Application Note

Ericsson MD110 BC13 SP3 using E1 ECMA QSIG to Cisco Unified Communications Manager 6.0

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Introduction

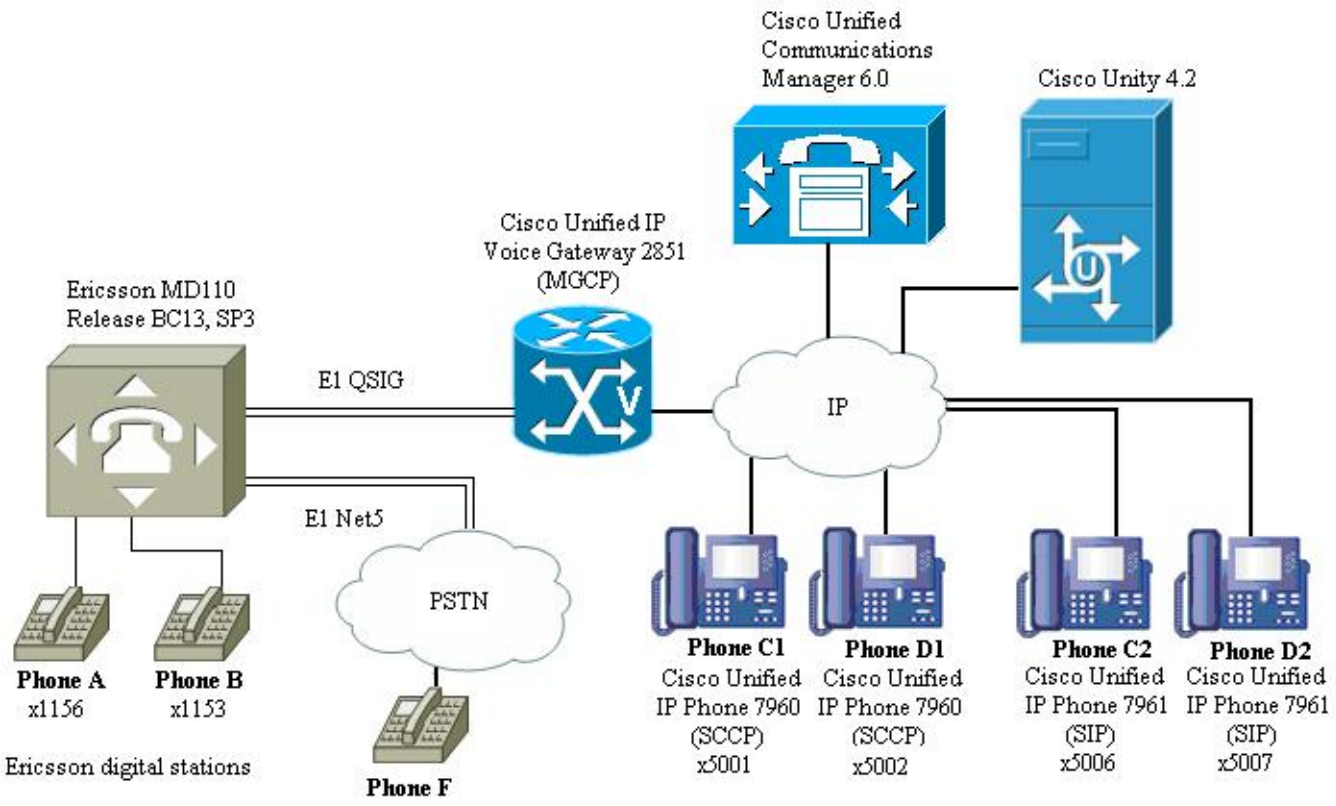
This is an application note for connectivity of Ericsson MD-110 Release BC13 PBX with Cisco Unified Communications Manager Release 6.0 via Cisco 2851 as MGCP gateway using ECMA QSIG protocol. A VWIC-2MFT-E1 is used to provide the physical E1 interface on the Cisco 2851.

The network topology diagram (Figure 1) shows the test setup for end-to-end interoperability with the Cisco Unified Communications Manager connected to the PBX via Cisco 2851 as MGCP gateway. Interoperability is achieved by using the PRI QSIG E1 protocol type on the MGCP gateway with Communications Manager Service parameter QSIG variant of ECMA and ECMA switch type on the Ericsson MD-110 PBX.

This Application Note uses the Cisco 2851 w/ VWIC-2MFT-E1 voice gateway. However, other Cisco voice gateways are also an option to use since Communications Manager QSIG implementation does not depend on the physical interface.

Network Topology

Figure 1. Basic Call Setup



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Limitations

The following section lists known limitations, caveats, or integration issues.

In a previous release of this application note, it was stated that Alerting Name was sent by the PBX extension, but not displayed on an originating SIP phone registered with Cisco Communications Manager 6.0. This was due to an improper PROGRESS message being sent before the ALERTING message from the PBX. This issue was resolved by passivating a patch (S111995A) from Ericsson, and should not be an issue in the field.

Cisco Unified IP Phones registered on Cisco Unified Communications Manager 6.0 do not display Busy Name sent over QSIG. Cisco Unified Communications Manager 6.0 does not support decode and display of Busy Name. It does support sending Busy Name.

The Ericsson MD110 PBX does not send or recognize ”Call Transfer Complete” or ”Call Transfer Active” FACILITY messages for ECMA QSIG. Therefore, the called (connected) name and number information is not updated on the originating phone after a transfer. Additionally, the original calling name and number information is not displayed on the final destination phone if the transfer is network/external (e.g., phone C1 calls phone A and phone A transfers to phone D1). Rather, the transferring phone’s information is displayed.

On a call that originates from a Cisco Unified IP Phone (registered on Cisco Unified Communications Manager 6.0) to an Ericsson MD110 PBX extension, and is then forwarded unconditionally to another Cisco Unified IP Phone over the same trunk (e.g., phone C1 calls phone A, and phone A forwards back to phone D1), the original calling name and number information is not displayed. Only the forwarding name and number information are displayed. This is because the PBX sets up the second leg of the call with a new SETUP message (i.e., no reroute), and the forwarding party’s information is sent as the calling party in this message. Also, the final destination connected name is not updated on the originating phone. The proper connected name is sent from Cisco Unified Communications Manager 6.0 to the PBX, but it is not included when the CONNECT message is relayed back to the Cisco Unified Communications Manager 6.0 in the first call leg.

On a call that originates from an Ericsson MD110 PBX extension to a Cisco Unified IP Phone (registered on Cisco Unified Communications Manager 6.0), and is then forwarded (either unconditionally or on busy or on no reply) to another extension on the same PBX, and where Reroute is not invoked, the forwarding name and number information is not displayed on the final destination. This is because the Cisco Unified Communications Manager 6.0 sets up the second leg of the call with a new SETUP message (i.e., no reroute), and the original party’s information is sent as the calling party in this message. No forwarding party (diverting leg) information is sent.

The Ericsson MD110 PBX does not support external Call Forward Busy or Call Forward No Reply for ECMA QSIG. This is a limitation of the PBX and was also seen on the previous realease (BC12, SP5).

The Ericsson MD110 PBX does not support Call Forward by Reroute for ECMA QSIG. There is no reroute proposal from the PBX, even if the parameter is enabled. This is a limitation of the PBX and was also seen on the previous realease (BC12, SP5). In cases where the Cisco Unified Communications Manager 6.0 is the forwarding PINX, it sends a Reroute request, but the PBX ignores it. The Cisco Unified Communications Manager 6.0 waits for a timer to expire before abandoning the Reroute proposal and joining the call. This causes a ~5 second delay for the call to be completed. So, it is recommended for ECMA QSIG that the Reroute feature is turned off in Cisco Unified Communications Manager 6.0 Service Parameters to avoid this delay.

The Ericsson MD110 PBX does not support Call Back (on No Reply or on Busy) for ECMA QSIG. This is a limitation of the PBX and was also seen on the previous realease (BC12, SP5).

The Ericsson MD110 PBX does not support Path Replacement for ECMA QSIG. This is a limitation of the PBX and was also seen on the previous realease (BC12, SP5).

The Ericsson MD110 PBX does not support a voice mail integration with Cisco Unity for ECMA QSIG. This is because no diverting leg information is sent for Call Forward Unconditional, and because Ericsson MD110 PBX does not support external Call Forward Busy or Call Forward No Reply for ECMA QSIG.

Voice mail features with the Ericsson MD110 PBX designated as the message center PINX were not tested. This is because there was not a fully integrated voice mail system at the time of testing.

iDivert to voicemail using the Ericsson MD110 PBX as a forwarding node (e.g., phone C1 calls phone A, phone A forwards to phone D1, and phone D1 presses iDivert soft key) are limited to Legacy mode for ECMA QSIG, even if Legacy mode is de-selected in Cisco Unified Communications Manager 6.0. As soon as the soft key is pressed, the originator hits the voice mailbox for the final destination with no data-pass-through screen presented.

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System Components

Hardware Requirements

The following hardware is required:

- Cisco Unified IOS gateway 2851 with NM-HD-2VE and VWIC-2MFT-E1
- Cisco MCS 7800 server (for Cisco Unified Communications Manager and Cisco Unity)
- Cisco Unified IP Phones 7960 and 7961
- Ericsson MD110 PBX and TL76/1, PRI-E1 interface card

Software Requirements

The following software is required:

- Cisco Unified Communications Manager Release 6.0
- PBX software release BC13, SP3
- Cisco IOS Release 12.4

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Features

This section lists new and changed features and features that are not supported.

Features Supported

Basic Call (Overlap and ENBLOC dialing)

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

Alerting Name (See Limitations)

Busy Name (See Limitations)

Tandem Call through PBX to/from PSTN

Consultation Transfer – Local and Network/External

Blind Transfer – Local and Network/External

Call Forward Unconditional by Join – Local and Network/External (See Limitations)

Call Forward Busy by Join – Local (See Limitations)

Call Forward No Reply by Join – Local (See Limitations)

iDivert (Legacy mode only)

Features Not Supported

Call Forward Busy by Join – Network/External

Call Forward No Reply by Join – Network/External

Call Forward Unconditional by Reroute – Network/External

Call Forward Busy by Reroute – Network/External

Call Forward No Reply by Reroute – Network/External

Call Back/Call Completion – Busy and No Reply

Path Replacement (for Call Transfer by join)

Path Replacement (for Trombone connection)

Voice Mail Integration and MWI

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Configuration

Configuring the Ericsson MD110 BC13 SP3 PBX

Warning: The Ericsson MD-110 PBX user interface is very precise. All parameters and options are mapped to position-dependent numeric fields within the various commands listed below. The user must have the correct revision of the Ericsson MD-110 PBX administration manual to be able to decipher each field position and determine its meaning. It is therefore not advisable to make changes to an MD-110 PBX unless you know exactly what you are doing. A single number out of place in a command string can cause unusual behavior on the PBX.
Configure the Ericsson MD-110 PBX in the following sequence:

1. ROCAI Route Category Initiate
2. RODAI Route Data Initiate
3. ROEQI Route Equipment Initiate
4. RODDI Route External Destination

Configuration Menus and Commands

Route Category Initiate

Setup internal characteristics for the route. Ex. Traffic direction, services, Bearer capabilities.

For Ericsson node (BC13, SP2) - using routes 100 & 101 only.

```
<ROCAP:ROU=ALL;
ROUTE CATEGORY DATA

ROU SEL               TRM SERV       NODG DIST DISL TRAF     SIG          BCAP

1   7110000000700010 4   3100000010  0    30   128  00151515 111110000031 001100
6   2110000000700010 5   0010100010  0    30   128  00151515 211100010050 001100
8   2110000000700010 5   0000100010  0    30   128  00151515 211100010050 001100
11  7110000000700010 5   3110030000  0    30   128  03151515 111110000011 111111
12  7110000000700010 5   3110000000  0    30   128  03151515 111110000011 111111
13  7110000000700010 5   3110000011  0    30   128  00151515 311110000011 101111
39  4110000000700010 5   3110000011  0    30   128  00151515 311110000031 001100
40  2110000000700010 5   0010000011  0    30   128  00151515 111110000031 001100
100 7110000000000010 5   3110000011  0    30   128  03151515 111110000031 111111
101 7110000000000010 5   3110000011  0    30   128  03151515 111110000031 111111

END
```

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Route Data Initiate

For Ericsson node

E1-PRI QSIG Route Protocol Characteristics, protocol side “Network”

```
<RODAP:ROU=ALL;
ROUTE DATA

ROU   TYPE  VARC        VARI        VARO        FILTER

1     SL60  H'00000310  H'15420000  H'06300000  NO
6     TL30              H'00000036  H'00002016  NO
8     TL30  H'00000000  H'00002232  H'00002016  NO
11    TL50  H'00000001  H'00000000  H'00000000  NO
12    TL50  H'00000002  H'00000000  H'00000000  NO
13
39    SL60  H'00000310  H'05400000  H'06400000  NO
40    SL60  H'00000B14  H'3A820000  H'46415000  NO
100   SL60  H'00000310  H'15400000  H'06300000  NO
101   SL60  H'00000310  H'05400000  H'06300000  NO

END
```

For, E1-PRI QSIG Route Protocol Characteristics, protocol side “User”, make VARO = 06400000.

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Route Equipment Initiate

E1-PRI QSIG trunk lines (B-channels)

For Ericsson node

```
<ROEDP:ROU=ALL,TRU=ALL;
ROUTE EQUIPMENT DATA
ROU   TRU      EQU           IP ADDRESS         SQU       INDDAT           CNTRL

11    001-1    001-0-00-01                             H'0000000000FF
11    001-2    001-0-00-02                             H'0000000000FF
11    001-3    001-0-00-03                             H'0000000000FF
11    001-4    001-0-00-04                             H'0000000000FF
11    001-5    001-0-00-05                             H'0000000000FF
11    001-6    001-0-00-06                             H'0000000000FF
11    001-7    001-0-00-07                             H'0000000000FF
11    001-8    001-0-00-08                             H'0000000000FF
11    001-9    001-0-00-09                             H'0000000000FF
11    001-10   001-0-00-10                             H'0000000000FF
11    001-11   001-0-00-11                             H'0000000000FF
11    001-12   001-0-00-12                             H'0000000000FF
11    001-13   001-0-00-13                             H'0000000000FF
11    001-14   001-0-00-14                             H'0000000000FF
11    001-15   001-0-00-15                             H'0000000000FF
11    001-17   001-0-00-17                             H'0000000000FF
11    001-18   001-0-00-18                             H'0000000000FF
11    001-19   001-0-00-19                             H'0000000000FF
11    001-20   001-0-00-20                             H'0000000000FF
11    001-21   001-0-00-21                             H'0000000000FF
11    001-22   001-0-00-22                             H'0000000000FF
11    001-23   001-0-00-23                             H'0000000000FF
11    001-24   001-0-00-24                             H'0000000000FF
11    001-25   001-0-00-25                             H'0000000000FF
11    001-26   001-0-00-26                             H'0000000000FF
11    001-27   001-0-00-27                             H'0000000000FF
11    001-28   001-0-00-28                             H'0000000000FF
11    001-29   001-0-00-29                             H'0000000000FF
11    001-30   001-0-00-30                             H'0000000000FF
11    001-31   001-0-00-31                             H'0000000000FF

100   001-1    001-0-30-01                             H'000000000000
100   001-2    001-0-30-02                             H'000000000000
100   001-3    001-0-30-03                             H'000000000000
100   001-4    001-0-30-04                             H'000000000000
100   001-5    001-0-30-05                             H'000000000000
100   001-6    001-0-30-06                             H'000000000000
100   001-7    001-0-30-07                             H'000000000000
100   001-8    001-0-30-08                             H'000000000000
100   001-9    001-0-30-09                             H'000000000000
100   001-10   001-0-30-10                             H'000000000000
100   001-11   001-0-30-11                             H'000000000000
100   001-12   001-0-30-12                             H'000000000000
100   001-13   001-0-30-13                             H'000000000000
100   001-14   001-0-30-14                             H'000000000000
```

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```
100    001-15    001-0-30-15                          H'000000000000
100    001-17    001-0-30-17                          H'000000000000
100    001-18    001-0-30-18                          H'000000000000
100    001-19    001-0-30-19                          H'000000000000
100    001-20    001-0-30-20                          H'000000000000
100    001-21    001-0-30-21                          H'000000000000
100    001-22    001-0-30-22                          H'000000000000
100    001-23    001-0-30-23                          H'000000000000
100    001-24    001-0-30-24                          H'000000000000
100    001-25    001-0-30-25                          H'000000000000
100    001-26    001-0-30-26                          H'000000000000
100    001-27    001-0-30-27                          H'000000000000
100    001-28    001-0-30-28                          H'000000000000
100    001-29    001-0-30-29                          H'000000000000
100    001-30    001-0-30-30                          H'000000000000
100    001-31    001-0-30-31                          H'000000000000

101    001-1     001-0-40-01                          H'000000000000
101    001-2     001-0-40-02                          H'000000000000
101    001-3     001-0-40-03                          H'000000000000
101    001-4     001-0-40-04                          H'000000000000
101    001-5     001-0-40-05                          H'000000000000
101    001-6     001-0-40-06                          H'000000000000
101    001-7     001-0-40-07                          H'000000000000
101    001-8     001-0-40-08                          H'000000000000
101    001-9     001-0-40-09                          H'000000000000
101    001-10    001-0-40-10                          H'000000000000
101    001-11    001-0-40-11                          H'000000000000
101    001-12    001-0-40-12                          H'000000000000
101    001-13    001-0-40-13                          H'000000000000
101    001-14    001-0-40-14                          H'000000000000
101    001-15    001-0-40-15                          H'000000000000
101    001-16    001-0-40-17                          H'000000000000
101    001-17    001-0-40-18                          H'000000000000
101    001-18    001-0-40-19                          H'000000000000
101    001-19    001-0-40-20                          H'000000000000
101    001-20    001-0-40-21                          H'000000000000
101    001-21    001-0-40-22                          H'000000000000
101    001-22    001-0-40-23                          H'000000000000
101    001-23    001-0-40-24                          H'000000000000
101    001-24    001-0-40-25                          H'000000000000
101    001-25    001-0-40-26                          H'000000000000
101    001-26    001-0-40-27                          H'000000000000
101    001-27    001-0-40-28                          H'000000000000
101    001-28    001-0-40-29                          H'000000000000
101    001-29    001-0-40-30                          H'000000000000
101    001-30    001-0-40-31                          H'000000000000

END
```

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Route External Destination Data Initiate

For Ericsson node

Route and Access Code for the trunk Information. Note Routes 100 and 101 are for the PRI trunks.

<RODDP:DEST=ALL;
EXTERNAL DESTINATION ROUTE DATA

DEST	DRN	ROU	CHO	CUST	ADC	TRC	SRT	NUMACK	PRE
12		101			150500000000002501050010010	0	1	0	
21		1			122500000000002501020011000	0	3	0	
235		100			150500000000002501050010010	0	1	0	
25		100			060610000000002500060000000	0	3	0	
30		100			160600000000002501060010010	0	1	0	
31		11			100500000000002500000000000	0	3	0	
35		11			060600000000002501060011000	0	3	0	
36		6			011500000000002500010000000	0	3	0	
38		8			011500000000002500010000000	0	3	0	
40		100			170700000000002501070010010	0	1	0	
42		**101**			**160600000000002501060010010**	**0**	**1**	**0**	
50		**100**			**160600000000002501060010010**	**0**	**1**	**0**	
550		11			060600000000002501060011000	0	1	0	
551		101			070700000000002501070011000	0	1	0	
560		11			060600000000002501060011000	0	1	0	
650		100			170700000000002501070011000	0	1	0	
666		100			070700000000002501070011000	0	1	0	
777		101			150500000000002501050010010	0	1	0	
9		101			150500000000002501050010010	0	2	0	

END

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Exchange ID (System ID)

For Path Replacement, Exchange IDs need to be unique. Change System ID by using the following commands:

<SYIDE;

EXECUTED

<SYIDI:EXGID=888;

EXECUTED

For Ericsson node

<SYIDP;

PRIVATE NETWORK EXCHANGE IDENTITY IS

888

END

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Route Number Data Print – Private Exchange Number Prefix

A prefix can be added to the outgoing number (as connected number) by setting the EXNOPR parameter. This should be left blank. This is accomplished by using the RONDE command.

```
<RONDE:ROU=100;

EXECUTED
```

It can be checked with the RONDP command.

For Ericsson node

```
Route and Access Code for the trunk Information- Note Routes 100 & 101 are for the PRI
trunks.

<RONDP:ROU=ALL;
ROUTE NUMBER DATA

ROU    PRE    ROUDIR    EXNOPU      EXNOPR      TERAC

1
6
8
11                                  6-777
12                                  6-777
13
39
40
100
101

END
```

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Number Analysis Summary

For Ericsson node

```
<NADAP;
NUMBER ANALYSIS DATA

TYPE OF SERIES                    NUMBER SERIES
EXTENSION NUMBER SERIES            1001 -  1199
                                   4500 -  4508

EXTERNAL DESTINATION CODE           122
                                    125
                                     21
                                    235
                                     25
                                     30 -    38
                                     40
                                     42
                                     50
                                    550 -   560
                                    650
                                    666
                                    777
                                      9

ABBREVIATED COMMON NUMBER SERIES 1200

OWN EXCHANGE NUMBER SERIES          888

TYPE OF SERVICE CODE              SERVICE CODE

EXTERNAL NUMBER LENGTH DATA

EXTERNAL NUMBER                   NUMBER LENGTH
122                                  4 -   4
125                                  4 -   4
235                                  7 -   7
40                                   4 -   4
42                                   4 -   4
50                                   4 -   4
550                                  4
551                                  3
554                                  4 -  10
650                                 10 -  10
666                                  3 -   7
777                                  4 -   4
9                                    8 -   8

PROCEED TO SEND SIGNAL DATA

EXTERNAL NUMBER                   POS. TYPE

CALL DISCRIMINATION DATA

EXTERNAL/INTERNAL NUMBER          CAT
```

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END

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Overlap/Enbloc sending

```
First remove access code
<NANLR:EXL=50;
To do overlap sending
<NANLS:EXL=50,MIN=2,MAX=4;
To do Enbloc sending
<NANLS:EXL=50,MIN=4,MAX=4;
```

Key System Directory

For Ericsson node

```
<KSDDP:DIR=ALL;
KEY SYSTEM DIRECTORY DATA

DIR     CUST     EQU             CAT     ADN     ODN     CALALT  TIMER

1151             001-0-20-00      -                      1       0
1152             001-0-20-01      -                      1       0
1153             001-0-20-02      -                      1       0
1154             001-0-20-03      -                      1       0
1155             001-0-20-04      -                      1       0
1156             001-0-20-05      -                      1       0
1157             001-0-20-06      -                      1       0
1158             001-0-20-07      -                      1       0
1159             001-0-20-08      -                      1       0
1160             001-0-20-09      -                      1       0
1161             001-0-20-10      -                      1       0
1162             001-0-20-11      -                      1       0
1163             001-0-20-12      -                      1       0
1164             001-0-20-13      -                      1       0
1165             001-0-20-14      -                      1       0

END
```

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Calling/Connected Name and Number Restrictions

For Ericsson node

<KSCAP:DIR=ALL;
KEY SYSTEM CATEGORY PRINT

DIR	TRAF	SERV	CDIV	ROC	ITYPE	TRM	ADC	LANG	BSEC
1151	03151515	0211120700	011151111	720004	19	0	00100013010000	0	0
1152	03151515	0211120700	011151111	720004	19	0	00100013010000	0	0
1153	**00151515**	**0202720500**	**011151111**	**000001**	**19**	**0**	**00100013010000**	**0**	**0**
1154	03151515	0211120700	111151111	720004	20	0	00100013001000	0	0
1155	00151515	0202720500	011151111	000001	19	0	00100013010000	0	0
1156	**00151515**	**0202720500**	**011151111**	**000001**	**19**	**0**	**00100013010000**	**0**	**0**
1157	00151515	0202720500	011151111	000001	19	0	00100013010000	0	0
1158	00151515	0202720500	011151111	000001	19	0	00100013010000	0	0
1159	00151515	0202720500	011151111	000001	19	0	00100013010000	0	0
1160	00151515	0202720500	011151111	000001	19	0	00100013010000	0	0
1161	00151515	0202720500	011151111	000001	19	0	00100013010000	0	0
1162	00151515	0202720500	011151111	000001	19	0	00100013010000	0	0
1163	00151515	0202720500	011151111	000001	19	0	00100013010000	0	0
1164	00151515	0202720500	011151111	000001	19	0	00100013010000	0	0
1165	00151515	0202720500	011151111	000001	19	0	00100013010000	0	0

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To configure Calling/Connected Name and Number Restricted, use the following command:

<KSCAC:DIR=1154&&1155,ADC=00**01**0013010000;

To configure Calling/Connected Name and Number Allowed, use the following command:

<KSCAC:DIR=1154&&1155,ADC=00**10**0013010000;

To remove Name, use the following command:

<NIINE:DIR=1154;//REMOVE NAME

To add Name, use the following command:

<NIINI:DIR=1154,NAME1="BC12-1",NAME2="ONE",PRES=20; //ADD NAME

To print Station's Name, use the following command:

For Ericsson node

<NIINP:DIR=ALL;
EXTENSION NAMES

DIR	NAME1	NAME2	PRES	INFO
1051	REAL MOFO		11	
1063	V-MAIL P-1		11	
1064	V-MAIL P-2		11	
1151	MX-ONE TSW-SP2	ONE	10	
1152	MX-ONE TSW-SP2	TWO	10	
1153	**ZORGON**		10	
1154	MX-ONE TSW-SP2	FOUR	10	
1155	MX-ONE TSW-SP2	FIVE	10	
1156	**reav**		10	
1157	MX-ONE TSW-SP2	SEVEN	10	
1158	MX-ONE TSW-SP2	EIGHT	10	
1159	MX-ONE TSW-SP2	NINE	10	
1160	MX-ONE TSW-SP2	ZERO	10	

END

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Path Replacement (Route Optimization)

To enable/disable Path Replacement, use the following command:

<ASPAC:PARNUM=66,PARVAL=**1**; //Route optimization allowed. --- FORWARD

<ASPAC:PARNUM=66,PARVAL=**0**; //Route optimization NOT allowed.

To print parameter's value, use the following command:

For Ericsson node

```
<ASPAP:PARNUM=66;
APPLICATION SYSTEM PARAMETERS
PARNUM     PARVAL
    66          1
END
```

Call Diversion on Busy/No Reply

For Ericsson node

```
<CDIDP:DIR=ALL;
CALL DIVERSION INDIVIDUAL DATA
DIR          DIV
1152         4500
1154         4500
1155         4500
1157         4500
1158         4500
1159         4500
1160         4500
1161         4500
1162         4500
1163         4500
1164         4500
1165         4500
END
```

To enable/disable Diversion on Busy/No Reply, use the following command:

<CDINI:DIR=1153,DIV=5001; // CALL DIVERSION INDIVIDUAL NUMBER INITIATE

<CDINE:DIR=1153;   // CALL DIVERSION INDIVIDUAL NUMBER END

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Diversion Counter

```
<ASUVP:PARNUM=121;   // check current setting for maximum number of hop diversions

<ASPAC:PARNUM=121,PARVAL= VALUE; // To set maximum number of hop diversions where VALUE
                              range is 0-255
```

For Ericsson node

```
<ASUVP:PARNUM=121;
APPLICATION SYSTEM PARAMETER VALUES FOR UNIT
PARNUM  CHA     PARVAL     MINVAL     MAXVAL  UNIT      REMARK
   121  YES         12          0        255  RMP
END

<ASPAP:PARNUM=121;
APPLICATION SYSTEM PARAMETERS
PARNUM     PARVAL
   121         12
END
```

Network Services

```
<ASPAC:PARNUM=223,PARVAL=7;   // Network Features: Standard SS-Call Forwarding,
Standard SS-Call Transfer, Path Replacement for route optimization.
```

For Ericsson node

```
<ASPAP:PARNUM=223;
APPLICATION SYSTEM PARAMETERS
PARNUM     PARVAL
   223          7
END
```

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Ericsson MD-110 Software Version

For Ericsson node

