Application Note

Cisco Unified CallManager Release 5.0-PBX Interoperability: NEC IPX2400 R15 to a Cisco CMM Using E1-PRI ECMA QSIG with MGCP

Initial Version November 30, 2006

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Introduction

This is an application note for connectivity of NEC IPX2400 Release 15 PBX with Cisco Unified CallManager Release 5.0 via Cisco Communication Media Module CMM-E1 as MGCP gateway using ECMA QSIG protocol.

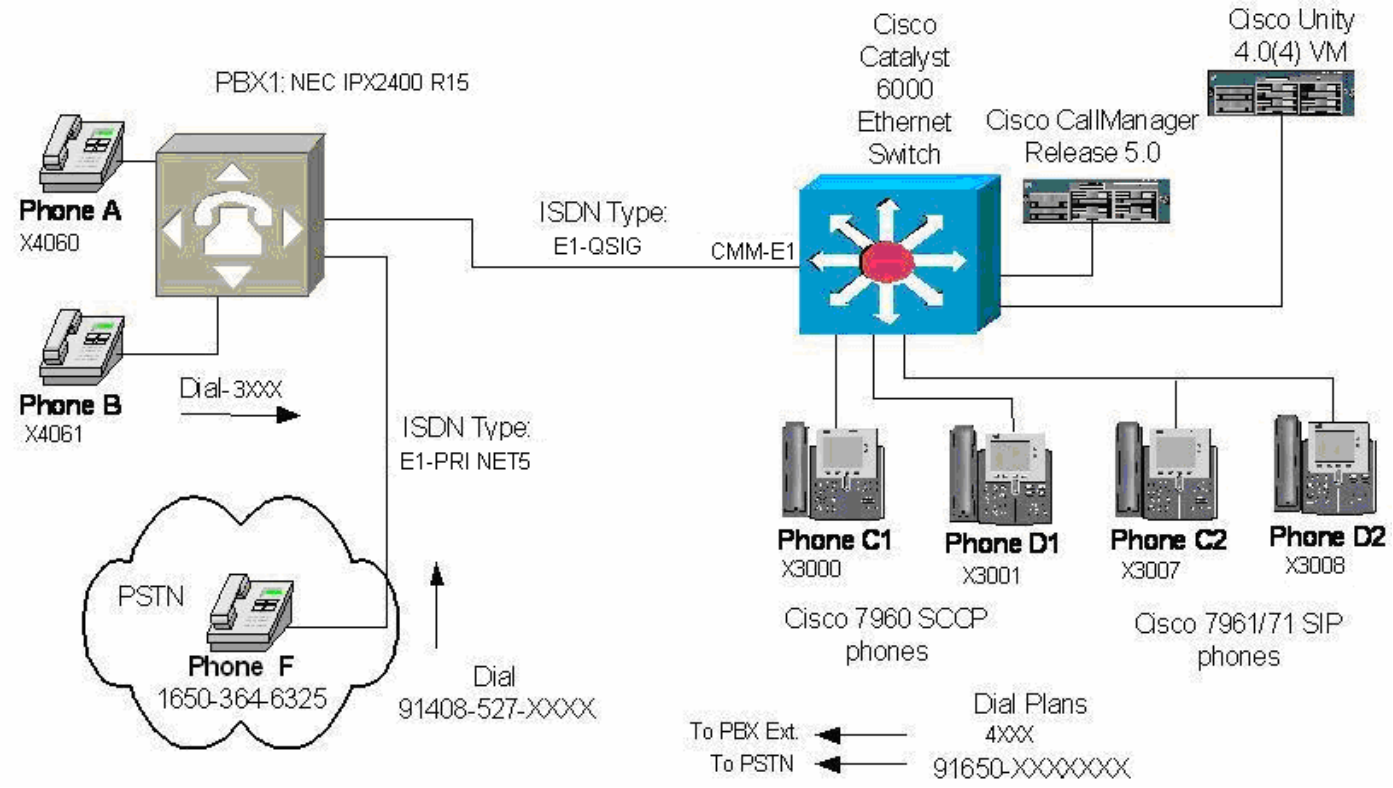
The network topology diagram (Figure 1) shows the test setup for end-to-end interoperability with the Cisco Unified CallManager connected to the PBX via Communication Media Module CMM-E1 link as MGCP gateway. Connectivity is achieved by using the PRI QSIG E1 protocol type on the MGCP gateway with CallManager Service parameter QSIG variant of ECMA and ECMA switch type on the NEC IPX2400

This Application Note uses the Communication Media Module CMM-E1 voice gateway, however other Cisco voice gateways are also an option to use since CallManager QSIG implementation does not depend on the physical interface.

Important Notice: The testing conducted on the NEC E1 QSIG configuration was done using the NEC North American Release 15 software. At this time, Cisco does not have the NEC European release and could not be used for testing. Integrating CCM 5.0 using E1 with a NEC IPX2400 Euro switch may cause different results from the results stated in this document.

Network Topology

Figure 1. Network Topology



Limitations

Call Transfer by join (Consultation local Transfer), Cisco IP Phone x3000 calling to Dterm phone x4060 that is Transferred to Dterm phone x4061. Cisco IP phone x3000 display shows uknown/unknown. NEC IPX2400 sends “CallTrasnferComplete” connected name and number restricted towards CallManager.

Call Transfer by join (Consultation network/external Transfer), Cisco IP Phone x3000 calling to Dterm phone x4060 that is Transferred to Cisco IP phone x3001. Cisco IP phones x3000 and x3001 display unknown/unknown (SCCP IP phone) and Anonymous (SIP IP phone), respectively. NEC IPX2400 sends “CallTrasnferComplete” connected name and number restricted towards CallManager.

Call Transfer by join (Blind network/external Transfer), Cisco IP Phone x3000 calling to Dterm phone x4060 that is Transferred to Cisco IP phone x3001. Cisco IP phone x3001 display shows Anonymous (SIP IP phone). NEC IPX2400 sends “CallTransferComplete” calling Name and number restricted towards CallManager. This limitation is fixed when SS-Path Replacement is activated.

Call Forward by join (local), Cisco IP Phone x3000 calling to Dterm phone x4060 that is forwarded to Dterm phone x4061. Cisco IP phone display shows “4060” as connected number when the call is complete.

Call Forward by Reroute, Dterm phone x4060 calling Cisco IP phone x3000 that is forwarded to Dterm phone x4061. Reroute is initiated by CallManager side and NEC PBX does not honor request.

Call back, Busy or NR, was invoked from Dterm phone x4060 to Cisco IP phone , the original calling name is not shown on the Cisco IP phone x3000. NEC PBX does not send Calling Name on a locally originated CallBack call.

NEC PBX could not restrict Calling Name, however, NEC has an option to turn off/remove name display delivery, in ASYD command (system wide) or remove name from individual stations using ANDD command, or block Name display at a trunk level using ARTD command.

System Components

Hardware Requirements

Cisco Hardware

Cisco Unified CallManager Server

Catalyst 6500

WS-SVC-**CMM**-6E1, Communications Media Module

NEC IPX2400

Circuit card PA-30PRTC

Software Requirements

Cisco Unified CallManager: 5.0

NEC IIPX2400 Release 15

Cisco IOS Release or 12.3 or higher

Features

Features Supported

CLIP-Calling Line (Number) Identification Presentation
CLIR-Calling Line (Number) Identification Restriction
CNIP-Calling Name Identification Presentation
COLP-Connected Line (Number) Identification Presentation
CONP-Connected Name Identification Presentation
Send Alerting Name
Call Back/Call Completion
CT-Call Transfer (by join)
CFU-Call Forwarding Unconditional
CFB-Call Forwarding Busy
CFNR-Call Forwarding No Reply
Call Forward by Reroute
ANF-PR-Additional Network Feature Path Replacement (for Call Transfer by join)
ANF-PR-Additional Network Feature Path Replacement (for Trombone connection)

Features Not Supported

CONR- Connected Name Identification Restriction – (NEC IPX2400 could not change connected name to restricted).
COLR- Connected Line (Number) Identification Restriction – (NEC IPX2400 could not change connected number to restricted).
Q.SIG MWI- Message Waiting Indication (lamp ON, lamp OFF), the current NEC IPX2400 North American Release 15 software does not support QSIG-MWI.
Overlap sending and overlap receiving are not supported on the current NEC IPX2400 North American Release 15 software.
ANF-PR-Additional Network Feature Path Replacement (for Call Forward by join), the current NEC IPX2400 North American Release 15 software does not support Path Replacement on Call Forward by join.

Configuration

Important Notice: It is important that the engineer/technician modifying the IPX2400 configuration be well versed in the NEC MAT command line. The NEC MAT command line is very precise and should only be changed by a person who is certified by NEC and has the in-depth knowledge on how to troubleshoot the system in case erratic behavior results.

Configuring the NEC2400 IPX PBX

Configure the PBX in the following sequence:

Physical Layer Set-up:

SW Mode➔SW15➔SW16

Note: You must set the switches on the PA-30PRTC appropriately for QSIG operation.

Enable QSIG services:

ASYD➔ASFC

To build the QSIG route:

ARTD➔ARTI➔ATRK➔ARSC➔ARRC➔ADPC➔ACSC➔ACIC1➔ACIC2➔MBRT

To build the dial plan to access the QSIG route (Assumes dummy route has been built and ARRC is assigned properly):

ANPD➔ASPA➔AMND➔AFRS➔AOPR➔ARNP

Configuration Menus and Commands

Physical Layer Set-up:

SW Mode

Set to 10 (A in HEX)

SW15

Set switch 6 to ‘off’ (Sets CRC4 control active)

SW16

Set switch 4 to ‘off’ (This switch determines the L2/L3 ISDN protocol side emulation for the route Off=Network/On=User)

Note: To set other physical layer parameters such as interface impedance (75 or 120ohms), alarm monitoring and Loss Pad settings please refer to the NEC CIRCUIT CARD GUIDE for the PA-30PRTC. These parameters are not covered in this document. The value of these parameters will depend upon the installation of each individual Telephony network.

Enable QSIG services

ASYD

System 1, Index 186, bit 6 = 1 (ISDN service enabled)
System 1, Index 375, bit 0 = 1 (avoid Bch lockup)

ASFC

SFI 94 set to ‘0’ (ANI)

Build QSIG Route

ARTD

Note: You must build two ARTD forms, one for the b-channels and one for the d-channel

RT 17 (B-Channels)

CDN		Data	CDN		Data	CDN		Data
001	OSGS	0	043	BT	1	085	CSEU	0
002	ONSG	2	044	PRV	0	086	CSEL	0
003	ISGS	0	045	A/D	1	087	CMP	0
004	INSG	2	046	CW	0	088	TALK	0
005	TF	3	047	TPQ	0	089	FOT	0
006	TCL	4	048	BL	0	090	RST	0
007	L/T	1	049	TRKS	0	091	TOCI	0
008	RLP	2	050	DPLY	1	092	TOCD	0
009	TQ	0	051	ACD	0	093	ODGD	0
010	SMDR	0	052	2w/4w	0	094	RLS	0
011	TD	0	053	FAAT	0	095	GWD	0
012	DR	0	054	GW	0	096	H1	0
013	AC	0	055	TCMA	0	097	DT	0
014	TNT	0	056	SMDR3	0	098	CI	0
015	LSG	12	057	HDT	0	099	OID	0
016	SMDR2	0	058	CD	0	100	TKS	0
017	H/M	0	059	CCH	0	101	PAD2	0
018	MC	0	060	TC/EC	0	102	TRM	0
019	ANI	0	061	IRE	0	103	TRPX	0
020	D	0	062	SCR	0	104	LDR	0
021	MSB	0	063	LYER1	1	105	TSC	0
022	MSW	0	064	NET	0	106	SATS	0
023	TR	0	065	INT	10	107	RVPX	0
024	OC	0	066	DC	4	108	DQ	0
025	R/L	0	067	HKS	0	109	SLOV	0
026	RVSD	0	068	SCF	0	110	SDTO	0
027	TL	0	069	SMDR4	0	111	ADVPRA	0
028	ANS	1	070	TCMN	0	112	IND	1
029	TELP	0	071	TCMC	0	113	UUI	0
030	PAD	4	072	MFSP	0	114	DCH	0
031	OGRL	1	073	KPST	0	115	CMRT	0
032	ICRL	1	074	KPPT	0	116	PREF	0
033	HD	0	075	STC	0	117	DFS	0
034	GUARD	1	076	MC2	0	118	BOB	0
035	WINK	0	077	MT	0	119	HO1CH	0
036	VAD	0	078	TONE	0	120	IFR	0
037	CLD	0	079	PPTM	0	121	CONV	0
038	FA	0	080	MPTM	0	122	ORRT	0
039	BC	0	081	LPTM	0	123	CNI	0
040	TCM	0	082	RSAX	0	124	AOC	0
041	TDMQ	0	083	CST	0	125	MGCOT	0
042	TRSC	0	084	CSEG	0			

Note 1: On the B-channel ARTD table, parameter IND must be set to ‘1’ for Name display, to disable Name display feature on the trunk change the value of IND to ‘0’.
Note 2: On the B-channel ARTD table, parameter DC must be set to equal the maximum number of digits in the PBX’s station numbers.

