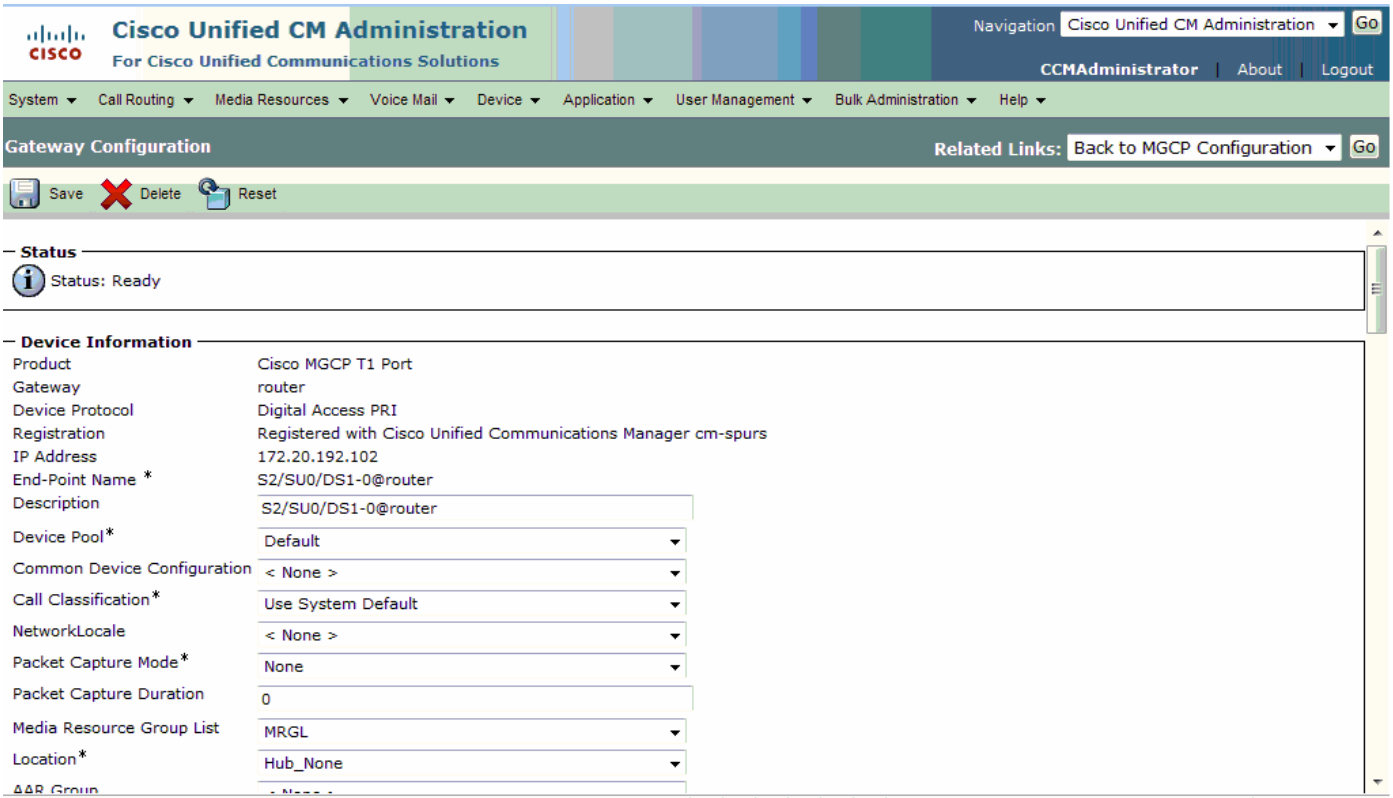


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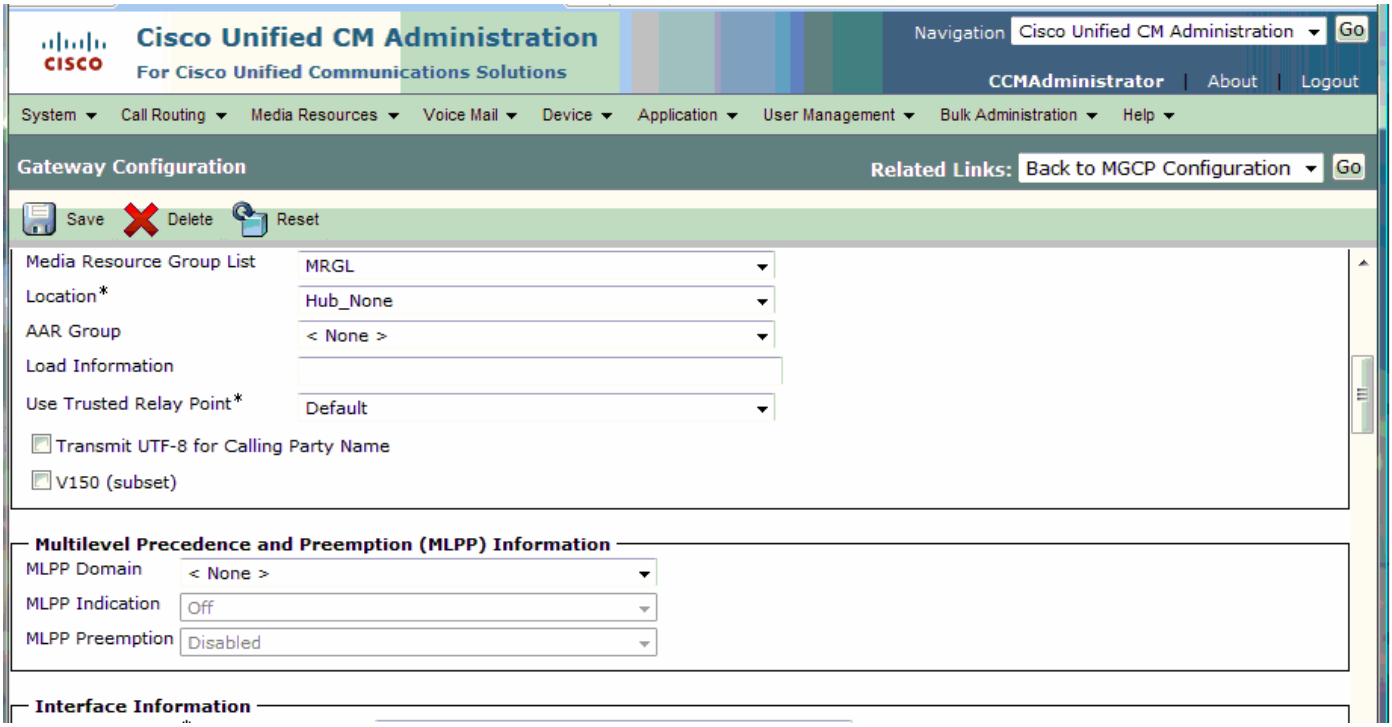


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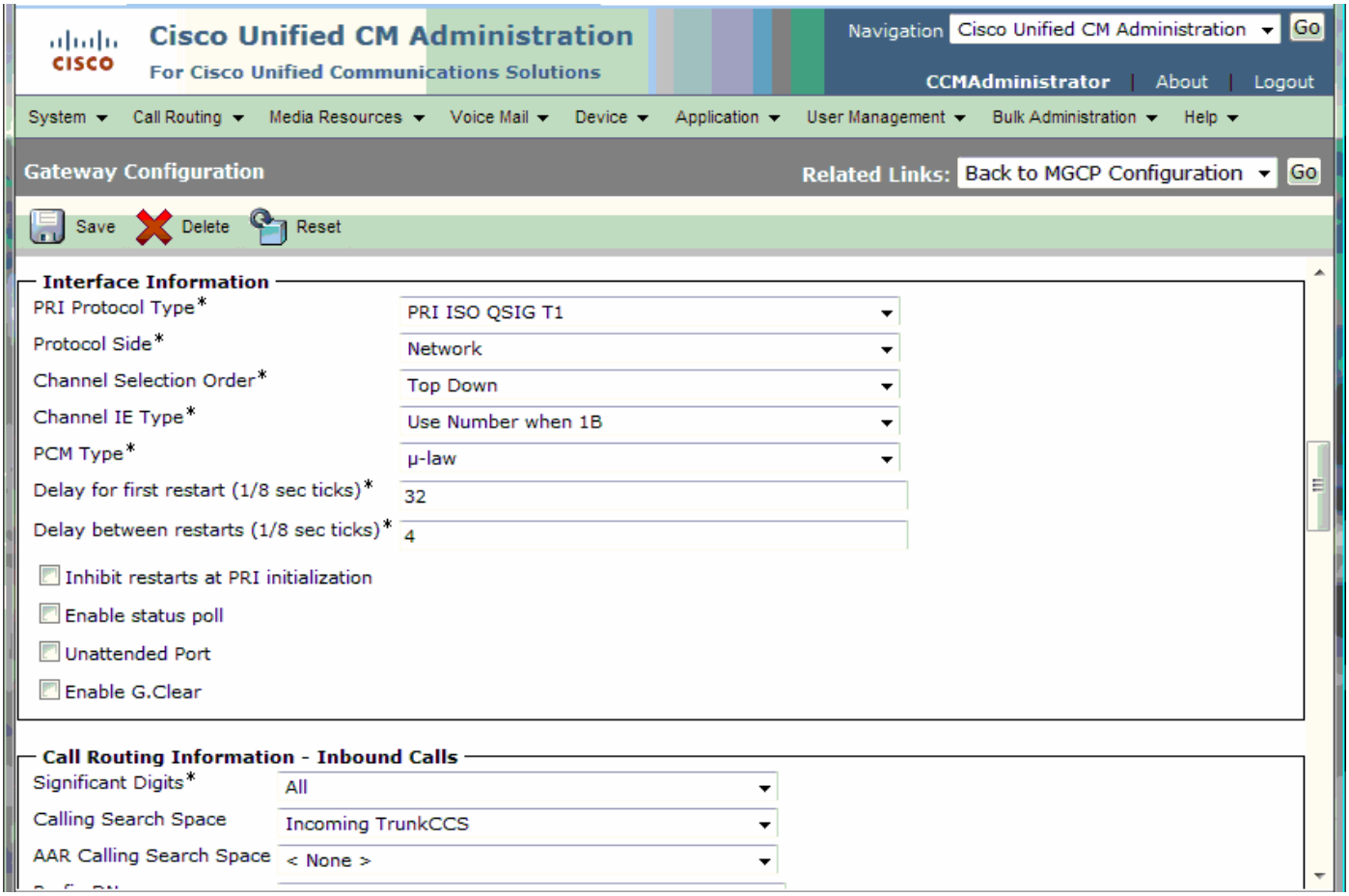


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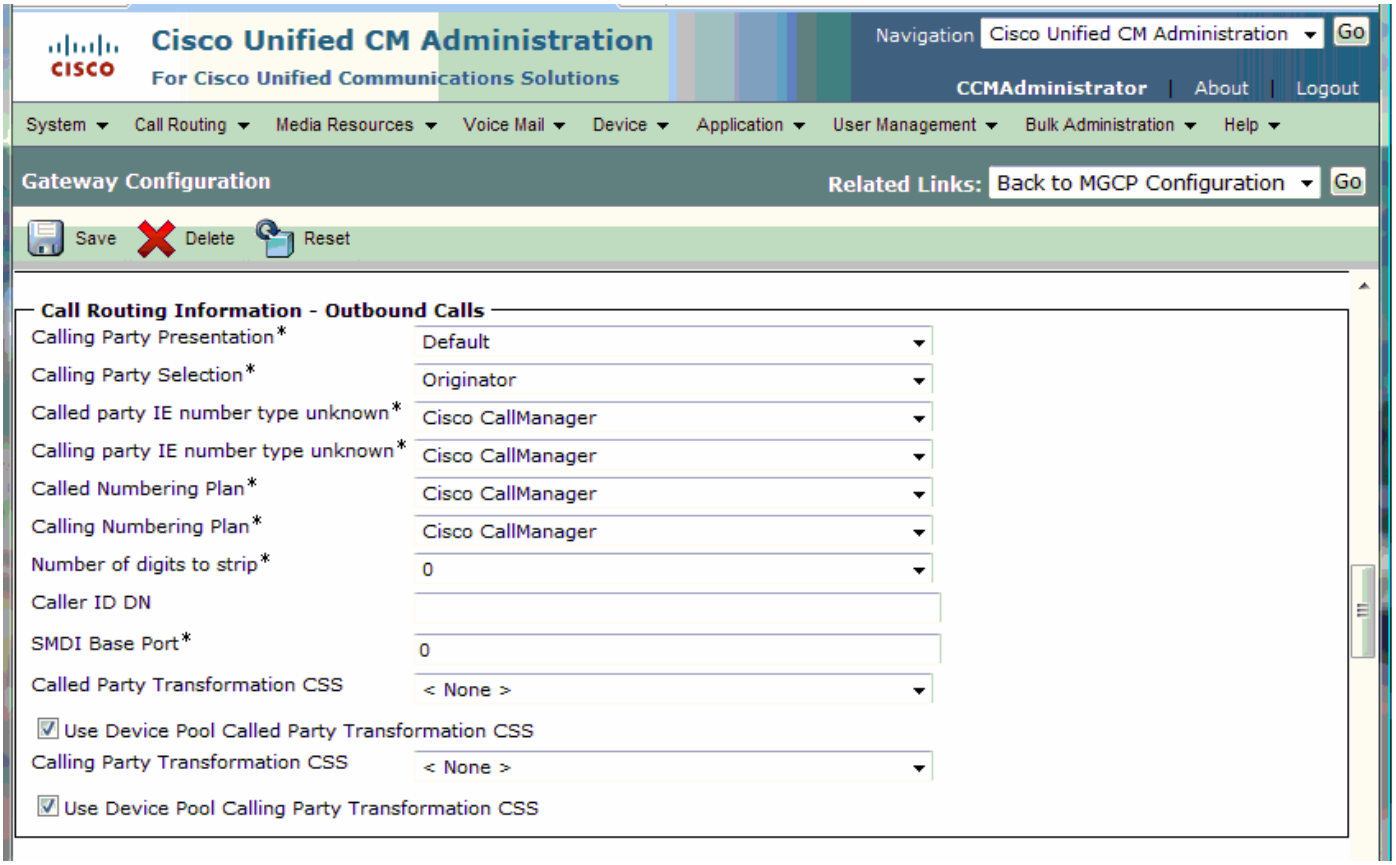


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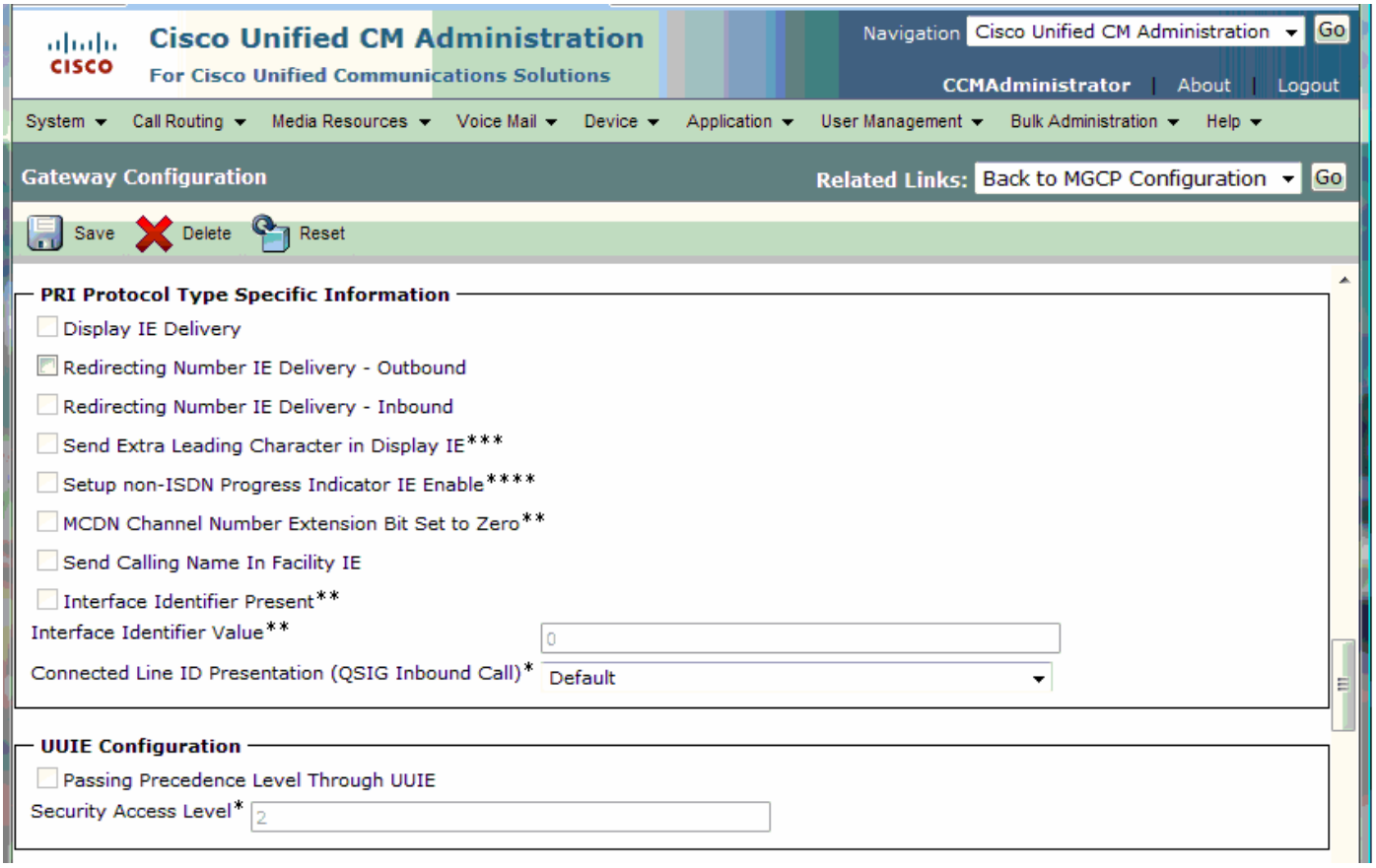


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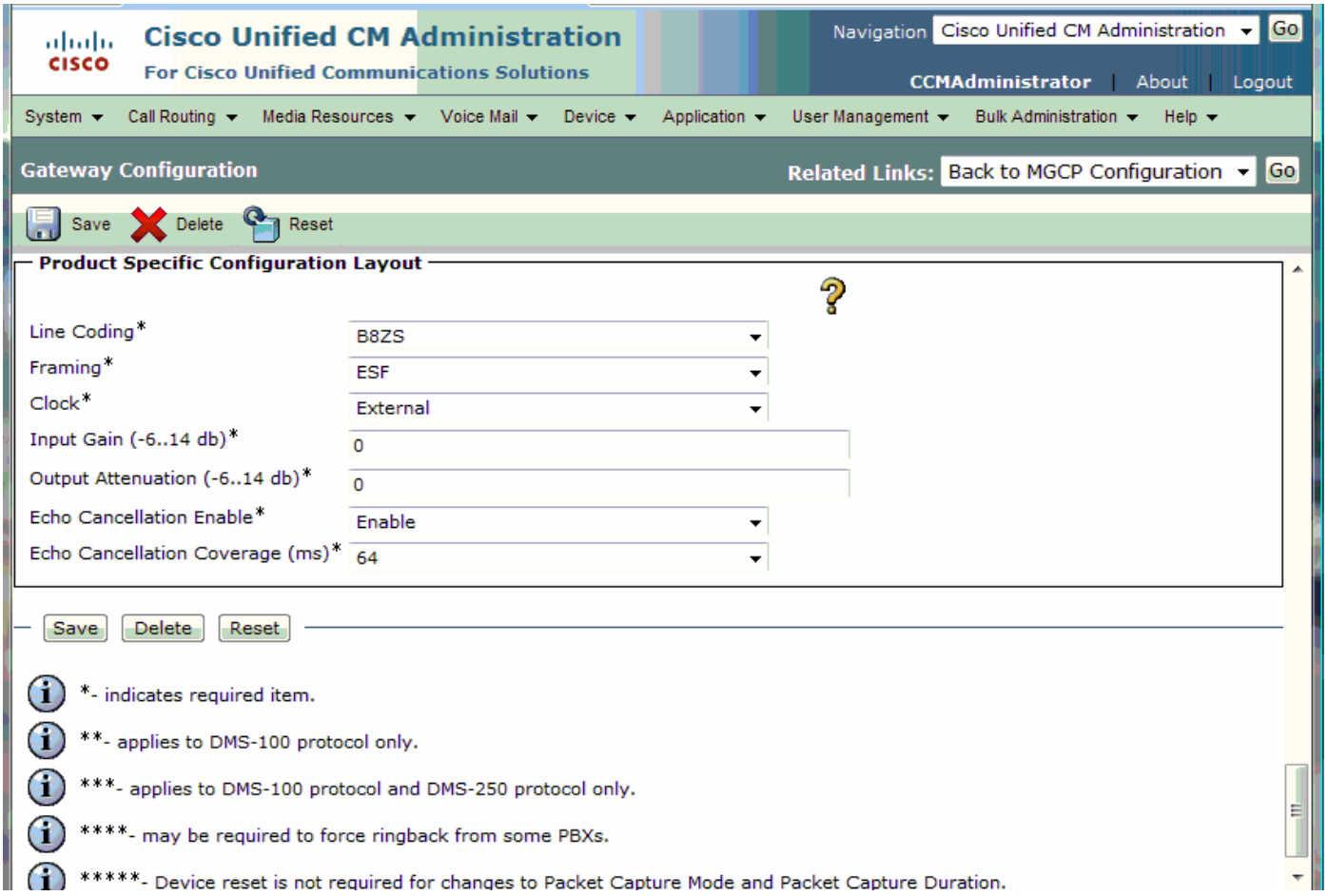


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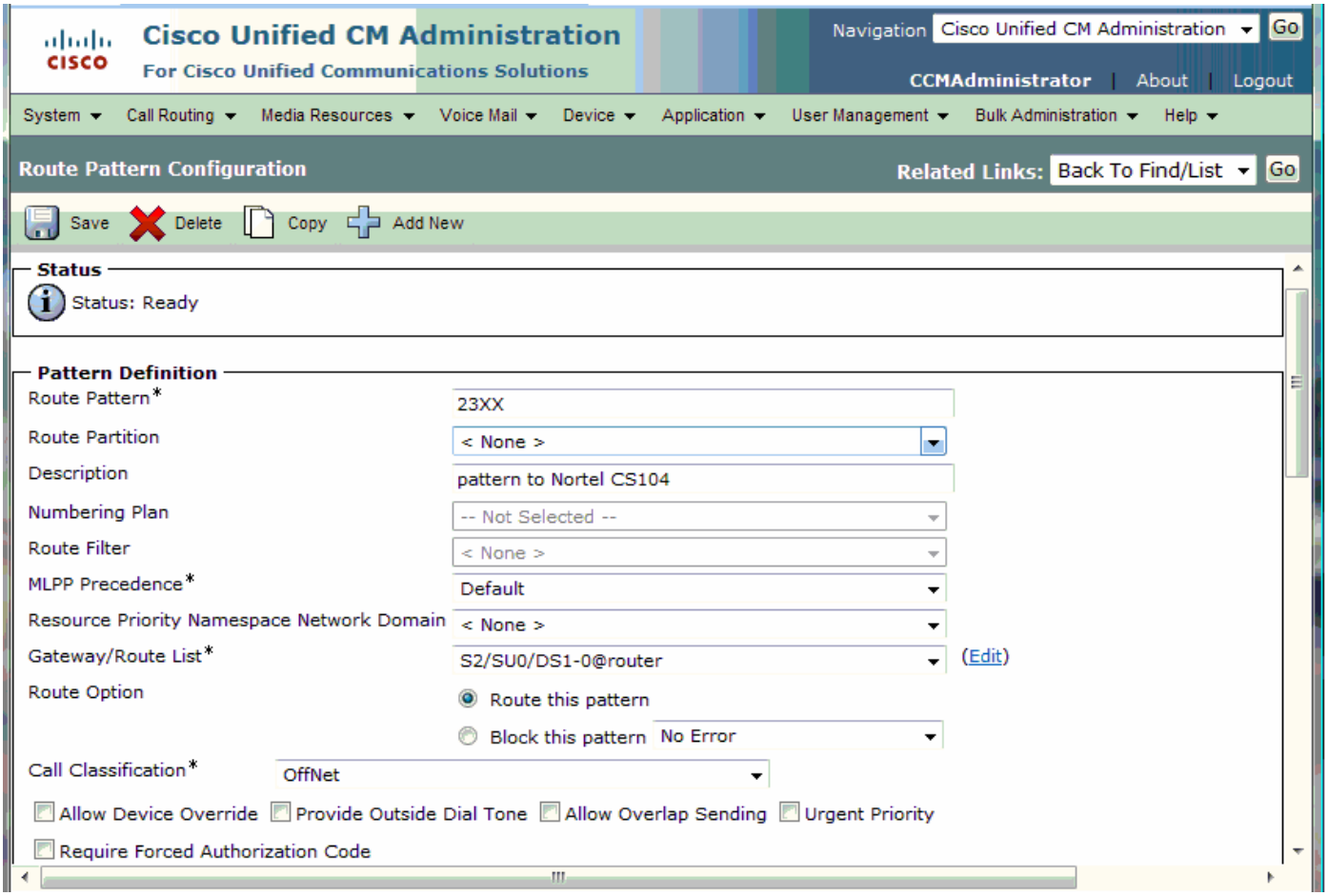
Enblock Route Pattern Configuration

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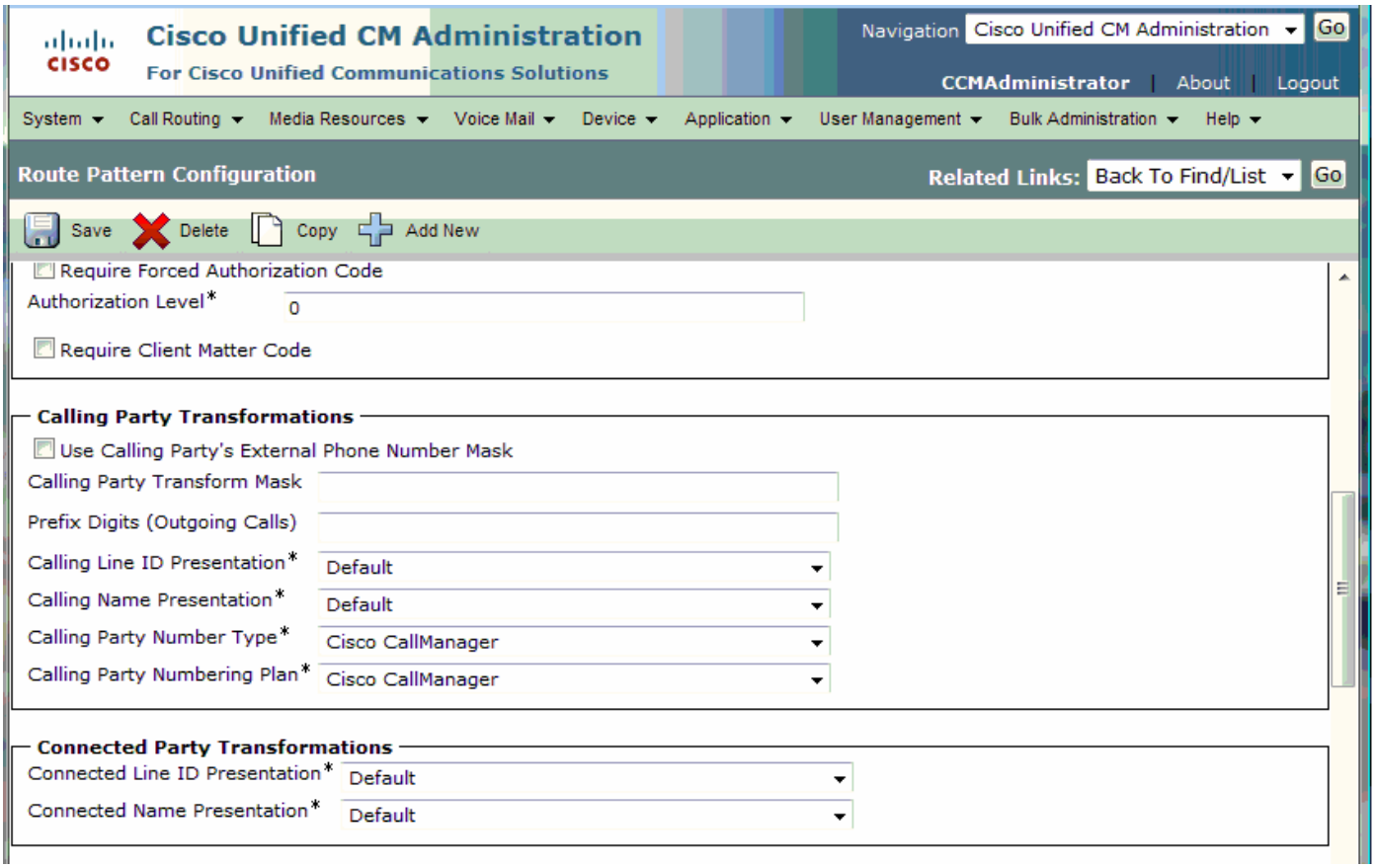


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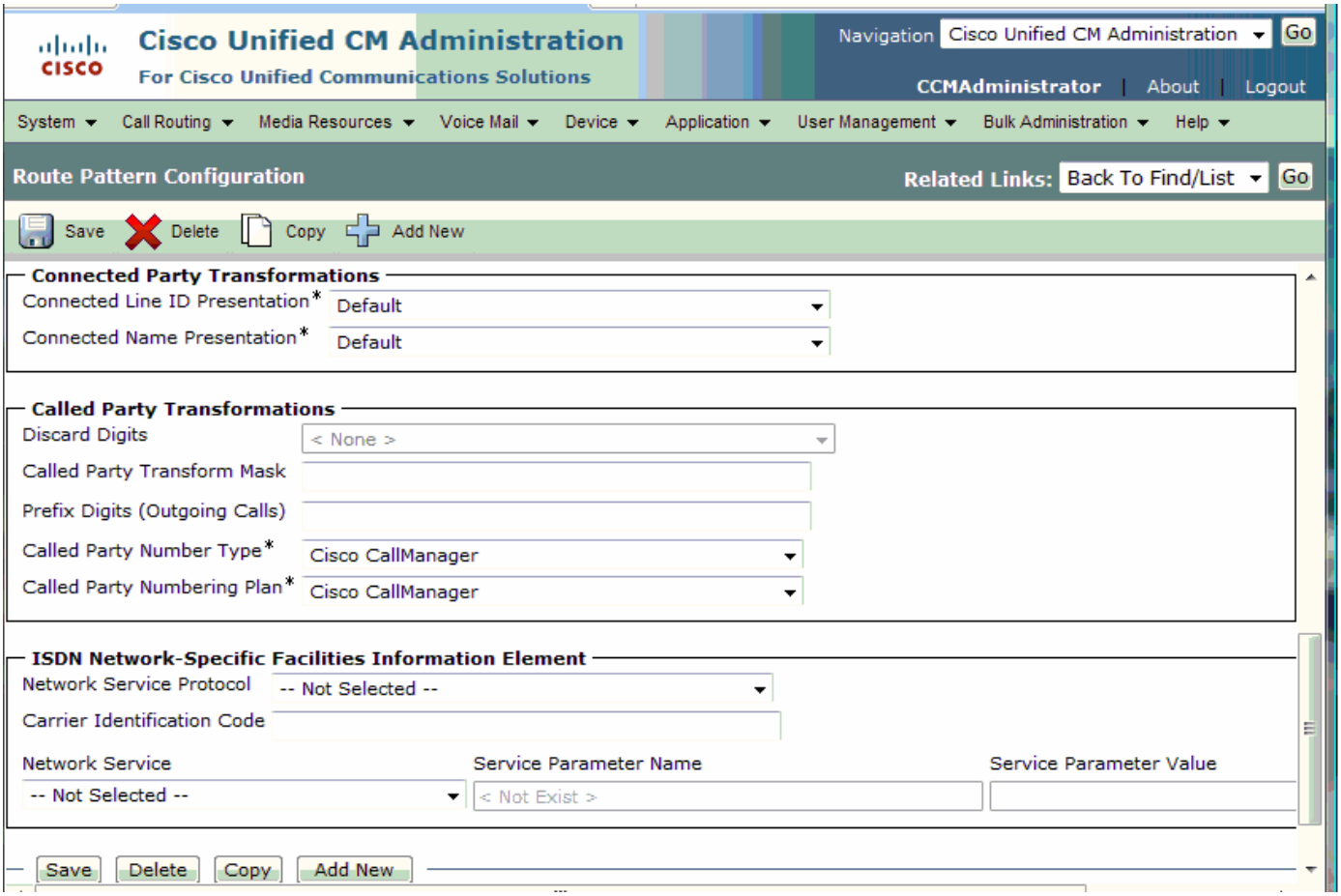


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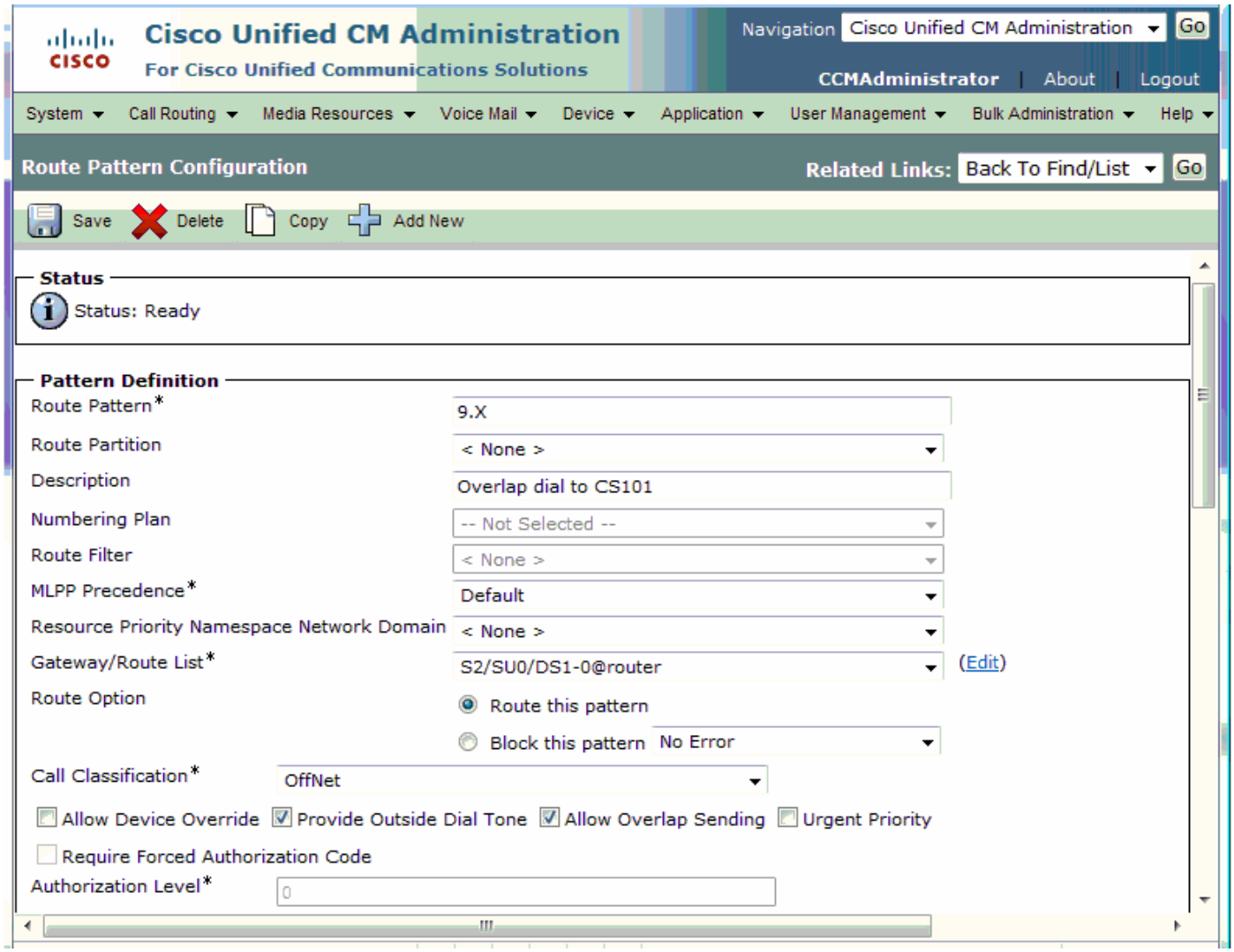
Overlap Sending Route Pattern Configuration