```
CADAP;
CALENDAR DATA
IDENTITY=ACM1
VERSION=CXP1010101/4/TSWSP03/R4A

16:43:21
MON 16 JUL 2007
END
```

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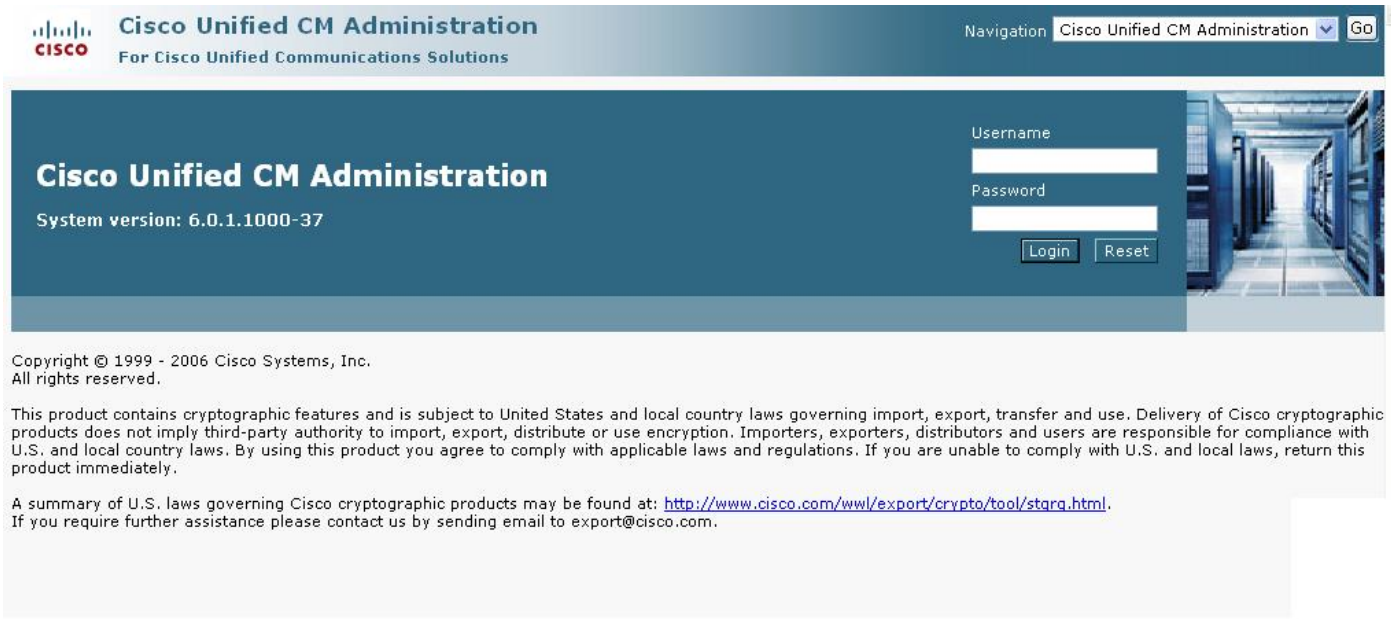
Configuring the Cisco Unified Communications Manager 6.0

Software Version

Software Version – 1 of 1.



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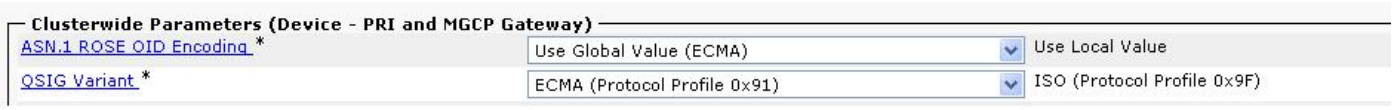
ECMA Parameter

ECMA Service Parameter – 1 of 1.



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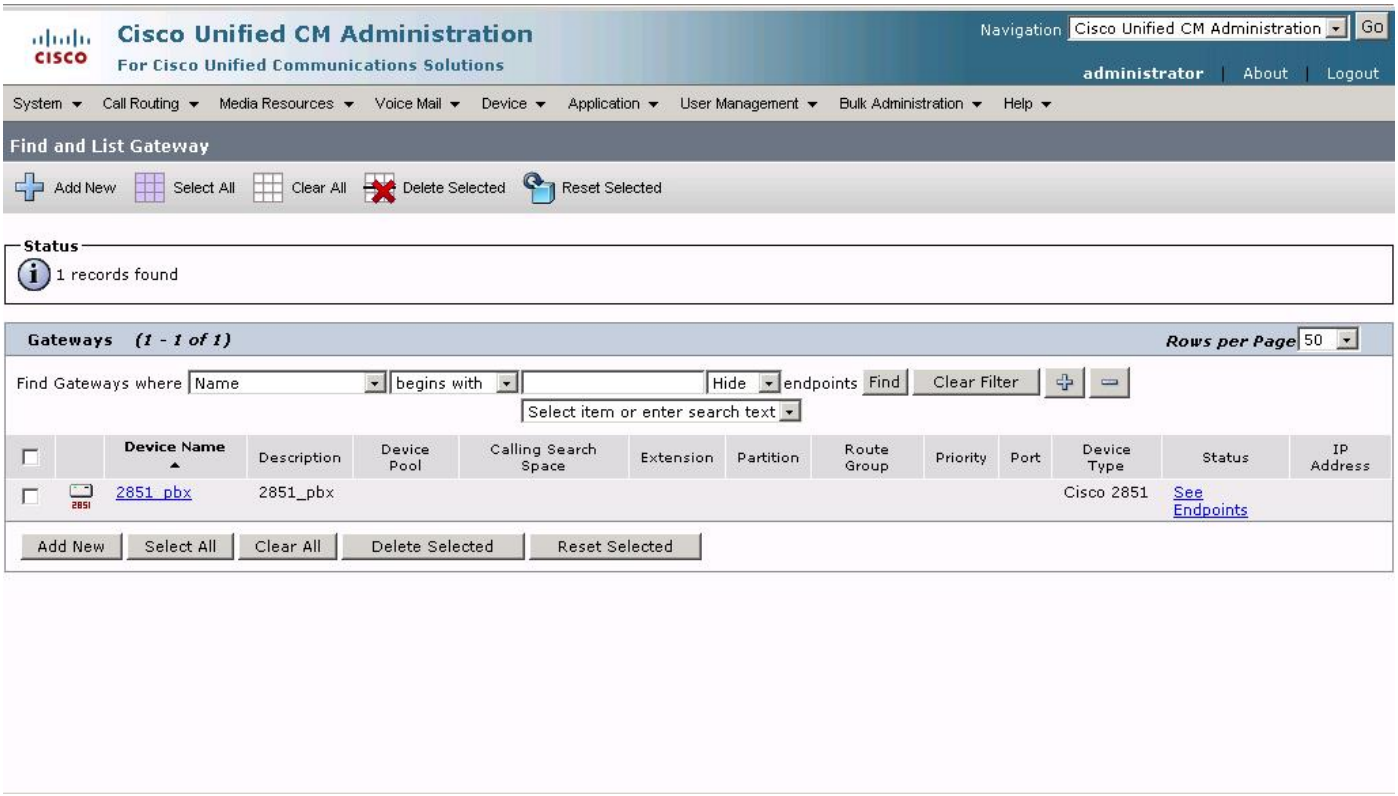
Voice Gateways

Cisco Unified Voice Gateways – 1 of 1.



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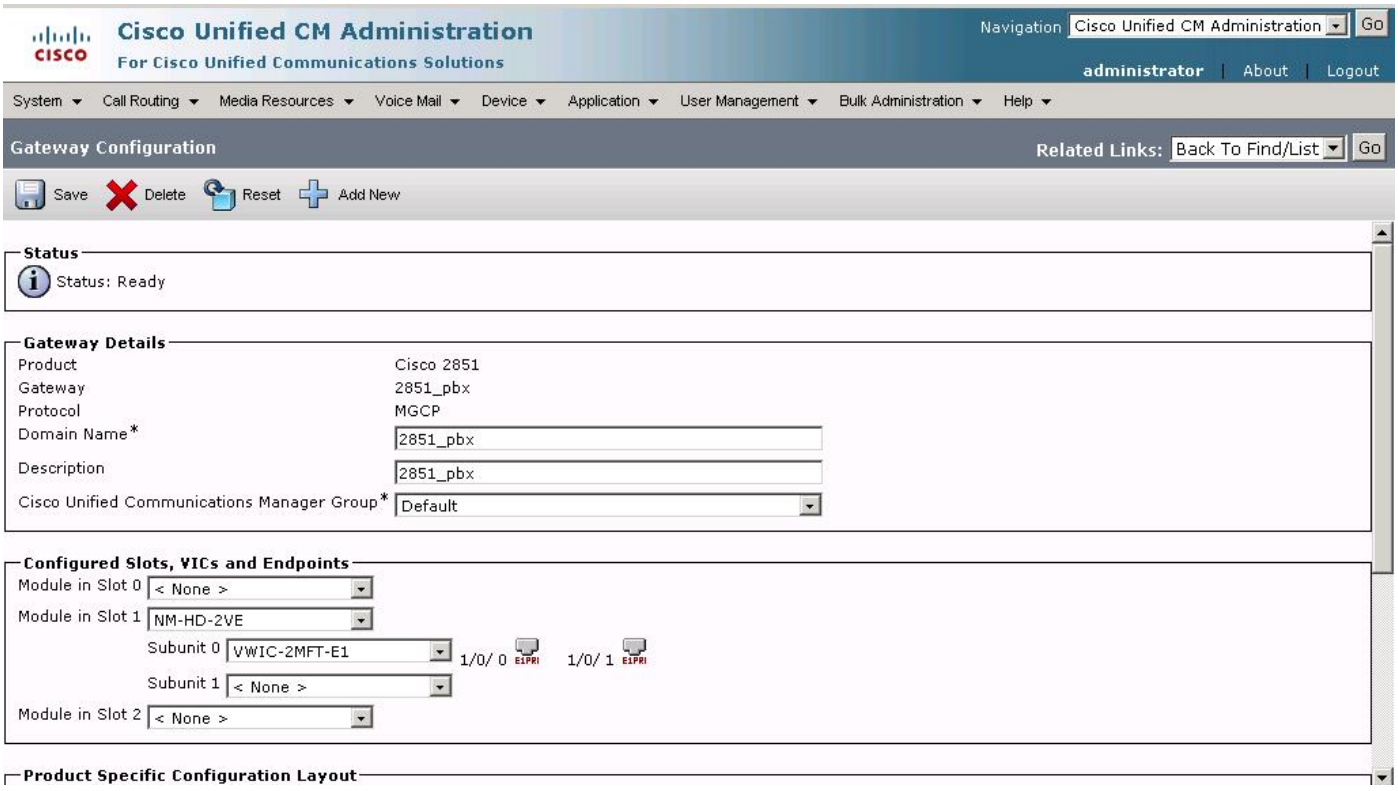
Cisco Unified Voice Gateway 2851 – 1 of 2.



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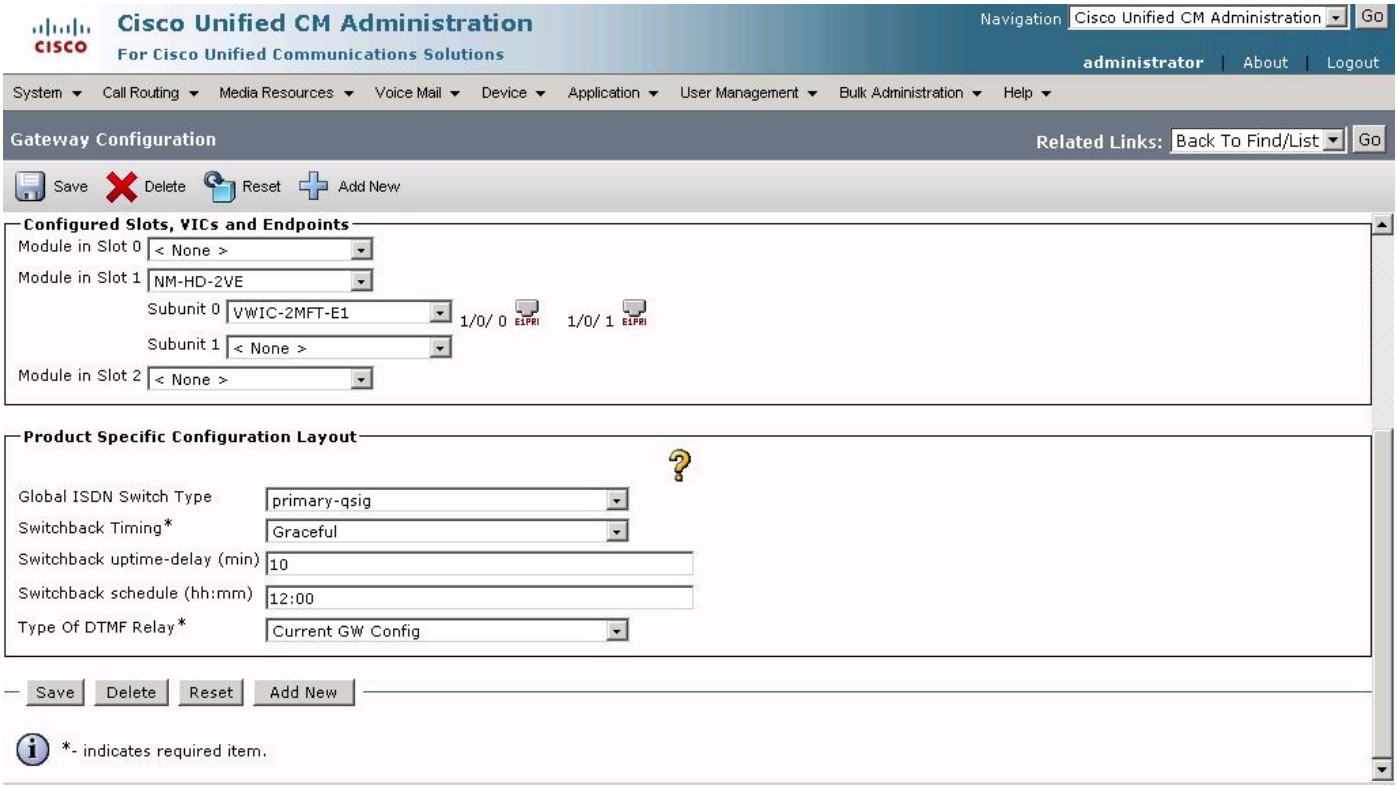
Cisco Unified Voice Gateway 2851 – 2 of 2.



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Cisco 2851 E1 PRI QSIG Trunk 1/0/0– 1 of 5.

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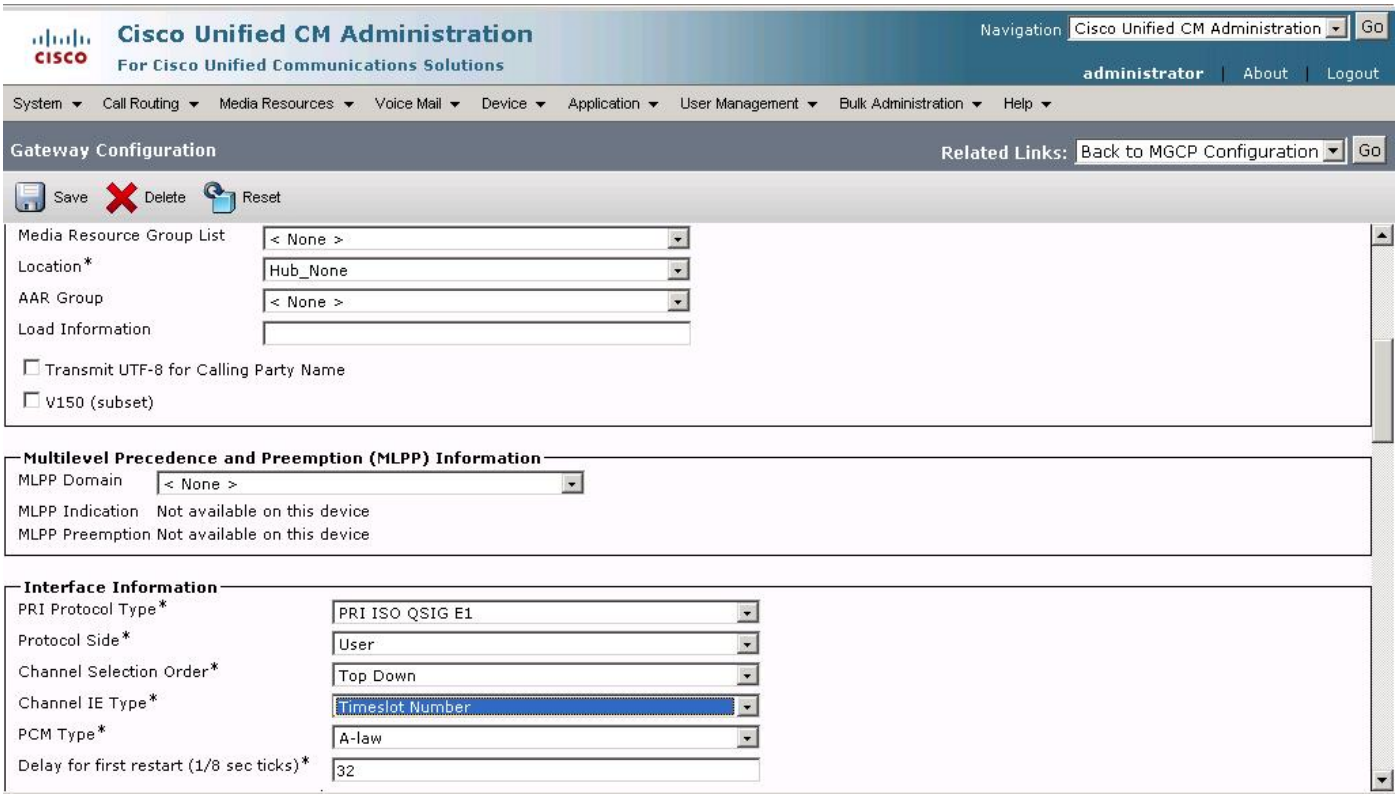
Cisco 2851 E1 PRI QSIG Trunk 1/0/0– 2 of 5.



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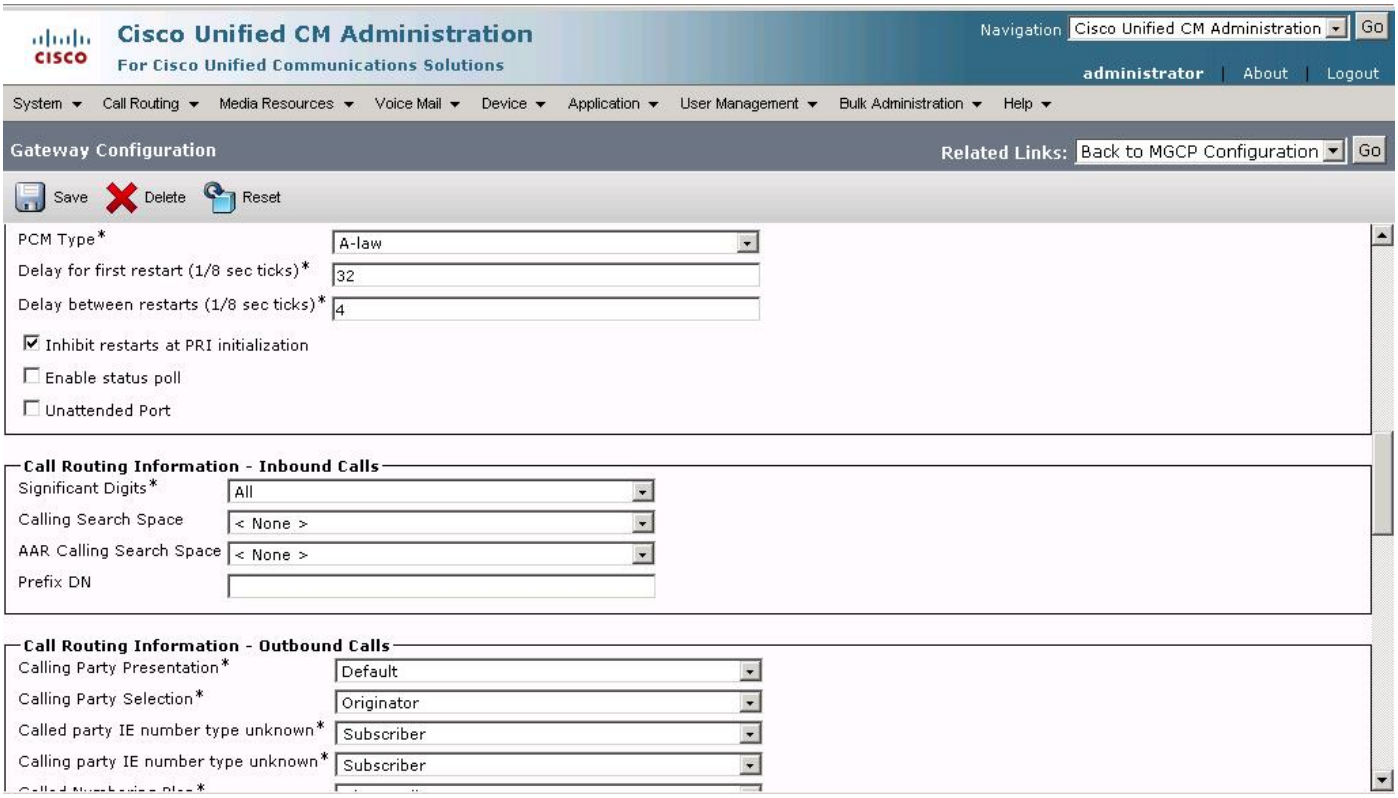
Cisco 2851 E1 PRI QSIG Trunk 1/0/0– 3 of 5.



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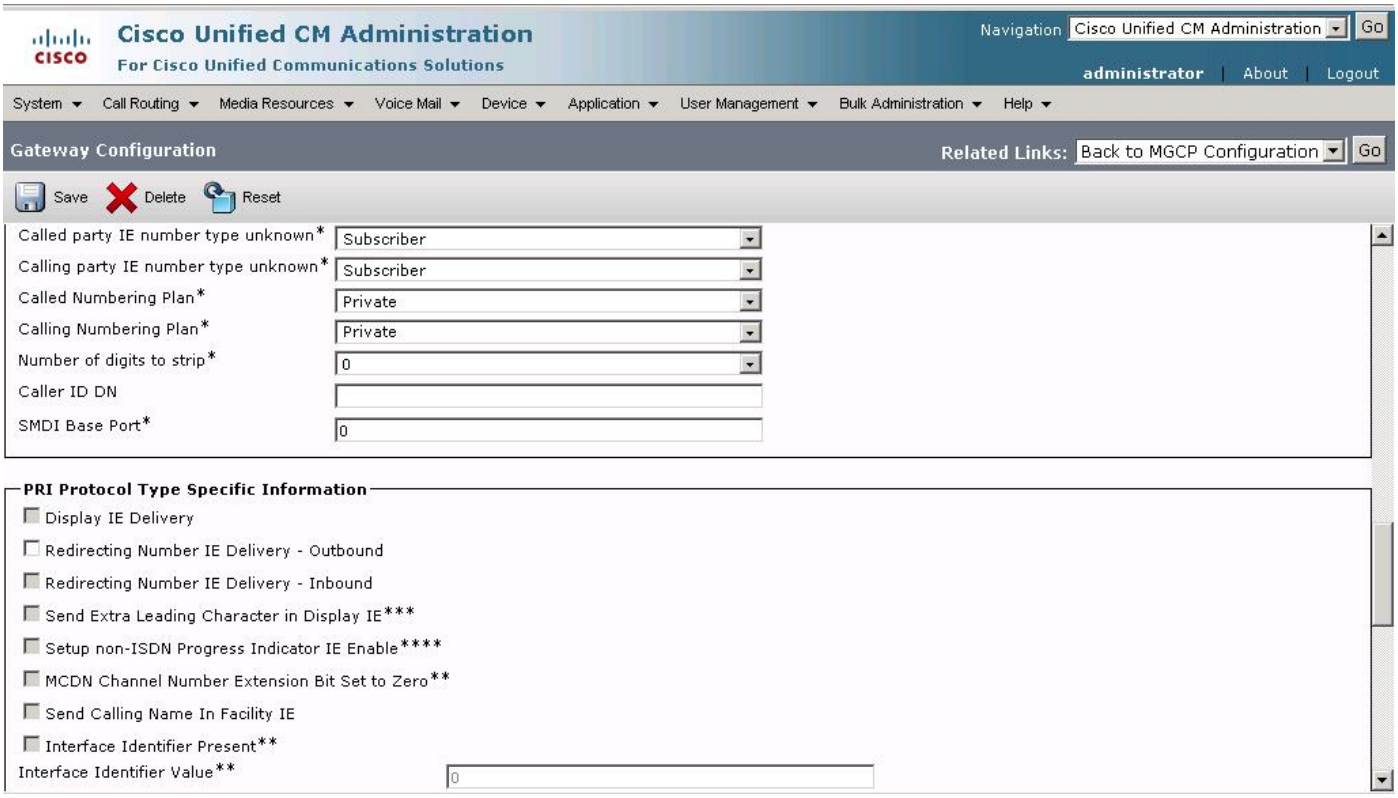
Cisco 2851 E1 PRI QSIG Trunk 1/0/0– 4 of 5.



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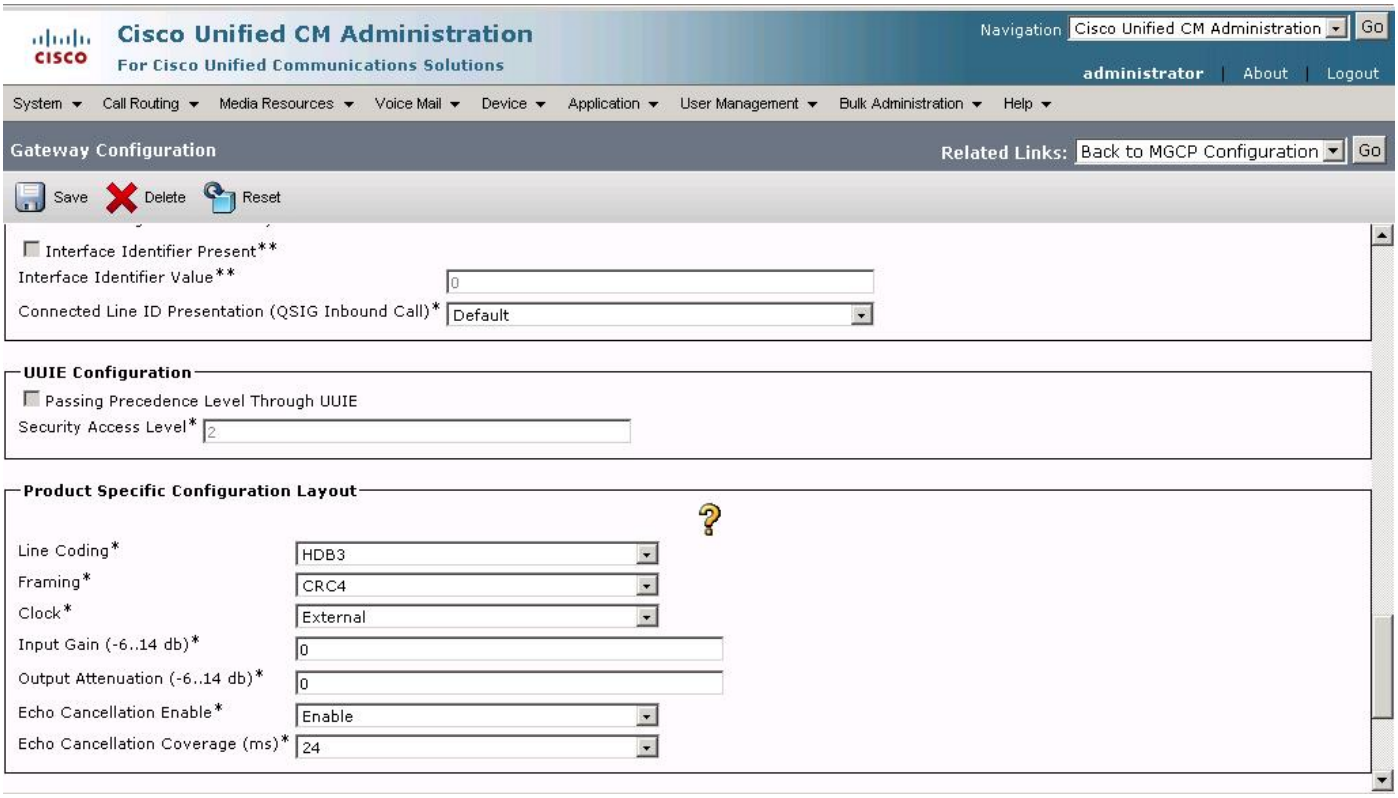
Cisco 2851 E1 PRI QSIG Trunk 1/0/0– 5 of 5.



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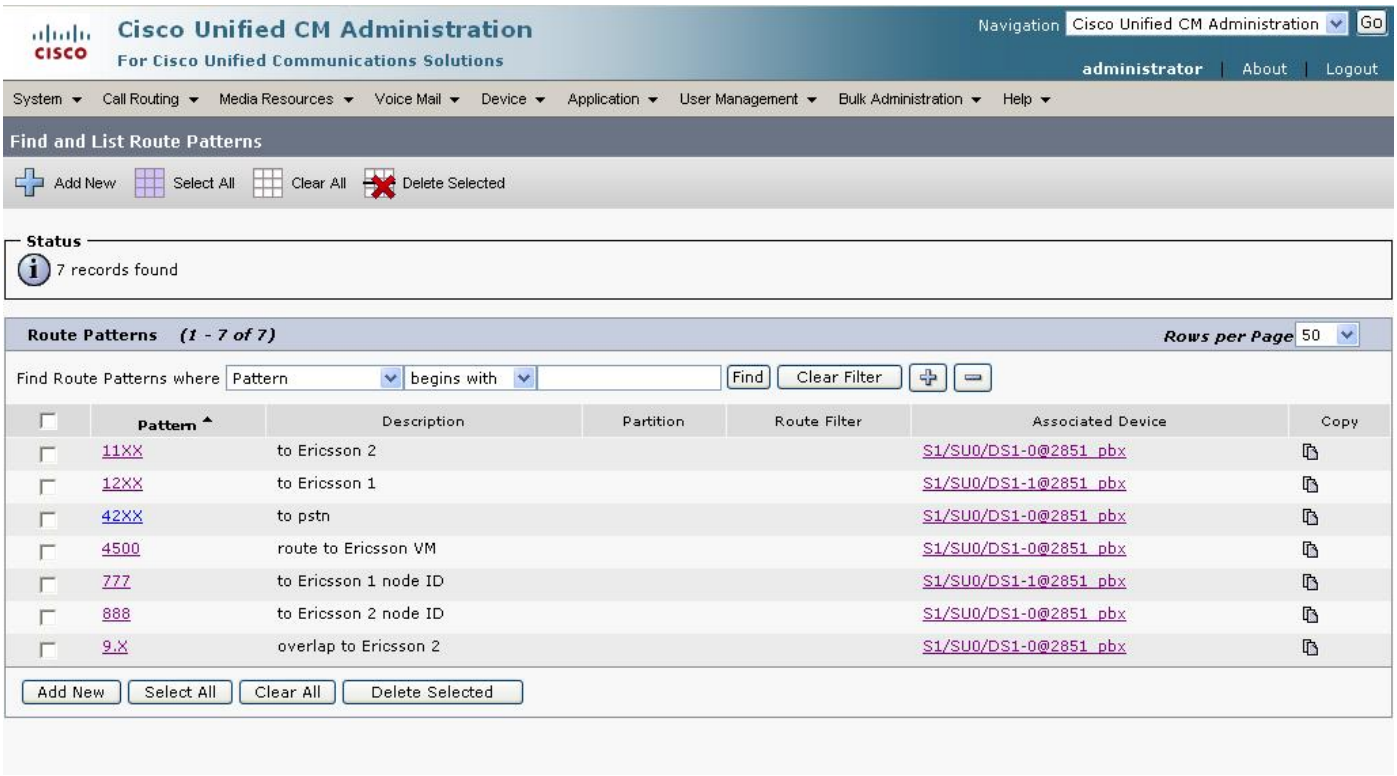
Route Patterns

Route Patterns – 1 of 1.



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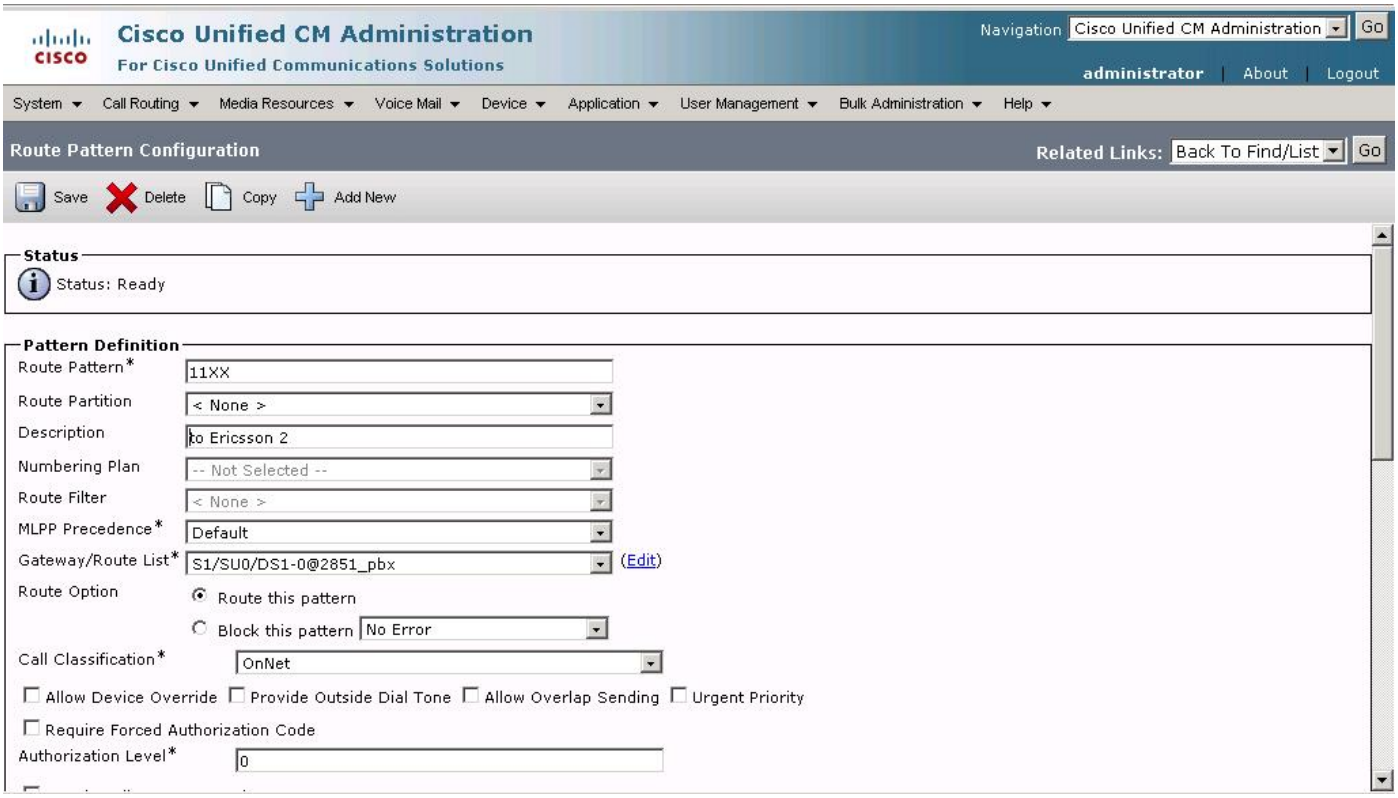
11xx ENBLOC Route Pattern – 1 of 3.



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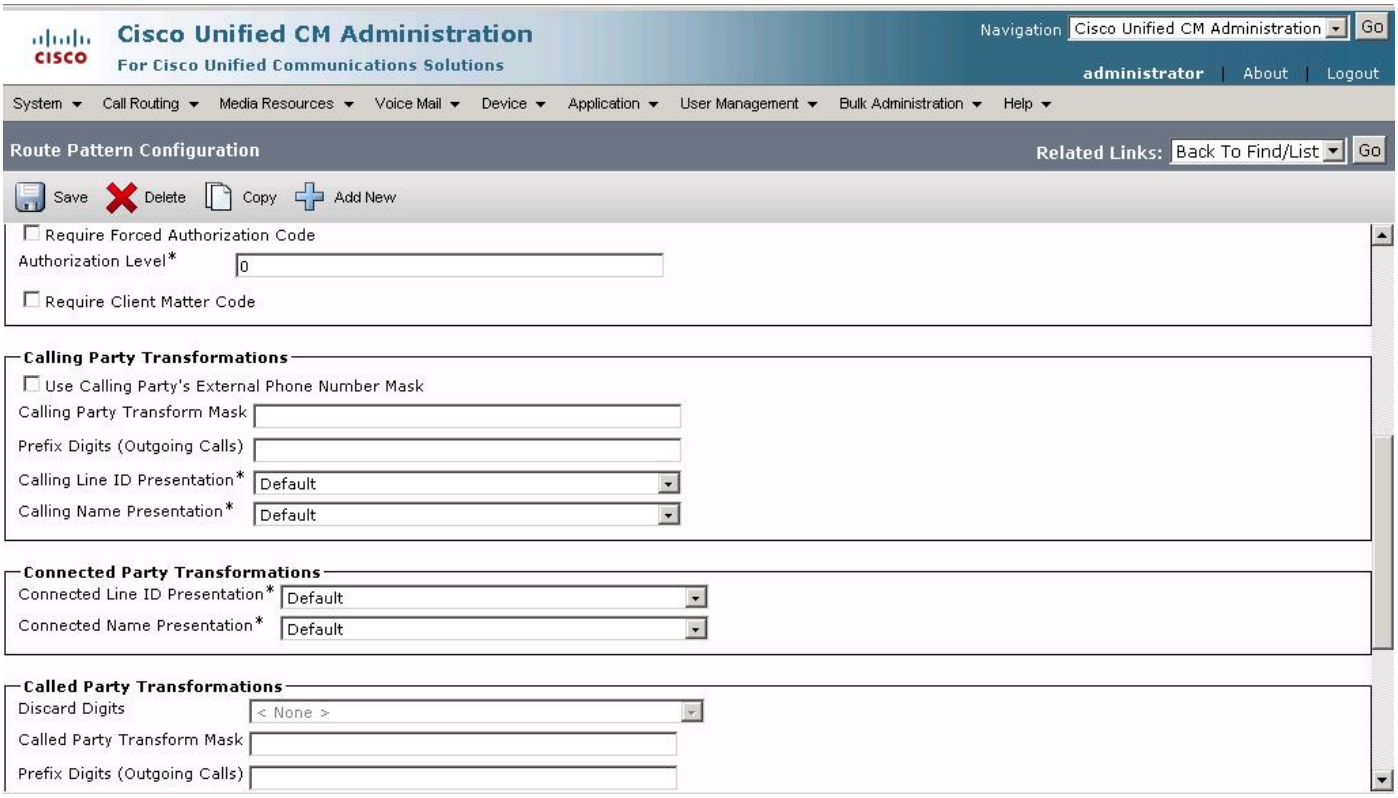
11xx ENBLOC Route Pattern – 2 of 3.



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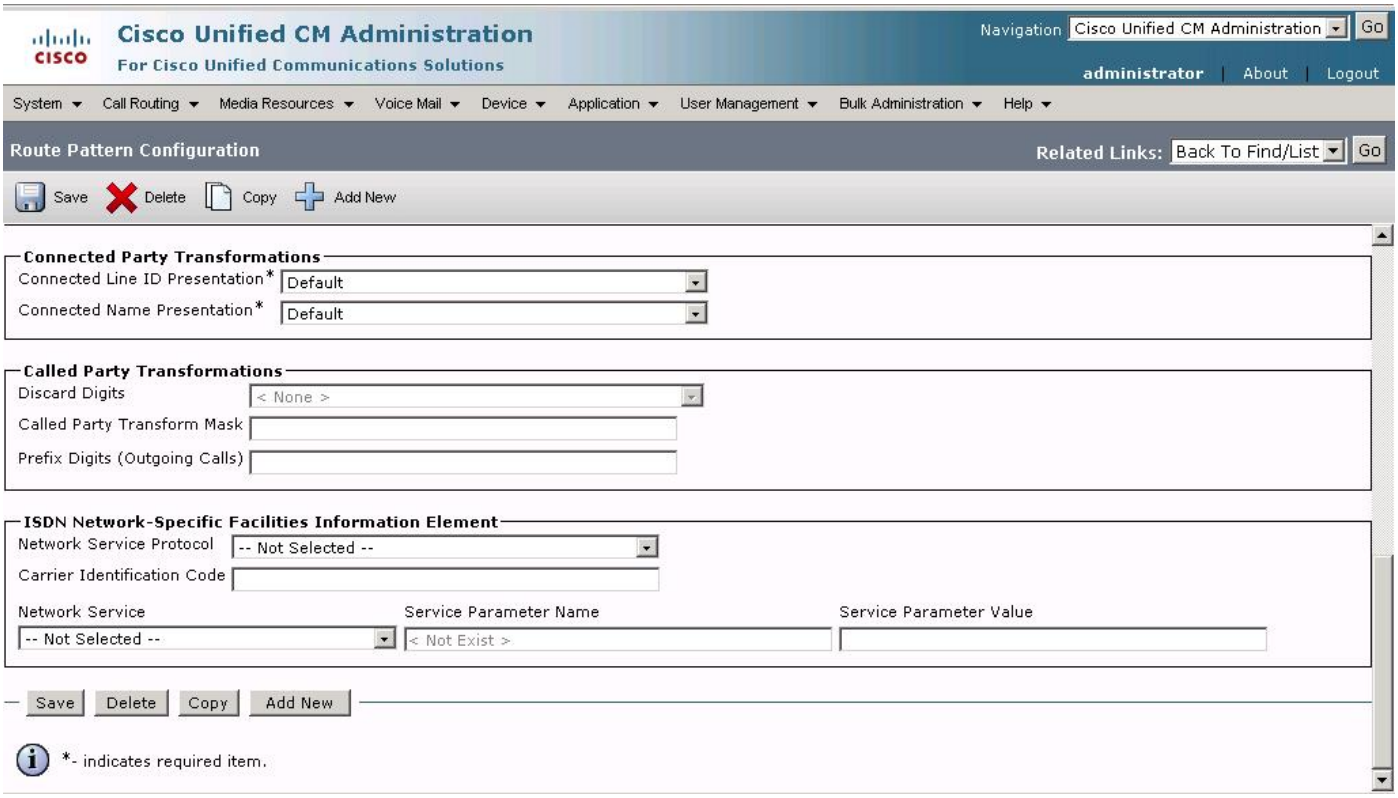
11xx ENBLOC Route Pattern – 3 of 3.



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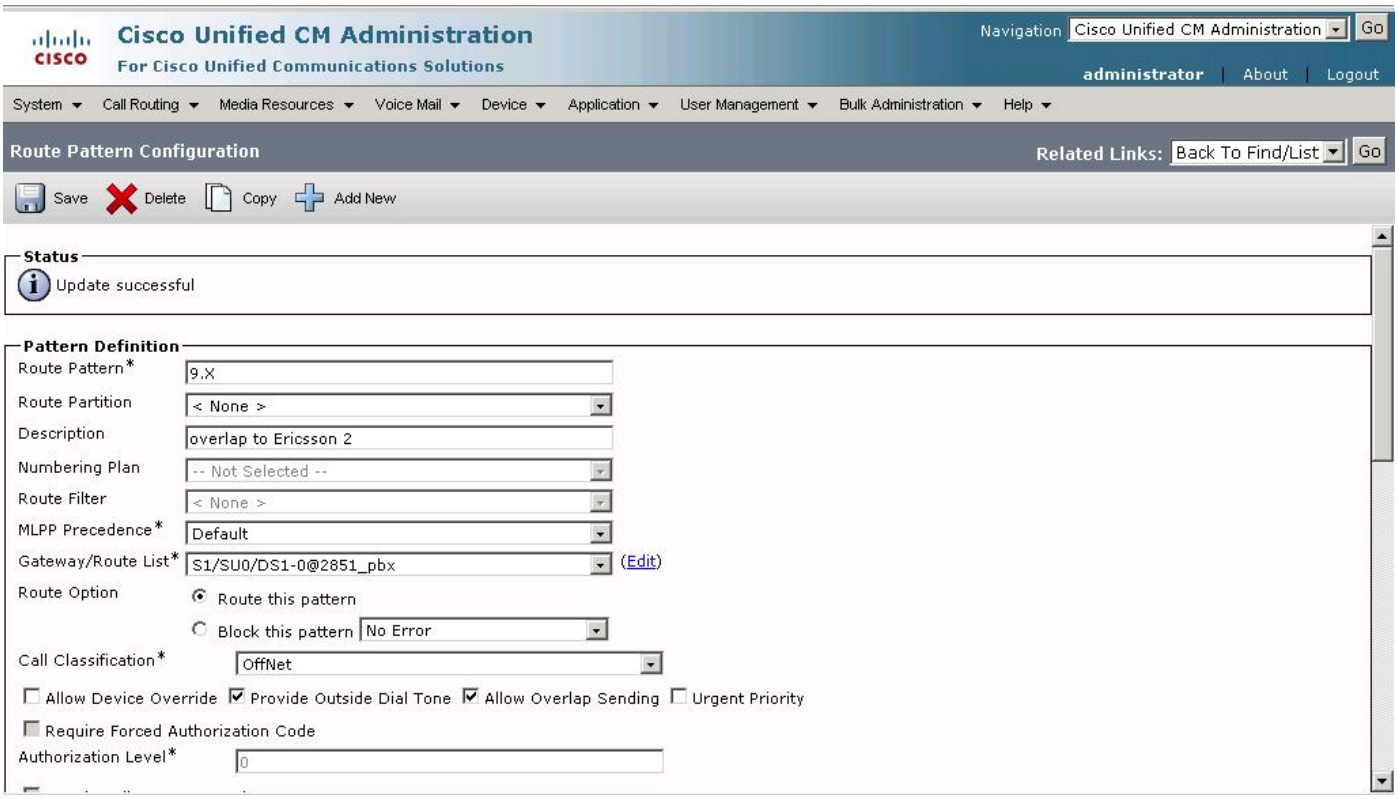
