

Ericsson MD110 BC13 SP3 using E1 ISO 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 ISO 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 ISO and ISO 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

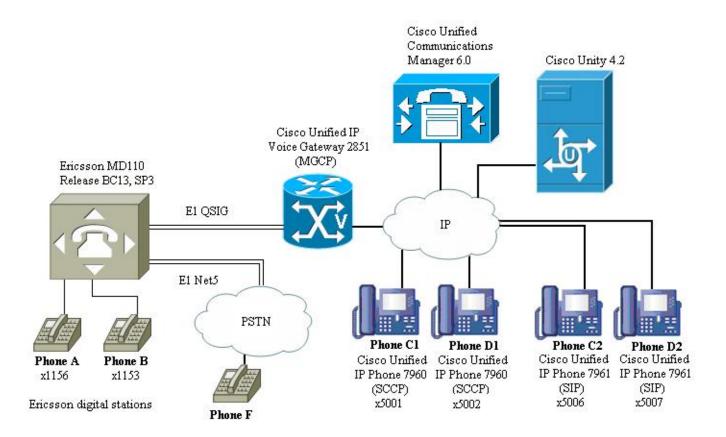
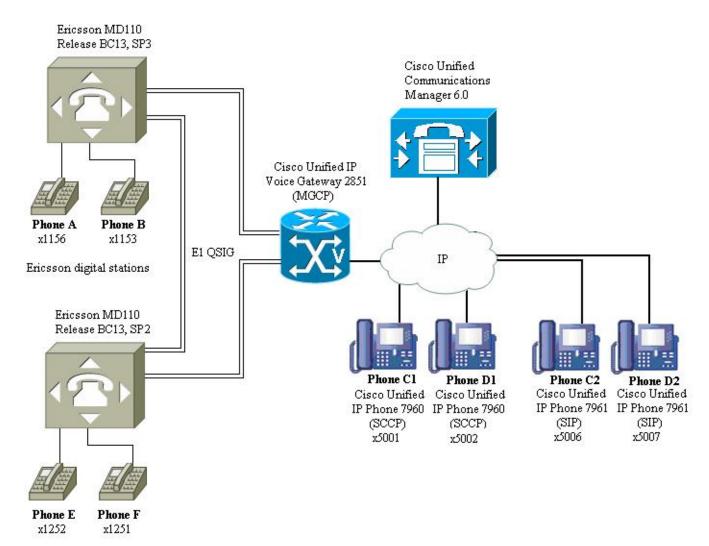




Figure 2. Call Setup for Path Replacement (Route Optimization) in 3 PINX scenario.





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.

On a call that originates from a Ericsson MD110 PBX extension to a Cisco Unified IP Phone (registered on Cisco Unified Communications Manager 6.0) that is forwarded unconditionally or on busy back to a PBX extension on the same PBX, and where Reroute is invoked, the forwarding name is not displayed on the final destination. This is a new limitation of the PBX and was not seen on the previous realease (BC12, SP5).

Call Back – No Reply attempted from the Ericsson MD110 PBX to a Cisco Unified IP Phone (using SCCP and registered on Cisco Unified Communications Manager 6.0) can only be invoked through overlap dialing from the PBX. Both ENBLOC and overlap dialing can be used if the Cisco Unified IP Phone is using SIP. This is due to a timing issue on the PBX. This is a new limitation of the PBX and was not seen on the previous release (BC12, SP5).

For Path Replacement (or Route Optimization) on forward-switched calls in a 3 PINX scenario where proposals come from the the Cisco Unified Communications Manager 6.0 (e.g., from figure 2, C1 calls E, which forwards to A), a Reroute occurs before Path Replacement can take place. This is because the middle Ericsson MD110 PBX proposes a Reroute before the call is joined, even though 'Reroute' is disabled on that PBX. This is a limitation of the PBX and was also seen on the previous release (BC12, SP5). An extraneous call leg is avoided, but it is avoided via Reroute rather than Path Replacement.

For Path Replacement (or Route Optimization) on forward-switched calls in a 3 PINX scenario where the proposal should come from the the Ericsson MD110 PBX (e.g., from figure 2, E calls C1, which forwards to A), there is no proposal and no Path Replacement takes place. The PBX does not invoke Path Replacement on forward switched calls. This is a limitation of the PBX and was also seen on the previous release (BC12, SP5).

MWI LED's are not activated/deactivated when a message is left for a station not residing on the Message Centre PINX. The Ericsson MD110 PBX does not utilize the standard QSIG-MWI code to activate/deactivate MWI LED's at the far-end PINX stations. The PBX utilizes a Manufacturer Specific code across the QSIG connection to support this feature.

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.



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



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 and Network/External (See Limitations)

Call Forward No Reply by Join – Local and Network/External (See Limitations)

 $Call\ Forward\ Unconditional\ by\ Reroute-Network/External$

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)

Features Not Supported

The Ericsson MD110 BC13 SP3 PBX does not support Network Call Forwarding (CFU, CFB, CFNR) by join. It always invokes Reroute on every external CF.

The Ericsson MD110 BC13 SP3 PBX does not support Path Replacement for Call Diversion by Forward Switch.

The Ericsson MD110 BC13 SP3 PBX does not support Q.SIG MWI- Message Waiting Indication (lamp ON, lamp OFF).



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 Ericsson1 node (BC13, SP2) - using routes 50 & 70 only.

< •ROCAP:ROU=ALL;
ROUTE CATEGORY DATA</pre>

ROU	SEL	TRM	SERV	NODG	DIST	DISL	TRAF	SIG	BCAP
10	7110000000700010	4	3110000010	0	30	128	00151515	111110000011	001100
50	7110000000000010	5	3110000011	0	30	128	03151515	111110000031	111111
70	7110000000000010	5	3110000011	0	30	128	03151515	111110000031	111111
100	7110000000000010	5	3110000000	0	30	128	03151515	011111100091	000100

END

For Ericsson2 node (BC13, SP3) – using routes 100 & 101 only.

< *ROCAP:ROU=ALL;
ROUTE CATEGORY DATA</pre>

ROU	SEL	TRM	SERV	NODG	DIST	DISI	TRAF	SIG	BCAP
1	71100000070001		3100000010	0	0 0	128		111110000031	001100
6	211000000070001) 5	0010100010	0	30	128	00151515	211100010050	001100
8	211000000070001) 5	0000100010	0	30	128	00151515	211100010050	001100
11	711000000070001	5 (3110030000	0	30	128	03151515	111110000011	111111
12	711000000070001	5 (3110000000	0	30	128	03151515	111110000011	111111
13	711000000070001) 5	3110000011	0	30	128	00151515	311110000011	101111
39	411000000070001) 5	3110000011	0	30	128	00151515	311110000031	001100
40	211000000070001	5 (0010000011	0	30	128	00151515	111110000031	001100
100	711000000000001	0 5	3110000011	0	30	128	03151515	111110000031	111111
101	711000000000001	0 5	3110000011	0	30	128	03151515	111110000031	111111



Route Data Initiate

For Ericsson1 node

E1-PRI QSIG Route Protocol Characteristics, protocol side "Network"
<RODAP:ROU=50;</pre>

ROUTE DATA

ROU TYPE VARC VARI VARO FILTER

50 SL60 H'00000310 H'55440000 H'06300000 NO

END

E1-PRI QSIG Route Protocol Characteristics, protocol side "Network"

<RODAP:ROU=70;

ROUTE DATA

ROU TYPE VARC VARI VARO FILTER

70 SL60 H'00000310 H'55440000 H'06300000 NO

END

For Ericsson2 node

E1-PRI QSIG Route Protocol Characteristics, protocol side "Network"

<RODAP:ROU=100;

ROUTE DATA

ROU TYPE VARC VARI VARO FILTER

100 SL60 H'00000310 H'55440000 H'06300000 NO

END

E1-PRI QSIG Route Protocol Characteristics, protocol side "User"

<RODAP:ROU=101;

ROUTE DATA

ROU TYPE VARC VARI VARO FILTER

101 SL60 H'00000310 H'55440000 H'06400000 NC



Route Equipment Initiate

E1-PRI QSIG trunk lines (B-channels)

For Ericsson1 node

< *ROEDP:ROU=ALL,TRU=ALL;
ROUTE EQUIPMENT DATA</pre>

ROU	TRU	EQU	IP ADDRESS	SQU	INDDAT	CNTRL
50 50 50 50 50 50 50 50 50 50 50 50	001-1 001-2 001-3 001-4 001-5 001-6 001-7 001-8 001-9 001-10 001-11 001-12 001-13 001-14	001-0-30-01 001-0-30-02 001-0-30-03 001-0-30-04 001-0-30-05 001-0-30-06 001-0-30-07 001-0-30-08 001-0-30-10 001-0-30-11 001-0-30-12 001-0-30-13 001-0-30-14 001-0-30-15			H'000000000000000000000000000000000000	
70 70 70 70 70 70 70 70 70 70 70 70 70 7	001-1 001-2 001-3 001-4 001-5 001-6 001-7 001-8 001-9 001-10 001-11 001-12 001-13 001-14 001-15 001-16 001-17 001-18 001-19 001-20 001-21 001-22 001-23	001-0-40-01 001-0-40-02 001-0-40-03 001-0-40-04 001-0-40-05 001-0-40-06 001-0-40-07 001-0-40-08 001-0-40-10 001-0-40-11 001-0-40-12 001-0-40-13 001-0-40-13 001-0-40-15 001-0-40-15 001-0-40-17 001-0-40-18 001-0-40-19 001-0-40-20 001-0-40-20 001-0-40-21 001-0-40-22 001-0-40-23 001-0-40-24			H'000000000000000000000000000000000000	
70 70 70 70 70	001-24 001-25 001-26 001-27 001-28	001-0-40-25 001-0-40-26 001-0-40-27 001-0-40-28 001-0-40-29			H'000000000000 H'00000000000000 H'00000000	



70 001-29 001-0-40-30 H'00000000000 70 001-30 001-0-40-31 H'00000000000

END

For Ericsson2 node

<ROEDP:ROU=ALL,TRU=ALL;
ROUTE EQUIPMENT DATA</pre>

ROU	TRU	EQU	IP ADDRESS	SQU	INDDAT	CNTRL
11 11 11 11 11 11 11 11 11 11 11 11 11	001-1 001-2 001-3 001-4 001-5 001-6 001-7 001-8 001-9 001-10 001-11 001-12 001-13 001-14 001-15 001-17 001-18 001-19 001-20 001-21 001-22 001-23 001-24 001-25 001-26 001-27 001-28 001-29 001-30 001-31	001-0-00-01 001-0-00-02 001-0-00-03 001-0-00-04 001-0-00-05 001-0-00-06 001-0-00-08 001-0-00-09 001-0-00-10 001-0-00-11 001-0-00-12 001-0-00-13 001-0-00-15 001-0-00-15 001-0-00-17 001-0-00-18 001-0-00-19 001-0-00-20 001-0-00-20 001-0-00-22 001-0-00-23 001-0-00-25 001-0-00-26 001-0-00-28 001-0-00-29 001-0-00-29 001-0-00-29 001-0-00-30 001-0-00-31			H'000000000FF H'0000000000	
100 100 100 100 100 100 100 100 100 100	001-1 001-2 001-3 001-4 001-5 001-6 001-7 001-8 001-9 001-10 001-11 001-12 001-13 001-14	001-0-30-01 001-0-30-02 001-0-30-03 001-0-30-04 001-0-30-05 001-0-30-06 001-0-30-08 001-0-30-09 001-0-30-10 001-0-30-11 001-0-30-12 001-0-30-13 001-0-30-14 001-0-30-15 001-0-30-17			H'000000000000000000000000000000000000	



100 100 100 100 100 100 100 100 100 100	001-17 001-18 001-19 001-20 001-21 001-22 001-23 001-24 001-25 001-26 001-27 001-28 001-29 001-30	001-0-30-18 001-0-30-19 001-0-30-20 001-0-30-21 001-0-30-22 001-0-30-23 001-0-30-24 001-0-30-25 001-0-30-26 001-0-30-27 001-0-30-28 001-0-30-29 001-0-30-30 001-0-30-31	H'000000000000000000000000000000000000
101 101 101 101 101 101 101 101 101 101	001-1 001-2 001-3 001-4 001-5 001-6 001-7 001-8 001-9 001-10 001-11 001-12 001-13 001-14 001-15 001-16 001-17 001-18 001-19 001-20 001-21 001-22 001-23 001-24 001-25 001-26 001-27 001-28	001-0-40-01 001-0-40-02 001-0-40-03 001-0-40-04 001-0-40-05 001-0-40-06 001-0-40-08 001-0-40-09 001-0-40-10 001-0-40-11 001-0-40-12 001-0-40-13 001-0-40-15 001-0-40-15 001-0-40-18 001-0-40-19 001-0-40-19 001-0-40-20 001-0-40-21 001-0-40-22 001-0-40-23 001-0-40-25 001-0-40-25 001-0-40-27 001-0-40-28 001-0-40-29	H'000000000000000000000000000000000000
	001-29 001-30	001-0-40-30 001-0-40-31	H'000000000000000000000000000000000000



Route External Destination Data Initiate

For Ericsson1 node

Route and Access Code for the trunk Information- Note Route 50 & 70 are the PRI QSIG routes.

<.RODDP:DEST=ALL;

EXTERNAL DESTINATION ROUTE DATA

DEST	DRN ROU CHO	CUST	ADC	TRC	SRT	NUMACK	PRE
11 235 42 50	70 50 70 50		15050000000002501050010010 15050000000002501050010010 17071000000002501070011010 15050000000002501050010010	0	1 1 1	0 0 0 0	
666	70		17070000000002501070011010	0	1	0	
888	70		15050000000002501050010010	0	1	0	

END

For Ericsson2 node

Route and Access Code for the trunk Information- Note Route 100 & 101 are the PRI QSIG routes.