RT 18 (D-channel)

CDN		Data	CDN		Data	CDN		Data
001	OSGS	0	043	BT	0	085	CSEU	0
002	ONSG	0	044	PRV	0	086	CSEL	0
003	ISGS	0	045	A/D	0	087	CMP	0
004	INSG	0	046	CW	0	088	TALK	0
005	TF	0	047	TPQ	0	089	FOT	0
006	TCL	4	048	BL	0	090	RST	0
007	L/T	1	049	TRKS	0	091	TOCI	0
008	RLP	0	050	DPLY	0	092	TOCD	0
009	TQ	0	051	ACD	0	093	ODGD	0
010	SMDR	0	052	2w/4w	0	094	RLS	0
011	TD	0	053	FAAT	0	095	GWD	0
012	DR	0	054	GW	0	096	H1	0
013	AC	0	055	TCMA	0	097	DT	0
014	TNT	0	056	SMDR3	0	098	CI	0
015	LSG	13	057	HDT	0	099	OID	0
016	SMDR2	0	058	CD	0	100	TKS	0
017	H/M	0	059	CCH	0	101	PAD2	0
018	MC	0	060	TC/EC	0	102	TRM	0
019	ANI	0	061	IRE	0	103	TRPX	0
020	D	0	062	SCR	0	104	LDR	0
021	MSB	0	063	LYER1	1	105	TSC	0
022	MSW	0	064	NET	0	106	SATS	0
023	TR	0	065	INT	10	107	RVPX	0
024	OC	0	066	DC	0	108	DQ	0
025	R/L	0	067	HKS	0	109	SLOV	0
026	RVSD	0	068	SCF	0	110	SDTO	0
027	TL	0	069	SMDR4	0	111	ADVPRA	0
028	ANS	1	070	TCMN	0	112	IND	0
029	TELP	0	071	TCMC	0	113	UUI	0
030	PAD	7	072	MFSP	0	114	DCH	0
031	OGRL	0	073	KPST	0	115	CMRT	0
032	ICRL	0	074	KPPT	0	116	PREF	0
033	HD	0	075	STC	0	117	DFS	0
034	GUARD	0	076	MC2	0	118	BOB	0
035	WINK	0	077	MT	0	119	HO1CH	0
036	VAD	0	078	TONE	0	120	IFR	0
037	CLD	0	079	PPTM	0	121	CONV	0
038	FA	0	080	MPTM	0	122	ORRT	0
039	BC	0	081	LPTM	0	123	CNI	0
040	TCM	0	082	RSAX	0	124	AOC	0
041	TDMQ	0	083	CST	0	125	MGCOT	0
042	TRSC	0	084	CSEG	0			

ARTI

RT 17

RST	0	RSCT	0	IDRT	0	COT	0
HMT	0	ROCG	0	ECCISTD	0	SS7	0
TRCRST	0	RICG	0	MFCG2	0	NI2ID	0
TRSRST	0	STSENQ	0	OPCC	0	CLRF	0
T309LNK	0	MMNPASS	0	ICTCON	0	TRC	0
T309CON	0	DLTK	0	VRD	0	OID	0
LLCRST	0	CALN	0	INTD	0	PHG	0
VCM	0	NETINT	0	JECCIS	0	VIR	0
POOL	0	RETMSG	0	IPINT2	0	CSMDS	0
DTRT	0	ANI	0	IPTRK	0	FXD	0
TMPRT	0	SRV	0	CTCF	1	FXJS	0
CODEC	0	TON	0	RERT	1	FXPT	0
PASS	0	NPI	0	DCANS	0	FXPS	0
IRL	0	L/T	0	RND	0	CPI	0
MTC	0	ECCIS	0	CLBK	0	E911	0
TC	0	ECCISTM	0	UALAW	2	RA_RT	0
TS	0	ECCISOB	0	MCTFAC	0		
CDCSPD	0	ECCISIB	0	RE	1		
DVRST	0	SPMET	0	PR	1		

Note: The following parameters determine the state of the following QSIG-SS features: CTCF-Call forward/Call transfer, RERT-CF Reroute, PR-Path Replacement. To set the feature enabled you must set it to ‘1’, if you want the feature disabled change the setting to ‘0’. Parameter INTD determines what flavor of QSIG is to be used (INTD=1 is ISO, INTD=0 is ECMA)

ATRK

* Trunk Data List *	
Starting	Ending
RT 17 TK 1	RT 18 TK 32

RT	TK	LENS	TN
17	1	001121	1
17	2	001122	1
17	3	001123	1
17	4	001124	1
17	5	001125	1
17	6	001126	1
17	7	001127	1
17	8	001130	1
17	9	001131	1
17	10	001132	1
17	11	001133	1
17	12	001134	1
17	13	001135	1
17	14	001136	1
17	15	001137	1
17	17	001141	1
17	18	001142	1
17	19	001143	1
17	20	001144	1
17	21	001145	1
17	22	001146	1
17	23	001147	1
17	24	001150	1
17	25	001151	1
17	26	001152	1
17	27	001153	1
17	28	001154	1
17	29	001155	1
17	30	001156	1
17	31	001157	1
18	1	001140	1
18	2	001120	1

ARSC

* Route Restriction Class List *	
Starting	Ending
Tenant 1 Route 17	Tenant 1 Route 17

				RSC Data Settings															
Tenant	Day/Night	Route	RRI	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	DAY	17	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
			2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
			3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

ARRC

* Alternative Route Restriction List *	
Starting	Ending
Incoming Route 17 Outgoing Route 17	Incoming Route 31 Outgoing Route 31

Incoming Route	Outgoing Route	ARI A-Restriction	ARI D-Restriction
17	17	1	1
17	19	1	1
17	31	1	1
18	18	1	1
18	20	1	1
18	31	1	1
19	17	1	1
19	19	1	1
19	31	1	1
20	18	1	1
20	20	1	1
20	31	1	1
22	23	1	1
22	31	1	1
23	22	1	1
23	31	1	1
31	17	1	1
31	18	1	1
31	19	1	1
31	20	1	1
31	31	1	1

ADPC

* Determinate Point Code Data List *	
Starting	Ending
RT 17	RT 18

RT	PC
17	3
18	3

ACSC

* CSC Data List *	
Starting	Ending
CSCG 134	CSCG 135

CSCG	GROUP:	0	1	2	3	4	5	6	7
134	CCH:	00112	00112	00112	00112	00112	00112	00112	00112
135	CCH:	00112	00112	00112	00112	00112	00112	00112	00112

Note: Because we are using circuit card PA-30PRTC, you assign the same LENS number to each CSCG number. You must assign an even CSCG number for the b-channels and an odd CSCG number for the D-channel. If you are using circuit cards PA-2DCH + PA-30DTR the LENS assignment to the B-channels and D-channels differ, please contact NEC customer support for technical assistance.

ACIC1

* CIC Code Data 1 List *	
Starting	Ending
PC 3	PC 3

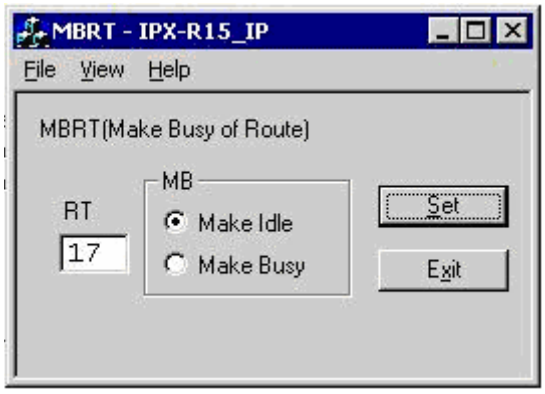
PC	CSCG	PC	CSCG	PC	CSCG
3	134				

ACIC2

* CIC Code Data 2 List *	
Starting	Ending
PC 3 CIC 1	PC 3 CIC 32

Determinate Point Code	Circuit Identification Code	LENS
3	1	001121
3	2	001122
3	3	001123
3	4	001124
3	5	001125
3	6	001126
3	7	001127
3	8	001130
3	9	001131
3	10	001132
3	11	001133
3	12	001134
3	13	001135
3	14	001136
3	15	001137
3	16	001141
3	17	001142
3	18	001143
3	19	001144
3	20	001145
3	21	001146
3	22	001147
3	23	001150
3	24	001151
3	25	001152
3	26	001153
3	27	001154
3	28	001155
3	29	001156
3	30	001157

MBRT



Build the dial plan to access the QSIG route (Assumes dummy route has been built and ARRC is assigned properly)

ANPD

* Numbering Plan Data List *	
Starting	Ending
Tenant 1	Tenant 1

		Normal		Hooking		Busy	
Tenant	1stDC	NND	Busy Lamp Field	NND	Busy Lamp Field	NND	Busy Lamp Field
1	0	1	Out of Service	1	Out of Service	1	Out of Service
	1	5	In Service	5	In Service	5	In Service
	2	2	In Service	2	In Service	-	-
	3	4	Out of Service	4	Out of Service	4	Out of Service
	4	4	Out of Service	4	In Service	4	In Service
	5	4	Out of Service	4	Out of Service	4	Out of Service
	6	-	-	-	-	-	-
	7	-	-	-	-	-	-
	8	1	Out of Service	-	-	-	-
	9	-	-	-	-	-	-
	*	3	Out of Service	3	Out of Service	3	Out of Service
	#	-	-	-	-	-	-

ASPA

* Special Access Code List *	
Starting	Ending
Tenant 1 Access Code 3 Connection Index Normal	Tenant 1 Access Code 3 Connection Index Busy

TN	ACC	CI	SRV									
1	3	Normal	LCR	RT	: 31	2ndDT	: 1	AH	: 0	SUB	: 0
1	3	Hooking	LCR	RT	: 31	2ndDT	: 1	AH	: 0	SUB	: 0
1	3	Busy	LCR	RT	: 31	2ndDT	: 0	AH	: 0	SUB	: 0

AMND

* Maximum Necessary Digits Data List *	
Starting	Ending
Tenant 1 DC 3	Tenant 1 DC 3

Tenant	DC	MND	TOLL	AN	RATE	A/D
1	3	4	0	0	0	1

AFRS

* Flexible Route Selection List *	
Starting	Ending
Tenant 1 Route 31 NPC 3	Tenant 1 Route 31 NPC 3

Tenant	Route	Number Pattern Code	OPR
1	31	3	3

AOPR

* Outgoing Pattern Routing Data List *	
Starting	Ending
TDPTN 0 OPR 3 RA Order 0	TDPTN 0 OPR 3 RA Order 0

TDPTN	OPR	RA Order	RA End	Route	SKIP	PNL	OVFT	PRSC
0	3	0	0	17	0	0	0	0

ARNP

[IPX-R15_IP::LRNP] May 17, 2006

* Reverse Numbering Plan Data List *	
Starting	Ending
Route 4	Route 4

Route	Access Code
17	3

Dterm Data (Digital Stations)

ASDT

* Station Data List *	
Starting	Ending
TN 1 STN 4060	TN 1 STN 4061

TN	STN	LENS	TEC	RSC	SFC	ETN	KD	CG	CE	HC	HP	HU	PH	HL	ND	NS	D1	D2	IC	SS	WS	IT	LNL	LNN
1	4060	000032	12	1	1	1									X									
1	4061	000031	12	1	1	1									X									

ANND (Name display for Dterms)

* Name Display Data List *	
Starting	Ending
Tenant 1 Station 4060	Tenant 1 Station 4061

Tenant	Station	Name Display
1	4060	Beasely
1	4061	Landon Donovan

ASFC SFI 94 (used to restrict Calling Number)

```
              * Service Feature Restriction Class List *
            Starting                                  Ending

         Tenant 1                                  Tenant  1
            SFI 94                                    SFI  94

                                   SFC Attribute Settings
Tenant    Mode    SFI    0  1 2  3    4 5  6 7    8  9 10 11   12 13 14 15
1         Day     94     0  0 0  0    0 0  0 0    0  0 0  0    0   0  0  1
```

Note: To restrict 'Calling Number' you assign SFC =15 (or any SFC set to '1'), under ASDT command for the Dterm station you want to restrict.

Call Back

ASYD

ASYD - System Data 1, Index 139. No Answer Timer for CALL BACK. Assign 00H. (RAM Data is 3FH = 30 seconds.)

System Data 1, Index 68, Bit 0. 0/1: SHF and Access Code/last digit of Telephone Number + Access Code.