9.X Overlap Route Pattern – 1 of 3.



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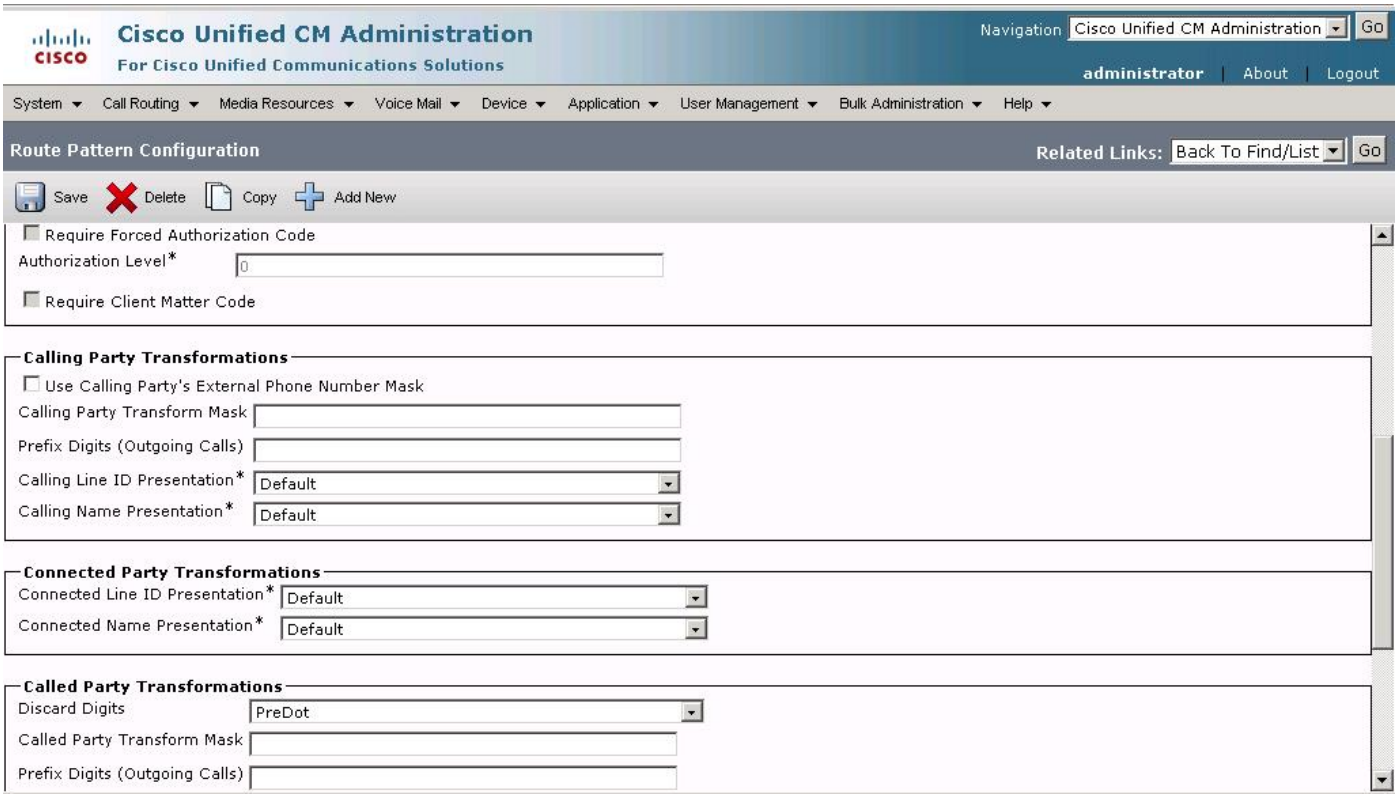
9.X Overlap Route Pattern – 2 of 3.



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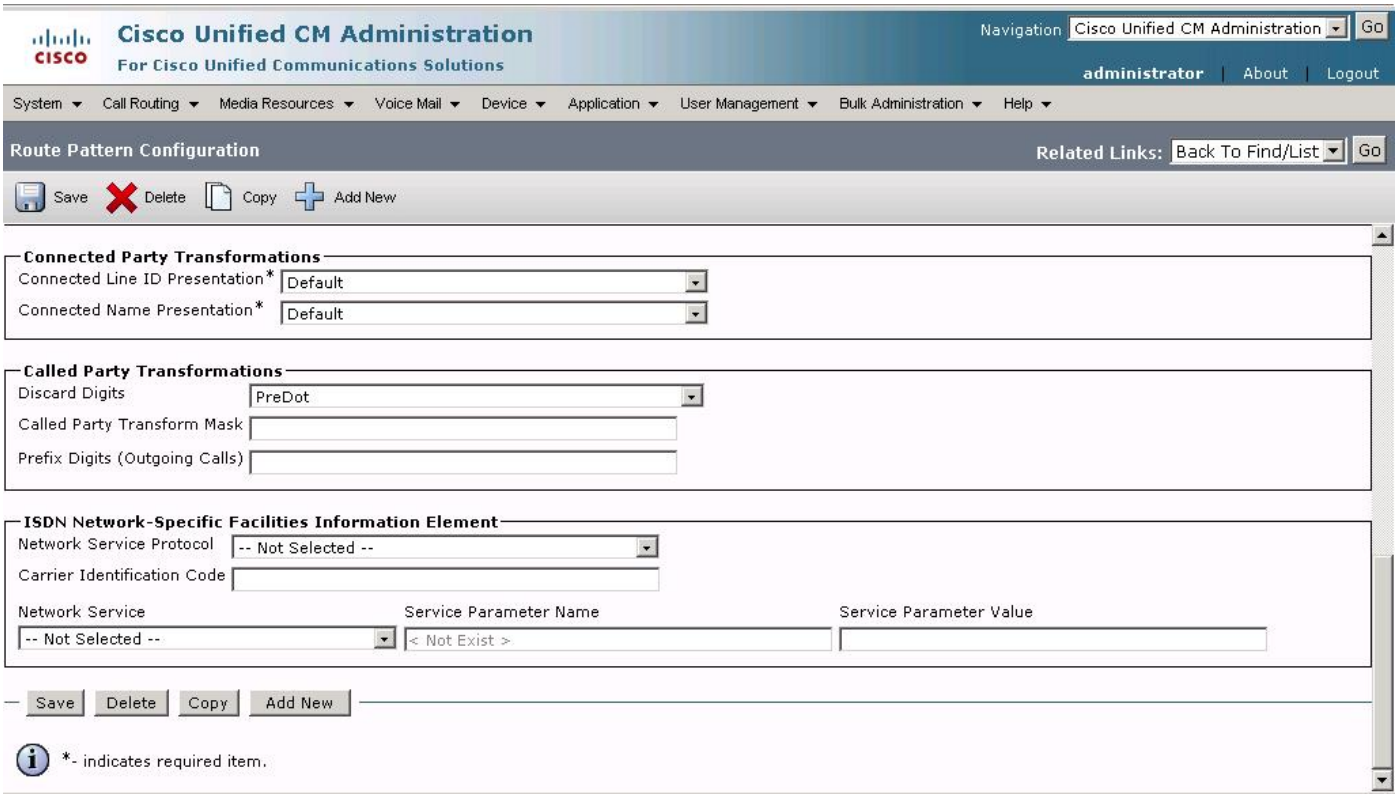
9.X Overlap Route Pattern – 3 of 3.



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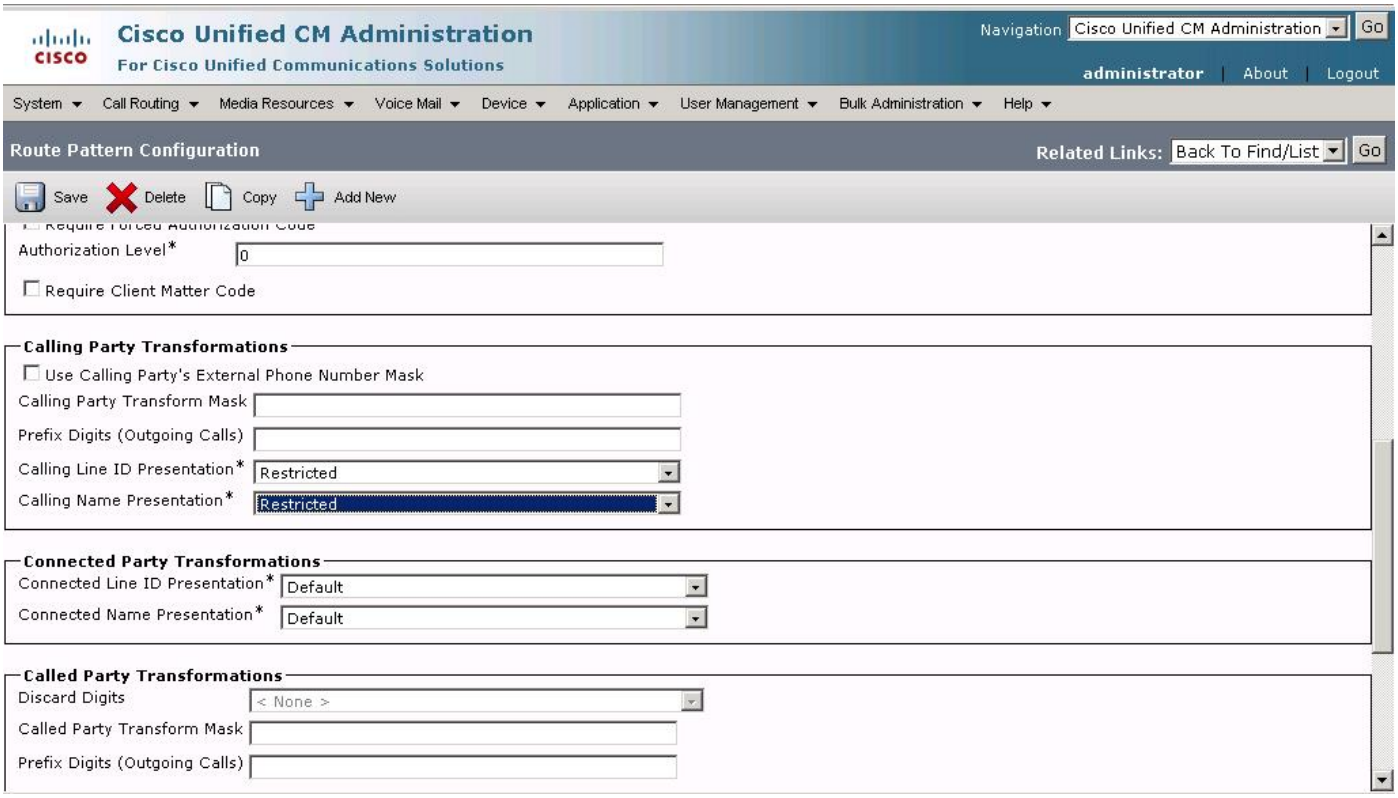
Calling Line ID Restriction

CLIR on 11xx Route Pattern – 1 of 1.



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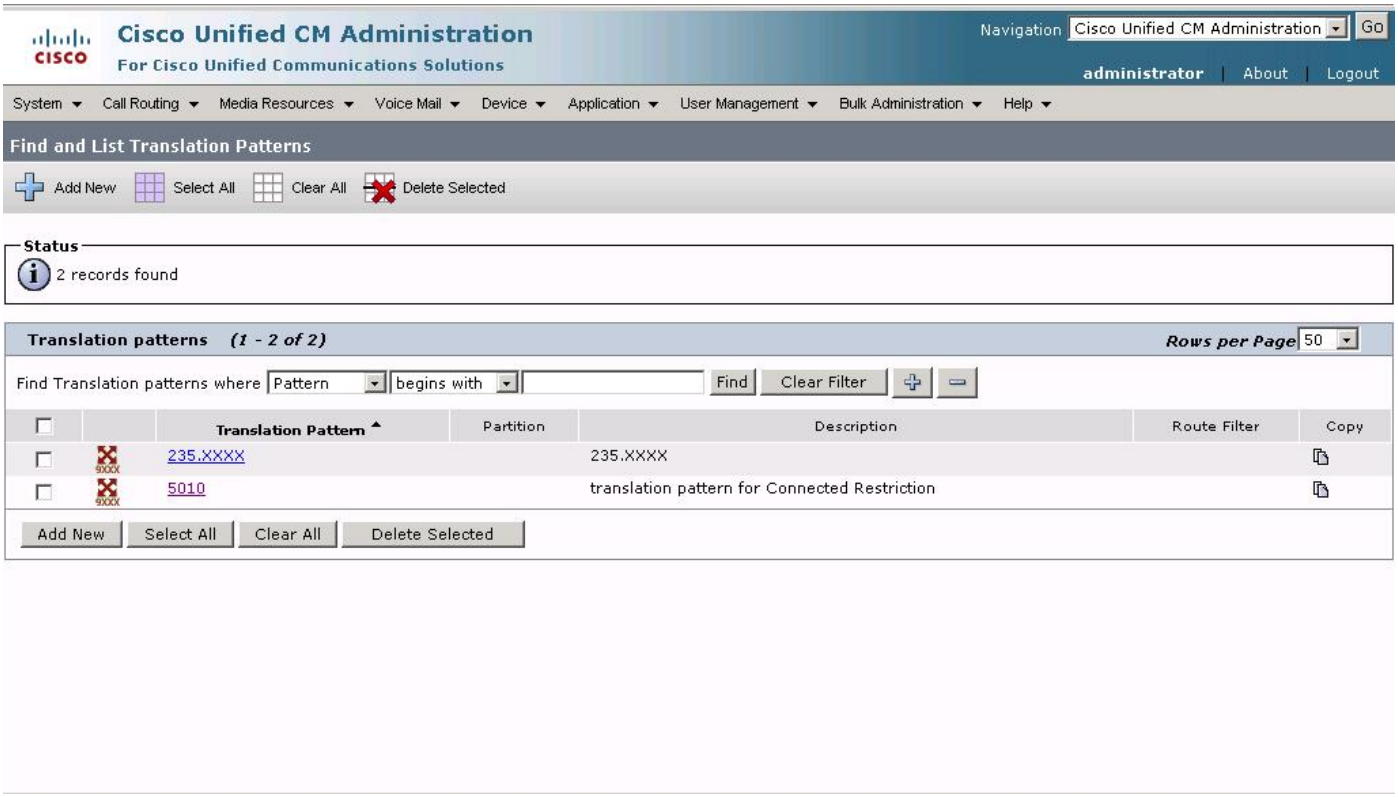
Translation Patterns

List Translation Patterns – 1 of 1.



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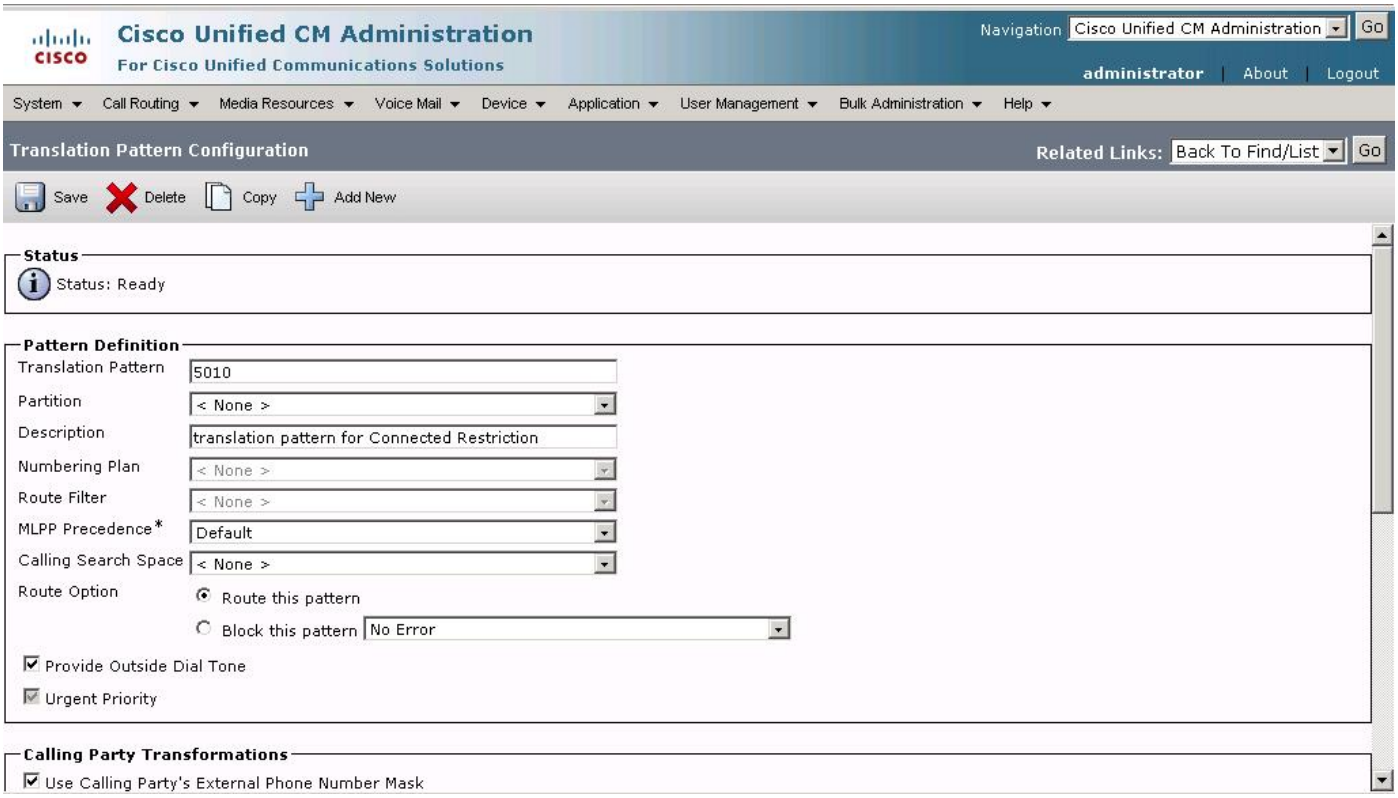
Translation Pattern 5010 – 1 of 2.



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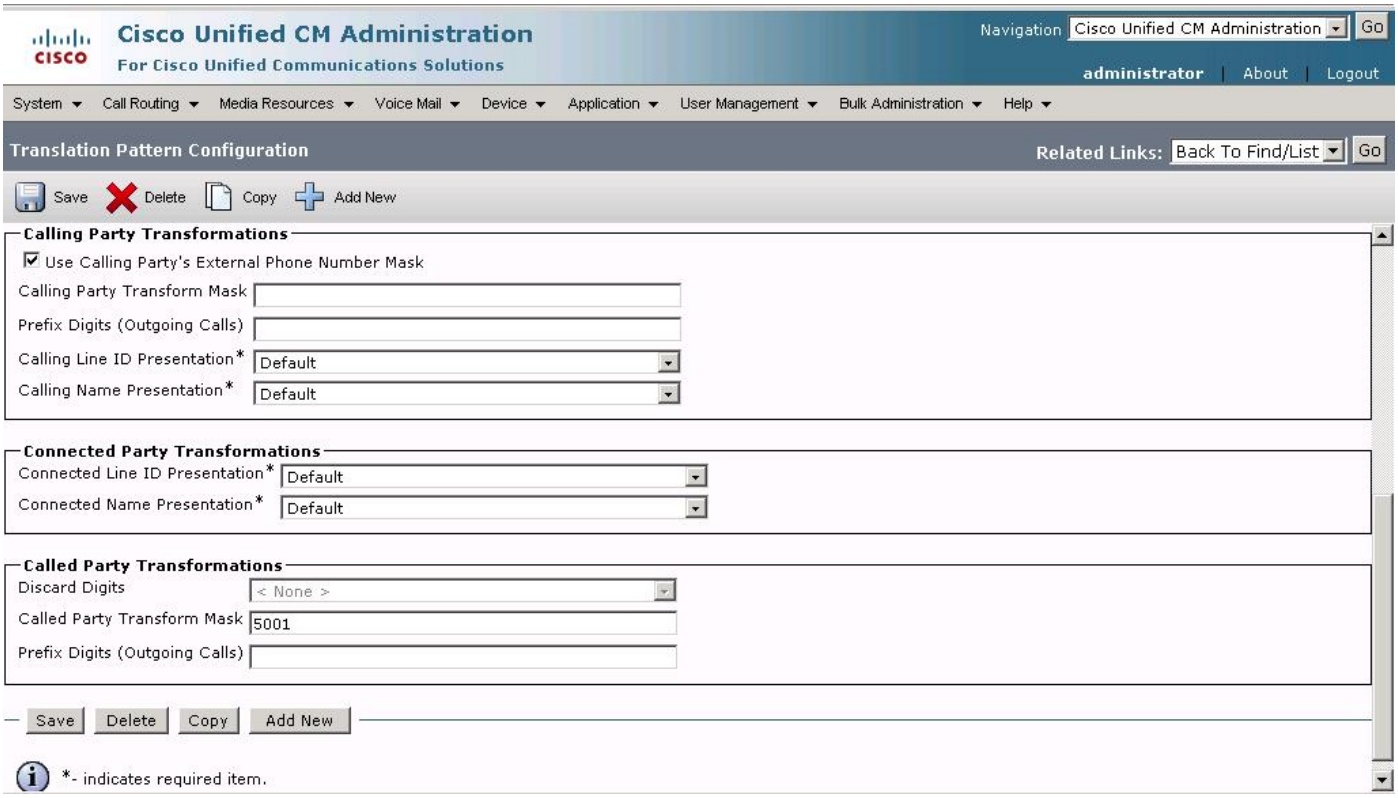
Translation Pattern 5010 – 2 of 2.



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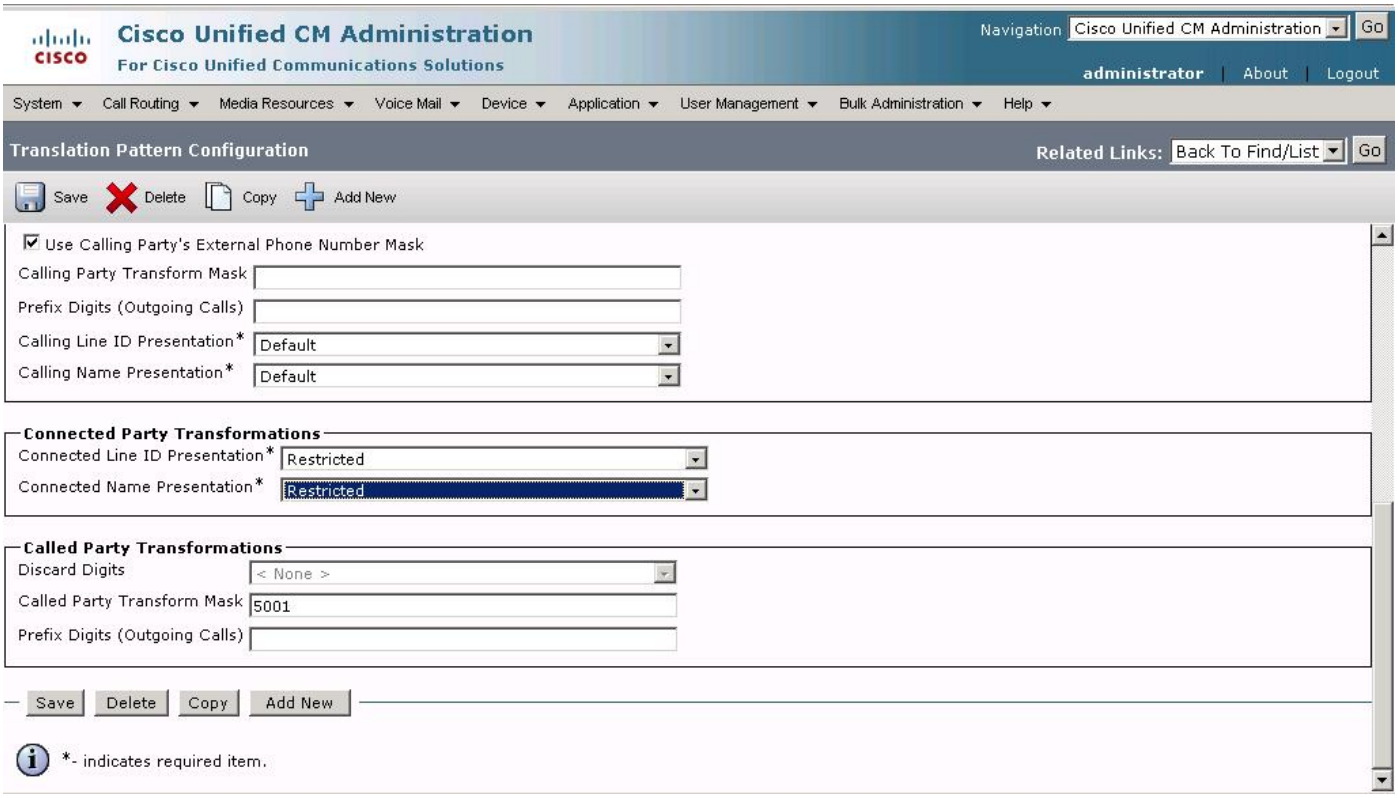
Connected Line ID Restriction

Translation Pattern 5010 - Connected Name / Number Restriction for 5001 – 1 of 1.



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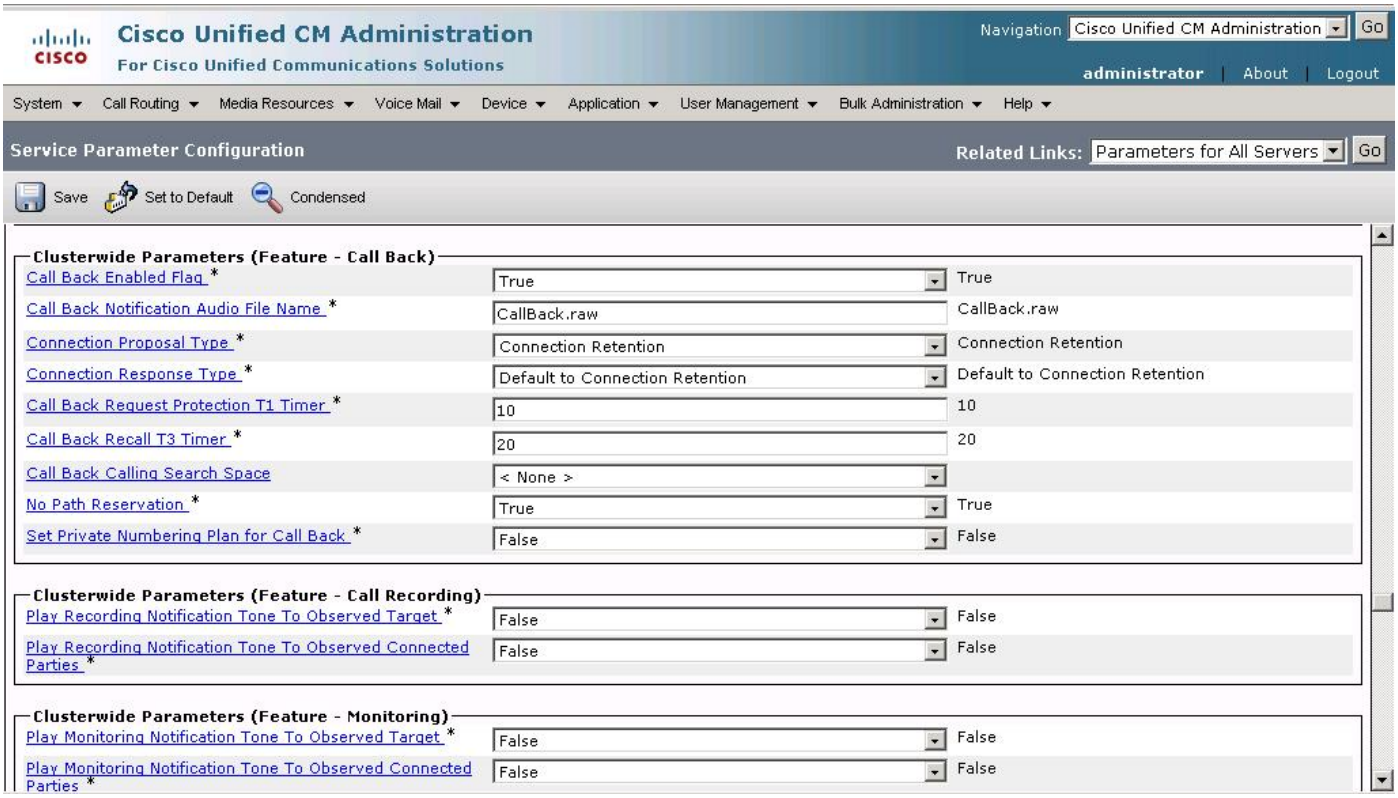
Call Back

Call Back Service Parameters – 1 of 1.



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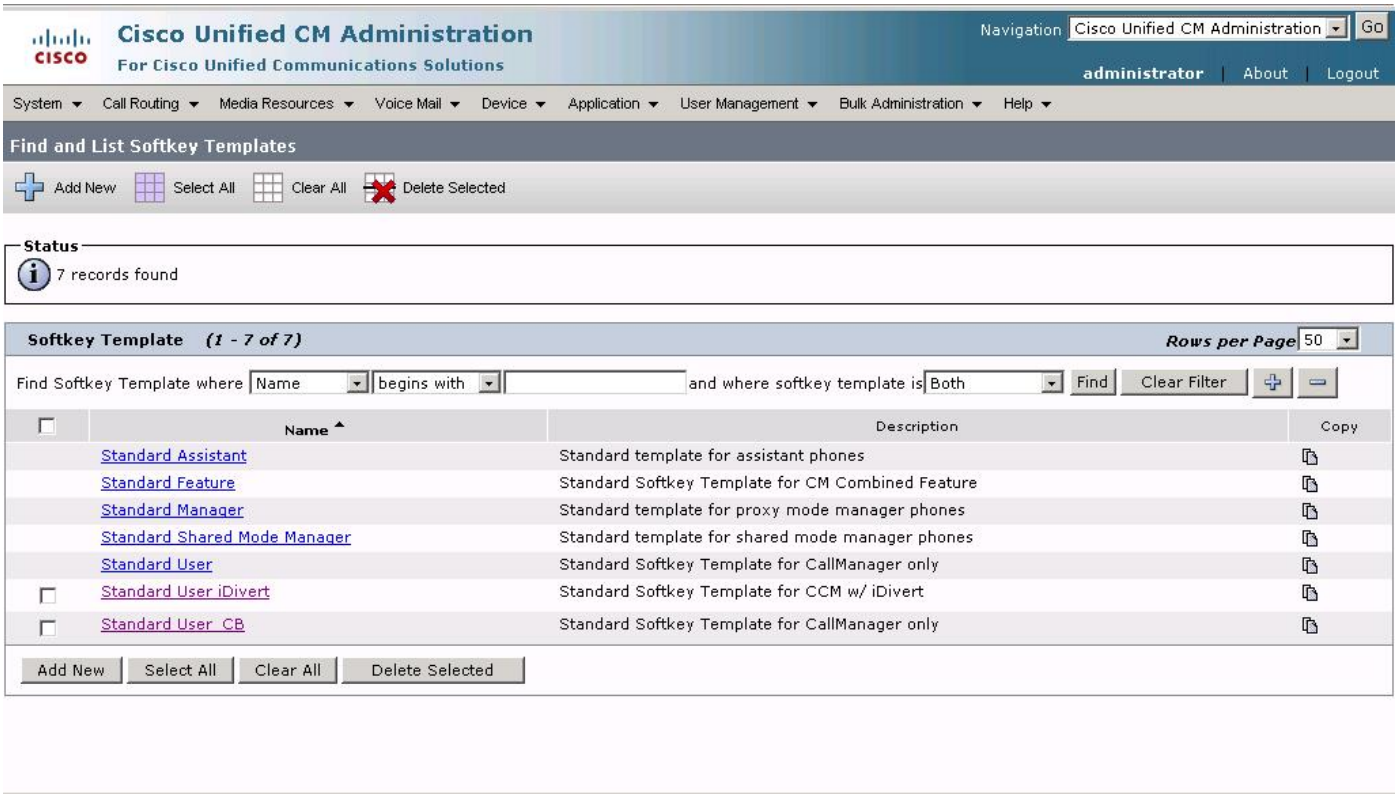
Soft Key Templates – 1 of 1.



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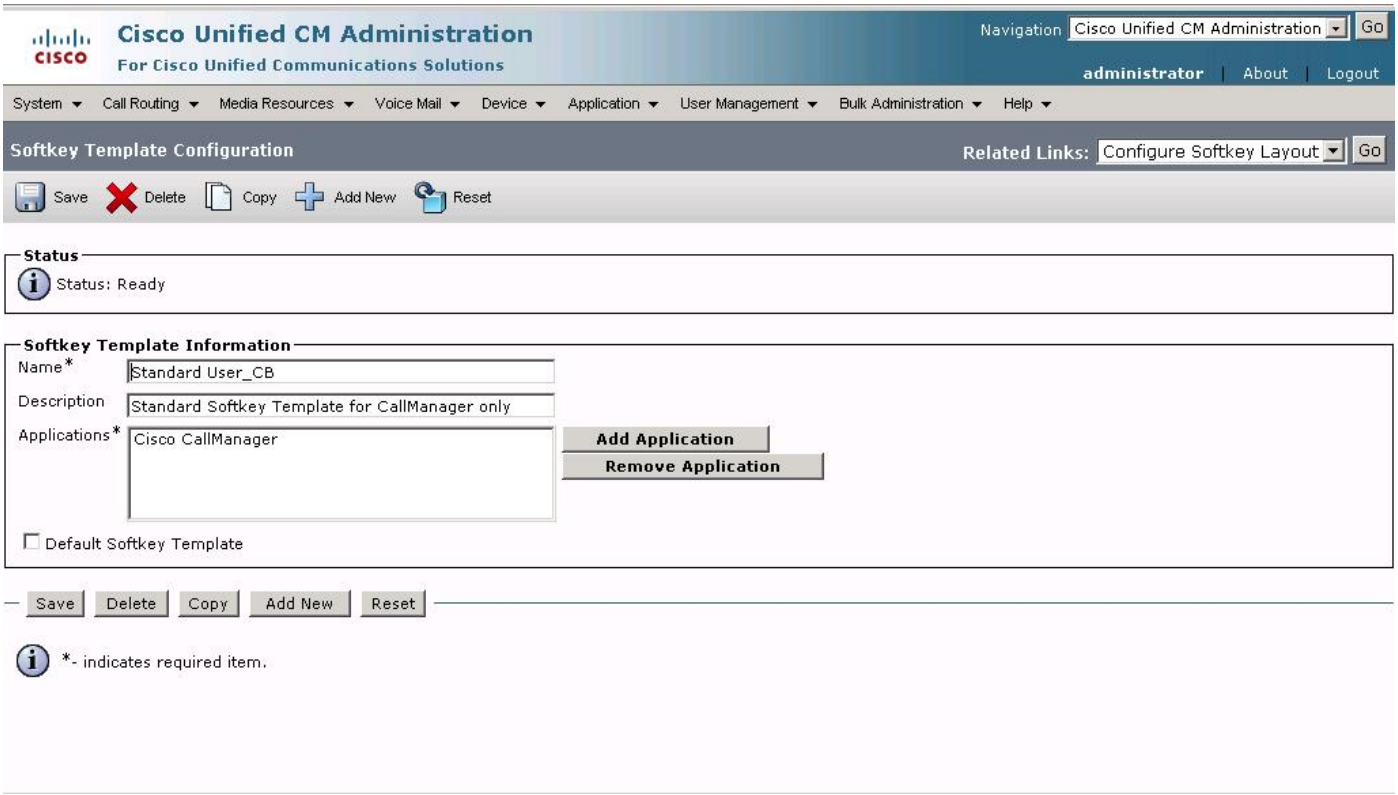
Call Back Soft Key – 1 of 1.



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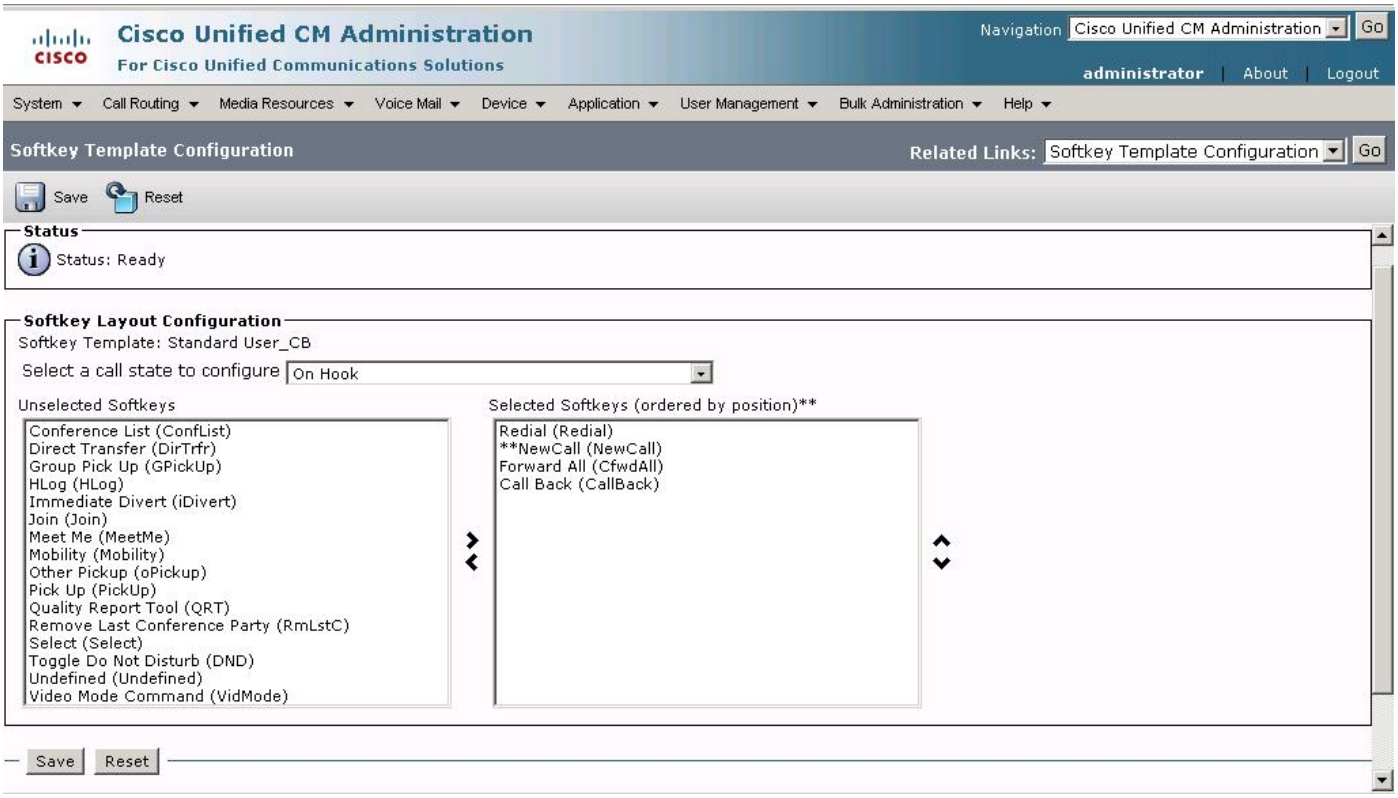
Call Back Soft Key Layout – On hook – 1 of 1.



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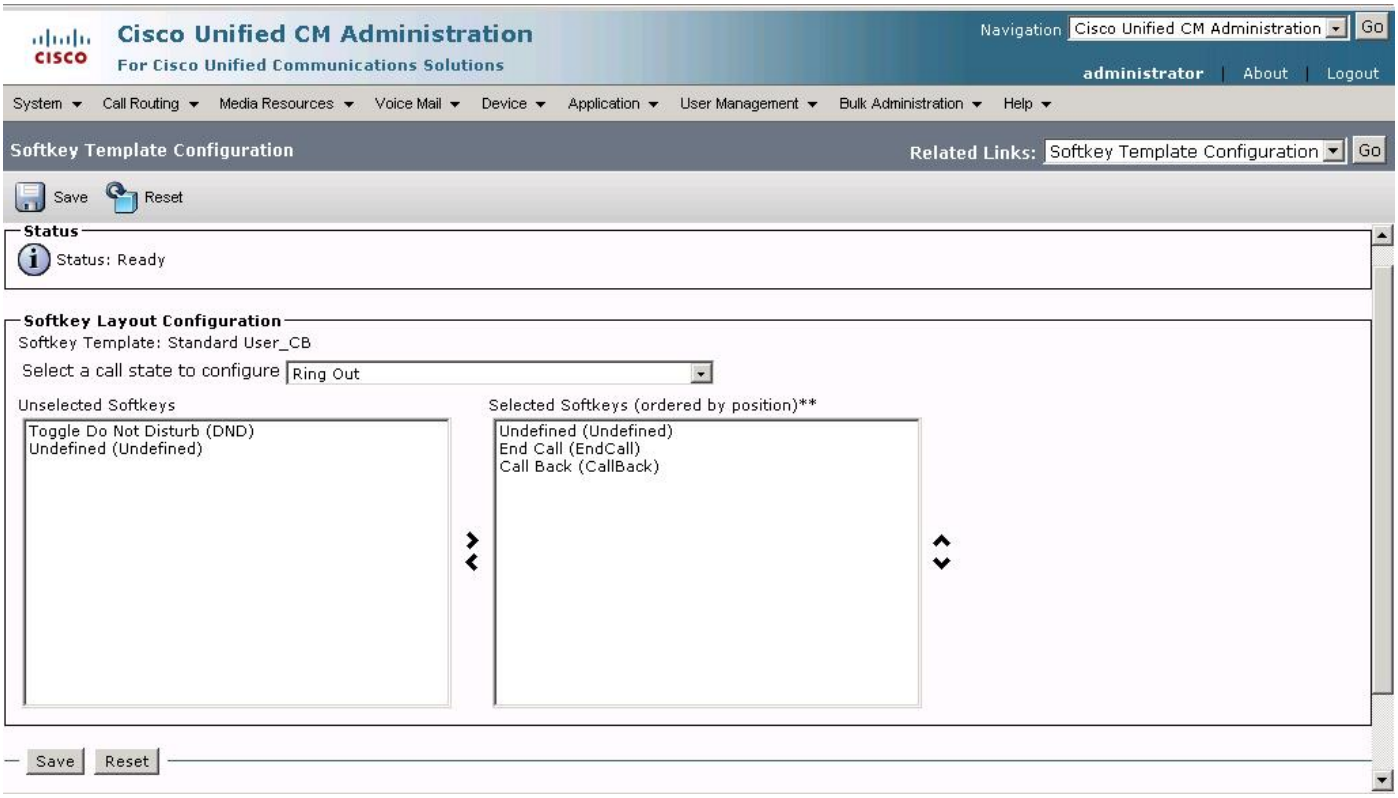
Call Back Soft Key Layout – Ring out – 1 of 1.



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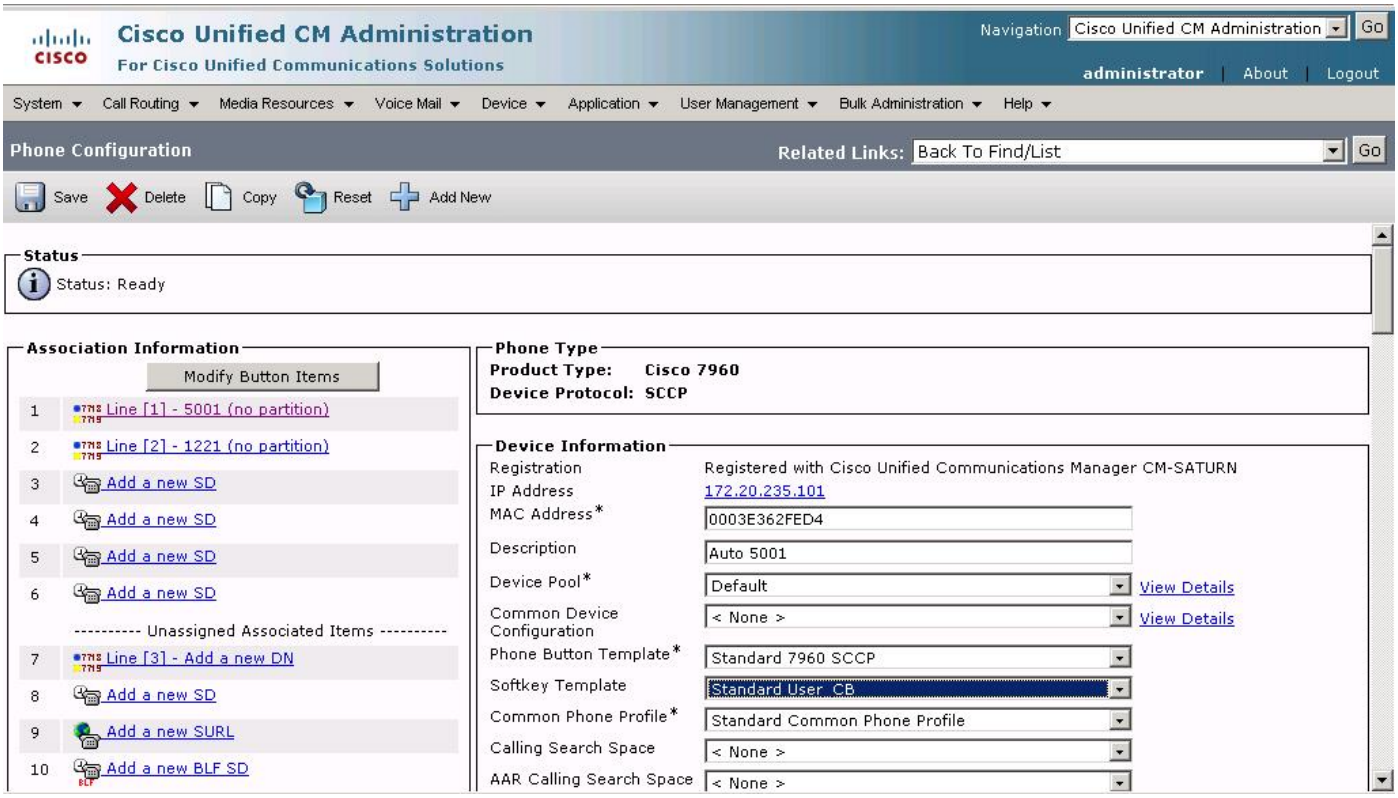
Phone x5001 set up for Call Back (Call Back Softkey Template Applied) – 1 of 1.



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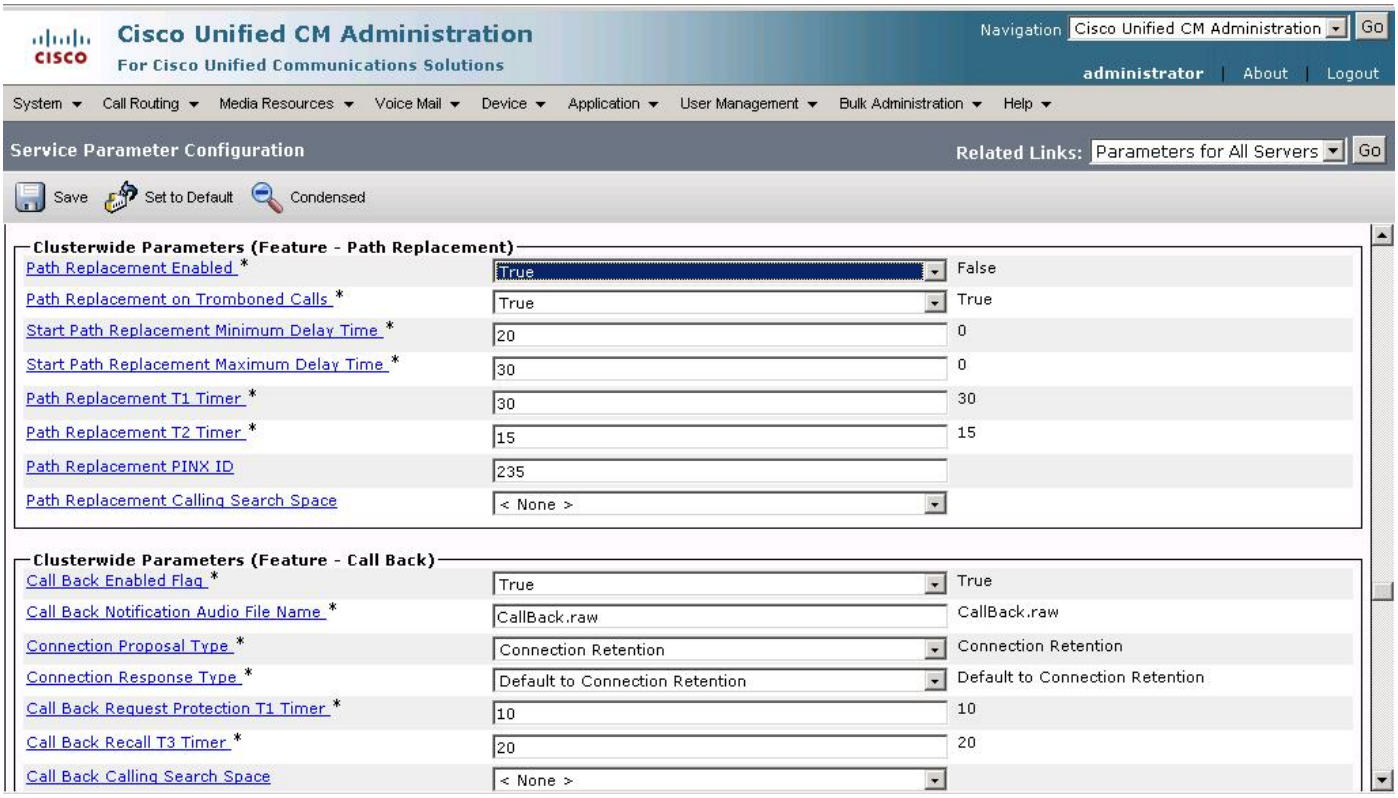
Route Optimization

Path Replacement Service Parameter – 1 of 1.



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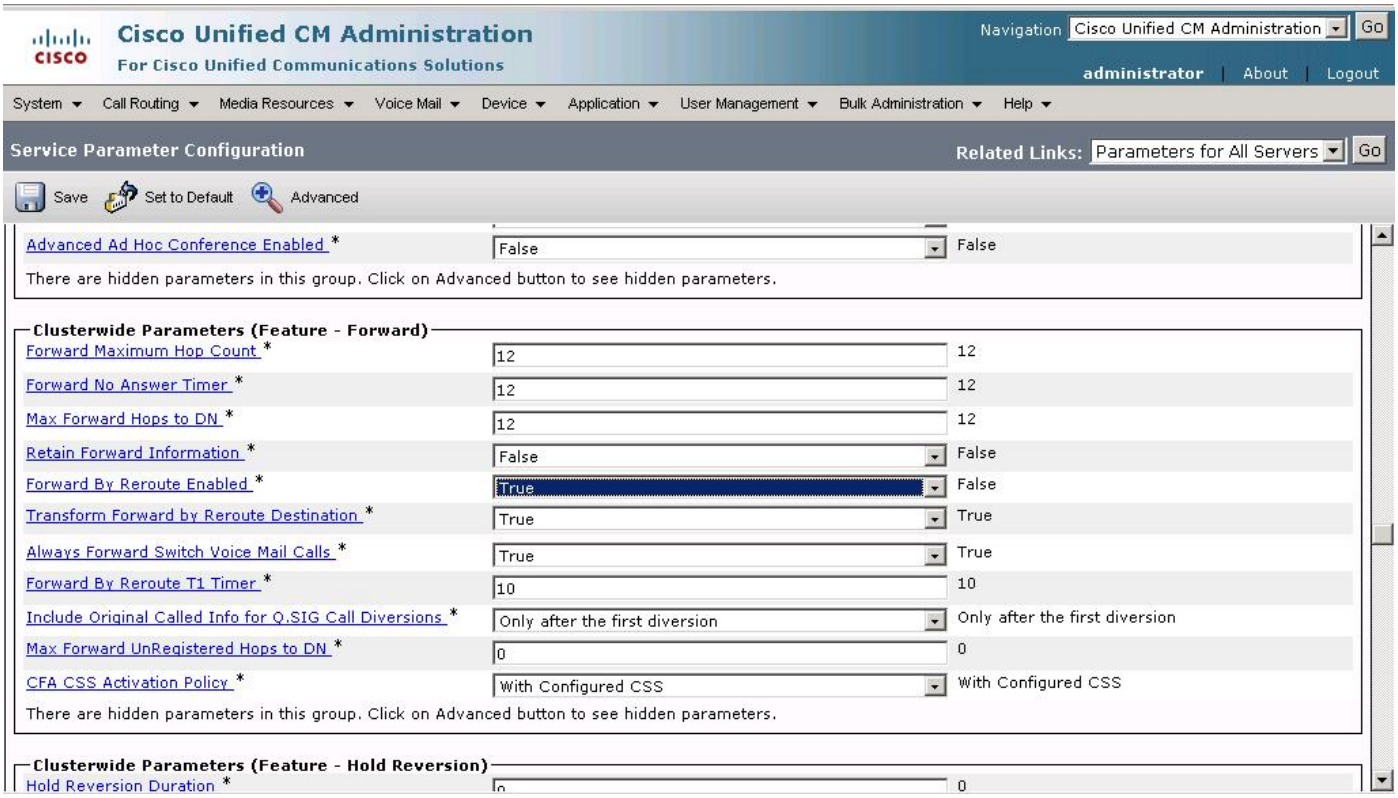