< RODDP:DEST=ALL;

EXTERNAL DESTINATION ROUTE DATA

DEST	DRN ROU CHO CUST	ADC	TRC	SRT	NUMACK	PRE
12	101	150500000000000000000000000000000000000	0	1	0	
		15050000000002501050010010	U	_		
21	1	12250000000002501020011000	0	3	0	
235	100	15050000000002501050010010	0	1	0	
25	100	06061000000002500060000000	0	3	0	
30	100	16060000000002501060010010	0	1	0	
31	11	10050000000002500000000000	0	3	0	
35	11	06060000000002501060011000	0	3	0	
36	6	01150000000002500010000000	0	3	0	
38	8	01150000000002500010000000	0	3	0	
40	100	17070000000002501070010010	0	1	0	
42	101	15050000000002501050010010	0	1	0	
50	100	15050000000002501050010010	0	1	0	
550	11	06060000000002501060011000	0	1	0	
551	101	07070000000002501070011000	0	1	0	
560	11	06060000000002501060011000	0	1	0	
650	100	17070000000002501070011000	0	1	0	
666	100	07070000000002501070011000	0	1	0	
777	101	15050000000002501050010010	0	1	0	
9	101	15050000000002501050010010	0	2	0	



Exchange ID (System ID)
For Ericsson1 node
<syidp;< td=""></syidp;<>
PRIVATE NETWORK EXCHANGE IDENTITY IS
777
END
For Ericsson2 node
<syidp;< td=""></syidp;<>
PRIVATE NETWORK EXCHANGE IDENTITY IS
888
END
For Path Replacement, Exchange IDs need to be unique. Change System ID by using the following commands:
<•SYIDE;
EXECUTED
< • SYIDI: EXGID=888;
EXECUTED



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=10;</pre>

EXECUTED

It can be checked with the RONDP command.

For Ericsson1 node

Route and Access Code for the trunk Information- Note Route 50 & 70 are the PRI QSIG

<RONDP:ROU=ALL;
ROUTE NUMBER DATA</pre>

ROU	PRE	ROUDIR	EXNOPU	EXNOPR	TERAC
10 50 70 100					

For Ericsson2 node

END

< RONDP:ROU=ALL;
ROUTE NUMBER DATA</pre>

ROU	PRE	ROUDIR	EXNOPU	EXNOPR	TERAC
1 6 8					
11				6-777	
12 13				6-777	
39					
40					
100					
101					
END.					



Number Analysis Summary

For Ericsson1 node

< • NADAP;

NUMBER ANALYSIS DATA

NUMBER ANALYSIS DATA	
TYPE OF SERIES	NUMBER SERIES
EXTENSION NUMBER SERIES	1201 - 1299 4500 - 4508
EXTERNAL DESTINATION CODE	050 11 21 235 25 31 - 38 40 42
	50 550 - 560 666 70 888 950
OWN EXCHANGE NUMBER SERIES	777
TYPE OF SERVICE CODE	SERVICE CODE
EXTERNAL NUMBER LENGTH DATA	
EXTERNAL NUMBER	NUMBER LENGTH
11 235 40 42 50 550 551 554 666 70 888	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
PROCEED TO SEND SIGNAL DATA	
EXTERNAL NUMBER	POS. TYPE
CALL DISCRIMINATION DATA	
EXTERNAL/INTERNAL NUMBER	CAT





For Ericsson2 node

EXTERNAL NUMBER

END

CALL DISCRIMINATION DATA EXTERNAL/INTERNAL NUMBER

< NADAP;

NUMBER ANALYSIS DATA

TYPE OF SERIES	NUMBER SERIES
EXTENSION NUMBER SERIES	1001 - 1199 4500 - 4508
EXTERNAL DESTINATION CODE	125 21 235 25
	30 - 38 40 42 50
	550 - 560 650 666 777 9
ABBREVIATED COMMON NUMBER SERIE	ES 1200
OWN EXCHANGE NUMBER SERIES	888
TYPE OF SERVICE CODE	SERVICE CODE
EXTERNAL NUMBER LENGTH DATA	
EXTERNAL NUMBER	NUMBER LENGTH
125 235 40 42 50 550	4 - 4 4 - 4 4 - 4 4 - 4 4 - 4
554 650	4 - 10 10 - 10
666	3 - 7
777	4 - 4
9 PROCEED TO SEND SIGNAL DATA	8 – 8

POS. TYPE

CAT



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 Ericsson1 node

<.KSDDP:DIR=ALL;

KEY SYSTEM DIRECTORY DATA

DIR 1251 1252 1253 1254 1255 1256 1257 1258 1259 1260 1261 1262 1263	CUST	EQU 001-0-22-00 001-0-22-01 001-0-22-02 001-0-22-03 001-0-22-05 001-0-22-06 001-0-22-07 001-0-22-08 001-0-22-09 001-0-22-10 001-0-22-11 001-0-22-12	CAT	ADN	ODN	CALALT 1 1 1 1 1 1 1 1 1 1 1 1 1	TIMER 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
			- - -			1 1 1 1	0 0 0

END

For Ericsson2 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



Calling/Connected Name and Number Restrictions

For Ericsson1 node

<.KSCAP:DIR=ALL;

KEY SYSTEM CATEGORY PRINT

DIR	TRAF	SERV	CDIV	ROC	ITYPE	TRM	ADC	LANG	BSEC
1251 1252 1253 1254 1255 1256 1257 1258 1259	03151515 03151515 00151515 00151515 00151515 00151515 00151515 00151515 00151515	0211120700 0211120700 0202720500 0202720500 0202720500 0202720500 0202720500 0202720500 0202720500	011151111 011151111 011151111 011151111 011151111 011151111 011151111 011151111	720004 720004 000001 000001 000001 000001 000001 000001	19 19 22 19 19 19 19 19	0 0 0 0 0 0	00100013010000 00100013010000 00100013010000 00100013010000 00100013010000 00100013010000 00100013010000 00100013010000	0 0 0 0 0 0	0 0 0 0 0 0 0
1260 1261 1262 1263 1264 1265	00151515 00151515 00151515 00151515 00151515 00151515	0202720500 0202720500 0202720500 0202720500 0202720500 0202720500	011151111 011151111 011151111 011151111 011151111 011151111	000001 000001 000001 000001 000001	19 19 19 19 19	0 0 0 0 0	00100013010000 00100013010000 00100013010000 00100013010000 00100013010000	0 0 0 0 0	0 0 0 0 0

END

For Ericsson2 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
END									



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

<KSCAC:DIR=1154&&1155,ADC=00010013010000;</pre>

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

<KSCAC:DIR=1154&&1155,ADC=00100013010000;</pre>

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 Ericsson1 node

< •NIINP:DIR=ALL;
EXTENSION NAMES</pre>

DIR	NAME1	NAME2	PRES	INFO
1251 1252 END	chris tony		10 10	

For Ericsson2 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	REAVER		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	



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 Ericsson1 node

<.ASAP. .. PAP:PARNUM=66; APPLICATION SYSTEM PARAMETERS PARNUM PARVAL 66 1 END

For Ericsson2 node

< ASPAP:PARNUM=66;
APPLICATION SYSTEM PARAMETERS
PARNUM PARVAL
 66 1
END</pre>



Call Diversion on Busy/No Reply

For Ericsson1 node

<.CDIDP:DIR=ALL;

CALL DIVERSION INDIVIDUAL DATA

DIR	DIV

1251 5090 1252 5001

END

For Ericsson2 node

<•CDIDP:DIR=1153&&1156;

CALL DIVERSION INDIVIDUAL DATA

DIR	DIV
1153	5001
1154	4500
1155	4500
1156	5007

END

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

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

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



Diversion Counter

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

<asuvp:parnum=121;

APPLICATION SYSTEM PARAMETER VALUES FOR UNIT

PARNUM CHA PARVAL MINVAL MAXVAL UNIT REMARK

121 YES 12 0 255 RMP

END

For Ericsson1 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

END

For Ericsson2 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 Ericsson1 node

<-ASPAP:PARNUM=223;

APPLICATION SYSTEM PARAMETERS

PARNUM PARVAL

223 7

END

For Ericsson2 node

< ASAPAP PAPA :PARNUM=223;

APPLICATION SYSTEM PARAMETERS

PARNUM PARVAL 223 7



Ericsson MD-110 Software Version

For Ericsson1 node

CADAP; CALENDAR DATA IDENTITY=ACM2 VERSION=CXP1010101/4/TSWSP02/R3A

CALENDAR TIME NOT VALID 04:03:56
TUE 19 JUN 2007
END

For Ericsson2 node

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

CALENDAR TIME NOT VALID 05:37:24 MON 28 MAY 2007 END



Configuring the Cisco Unified Communications Manager 6.0

Software Version

Software Version - 1 of 1.



Cisco Unified CM Administration

System version: 6.0.1.1000-36



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This product contains cryptographic features and is subject to United States and local country laws governing import, export, transfer and use. Delivery of Cisco cryptographic products does not imply third-party authority to import, export, distribute or use encryption. Importers, exporters, distributors and users are responsible for compliance with U.S. and local country laws. By using this product you agree to comply with applicable laws and regulations. If you are unable to comply with U.S. and local laws, return this product importantly impediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at: http://www.cisco.com/wwl/export/crypto/tool/stqrq.html. If you require further assistance please contact us by sending email to export@cisco.com.



ISO Parameter

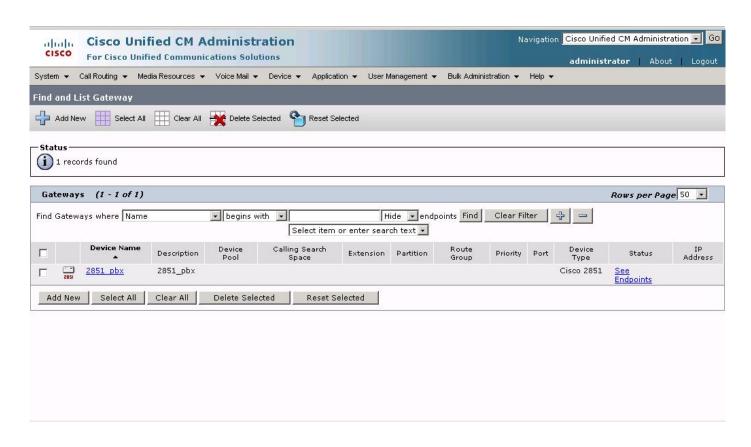
ISO Service Parameter – 1 of 1.

Clusterwide Parameters (Device - PRI and	MGCP Gateway)	
ASN.1 ROSE OID Encoding *	Use Local Value	■ Use Local Value
QSIG Variant *	ISO (Protocol Profile 0x9F)	ISO (Protocol Profile 0x9F)



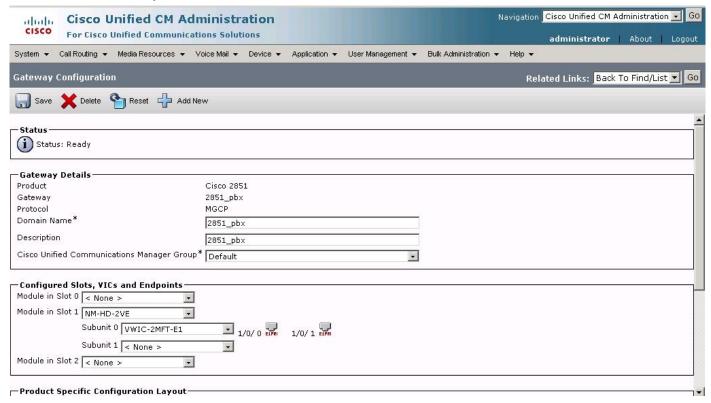
Voice Gateways

Cisco Unified Voice Gateways - 1 of 1.



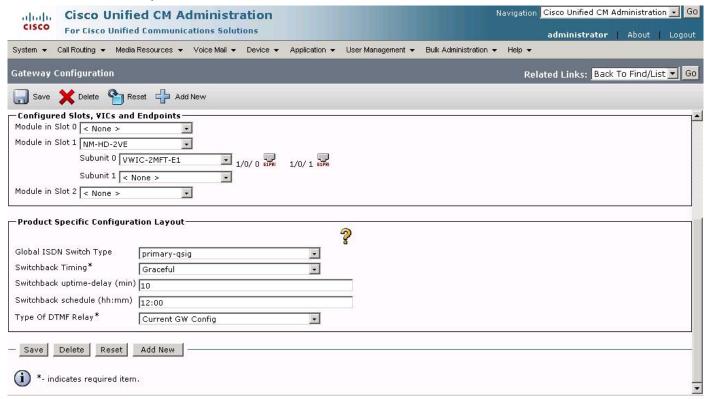


Cisco Unified Voice Gateway 2851 – 1 of 2.



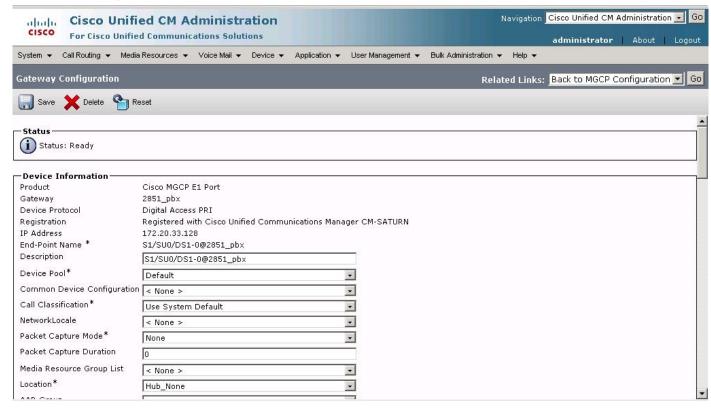


Cisco Unified Voice Gateway 2851 – 2 of 2.