System Data 2, Index 0, Bit 0. Is CALL BACK enabled on a per Tenant basis? 0/1: No/Yes.

System Data 2, Index 4, Bit 0. CALL BACK and OUTGOING TRUNK QUEUING [O-2] Access Codes are same or separate? 0/1: Separate/Same.

ASFC

SFI 2 allows/restricts CallBack feature.

* Service Feature Restriction Class List *	
Starting	Ending
Tenant 1 SFI 2	Tenant 1 SFI 2

			SFC Attribute Settings															
Tenant	Mode	SFI	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Day	2	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Note: On each Dterm station Assign a SFC that has SFI=2 set to '1', using a SFC with SFI=2 set to '0' restricts CallBack.

ADSL (Assigning CallBack feature on Dterm softkey)

* Dterm Soft Key on LCD Data in LDM List *	
Starting	Ending
SKP 1 SN 2	SKP 1 SN 3

SKP	SN	SKN	FKY	DISP
1	2	0	5	CB
1	2	1	0	00
1	2	2	0	00
1	2	3	0	00
1	2	4	0	00
1	2	5	0	00
1	2	6	0	00
1	2	7	0	00
1	2	8	0	00
1	2	9	0	00
1	2	10	0	00
1	2	11	0	00
1	2	12	0	00
1	2	13	0	00
1	2	14	0	00
1	2	15	0	00
1	3	0	5	CB
1	3	1	0	00
1	3	2	0	00
1	3	3	0	00
1	3	4	0	00
1	3	5	0	00
1	3	6	0	00
1	3	7	0	00
1	3	8	0	00
1	3	9	0	00
1	3	10	0	00
1	3	11	0	00
1	3	12	0	00
1	3	13	0	00
1	3	14	0	00
1	3	15	0	00

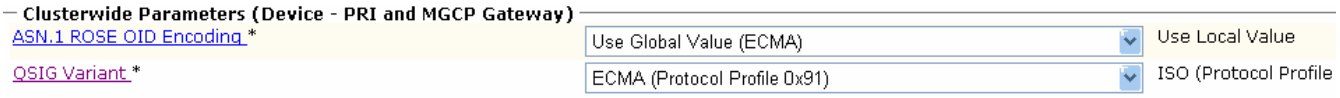
ADKS (Assigns soft key pattern to Dterm station)

* Dterm Key Status Data for LDM List *	
Starting	Ending
Tenant 1 Station 4060	Tenant 1 Station 4061

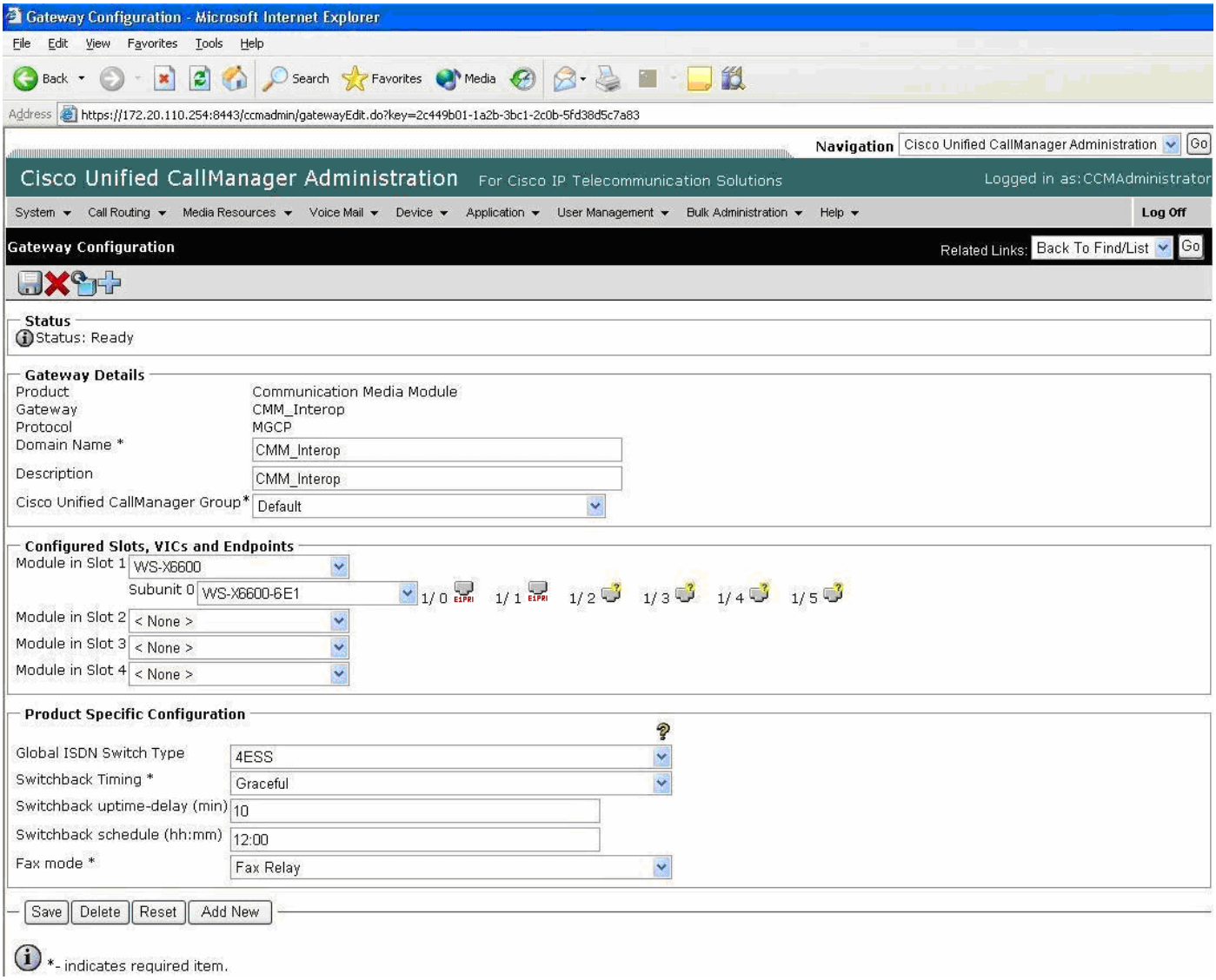
Tenant	Station	Soft Key Pattern	Line Key Pattern	Page Scroll Key
1	4060	1	3	0
1	4061	1	1	0

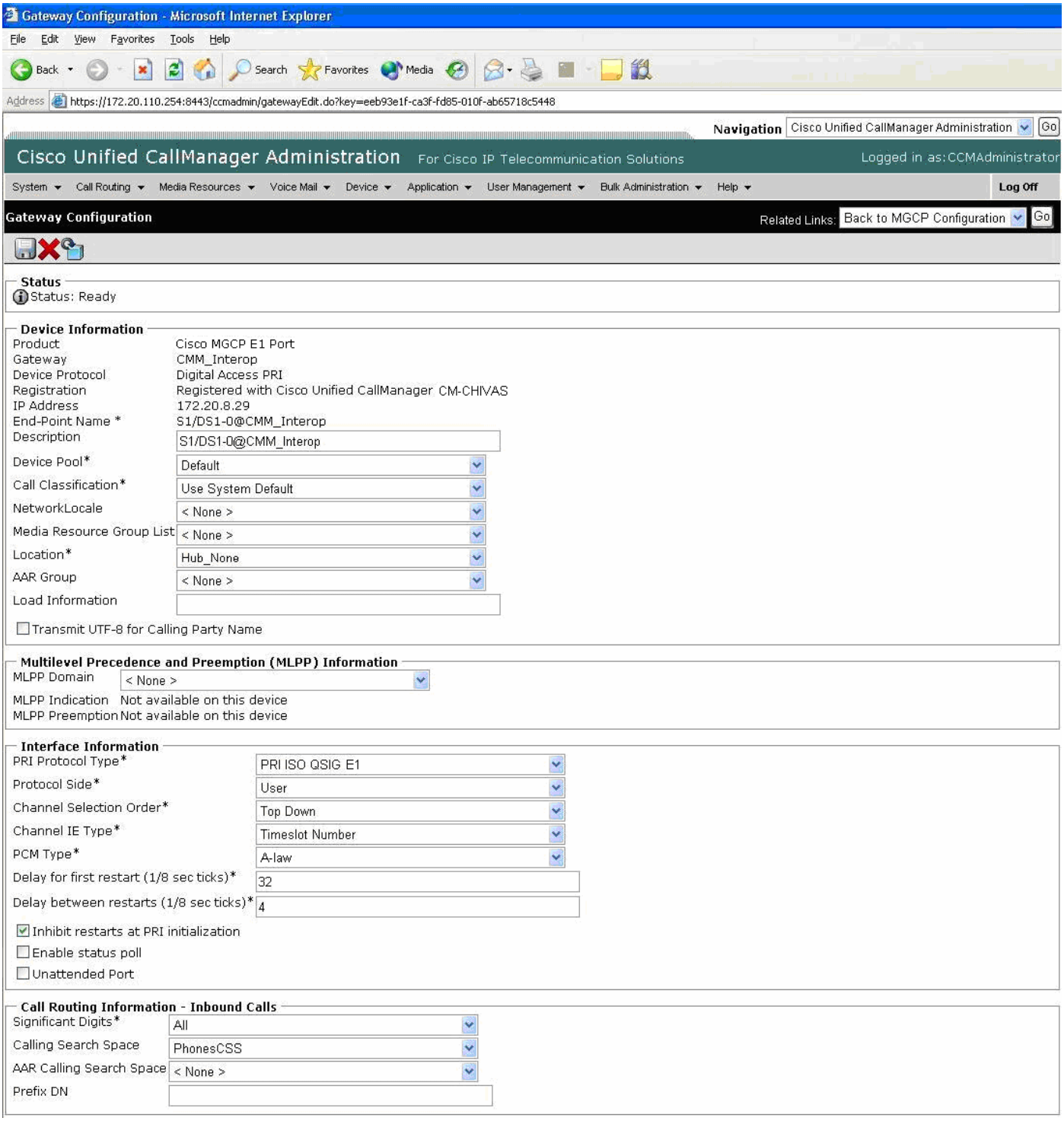
Cisco Unified CallManager Configuration

ECMA Protocol Service Parameter



Cisco Unified CallManager (CCM) Gateway Configuration





PRI Protocol Type Specific Information

- [ ] Display IE Delivery
- [ ] Redirecting Number IE Delivery - Outbound
- [ ] Redirecting Number IE Delivery - Inbound
- [ ] Send Extra Leading Character in Display IE***
- [ ] Setup non-ISDN Progress Indicator IE Enable****
- [ ] MCDN Channel Number Extension Bit Set to Zero**
- [ ] Send Calling Name In Facility IE
- [ ] Interface Identifier Present**

Interface Identifier Value** 0

Connected Line ID Presentation (QSIG Inbound Call)* Default

UUIE Configuration

- [ ] Passing Precedence Level Through UUIE

Security Access Level* 2

Product Specific Configuration

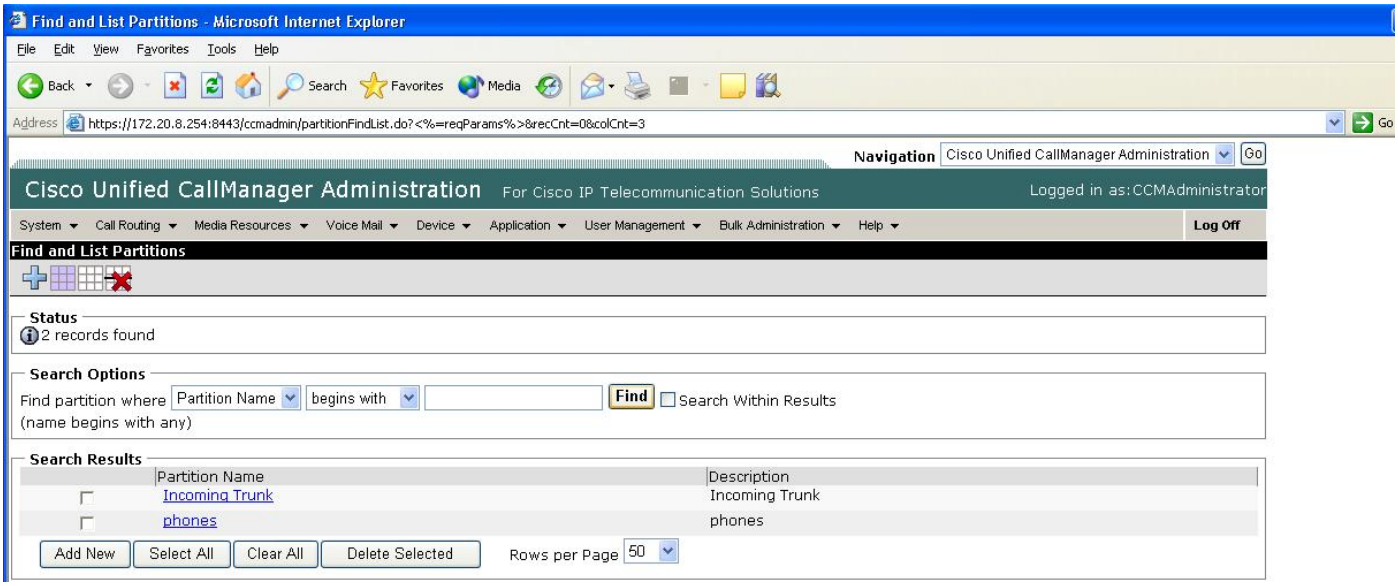
Line Coding *	HDB3
Framing *	CRC4
Clock *	External
Input Gain (-6..14 db) *	0
Output Attenuation (-6..14 db) *	0
Echo Cancellation Enable *	Enable
Echo Cancel Coverage (ms) *	64