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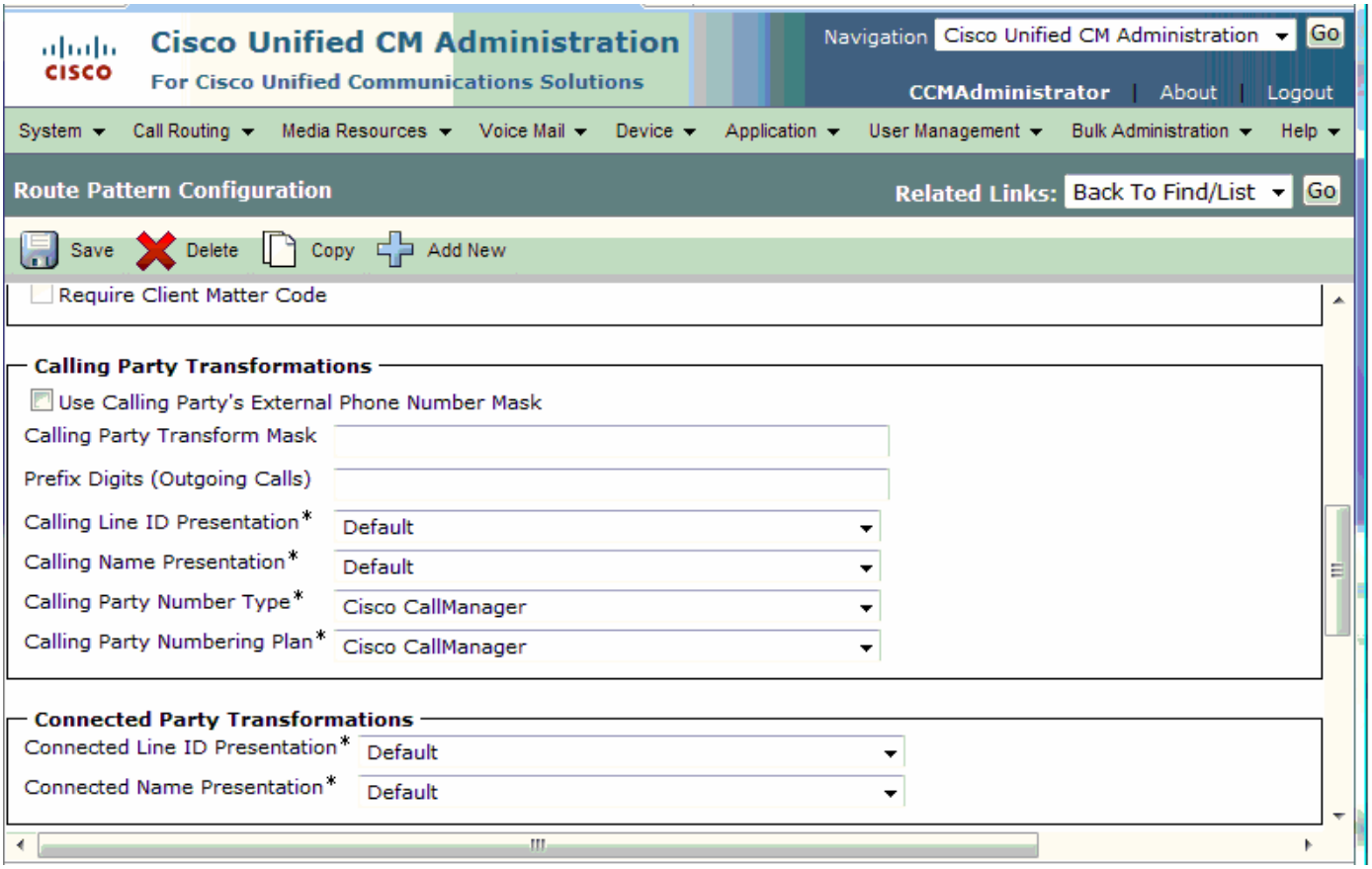


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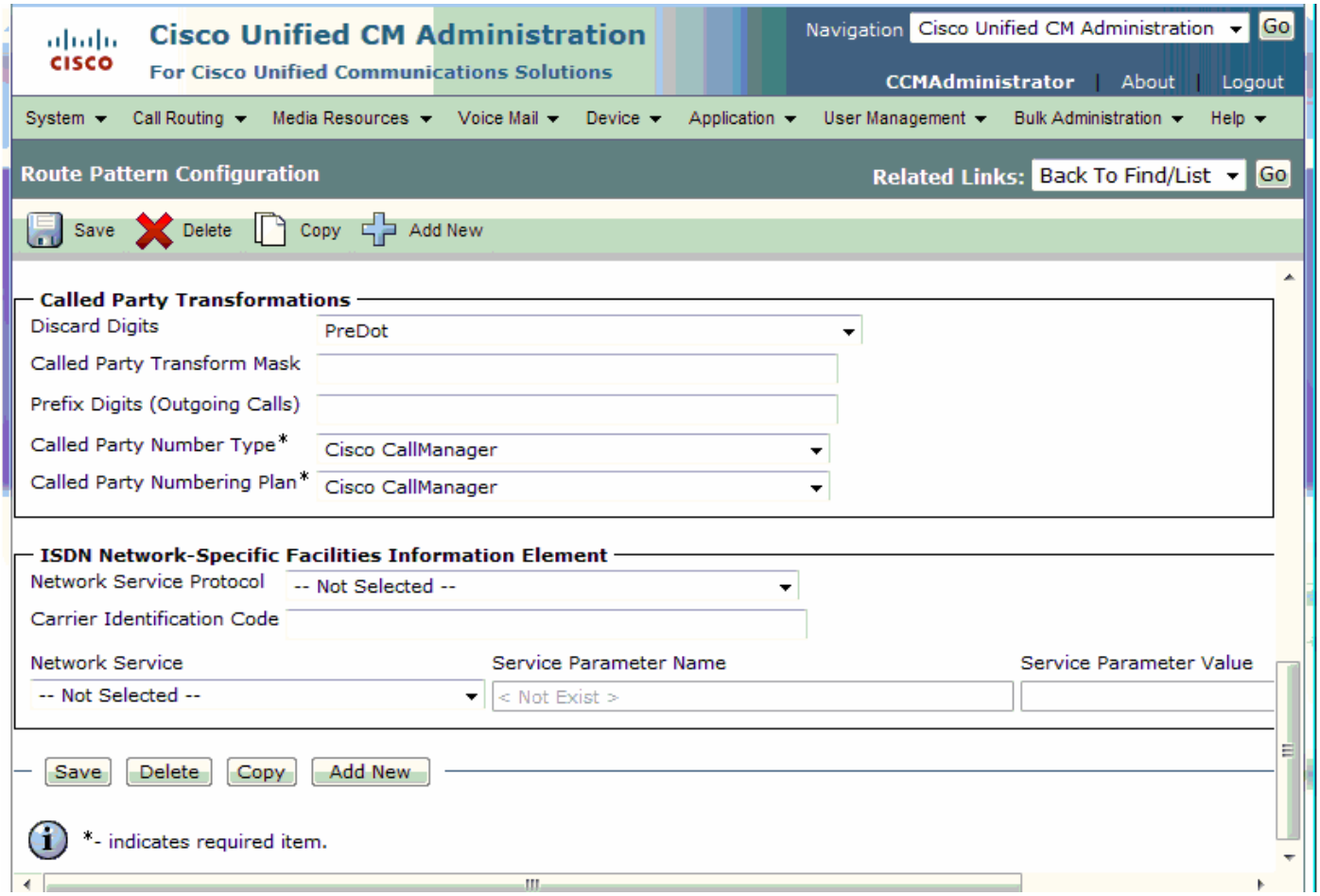


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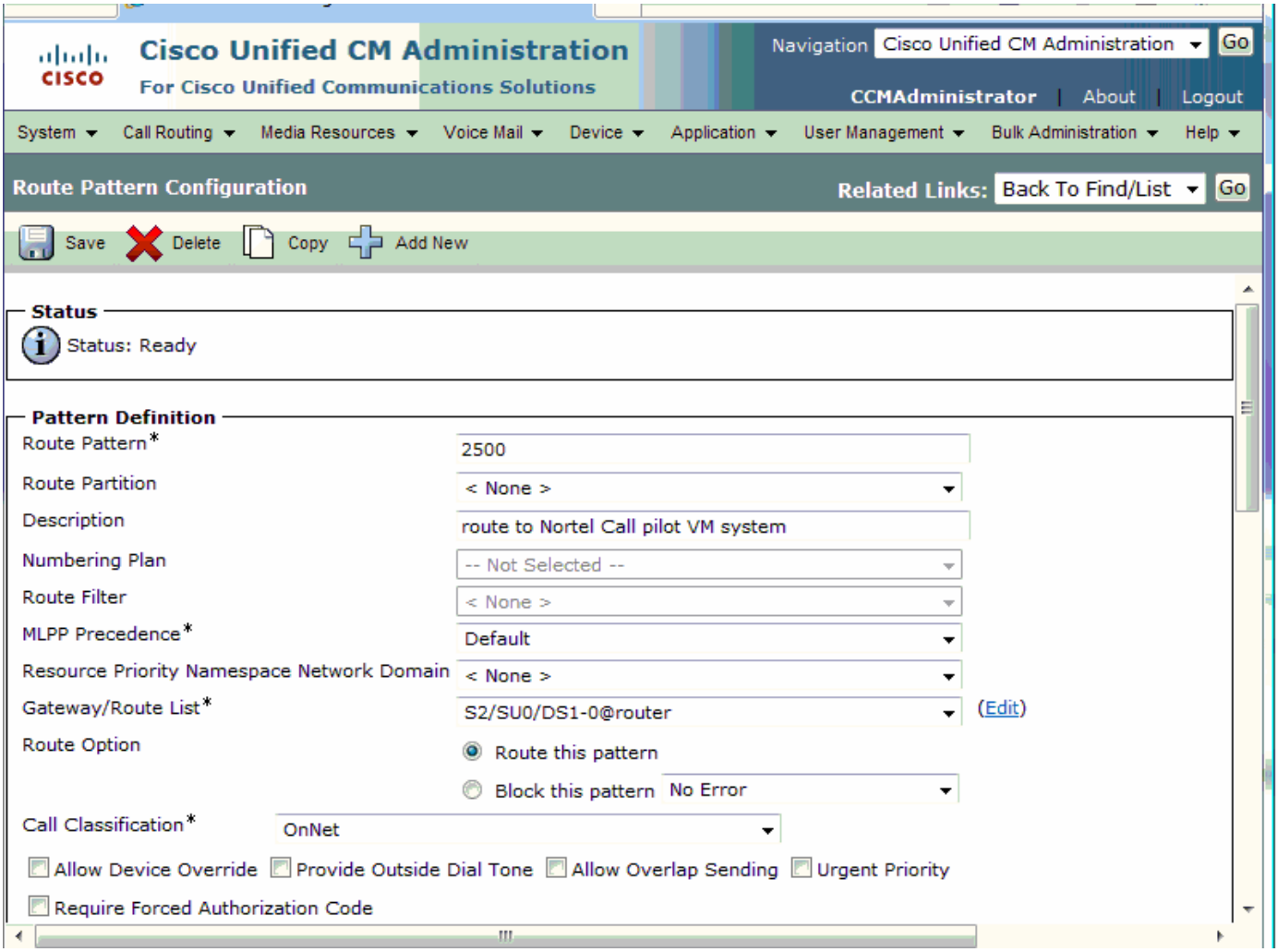
Route Pattern to Nortel CallPilot

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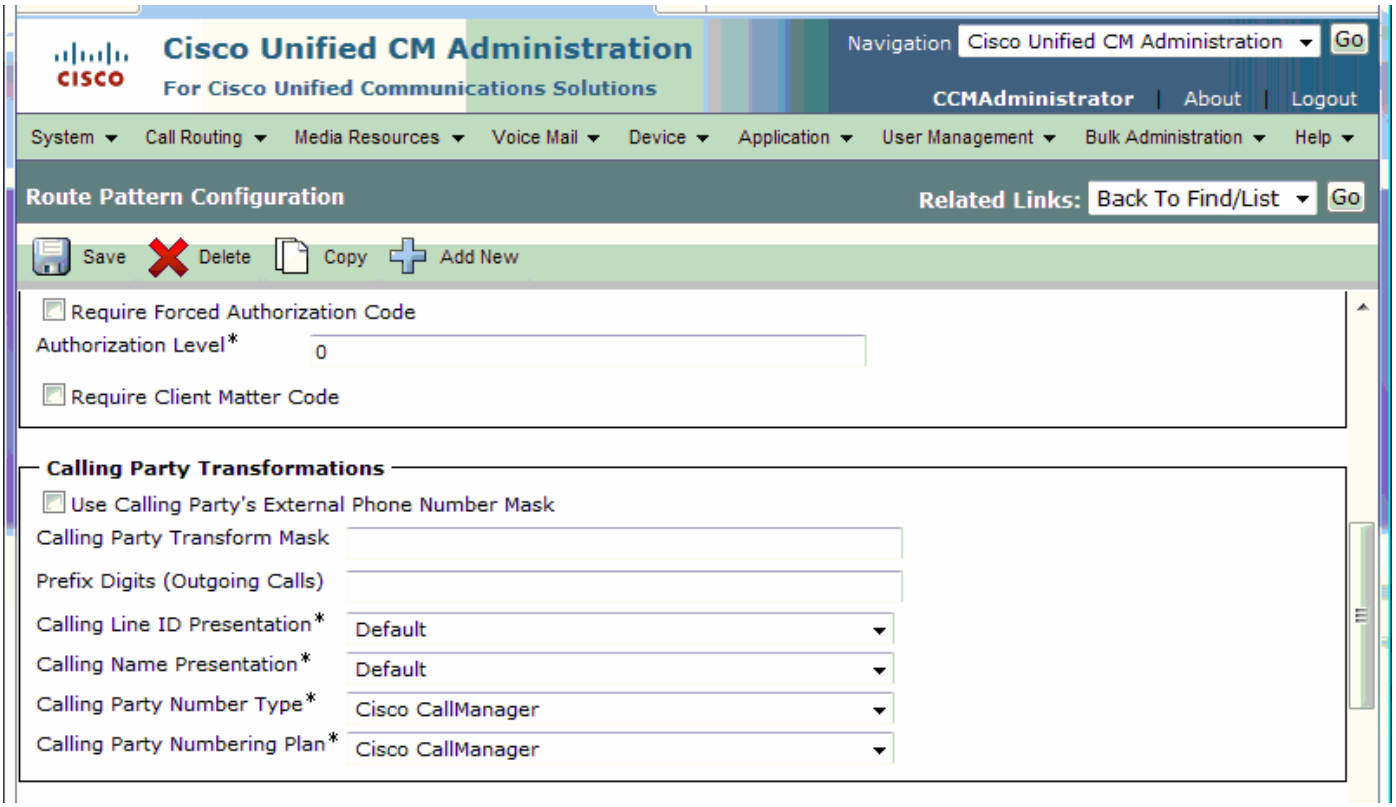


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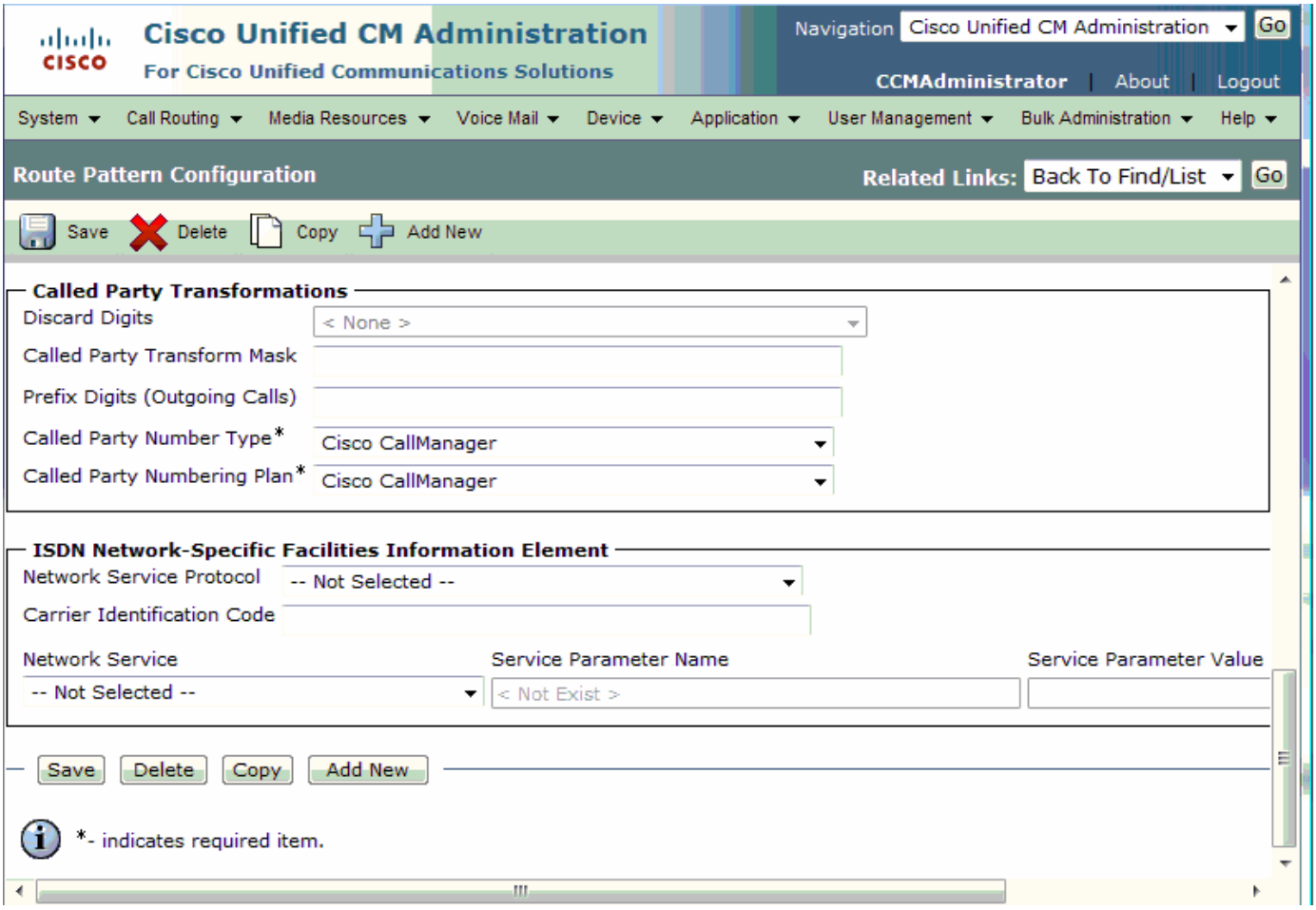


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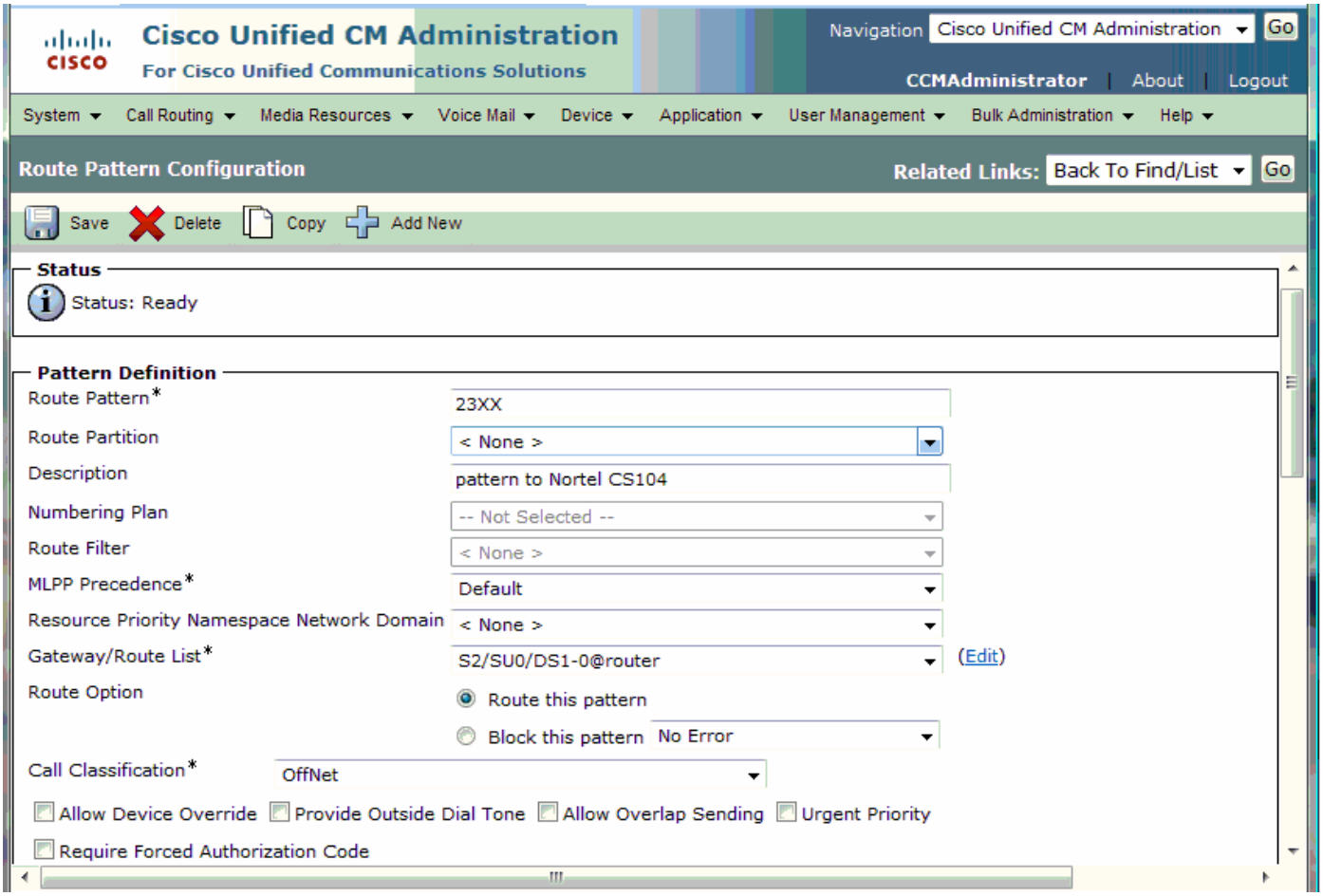
Route Pattern to Nortel CS 1000E

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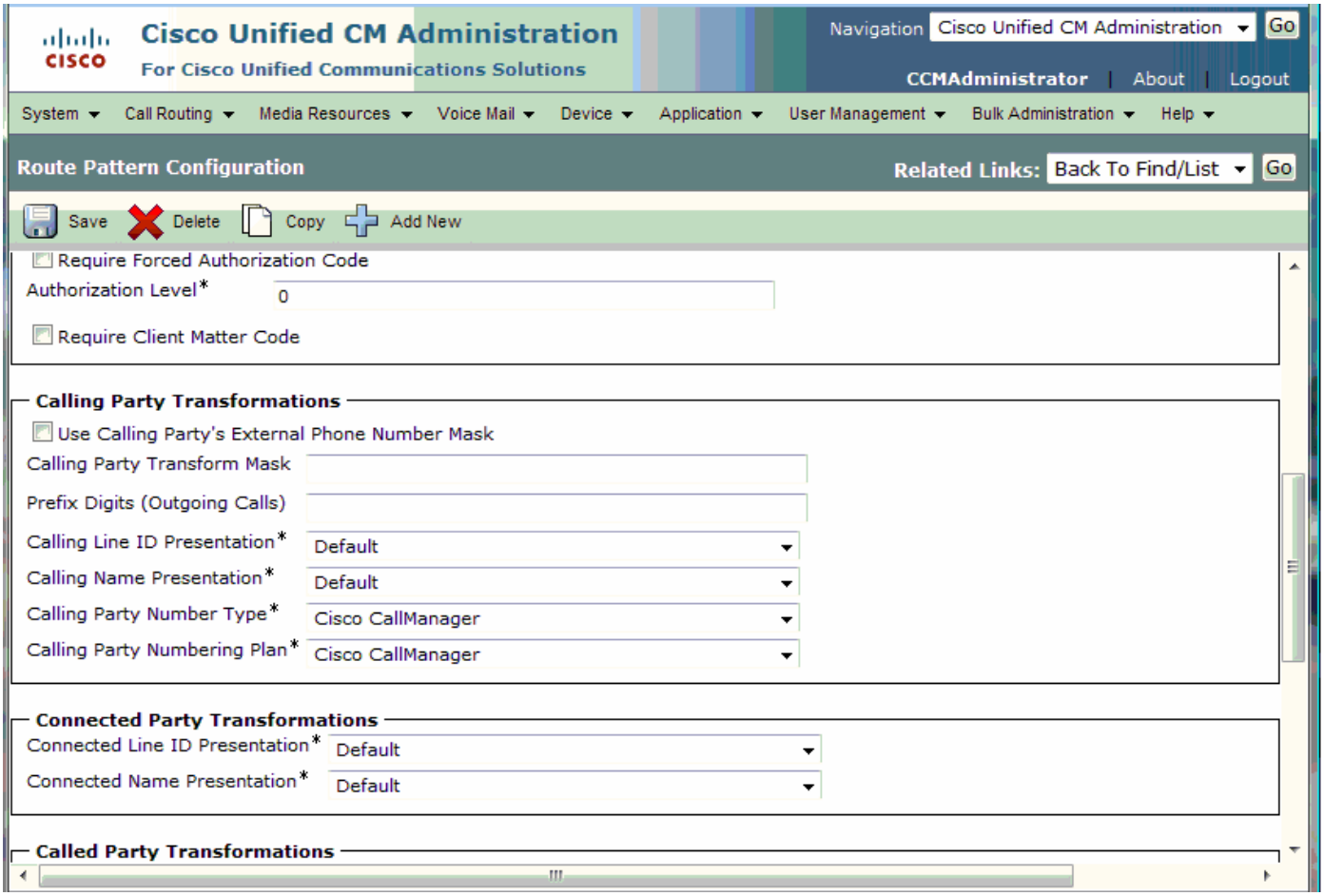


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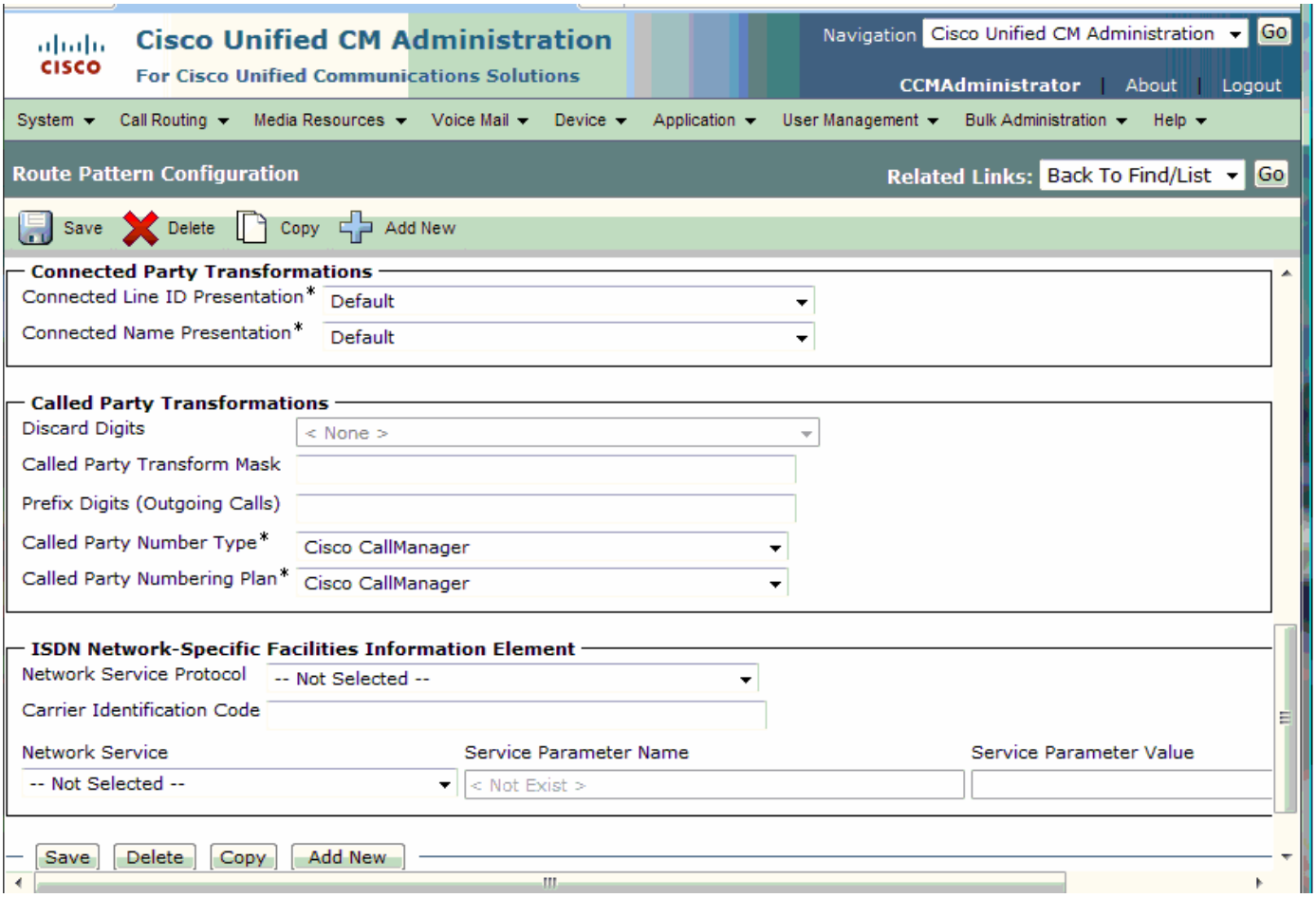


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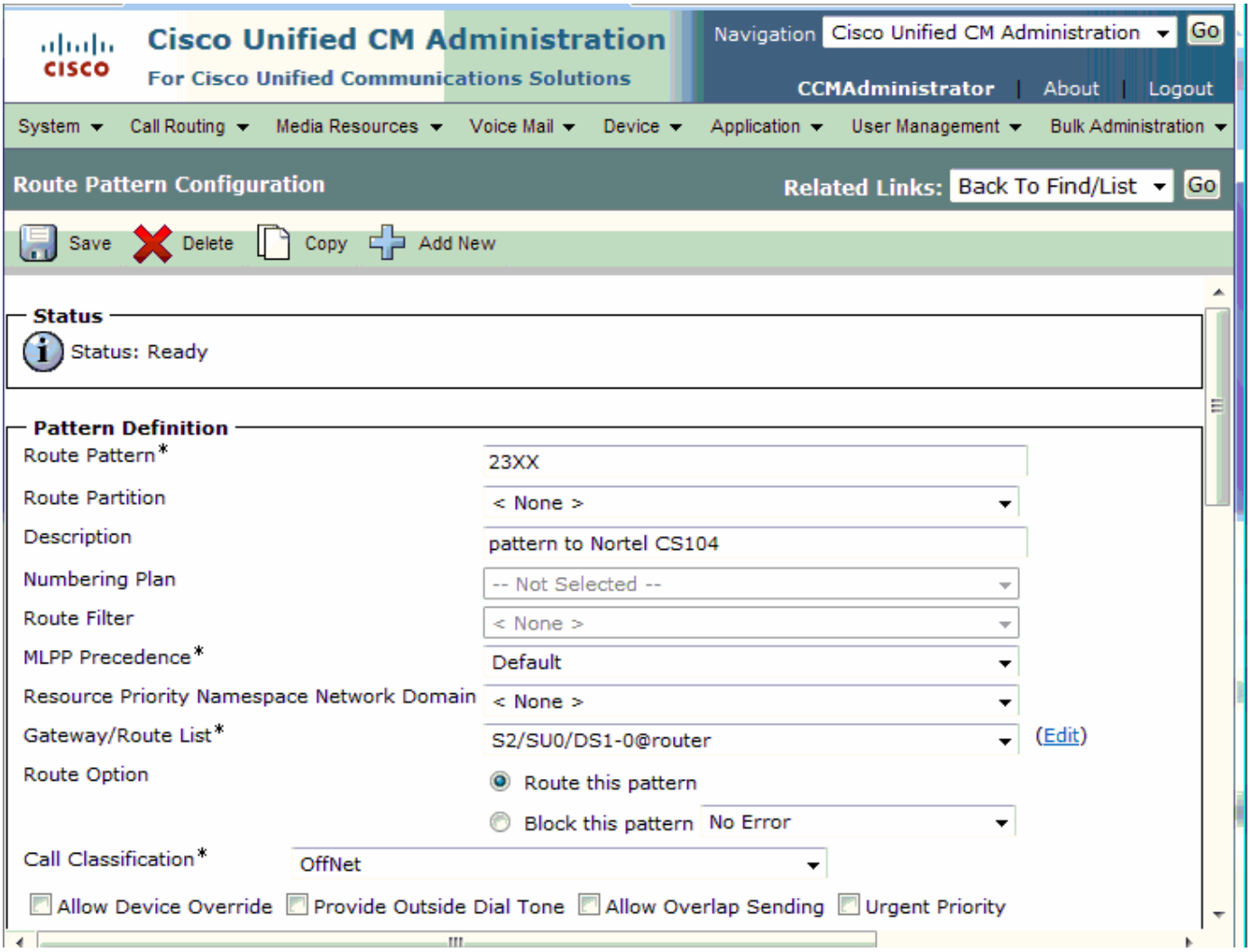
CLIR/CNIR on 23xx Route Pattern