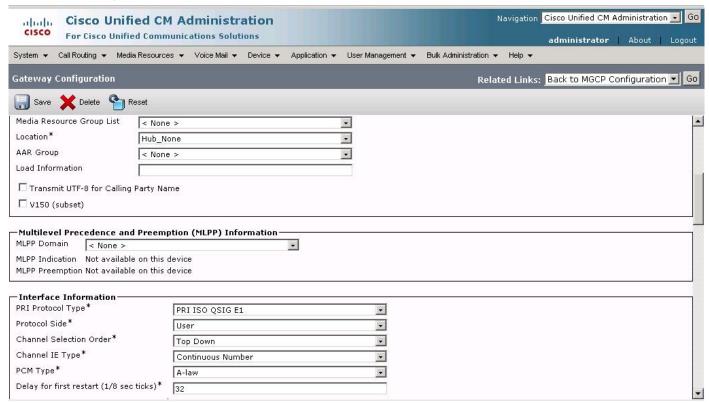


Cisco 2851 E1 PRI QSIG Trunk 1/0/0-1 of 5.



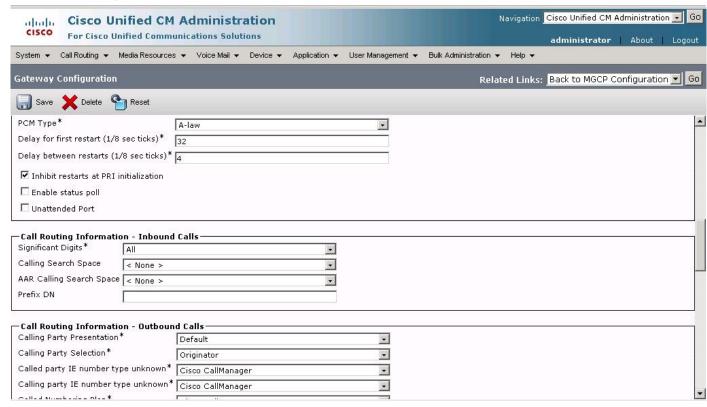


Cisco 2851 E1 PRI QSIG Trunk 1/0/0-2 of 5.



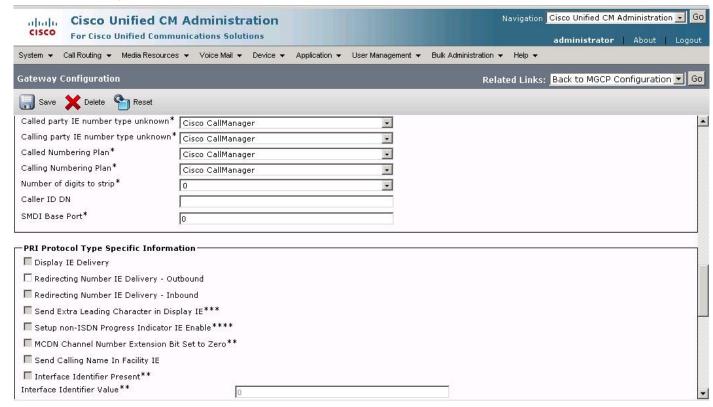


Cisco 2851 E1 PRI QSIG Trunk 1/0/0-3 of 5.



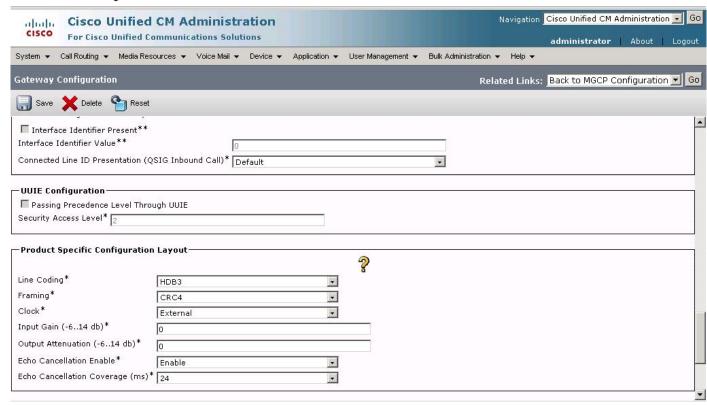


Cisco 2851 E1 PRI QSIG Trunk 1/0/0-4 of 5.





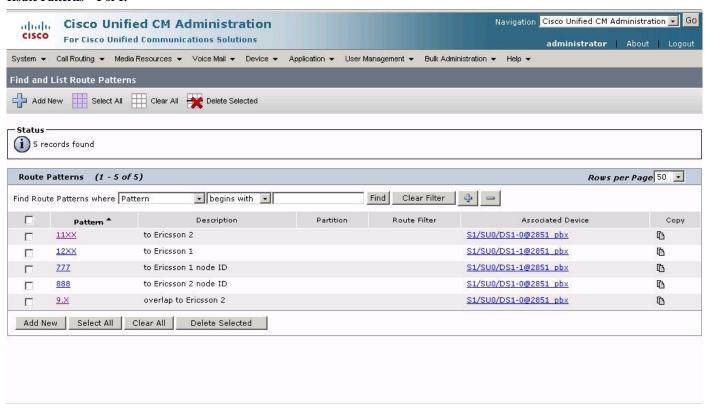
Cisco 2851 E1 PRI QSIG Trunk 1/0/0-5 of 5.





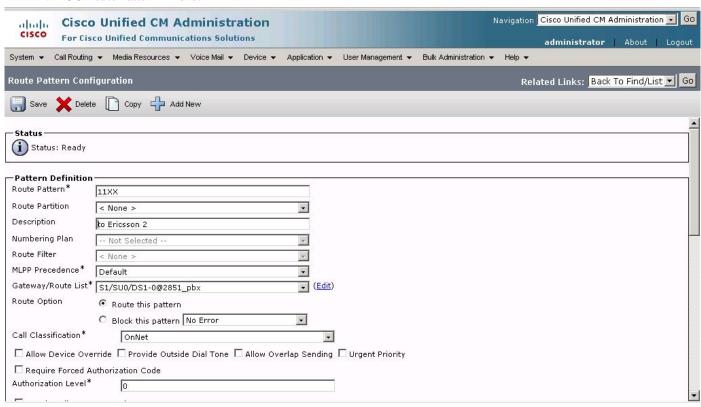
Route Patterns

Route Patterns - 1 of 1.



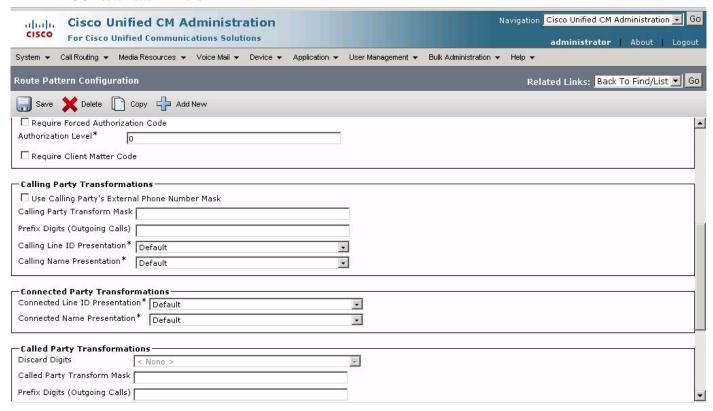


11xx ENBLOC Route Pattern - 1 of 3.



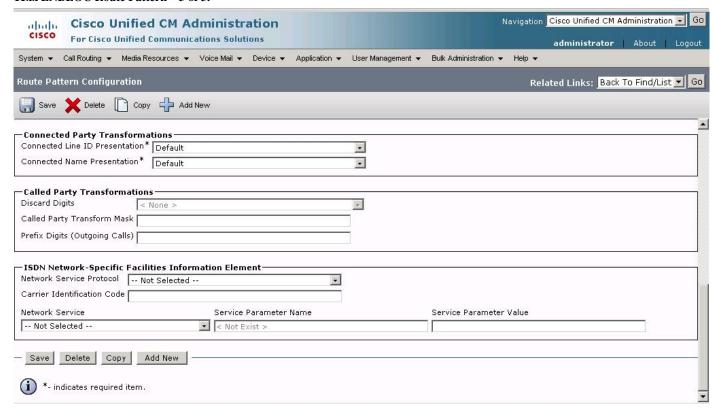


11xx ENBLOC Route Pattern - 2 of 3.



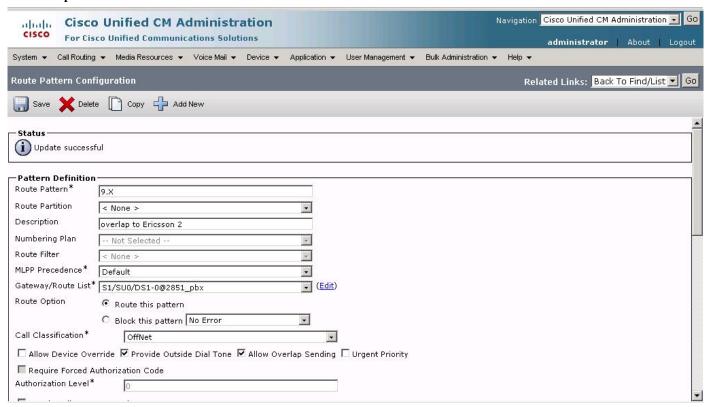


11xx ENBLOC Route Pattern - 3 of 3.



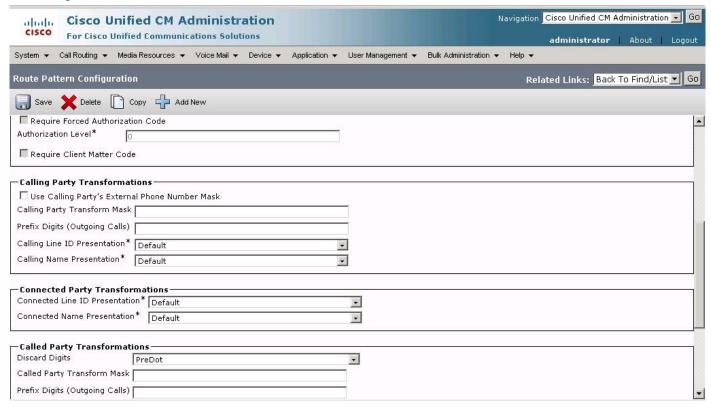


9.X Overlap Route Pattern – 1 of 3.



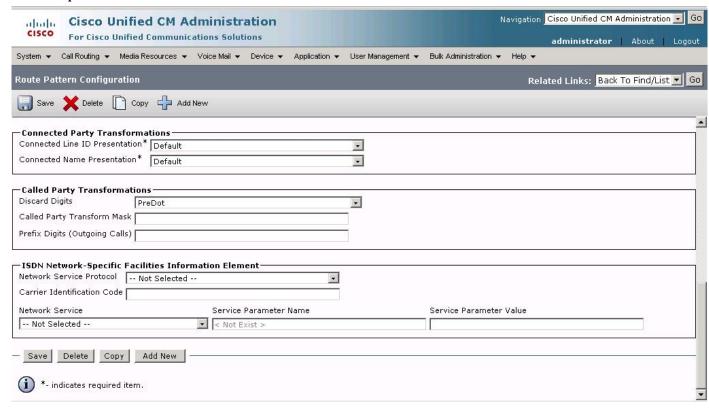


9.X Overlap Route Pattern - 2 of 3.





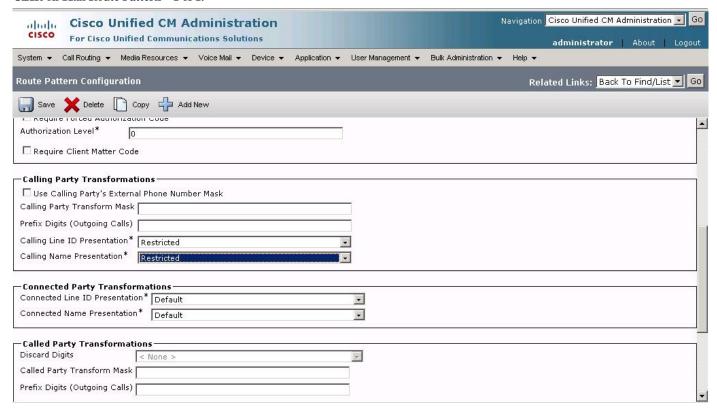
9.X Overlap Route Pattern - 3 of 3.





Calling Line ID Restriction

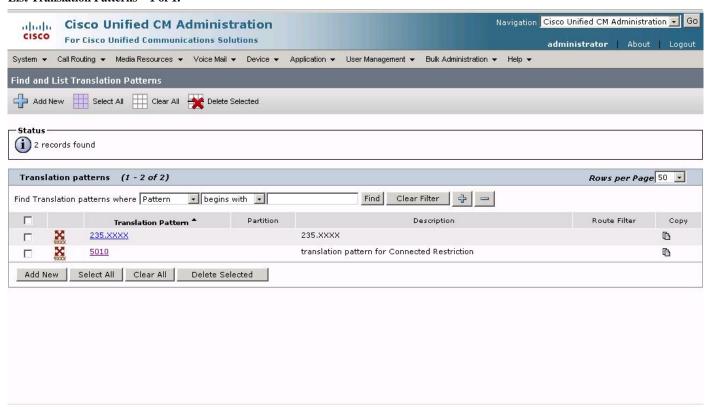
CLIR on 11xx Route Pattern - 1 of 1.