Save Delete Reset

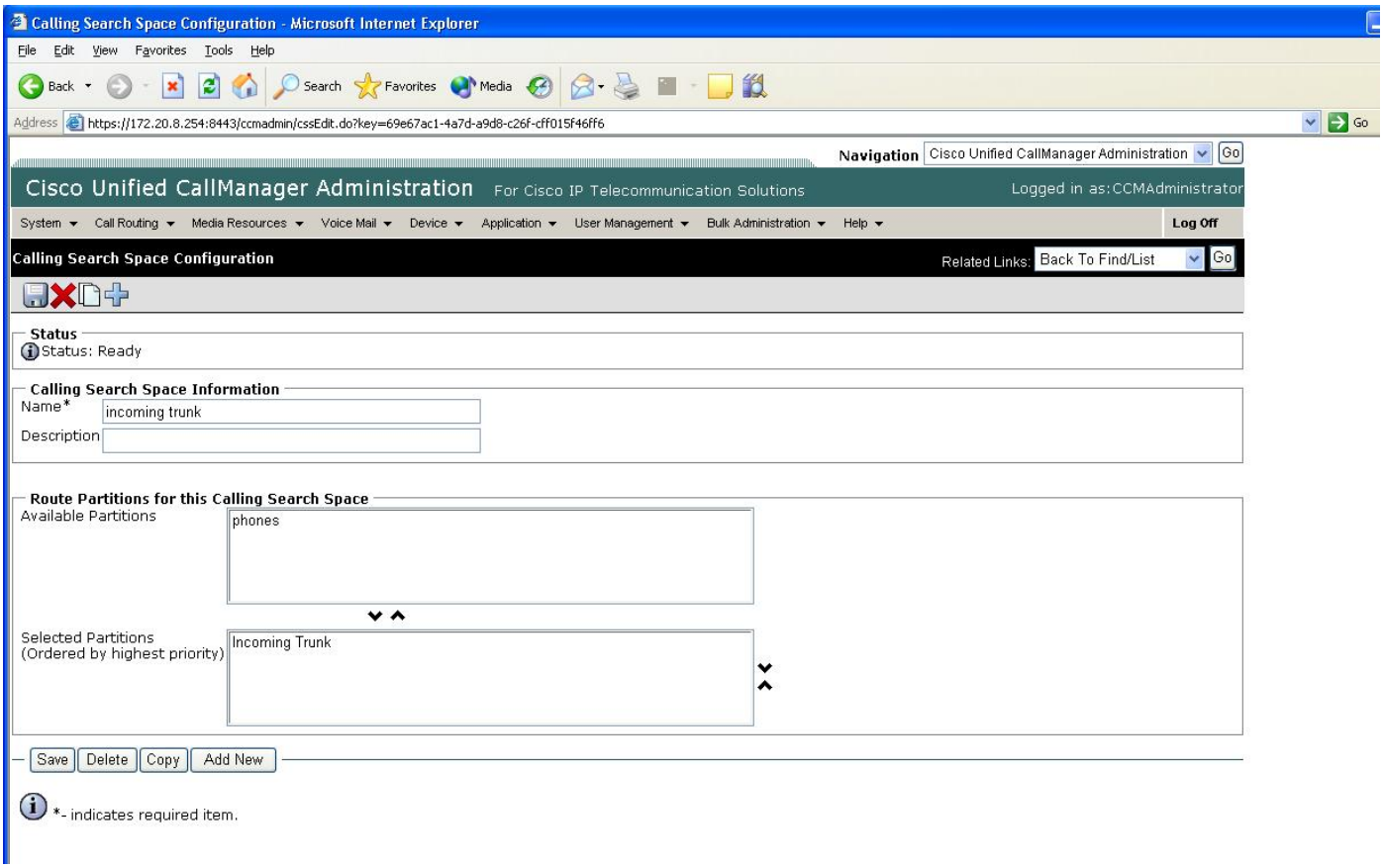
*- indicates required item.

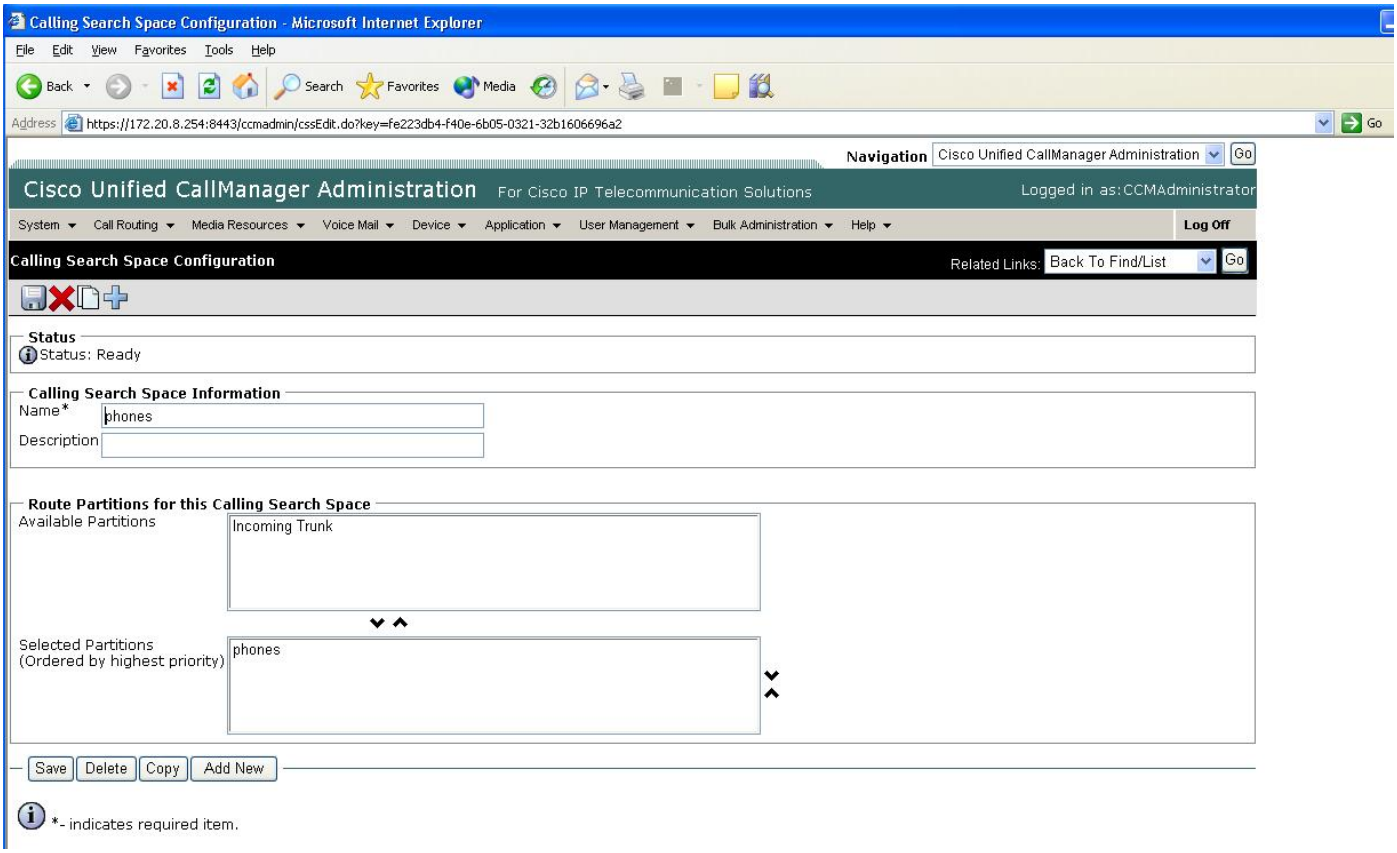
**- applies to DMS-100 protocol only.