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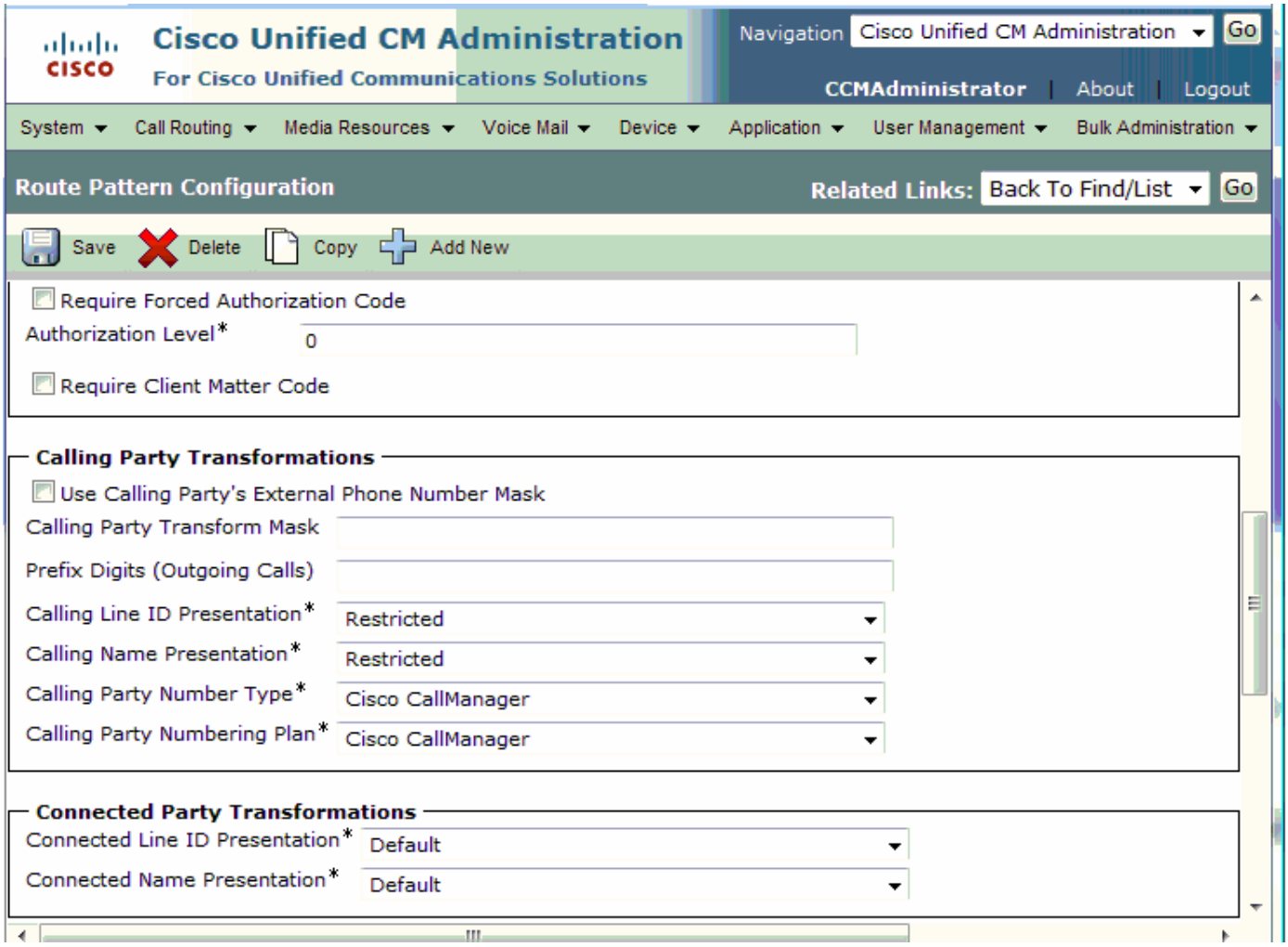


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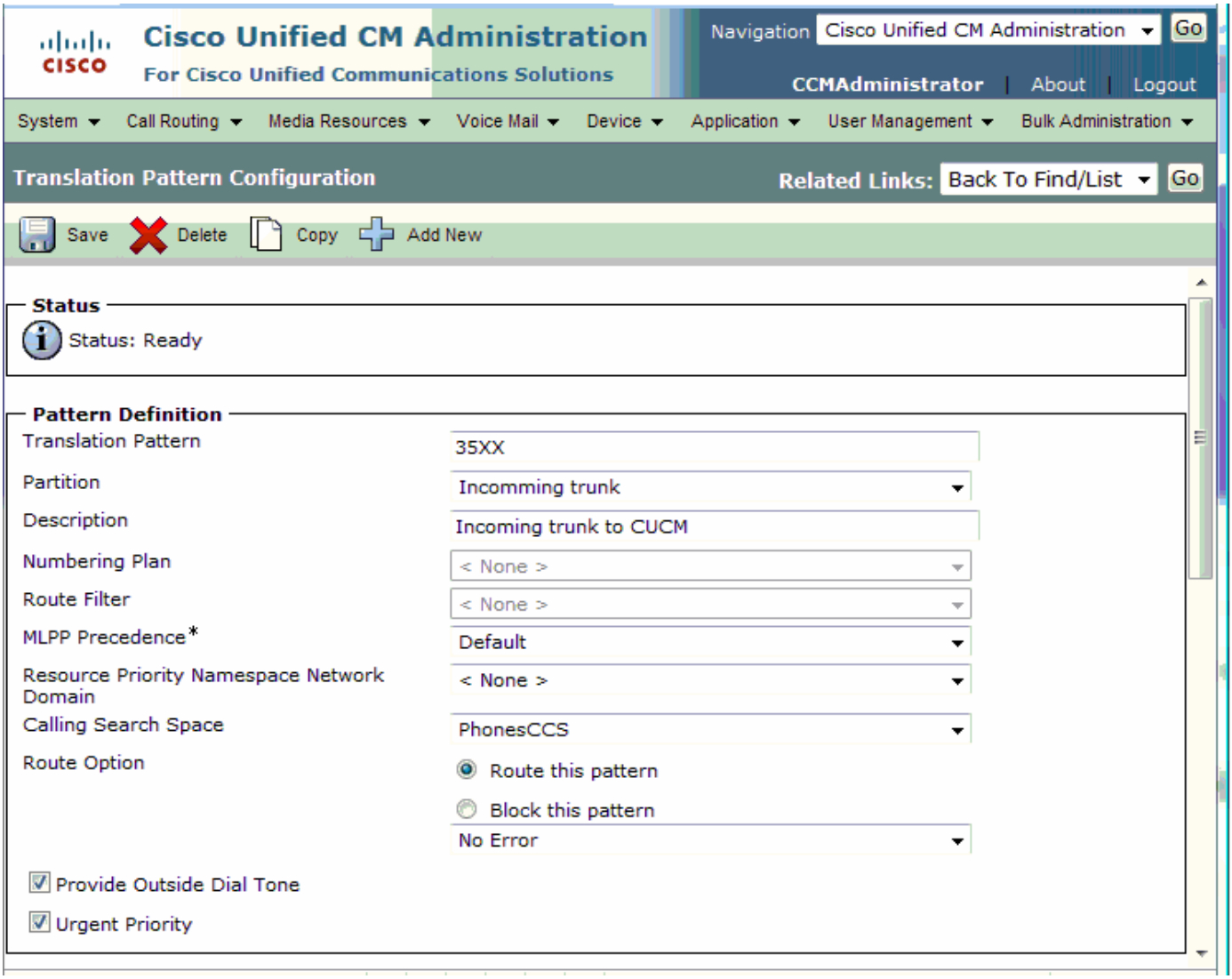
Translation Pattern 35xx: Connected Name and Number Restrictions

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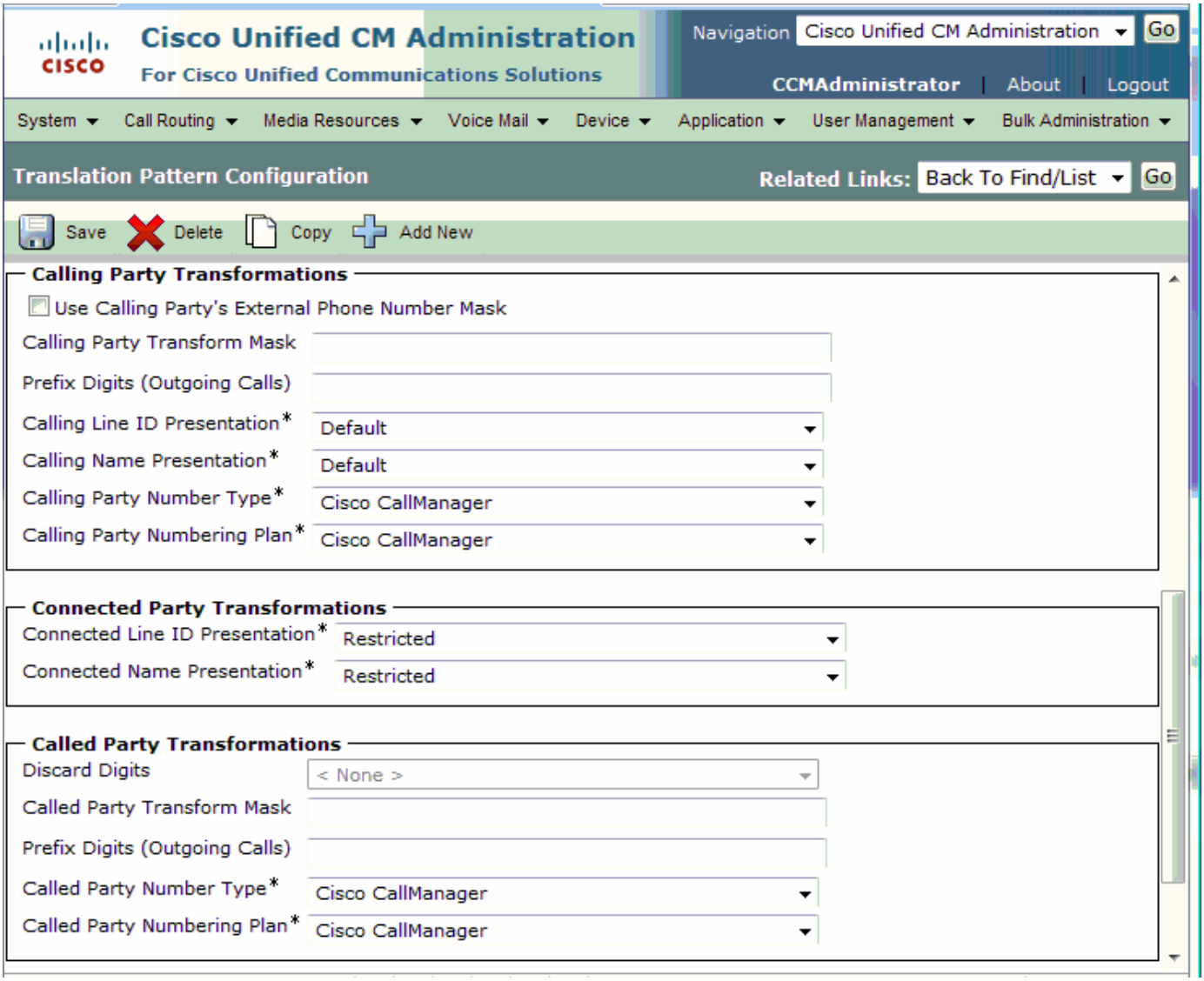


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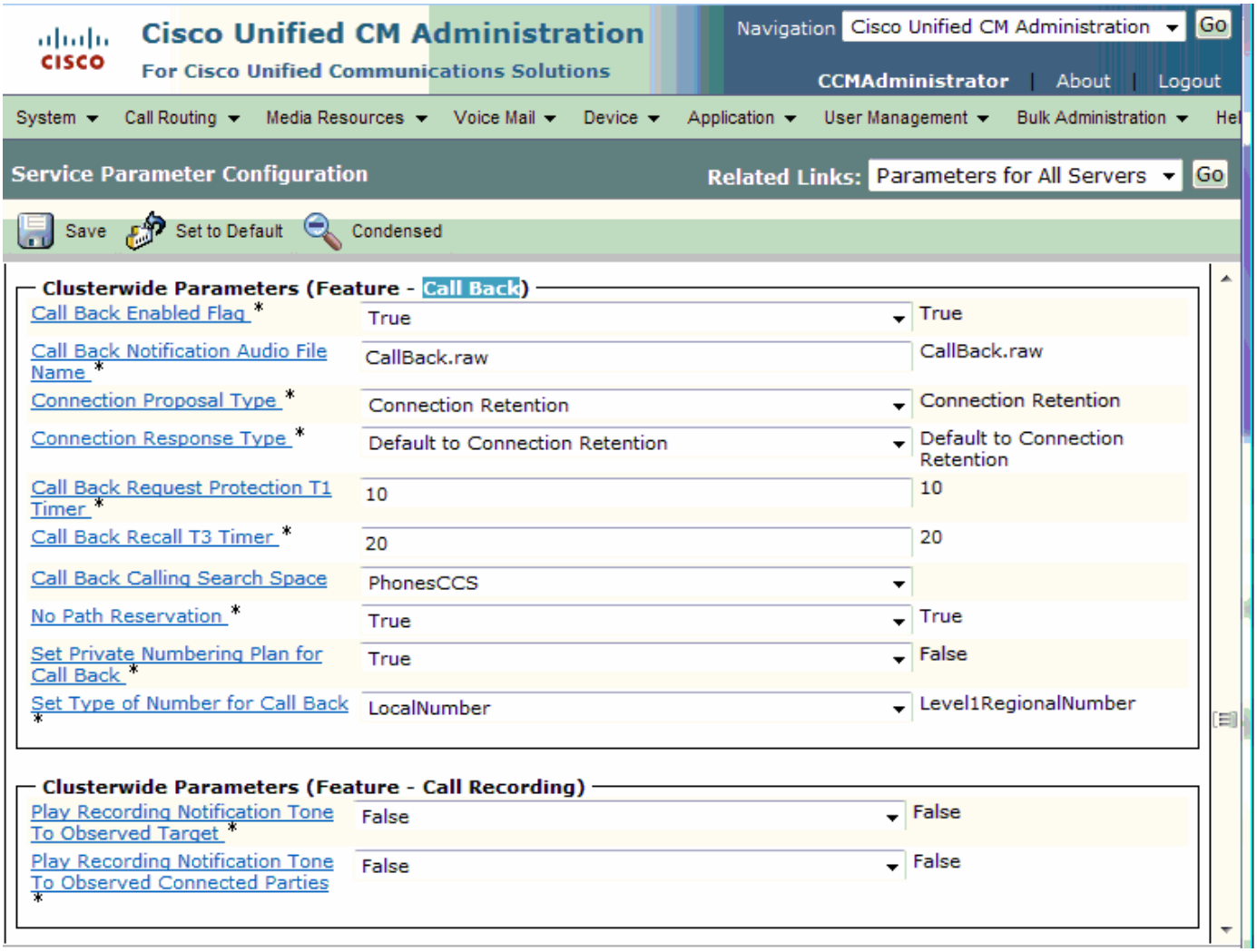
Call Back Service Parameters

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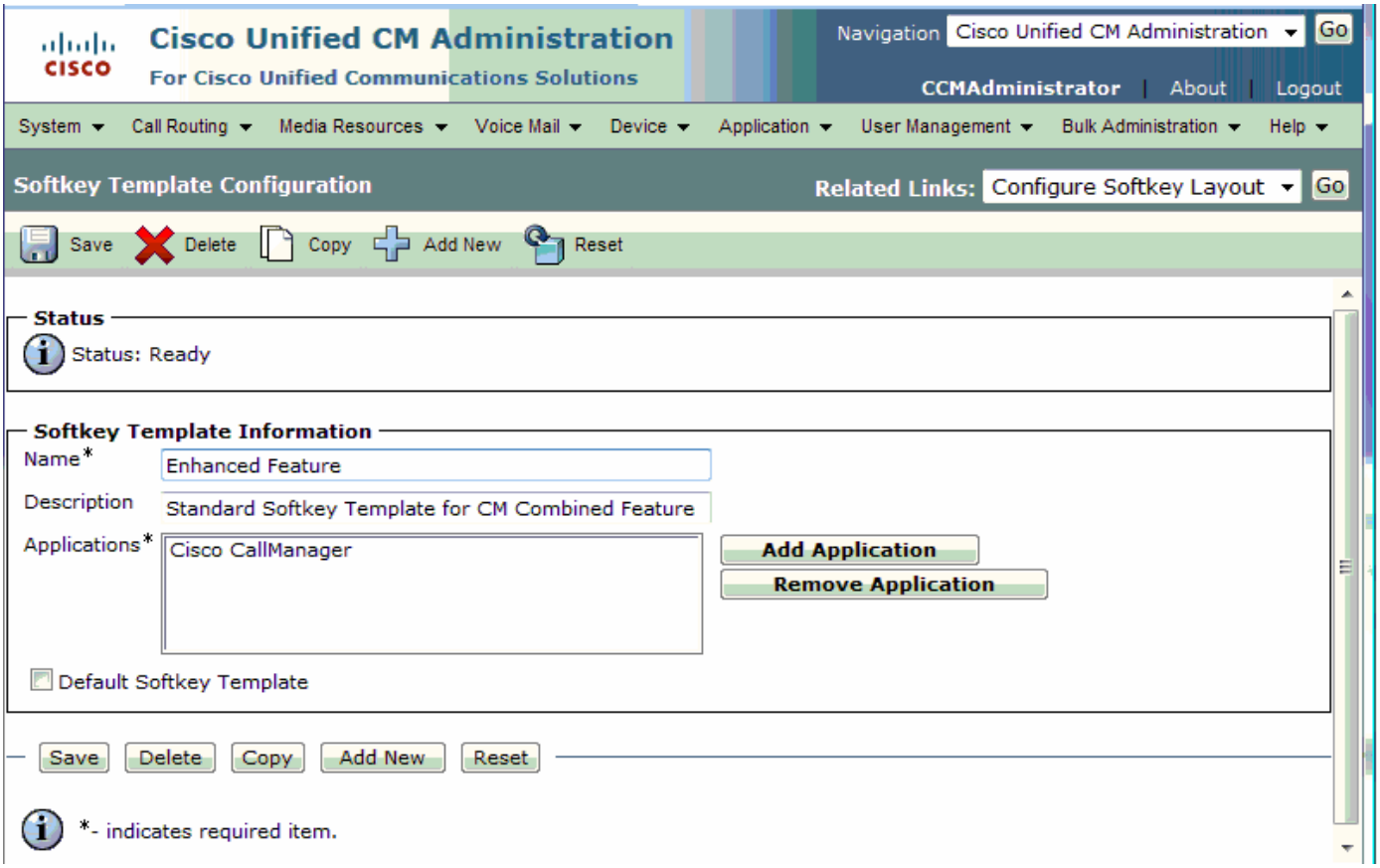
Call Back and IDivert Soft Key Template

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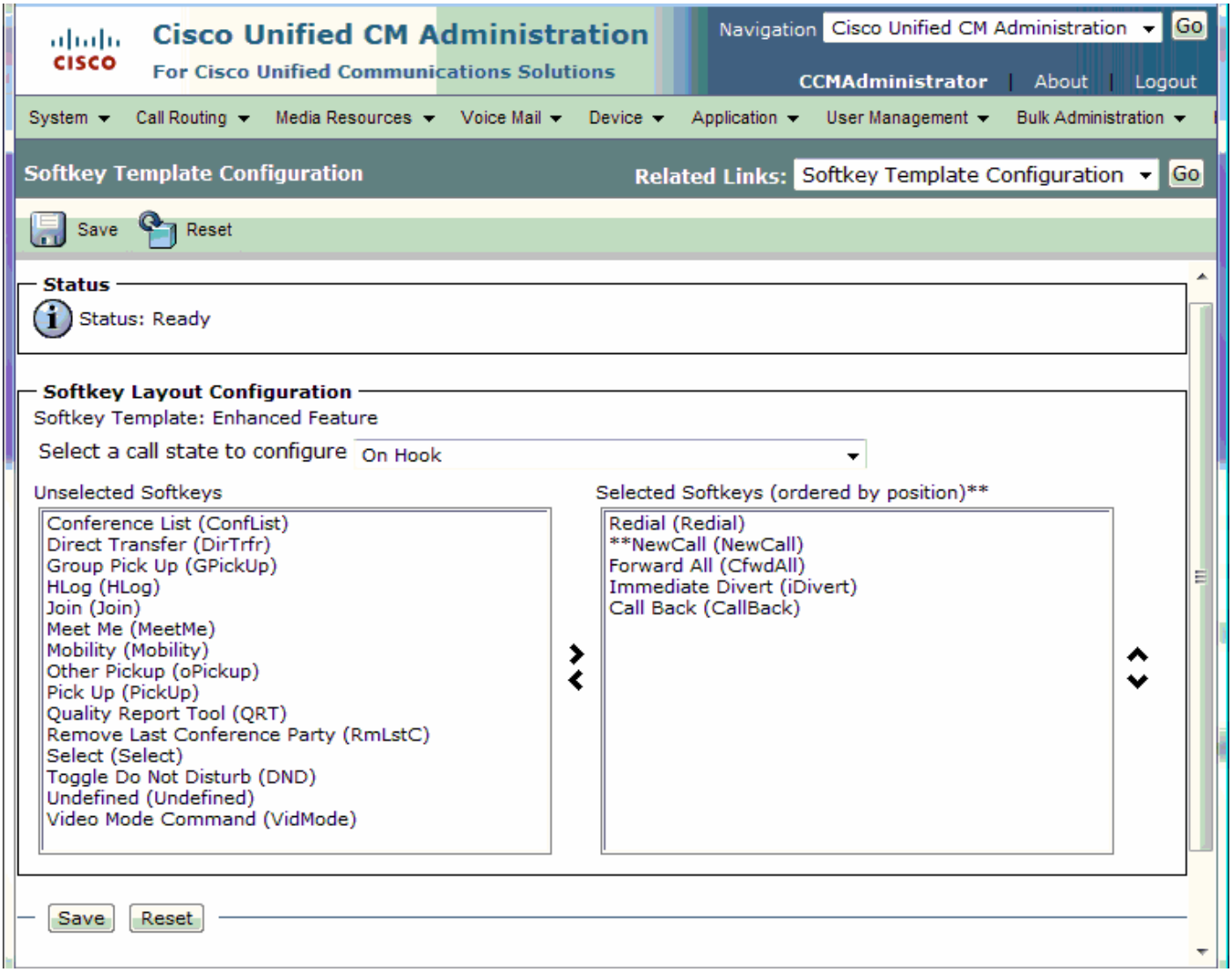
Call Back and IDivert Soft Key

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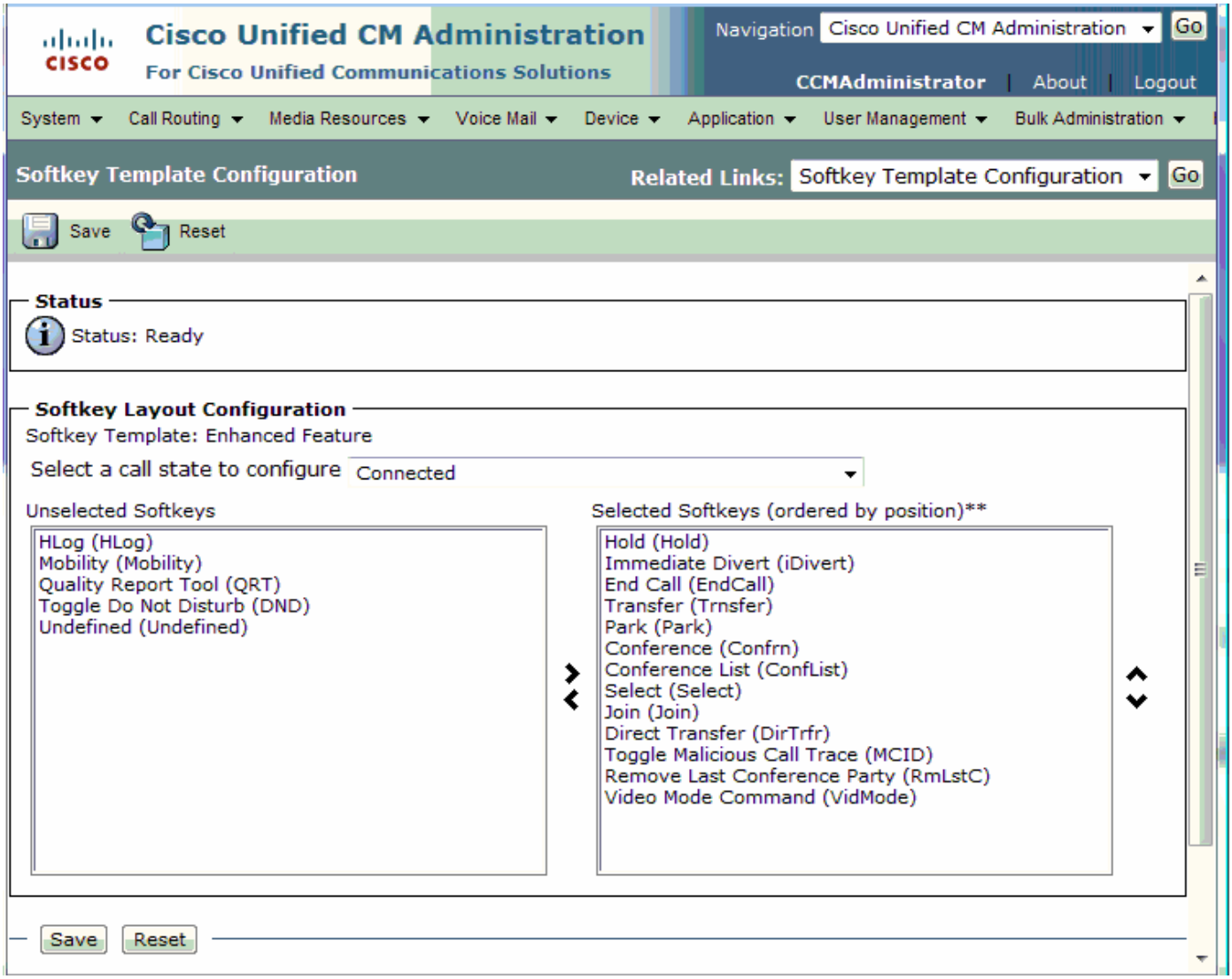


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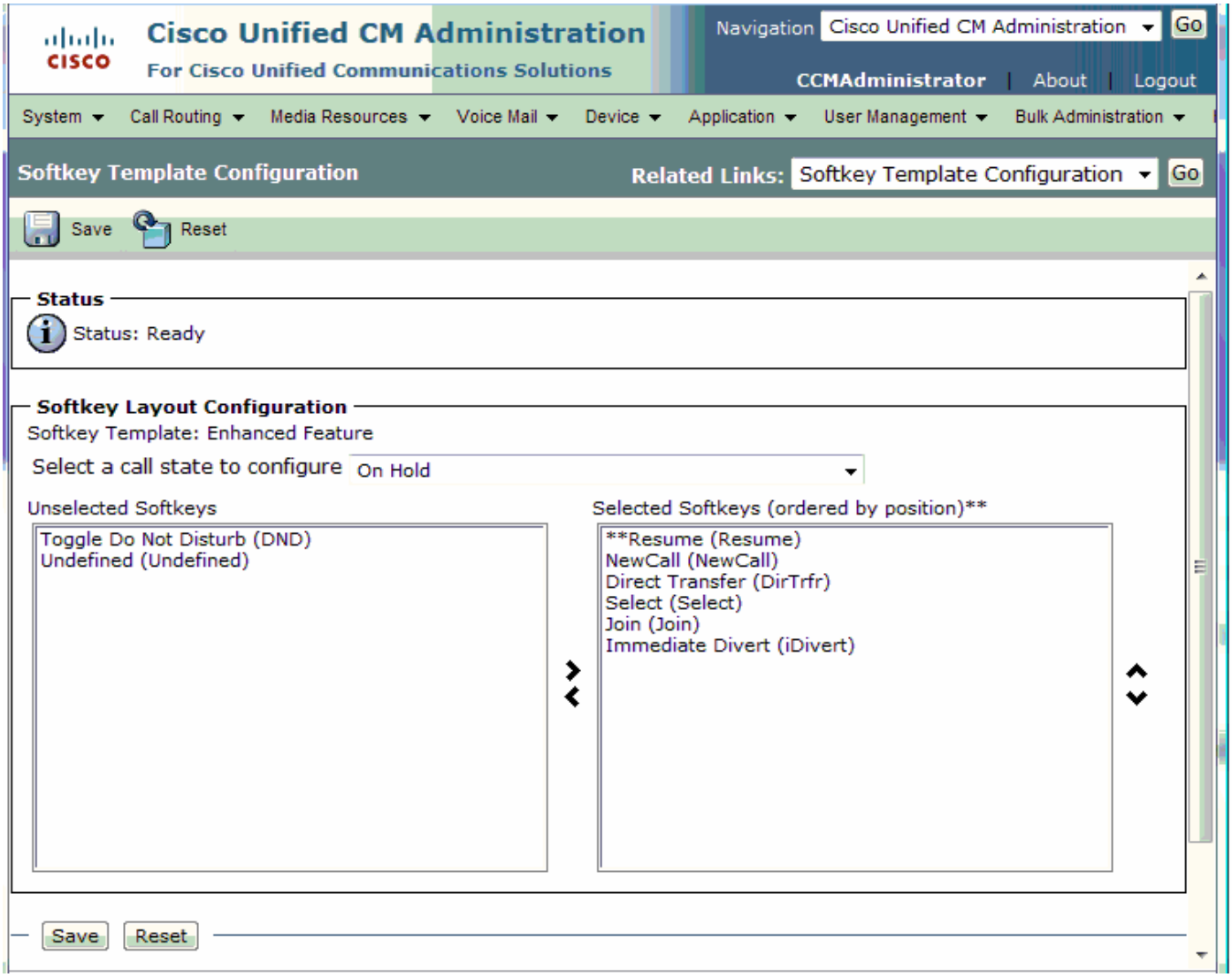


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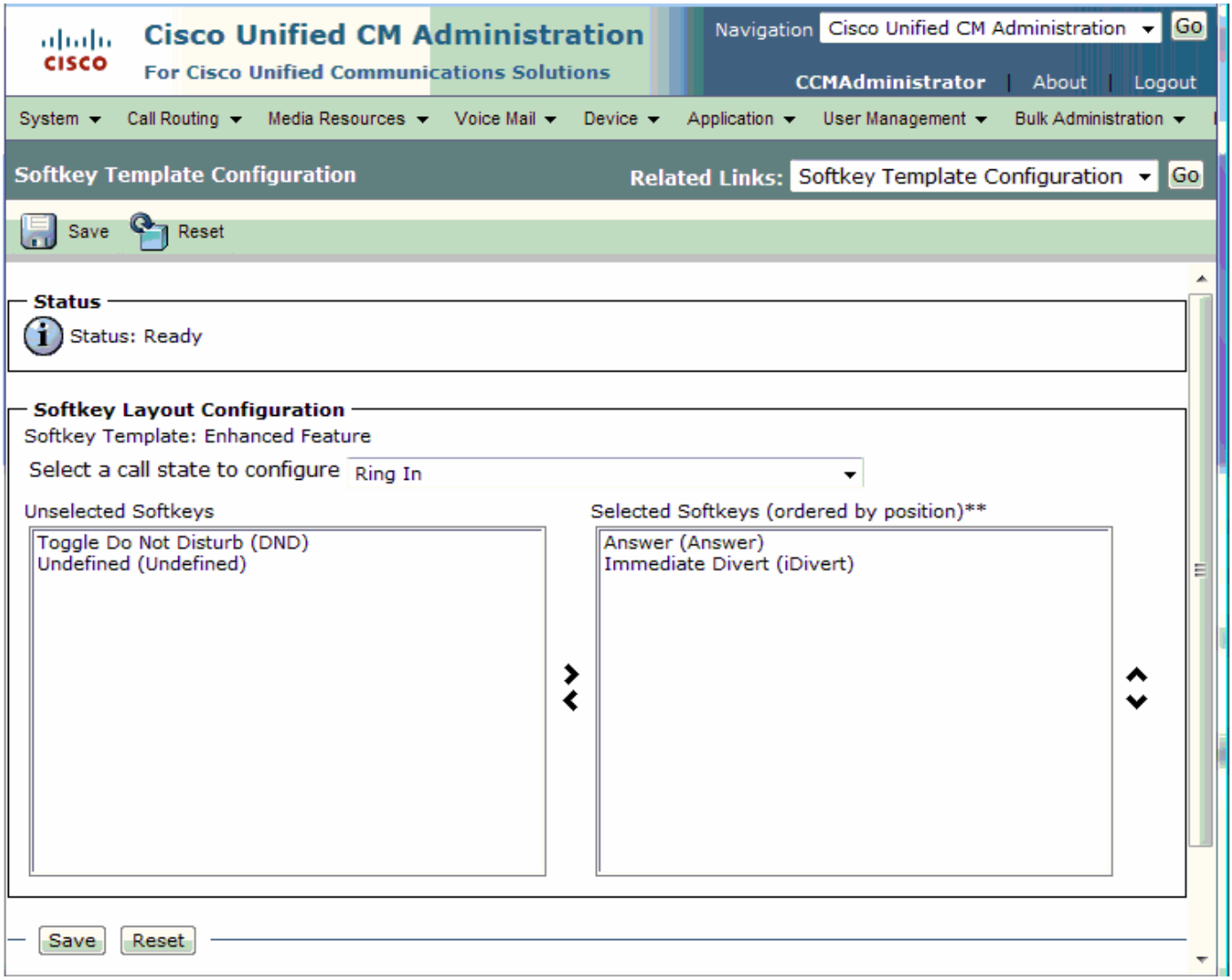


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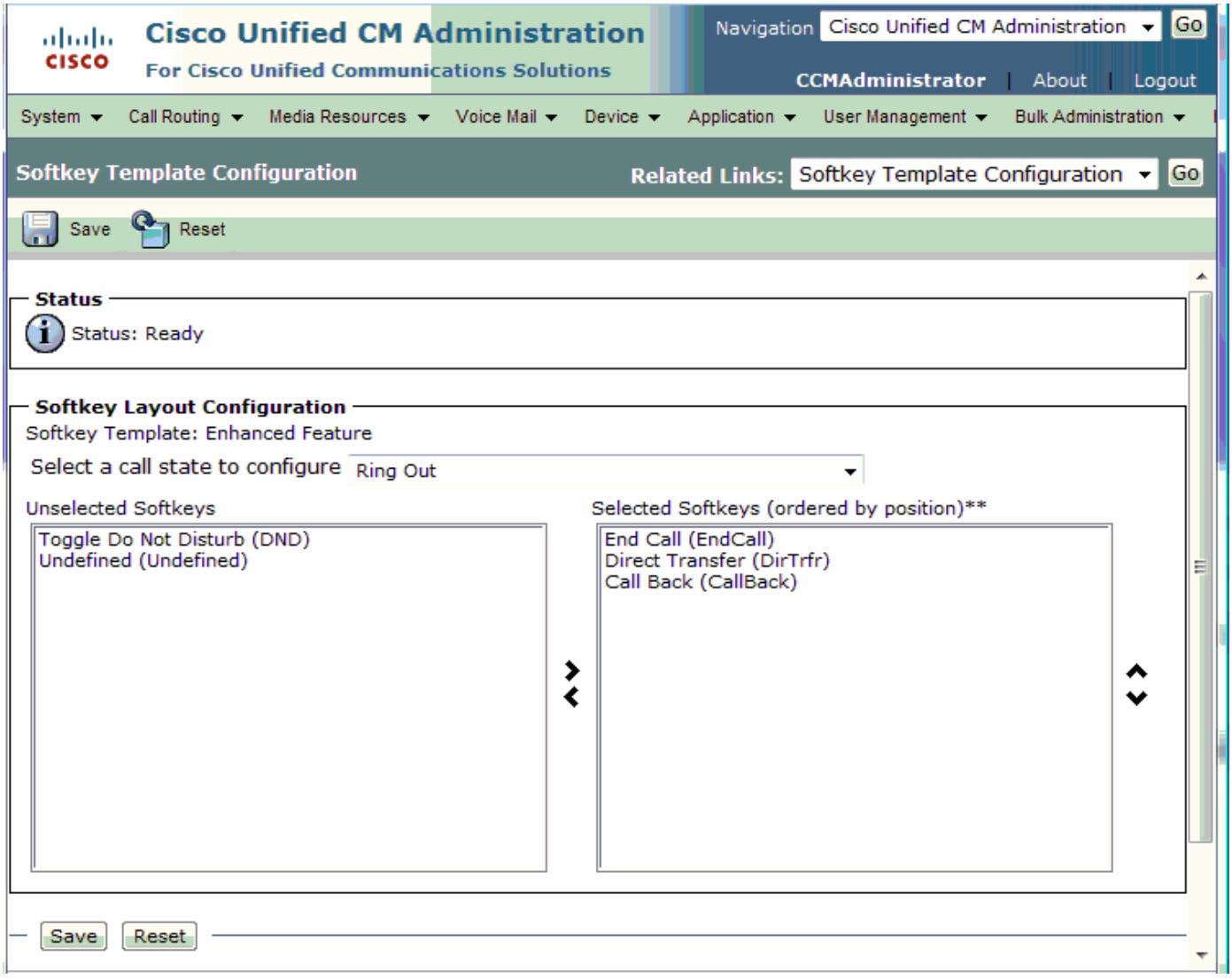