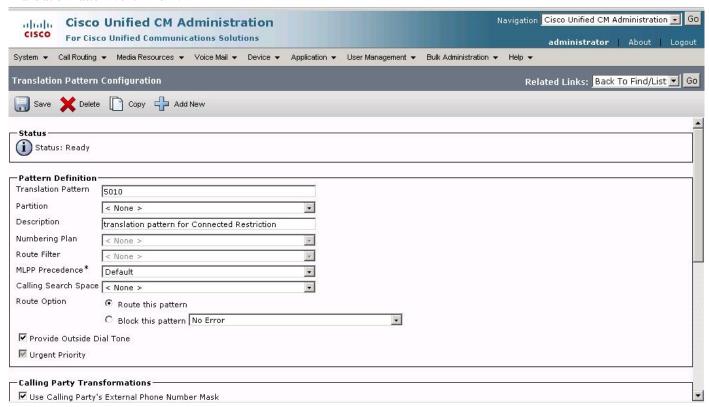
Translation Patterns

List Translation Patterns – 1 of 1.



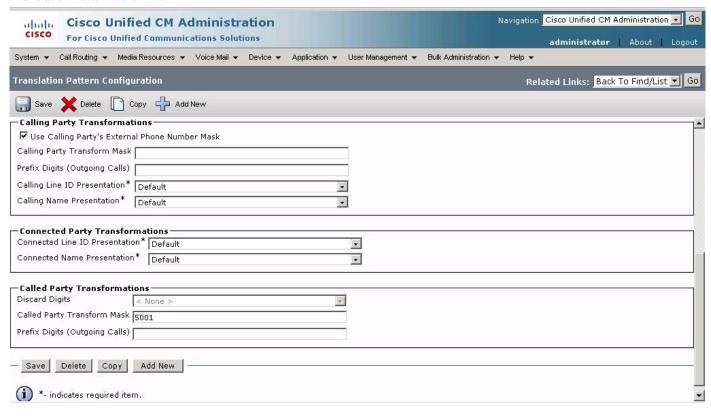


Translation Pattern 5010 - 1 of 2.





Translation Pattern 5010 - 2 of 2.





Connected Line ID Restriction

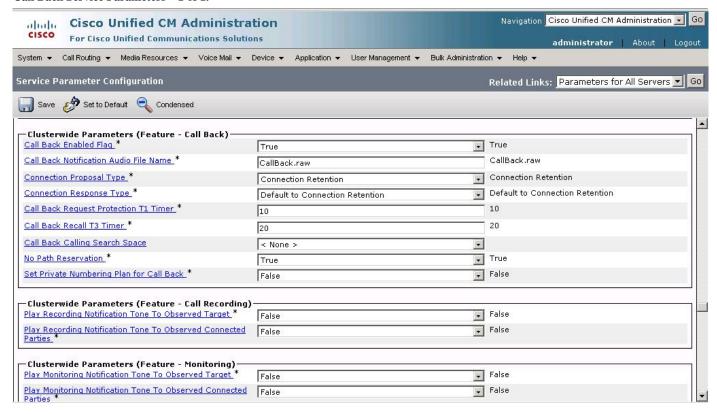
Translation Pattern 5010 - Connected Name / Number Restriction for 5001-1 of 1.

aliah								Navigation Cisco Unified CM Administration 🔻 Go				
cisco	For Cisco	Unified	d Communi	cations Solu	tions					administrator	About	Logout
System ▼	Call Routing ▼	Media	Resources 🕶	Voice Mail ▼	Device ▼	Application ▼	User Management ▼	Bulk Administration 🔻	Help ▼			3111
Translation Pattern Configuration Related Links: Back To Find/Lis												st ▼ Go
Save	Delete	[] co	py 🕂 Add	d New								
▼ Use ○	Calling Party's E	External	Phone Numl	ber Mask								_
Calling P	arty Transform	n Mask [
Prefix Di	gits (Outgoing	Calls)										
Calling Li	ine ID Presenta	ation* [Default									
Calling N	ame Presentat	ion* [Default				<u> </u>					
Connecte	ted Party Tra ed Line ID Pres ed Name Prese	entation	* Restricte									
┌─ Called I	Party Transfo	ormatio	ns —									
Discard D			None >									
Called Pa	arty Transform	Mask 5	001									
Prefix Di	gits (Outgoing	Calls)										
- Save	Delete C	opy	Add New									
	naicates requir	ea item										-



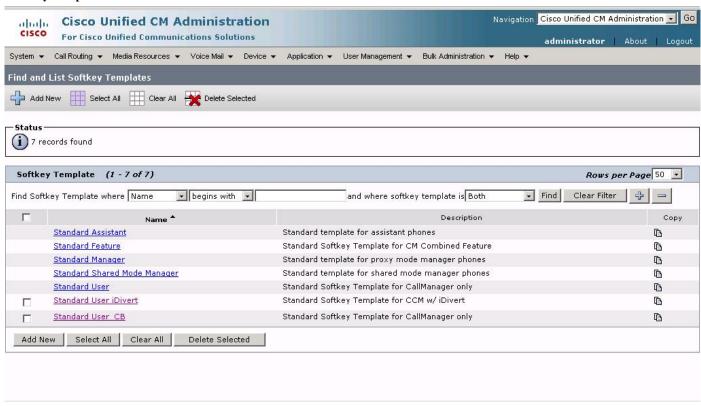
Call Back

Call Back Service Parameters - 1 of 1.



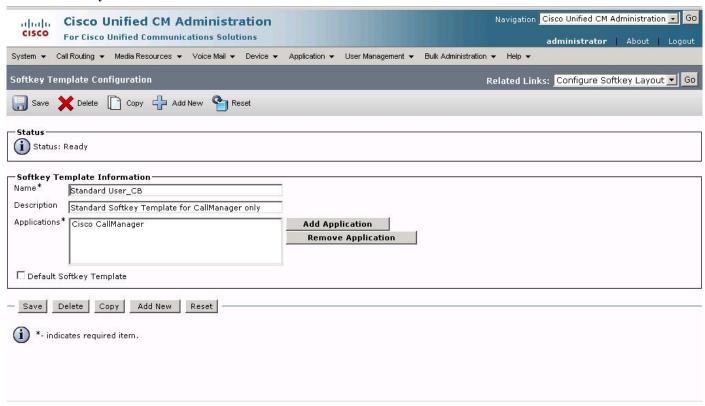


Soft Key Templates – 1 of 1.



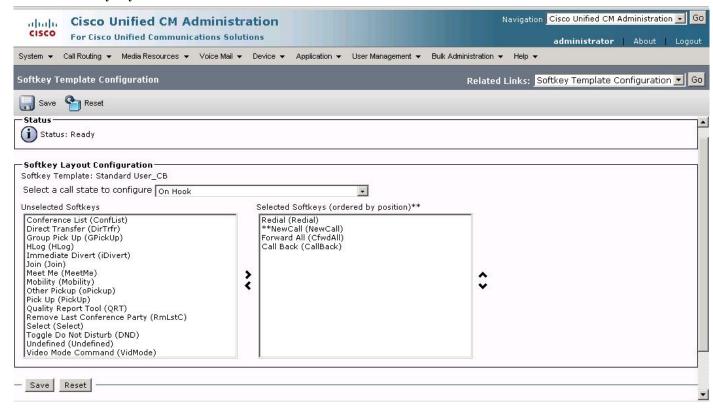


Call Back Soft Key - 1 of 1.



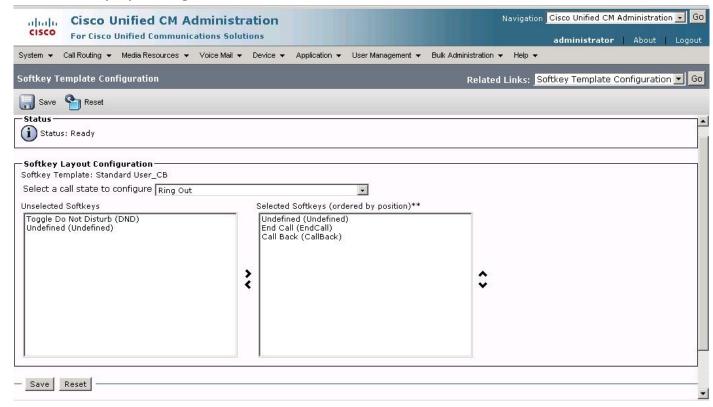


Call Back Soft Key Layout - On hook - 1 of 1.



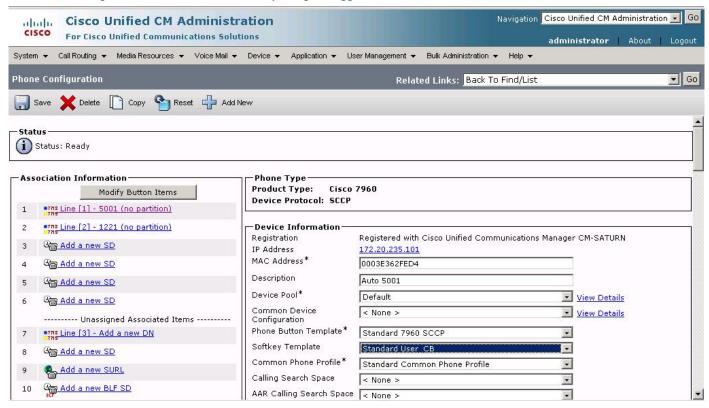


Call Back Soft Key Layout - Ring out - 1 of 1.





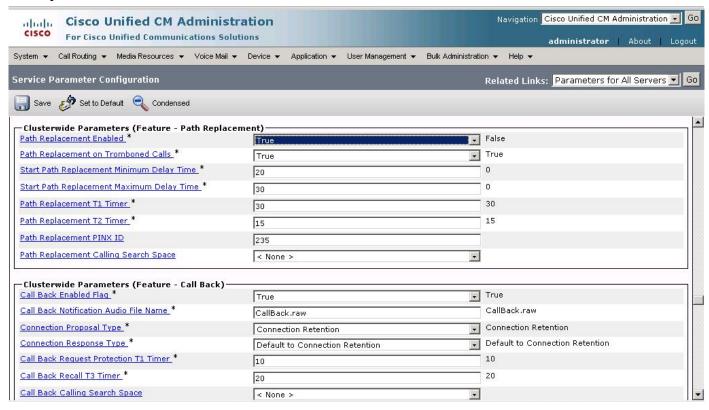
Phone x5001 set up for Call Back (Call Back Softkey Template Applied) – 1 of 1.





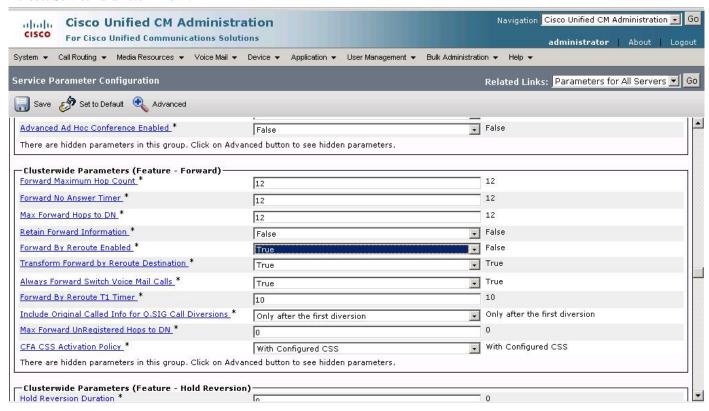
Route Optimization

Path Replacement Service Parameter - 1 of 1.





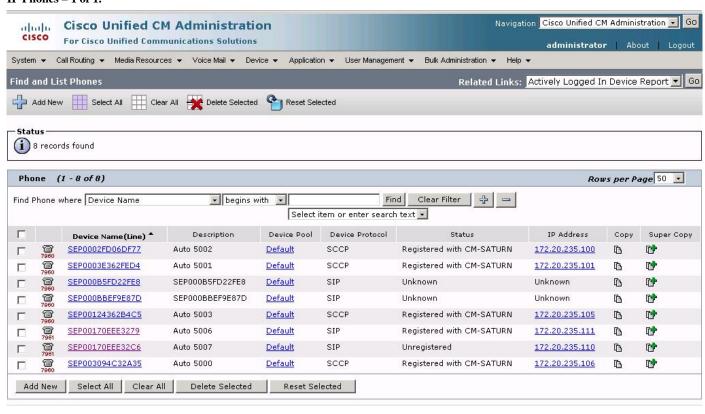
Reroute Service Parameter - 1 of 1.





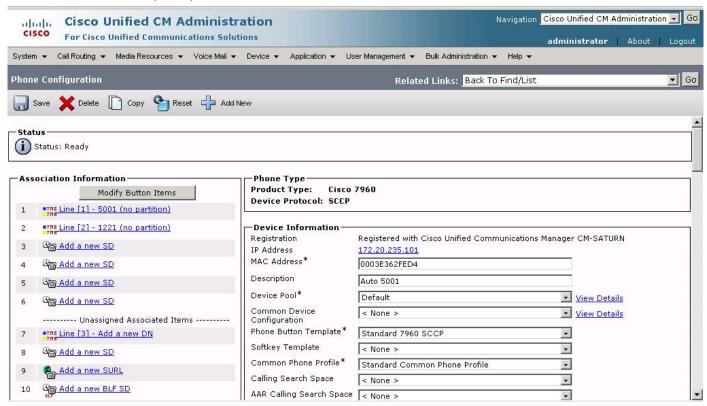
IP Phones

IP Phones - 1 of 1.