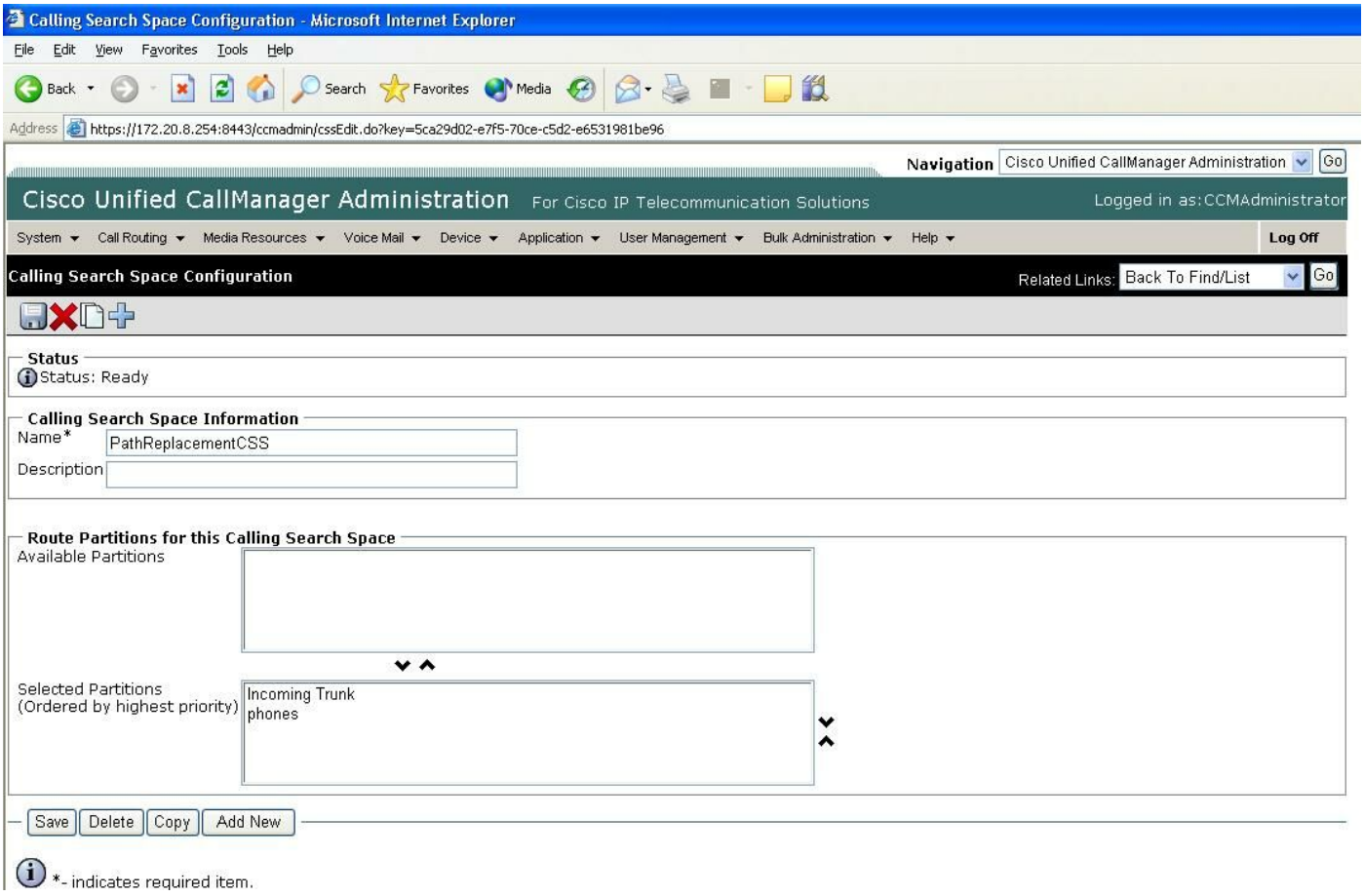
Partitions Configuration



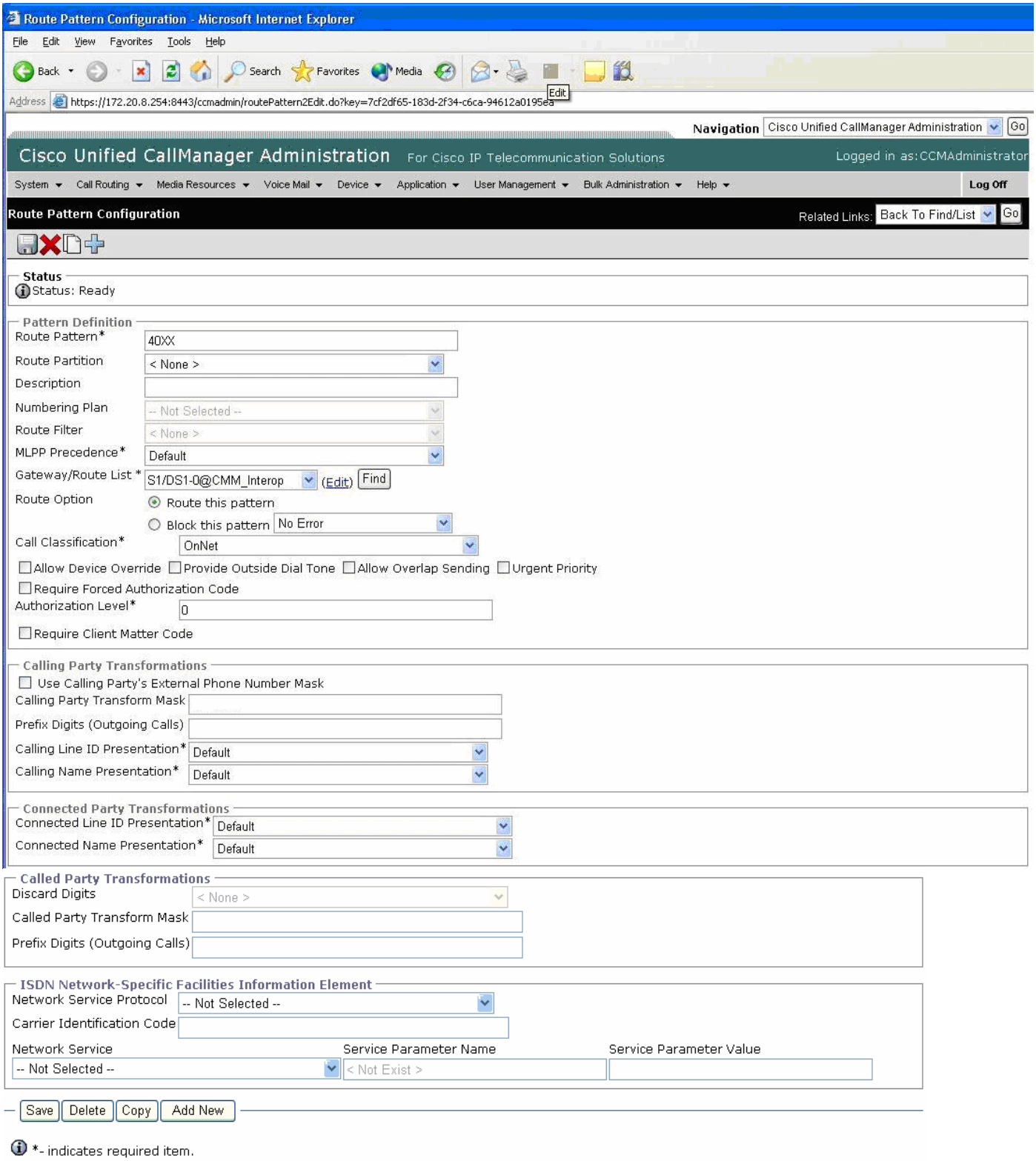
Calling Search Space Configuration



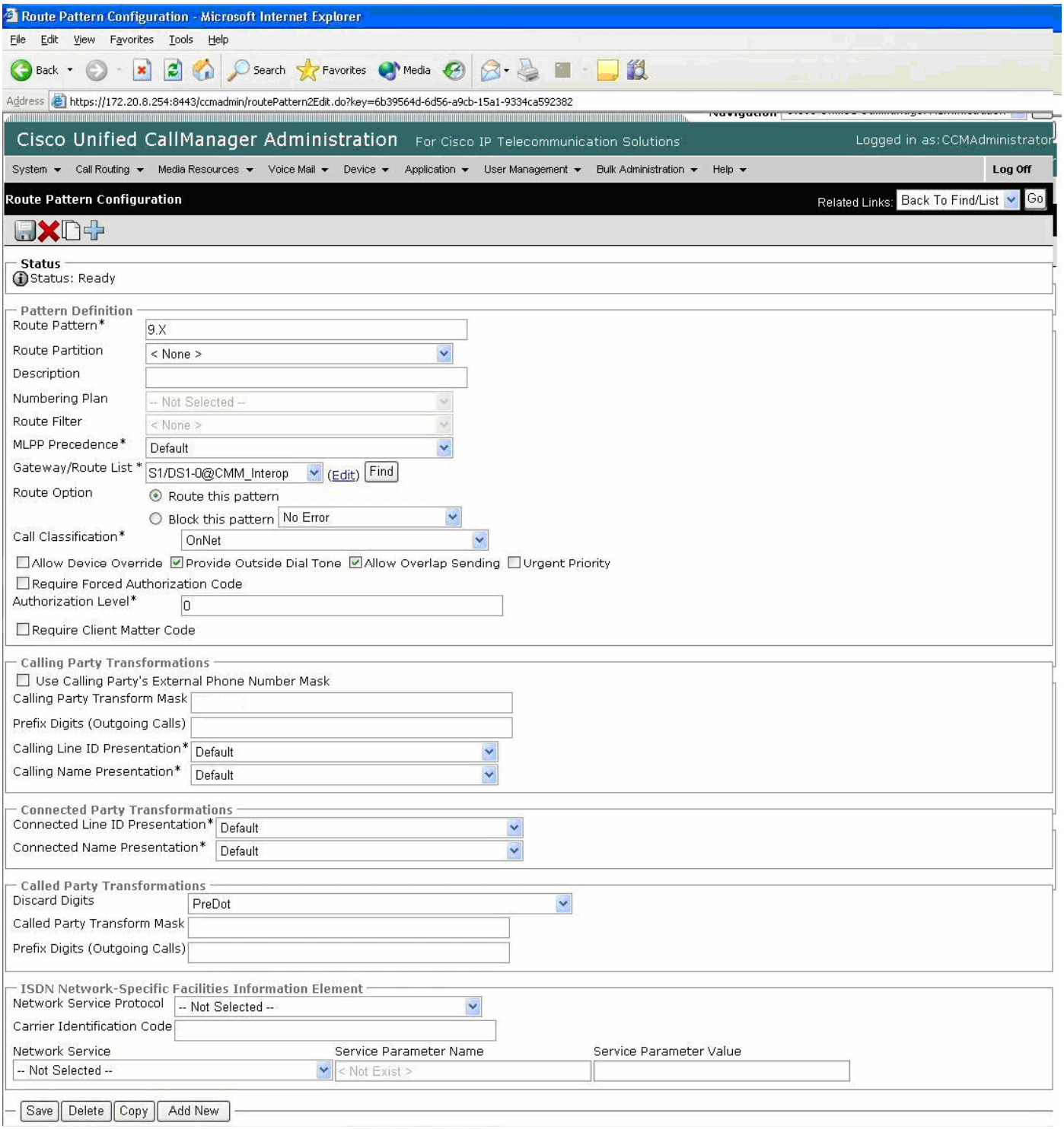




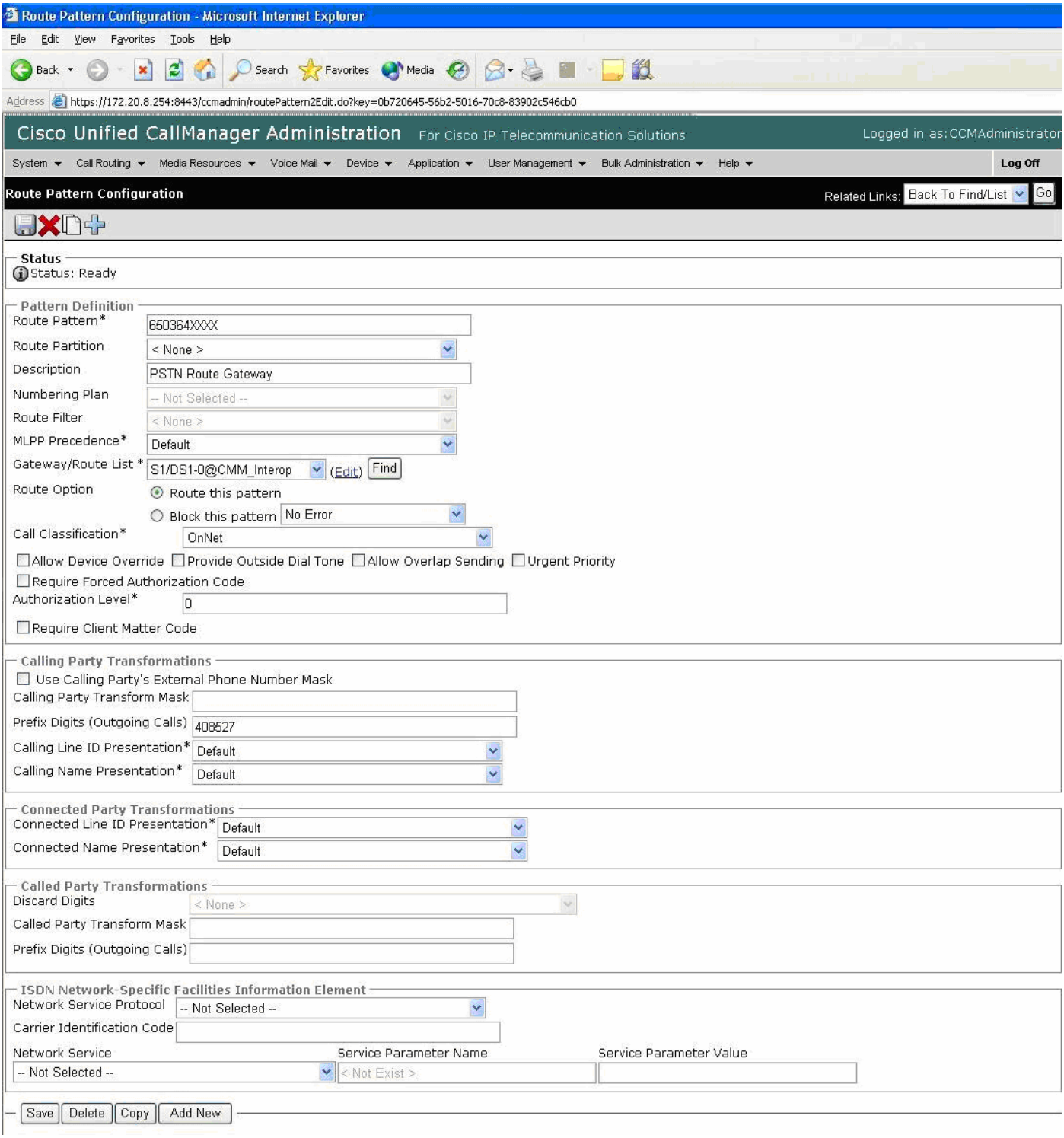
Enbloc Route Pattern Configuration



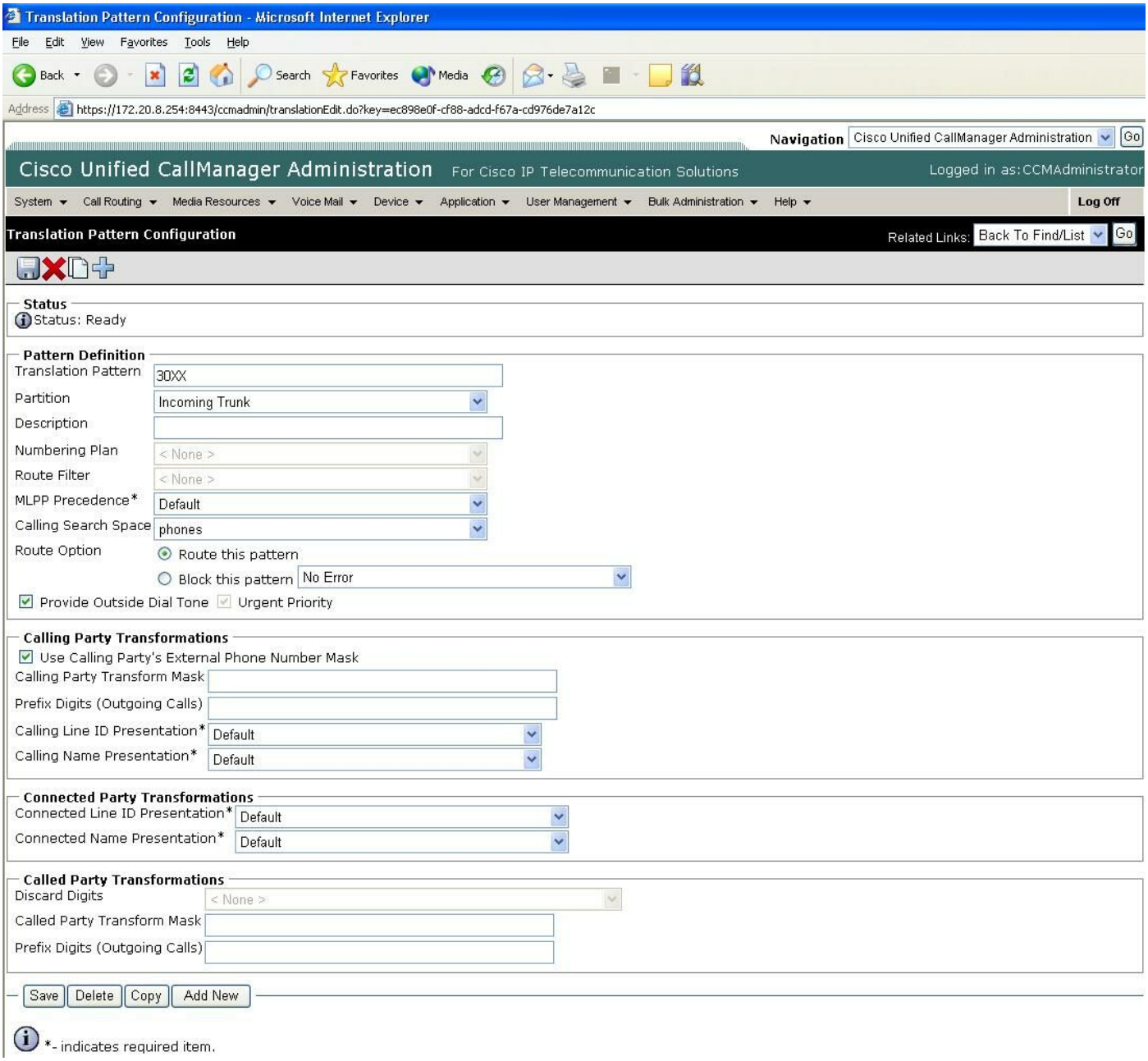
Overlap Sending Route Pattern



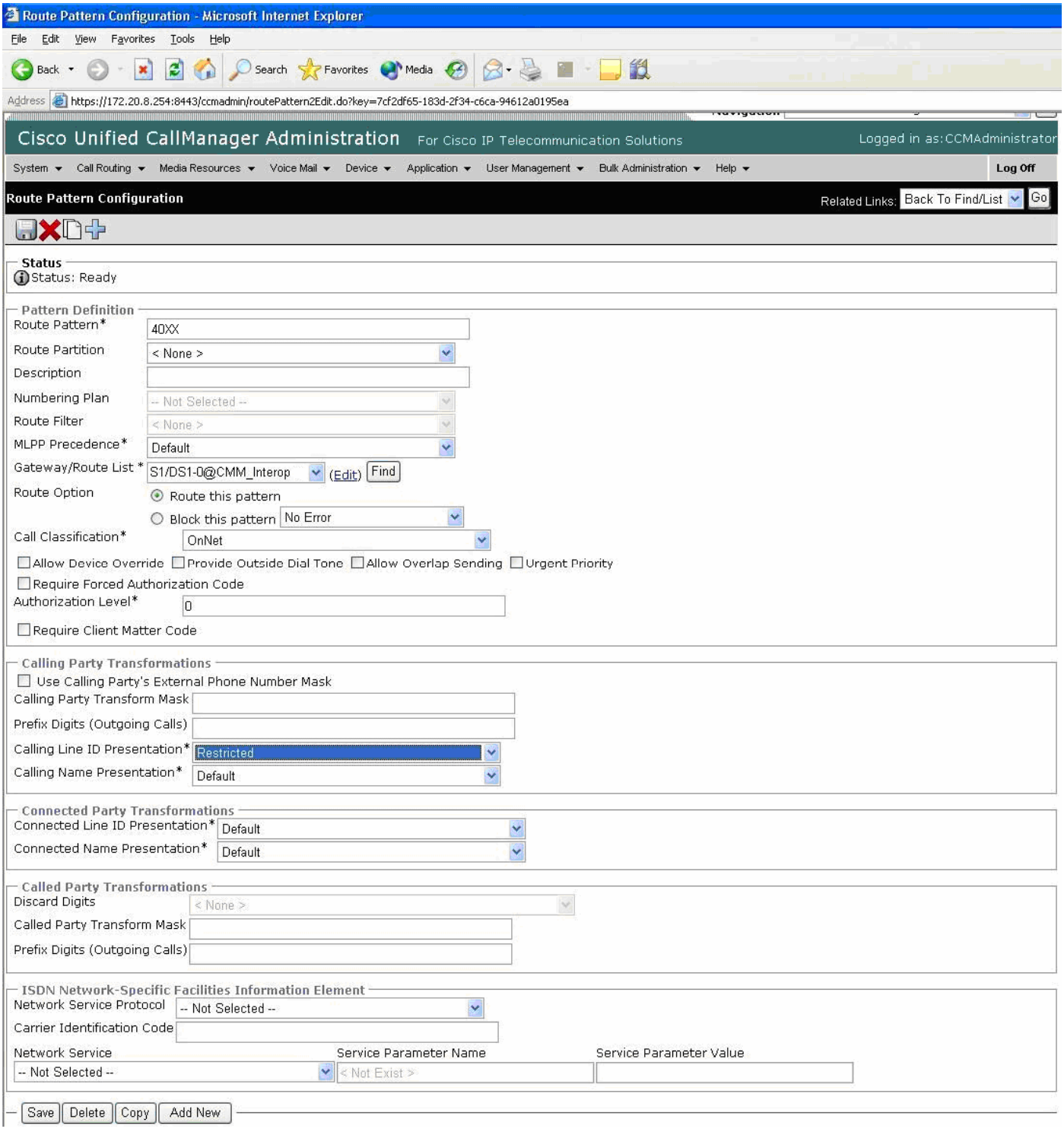
PSTN Route Pattern Configuration



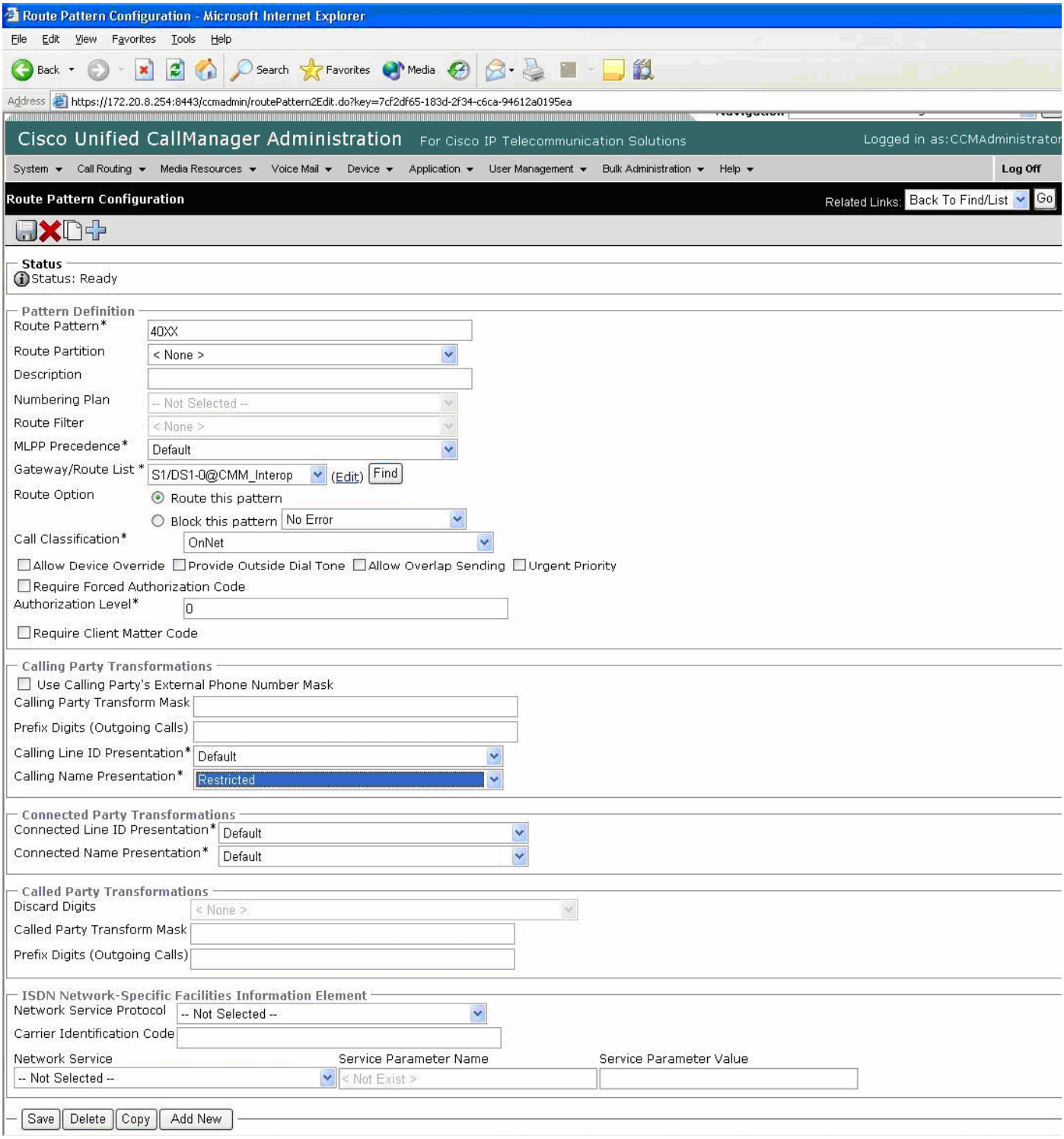
Translation Pattern for Incoming Calls



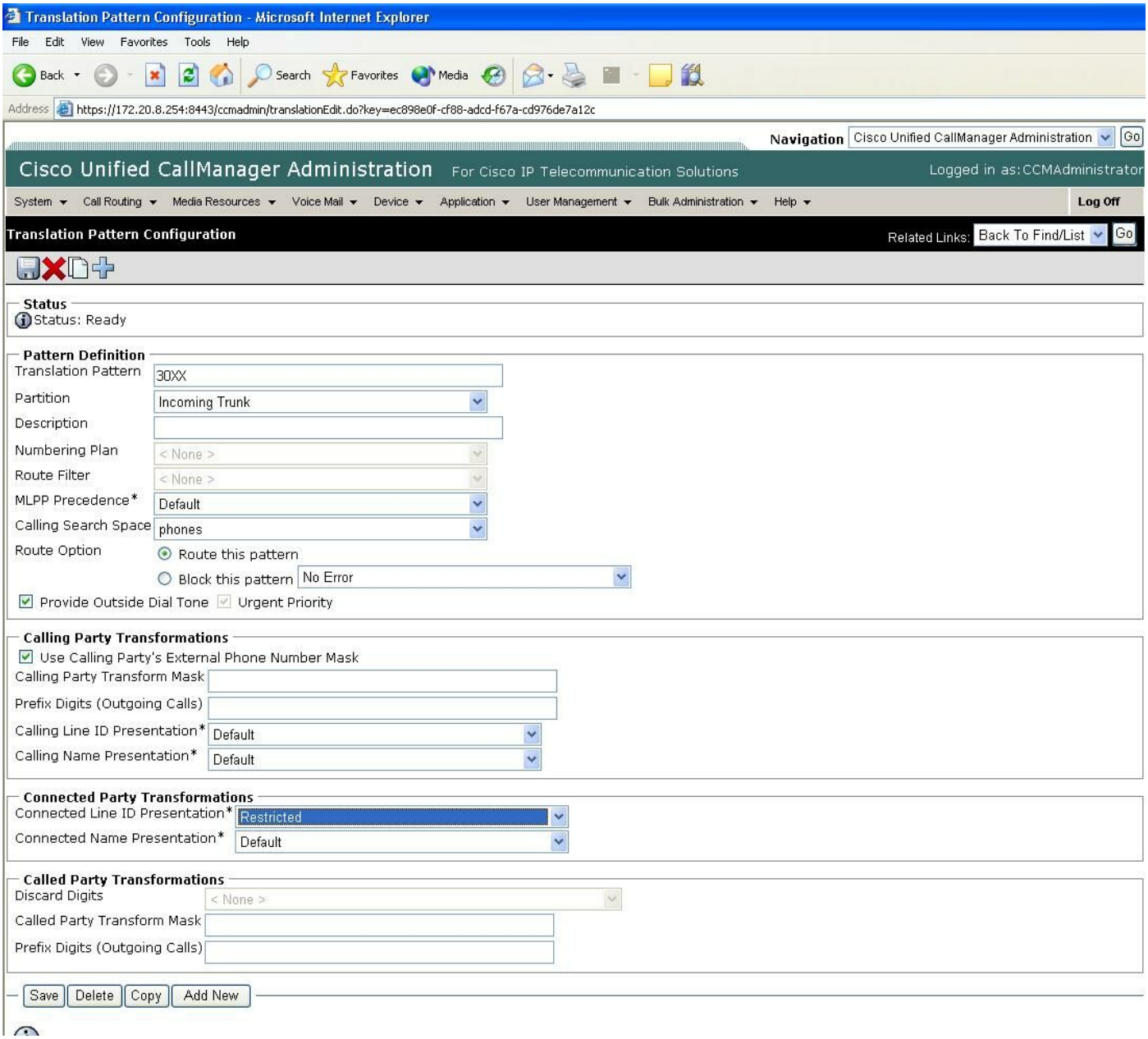
CLIR Route Pattern Config



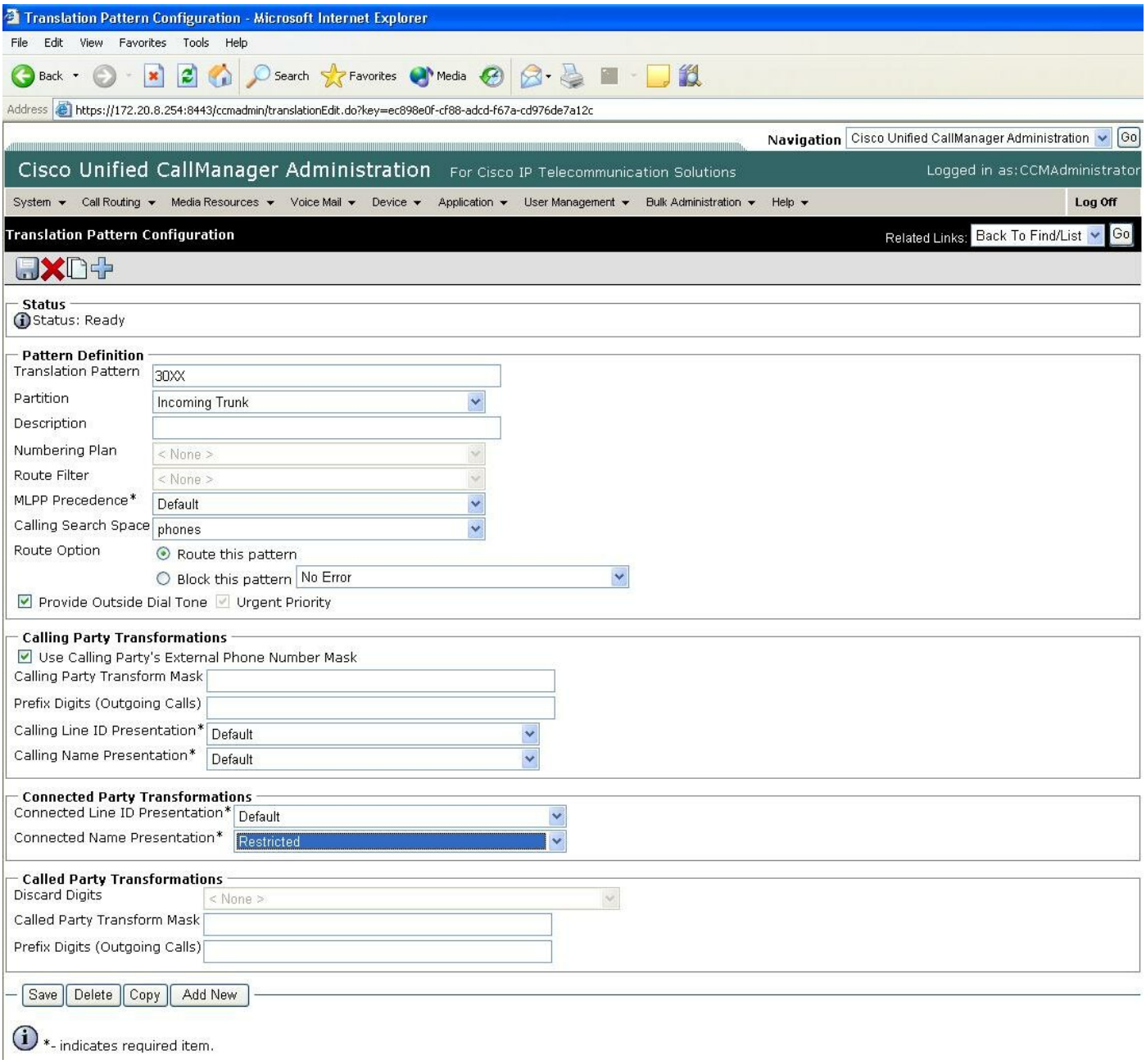
CNIR Route Pattern Config



COLR Translation Pattern Config



CONR Route Pattern Configuration