Reroute Service Parameter – 1 of 1.



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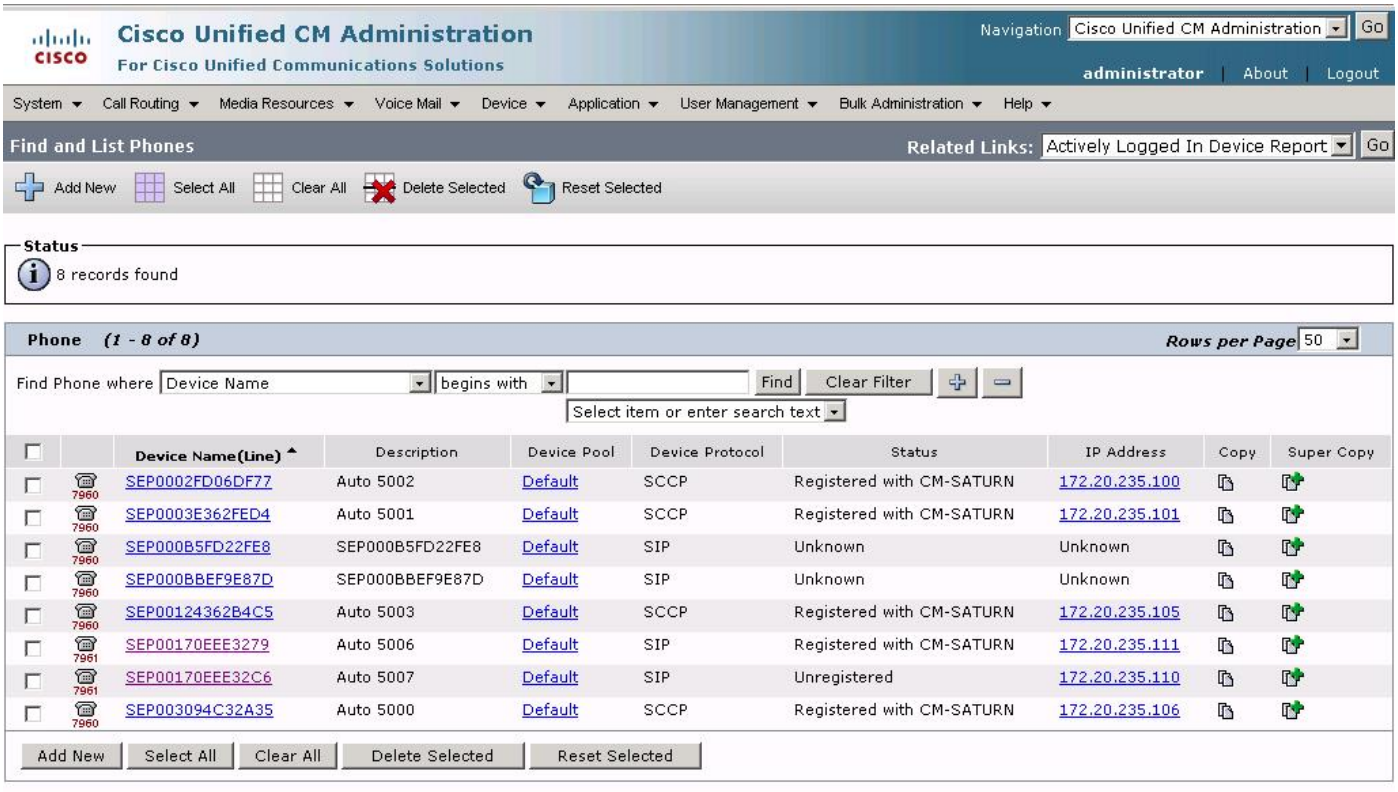
IP Phones

IP Phones – 1 of 1.



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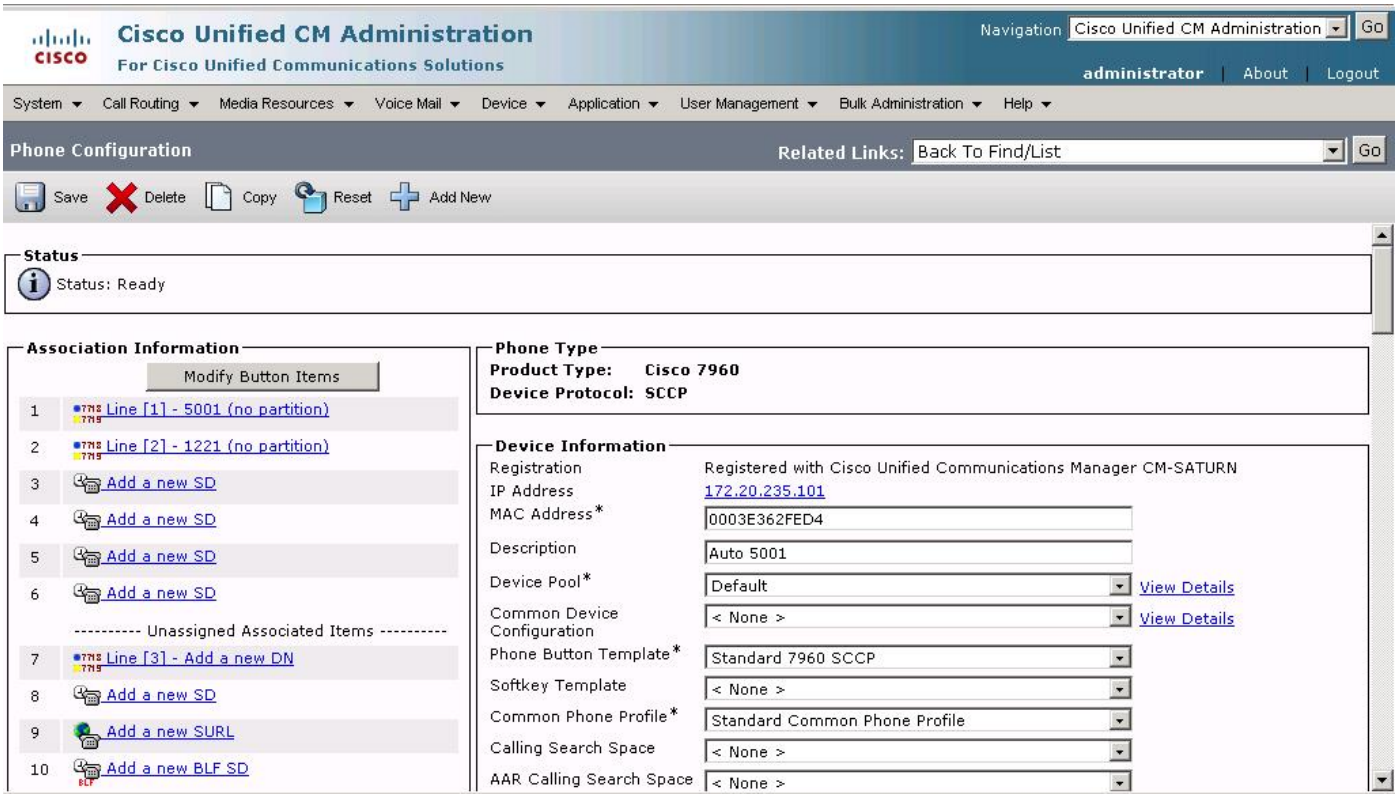
Cisco Unified IP Phone 7960, x5001, SCCP – 1 of 7.



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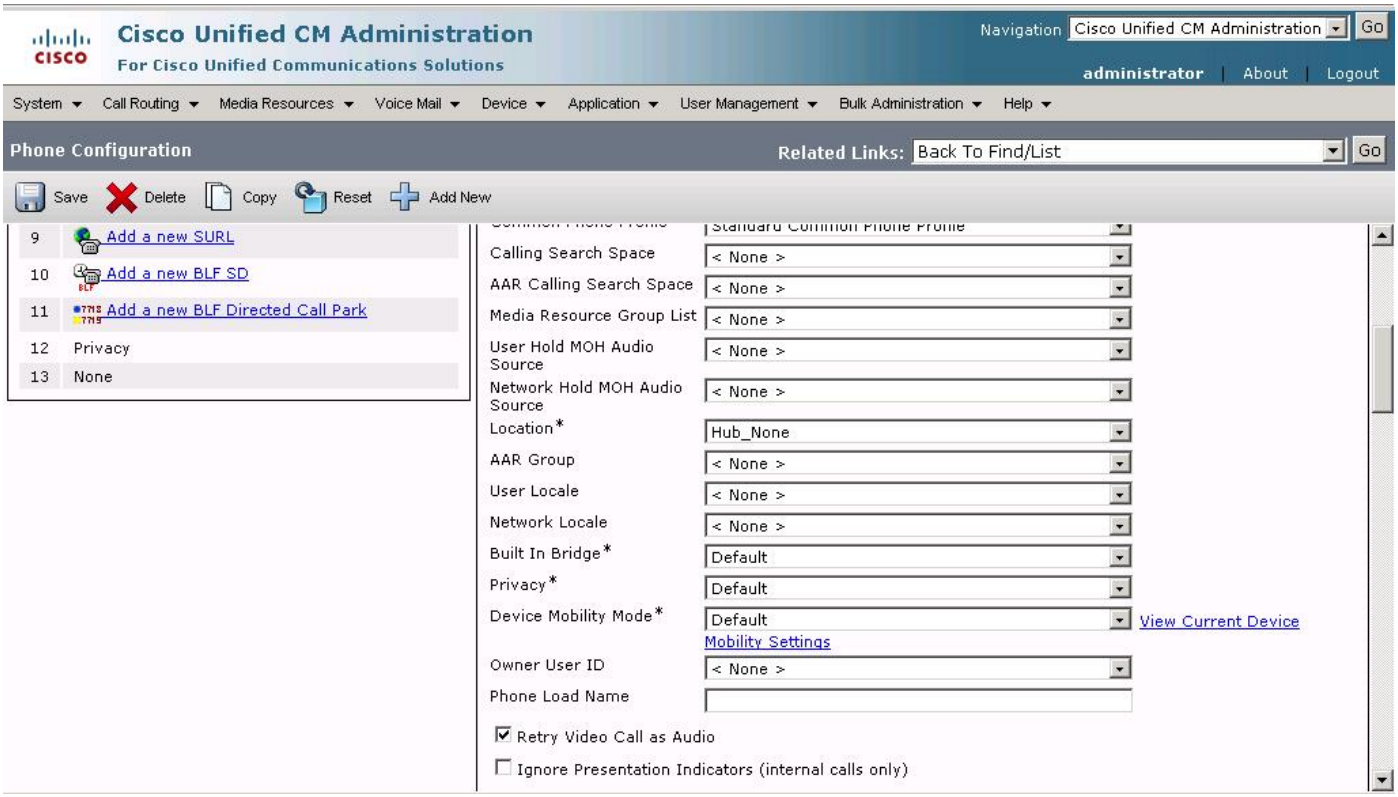
Cisco Unified IP Phone 7960, x5001, SCCP – 2 of 7.



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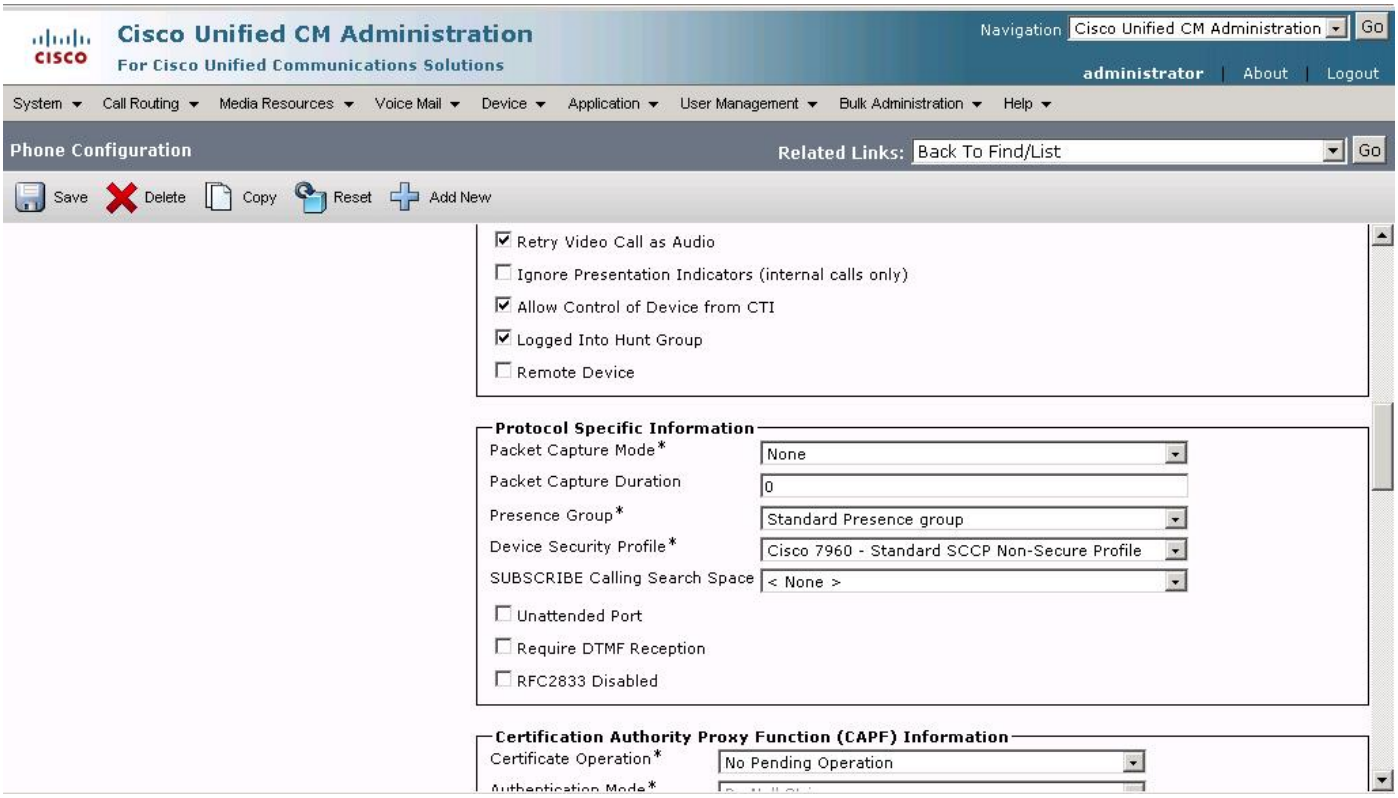
Cisco Unified IP Phone 7960, x5001, SCCP – 3 of 7.



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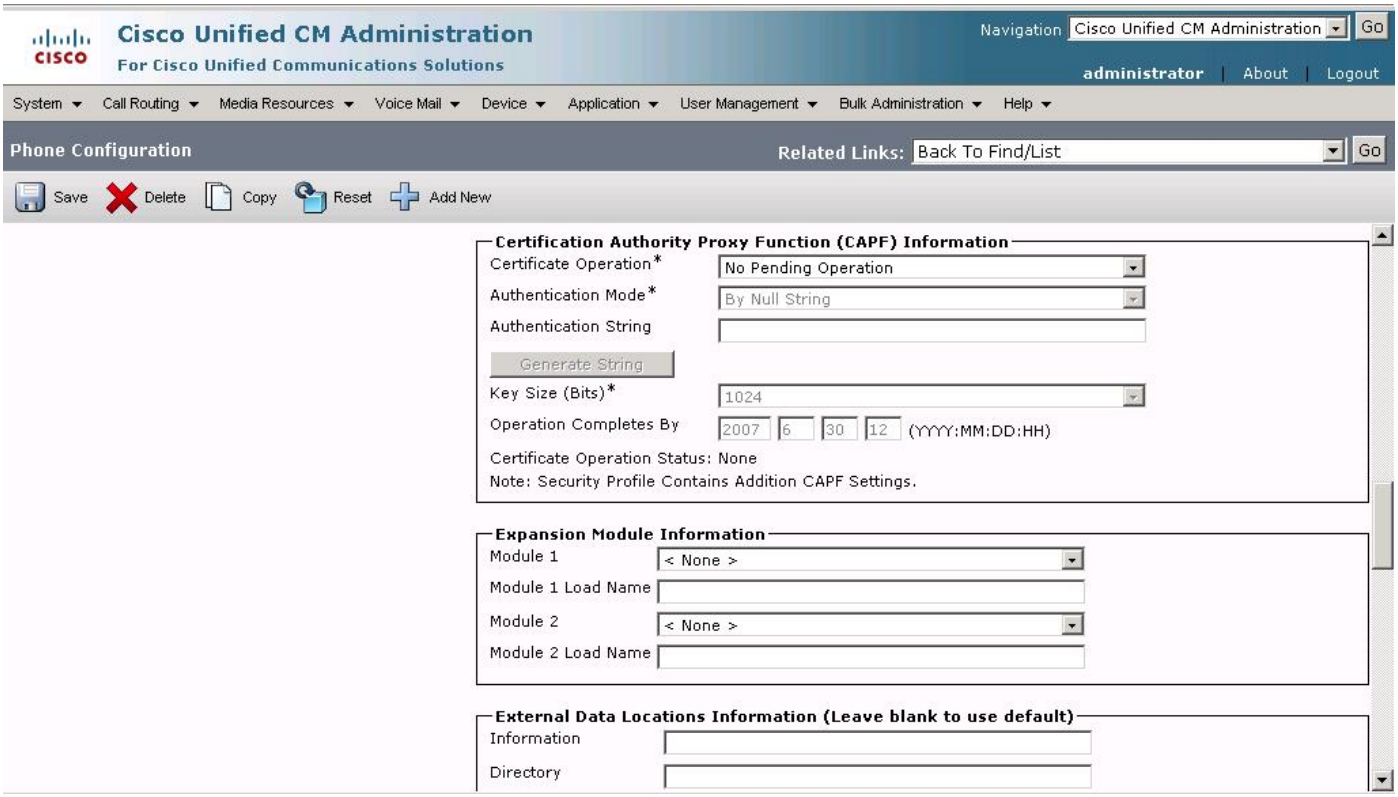
Cisco Unified IP Phone 7960, x5001, SCCP – 4 of 7.



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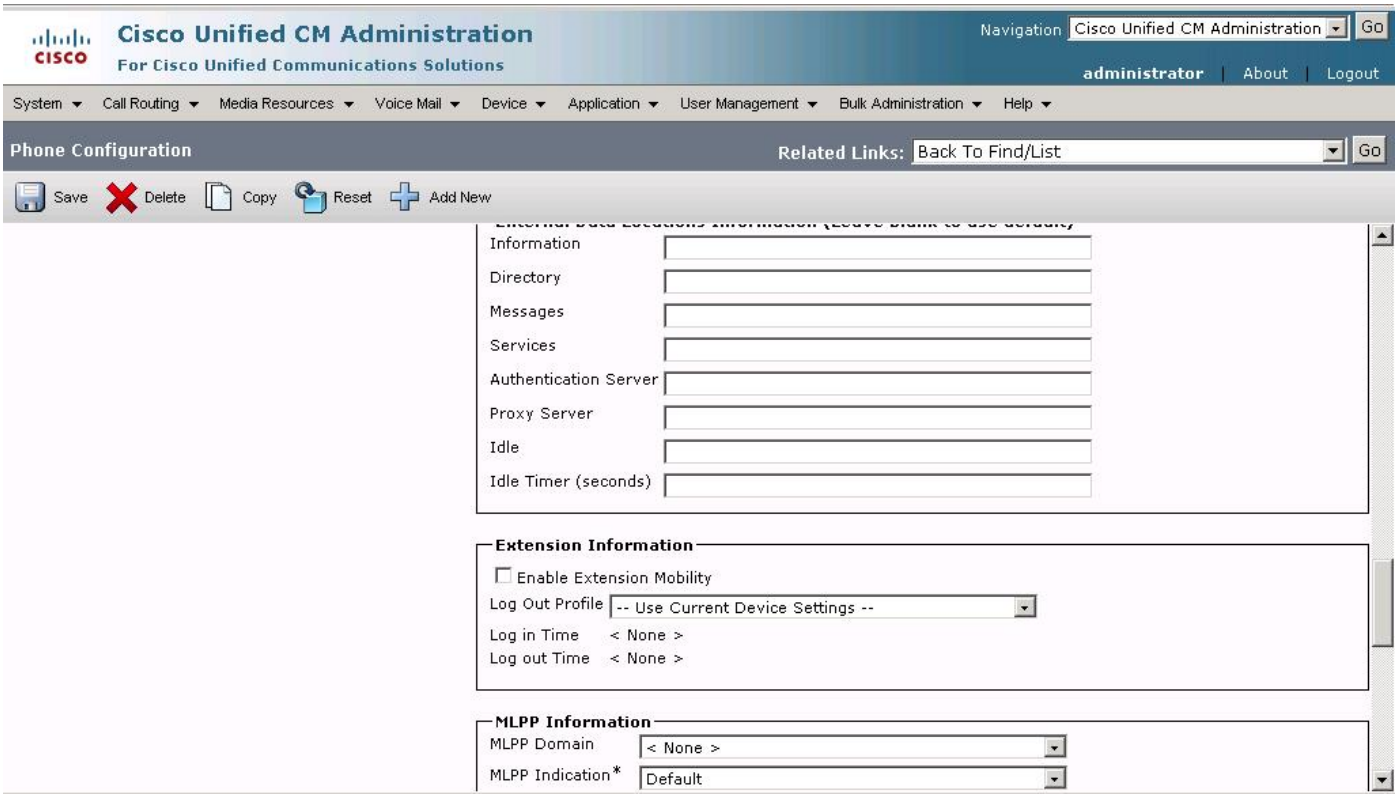
Cisco Unified IP Phone 7960, x5001, SCCP – 5 of 7.



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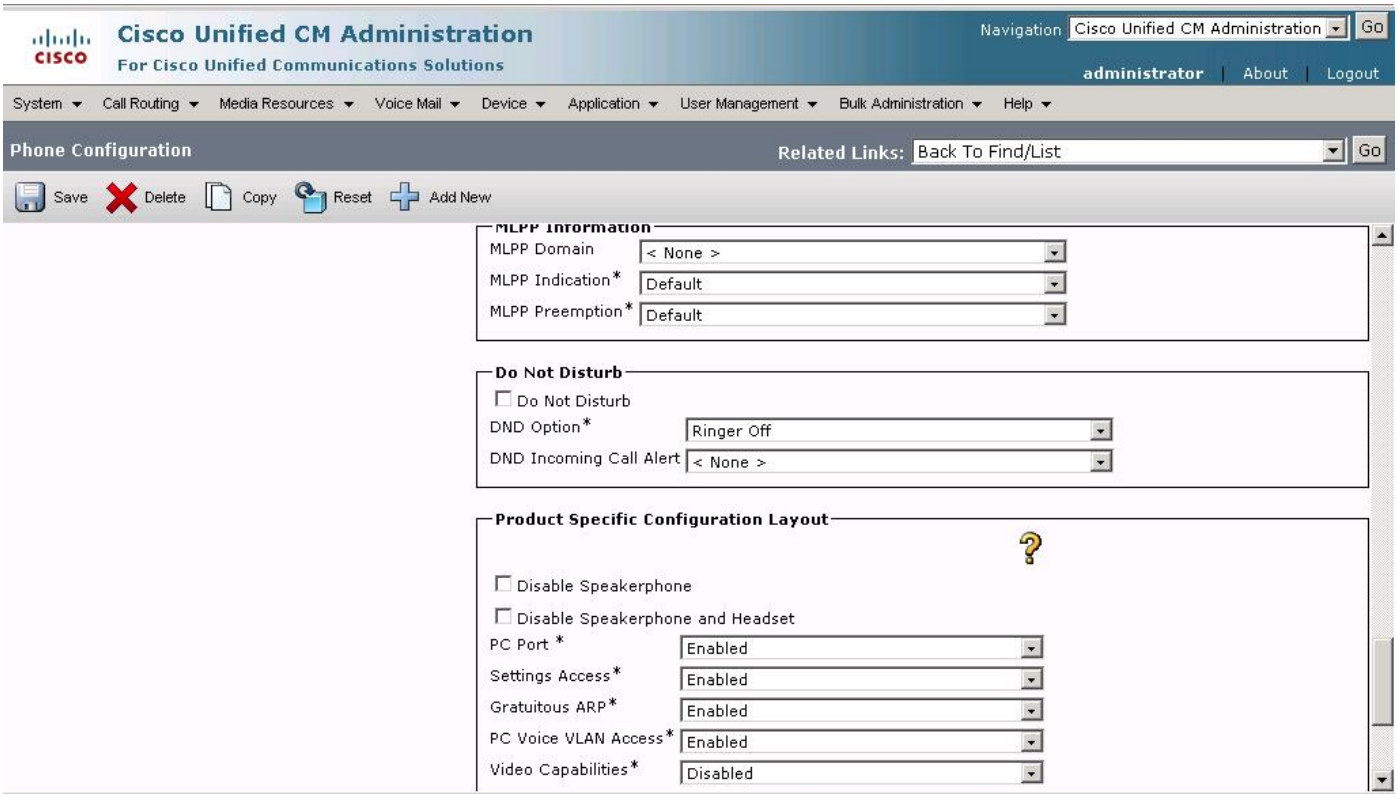
Cisco Unified IP Phone 7960, x5001, SCCP – 6 of 7.



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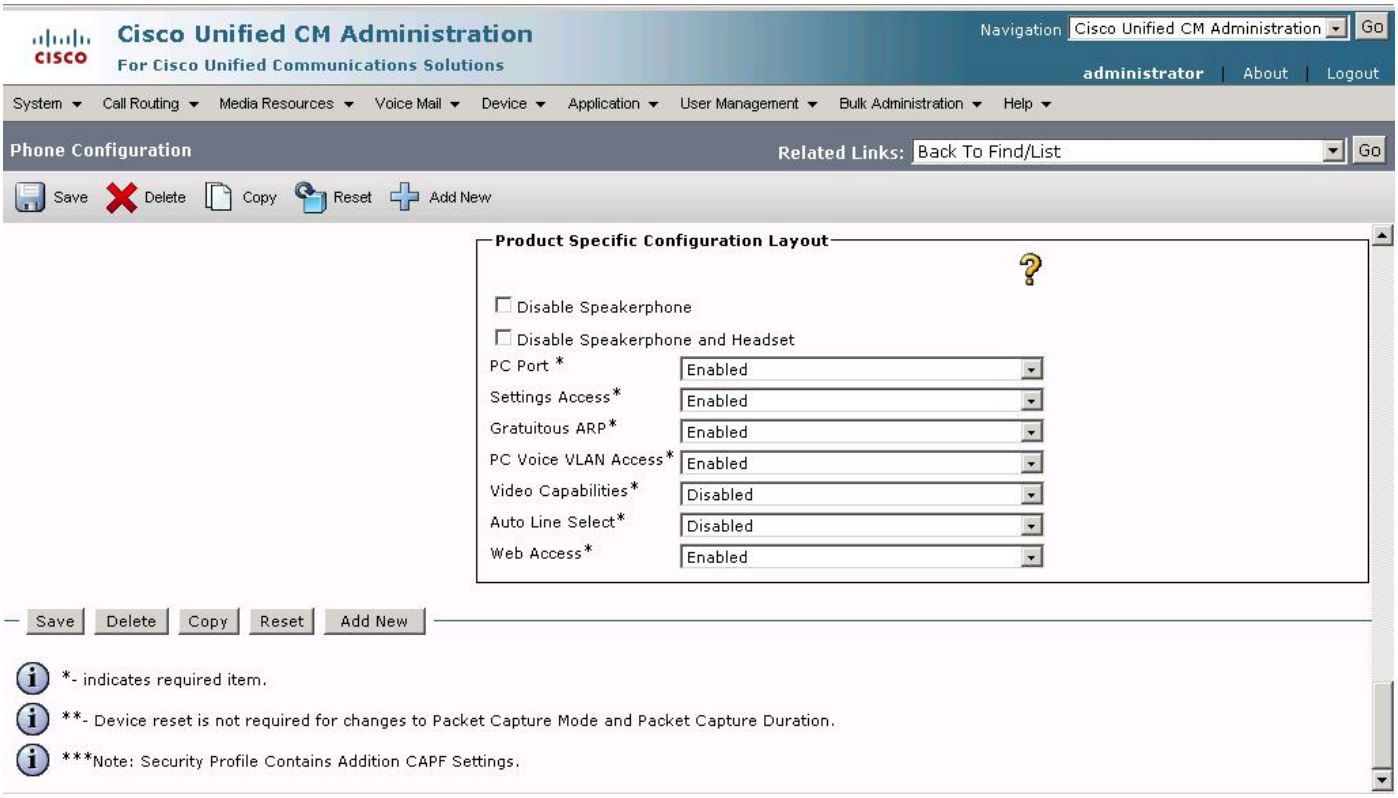
Cisco Unified IP Phone 7960, x5001, SCCP – 7 of 7.



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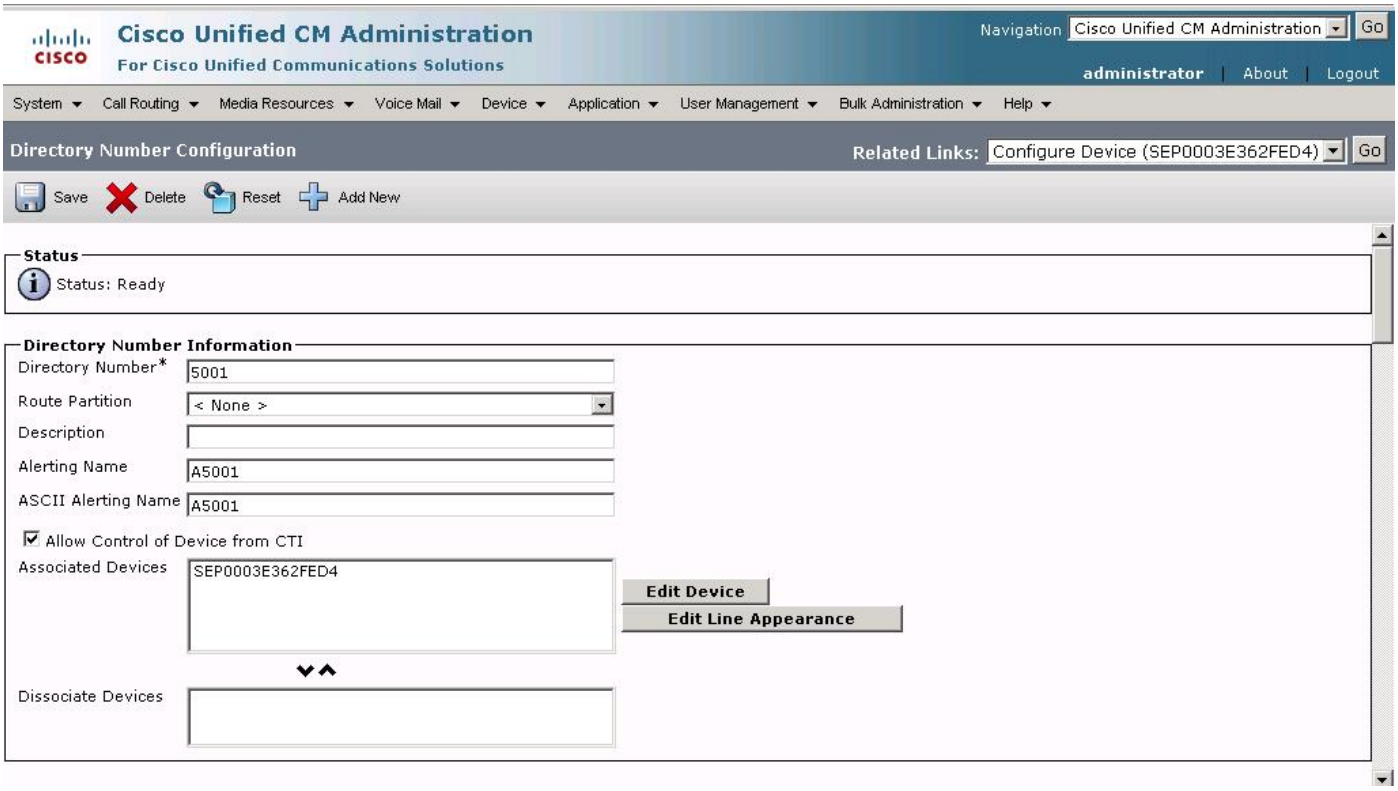
Line 5001 – 1 of 6.



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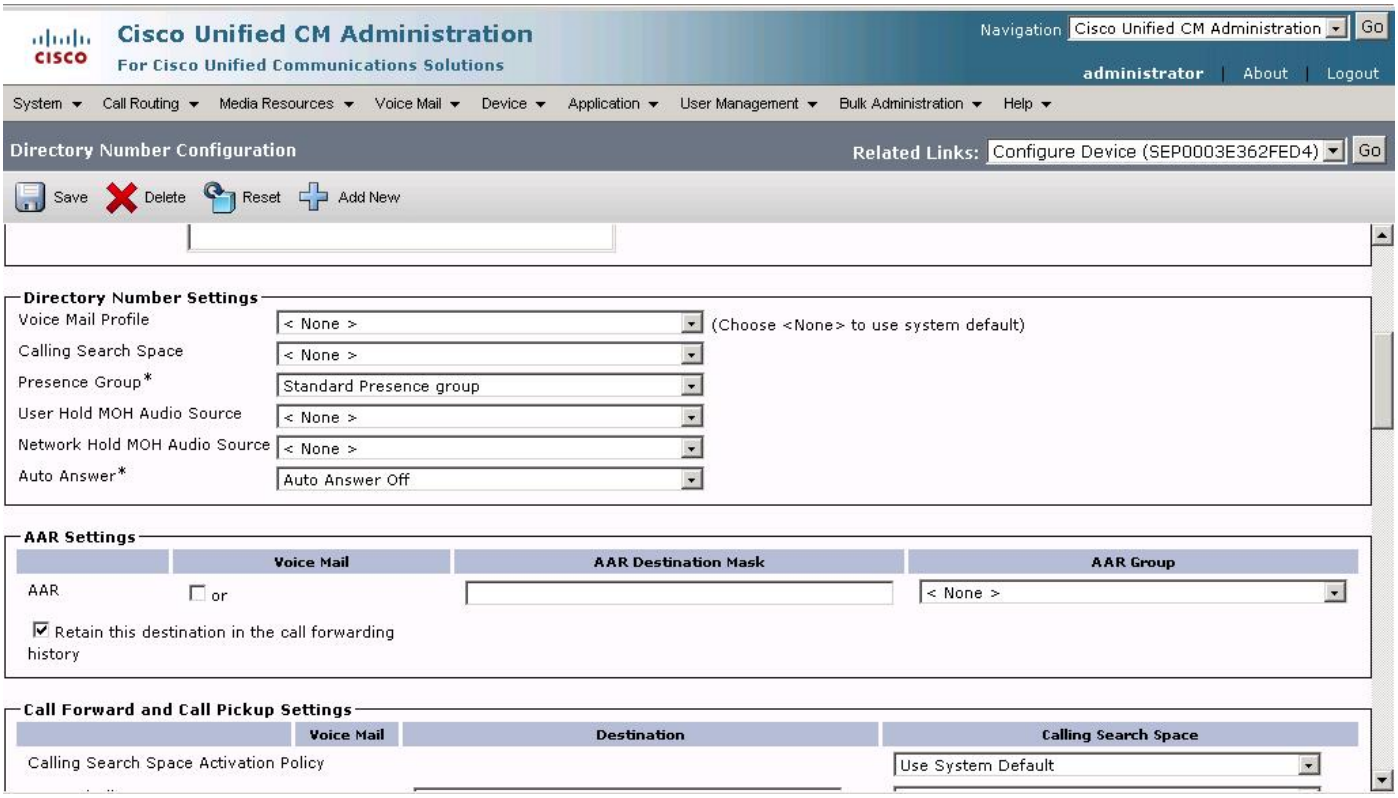
Line 5001 – 2 of 6.



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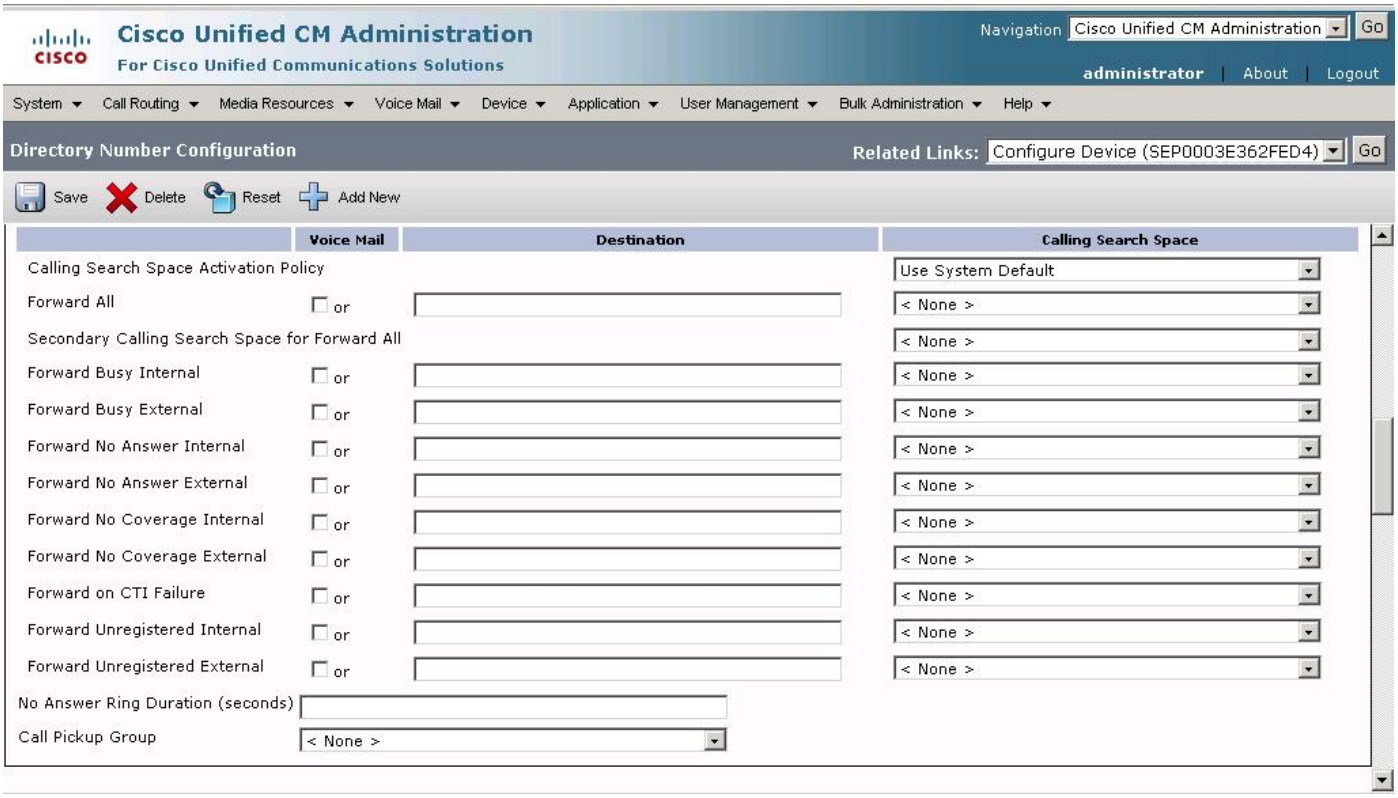

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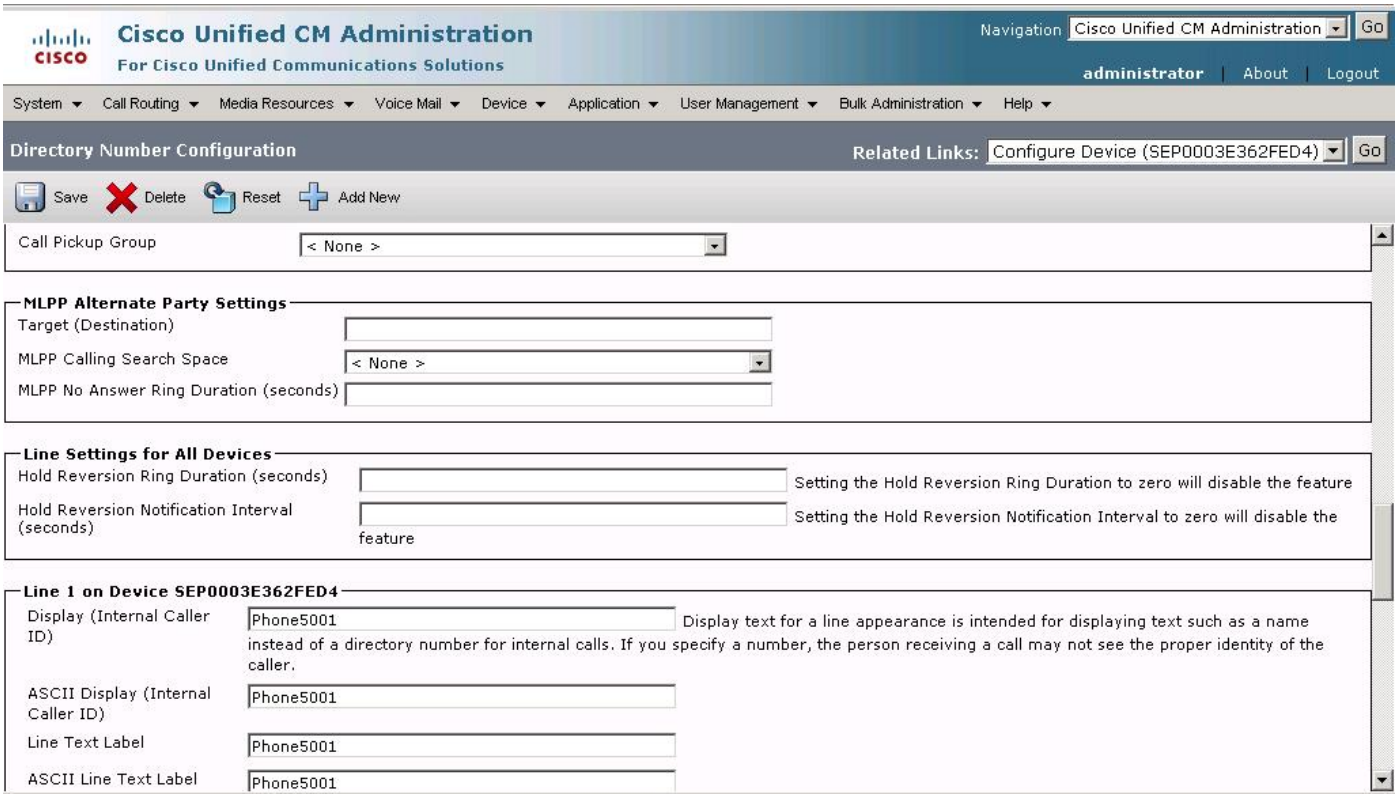

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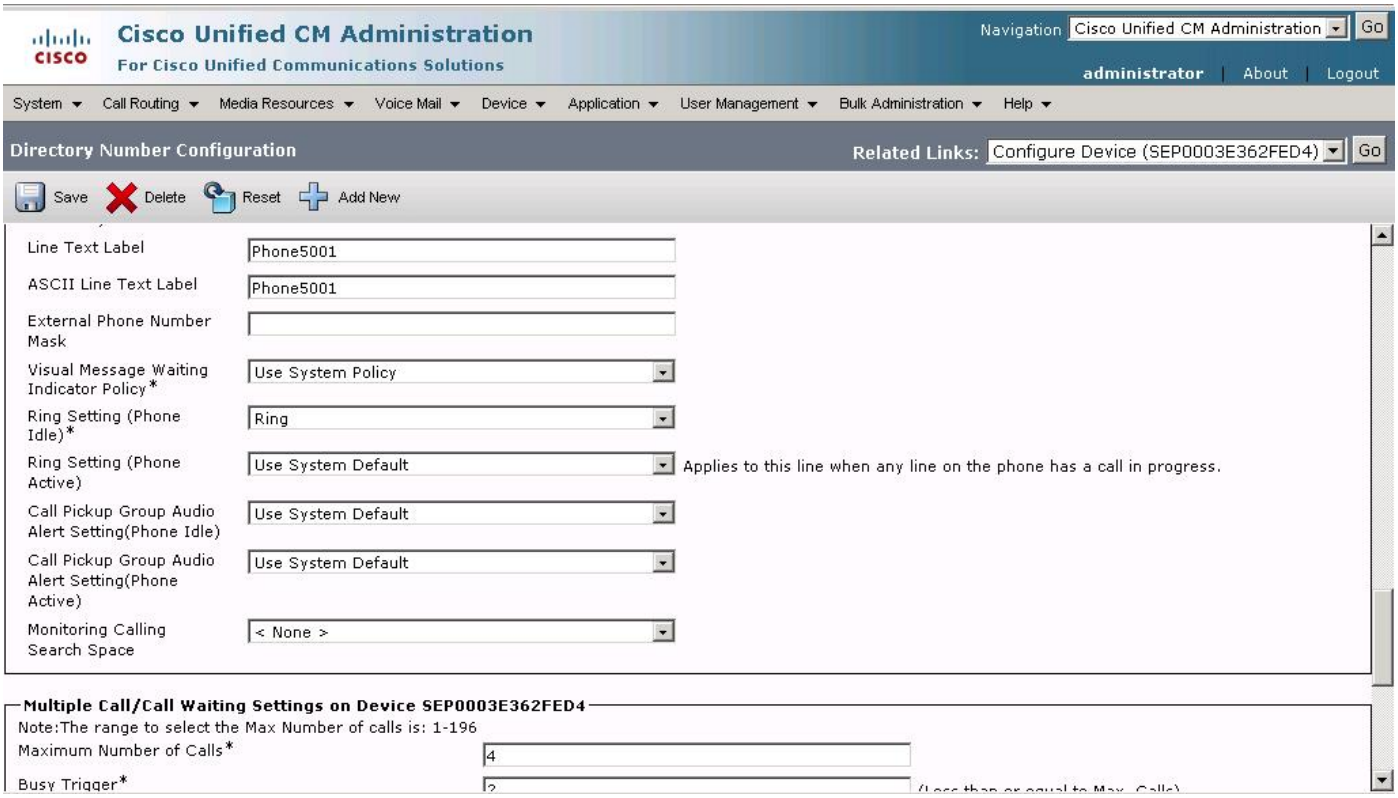
Line 5001 – 5 of 6.



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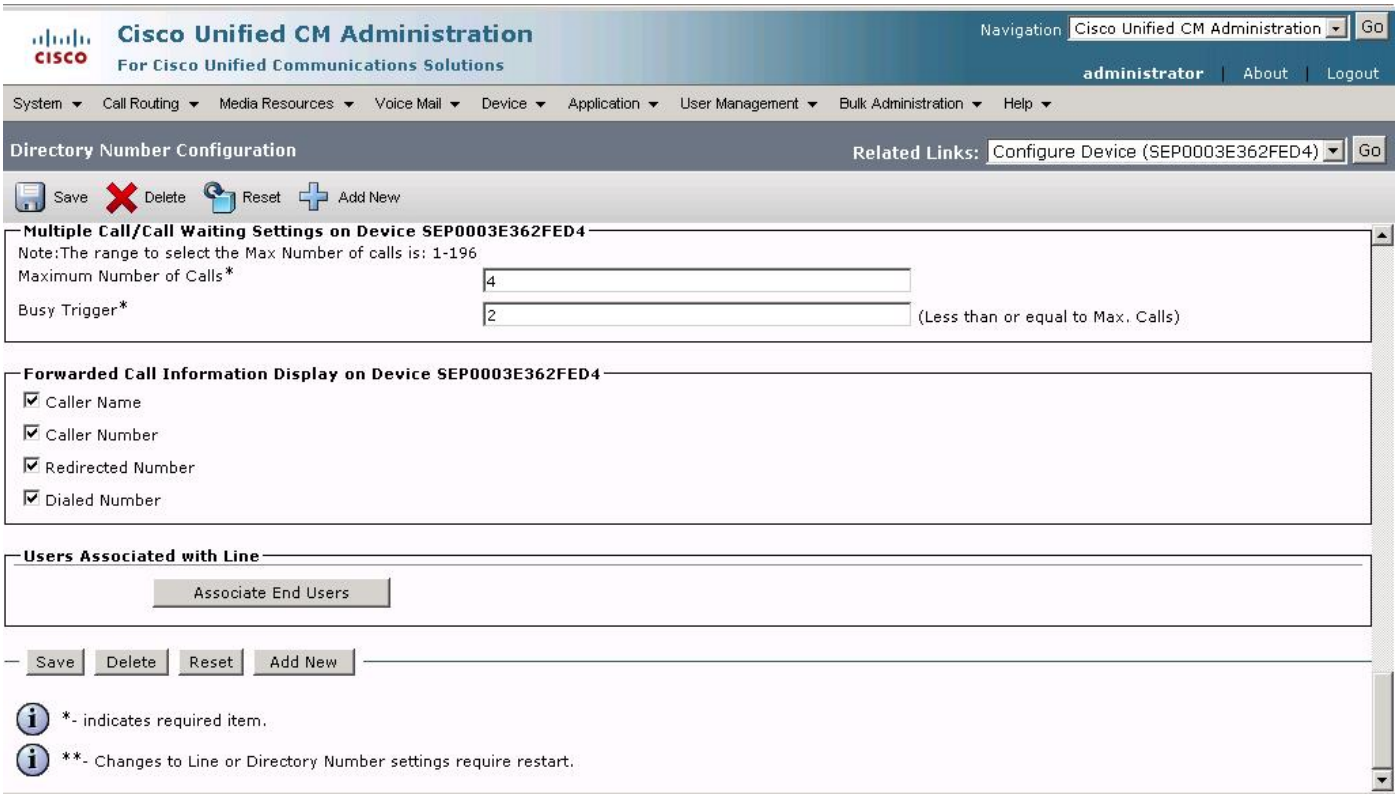

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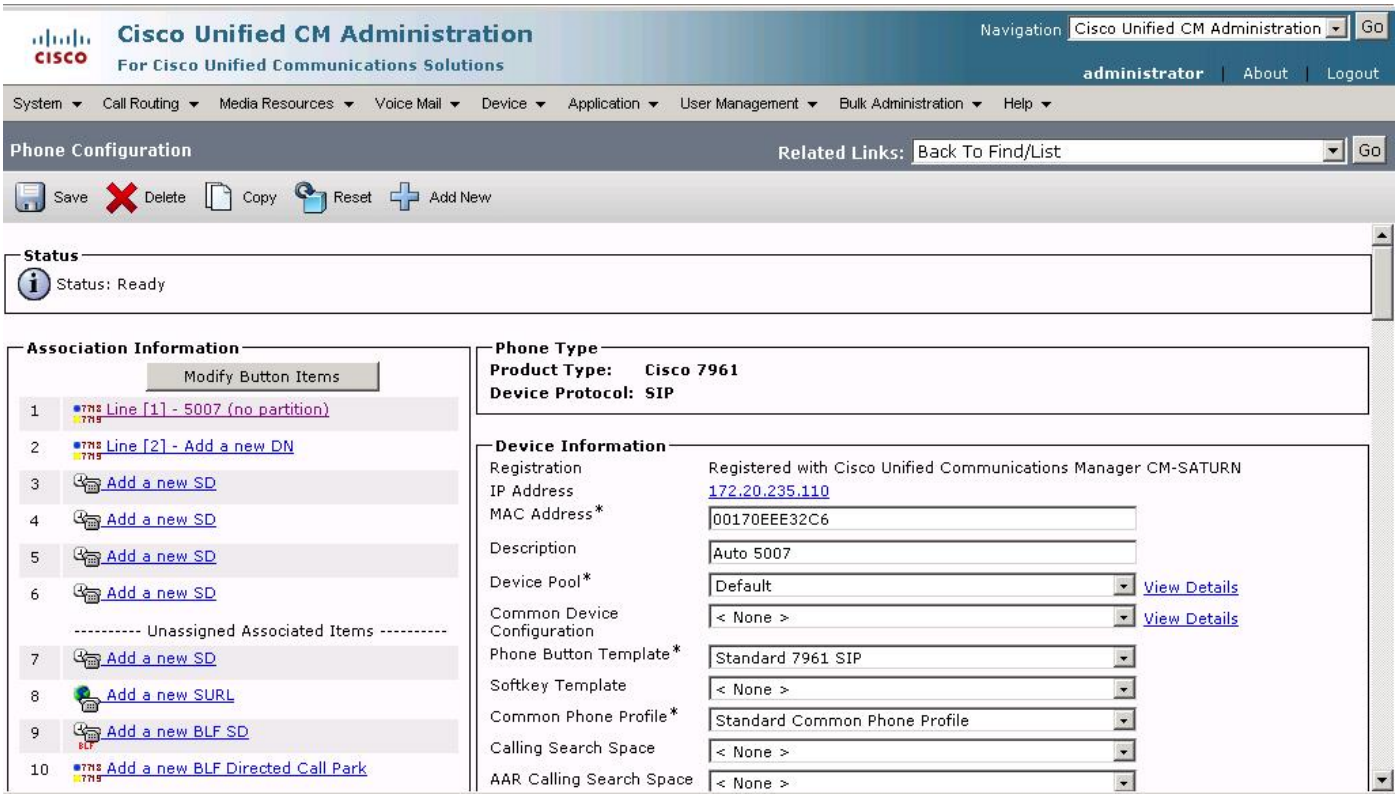
Cisco Unified IP Phone 7961, x5007, SIP – 1 of 8.



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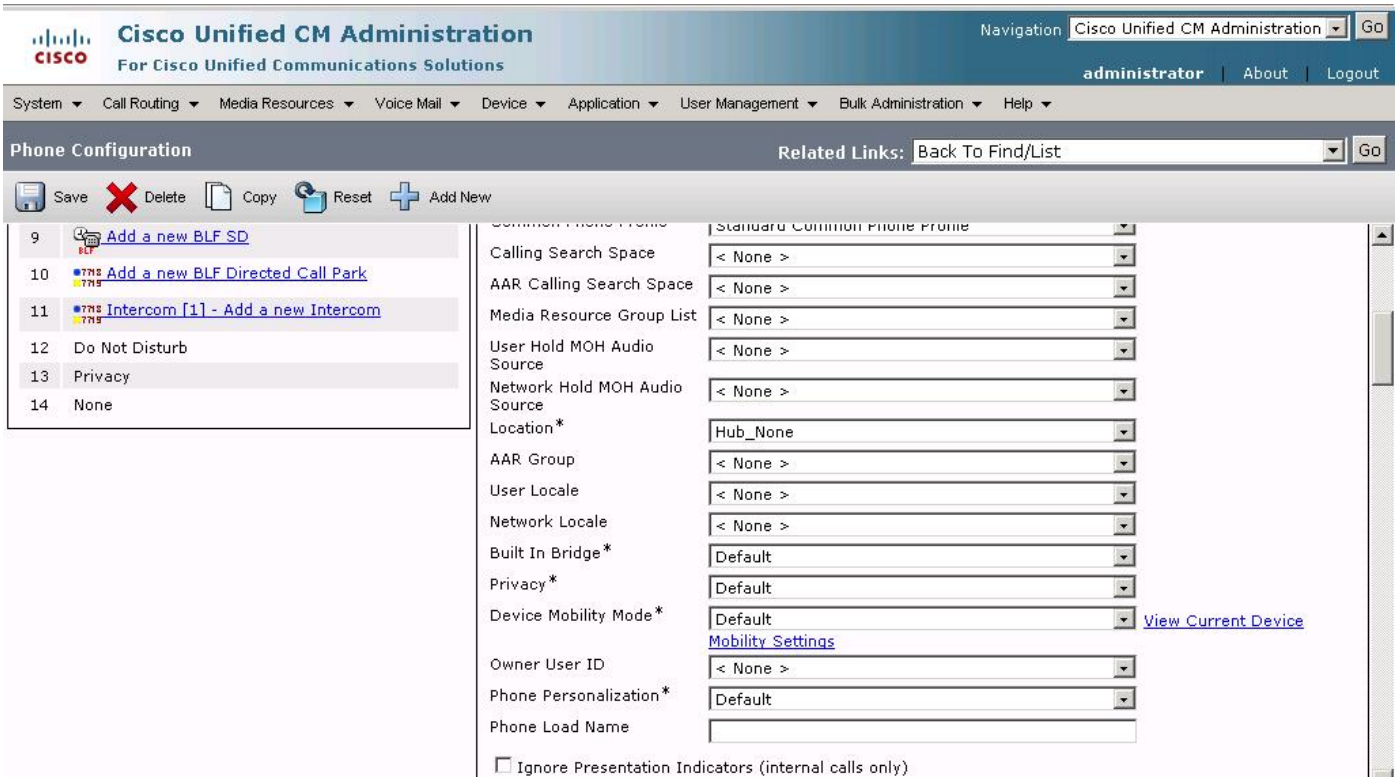
Cisco Unified IP Phone 7961, x5007, SIP – 2 of 8.



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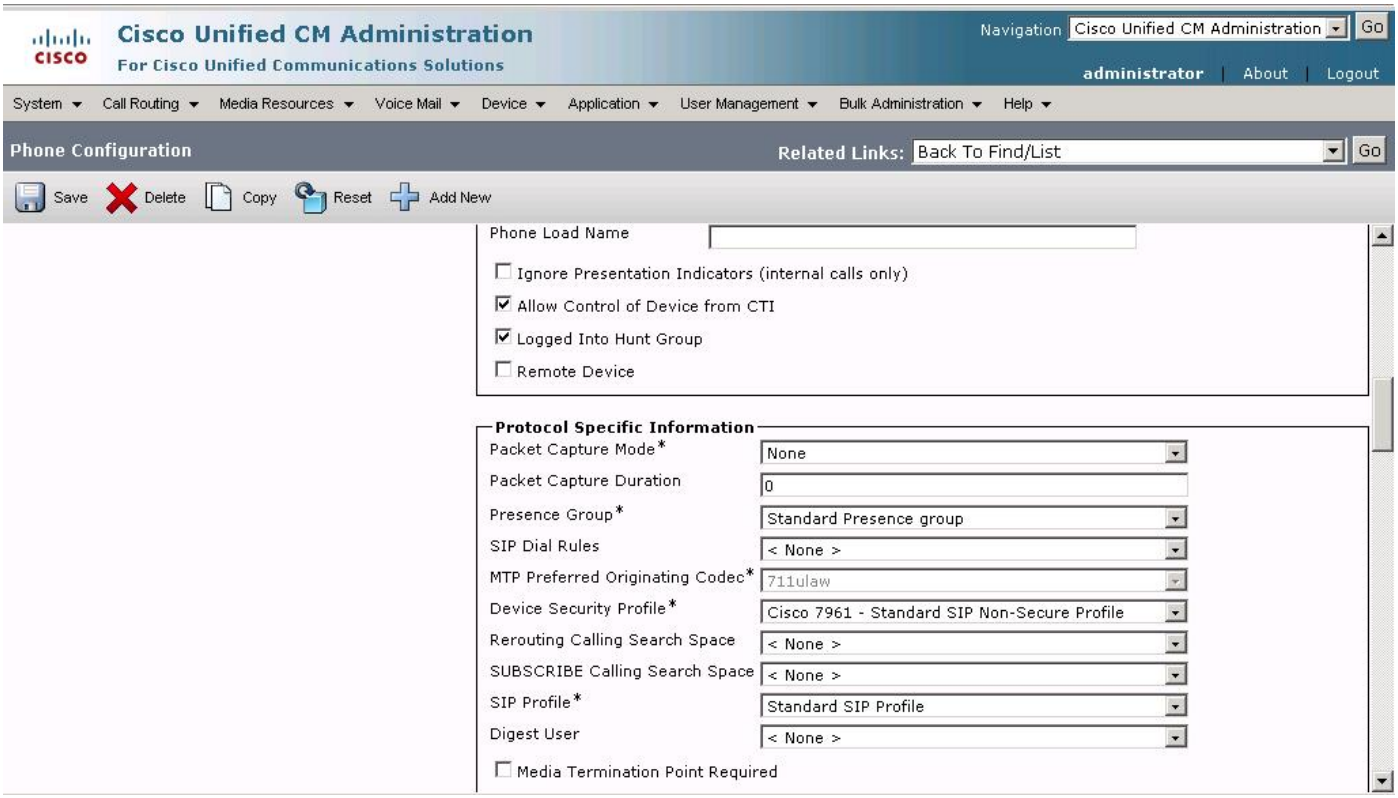