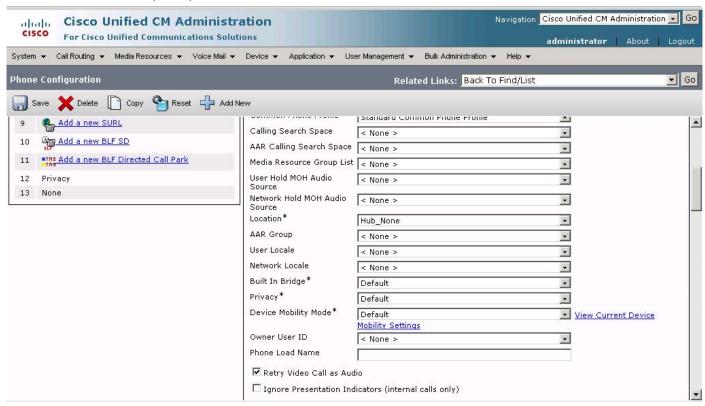


Cisco Unified IP Phone 7960, x5001, SCCP – 1 of 7.



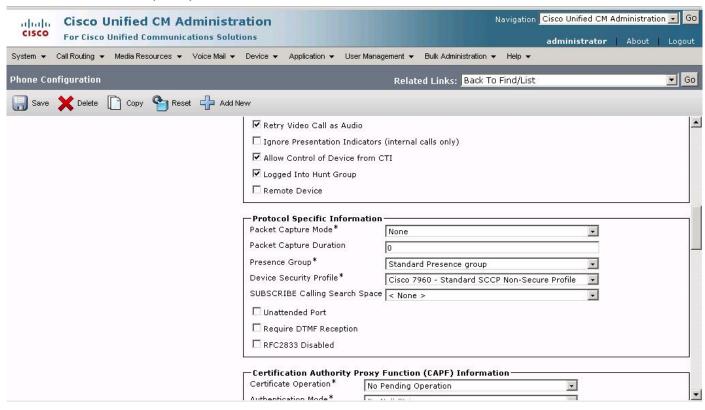


Cisco Unified IP Phone 7960, x5001, SCCP - 2 of 7.



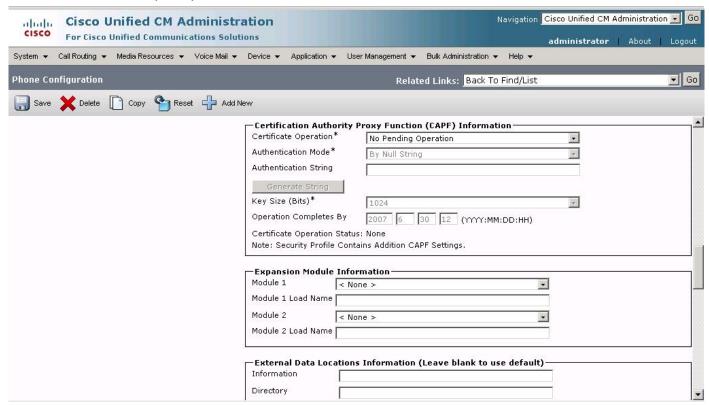


Cisco Unified IP Phone 7960, x5001, SCCP - 3 of 7.



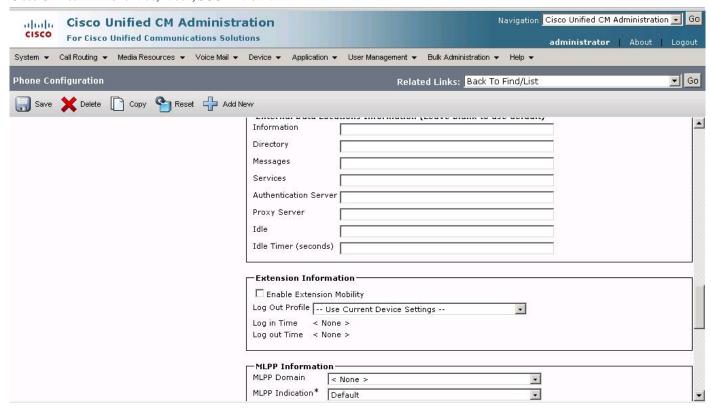


Cisco Unified IP Phone 7960, x5001, SCCP - 4 of 7.



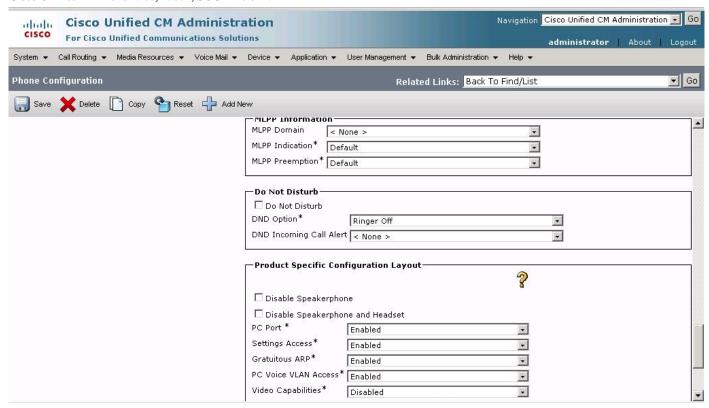


Cisco Unified IP Phone 7960, x5001, SCCP - 5 of 7.



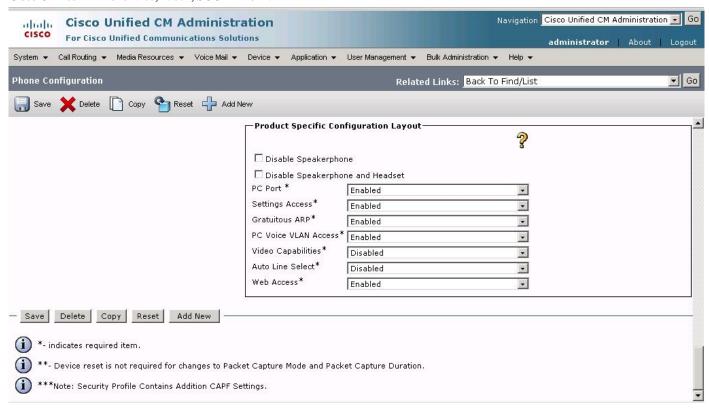


Cisco Unified IP Phone 7960, x5001, SCCP - 6 of 7.



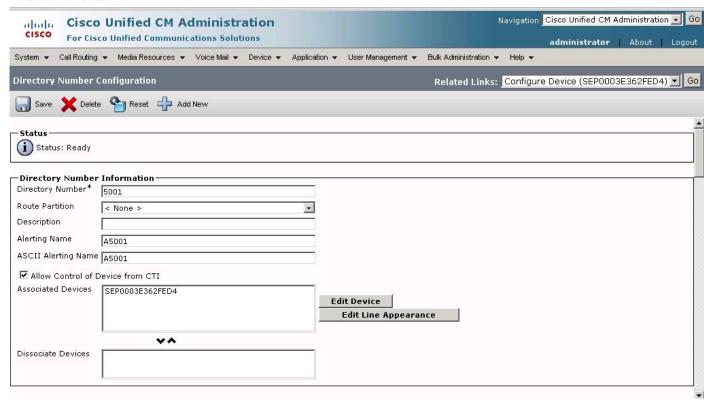


Cisco Unified IP Phone 7960, x5001, SCCP - 7 of 7.



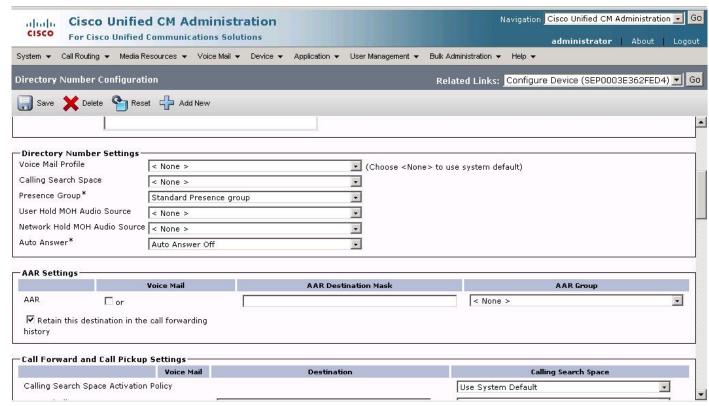


Line 5001 – 1 of 6.



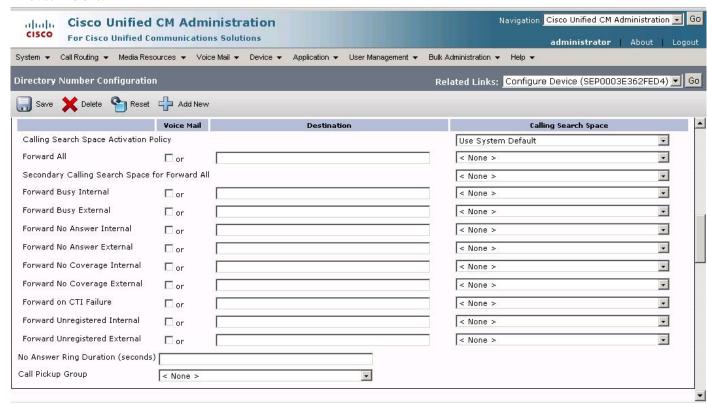


Line 5001 – 2 of 6.



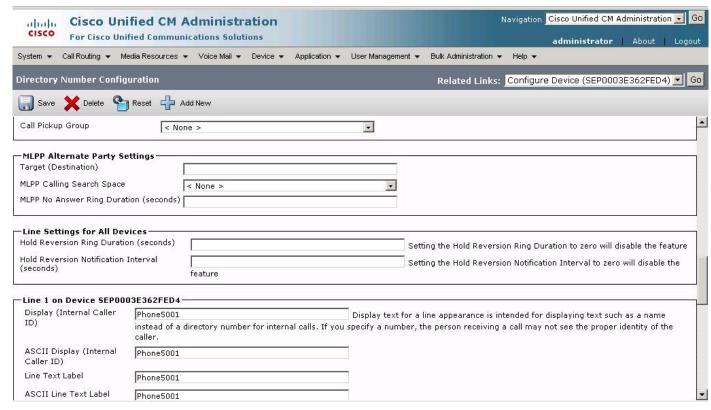


Line 5001 – 3 of 6.



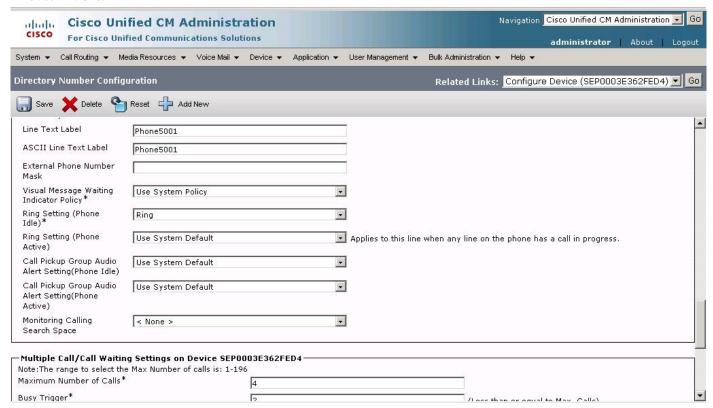


Line 5001 - 4 of 6.



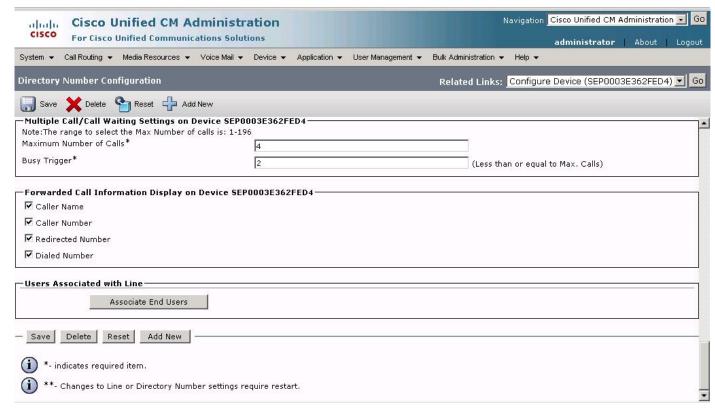


Line 5001 – 5 of 6.



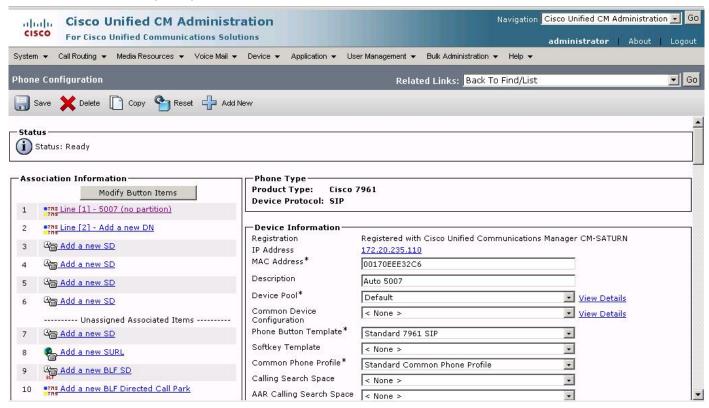


Line 5001 - 6 of 6.