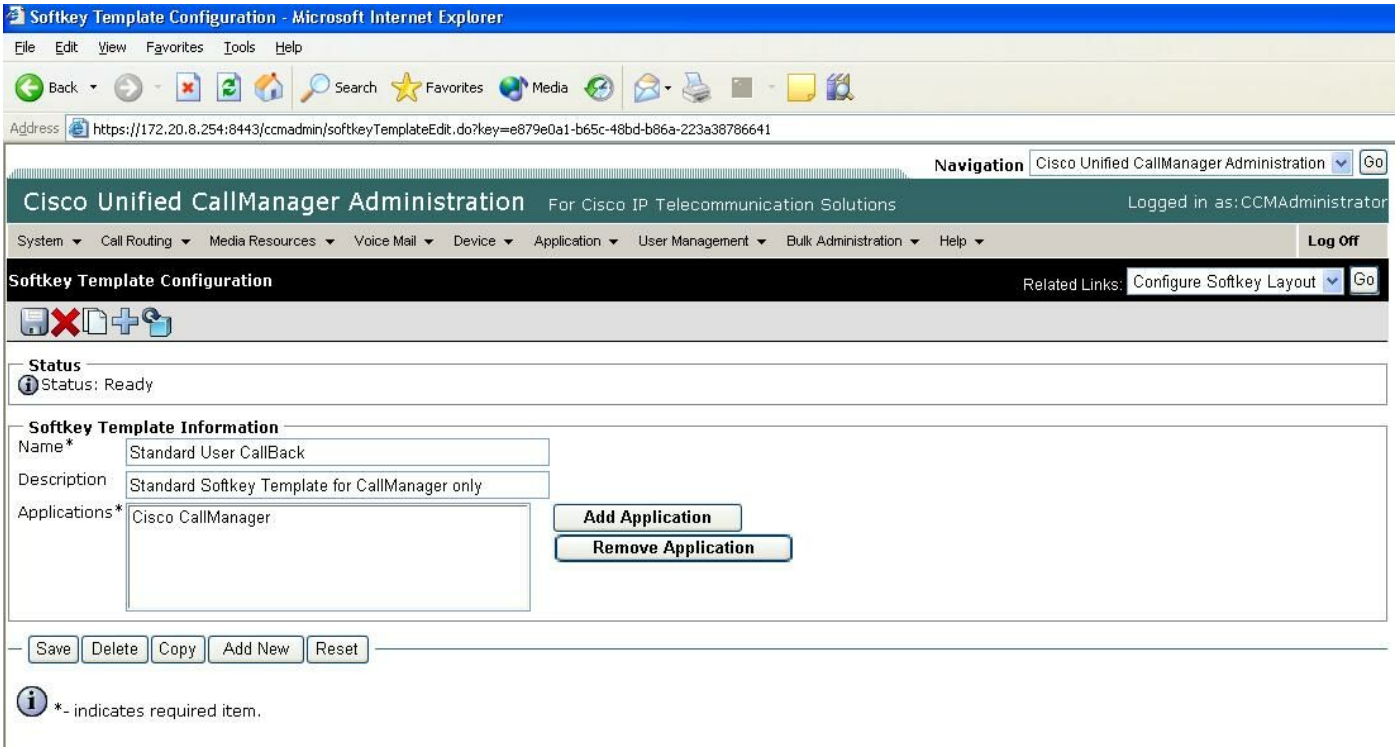


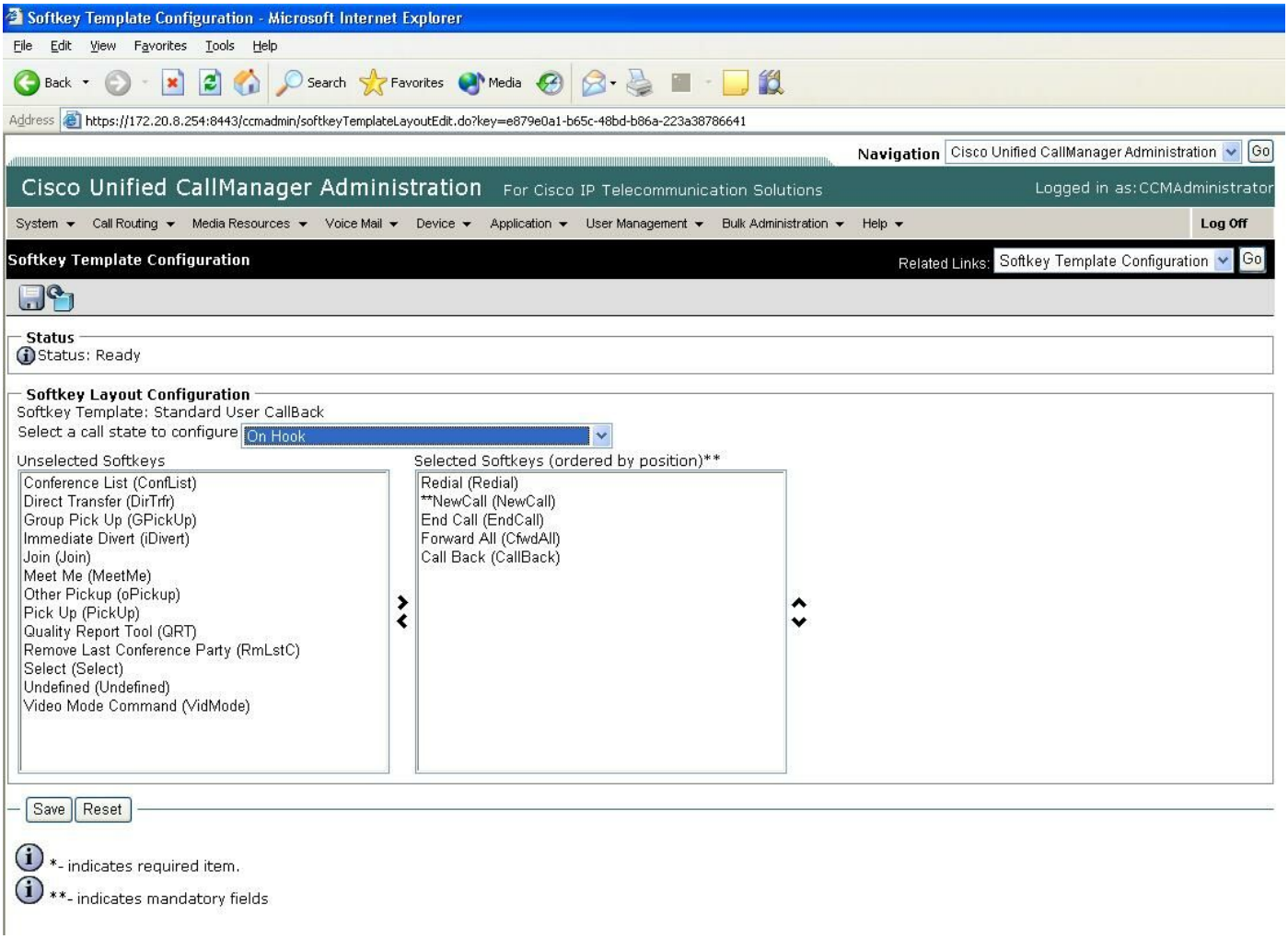
CallBack Service Parameters

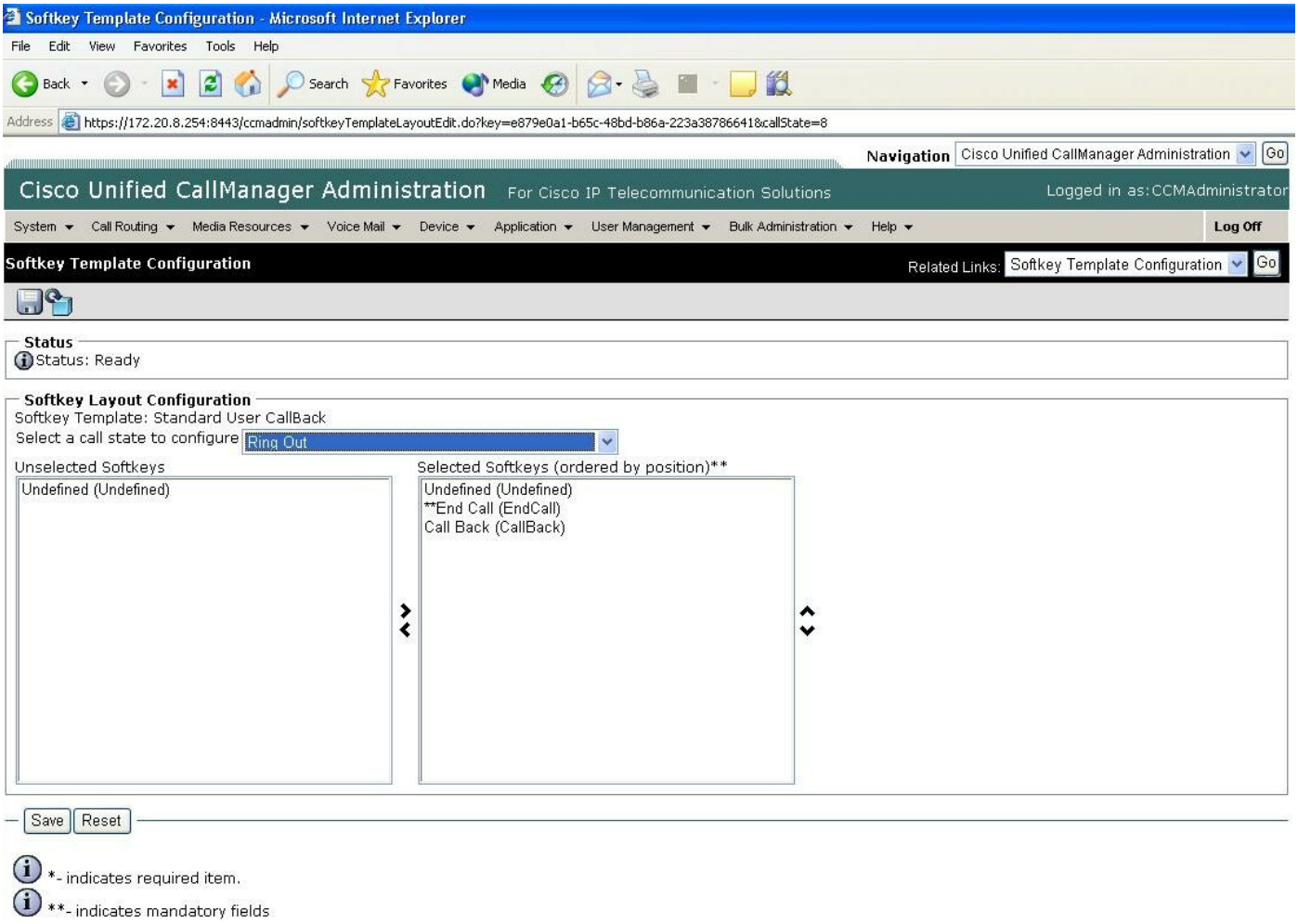
Clusterwide Parameters (Feature - Call Back)

Call Back Enabled Flag *	True	True
Call Back Notification Audio File Name *	CallBack.raw	CallBack.raw
Connection Proposal Type *	Connection Retention	Connection Retention
Connection Response Type *	Default to Connection Retention	Default to Connection Retention
Call Back Request Protection T1 Timer *	10	10
Call Back Recall T3 Timer *	20	20
Call Back Calling Search Space	< None >	
No Path Reservation *	True	True
Set Private Numbering Plan for CallBack *	False	False

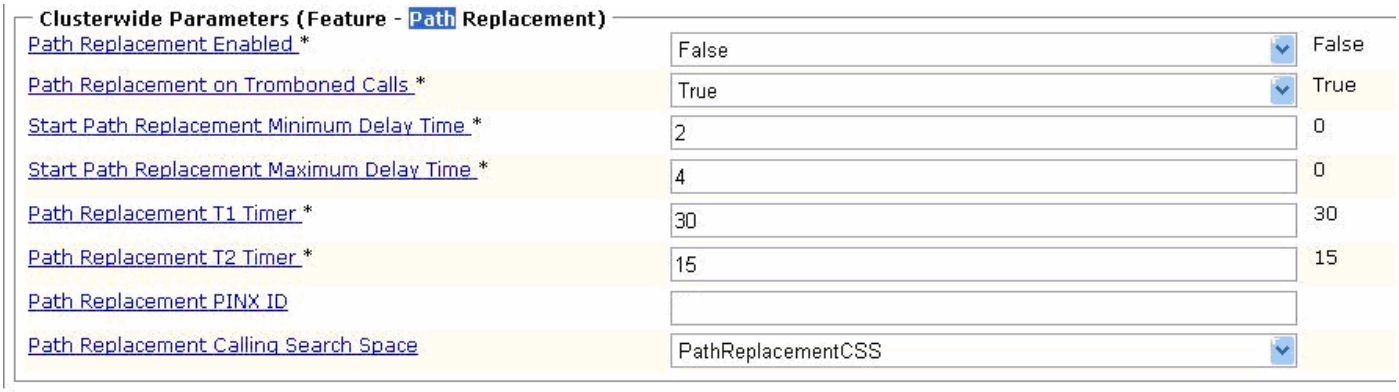
CallBack Softkey Config