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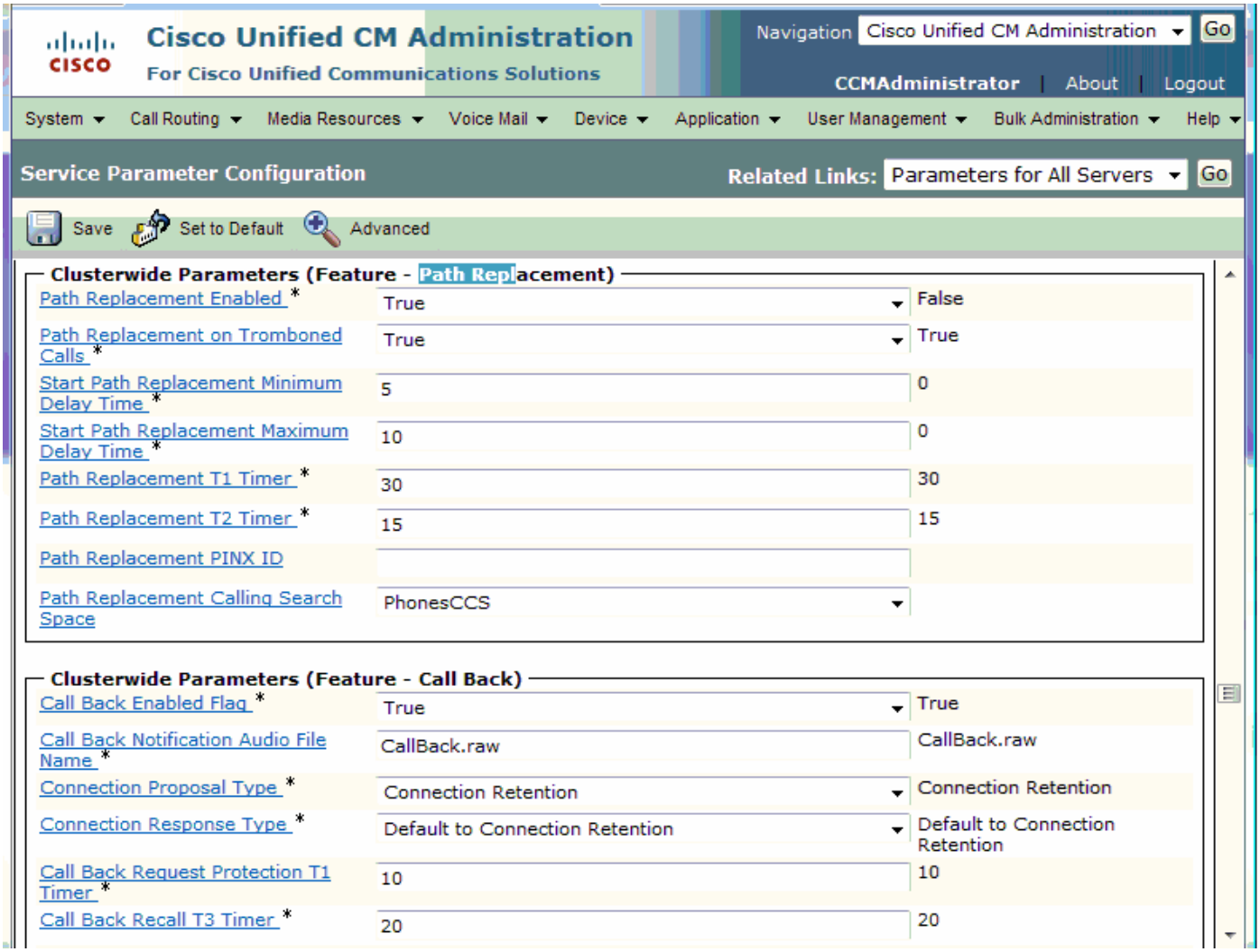
### Route Optimization

Path Replacement Service Parameter

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Reroute Service Parameter

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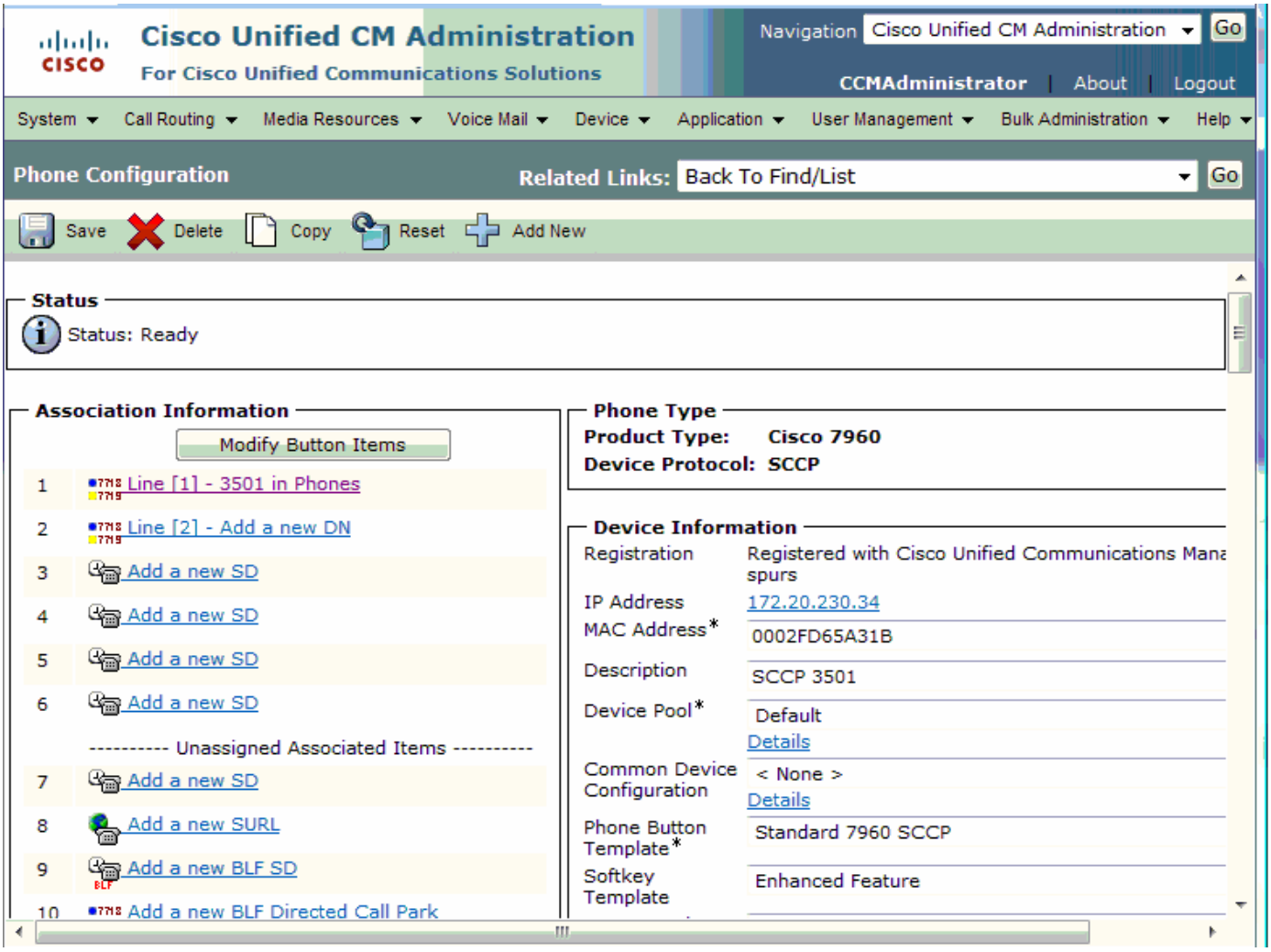
Cisco Unified IP Phone 7960, CSSP

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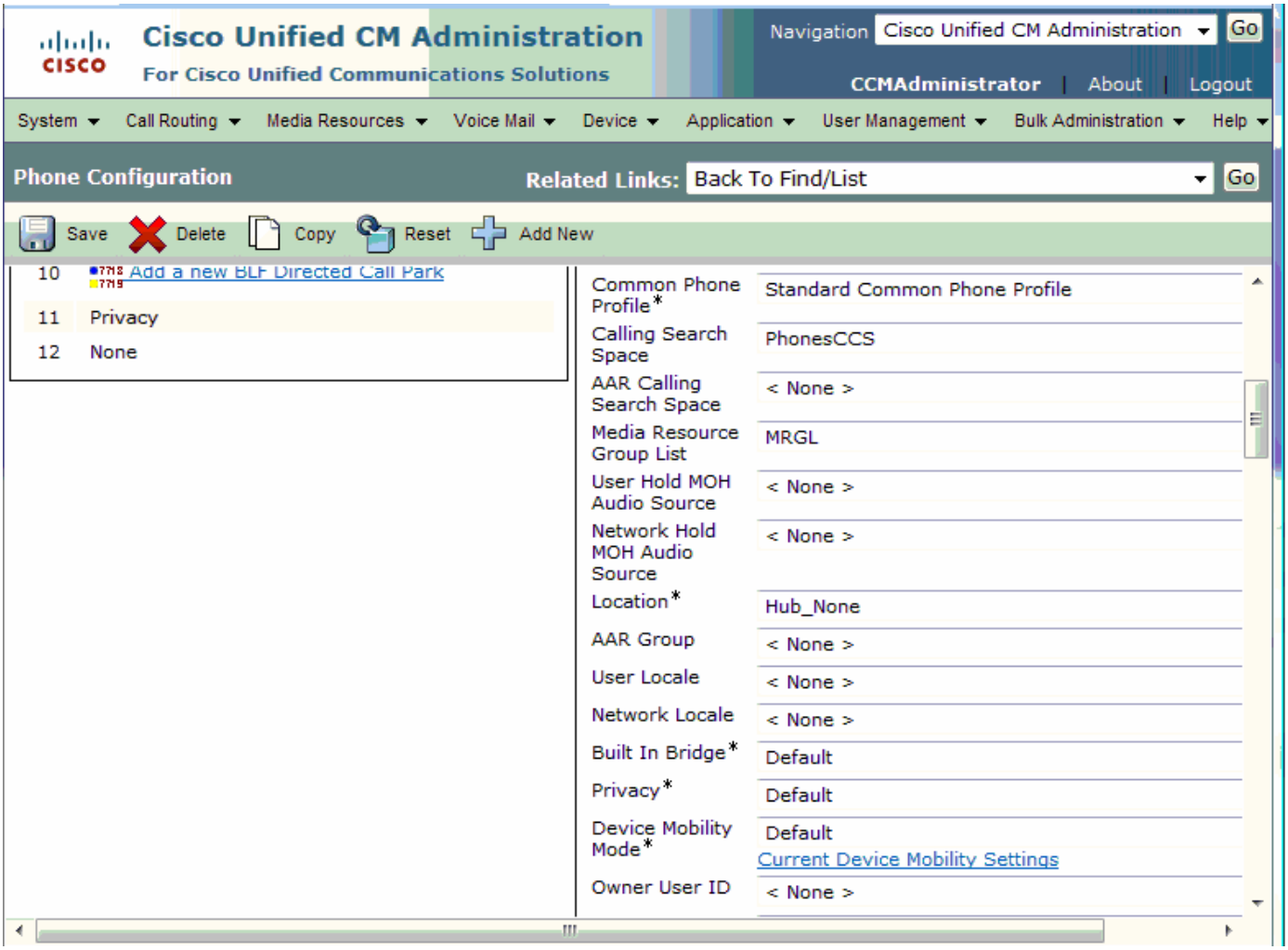


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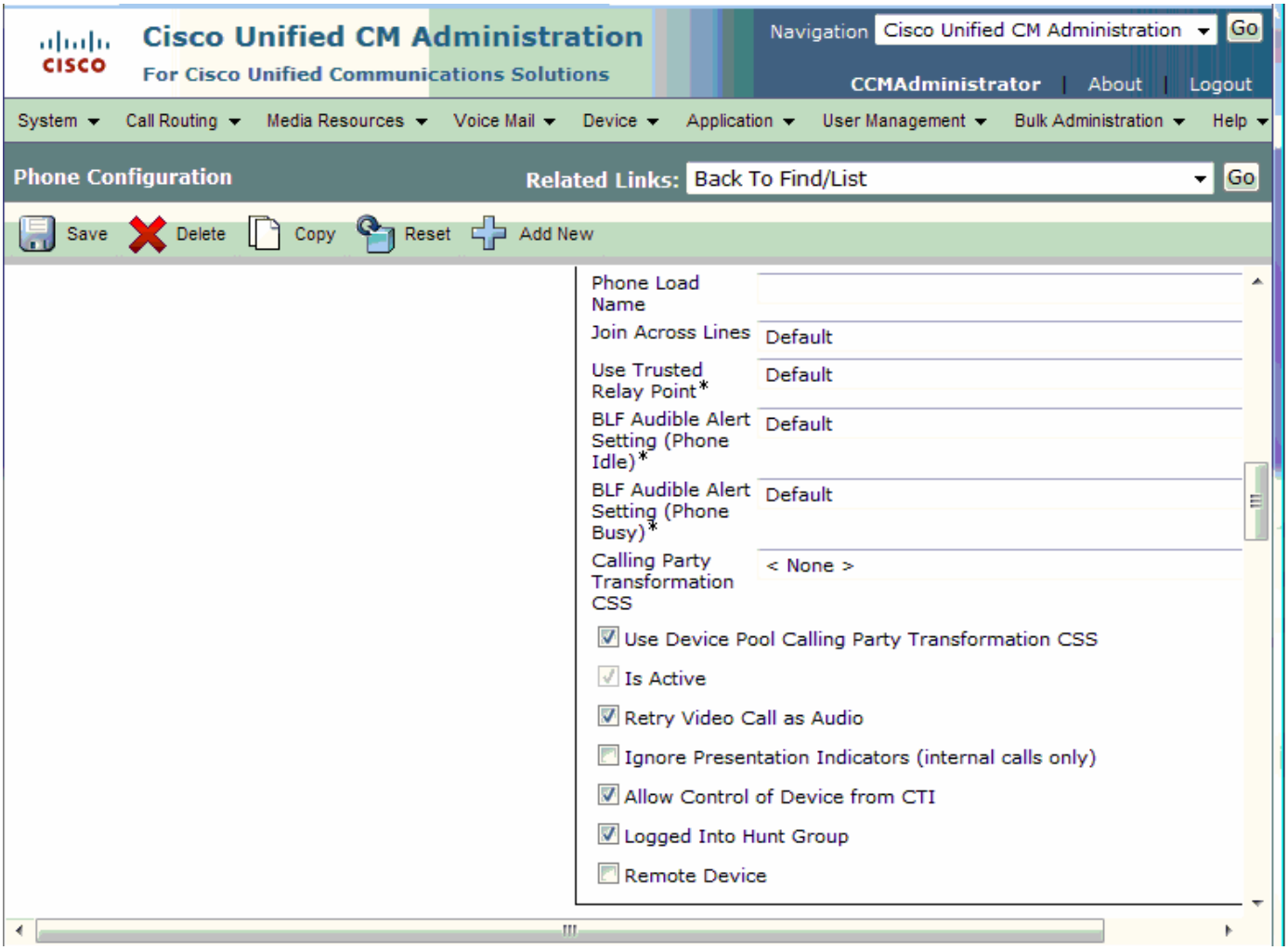


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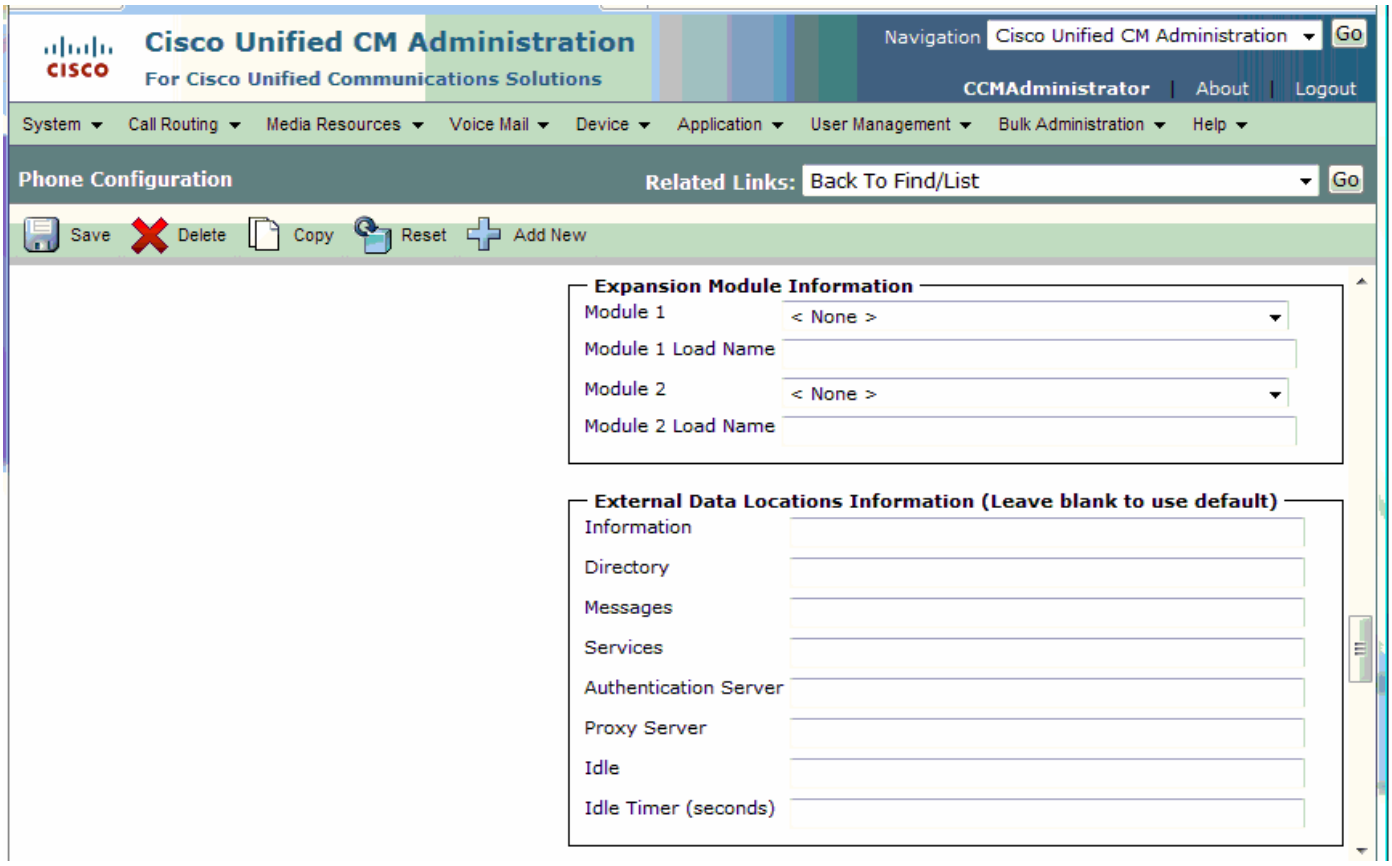


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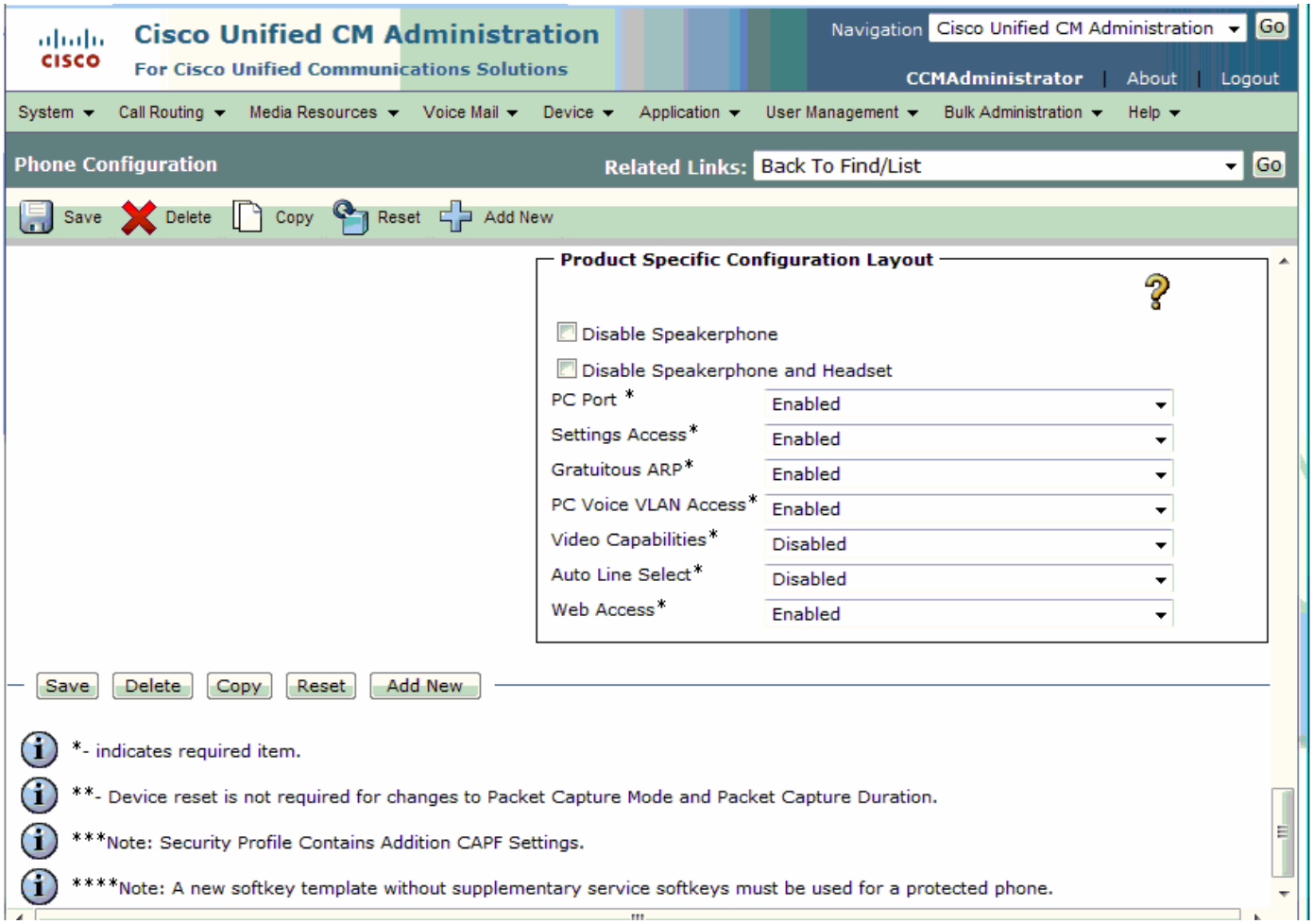


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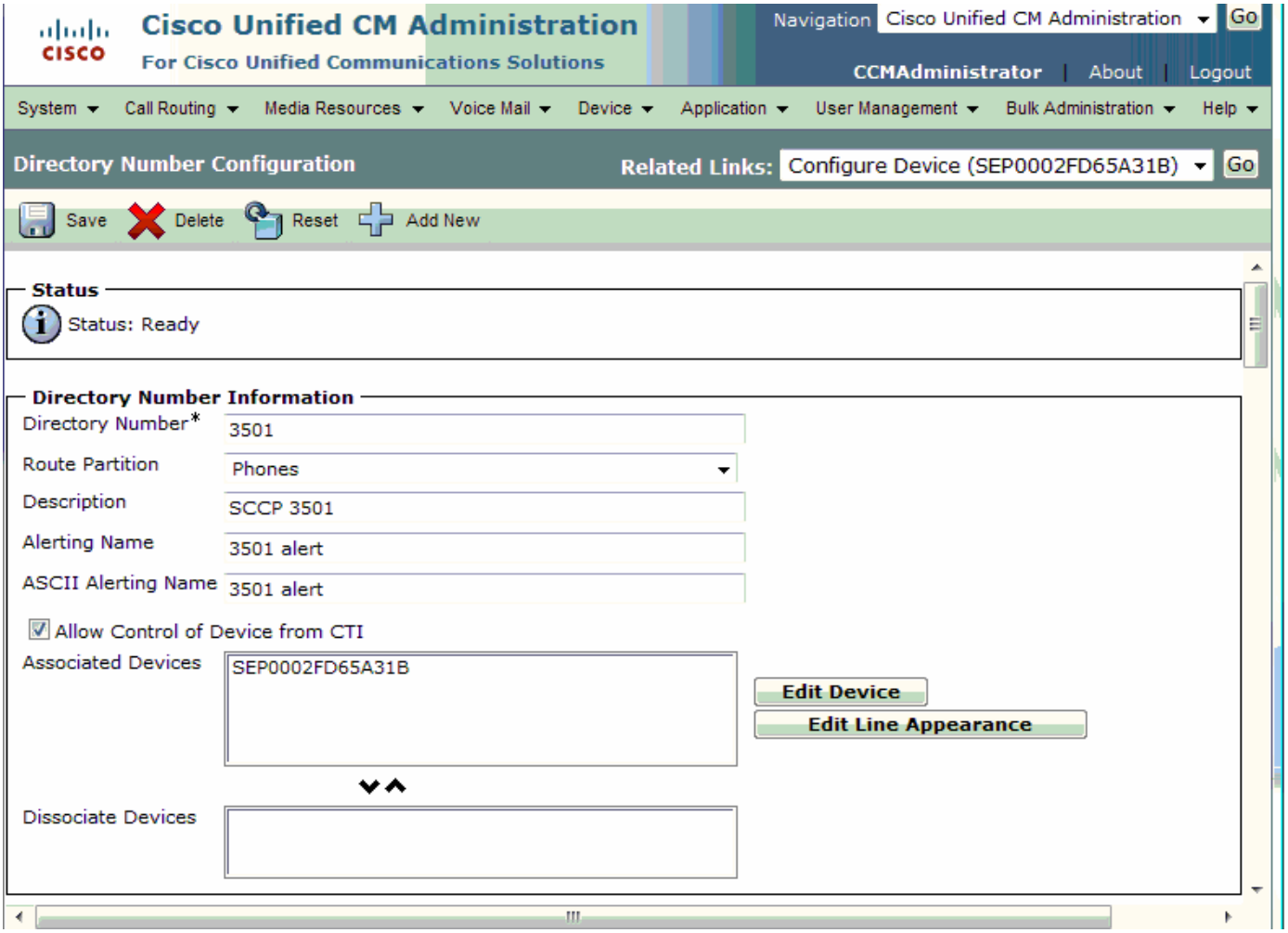
Line Directory Number 3501

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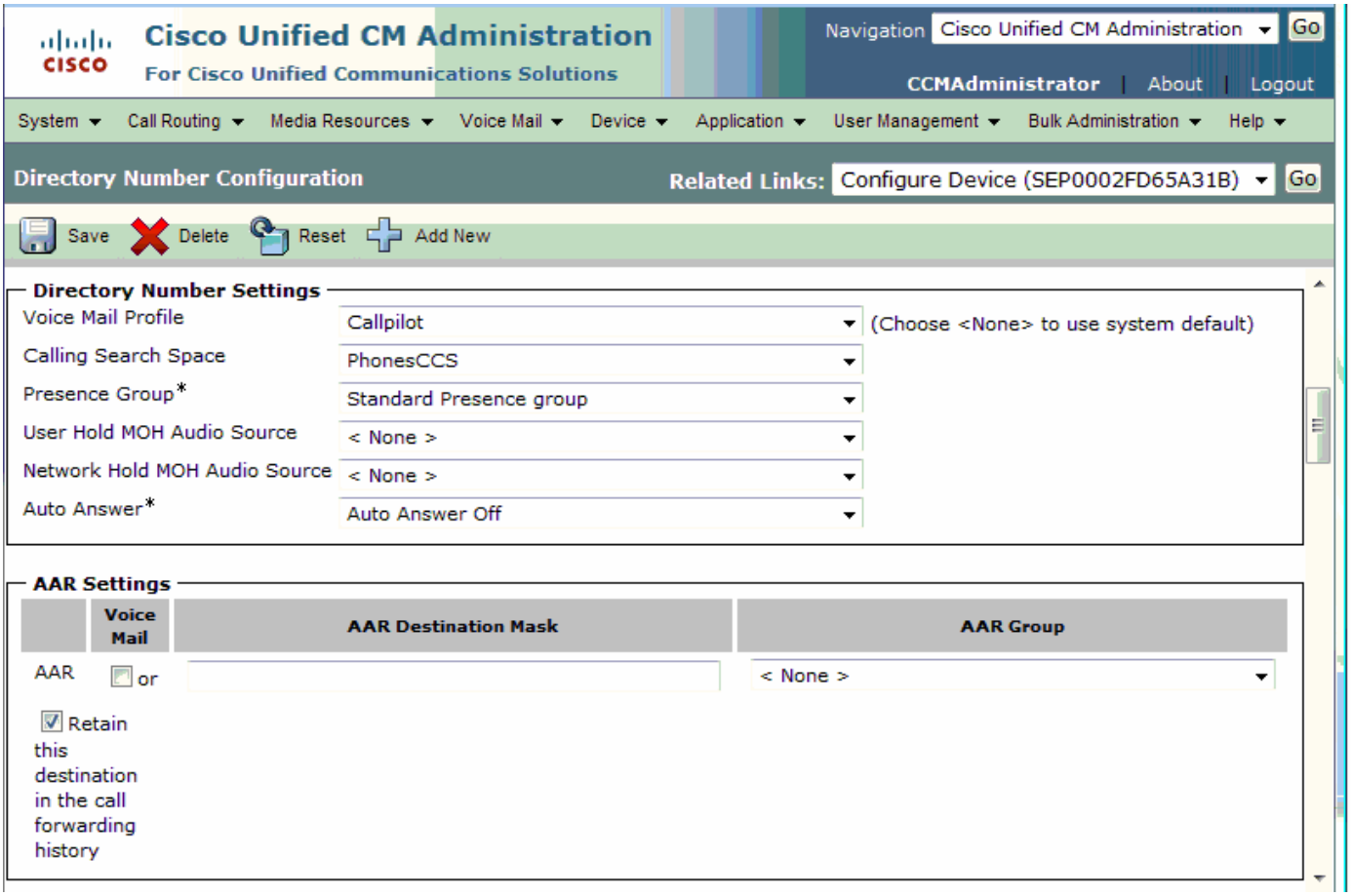


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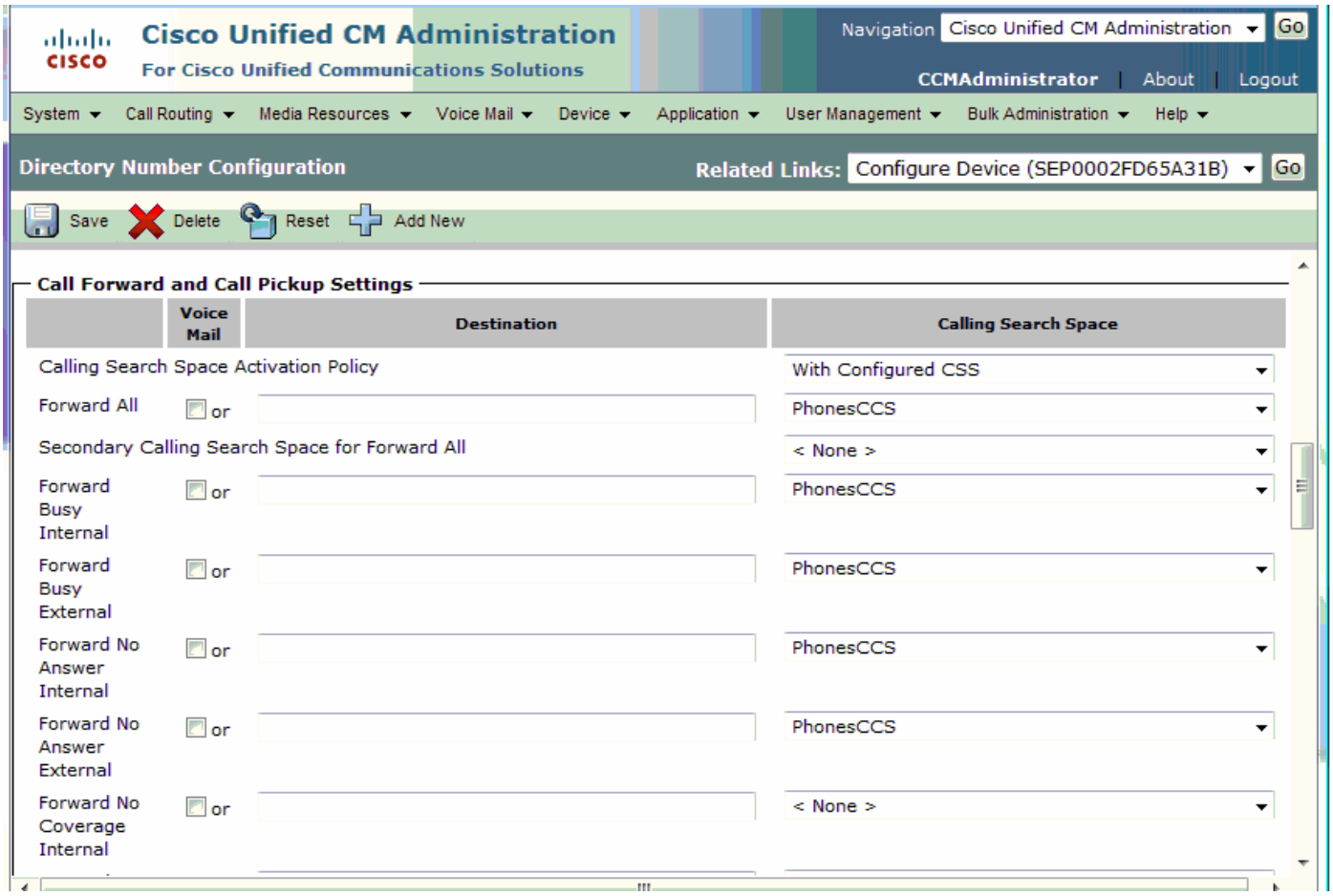