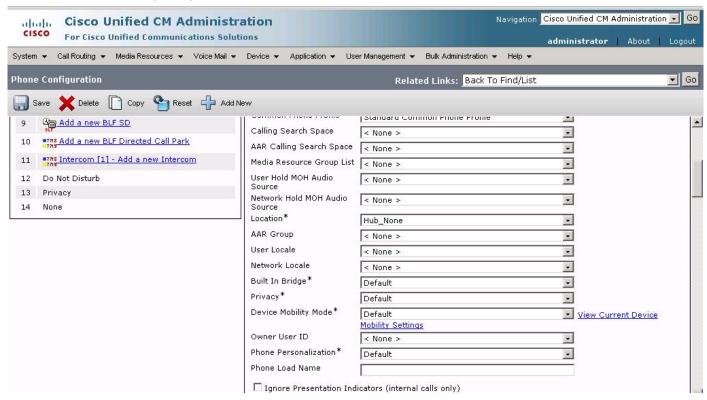


Cisco Unified IP Phone 7961, x5007, SIP - 1 of 8.



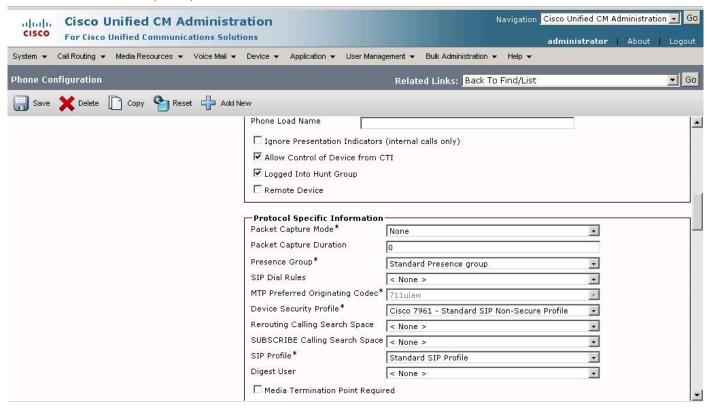


Cisco Unified IP Phone 7961, x5007, SIP - 2 of 8.



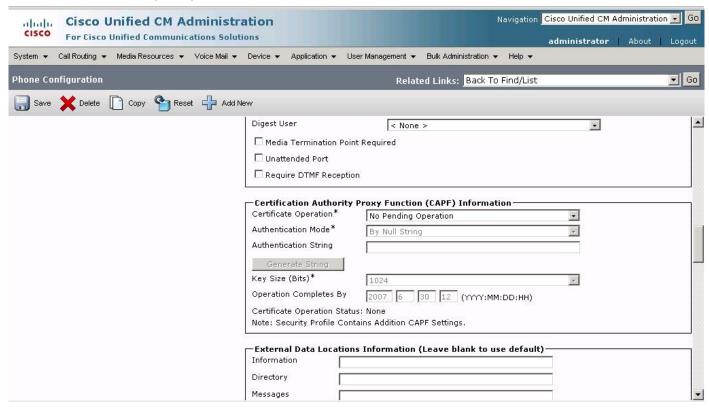


Cisco Unified IP Phone 7961, x5007, SIP - 3 of 8.



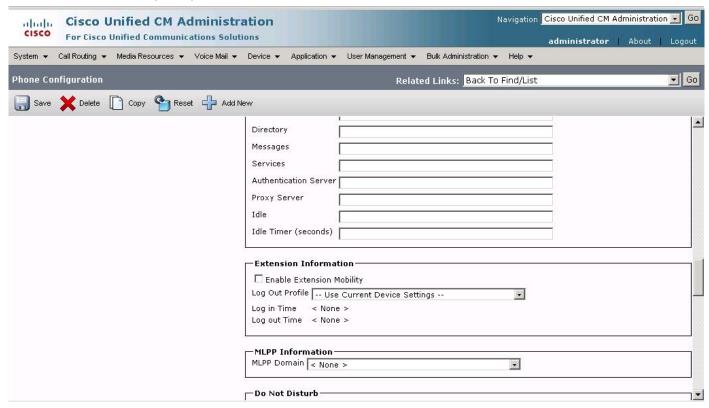


Cisco Unified IP Phone 7961, x5007, SIP - 4 of 8.



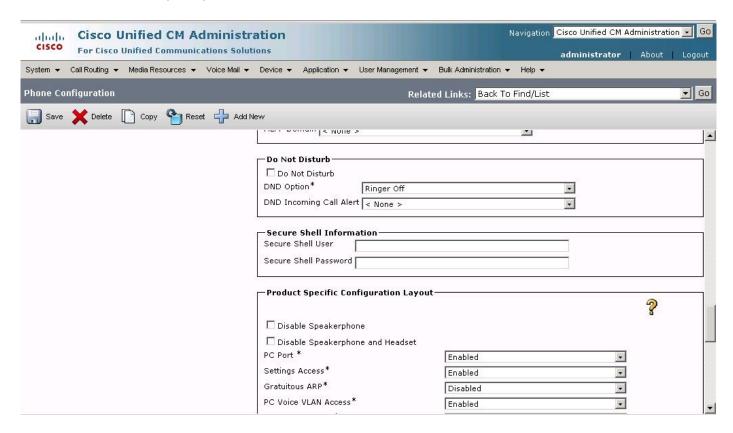


Cisco Unified IP Phone 7961, x5007, SIP - 5 of 8.



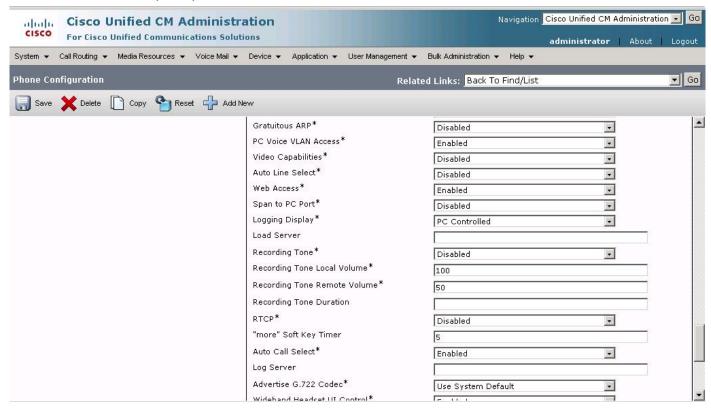


Cisco Unified IP Phone 7961, x5007, SIP - 6 of 8.



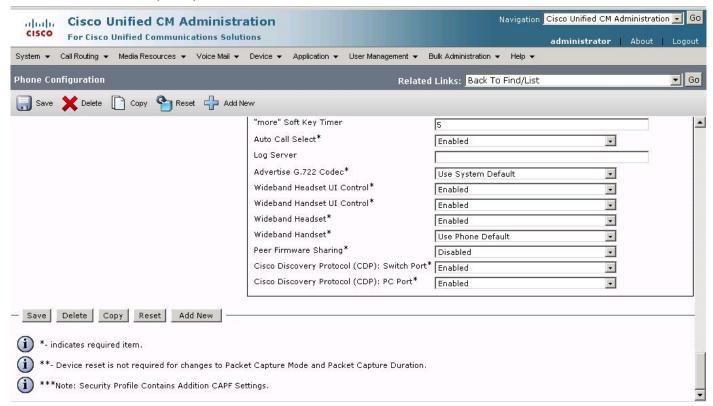


Cisco Unified IP Phone 7961, x5007, SIP - 7 of 8.



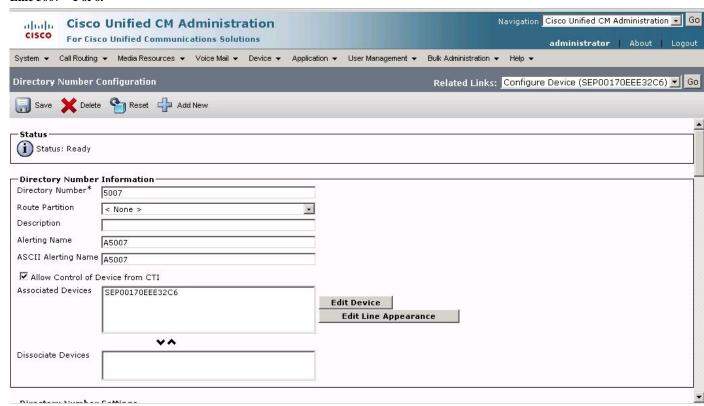


Cisco Unified IP Phone 7961, x5007, SIP - 8 of 8.



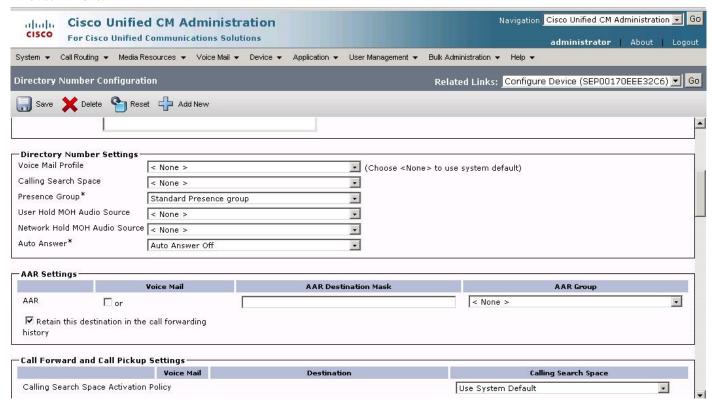


Line 5007 - 1 of 6.



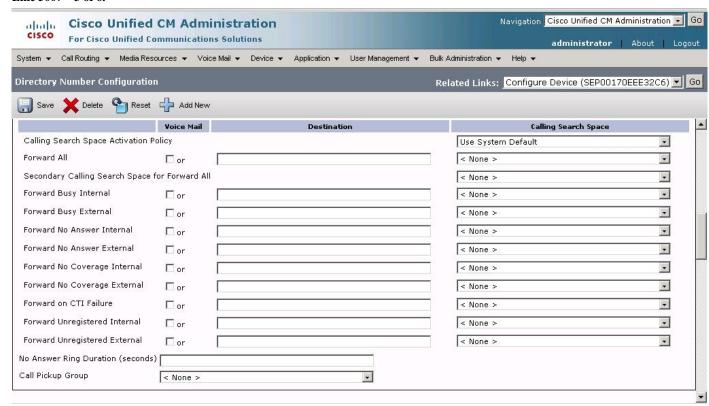


Line 5007 - 2 of 6.



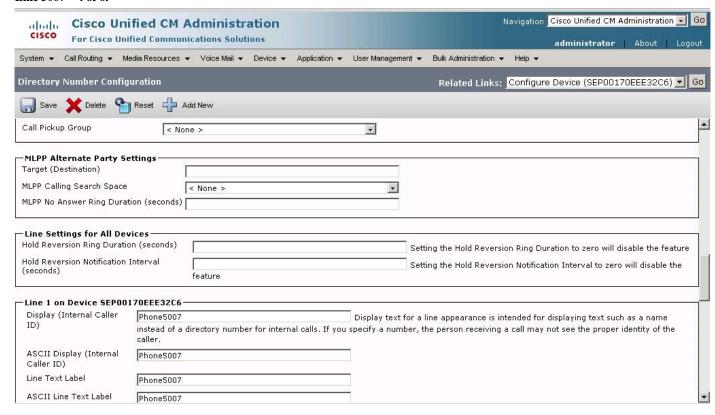


Line 5007 - 3 of 6.



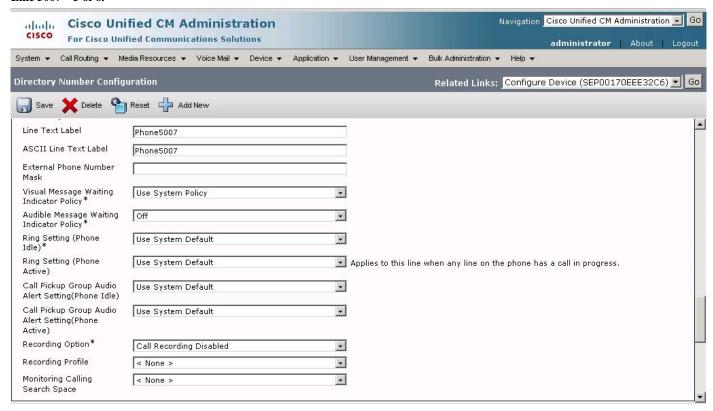


Line 5007 - 4 of 6.



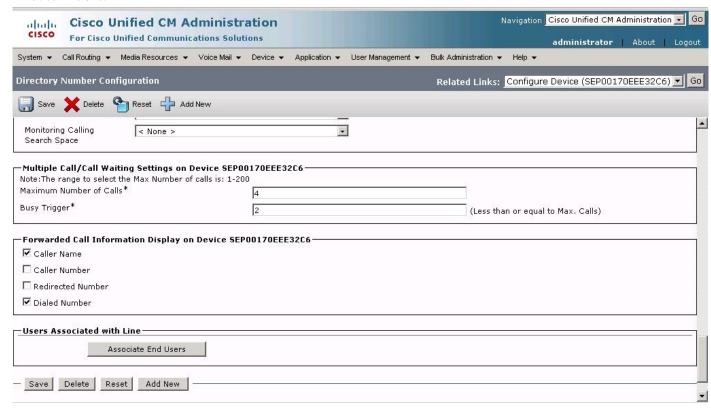


Line 5007 - 5 of 6.