Cisco Unified IP Phone 7961, x5007, SIP – 3 of 8.



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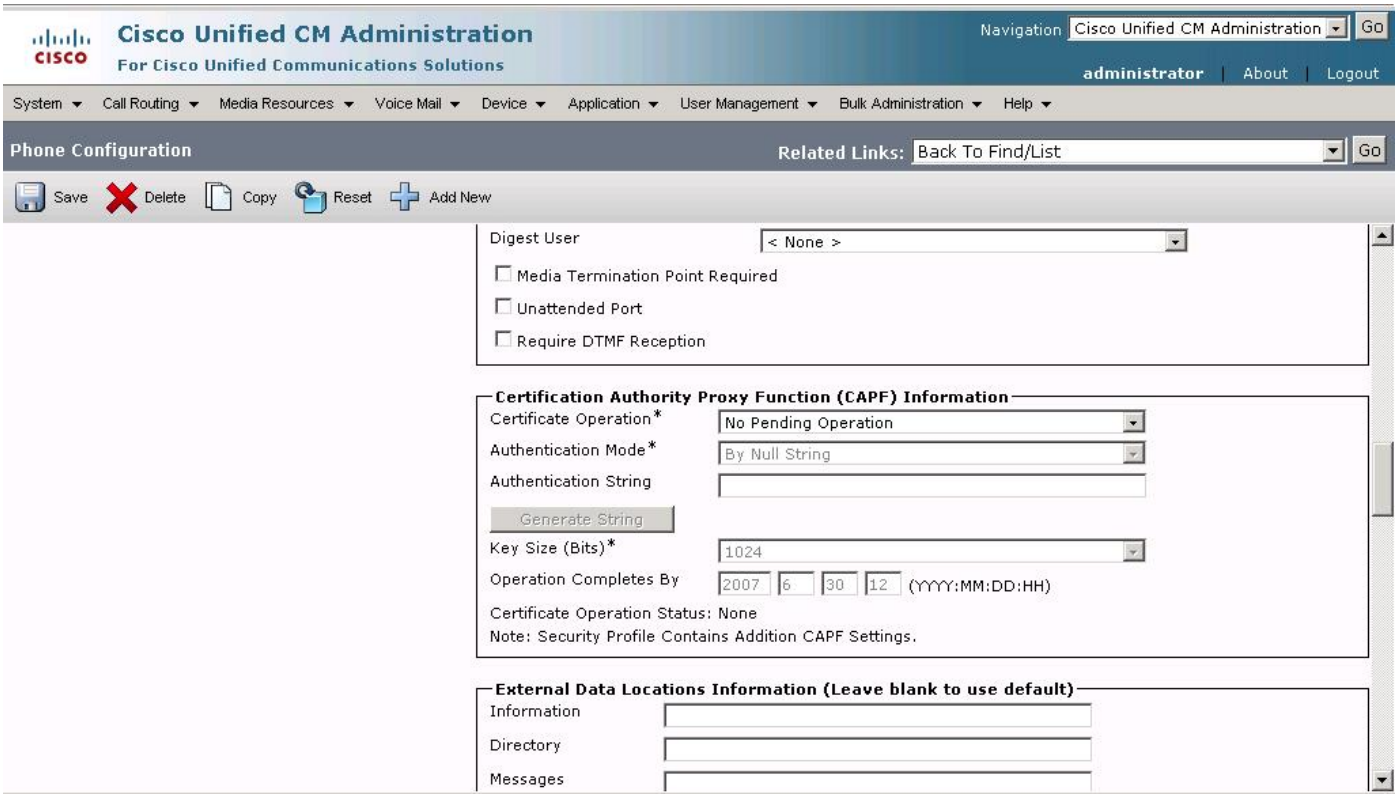
Cisco Unified IP Phone 7961, x5007, SIP – 4 of 8.



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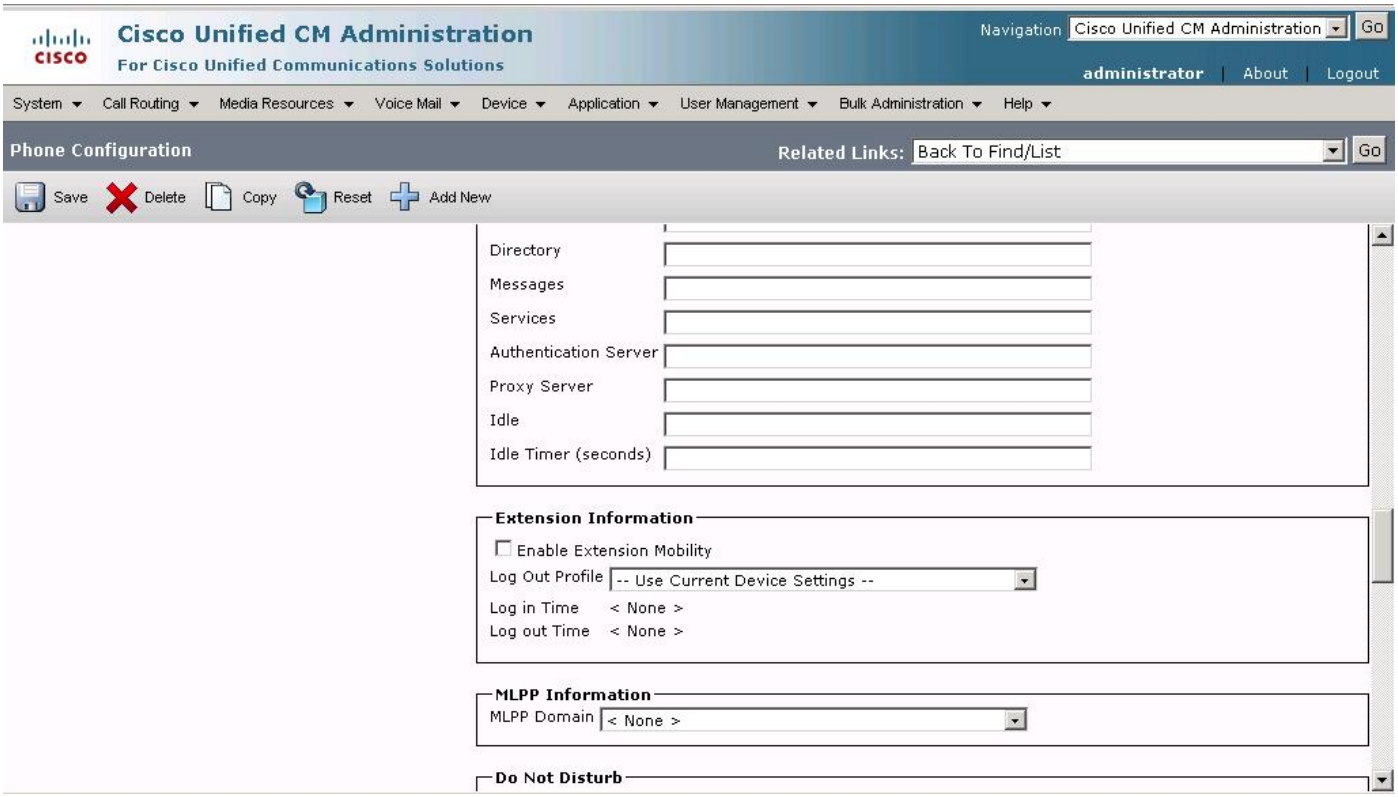

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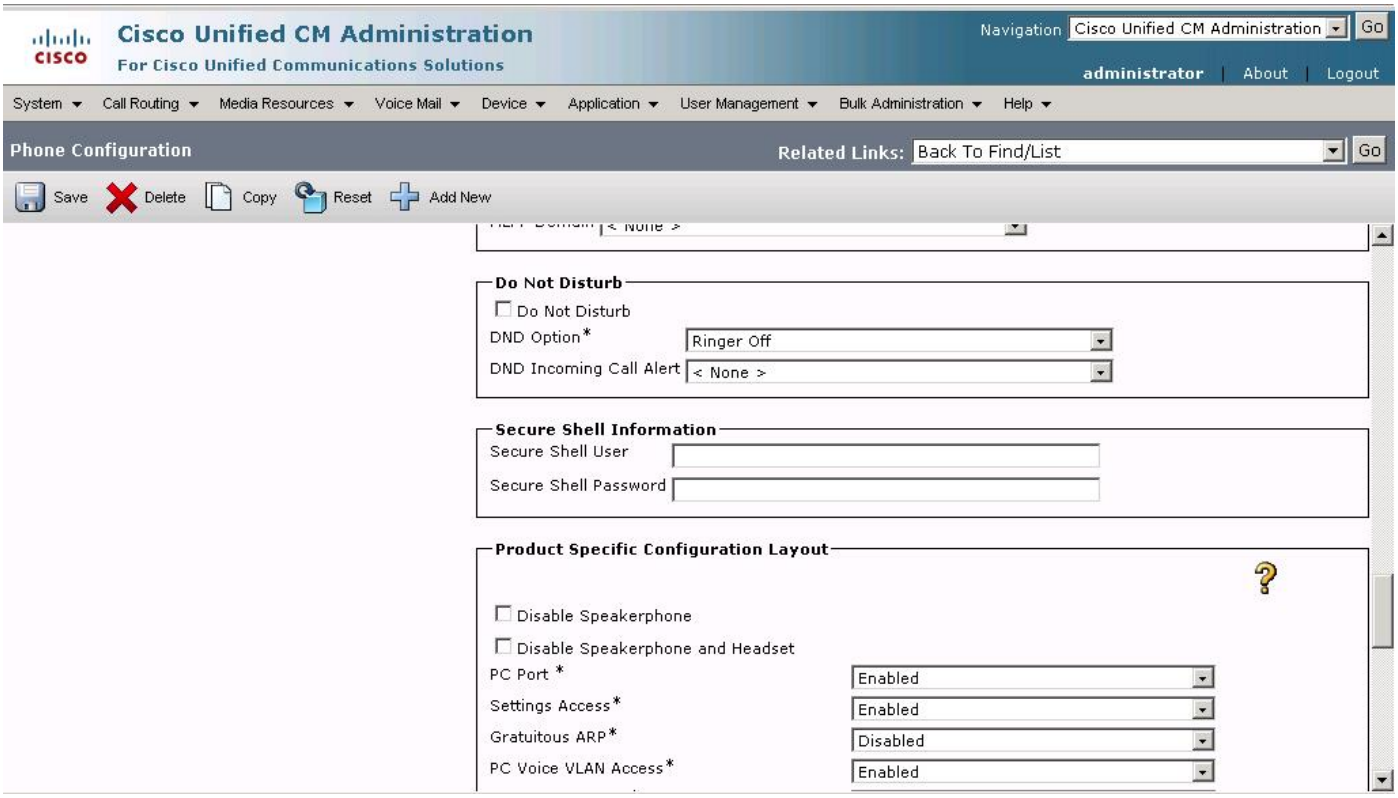
Cisco Unified IP Phone 7961, x5007, SIP – 6 of 8.



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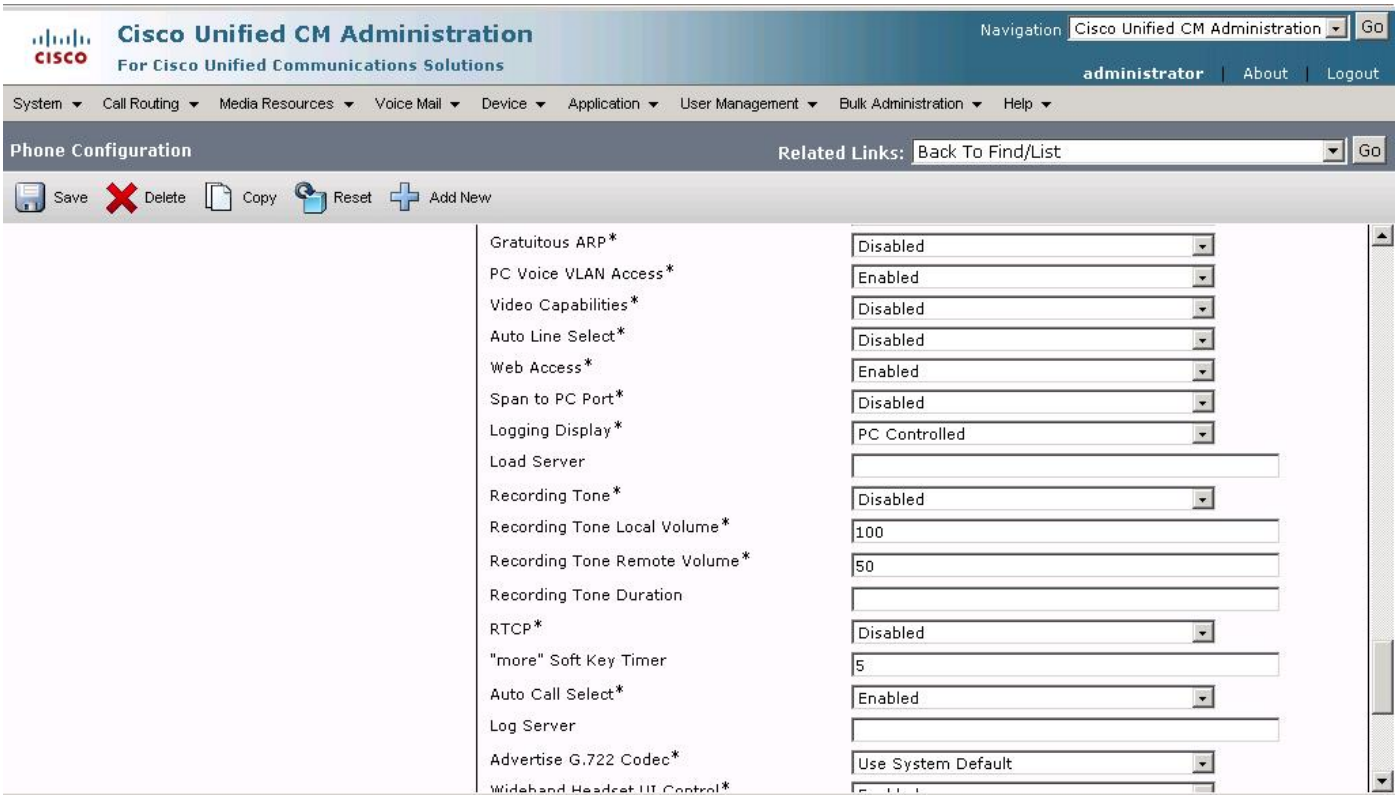
Cisco Unified IP Phone 7961, x5007, SIP – 7 of 8.



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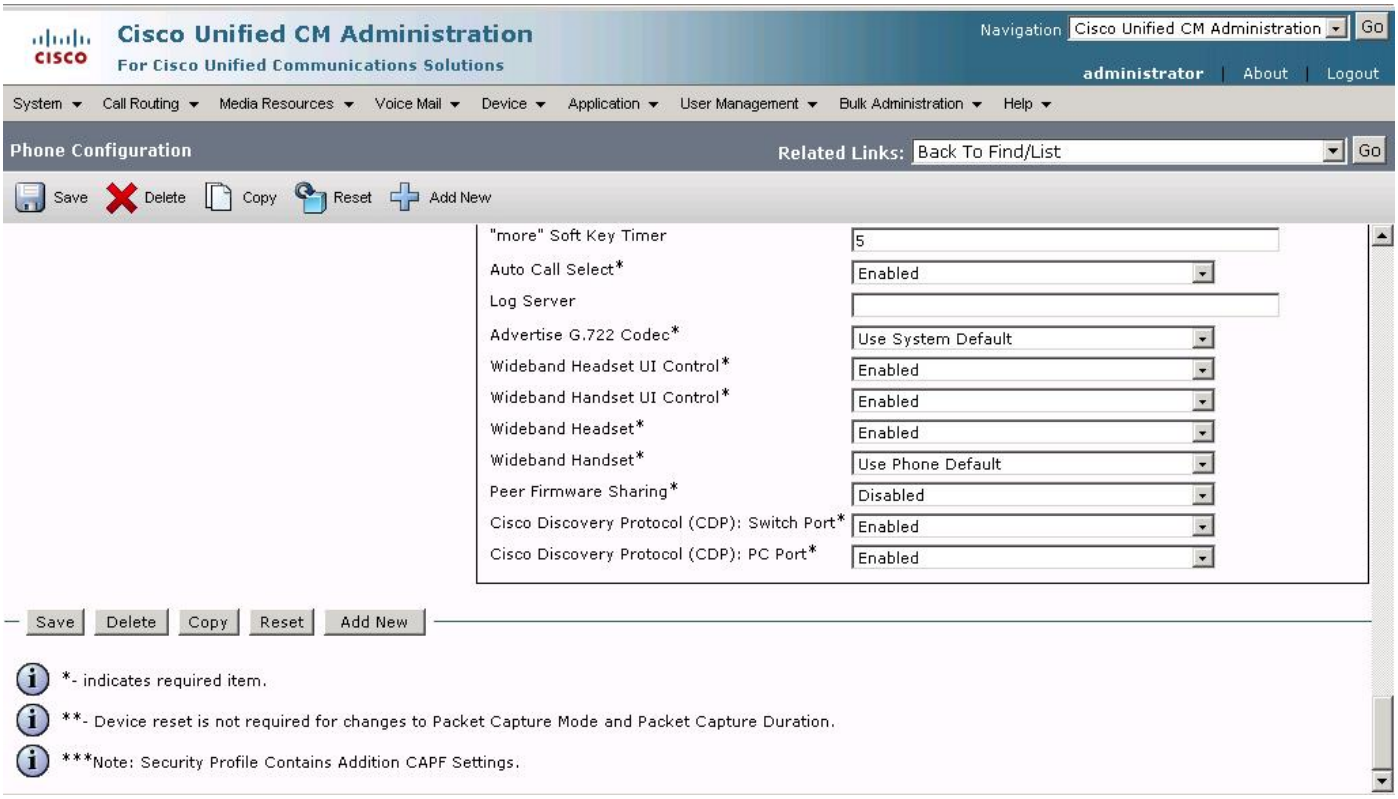

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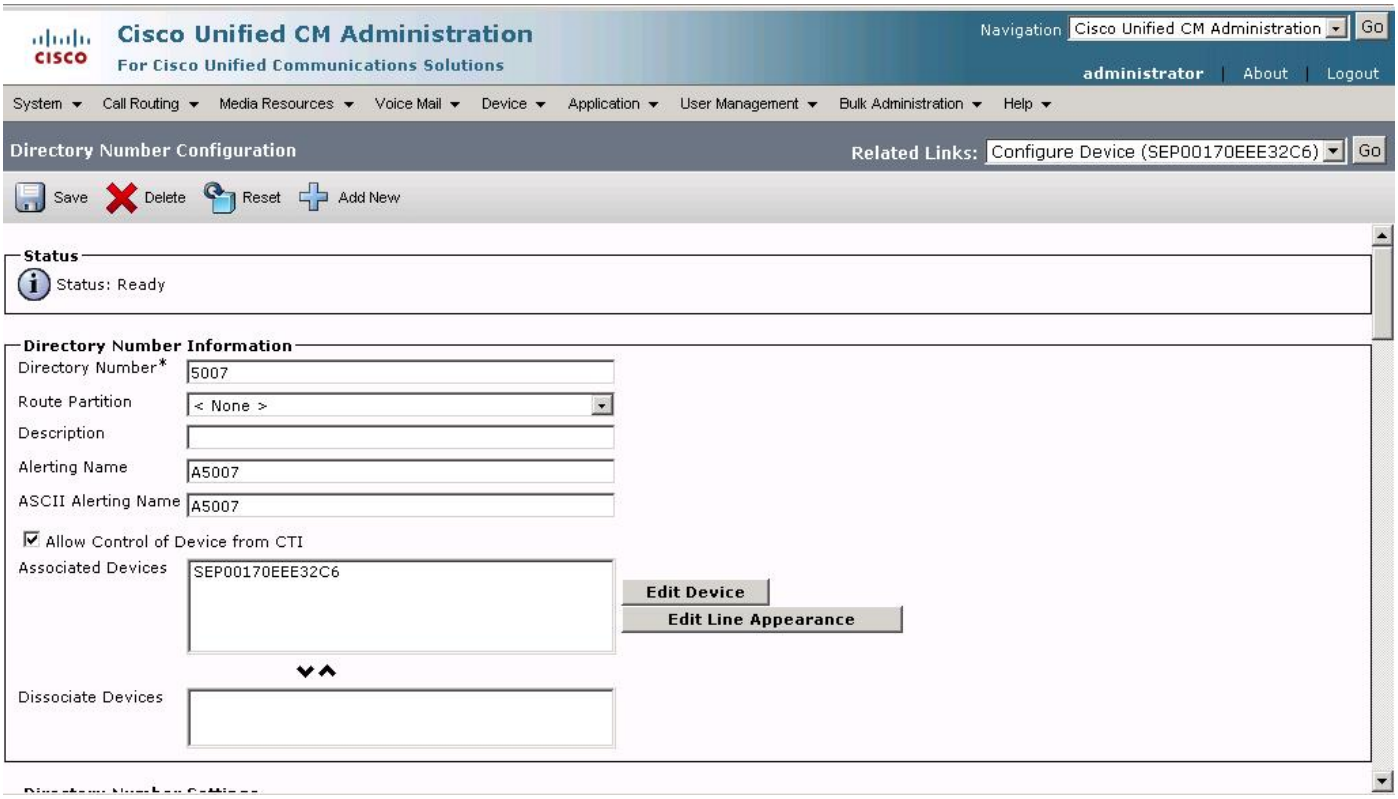
Line 5007 – 1 of 6.



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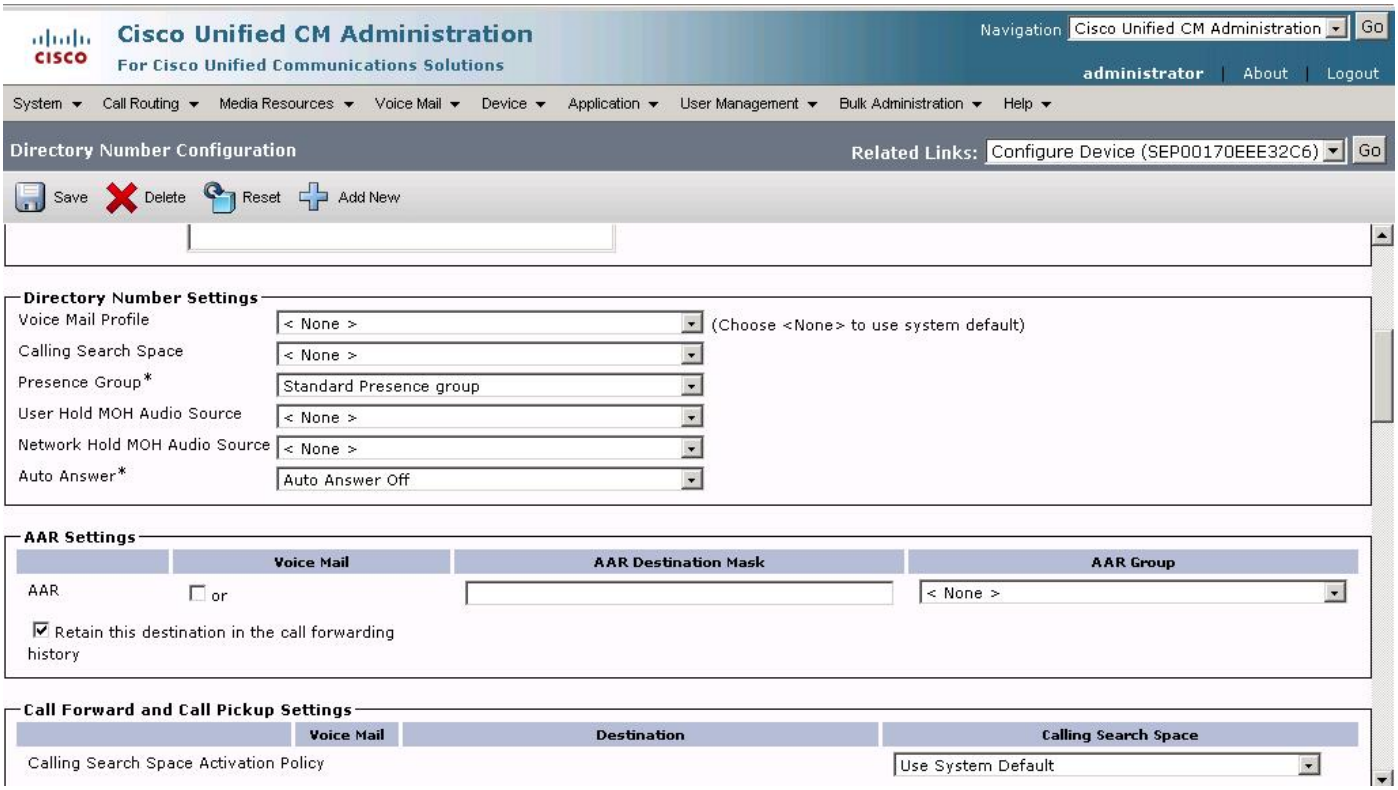

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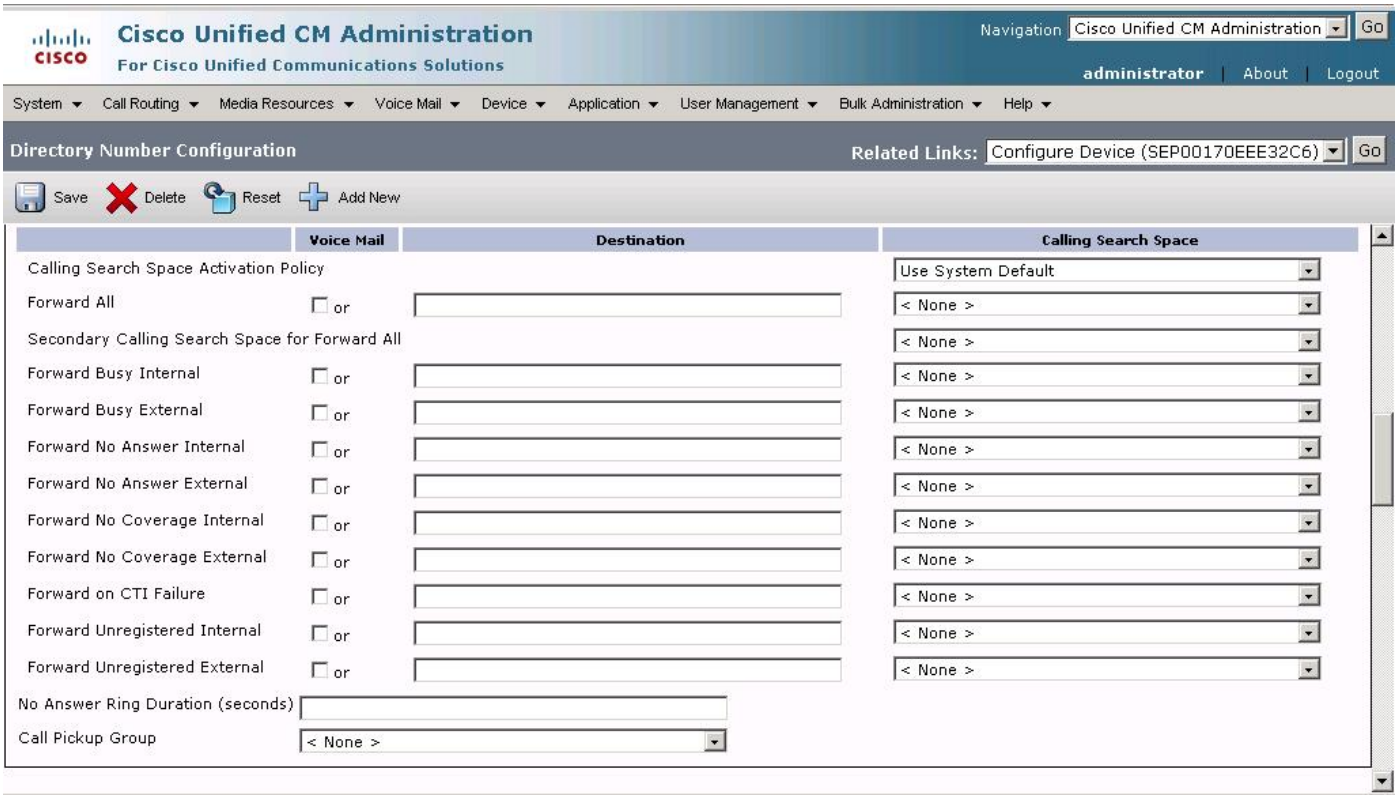

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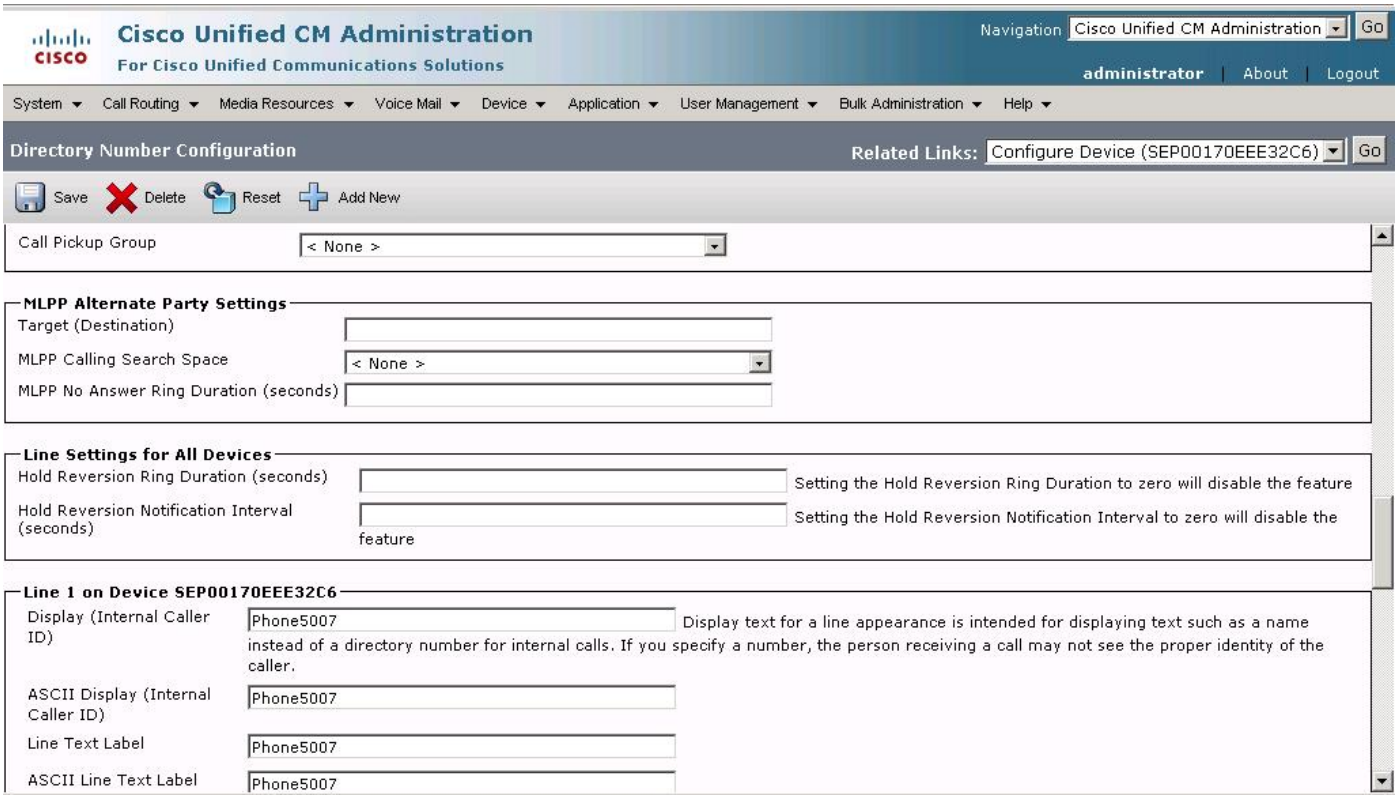

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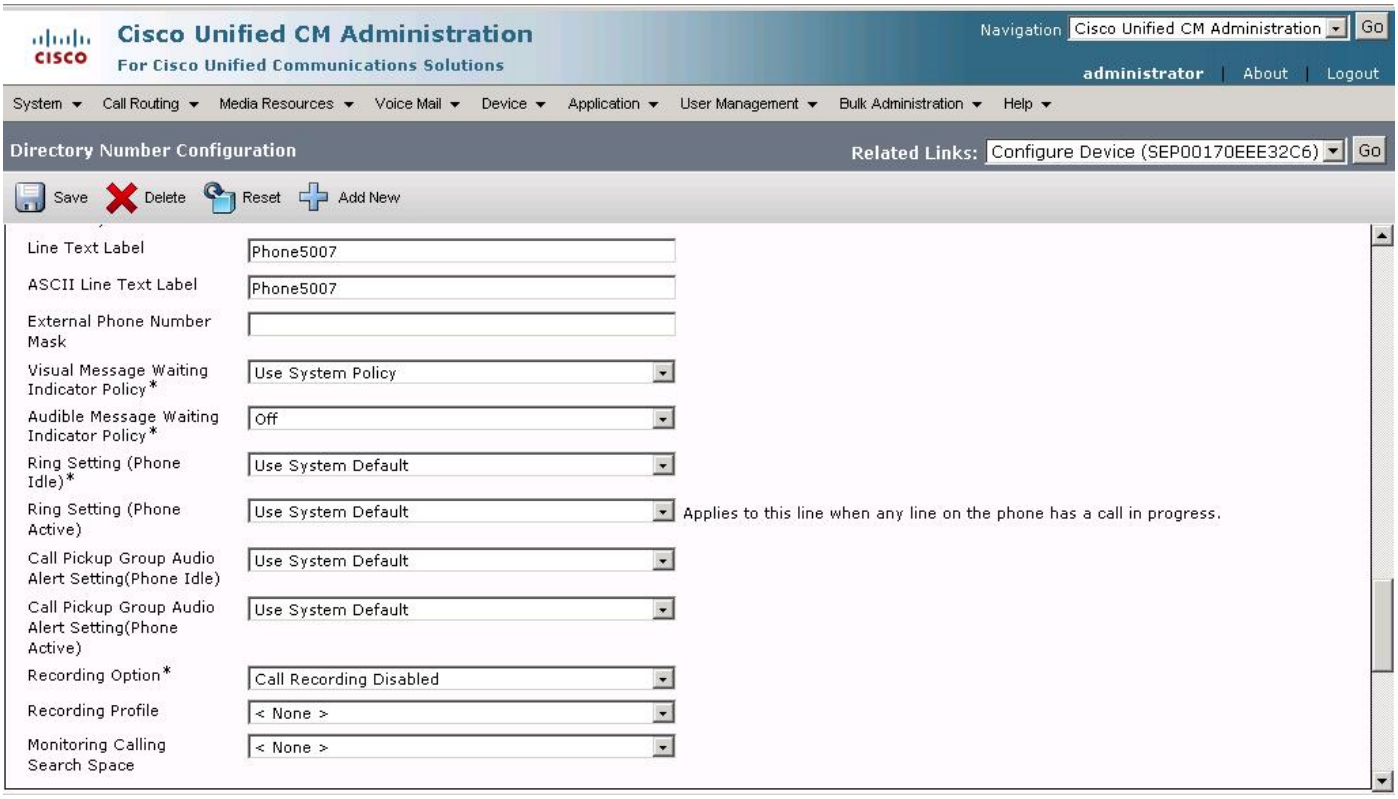

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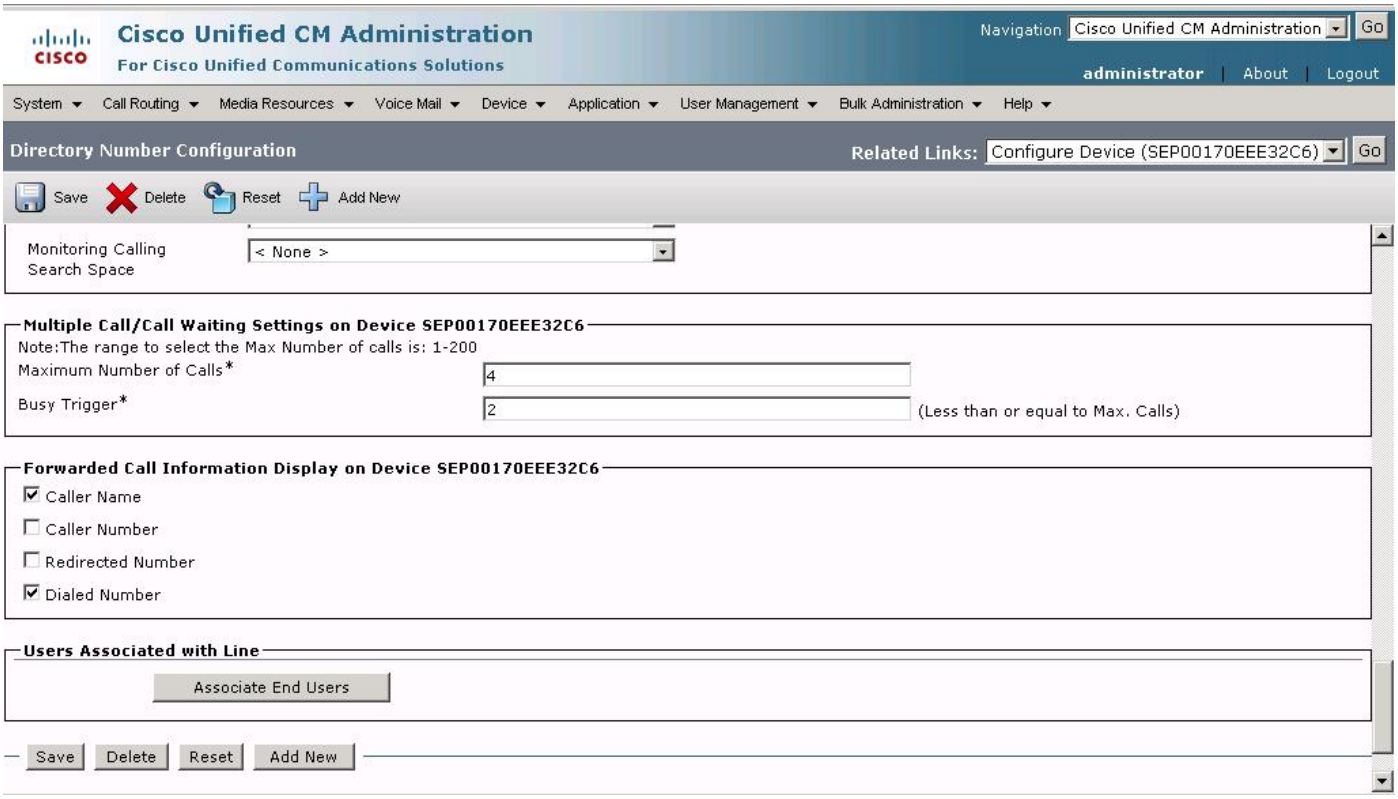

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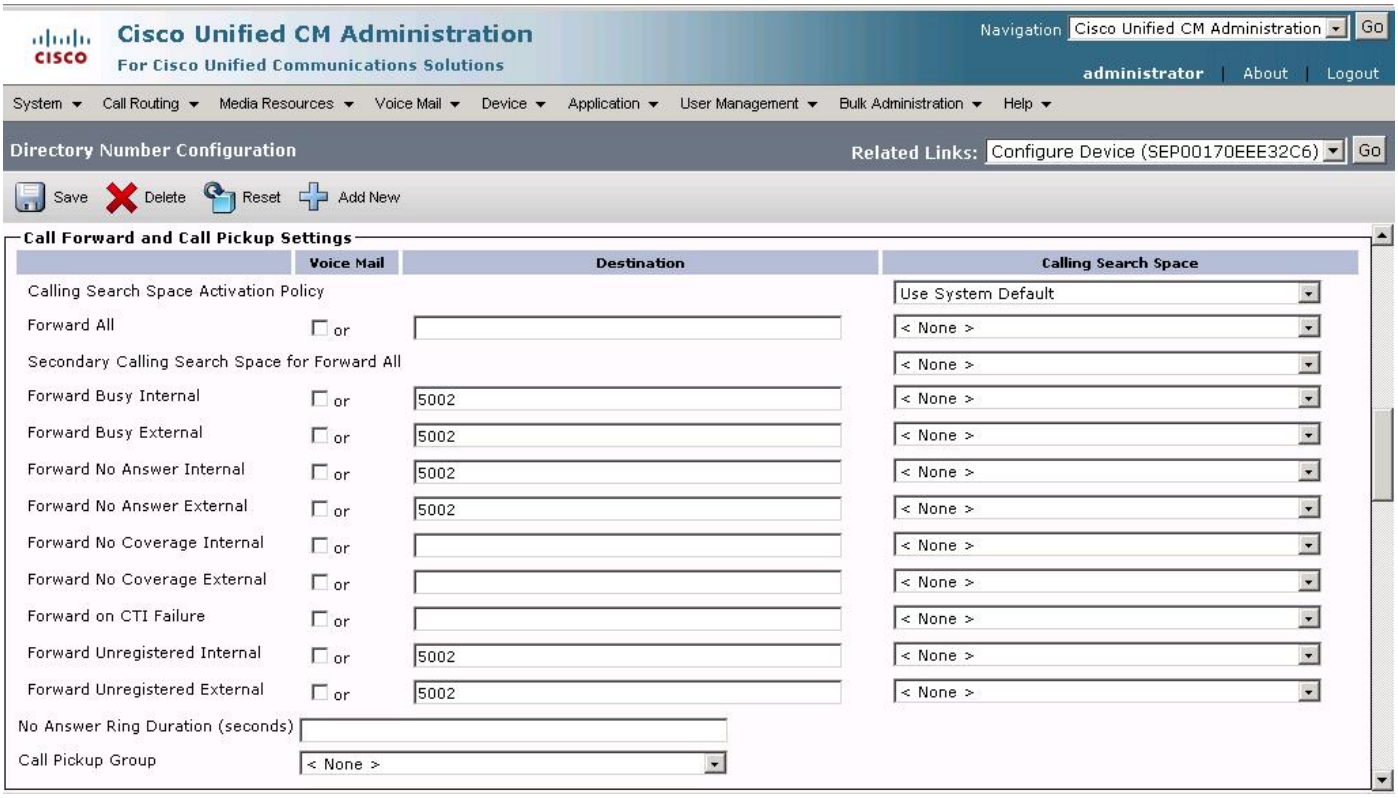
Call Forwarding

Call Forwarding: line 5007 set up to forward to 5002 – 1 of 1.



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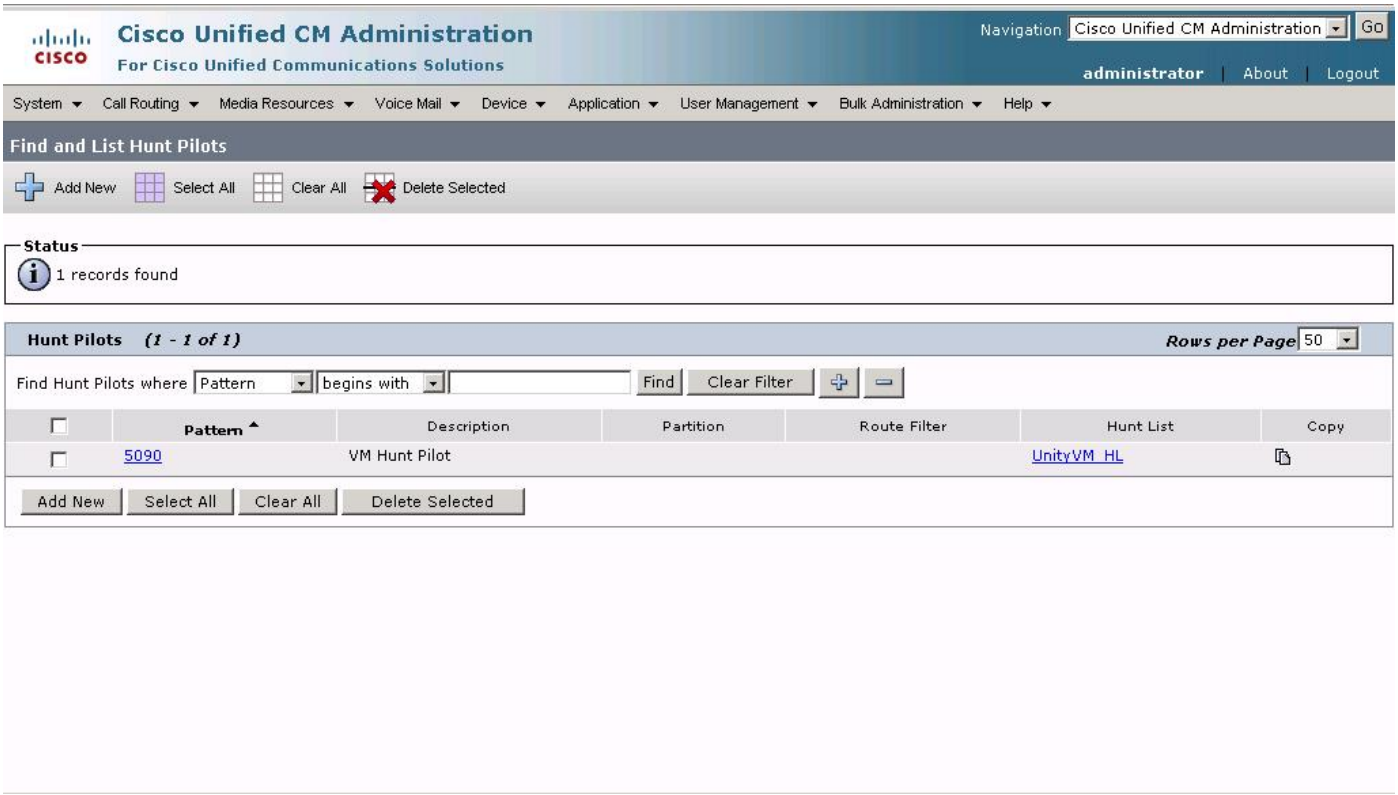
List Hunt Pilots – 1 of 1.



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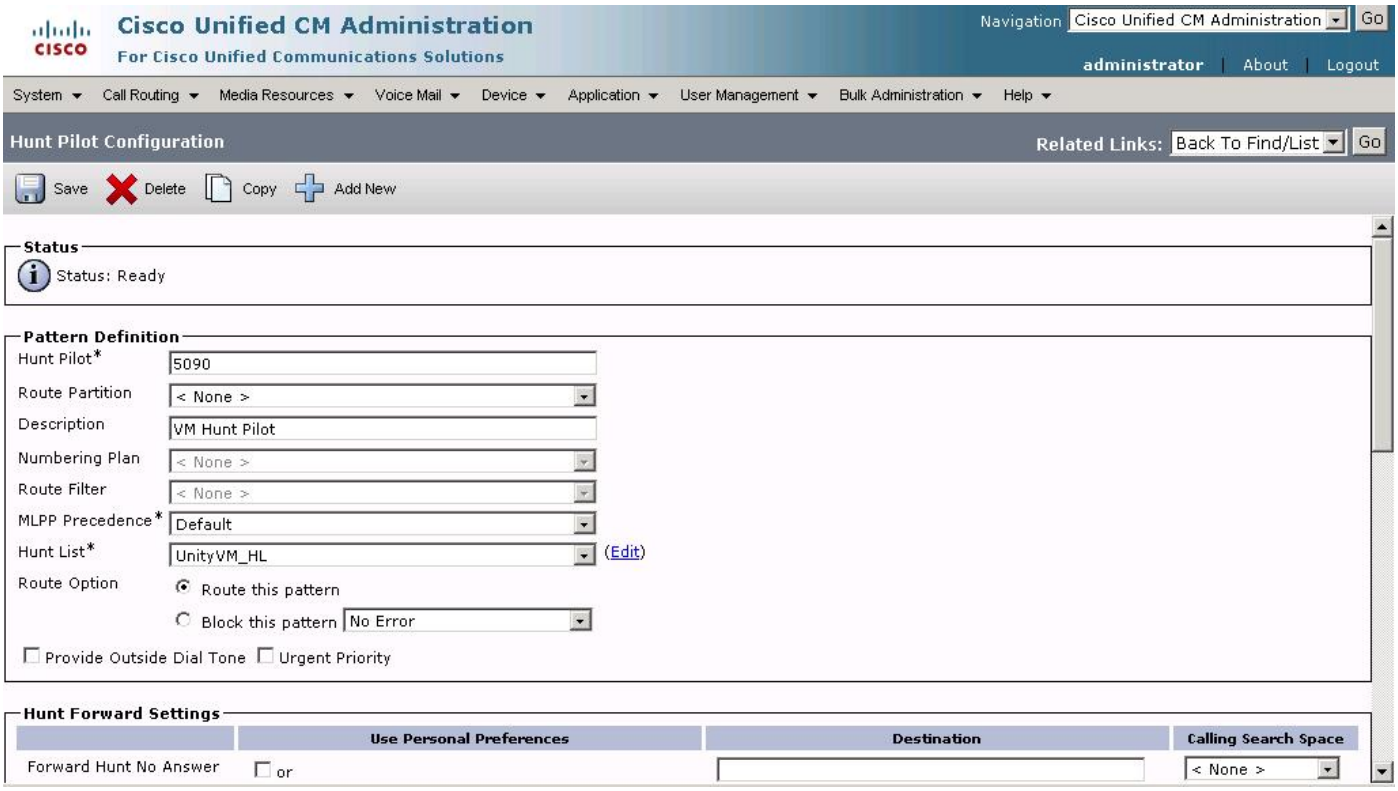
Hunt Pilot 5090 – 1 of 3.



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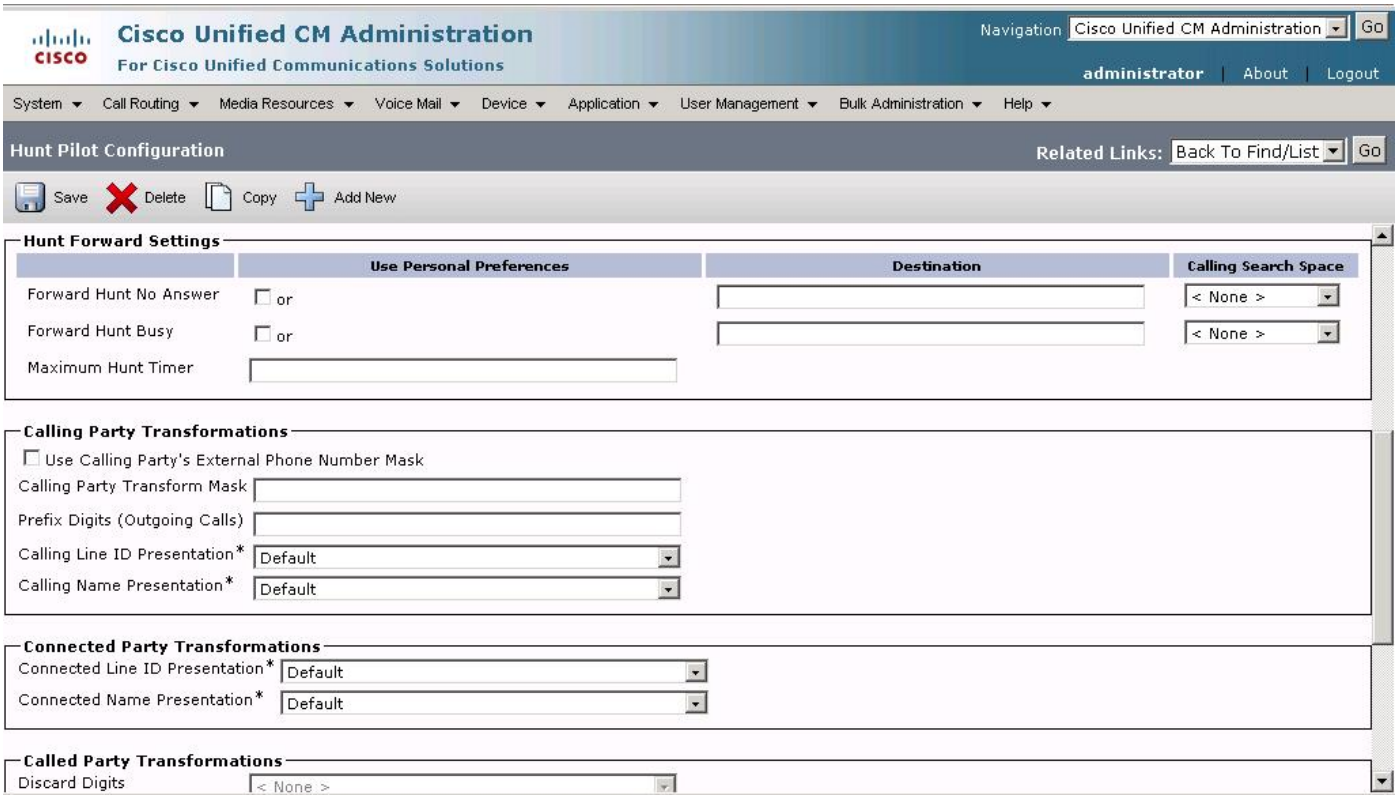
Hunt Pilot 5090 – 2 of 3.



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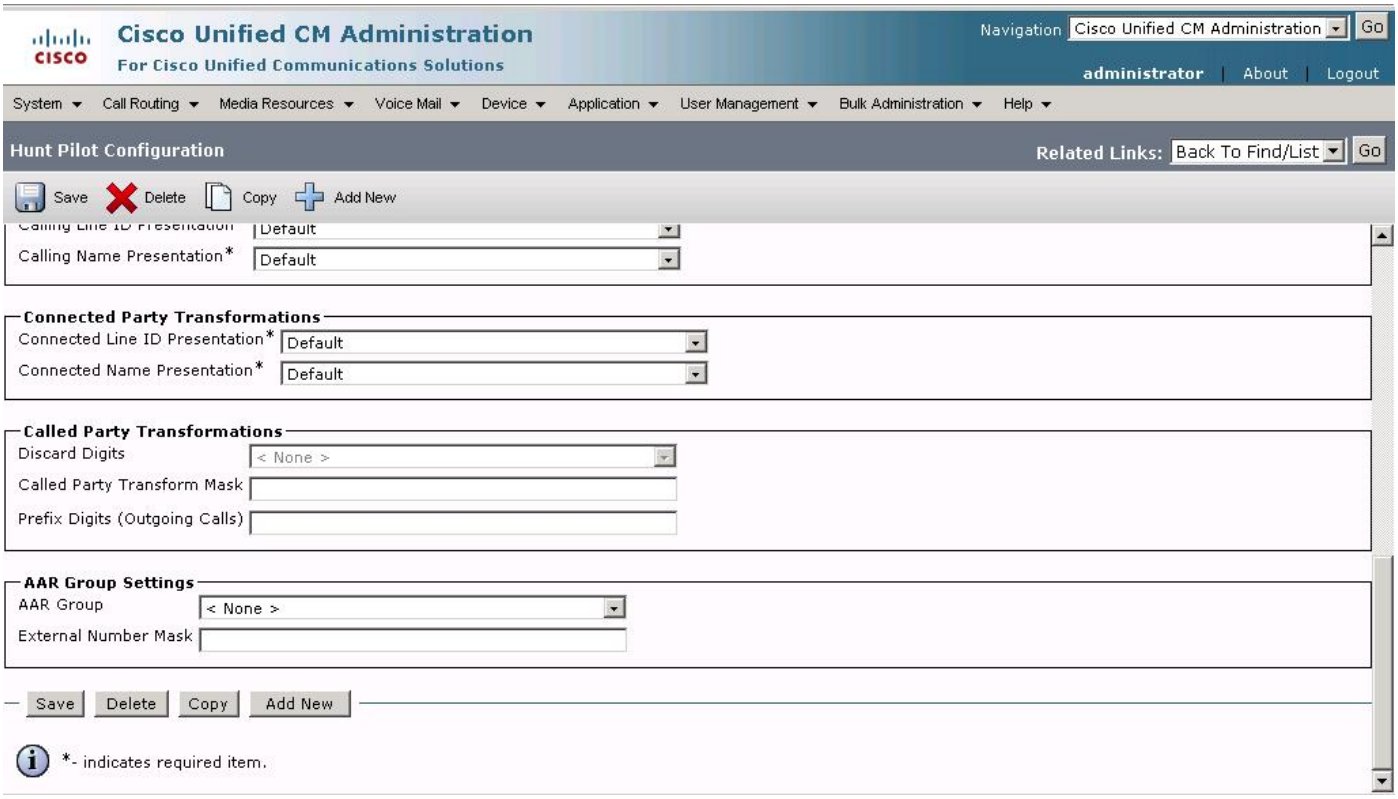
Hunt Pilot 5090 – 3 of 3.



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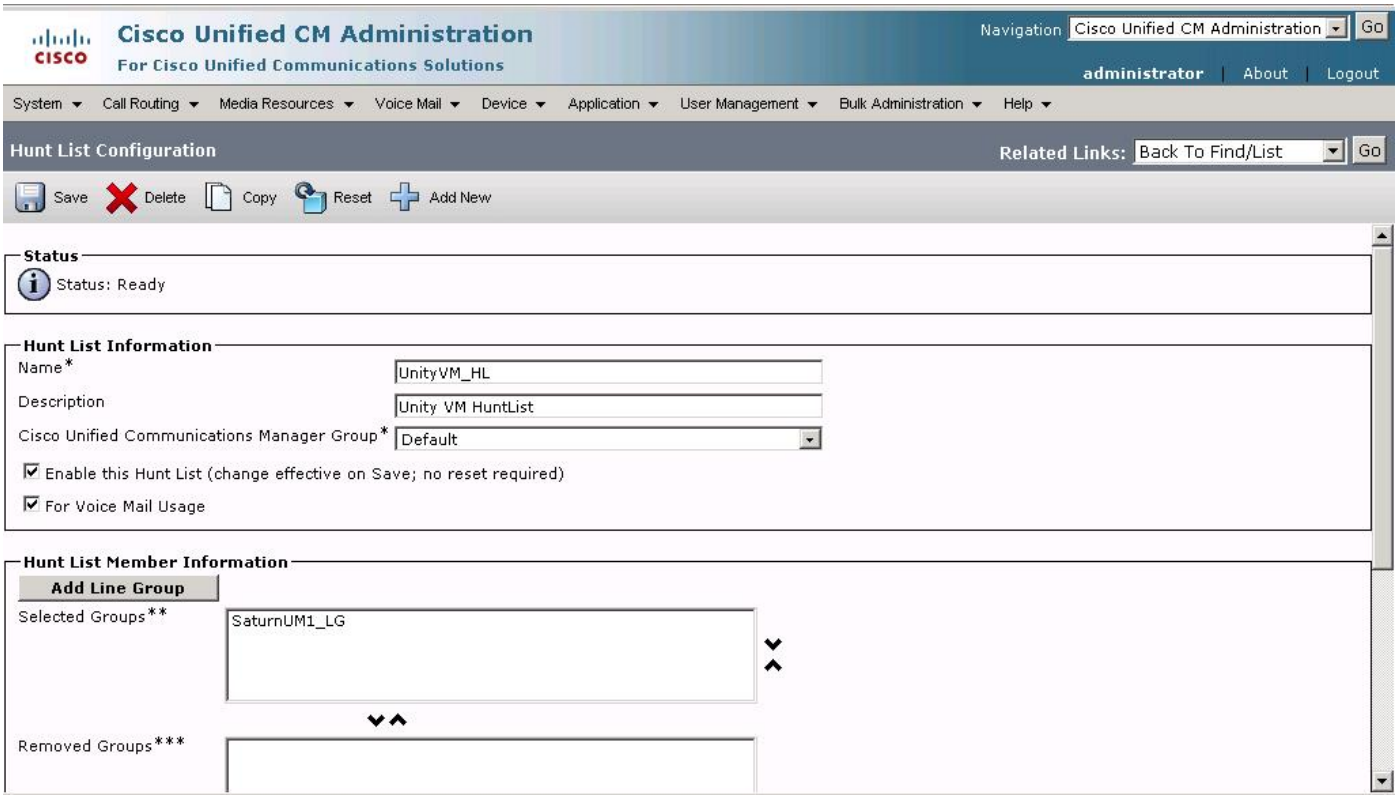
Hunt List – 1 of 2.



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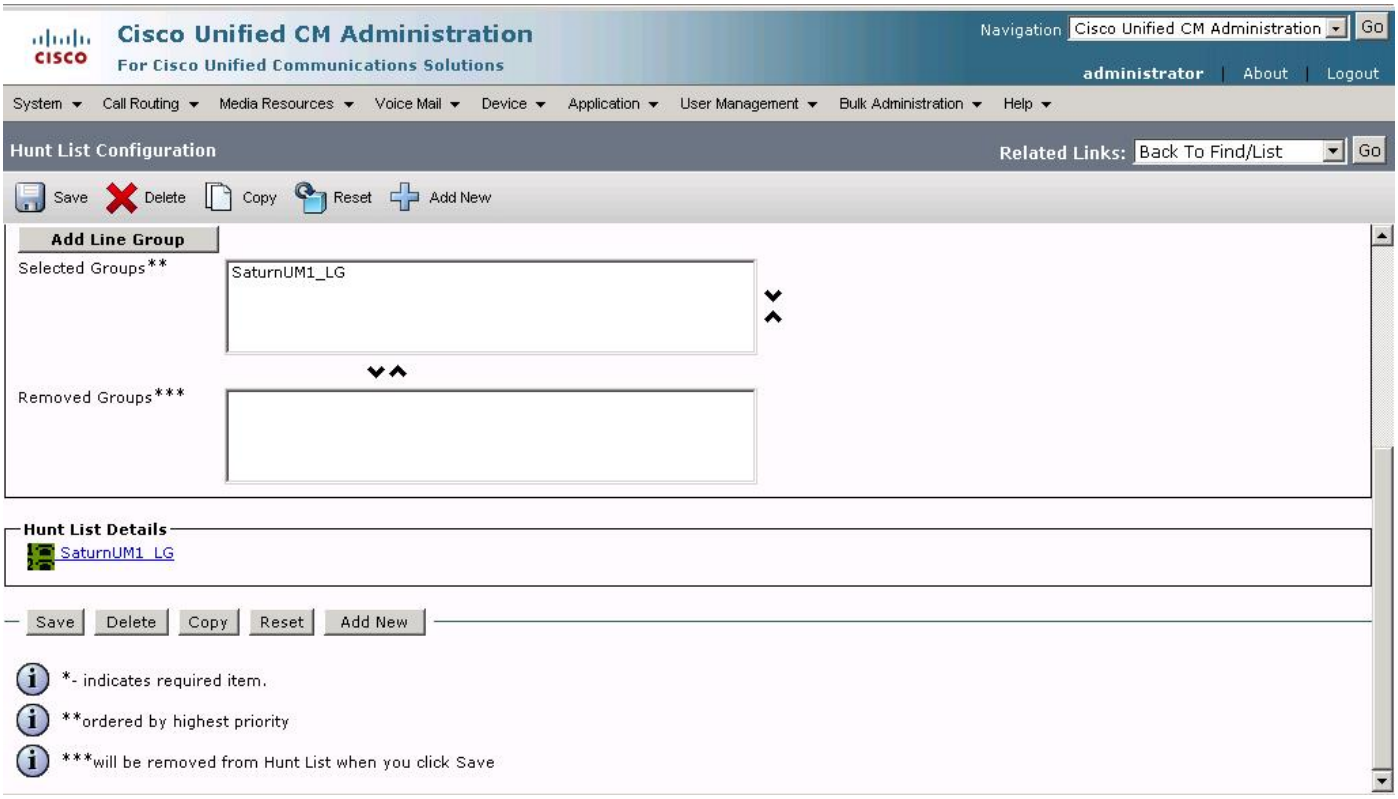