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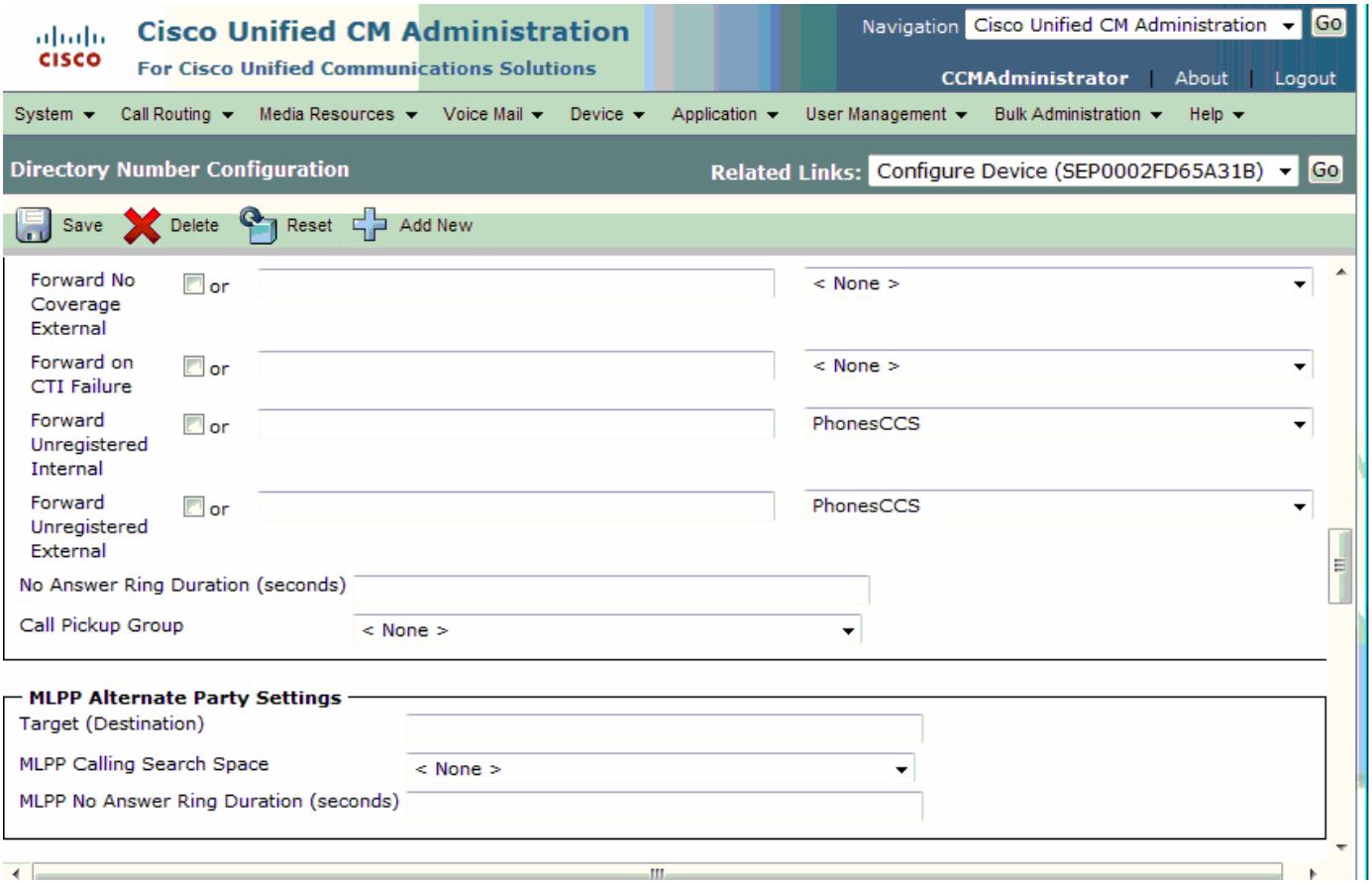


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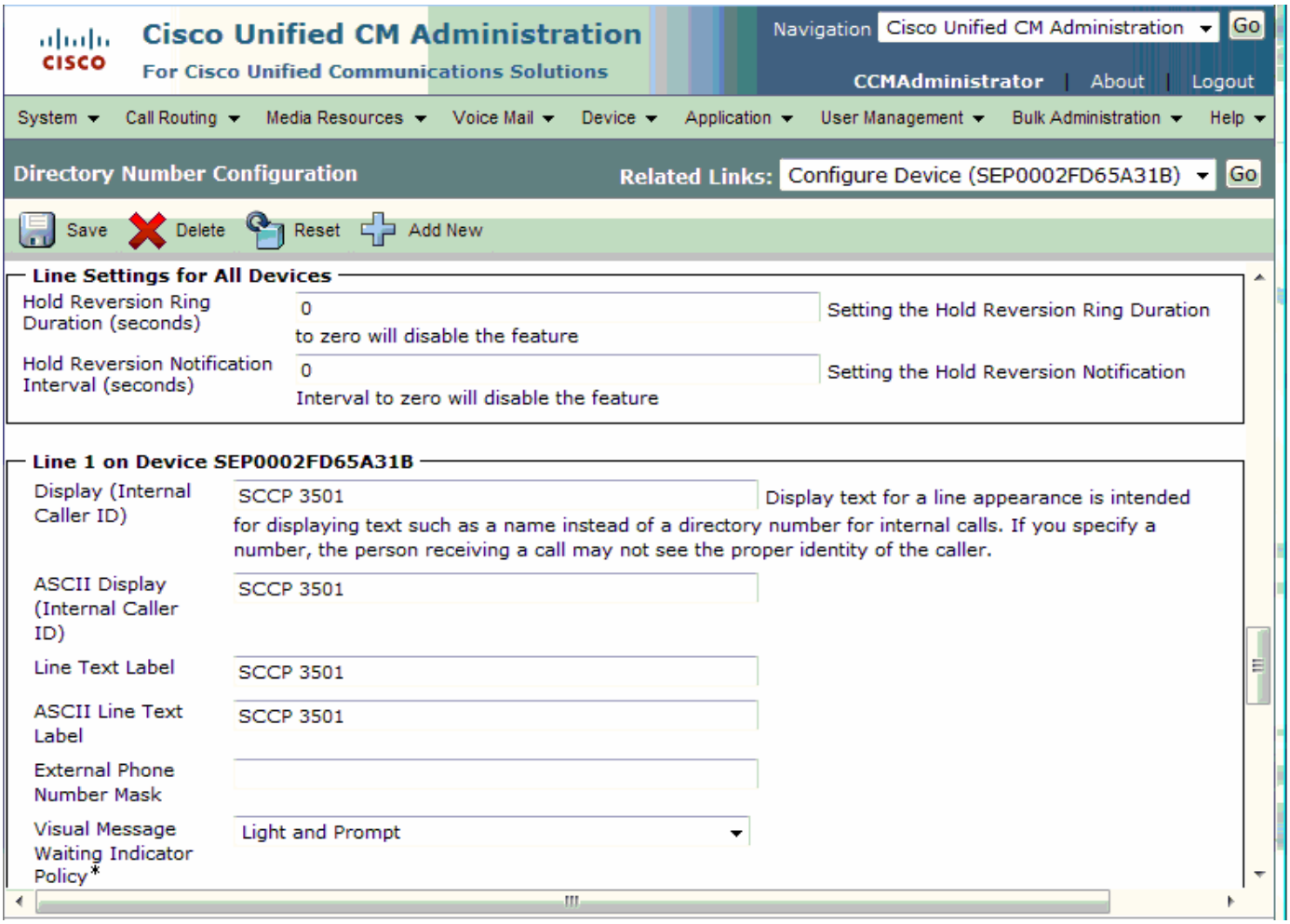


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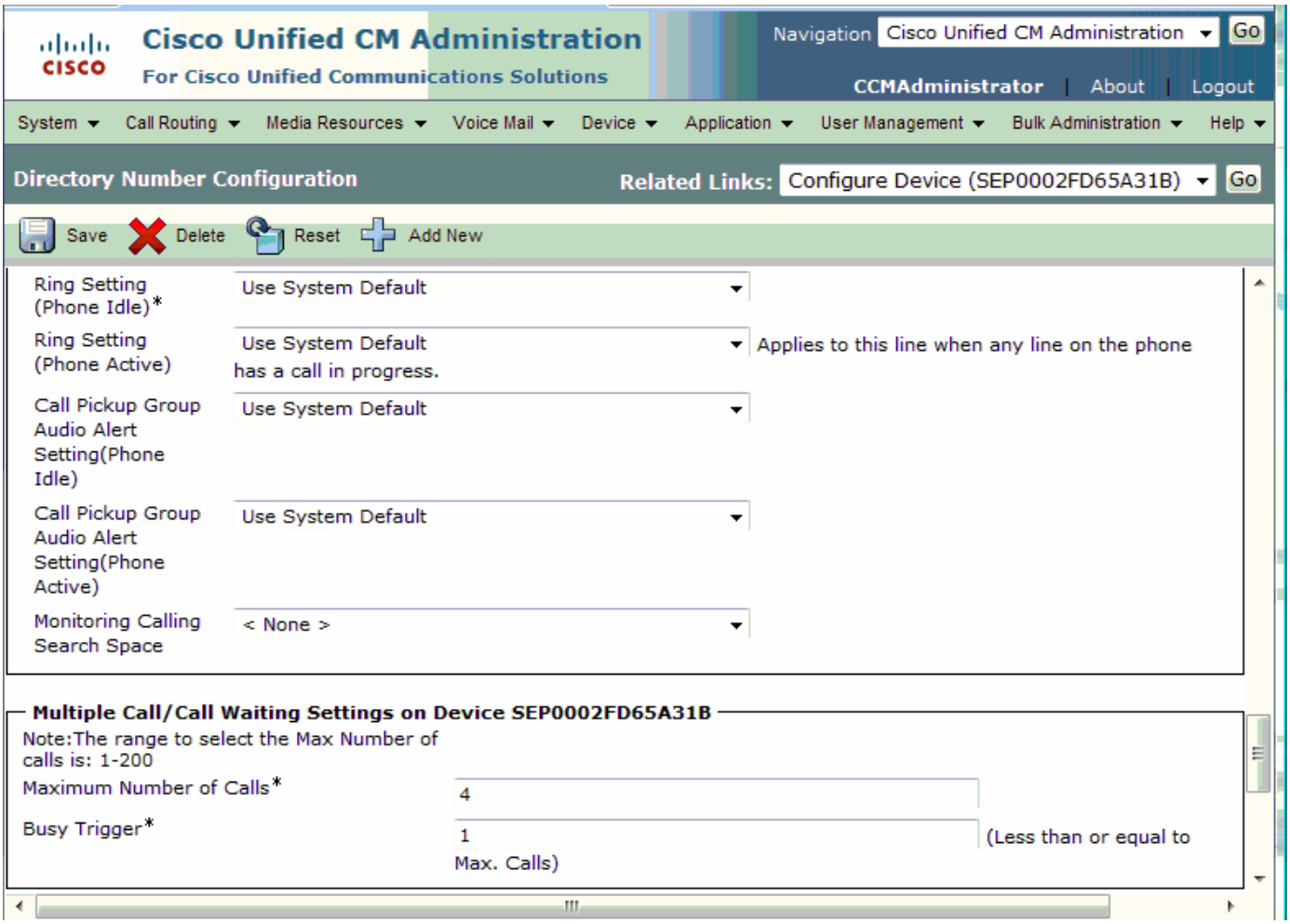


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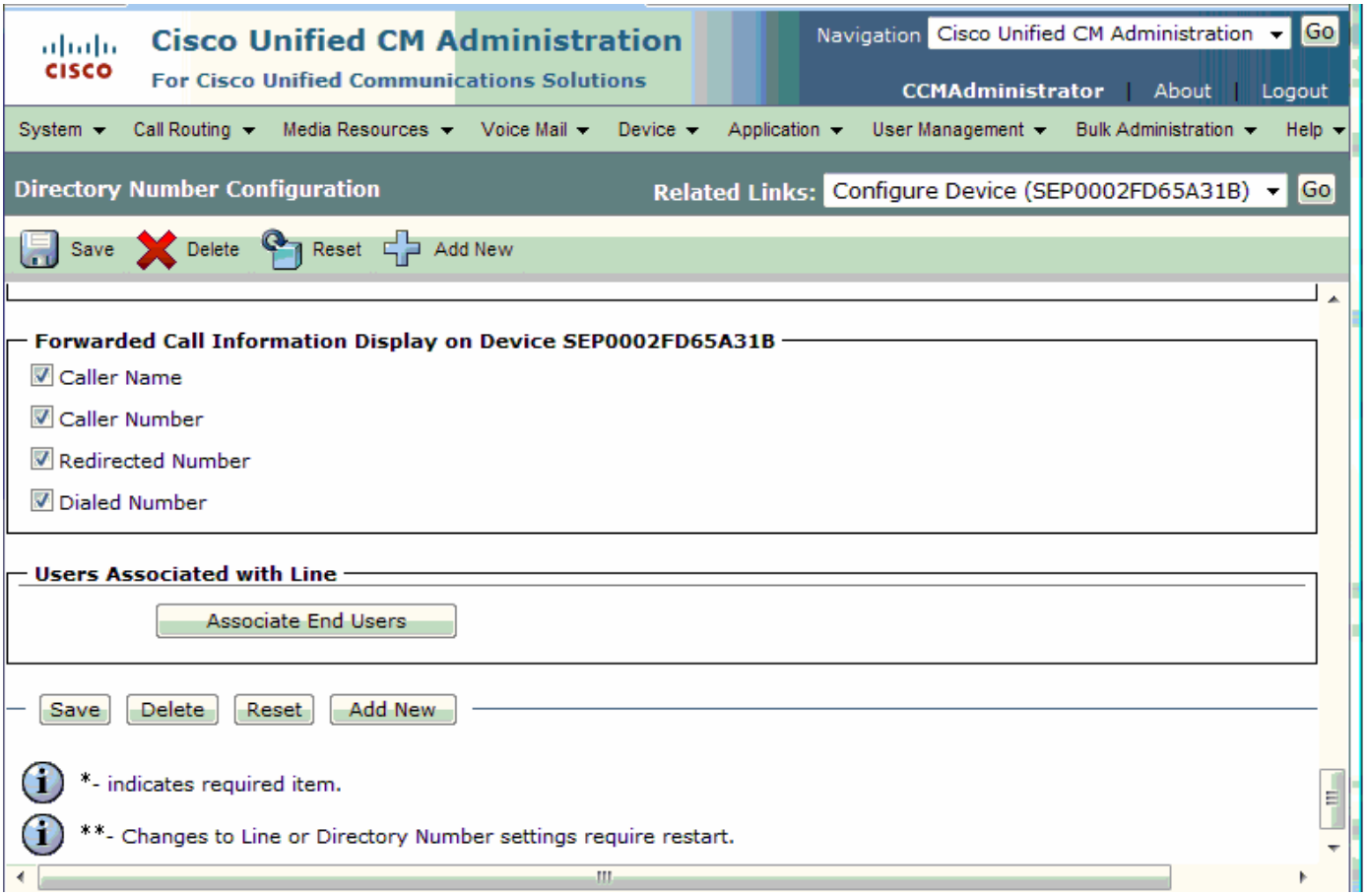


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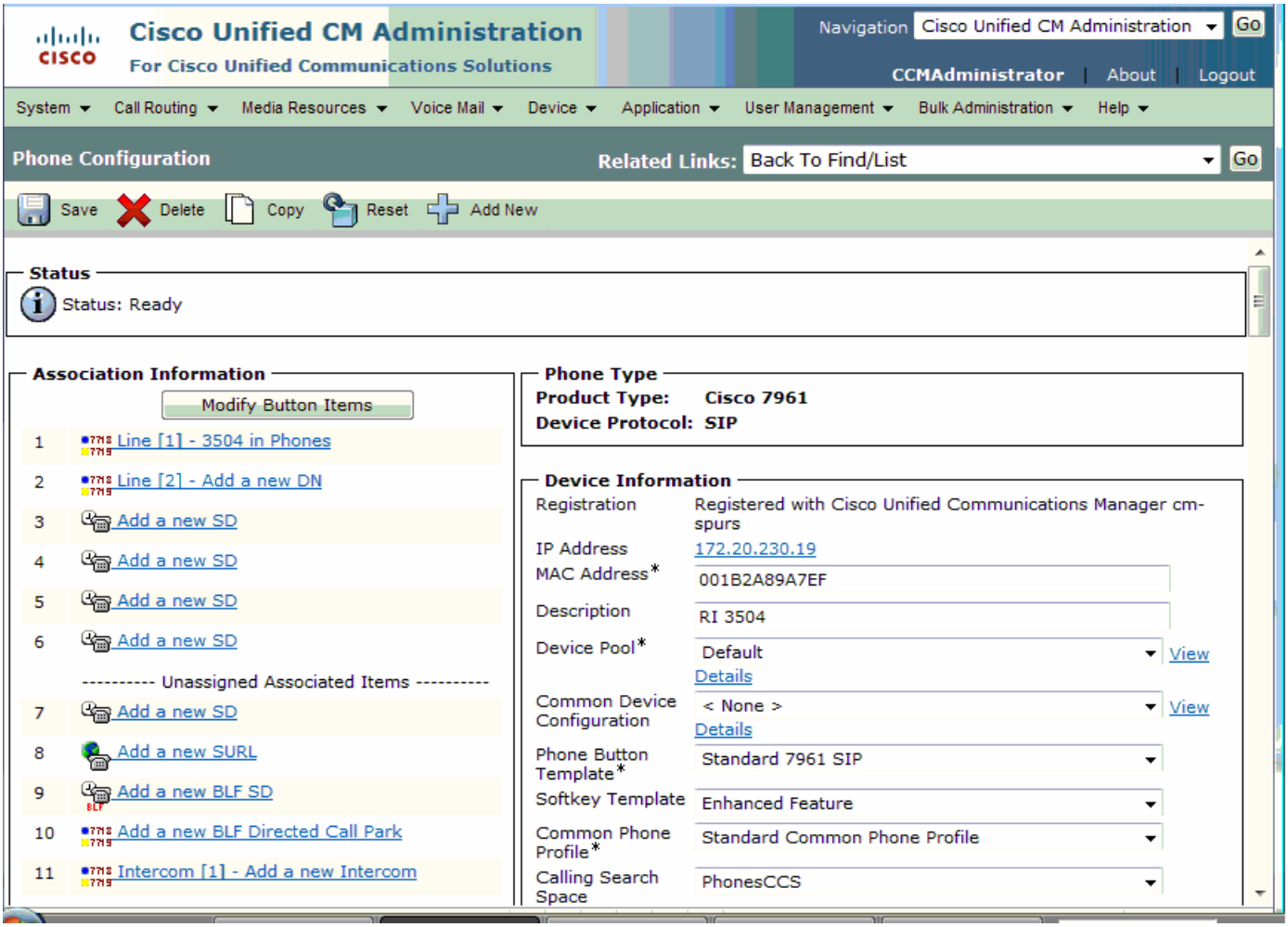
Cisco Unified IP Phone 7961, SIP

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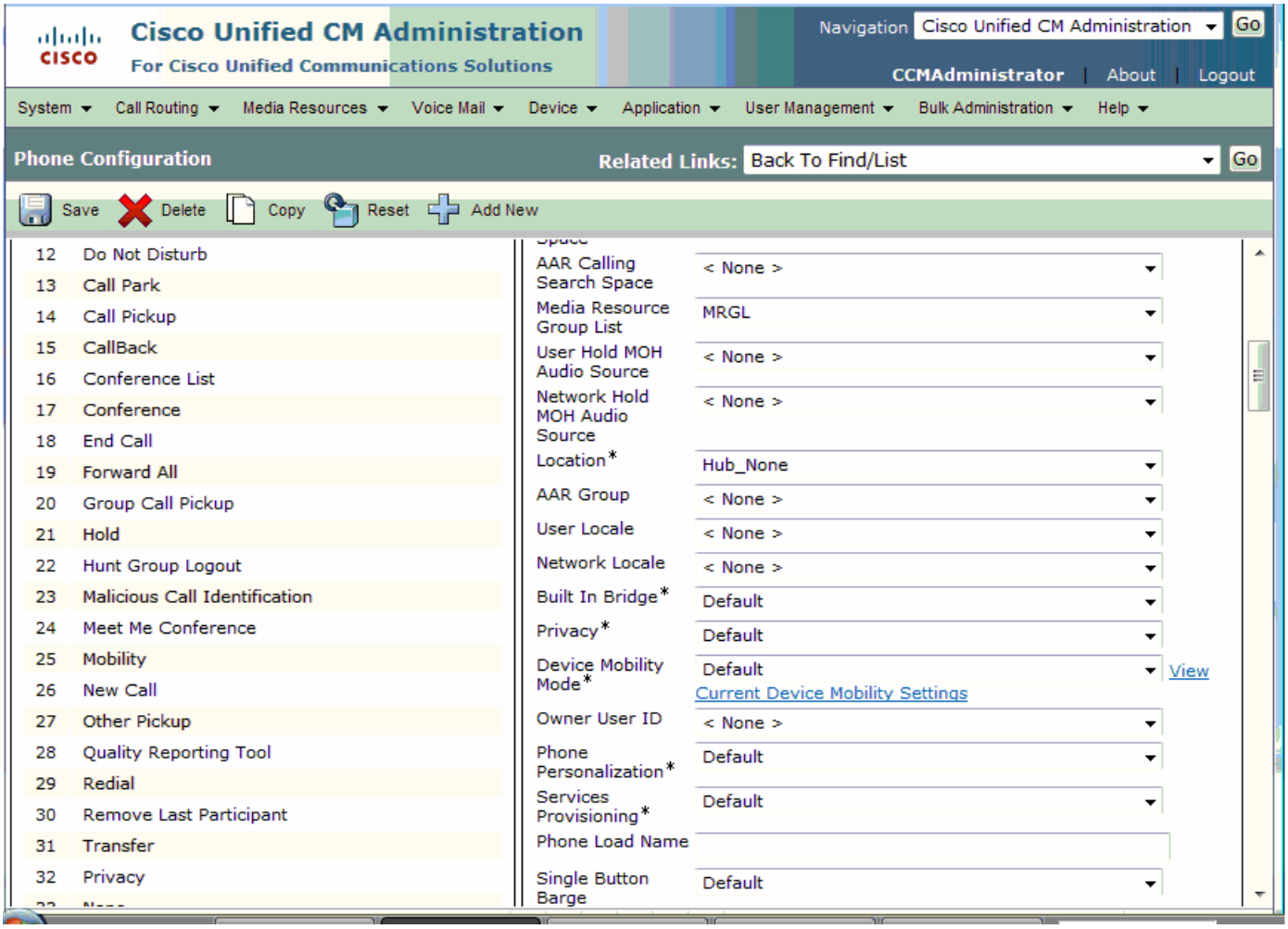


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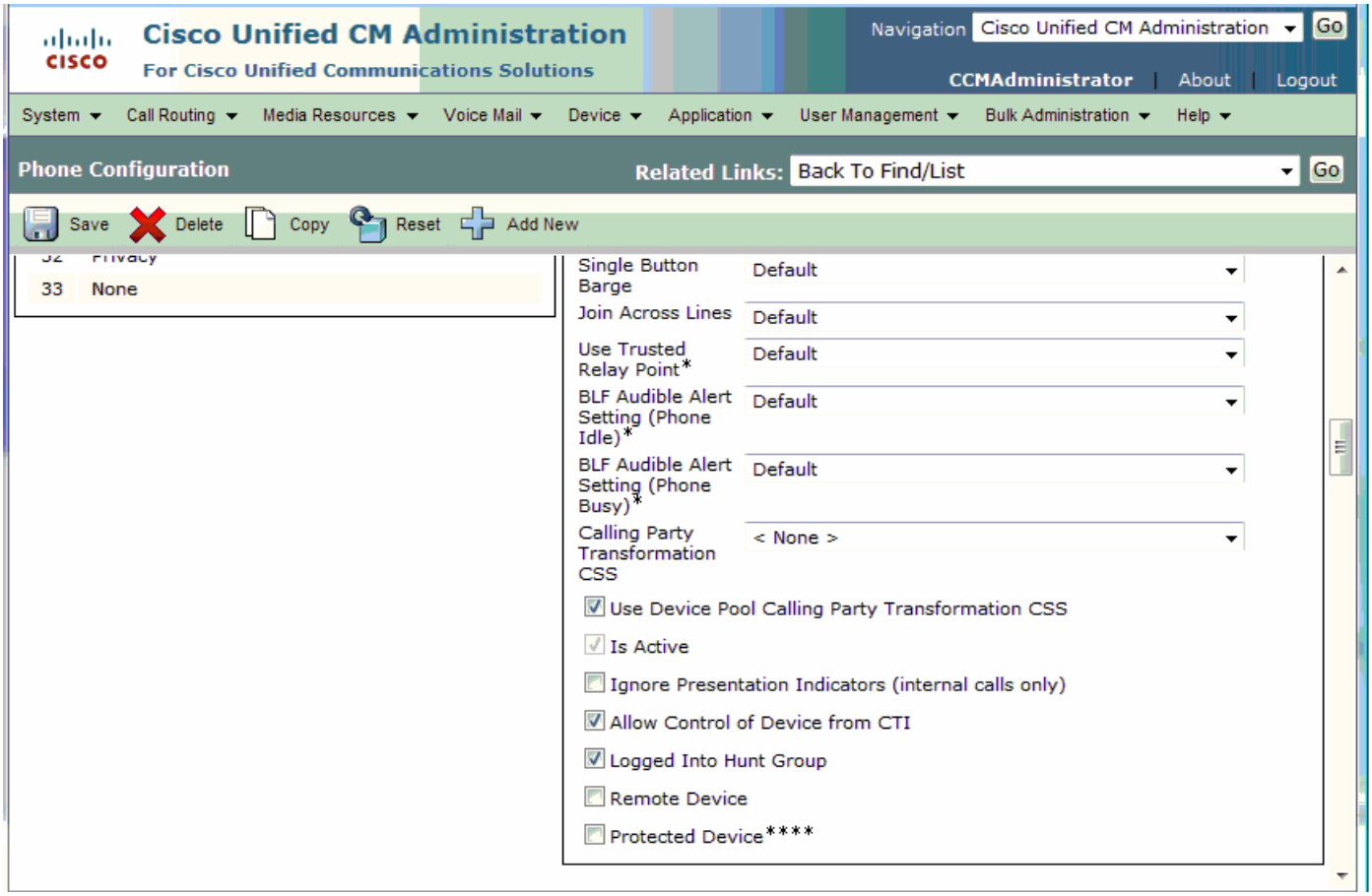


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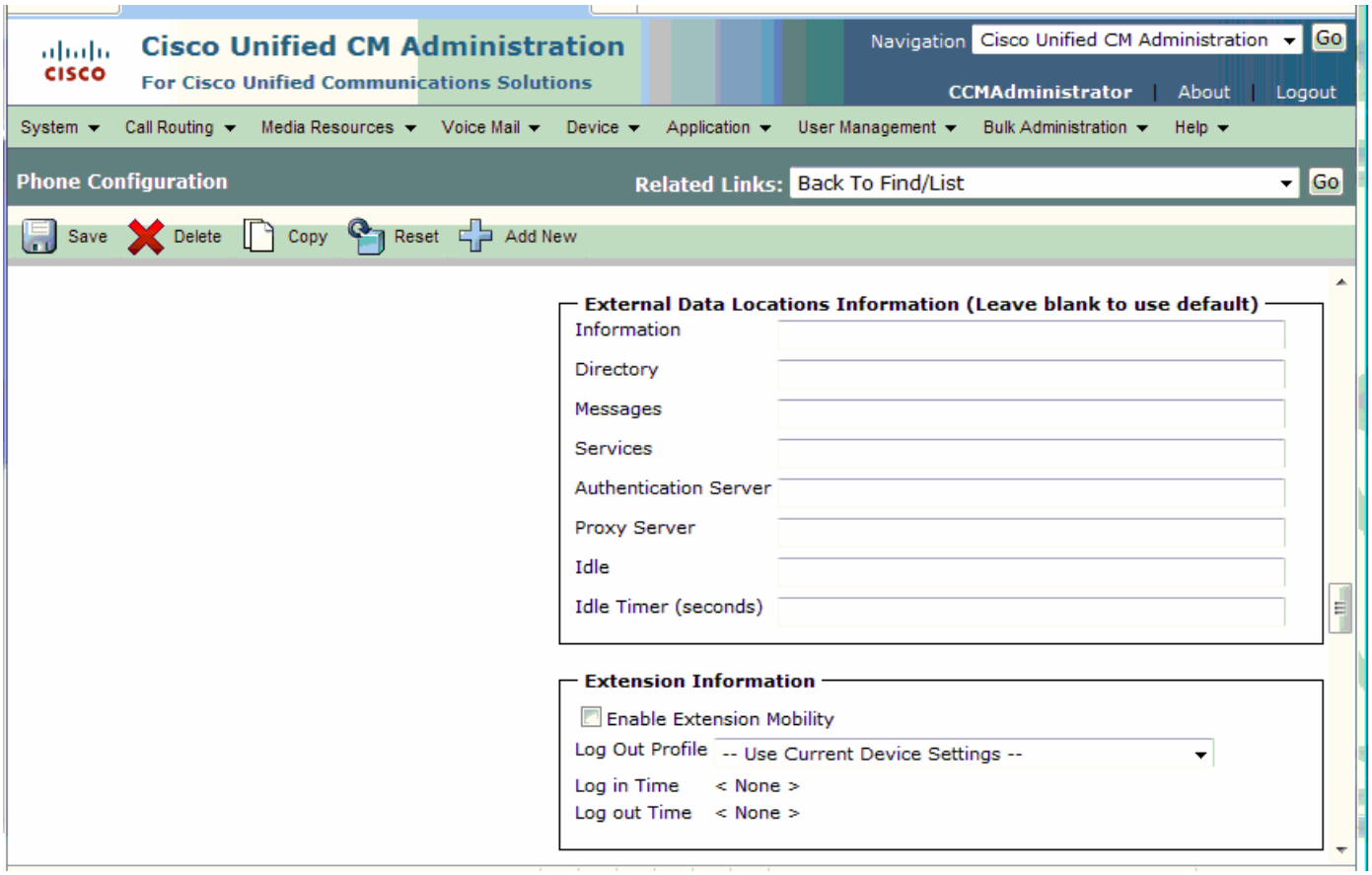


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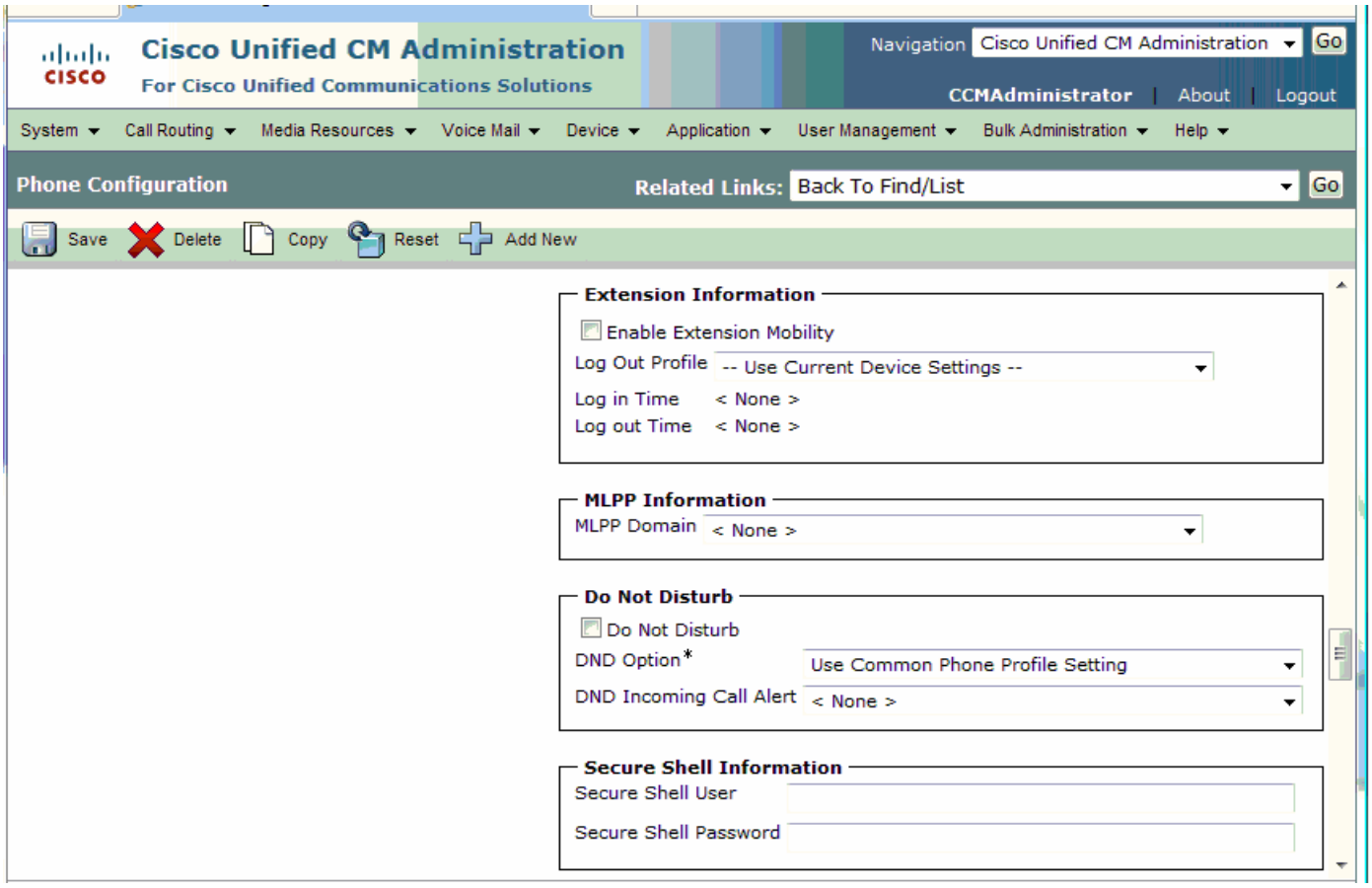


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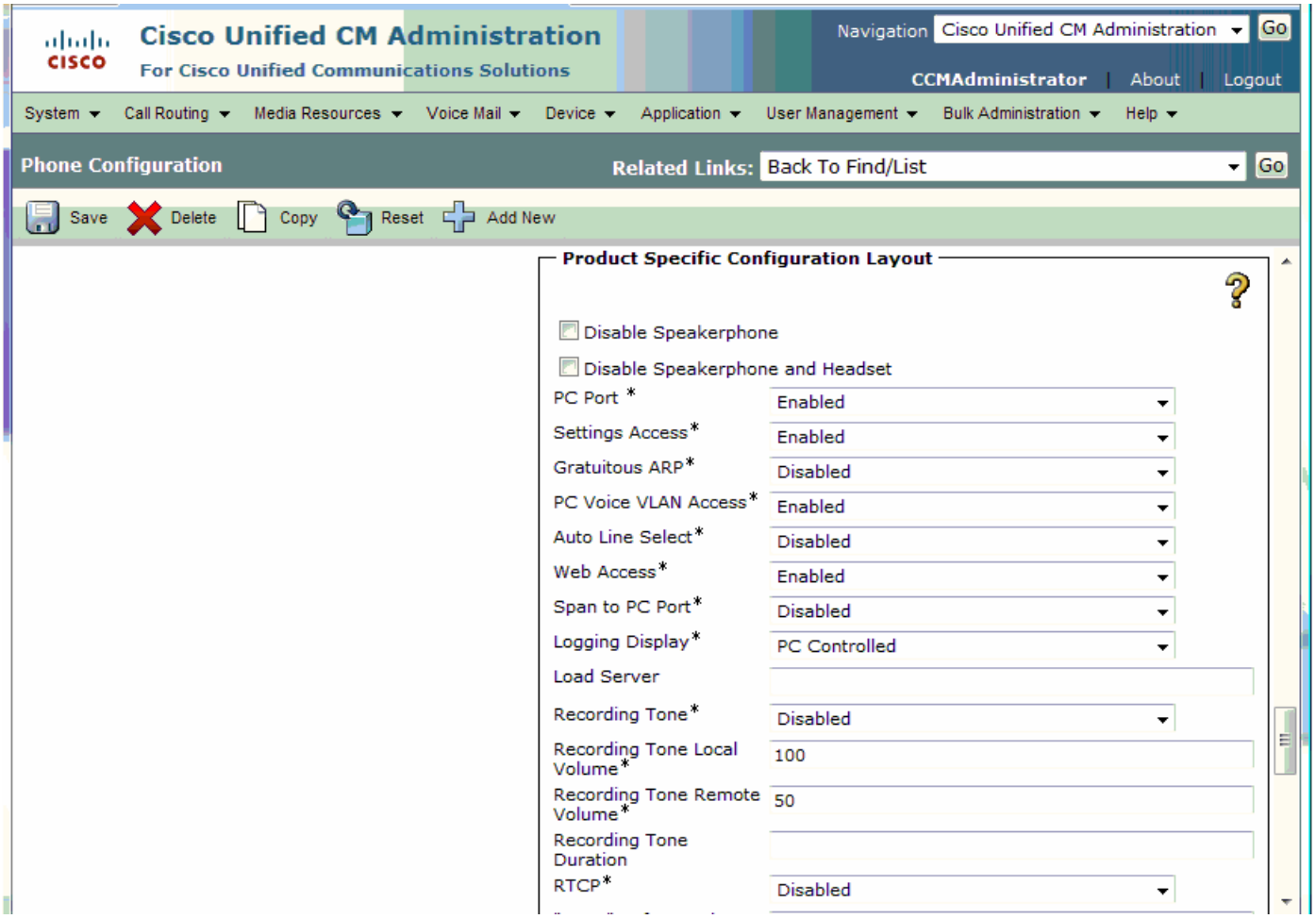