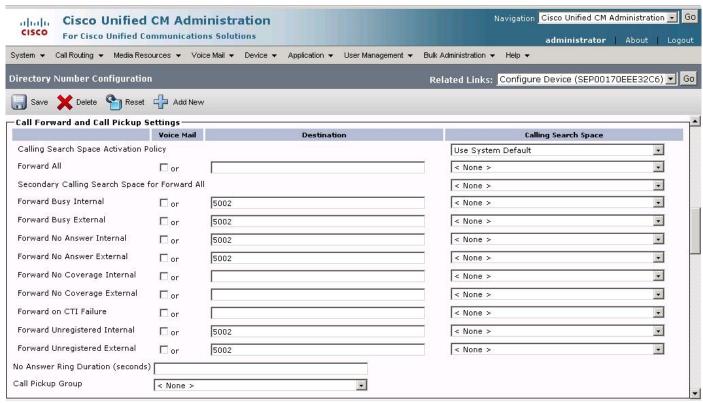
Line 5007 - 6 of 6.





Call Forwarding

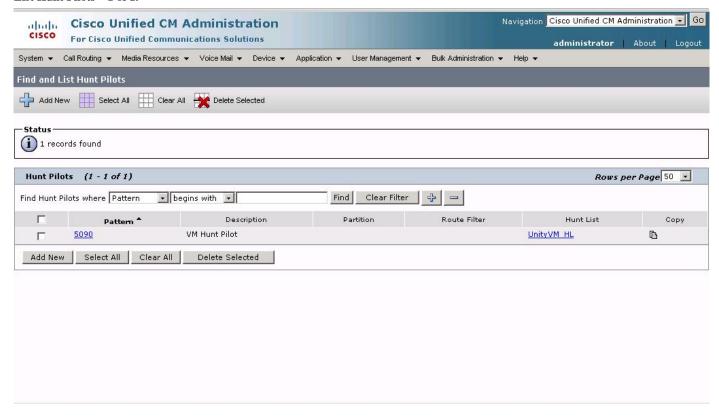
Call Forwarding: line 5007 set up to forward to 5002 – 1 of 1.





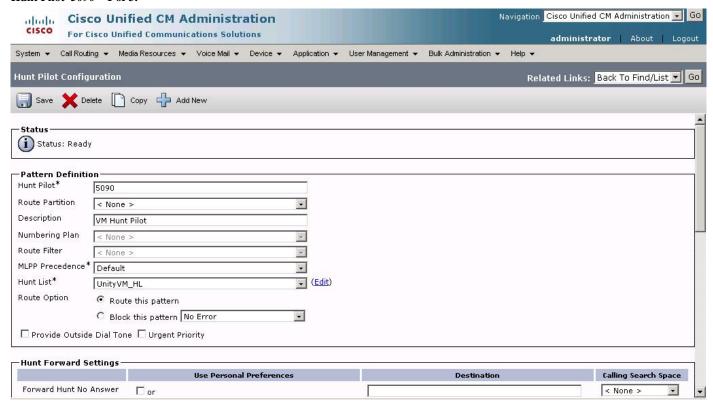
Cisco Unity Integration

List Hunt Pilots - 1 of 1.





Hunt Pilot 5090 - 1 of 3.



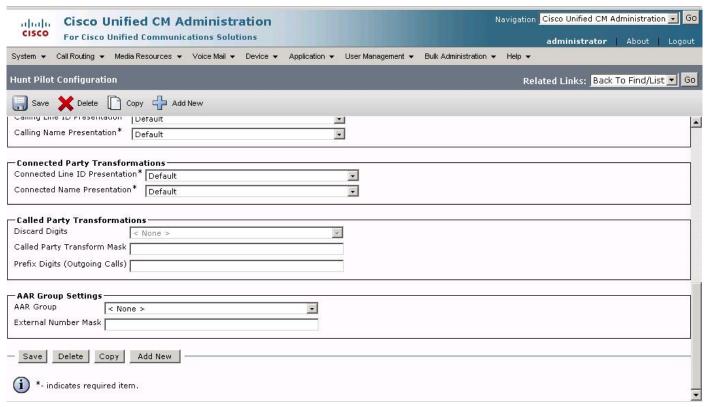


Hunt Pilot 5090 – 2 of 3.

Cisco Unified CM Administration Cisco For Cisco Unified Communications Solutions		Navigation Cisco Unified CM Administration 👤 🤇		
FOR CISCO DIMI	dia Resources Voice Mail V		ser Management ▼ Bulk Administration ▼ Help ▼	administrator About Logo
System ▼ Call Routing ▼ Iviet	ila Resources Voice Mail V	Device ▼ Application ▼ Os	ser ividinagement. Duik Administration Telp.	
Hunt Pilot Configuration			Rel	ated Links: Back To Find/List 💌 🤇
Save X Delete	Copy 👍 Add New			
-Hunt Forward Settings —				
	Use Personal	Preferences	Destination	Calling Search Space
Forward Hunt No Answer	□ or			< None >
Forward Hunt Busy	□or			< None >
Maximum Hunt Timer			<i>M</i>	
☐ Use Calling Party's Extern Calling Party Transform Masl Prefix Digits (Outgoing Calls)	<			
	1			
Calling Line ID Presentation*	Default	¥		
Calling Line ID Presentation*	1	v		
Calling Line ID Presentation* Calling Name Presentation*	Default Default	v		
Calling Line ID Presentation* Calling Name Presentation* Connected Party Transfo	Default Default rmations	•	<u>-</u>	
Calling Line ID Presentation* Calling Name Presentation*	Default Default rmations ion* Default			
Calling Line ID Presentation* Calling Name Presentation* -Connected Party Transfo Connected Line ID Presentat	Default rmations ion* Default Default Default			

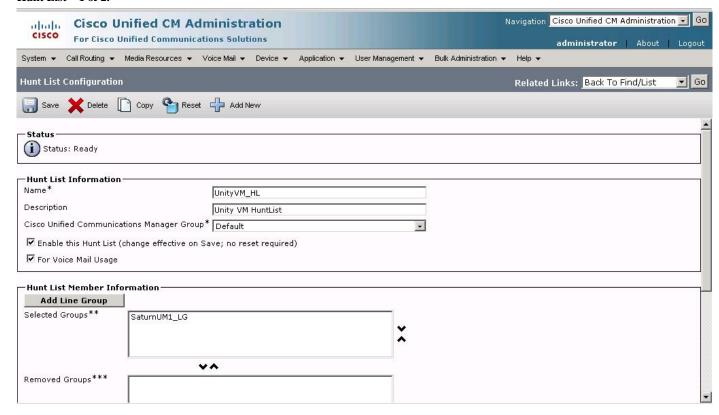


Hunt Pilot 5090 - 3 of 3.



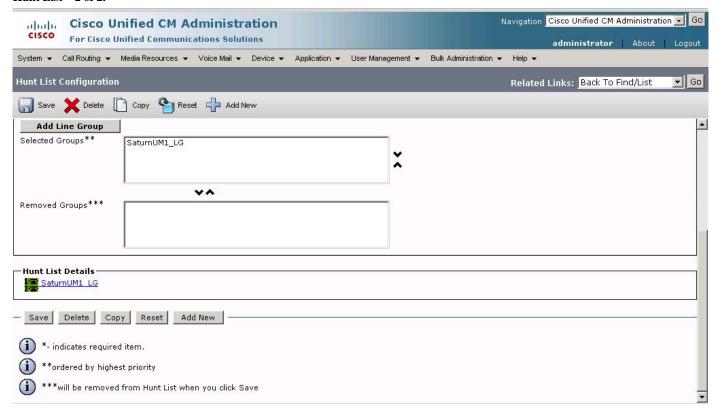


Hunt List – 1 of 2.



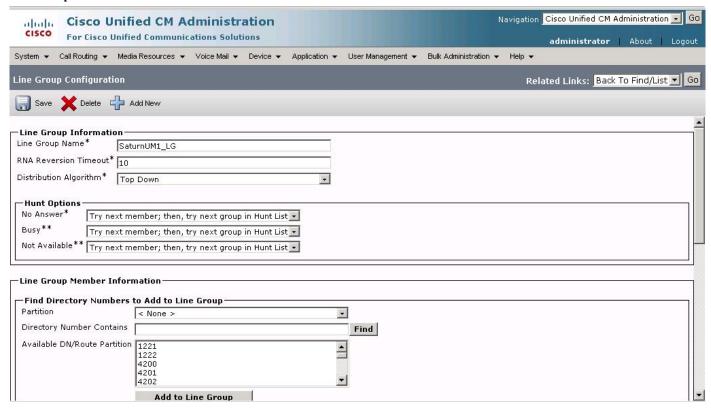


Hunt List - 2 of 2.



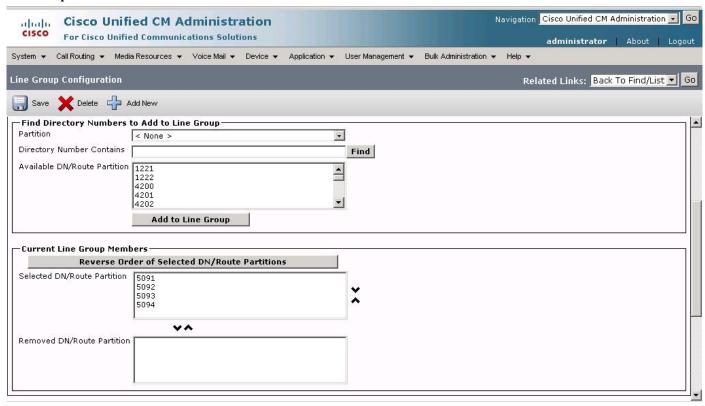


Line Group – 1 of 3.



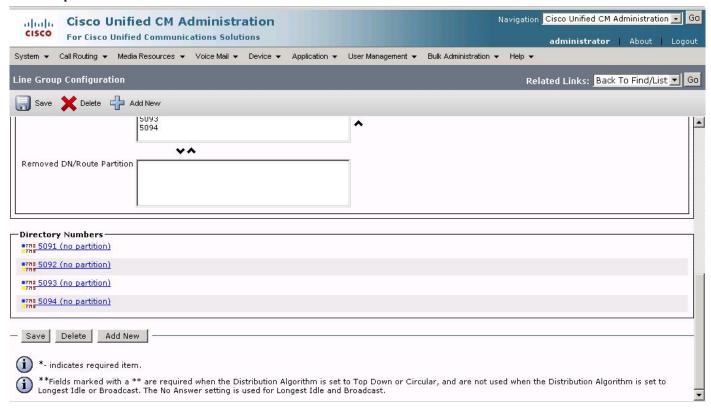


Line Group - 2 of 3.



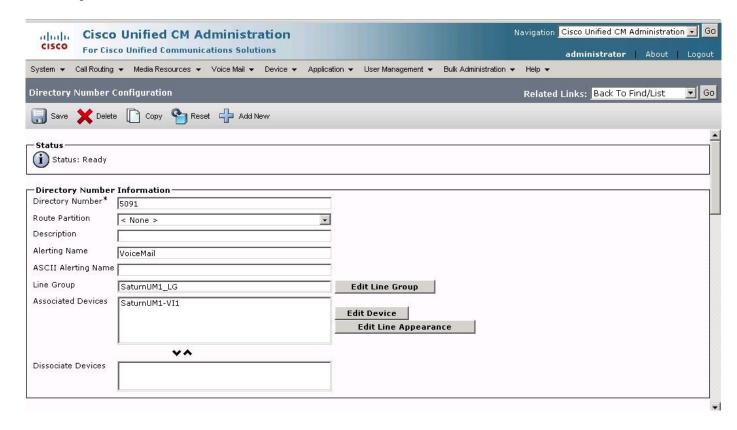


Line Group - 3 of 3.



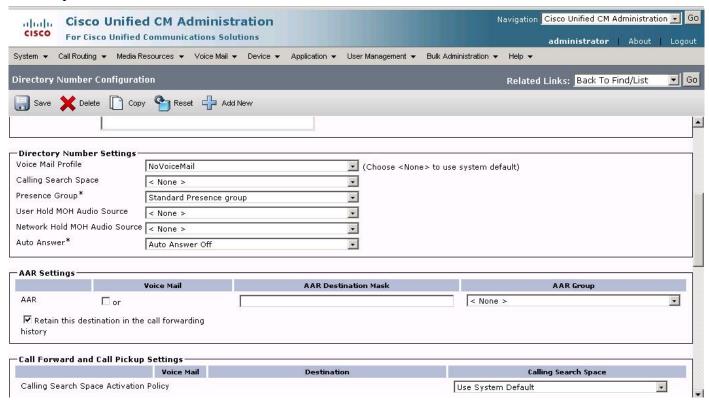


Line Group Line 5091 - 1 of 4.



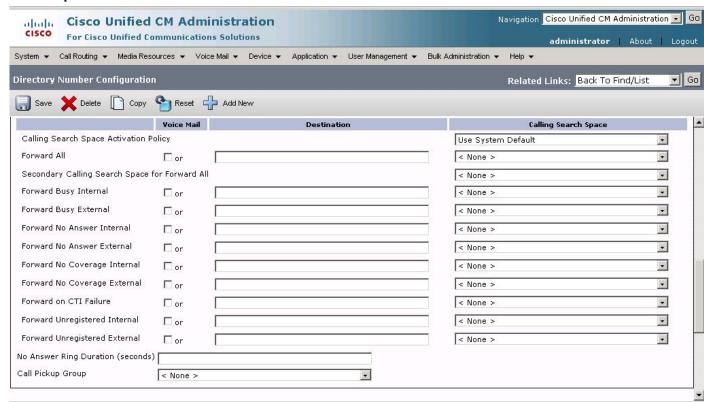


Line Group Line 5091 - 2 of 4.