Hunt List – 2 of 2.



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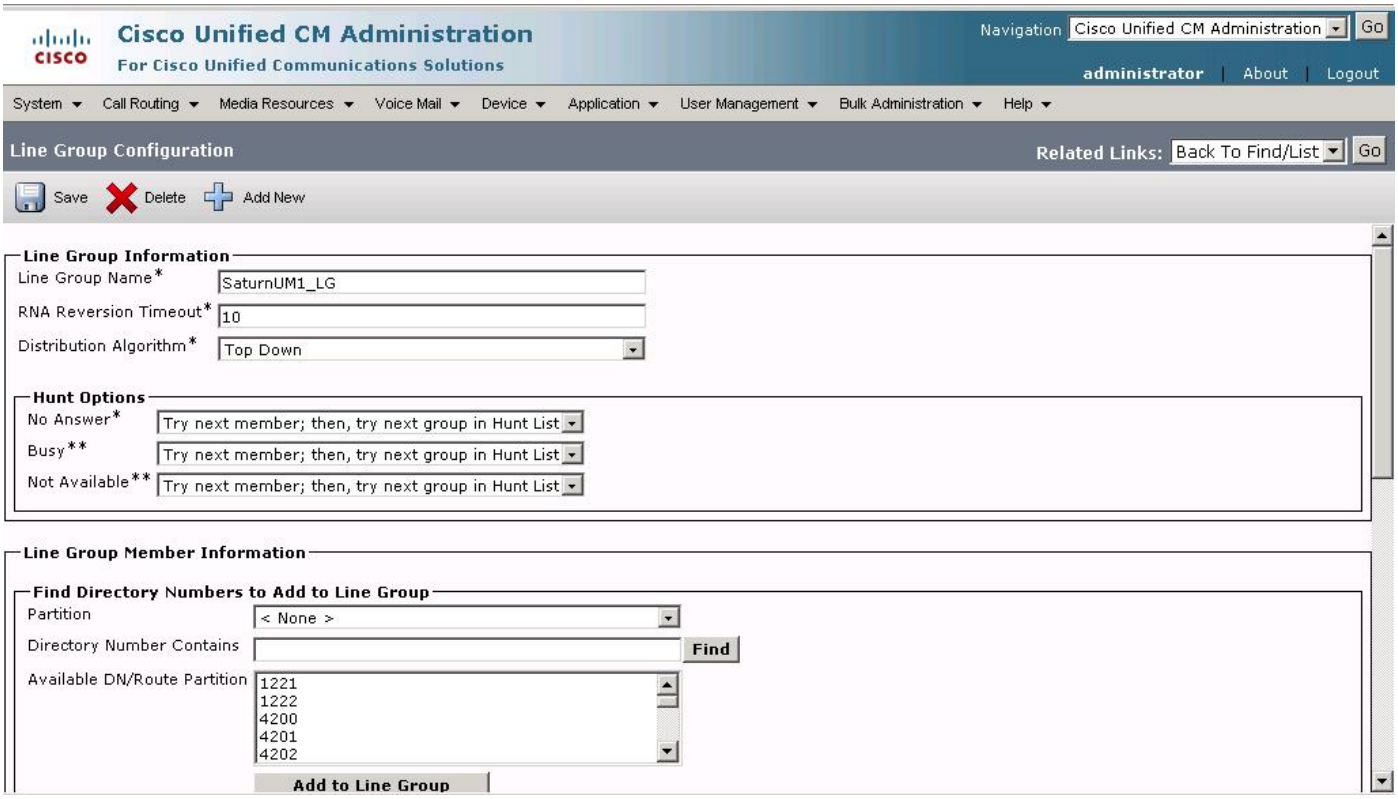
Line Group – 1 of 3.



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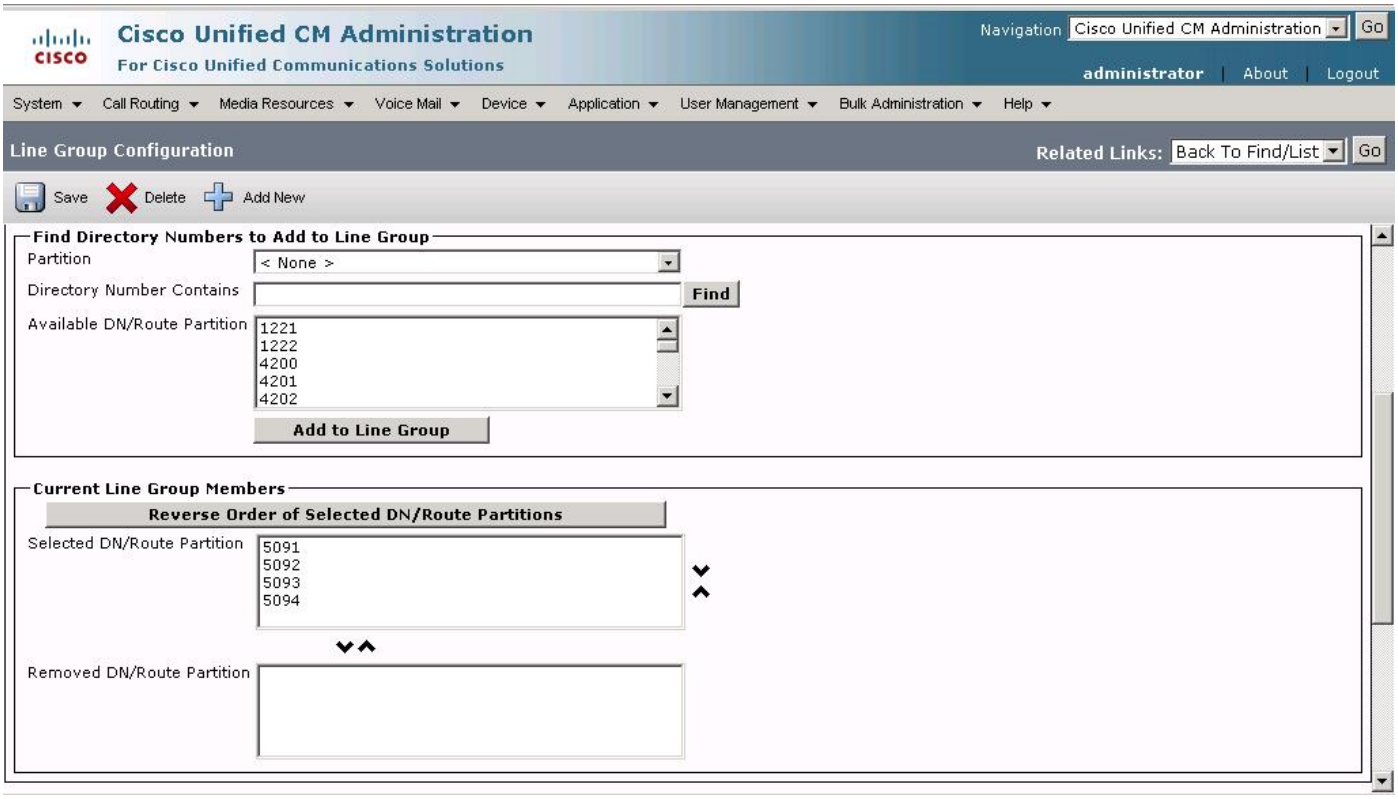
Line Group – 2 of 3.



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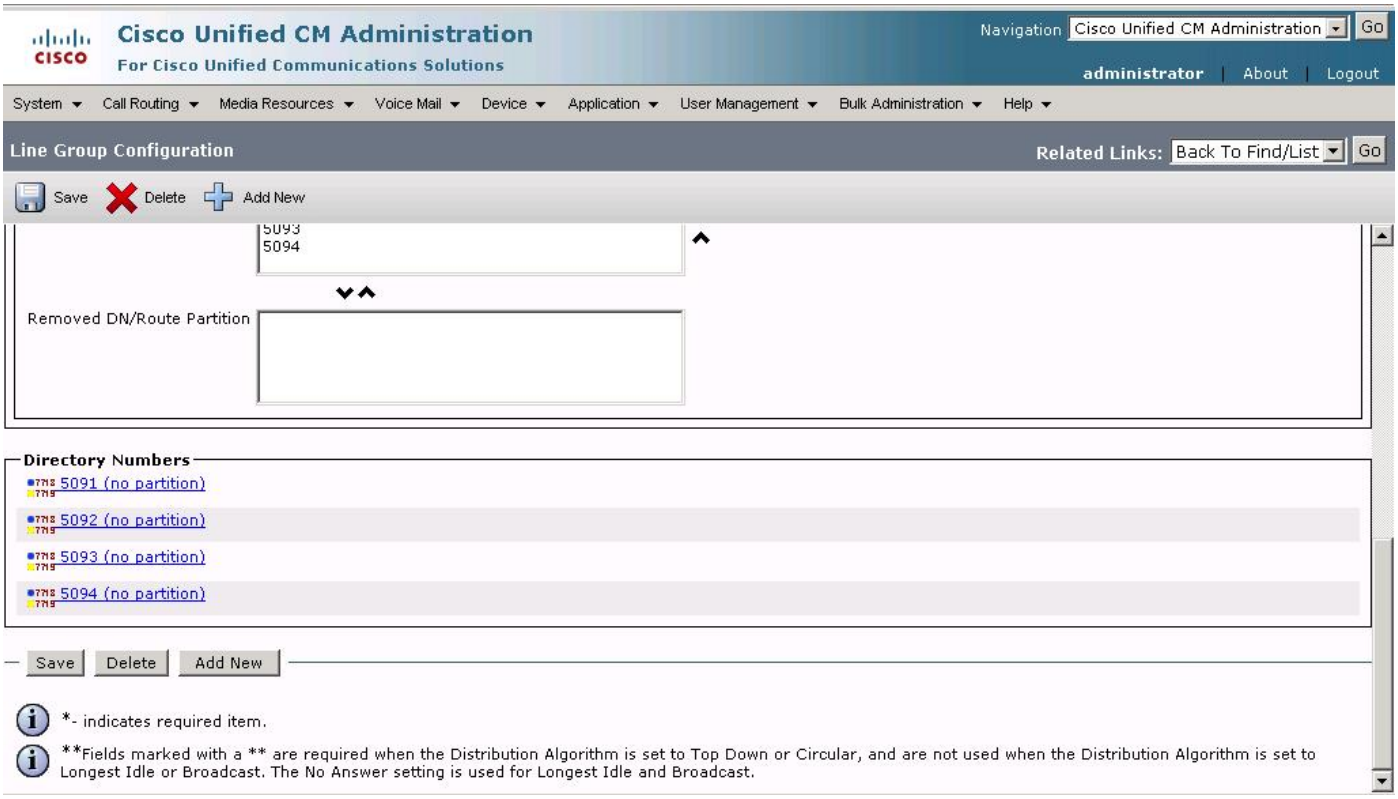
Line Group – 3 of 3.



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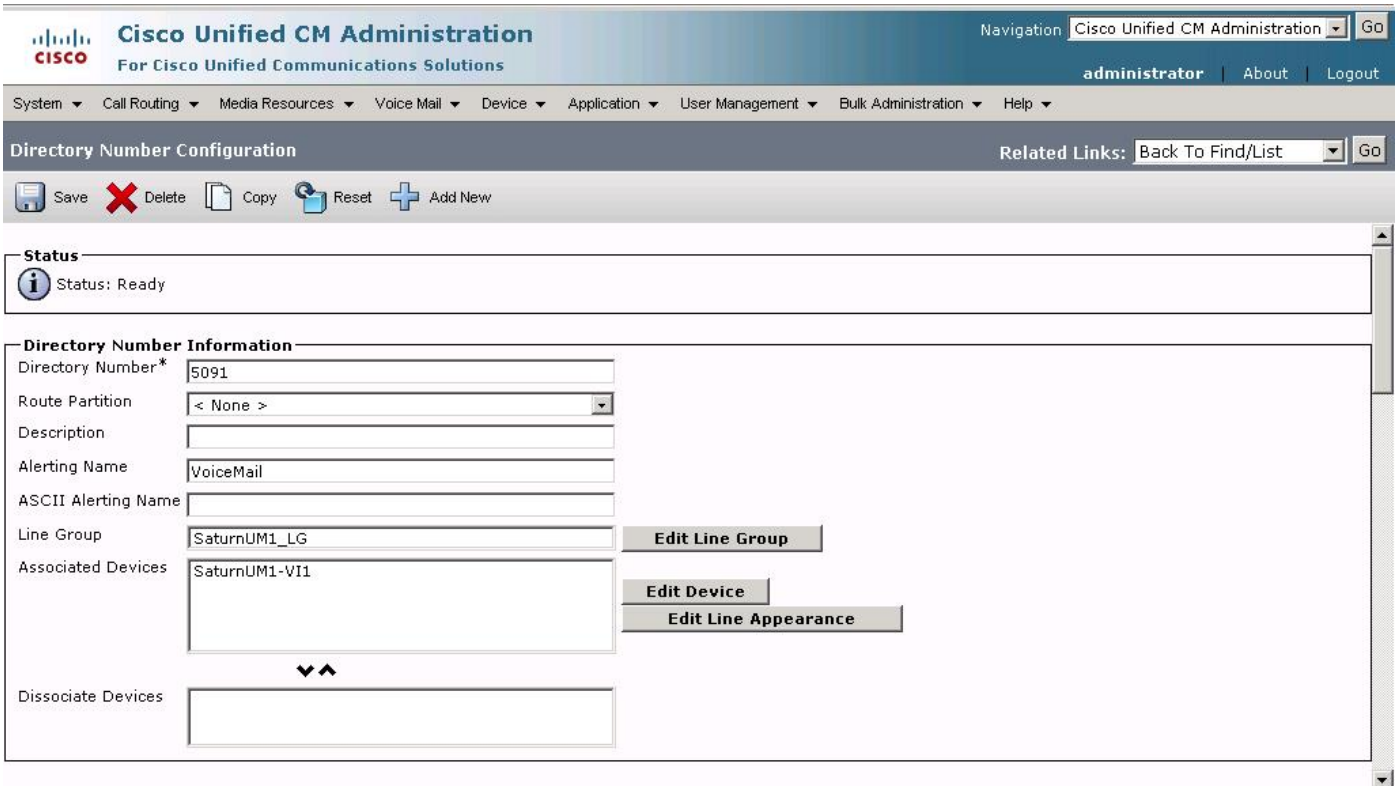
Line Group Line 5091 – 1 of 4.



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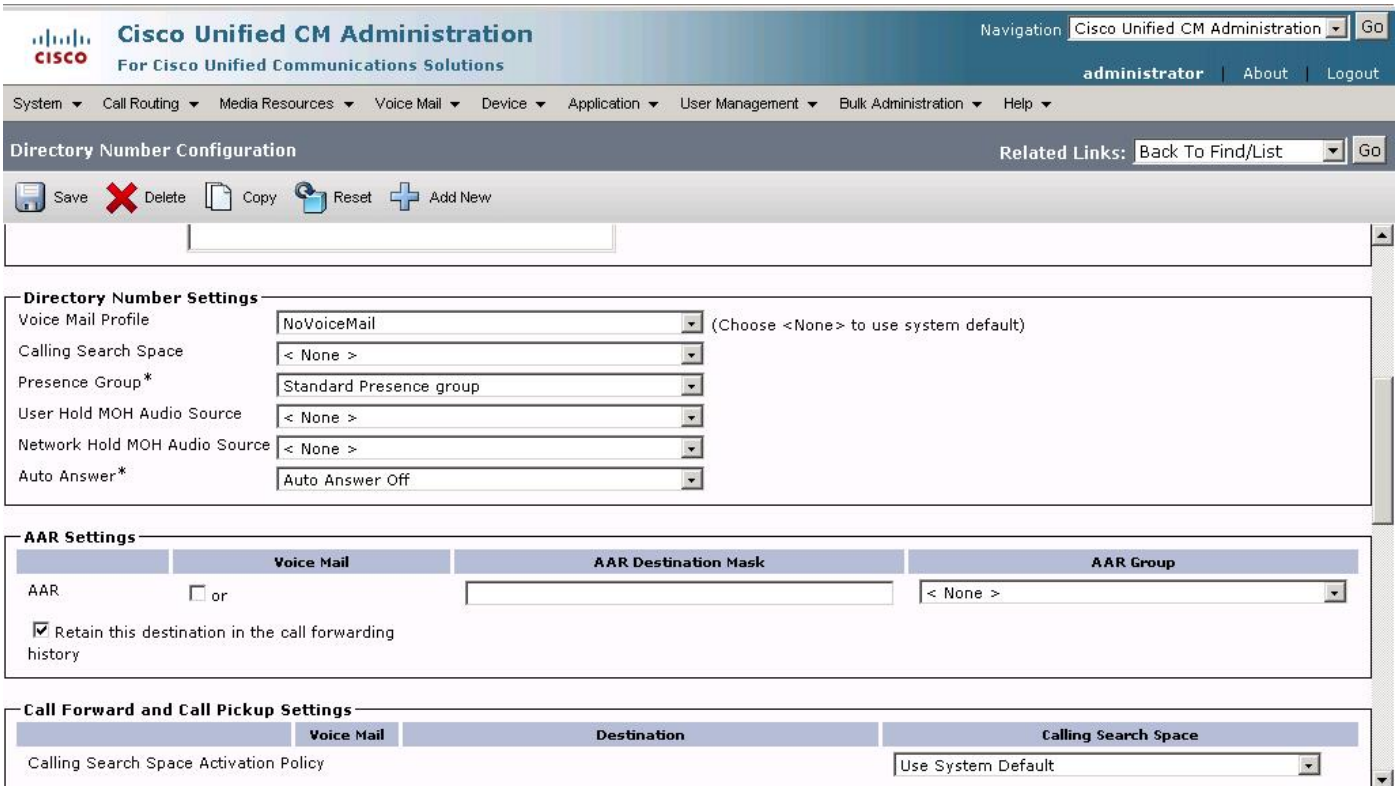
Line Group Line 5091 – 2 of 4.



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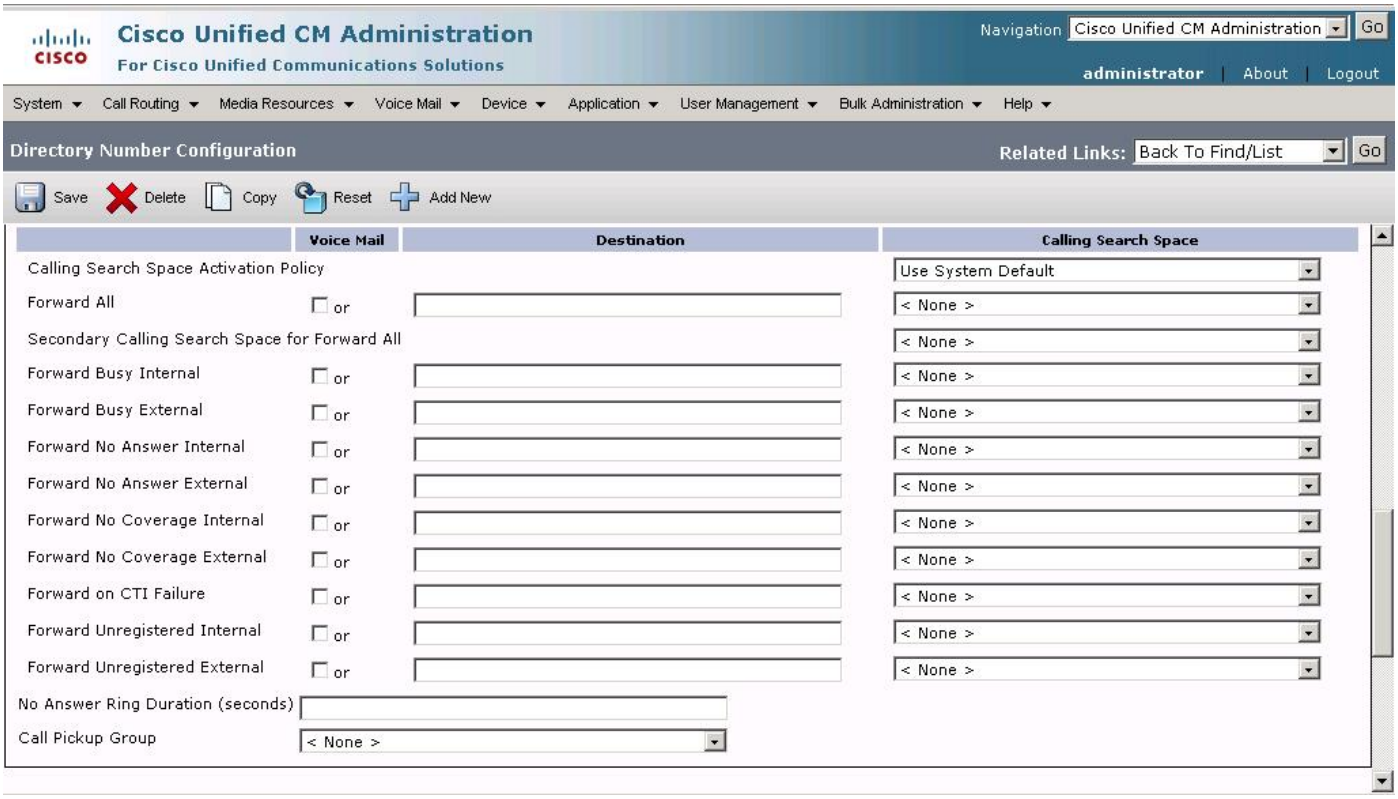
Line Group Line 5091 – 3 of 4.



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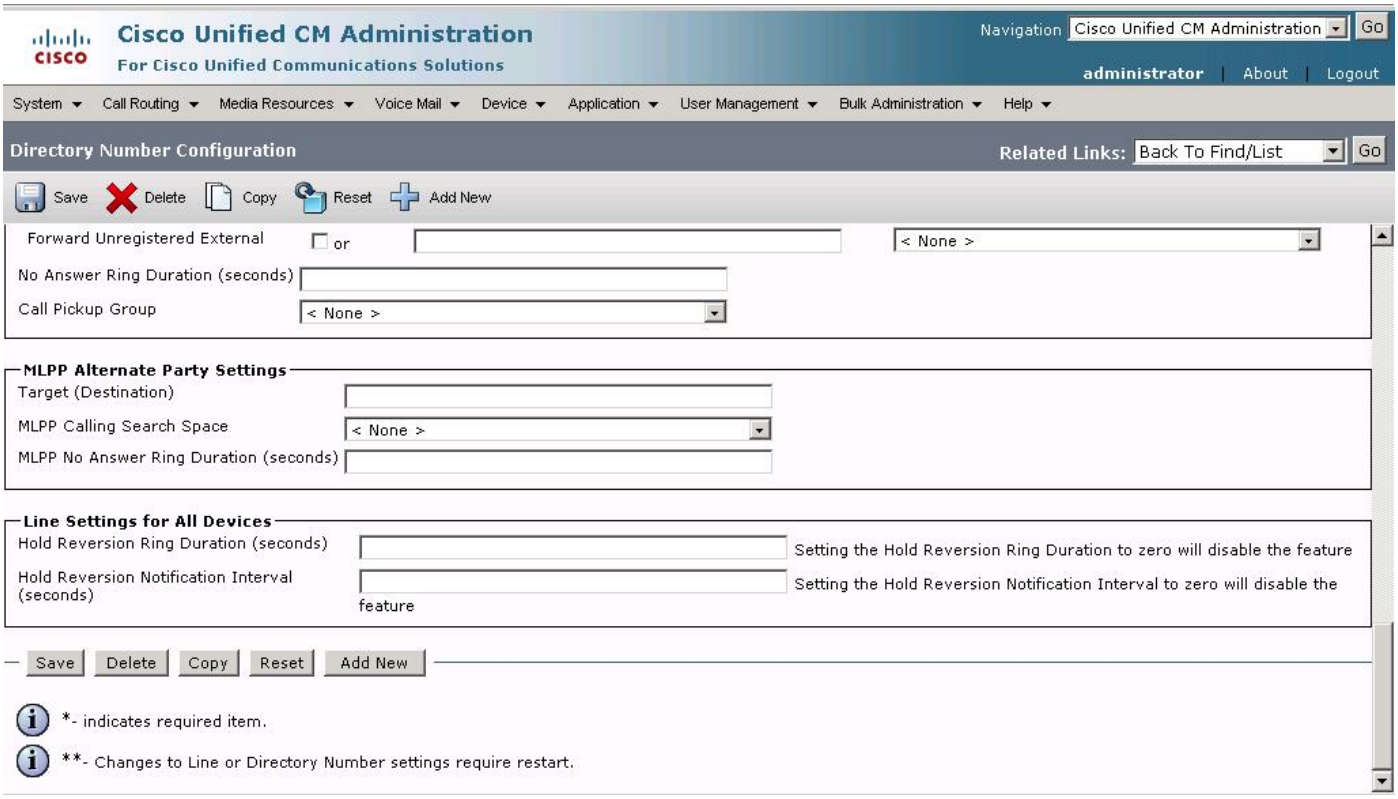
Line Group Line 5091 – 4 of 4.



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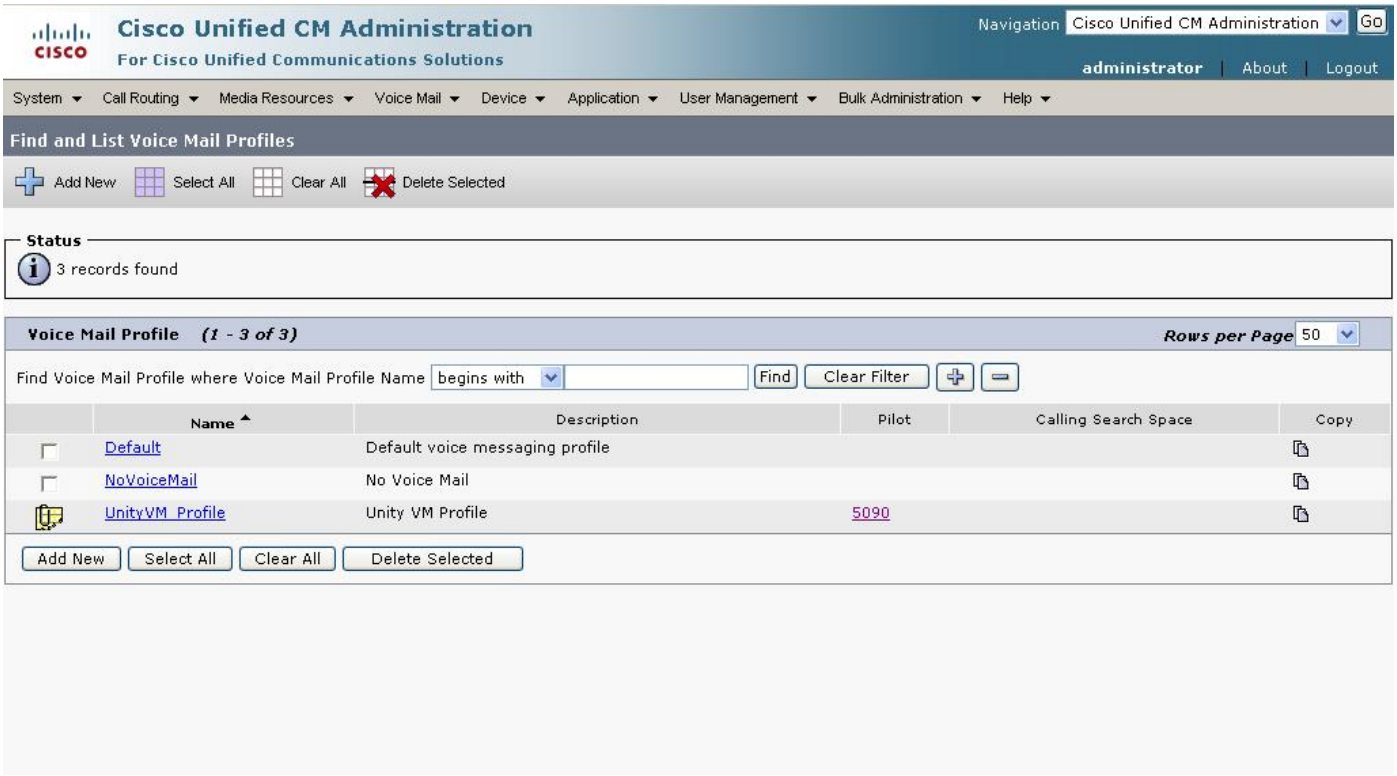
Voice Mail Profiles – 1 of 1.



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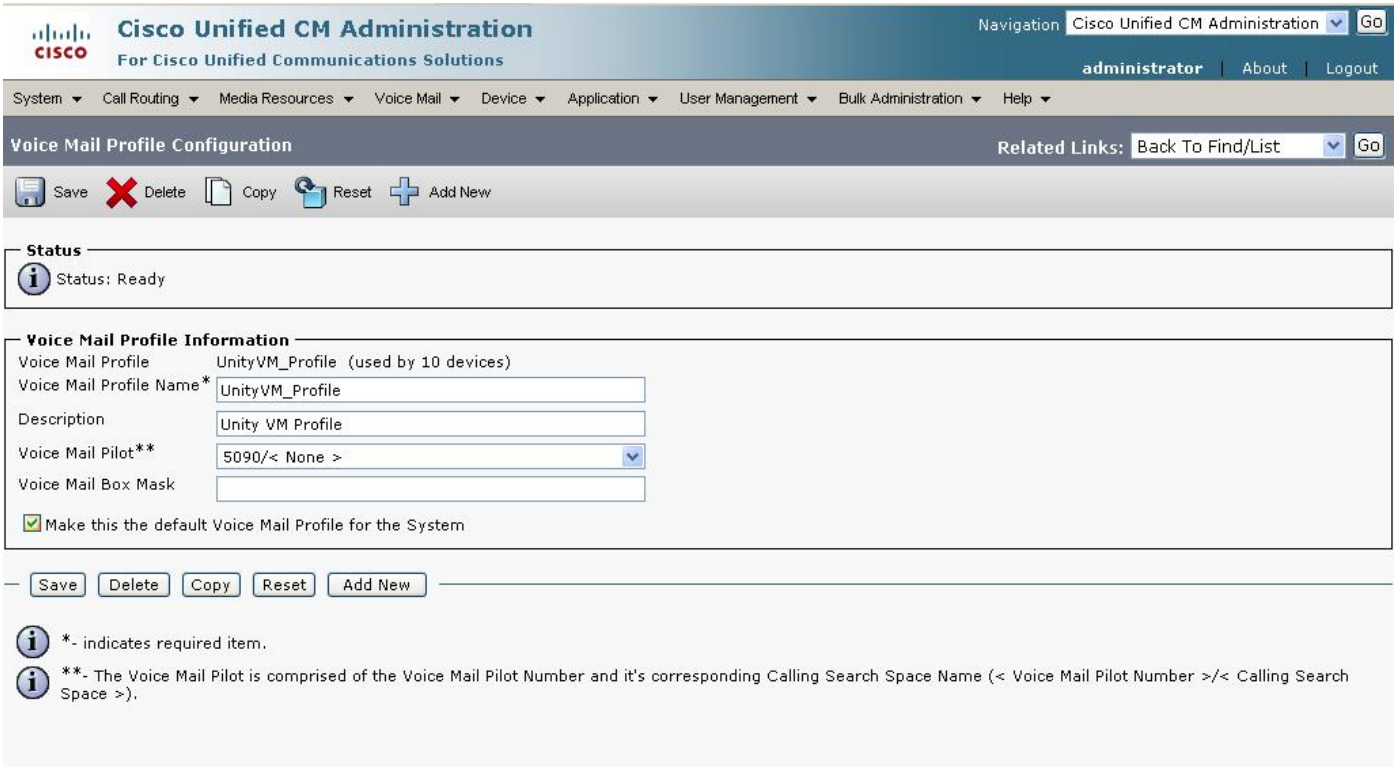
Unity Voice Mail Profile – 1 of 1.



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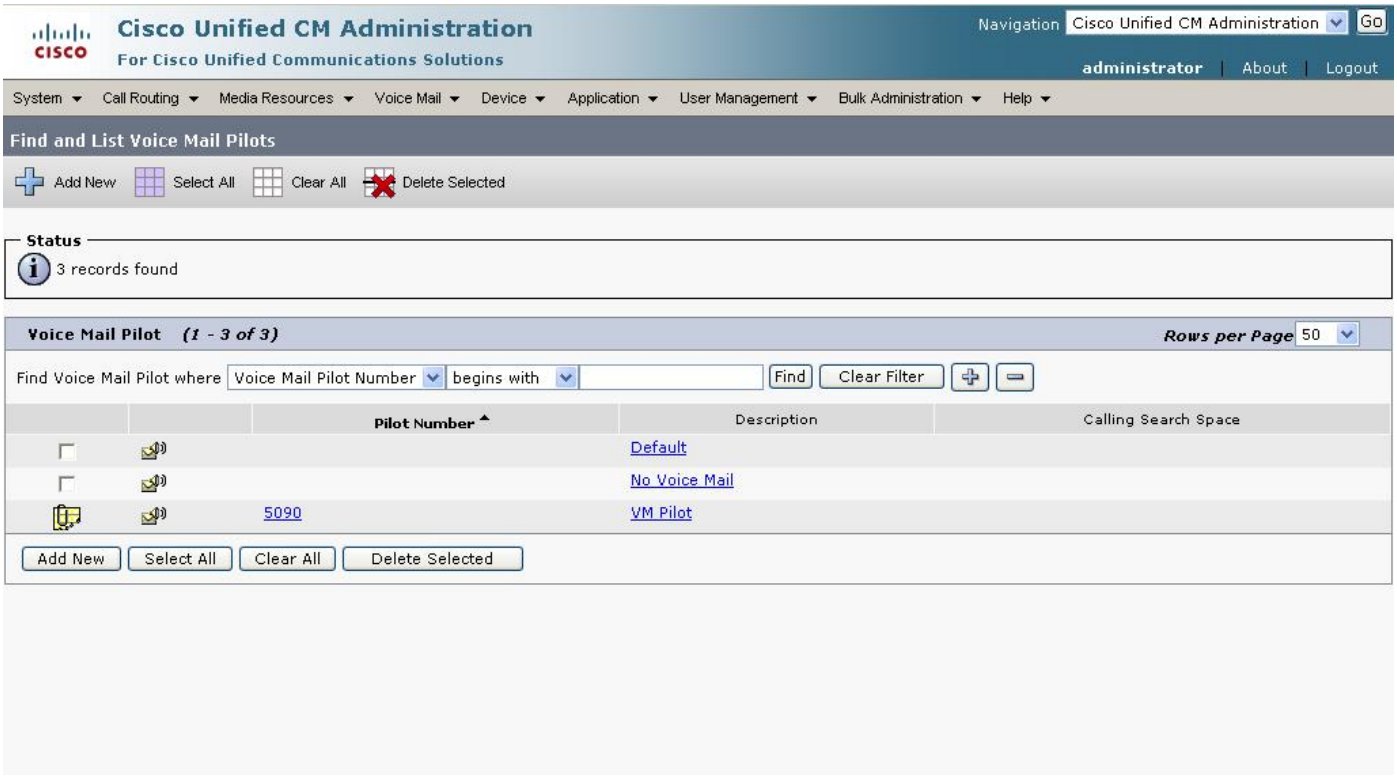
Voice Mail Pilots – 1 of 1.



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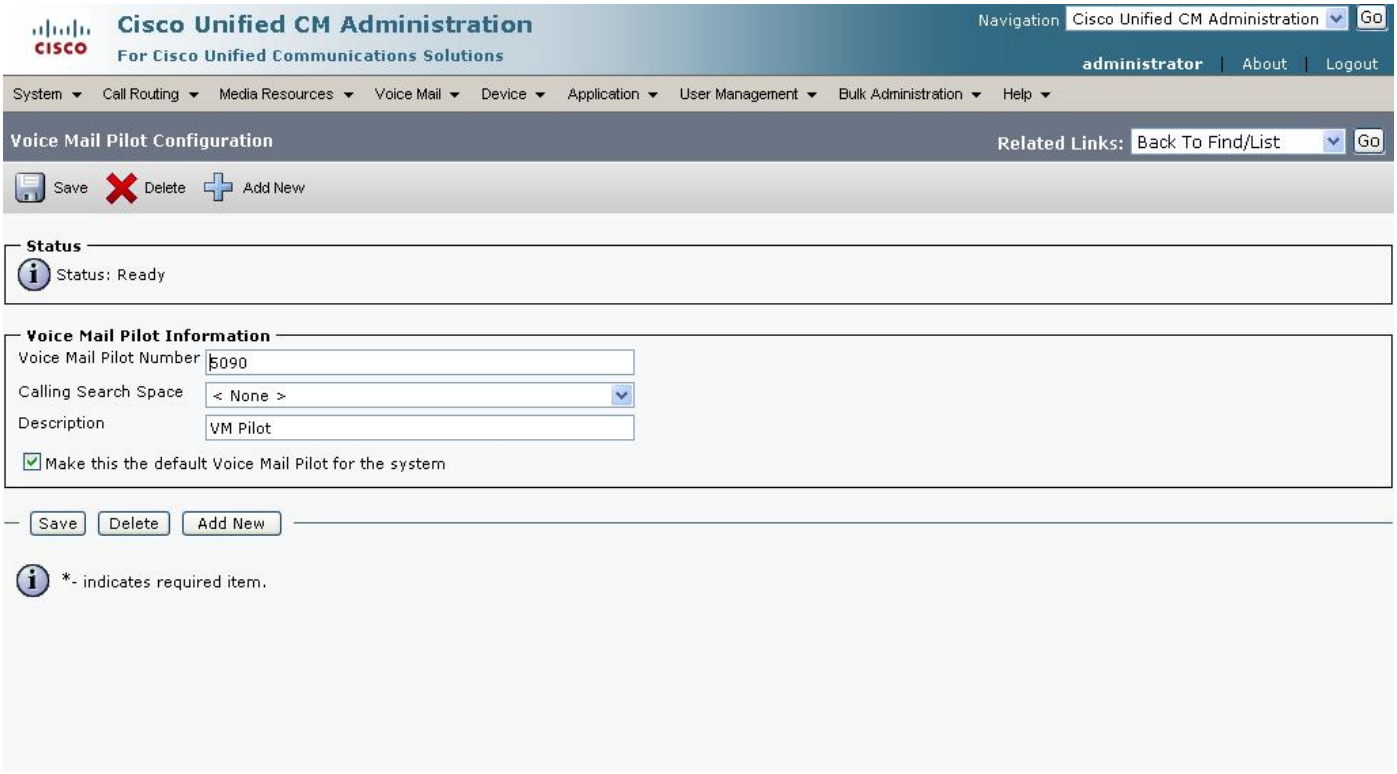
Voice Mail Pilot 5090 – 1 of 1.



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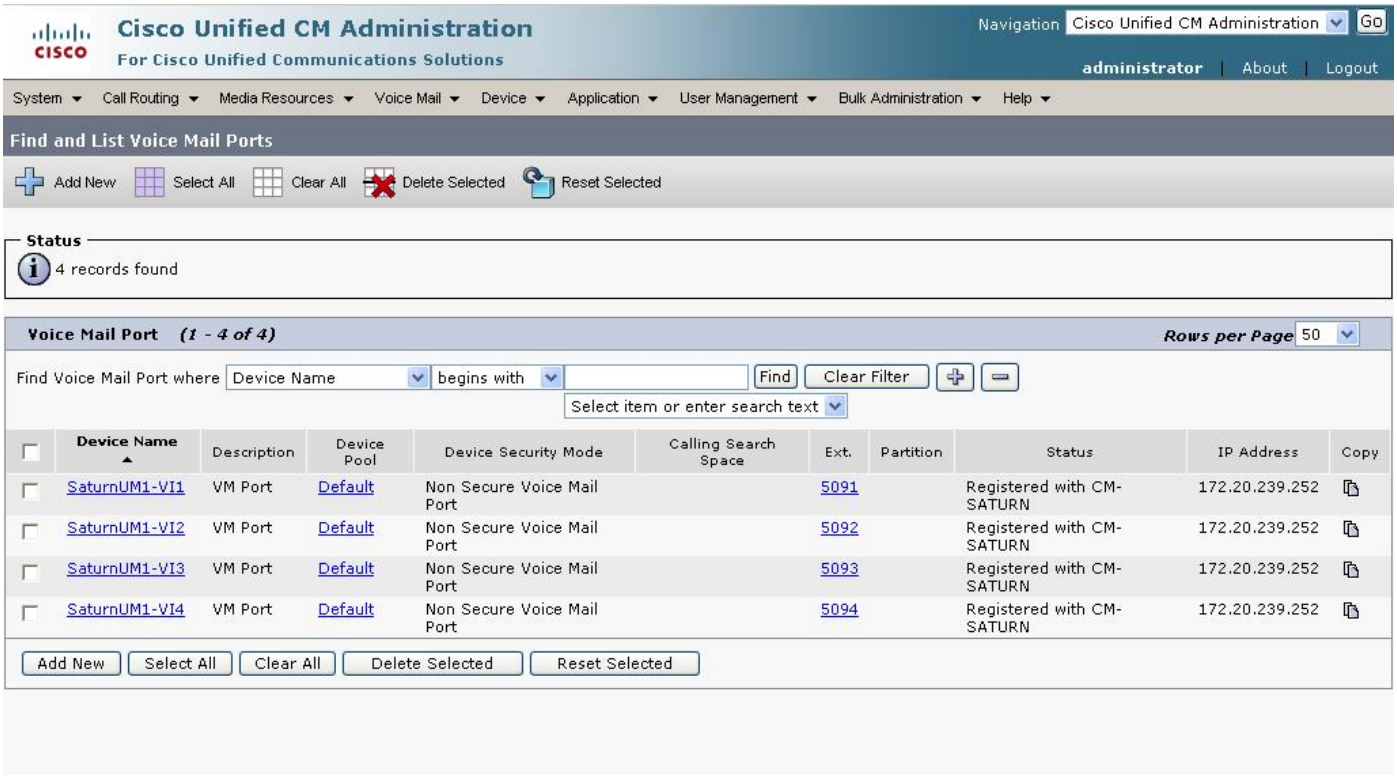
Voice Mail Ports – 1 of 1.



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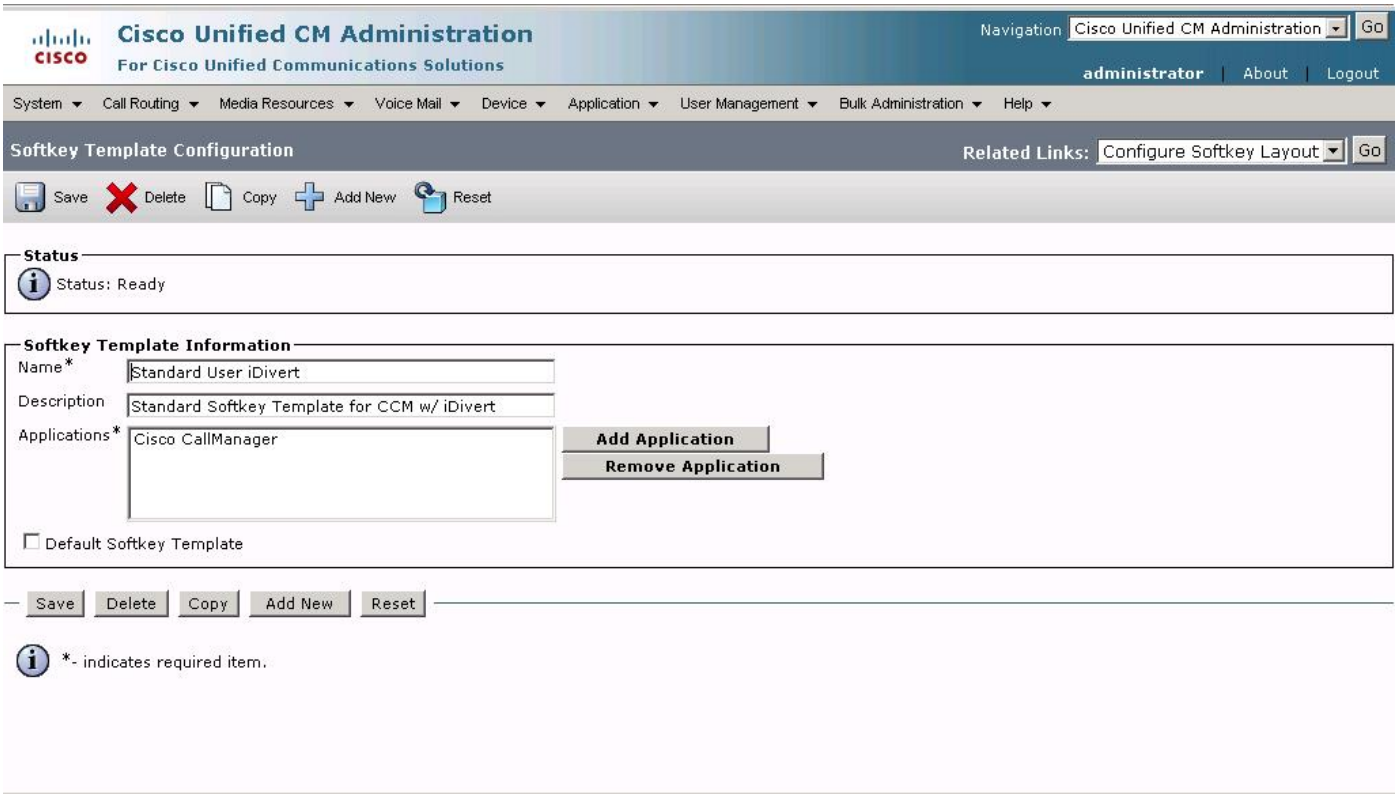
iDivert

iDivert Softkey Template – 1 of 1.



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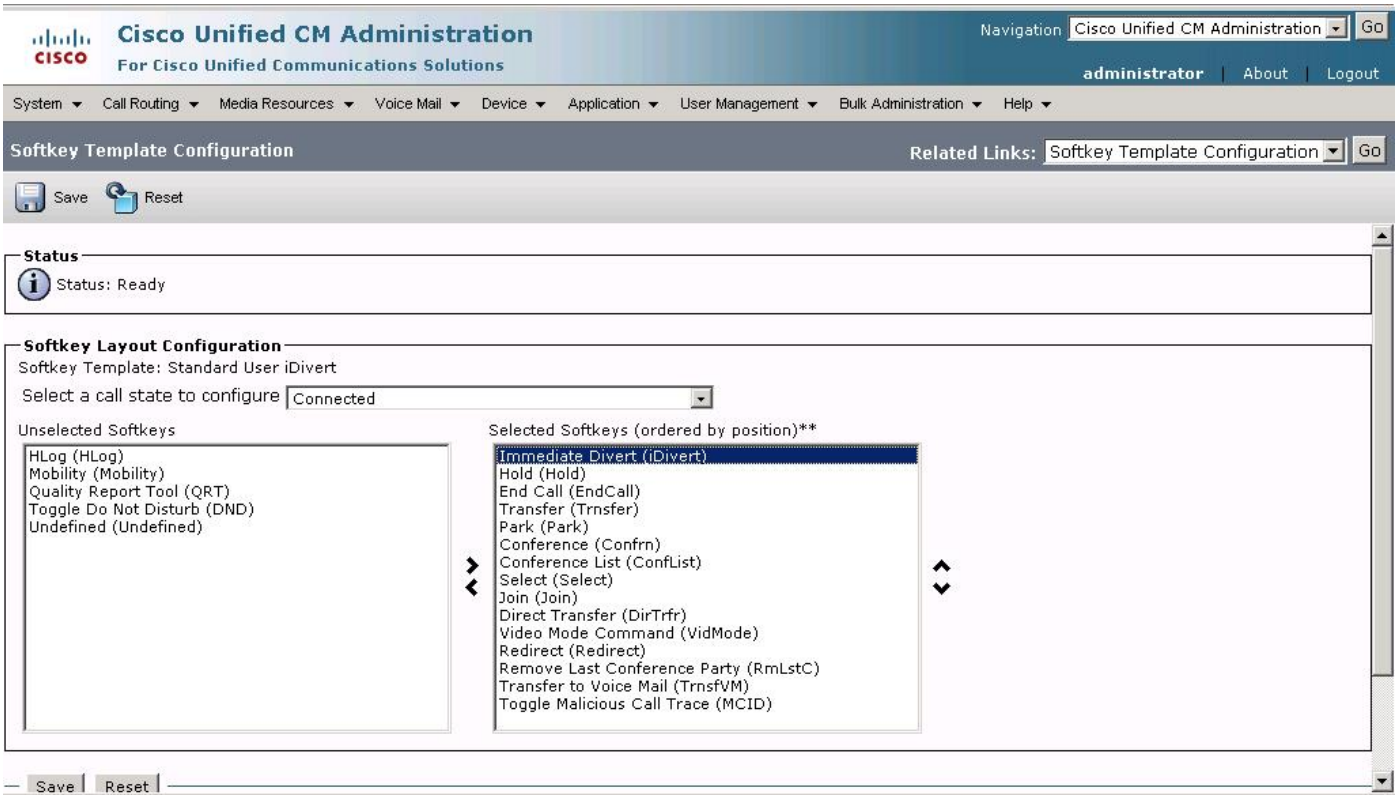
iDivert Softkey Template Layout – Connected – 1 of 1.



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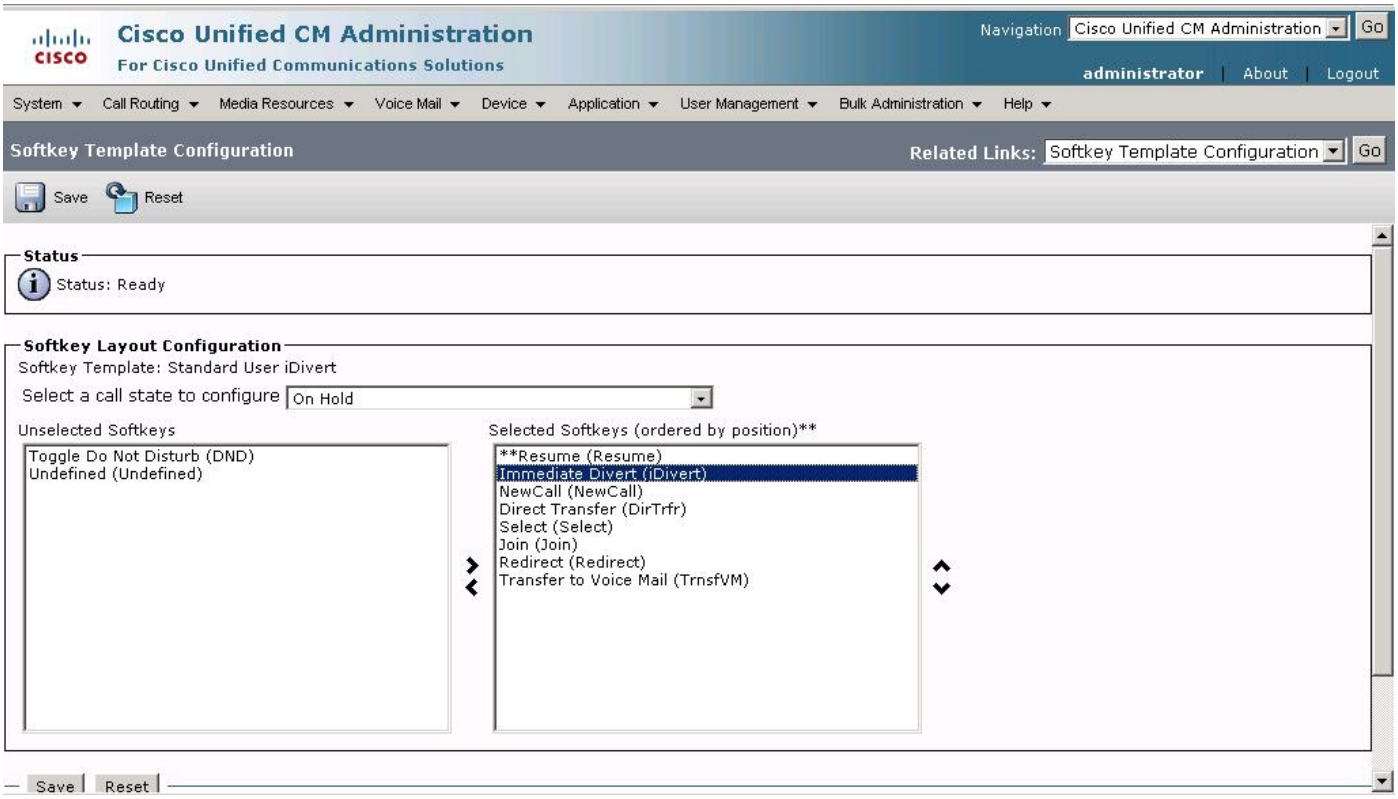
iDivert Softkey Template Layout – Hold – 1 of 1.



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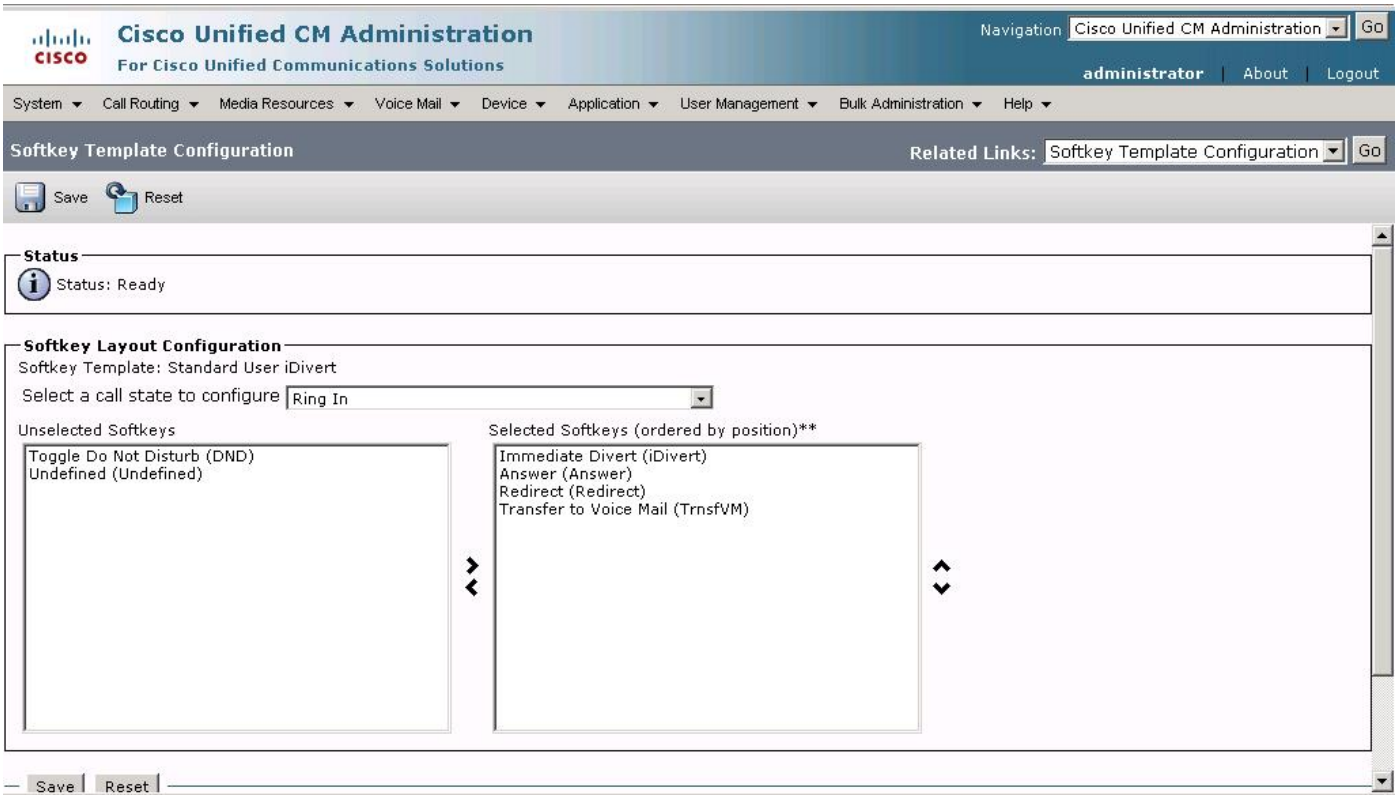
iDivert Softkey Template Layout – Ring in – 1 of 1.



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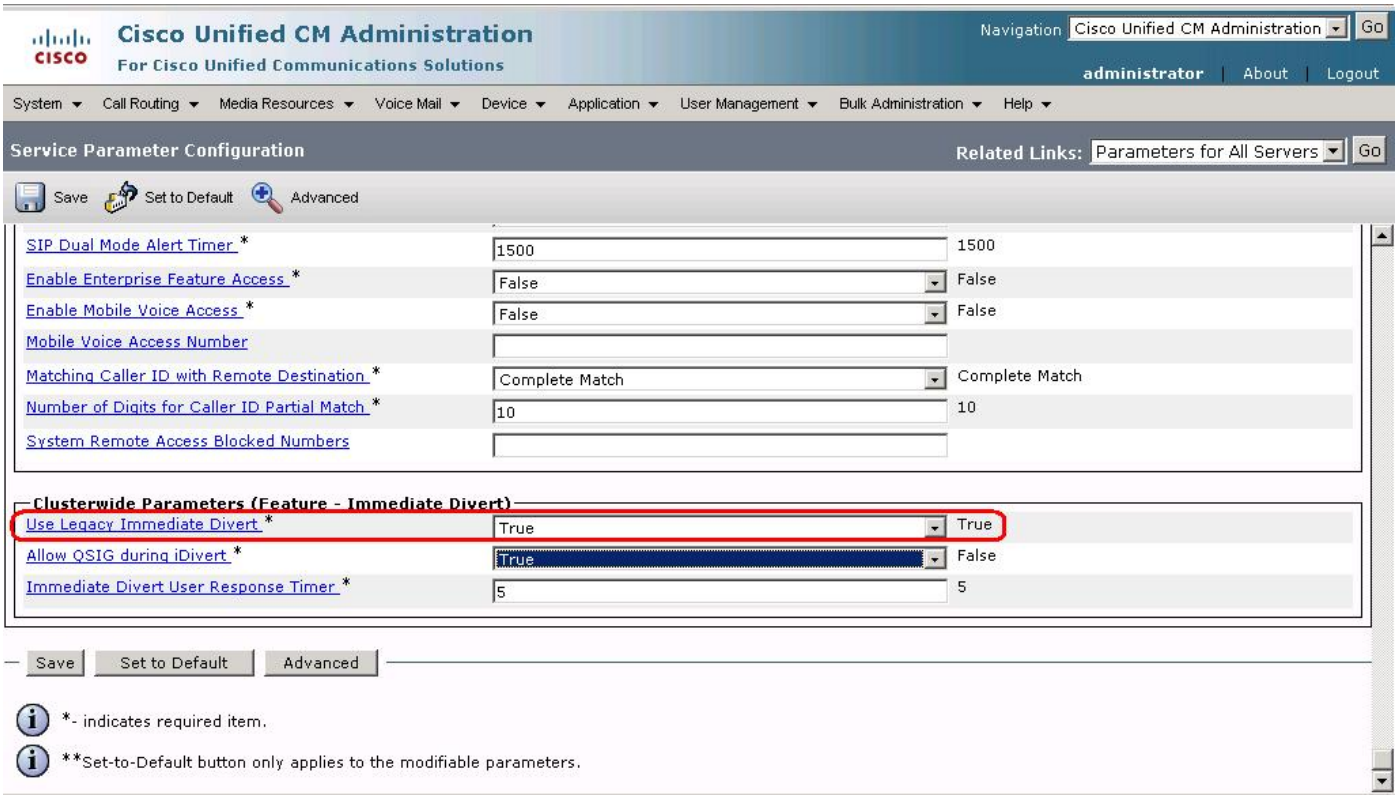