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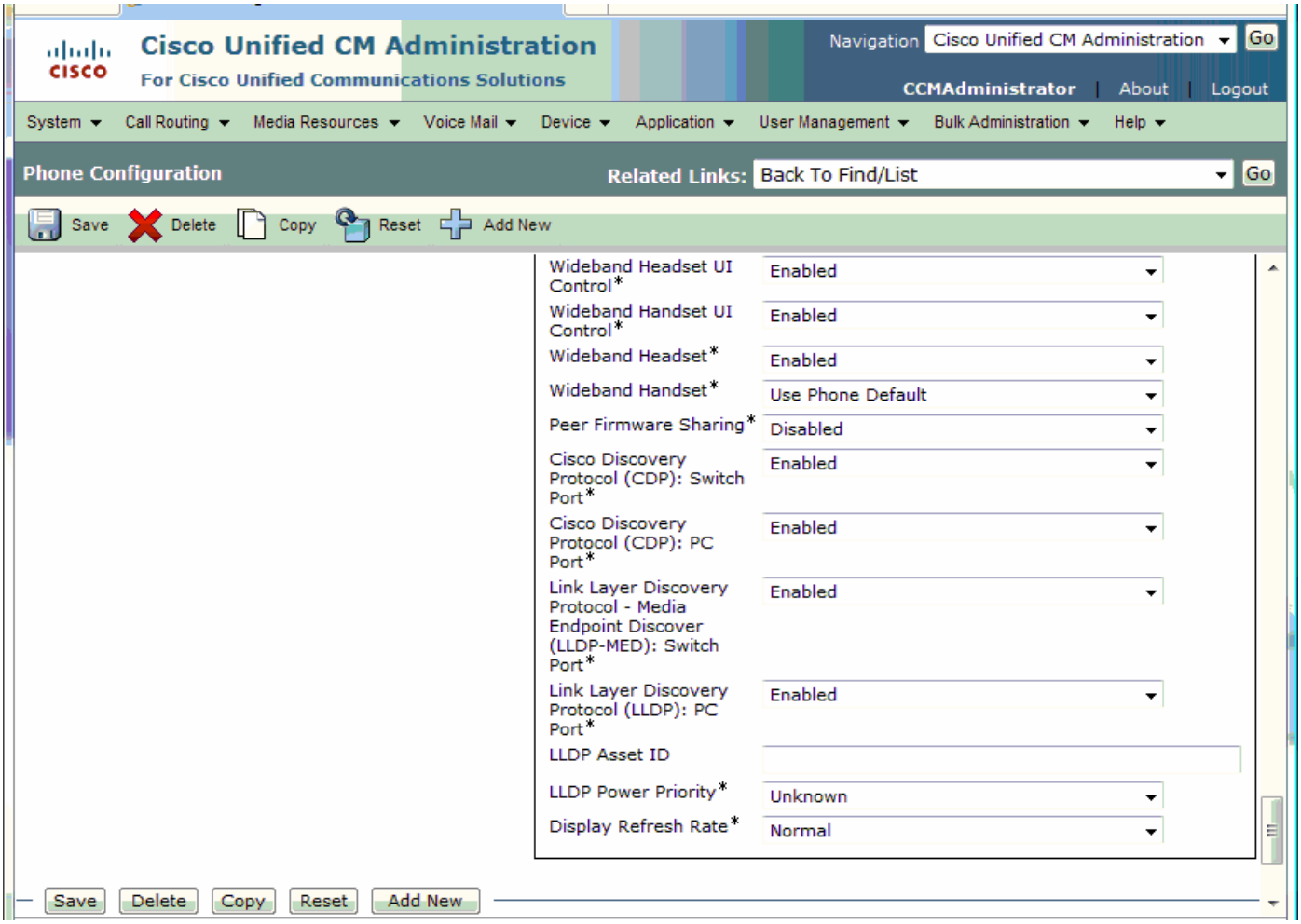


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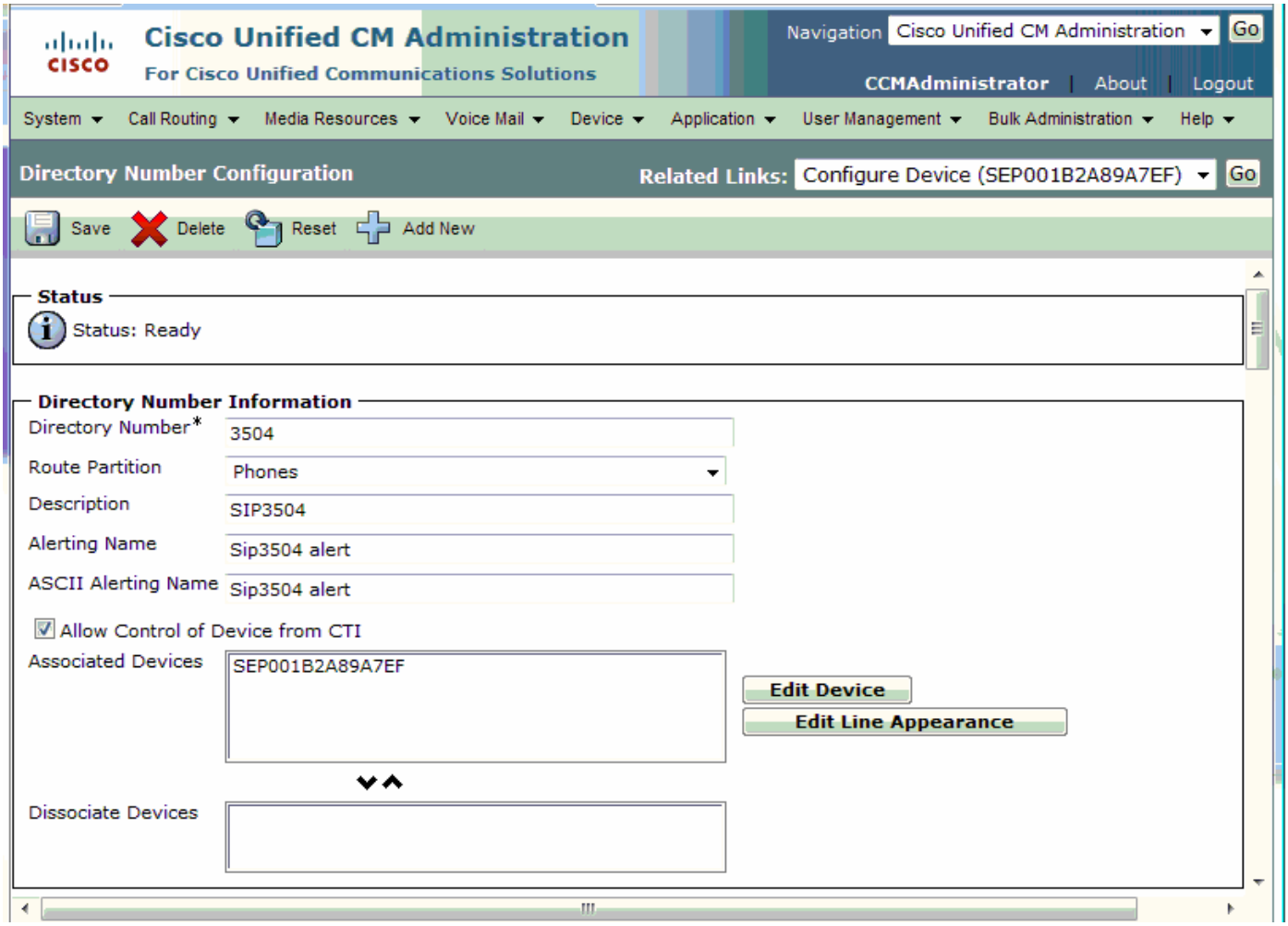
Line DN 3504 SIP

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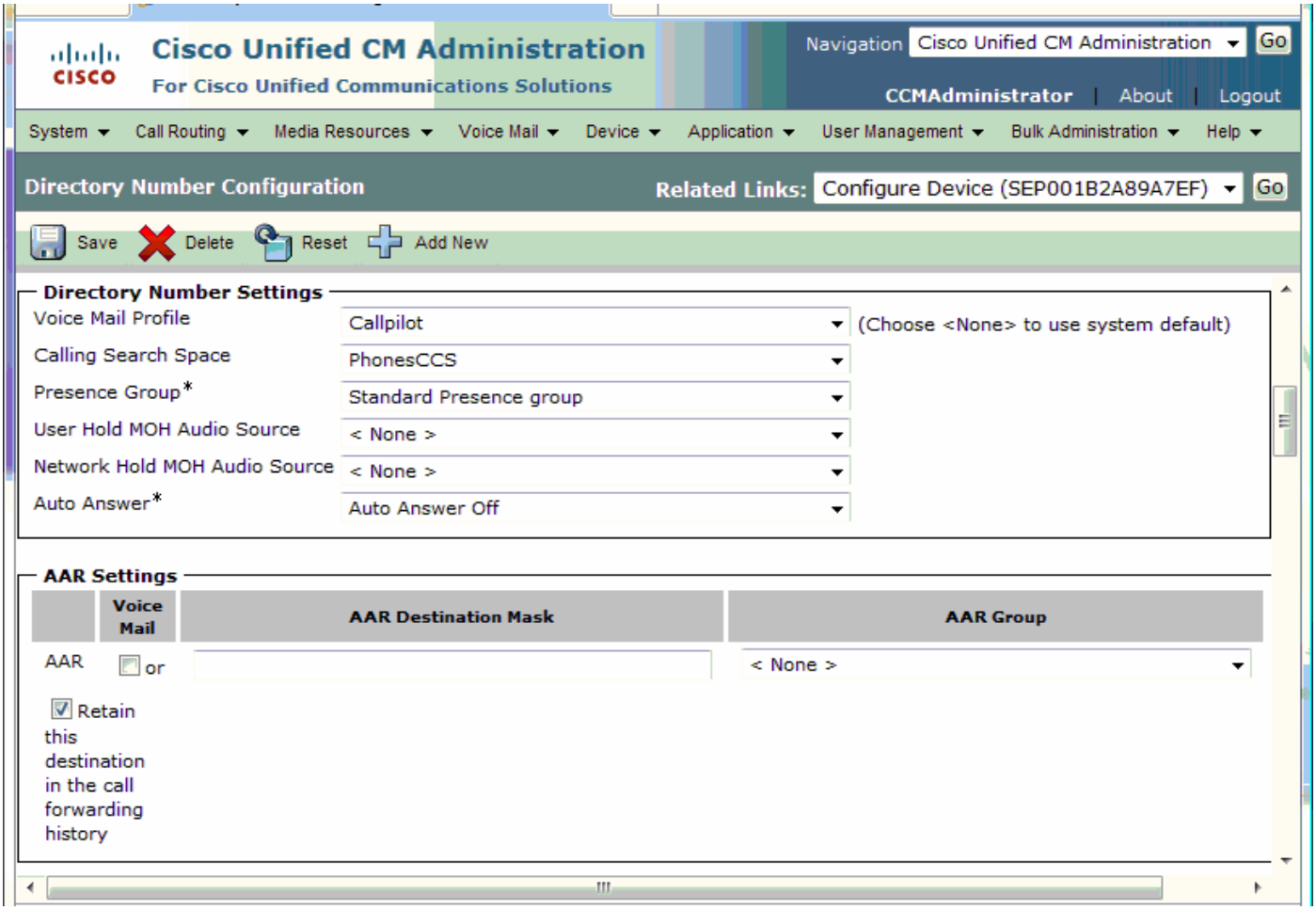


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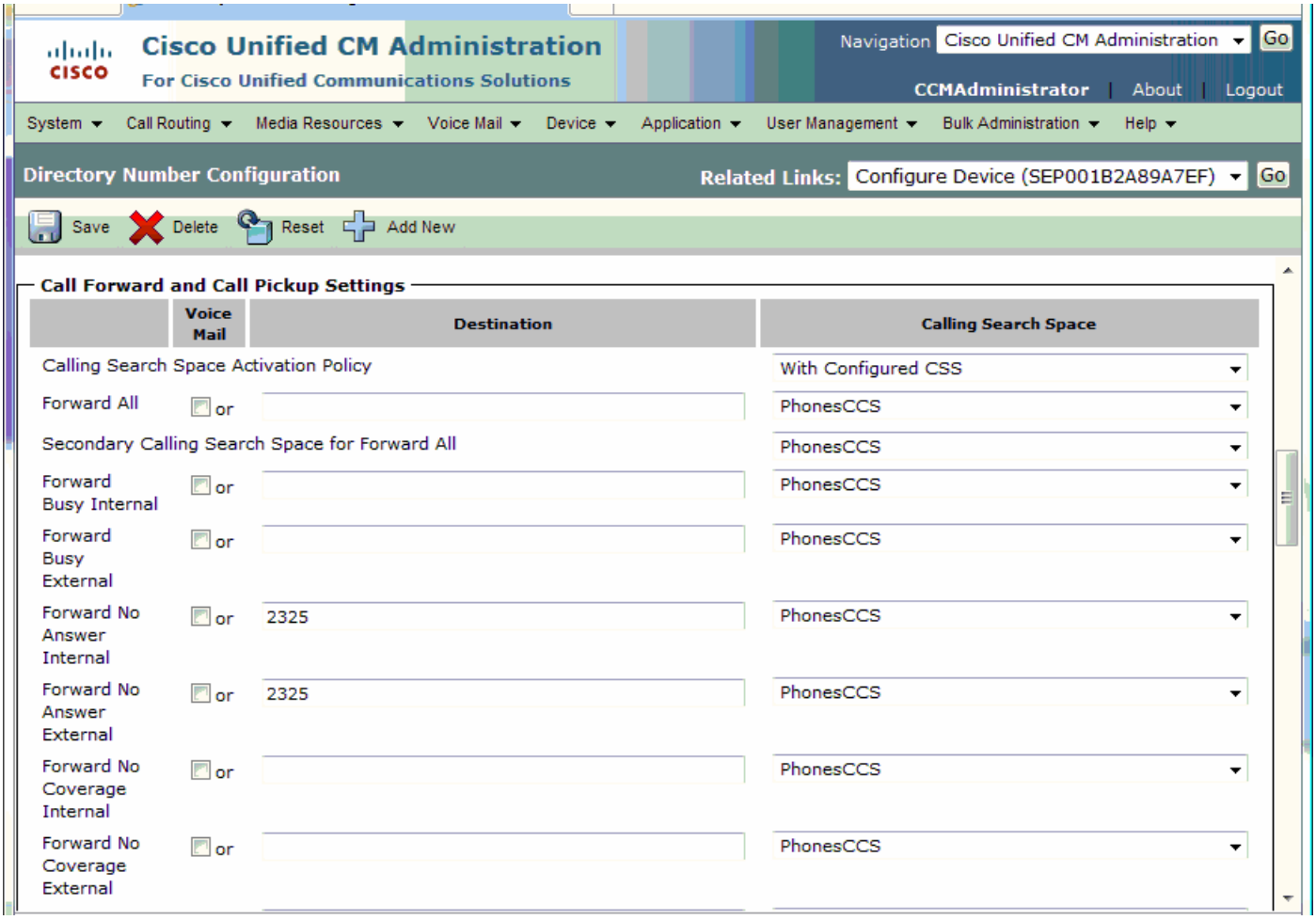


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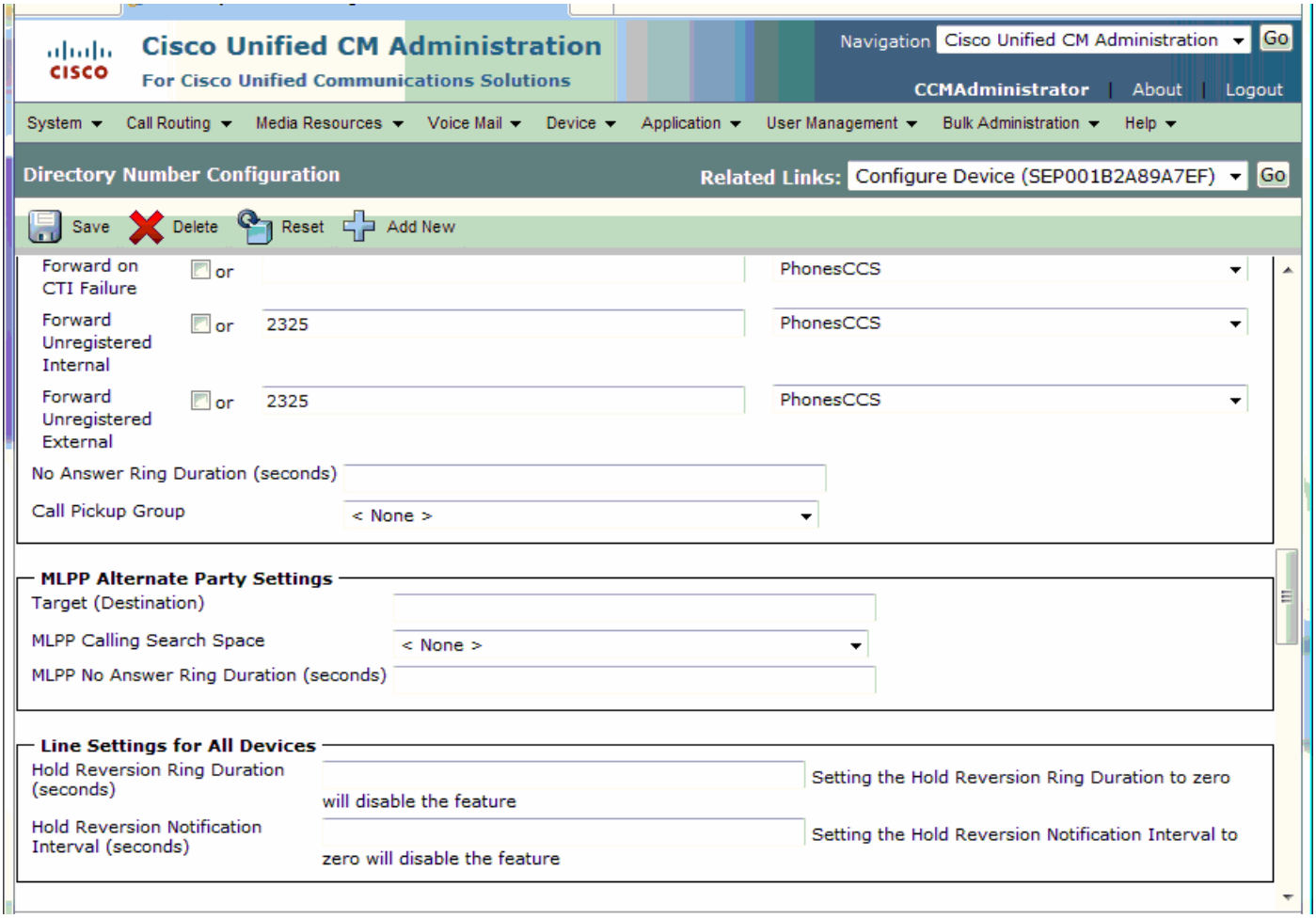


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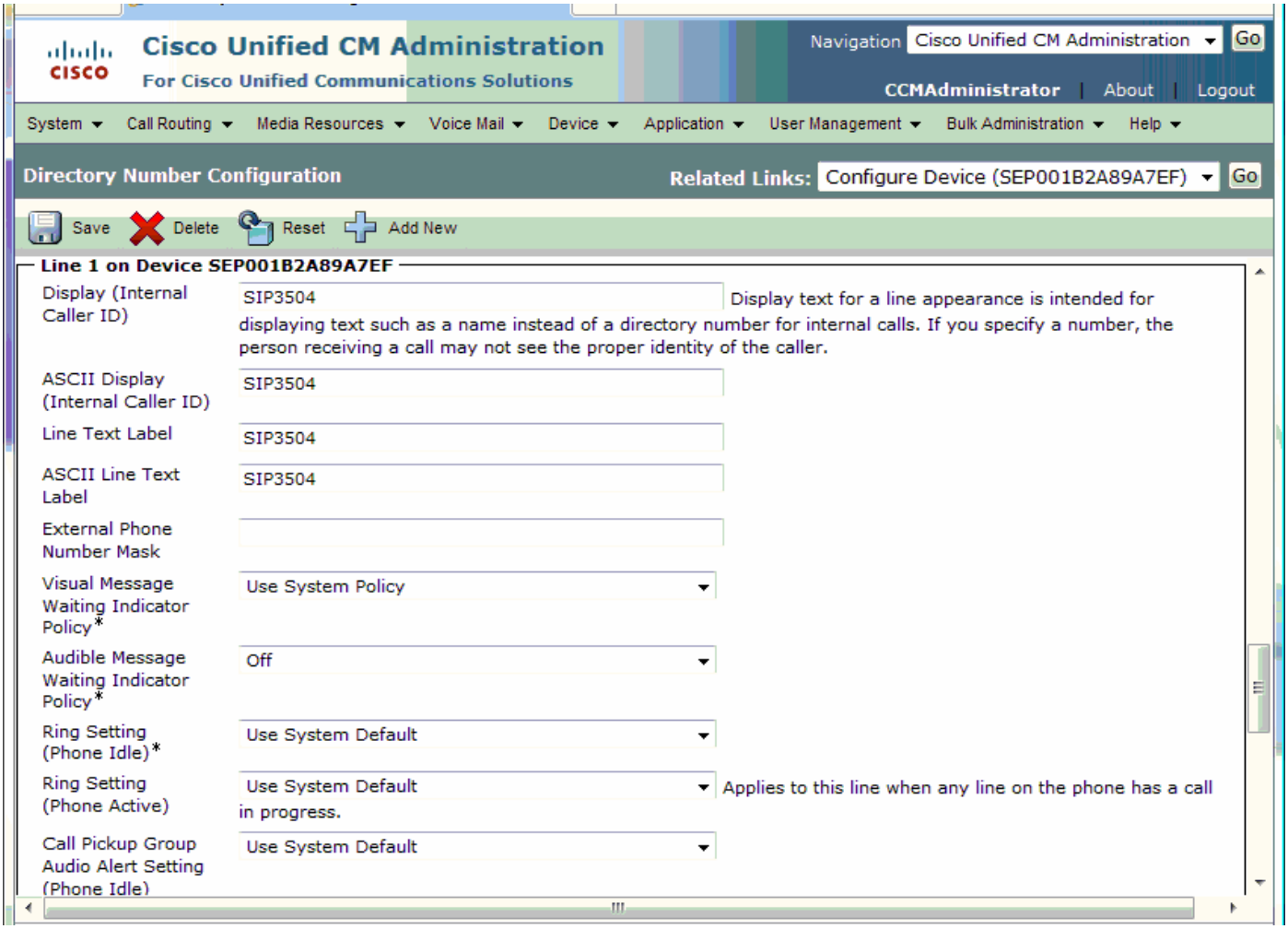


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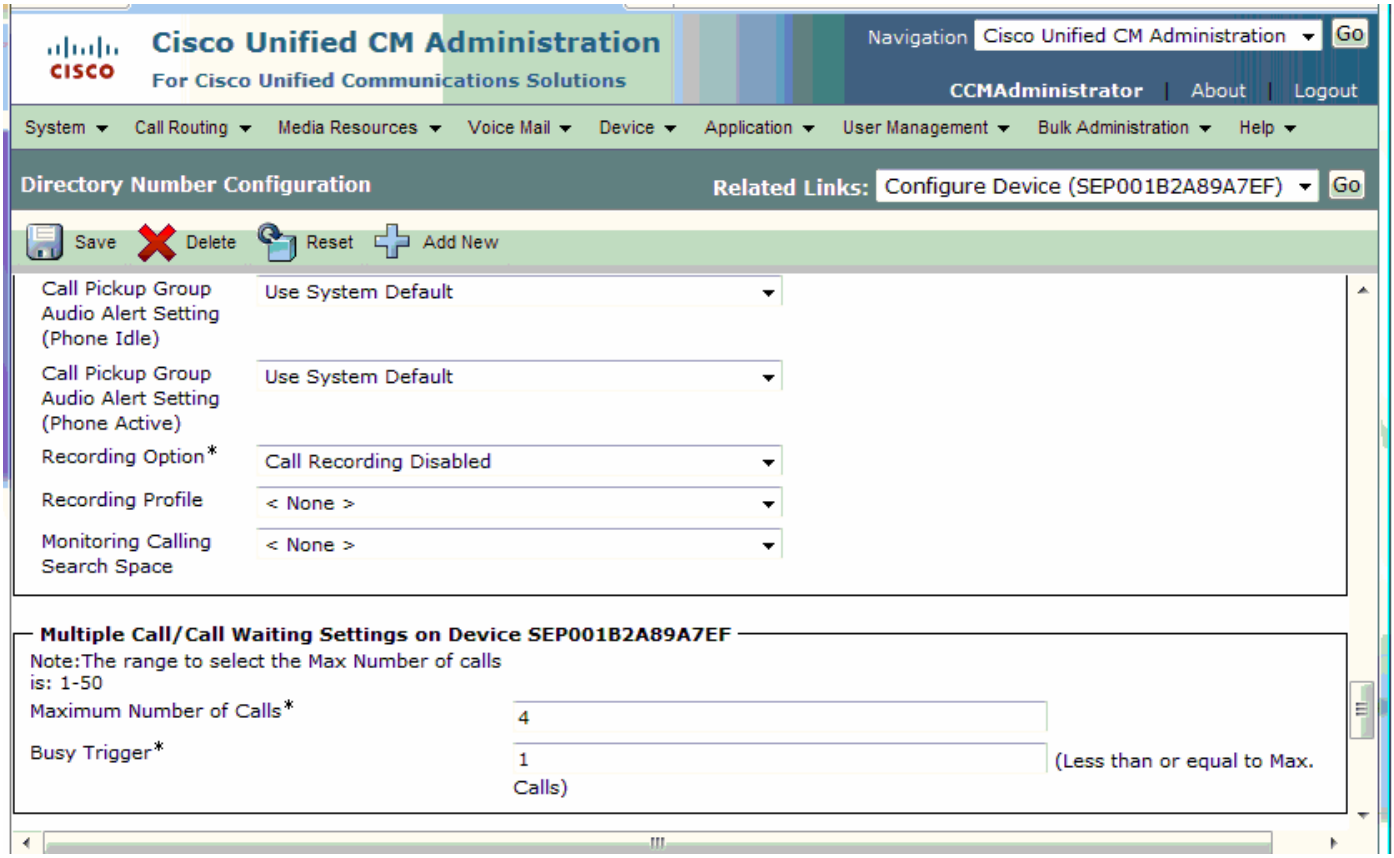


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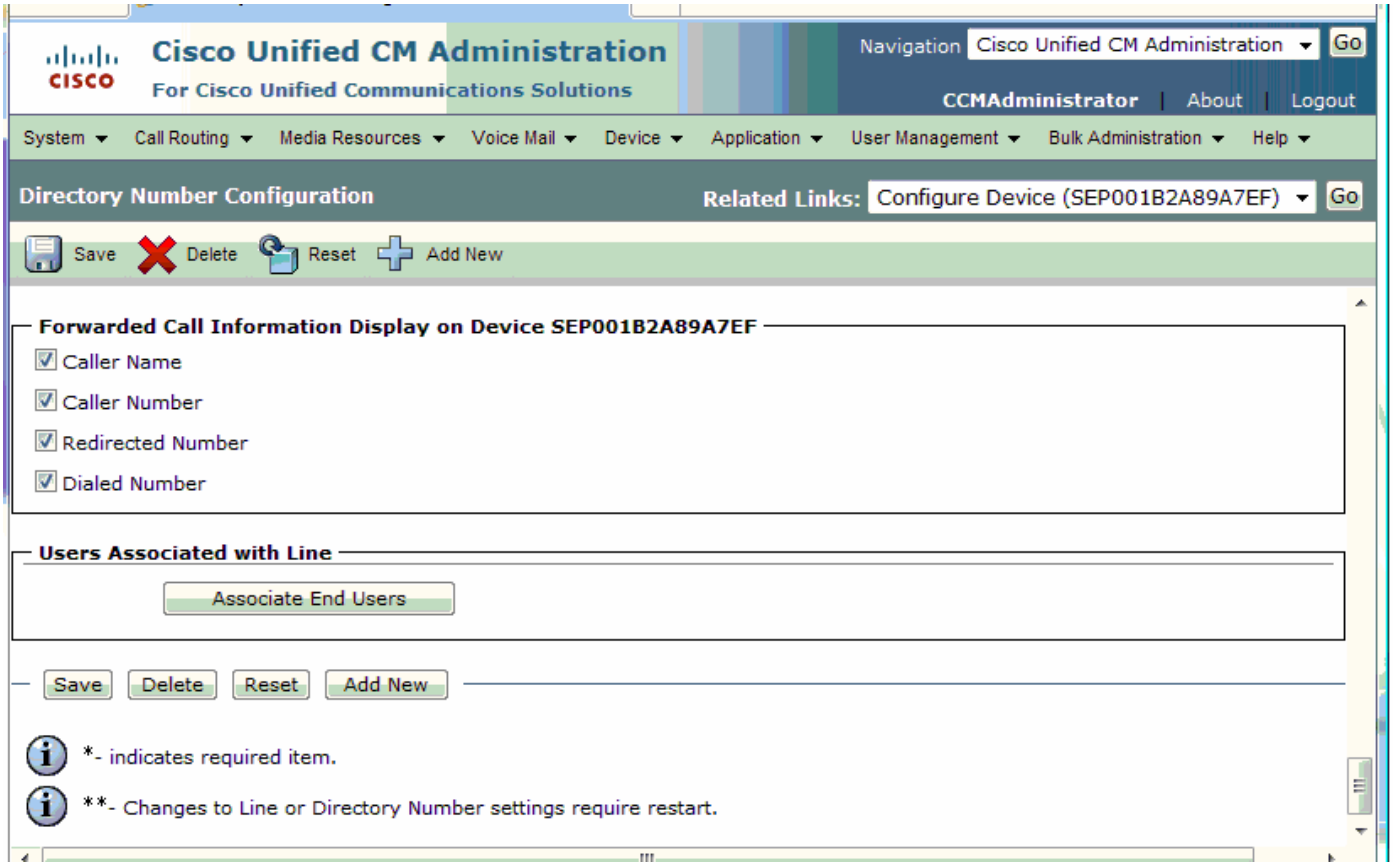


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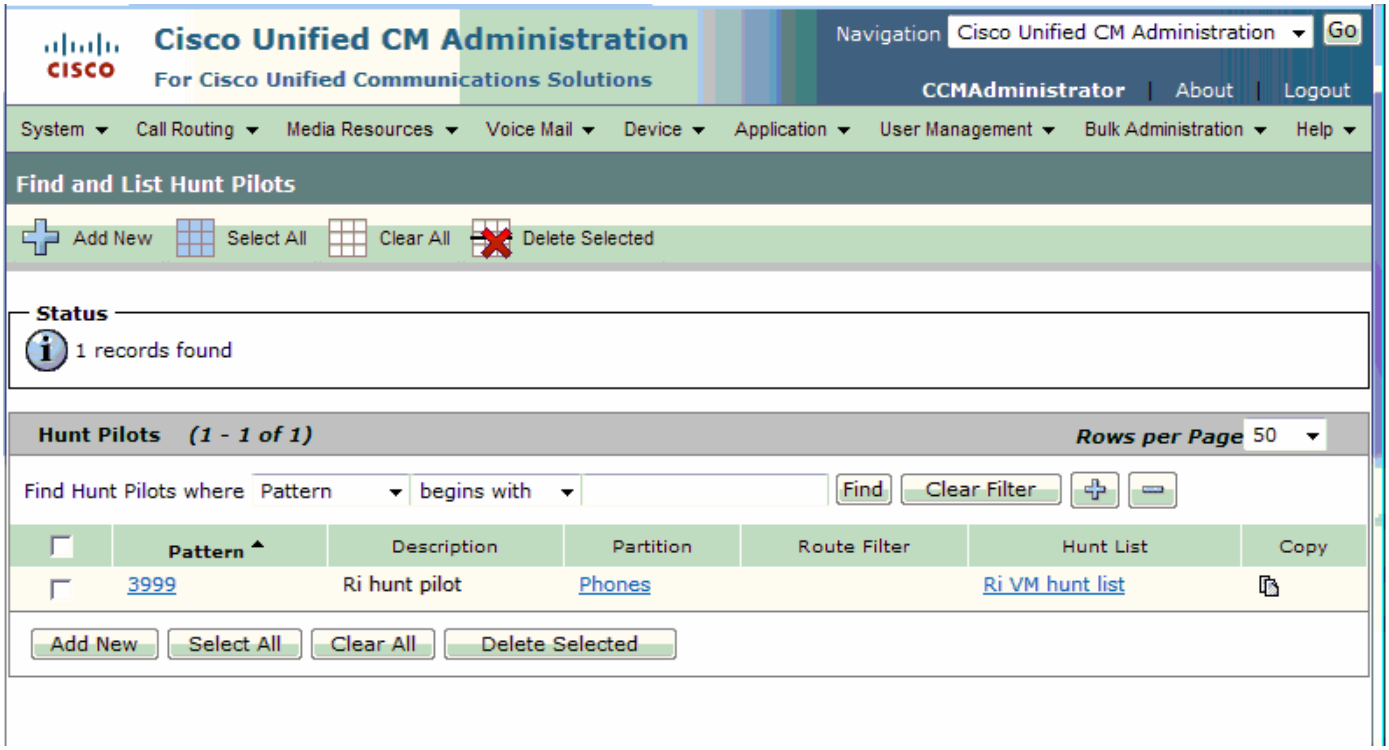
**Unity Voice Mail Integration**

List Hunt Pilot

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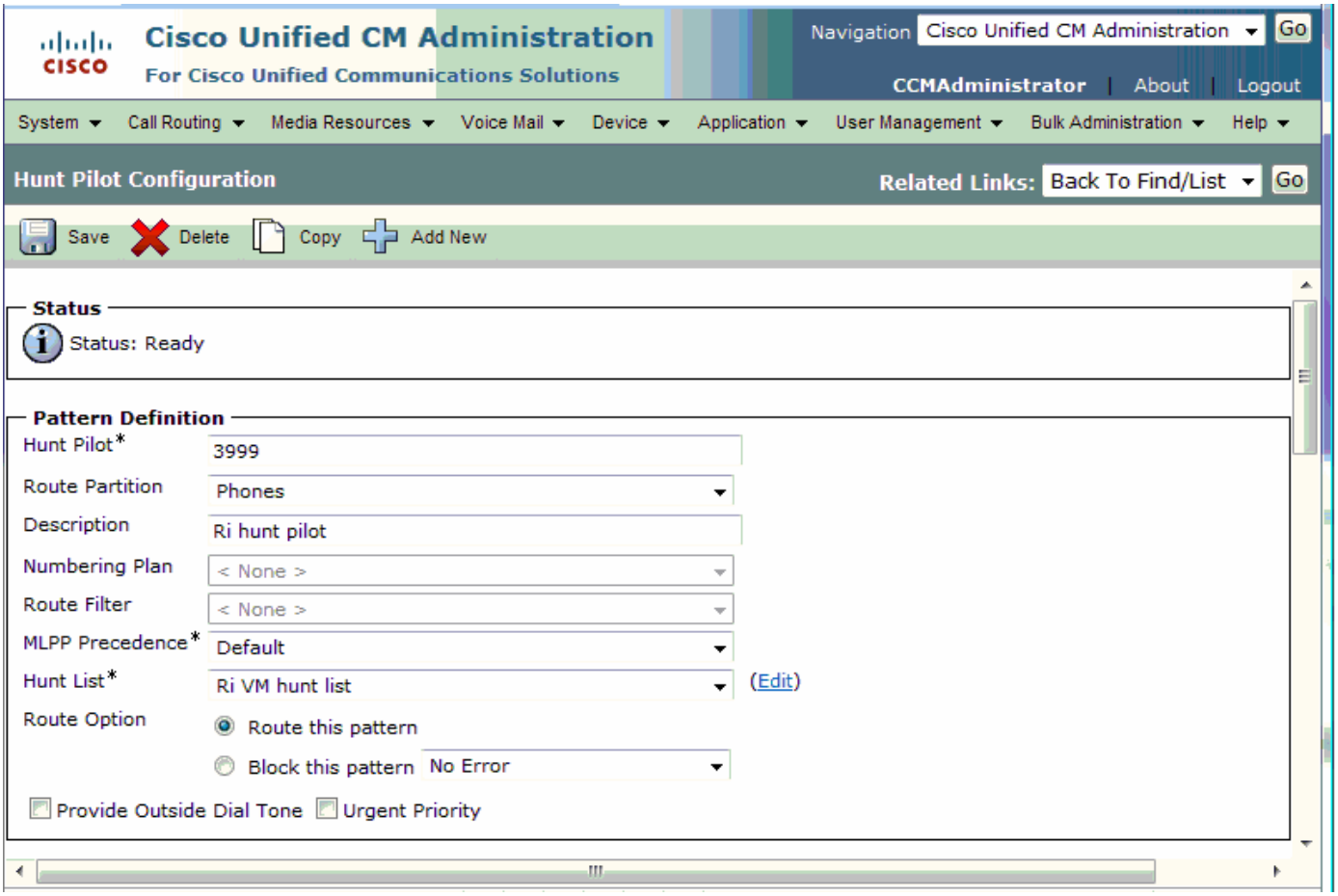
Hunt Pilot 3999