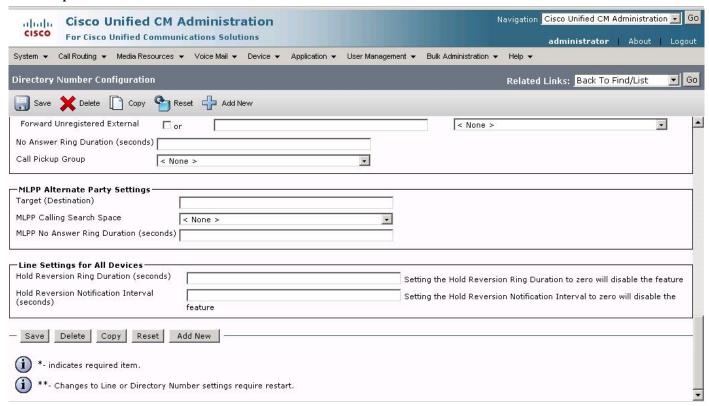


Line Group Line 5091 - 3 of 4.



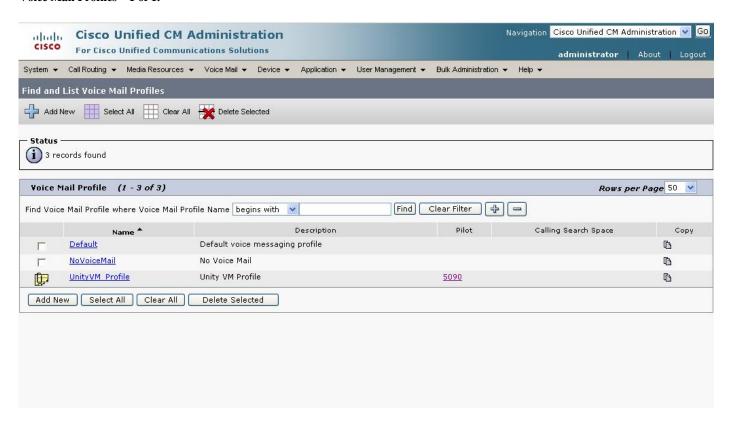


Line Group Line 5091 - 4 of 4.



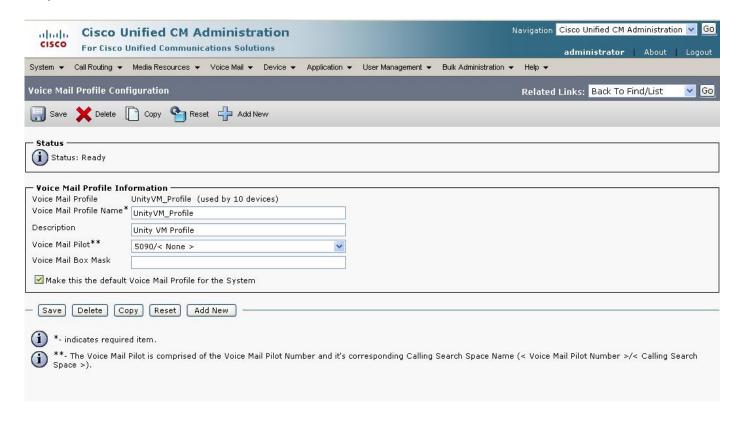


Voice Mail Profiles - 1 of 1.



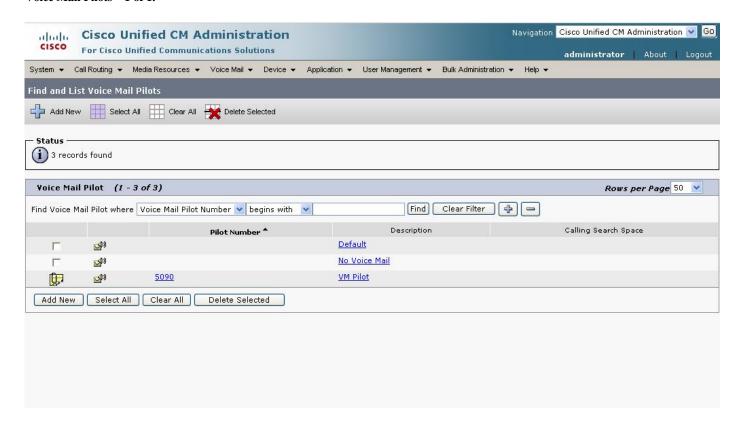


Unity Voice Mail Profile - 1 of 1.



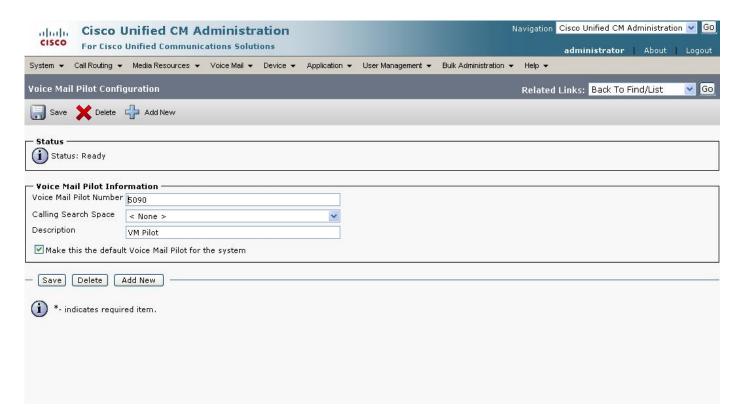


Voice Mail Pilots - 1 of 1.



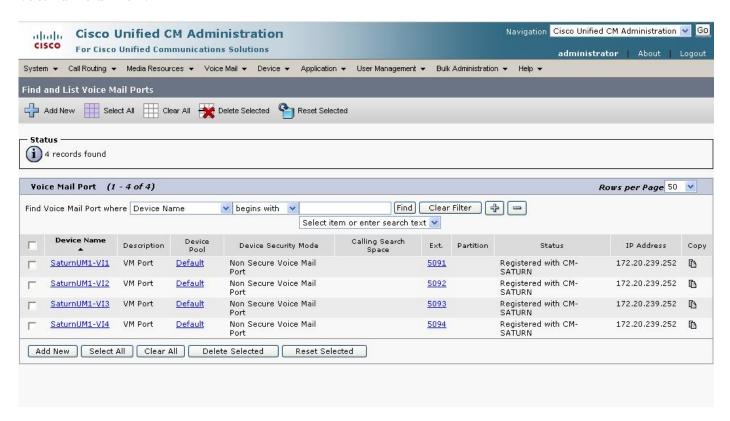


Voice Mail Pilot 5090 - 1 of 1.





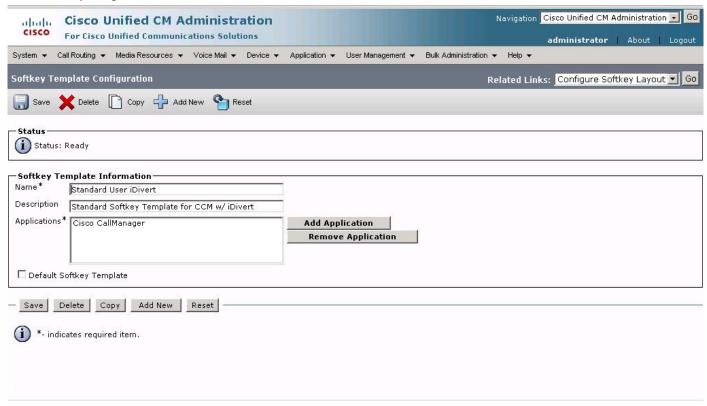
Voice Mail Ports – 1 of 1.





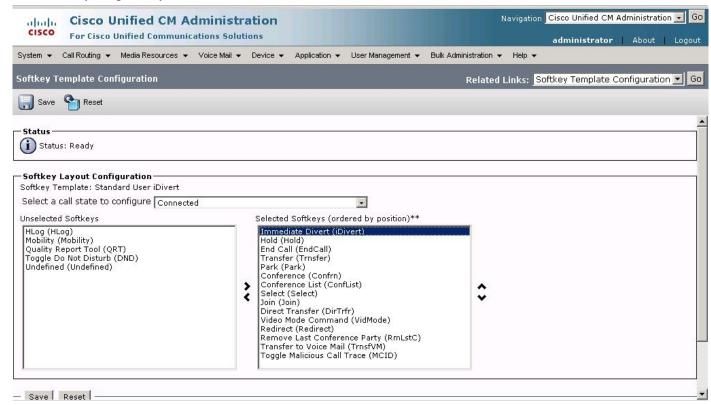
iDivert

iDivert Softkey Template - 1 of 1.



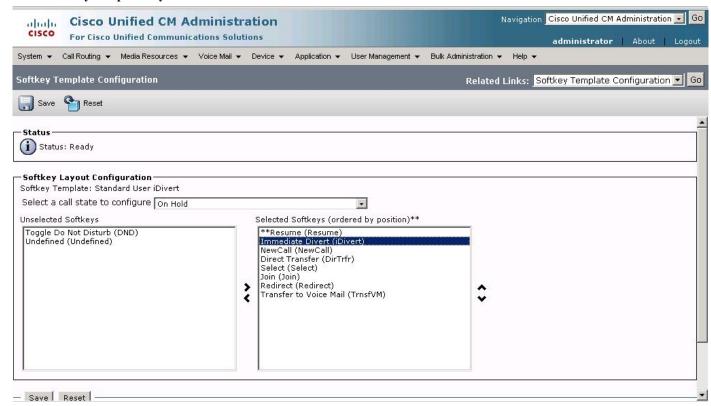


iDivert Softkey Template Layout - Connected - 1 of 1.



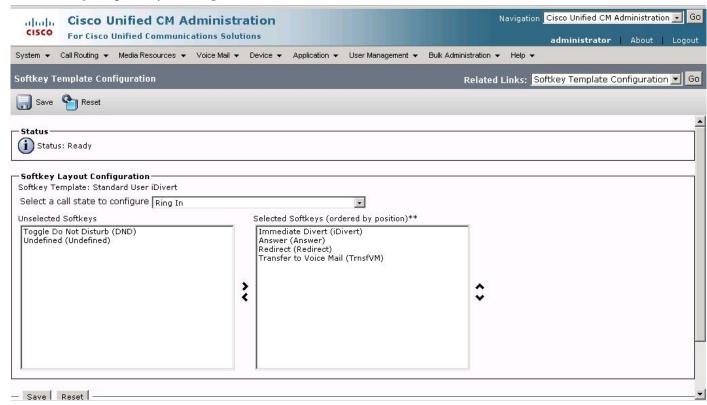


iDivert Softkey Template Layout - Hold - 1 of 1.



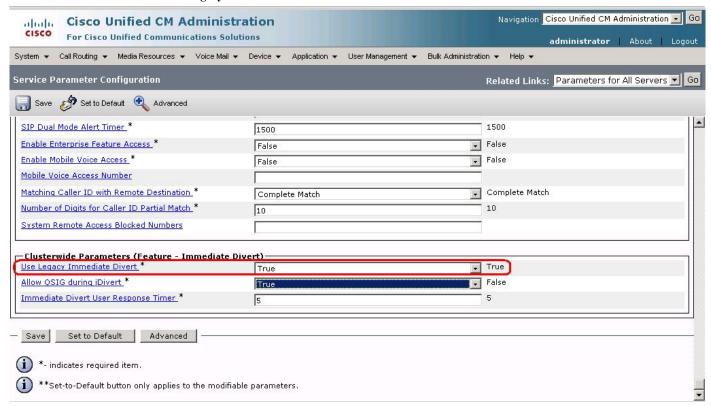


iDivert Softkey Template Layout - Ring in - 1 of 1.



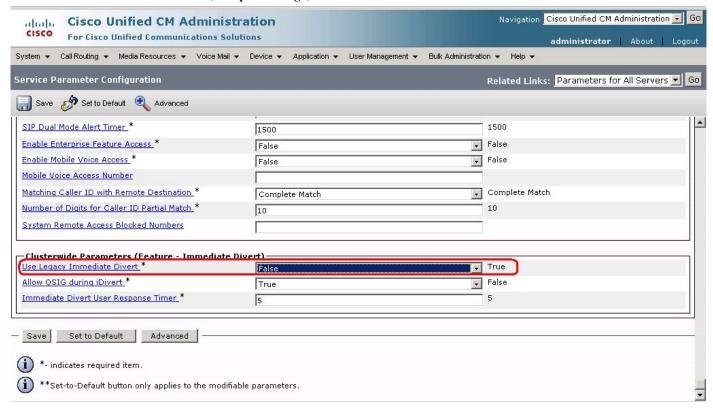


iDivert Service Parameters set for Legacy - 1 of 1.





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





Configuring the Cisco Unified IOS Gateway 2851

2851_pbx#sho ver

Cisco IOS Software, 2800 Software (C2800NM-IPVOICE-M), Version 12.4(11)T, RELEAS

E 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 1 day, 18 hours, 56 minutes

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

47 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



```
2851_pbx# show run
Building configuration...
Current configuration: 3347 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 $1$Aofo$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
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 1-16 service mgcp
```



```
interface GigabitEthernet0/0
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-13 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-13 ccm-manager
isdn bchan-number-order ascending
no cdp enable
```



```
!
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
voice-port 1/0/1:15
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
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
!
!!
!
line con 0
line aux 0
line vty 04
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
```



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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