iDivert Service Parameters set for Legacy – 1 of 1.



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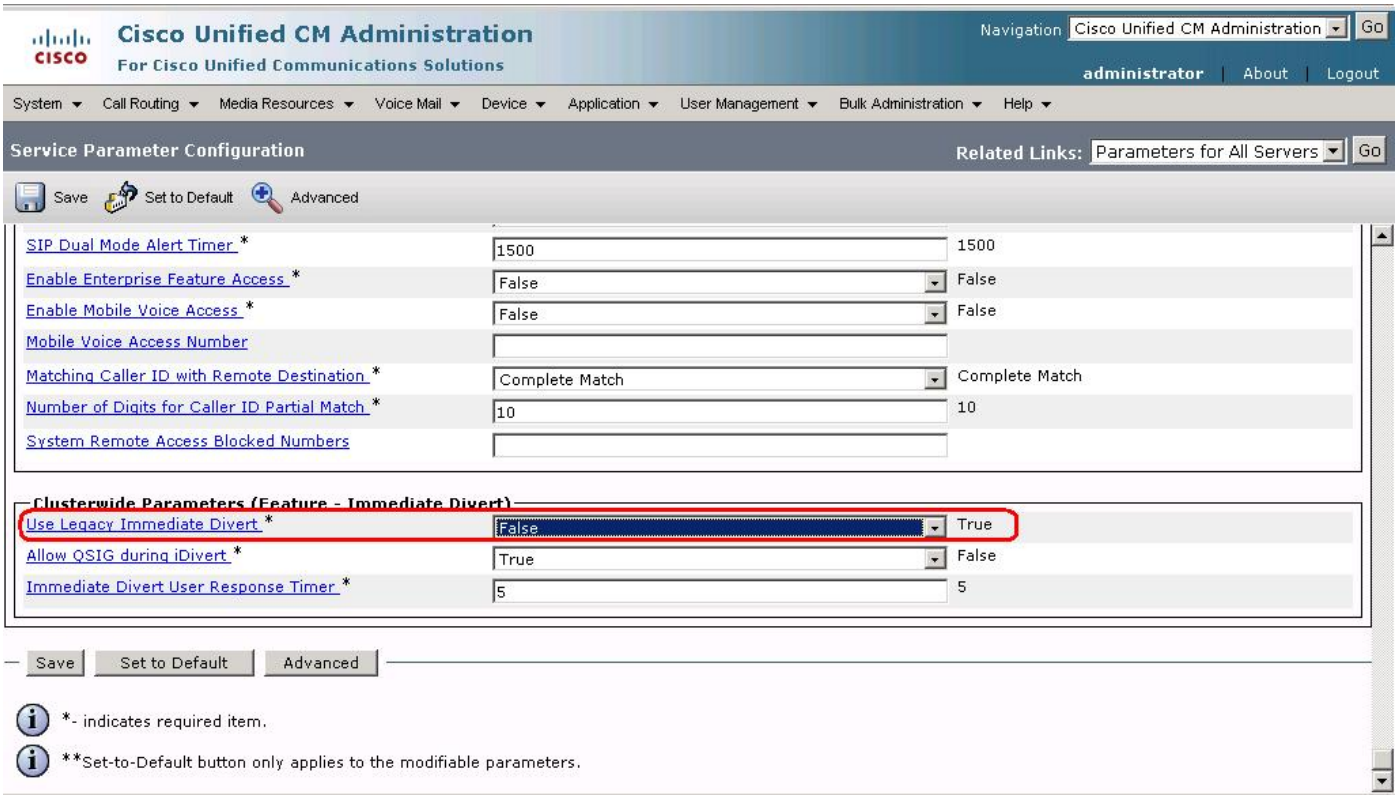
iDivert Service Parameters set for *50 (data-pass-through) – 1 of 1.



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sho ver

Cisco IOS Software, 2800 Software (C2800NM-IPVOICE-M), Version 12.4(11)T, RELEASE SOFTWARE (fc2)

Technical Support: http://www.cisco.com/techsupport

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Compiled Sat 18-Nov-06 17:16 by prod_rel_team

ROM: System Bootstrap, Version 12.3(8r)T7, RELEASE SOFTWARE (fc1)

2851_pbx uptime is 4 weeks, 1 minute

System returned to ROM by power-on

System image file is "flash:c2800nm-ipvoice-mz.124-11.T.bin"

Cisco 2851 (revision 53.51) with 251904K/10240K bytes of memory.

Processor board ID FTX1002C063

2 Gigabit Ethernet interfaces

49 Serial interfaces

2 Channelized E1/PRI ports

DRAM configuration is 64 bits wide with parity enabled.

239K bytes of non-volatile configuration memory.

62720K bytes of ATA CompactFlash (Read/Write)

Configuration register is 0x2102

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2851_pbx# show run

Building configuration...

Current configuration : 3397 bytes

!

version 12.4

service timestamps debug datetime msec

service timestamps log datetime msec

no service password-encryption

!

hostname 2851_pbx

!

boot-start-marker

boot-end-marker

!

logging buffered 1000000

enable secret 5 1Aofo$VpNFzm5wFXJFI.udPvRnm/

enable password cisco

!

no aaa new-model

network-clock-participate slot 1

ip tcp synwait-time 13

!

!

ip cef

!

no ip domain lookup

ip host CM-SATURN 172.20.235.254

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```
ip name-server 172.20.235.254
multilink bundle-name authenticated
!
isdn switch-type primary-qsig
isdn gateway-max-interworking
!
voice-card 0
 no dspfarm
!
voice-card 1
 dspfarm
!
!
!
!
username pbx privilege 15 secret 5 $1$Dby8$s6cwlUG35kFpoBqcoZocH/
username cisco password 0 cisco
!
!
controller E1 1/0/0
 pri-group timeslots 1-31 service mgcp
!
controller E1 1/0/1
 pri-group timeslots 1-18 service mgcp
!
!
!
!
interface GigabitEthernet0/0
```