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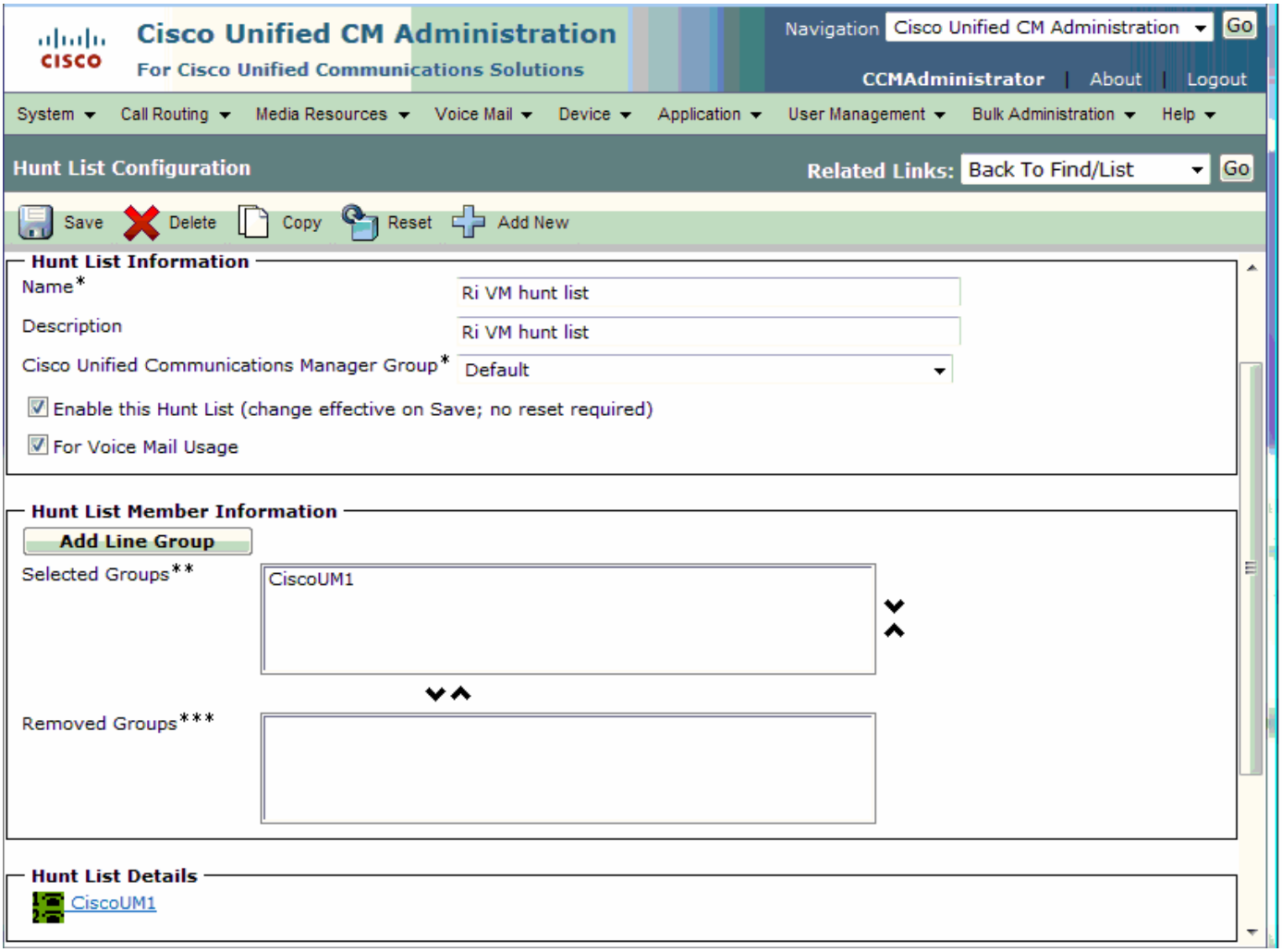


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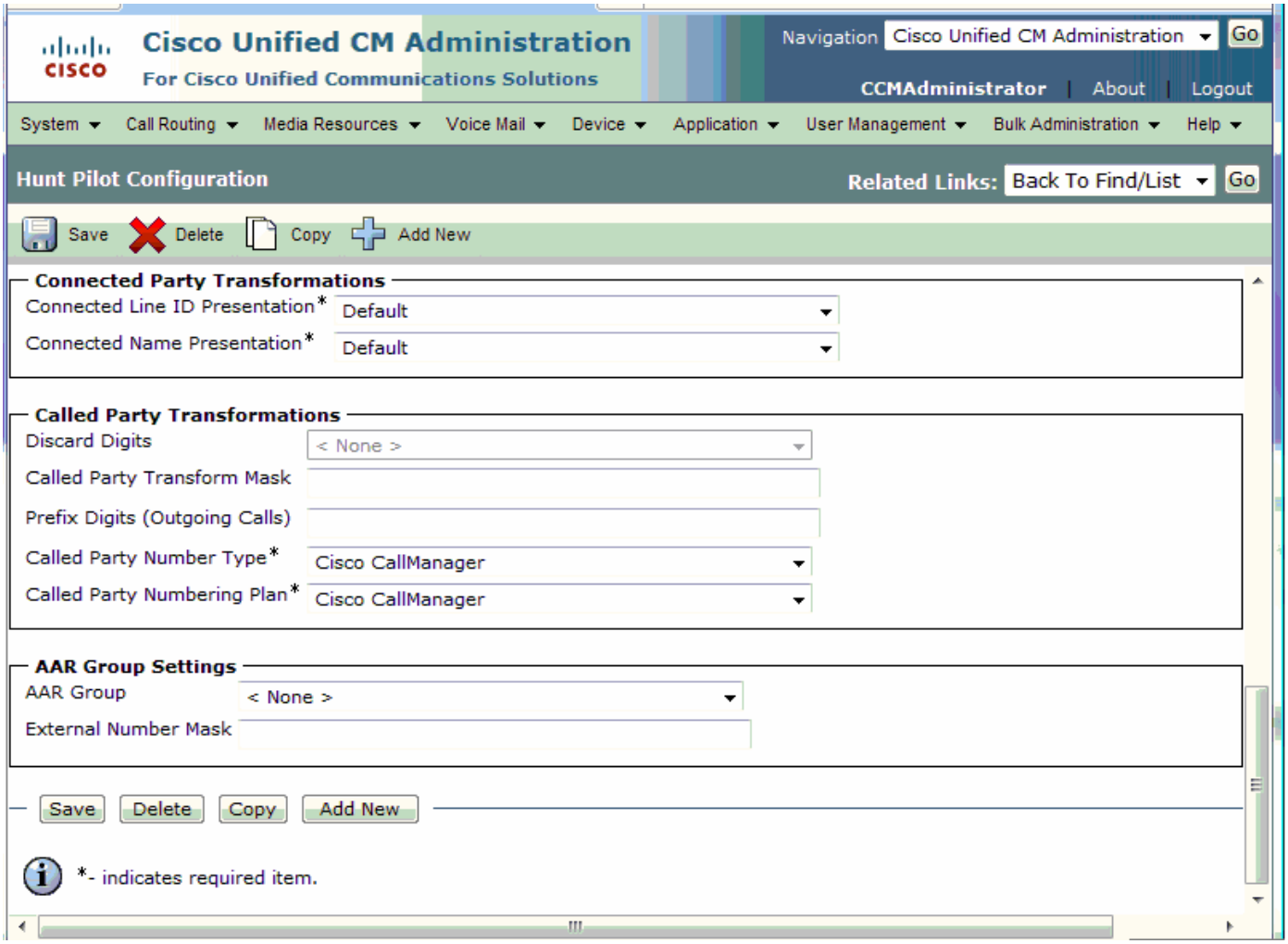


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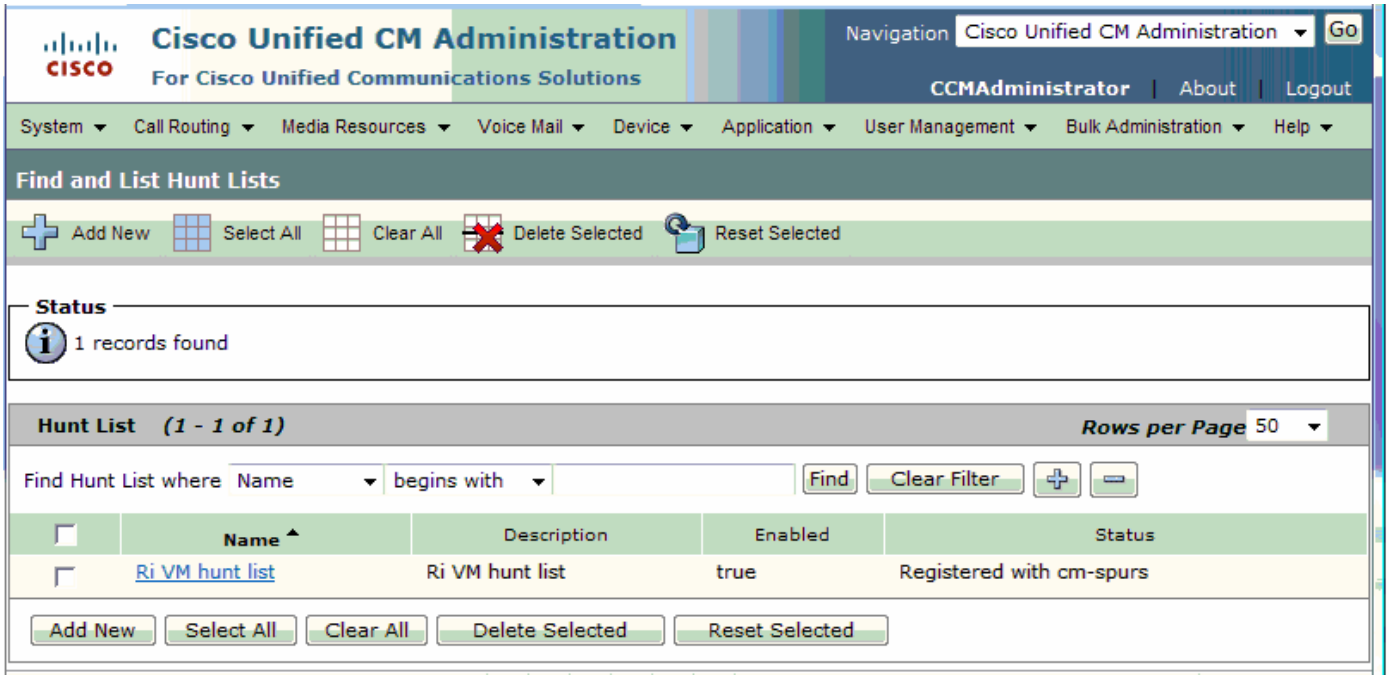
Hunt List

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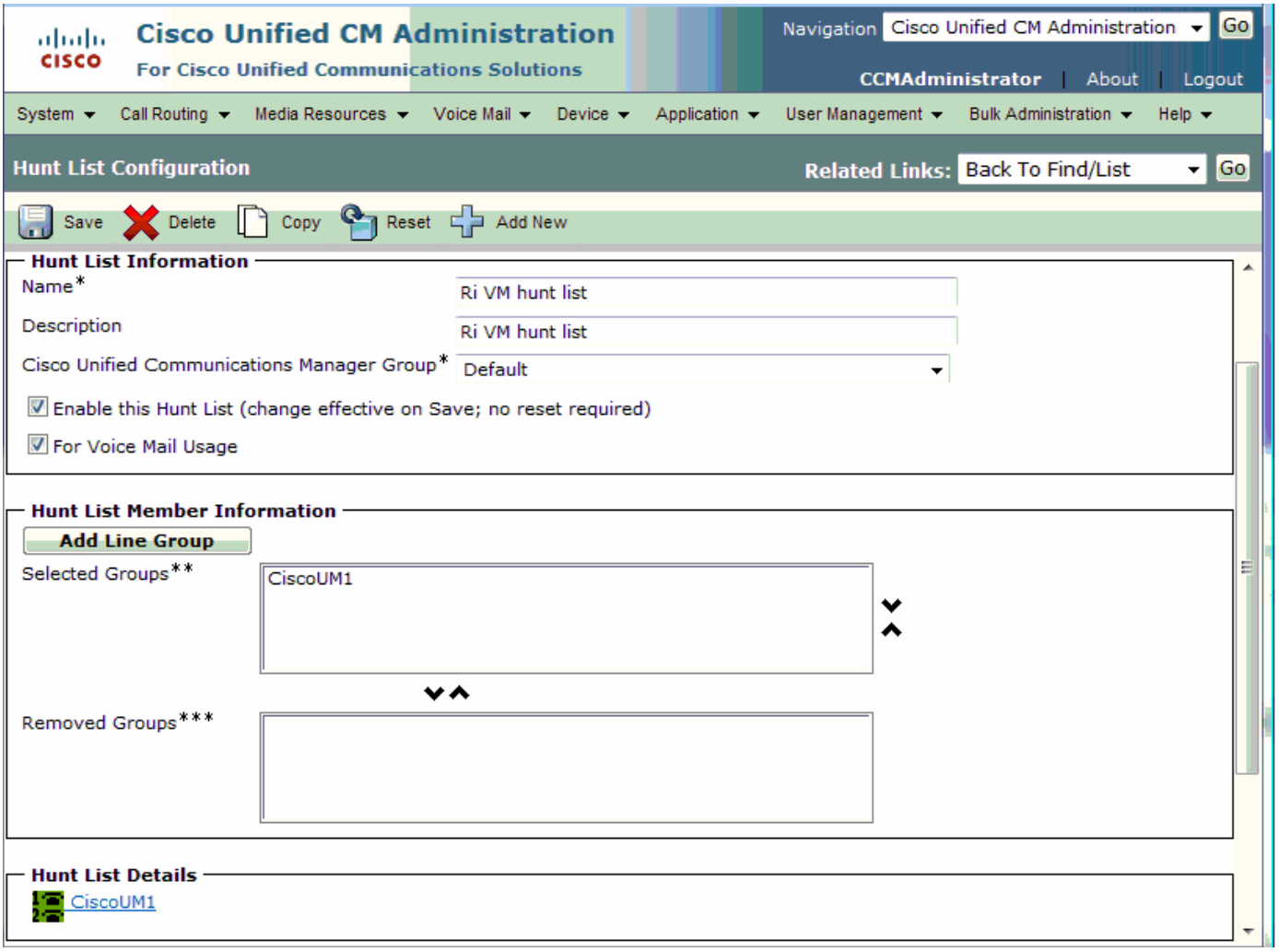


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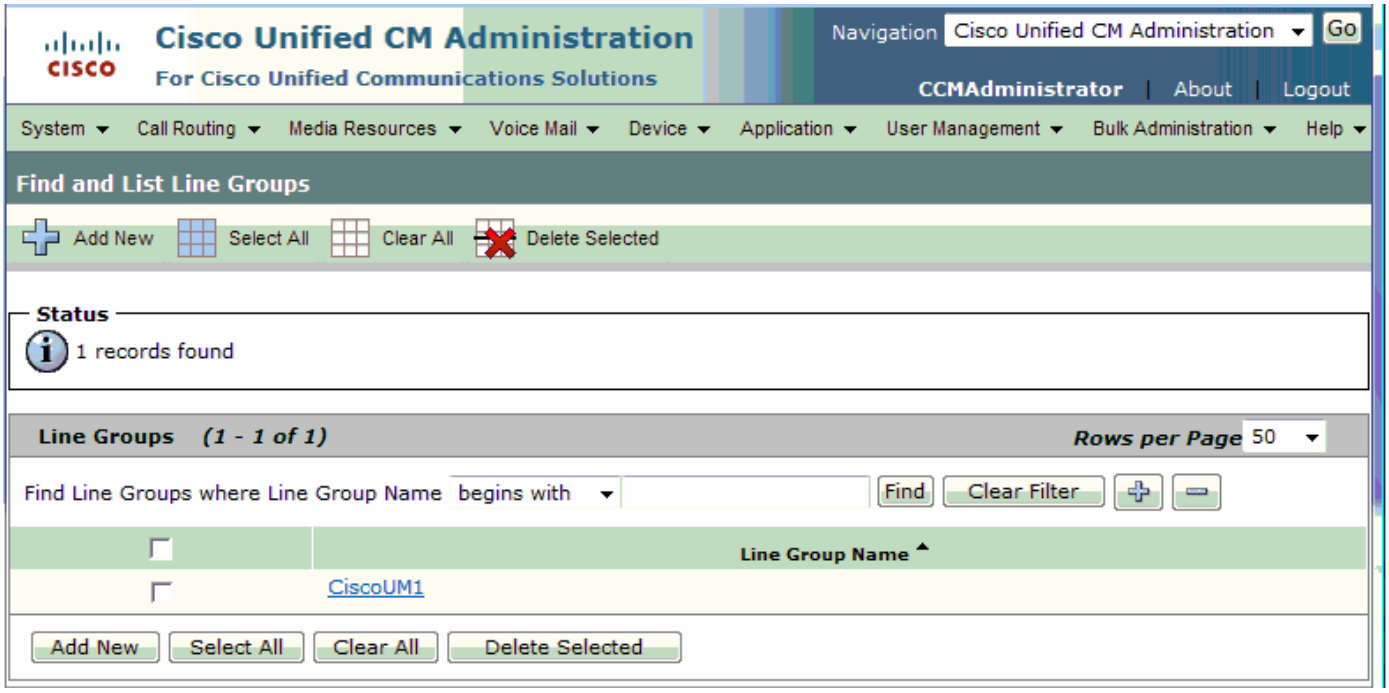
Line Group

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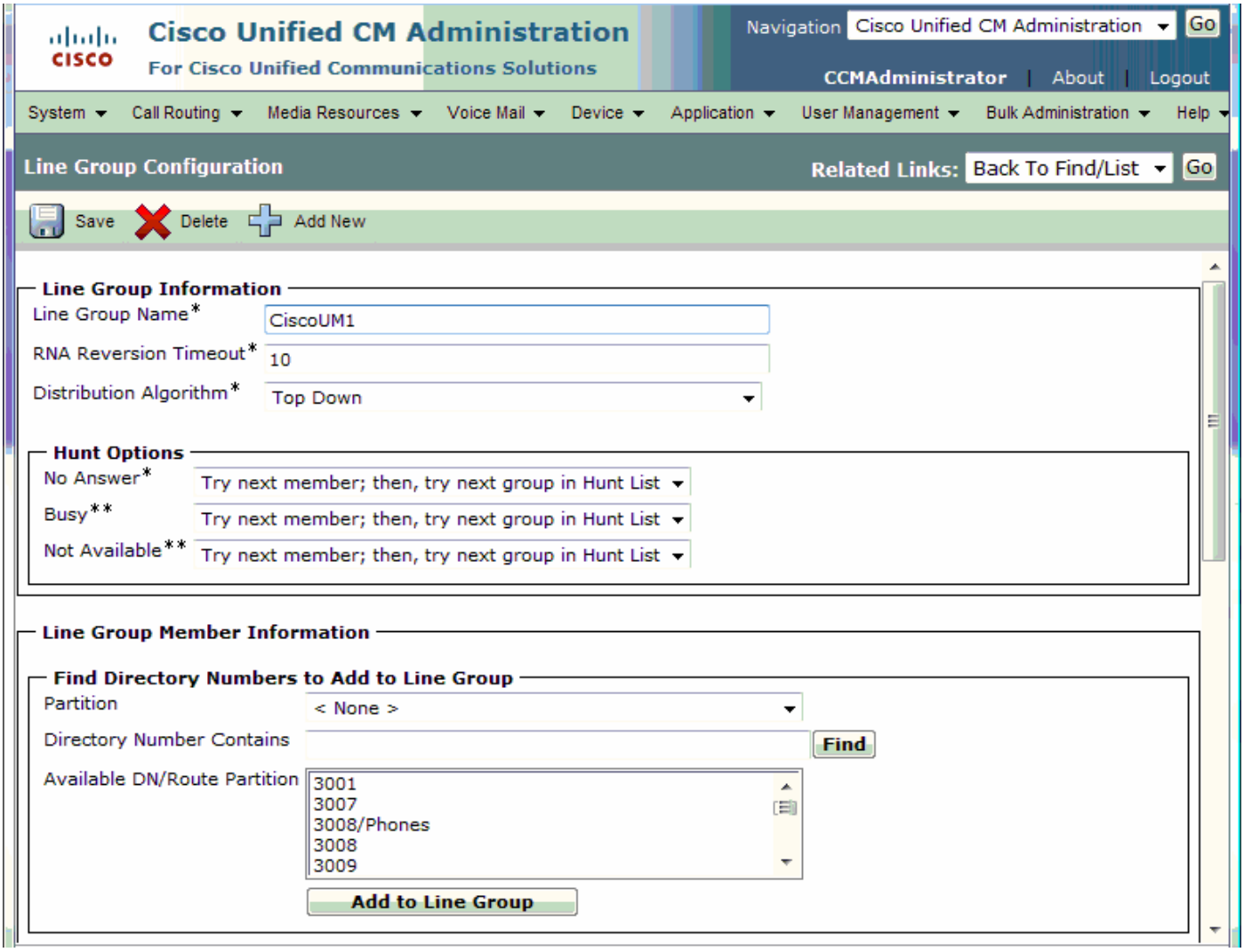


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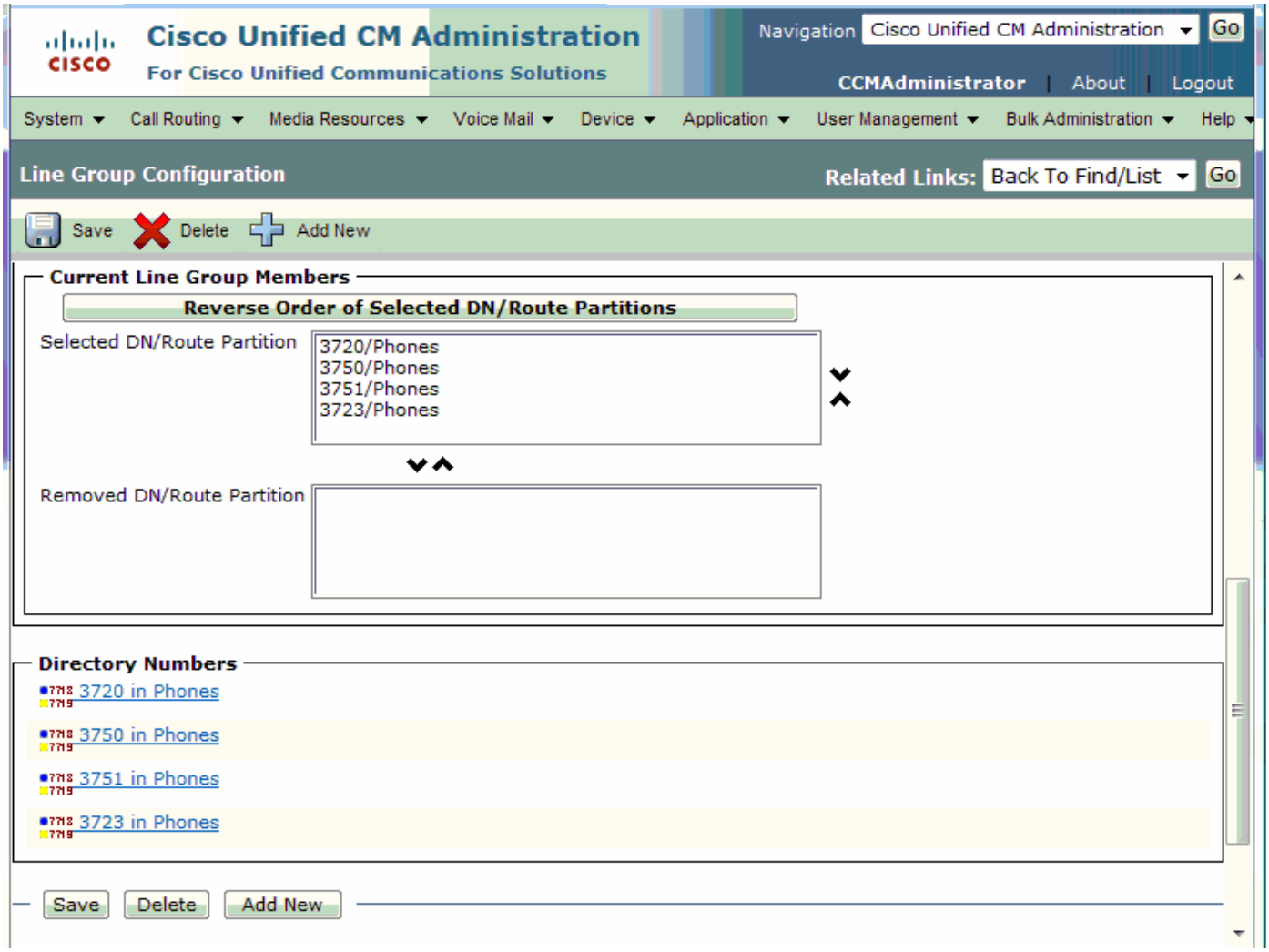


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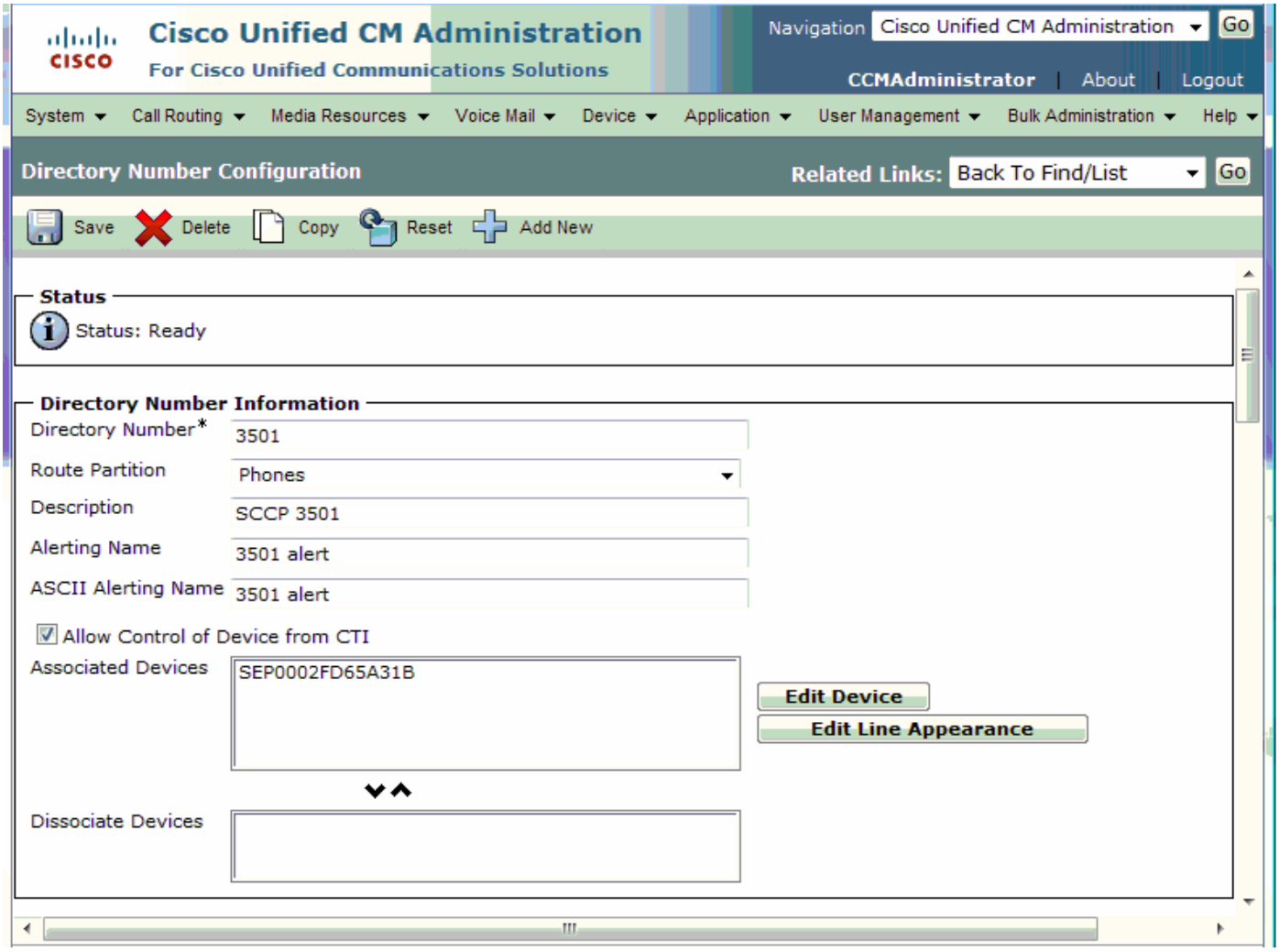
Line Group Line

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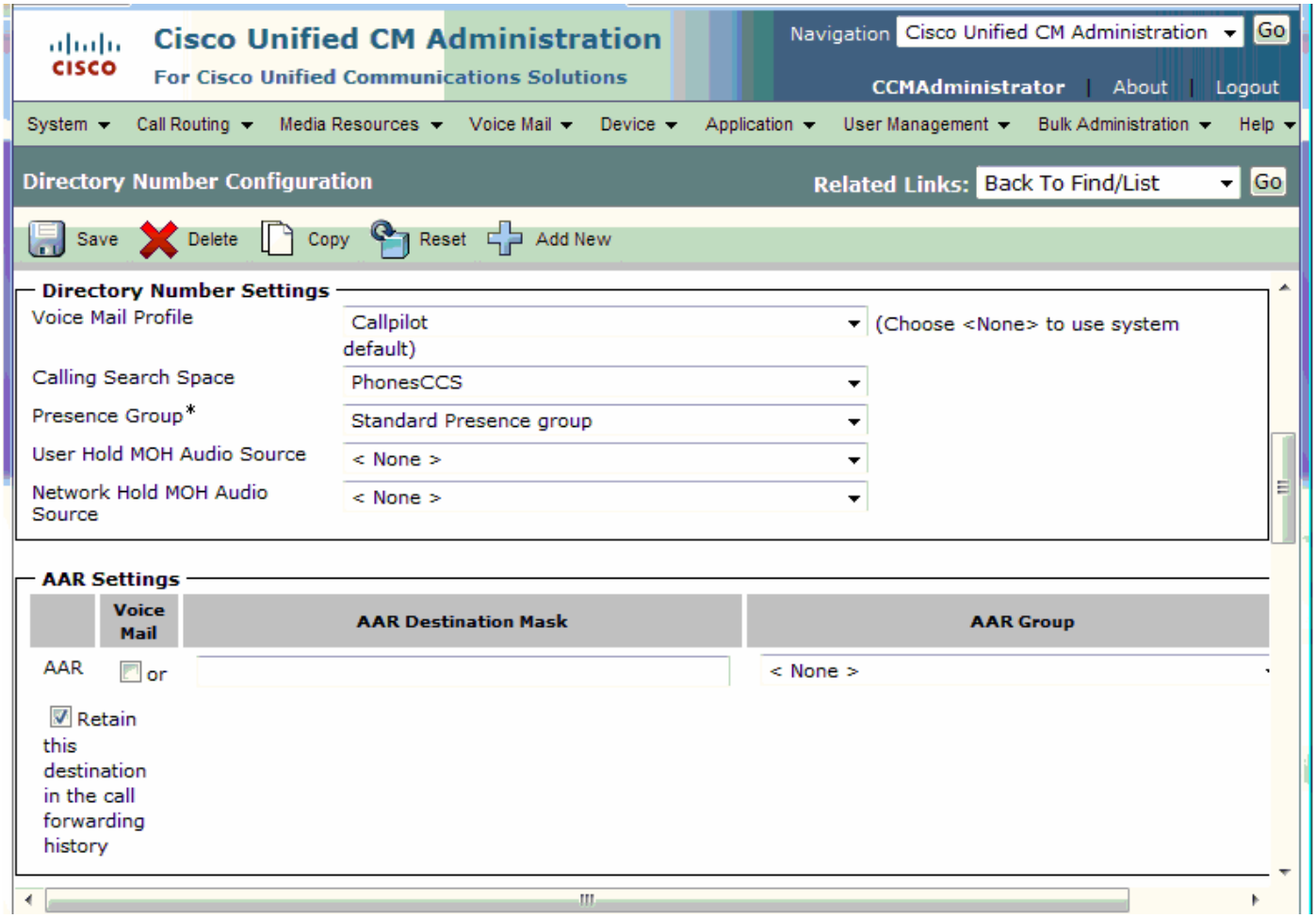


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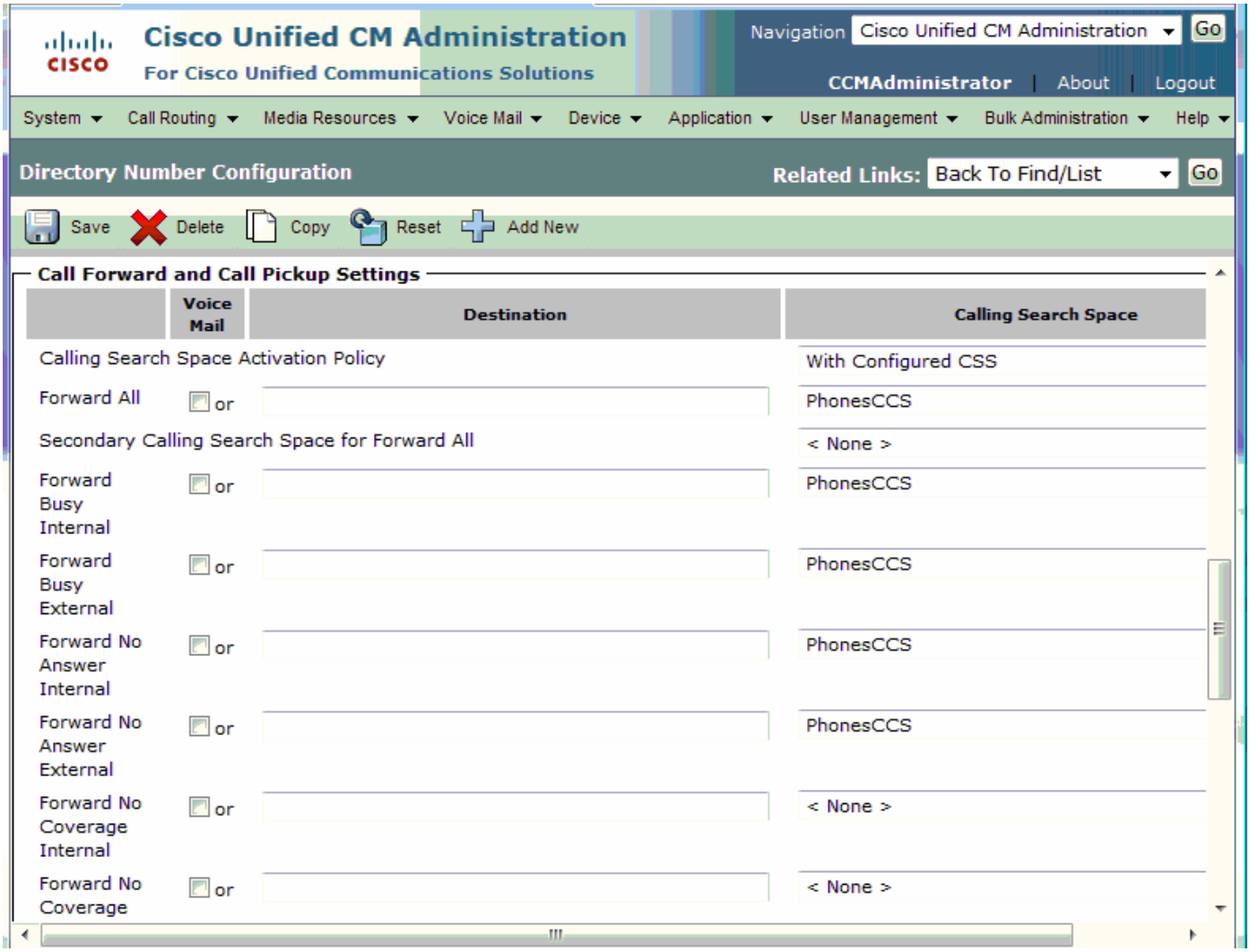


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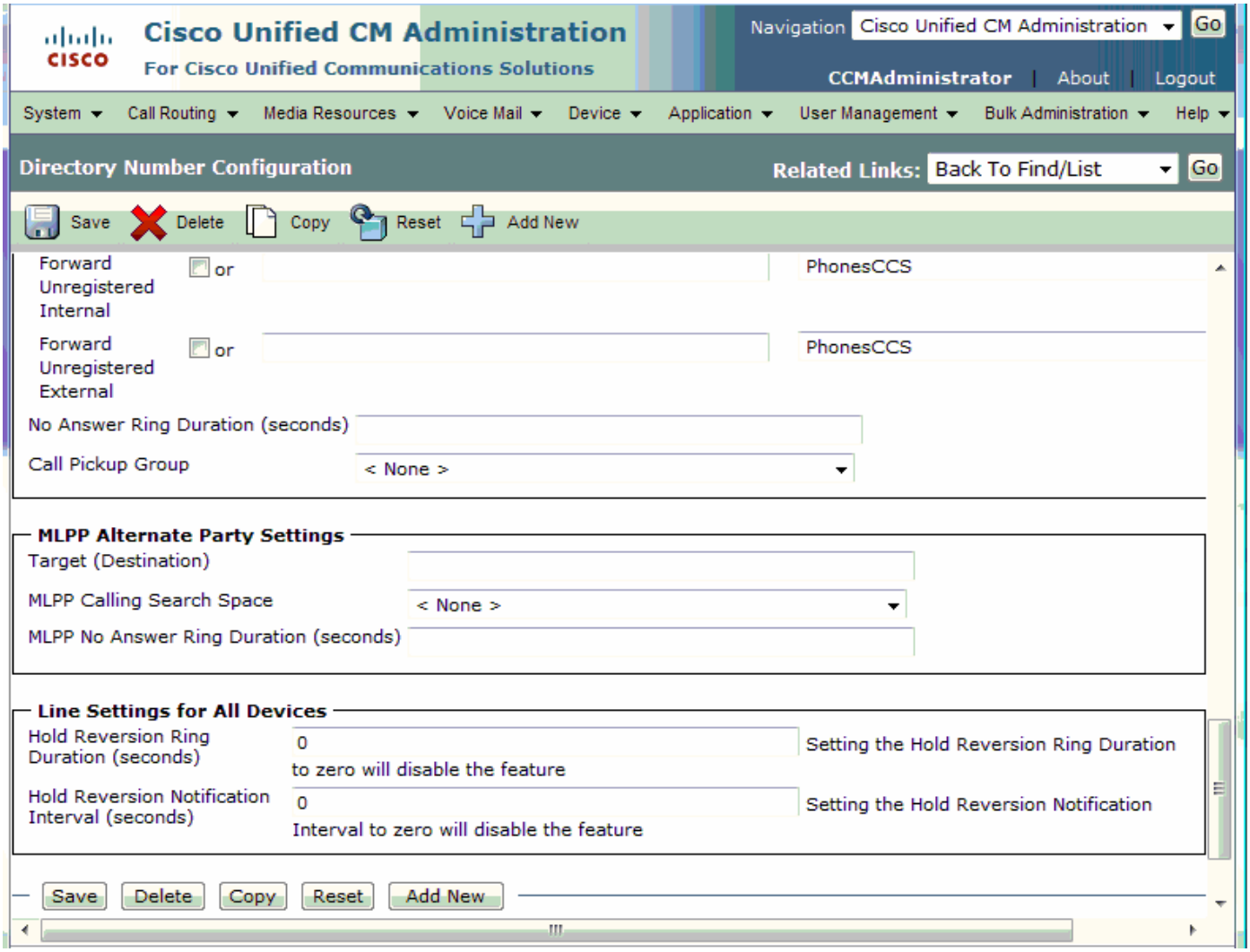


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Unity Voice Mail Profile

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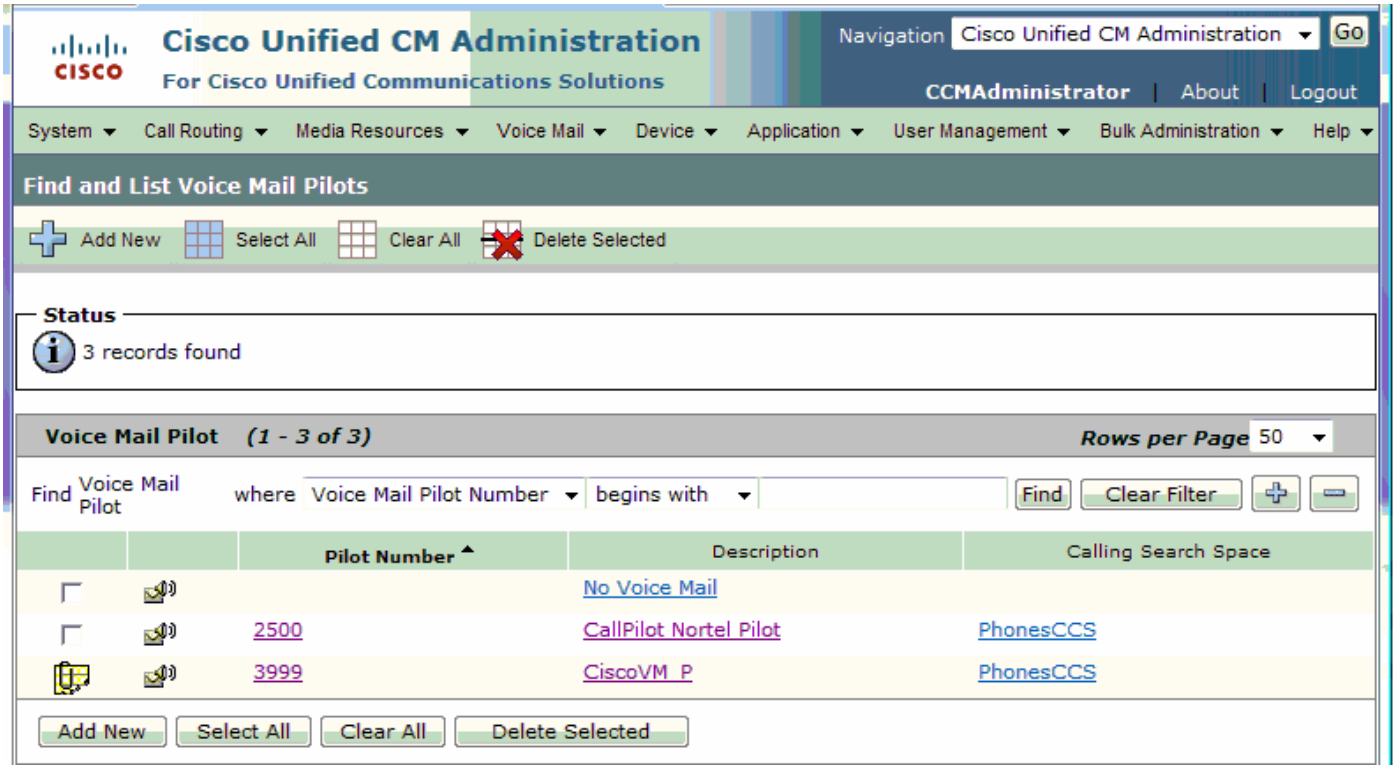
Voice Mail Pilot

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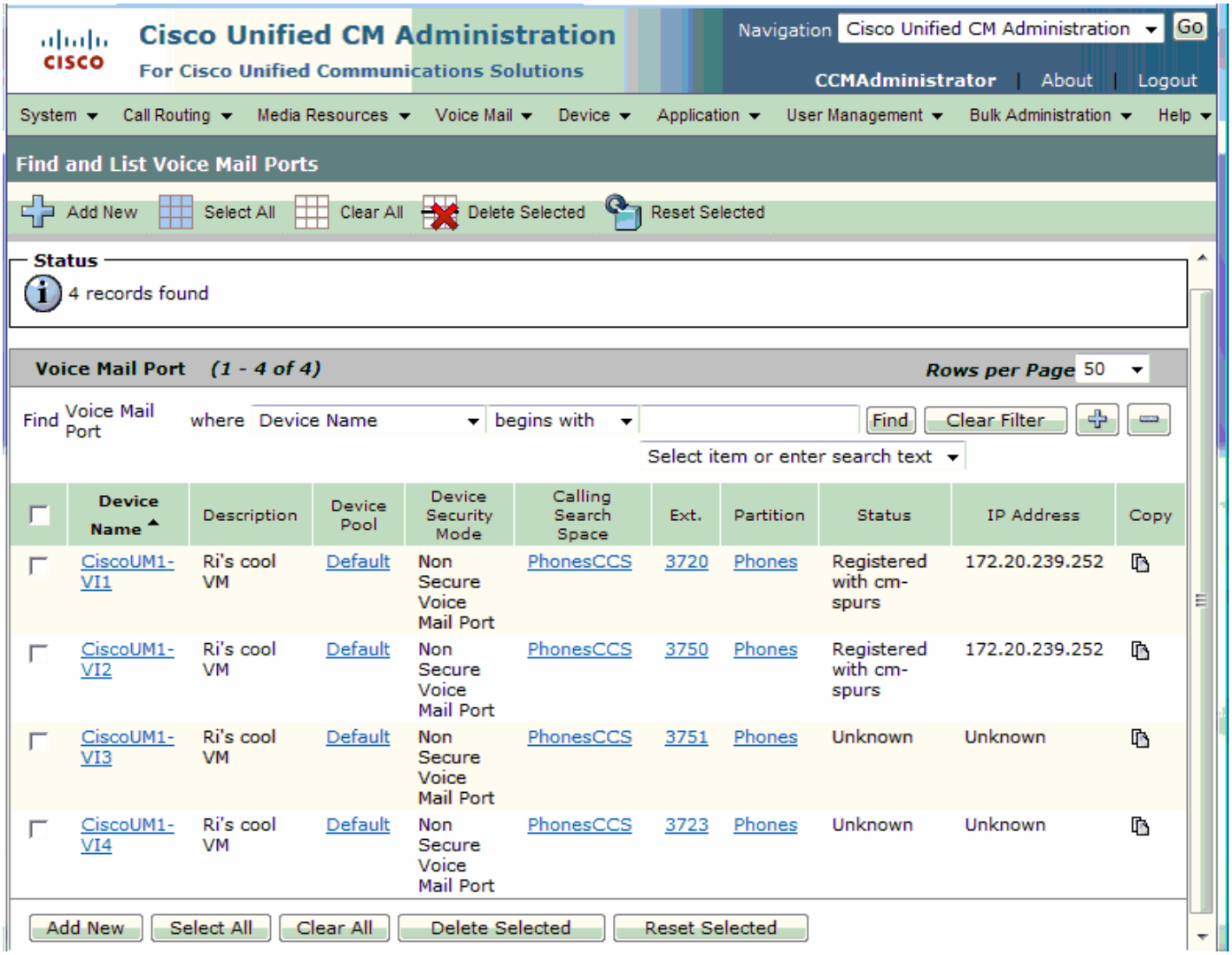
Voice Mail Port

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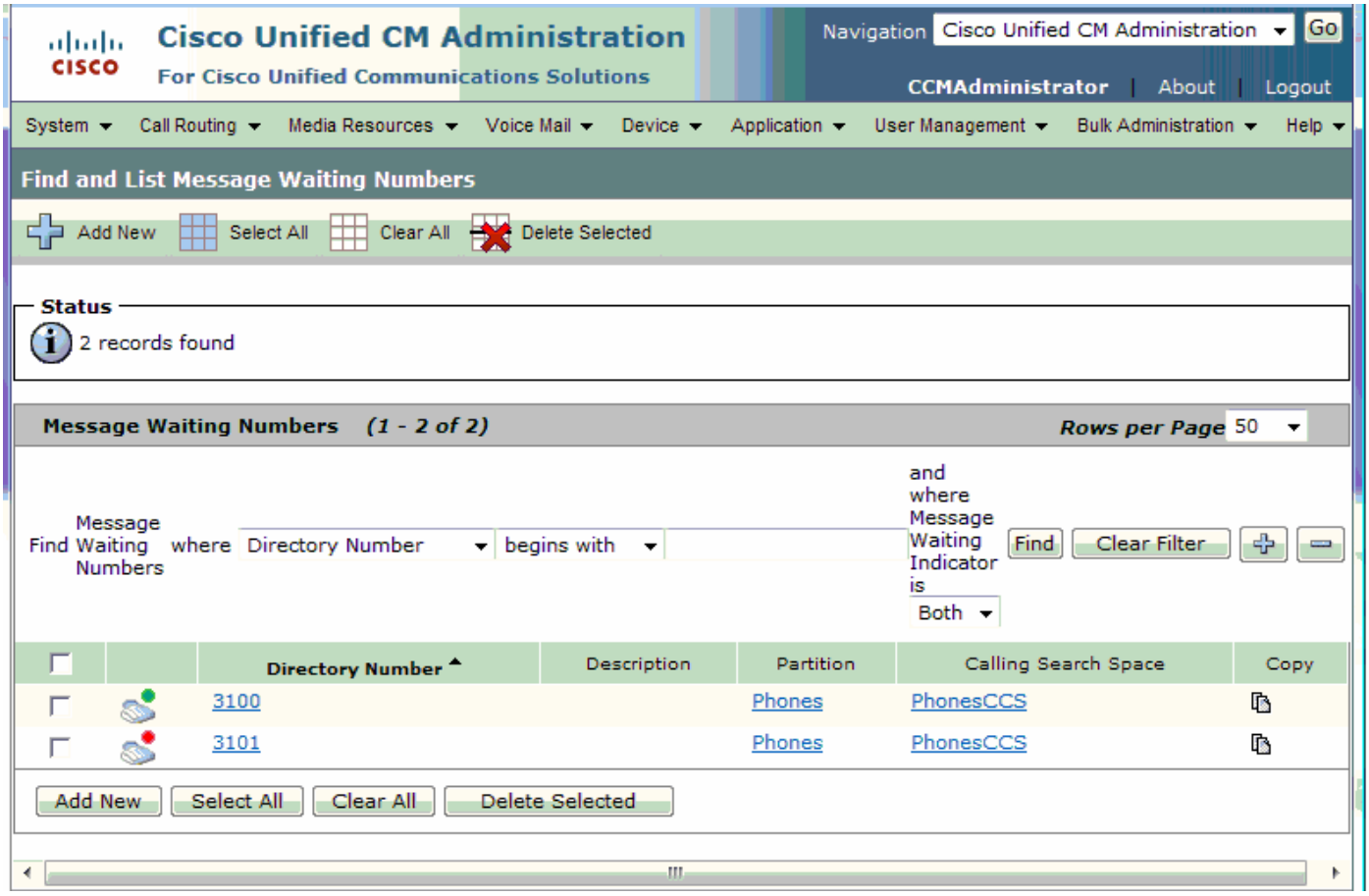
MWI Number

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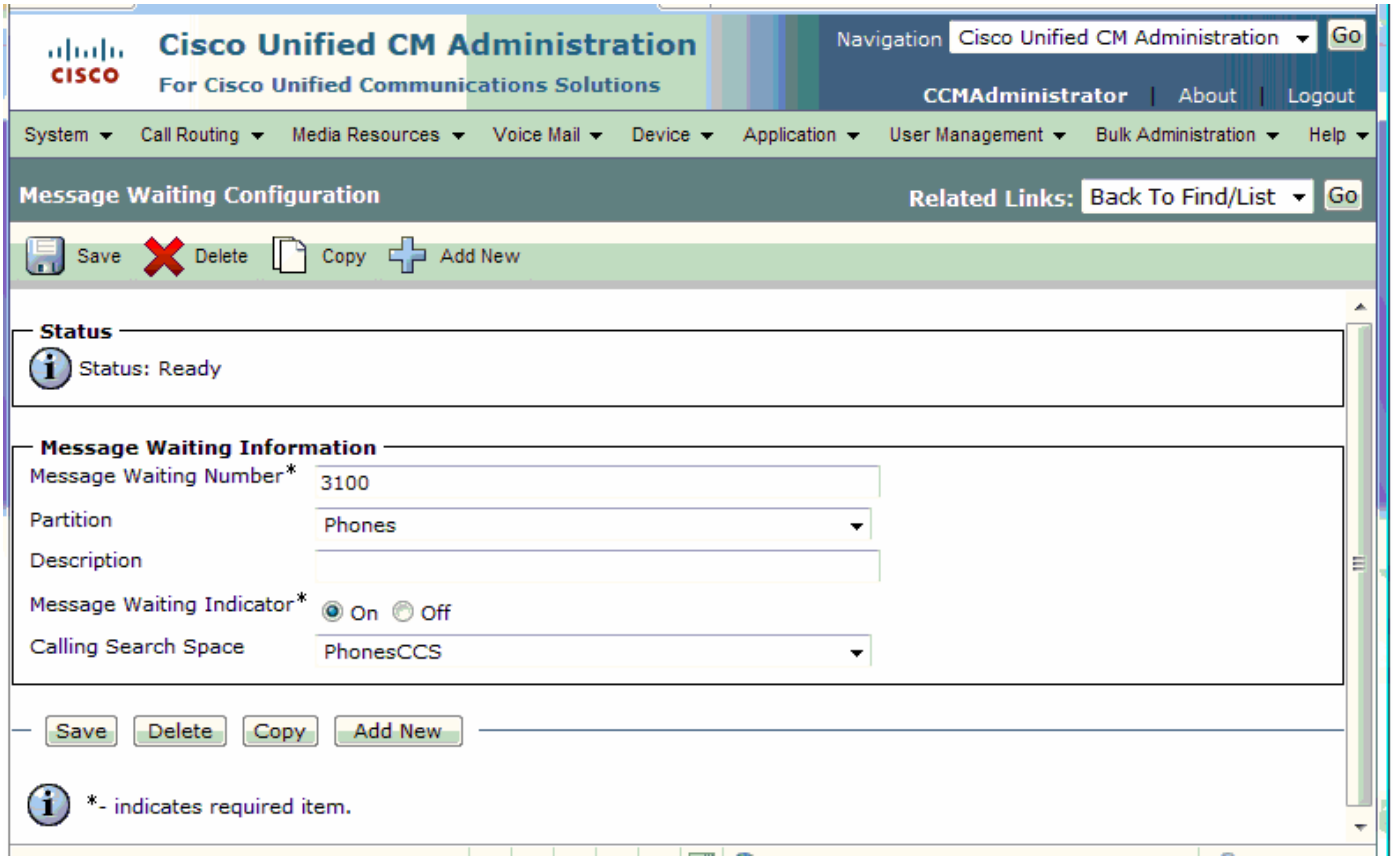
MWI On

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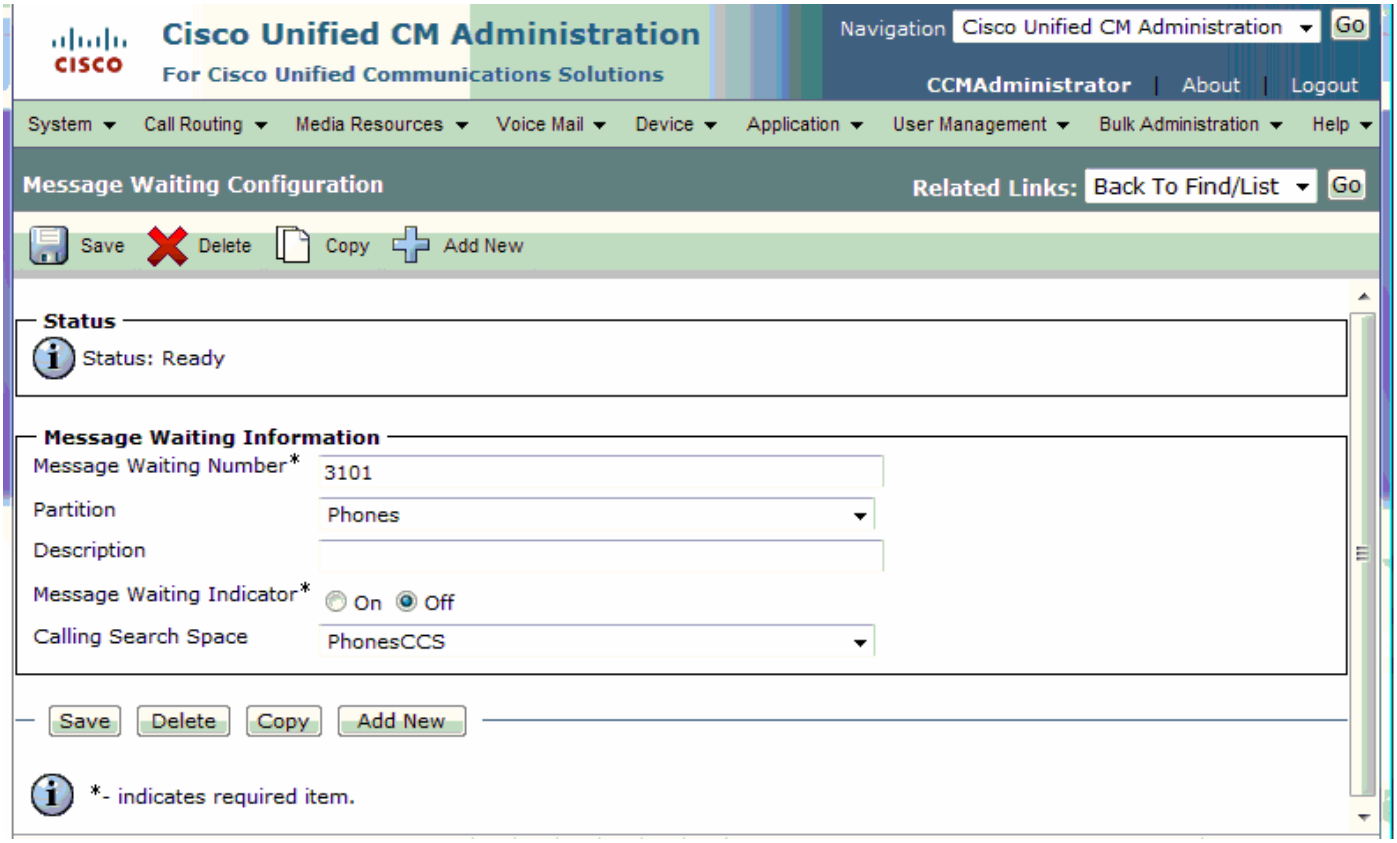


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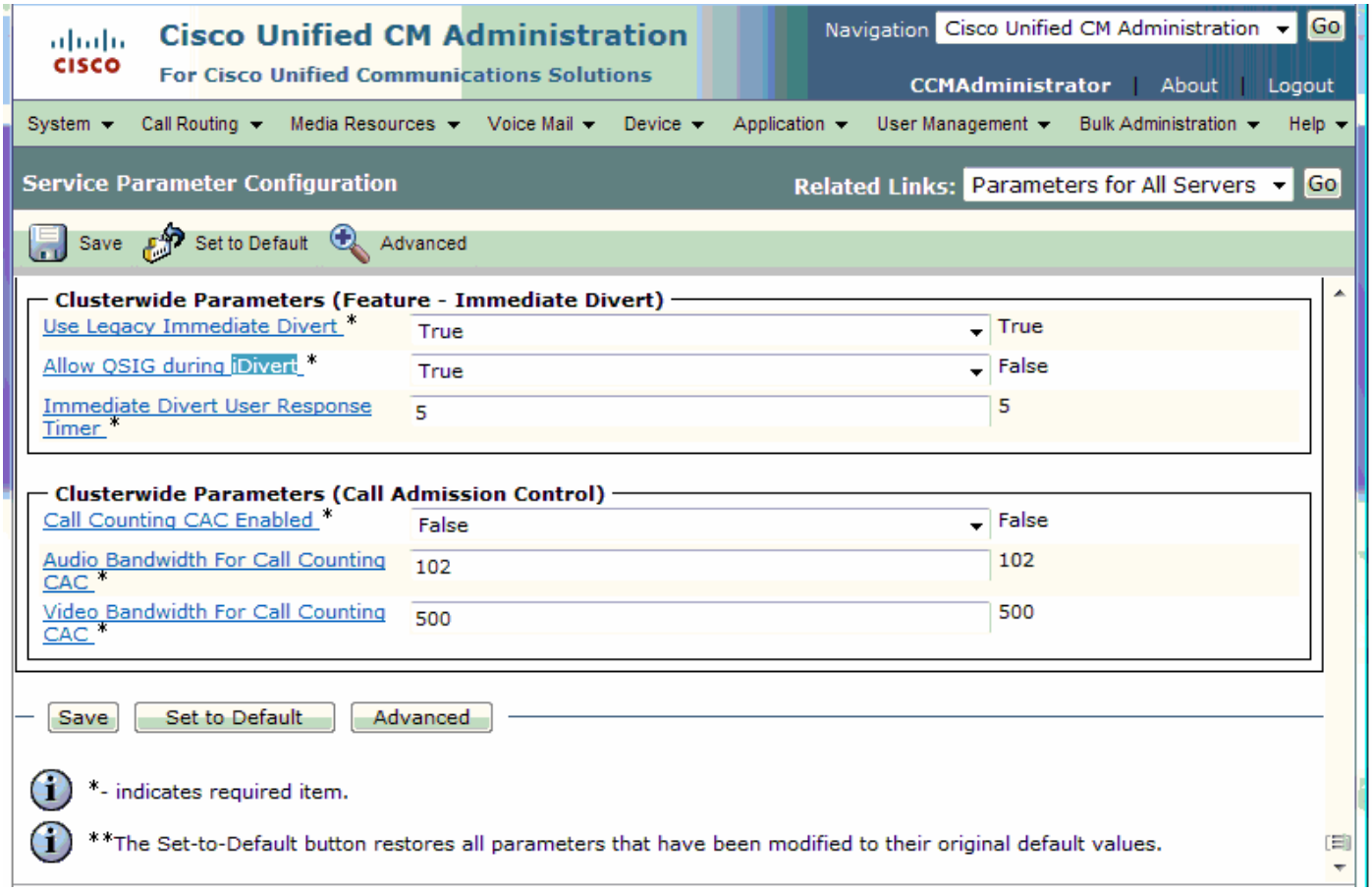
iDivert Service Parameters Set for Legacy Mode

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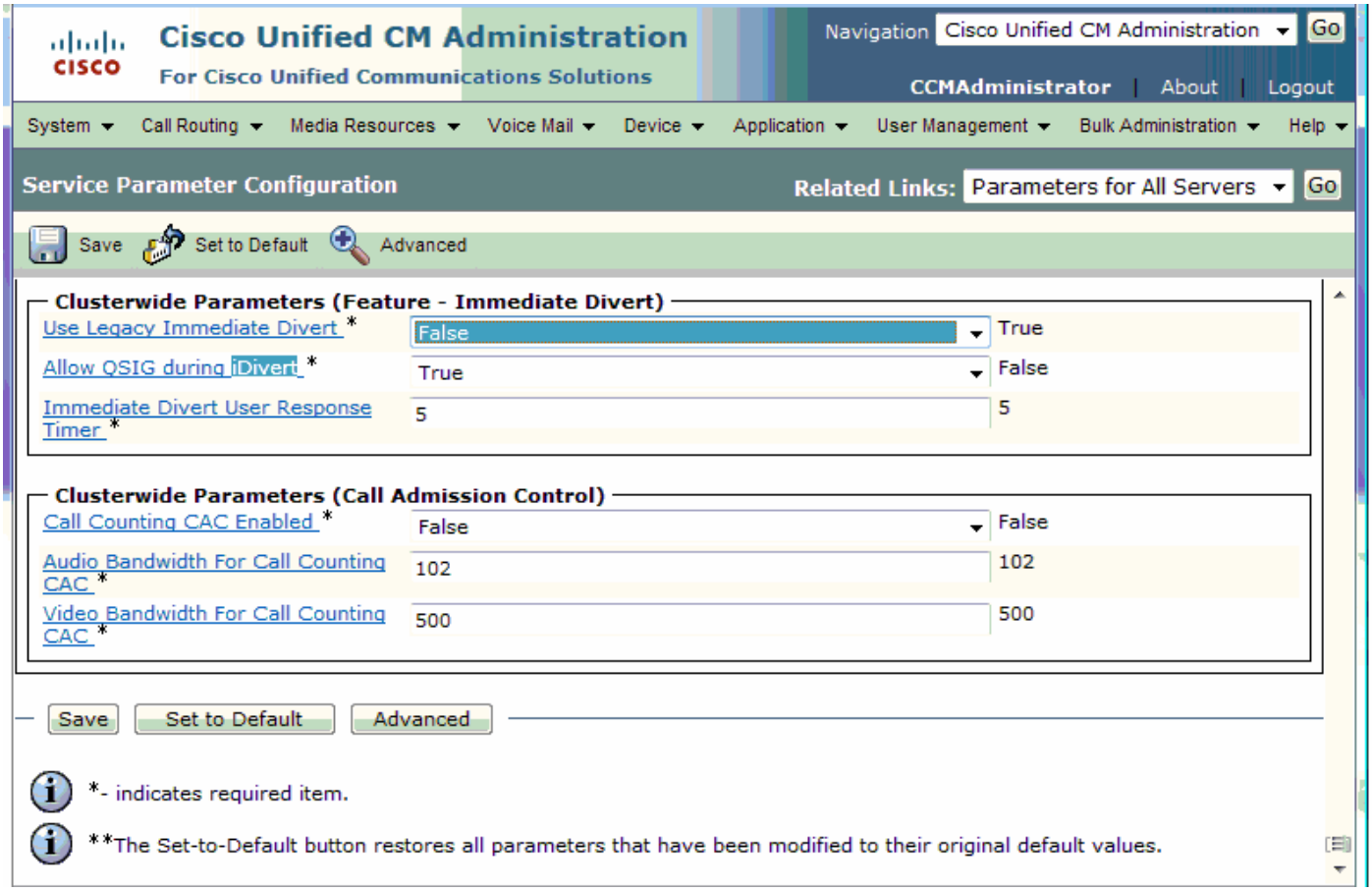
iDivert Service Parameters Set for *50 Data-Pass-Through Mode

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```
Router#sh ver

Cisco IOS Software, 3800 Software (C3825-IPVOICE-M), Version 12.4(15)XZ, RELEASE
 SOFTWARE (fc2)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2008 by Cisco Systems, Inc.
Compiled Fri 11-Apr-08 21:10 by prod_rel_team

ROM: System Bootstrap, Version 12.3(11r)T2, RELEASE SOFTWARE (fc1)

Router uptime is 5 weeks, 5 days, 3 hours, 15 minutes
System returned to ROM by power-on
System image file is "flash:c3825-ipvoice-mz.124-15.XZ.bin"

Cisco 3825 (revision 1.0) with 226304K/35840K bytes of memory.
Processor board ID FTX0946A1BV
2 Gigabit Ethernet interfaces
48 Serial interfaces
2 Channelized T1/PRI ports
2 Channelized (E1 or T1)/PRI ports
2 Voice FXO interfaces
DRAM configuration is 64 bits wide with parity enabled.
479K bytes of NVRAM.
62720K bytes of ATA System CompactFlash (Read/Write)

Configuration register is 0x2102

Router#sh run
Building configuration...

Current configuration : 2348 bytes
!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname Router
!
boot-start-marker
boot-end-marker
!
! card type command needed for slot/vwic-slot 0/2
logging message-counter syslog
logging buffered 10000000
no logging console
enable password cisco
!
no aaa new-model
network-clock-participate slot 2
!
```

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```
voice-card 0
 no dspfarm
!
voice-card 2
 no dspfarm
!
ip cef
!
!
!
!
no ip domain lookup
ip host CM-SPURS 172.20.192.254
multilink bundle-name authenticated
!
isdn switch-type primary-qsig
!
!
!
!
!
!
!
!
!
archive
 log config
  hidekeys
!
!
controller T1 2/0/0
 framing esf
 linecode b8zs
 pri-group timeslots 1-24 service mgcp
!
controller T1 2/0/1
 framing esf
 linecode b8zs
 pri-group timeslots 1-24 service mgcp
!
!
!
!
!
interface GigabitEthernet0/0
 ip address 172.20.192.102 255.255.255.0
 duplex auto
 speed auto
 media-type rj45
 no keepalive
!
interface GigabitEthernet0/1
 no ip address
```

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```
 shutdown
 duplex auto
 speed auto
 media-type rj45
 no keepalive
!
interface Serial2/0/0:23
 no ip address
 encapsulation hdlc
 isdn switch-type primary-qsig
 isdn timer T310 120000
 isdn protocol-emulate network
 isdn incoming-voice voice
 isdn bind-l3 ccm-manager
 no cdp enable
!
interface Serial2/0/1:23
 no ip address
 encapsulation hdlc
 isdn switch-type primary-qsig
 isdn incoming-voice voice
 isdn bind-l3 ccm-manager
 no cdp enable
!
ip forward-protocol nd
ip route 0.0.0.0 0.0.0.0 172.20.192.1
!
!
ip http server
!
!
!
!
control-plane
!
!
!
voice-port 0/0/0
!
voice-port 0/0/1
!
voice-port 2/0/0:23
!
voice-port 2/0/1:23
!
ccm-manager mgcp
ccm-manager music-on-hold
ccm-manager config server CM-SPURS
ccm-manager config
!
mgcp
mgcp call-agent cm-spurs 2427 service-type mgcp version 0.1
mgcp dtmf-relay voip codec all mode out-of-band
```

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```
mgcp rtp unreachable timeout 1000 action notify
mgcp modem passthrough voip mode nse
mgcp package-capability rtp-package
mgcp package-capability sst-package
mgcp package-capability pre-package
no mgcp package-capability res-package
no mgcp package-capability fxr-package
no mgcp timer receive-rtcp
mgcp sdp simple
mgcp fax t38 inhibit
mgcp rtp payload-type g726r16 static
!
mgcp profile default
!
!
!
!
!
line con 0
line aux 0
line vty 0 4
 password cisco
 login
!
scheduler allocate 20000 1000
end

Router#
```

**Acronyms**

| Acronym | Definition |
|---|---|
| ANF-PR | Additional Network Feature Path Replacement |
| 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 |

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| Acronym | Definition |
|---|---|
| ISR | Integrated Services Router |
| MGCP | Media Gateway Control Protocol |
| MWI | Message Waiting Indication |
| PBX | Private branch exchange |
| PRI | Primary Rate Interface |
| QSIG | Q Signaling |
| VWIC | Voice/WAN Interface Card |

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