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```
description $ETH-LAN$$ETH-SW-LAUNCH$$INTF-INFO-GE 0/0$
 ip address 172.20.33.128 255.255.255.0
 duplex auto
 speed auto
!
interface GigabitEthernet0/1
 no ip address
 shutdown
 duplex auto
 speed auto
!
interface Serial1/0/0:15
 no ip address
 encapsulation hdlc
 isdn switch-type primary-qsig
 isdn incoming-voice voice
 isdn bind-l3 ccm-manager
 isdn bchan-number-order ascending
 no cdp enable
!
interface Serial1/0/1:15
 no ip address
 encapsulation hdlc
 isdn switch-type primary-qsig
 isdn incoming-voice voice
 isdn bind-l3 ccm-manager
 isdn bchan-number-order ascending
 no cdp enable
!
```

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```
ip route 0.0.0.0 0.0.0.0 GigabitEthernet0/0
ip route 0.0.0.0 0.0.0.0 172.20.33.1
!
!
ip http server
ip http authentication local
ip http timeout-policy idle 5 life 86400 requests 10000
!
!
!
!
control-plane
!
!
!
voice-port 1/0/0:15
 echo-cancel coverage 24
 voice-port 1/0/1:15
 echo-cancel coverage 24
!
ccm-manager mgcp
ccm-manager music-on-hold
ccm-manager config server 172.20.235.254
ccm-manager config
!
mgcp
mgcp call-agent CM-SATURN 2427 service-type mgcp version 0.1
mgcp dtmf-relay voip codec all mode out-of-band
mgcp rtp unreachable timeout 1000 action notify
```

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mgcp modem passthrough voip mode nse

mgcp package-capability rtp-package

no mgcp package-capability res-package

mgcp package-capability sst-package

no mgcp package-capability fxr-package

mgcp package-capability pre-package

no mgcp timer receive-rtcp

mgcp sdp simple

mgcp fax t38 inhibit

mgcp rtp payload-type g726r16 static

mgcp profile default

!

!

dial-peer cor custom

!

!

!

!

banner login ^C

Cisco Router and Security Device Manager (SDM) is installed on this device.

This feature requires the one-time use of the username "cisco"

with the password "cisco".

Please change these publicly known initial credentials using SDM or the Cisco IOS CLI.

Here are the Cisco IOS commands.

username <myuser> privilege 15 secret 0 <mypassword>

no username cisco

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Replace <myuser> and <mypassword> with the username and password you want to use.

For more information about SDM please follow the instructions in the QUICK START

GUIDE for your router or go to http://www.cisco.com/go/sdm

---

^C

!

line con 0

line aux 0

line vty 0 4

 privilege level 15

 login local

 transport input telnet

line vty 5 15

 privilege level 15

 login local

 transport input telnet

!

scheduler allocate 20000 1000

!

end

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Acronyms

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

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