Path Replacement Service Parameter



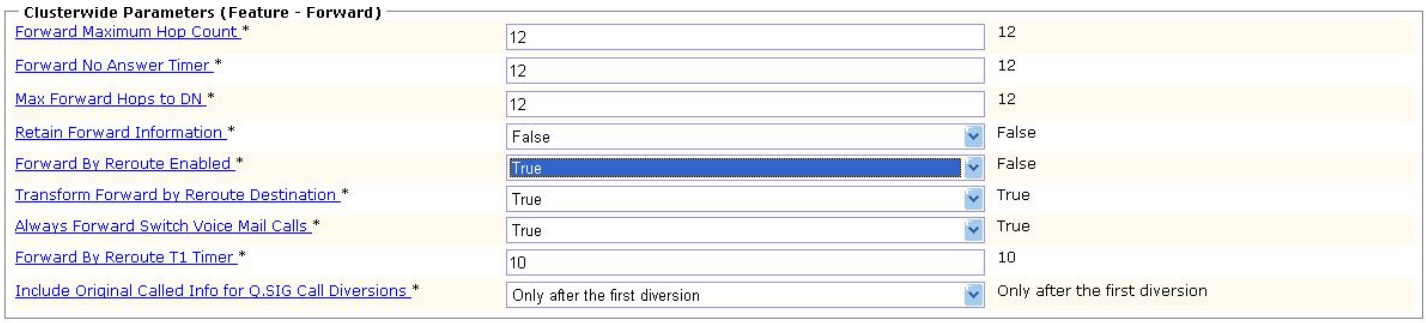
Clusterwide Parameters (Feature - Path Replacement)

Path Replacement Enabled *	False	False
Path Replacement on Tromboned Calls *	True	True
Start Path Replacement Minimum Delay Time *	2	0
Start Path Replacement Maximum Delay Time *	4	0
Path Replacement T1 Timer *	30	30
Path Replacement T2 Timer *	15	15
Path Replacement PINX ID		
Path Replacement Calling Search Space	PathReplacementCSS	

MWI lamp On/Off Configuration

Note: Not Applicable. Standard QSIG SS-MWI is not supported on NEC IPX2400 R15

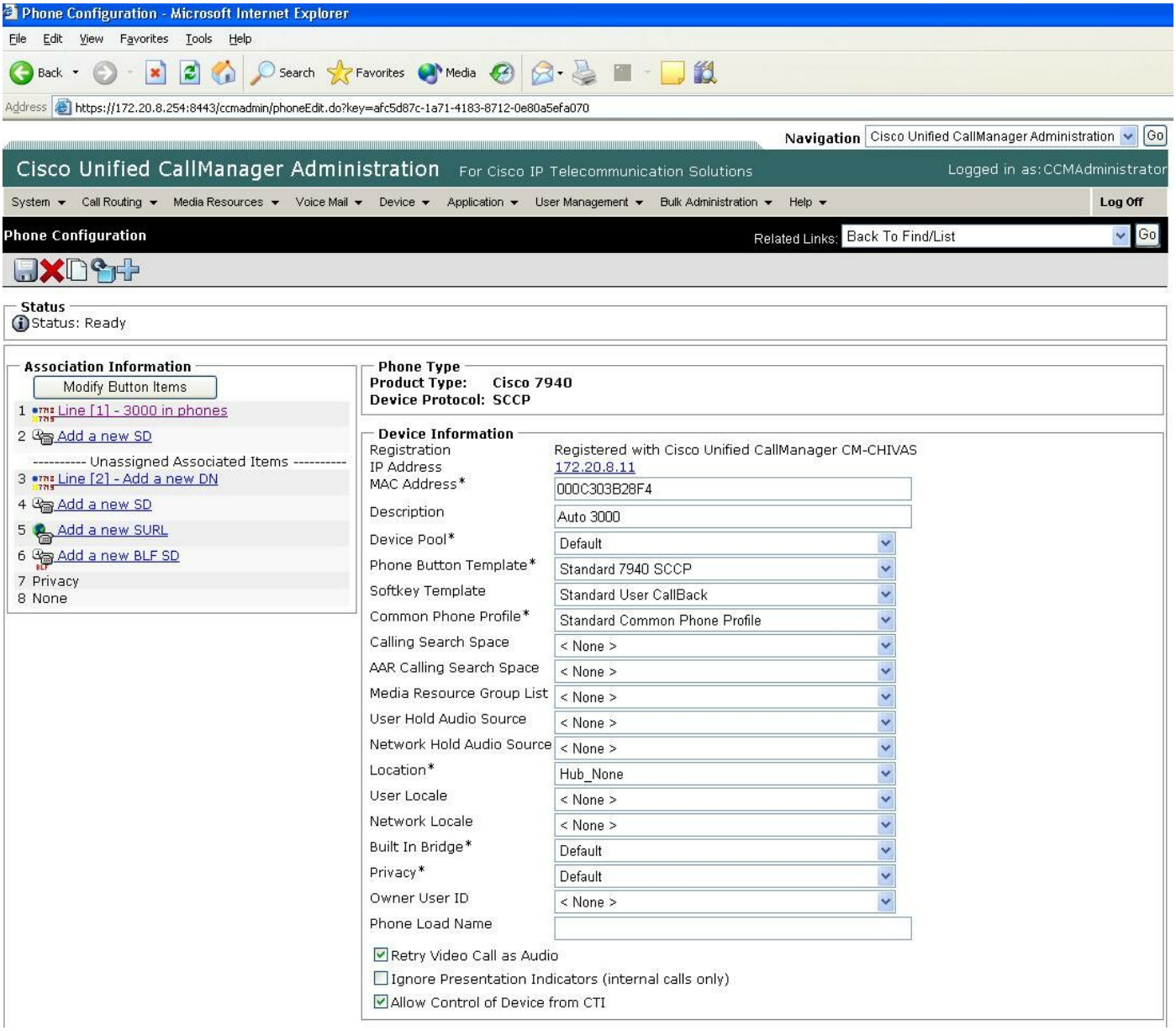
Forward by Reroute Service Parameter



Clusterwide Parameters (Feature - Forward)

Forward Maximum Hop Count *	12	12
Forward No Answer Timer *	12	12
Max Forward Hops to DN *	12	12
Retain Forward Information *	False	False
Forward By Reroute Enabled *	True	False
Transform Forward by Reroute Destination *	True	True
Always Forward Switch Voice Mail Calls *	True	True
Forward By Reroute T1 Timer *	10	10
Include Original Called Info for Q.SIG Call Diversions *	Only after the first diversion	Only after the first diversion

Cisco IP phone Configuration (SCCP)



Protocol Specific Information

Packet Capture Mode*	None
Packet Capture Duration	0
Presence Group*	Standard Presence group
SCCP Phone Security Profile*	Standard SCCP Profile for Auto Registration
SUBSCRIBE Calling Search Space	< None >

☐ Unattended Port
☐ Require DTMF Reception
☐ RFC2833 Disabled

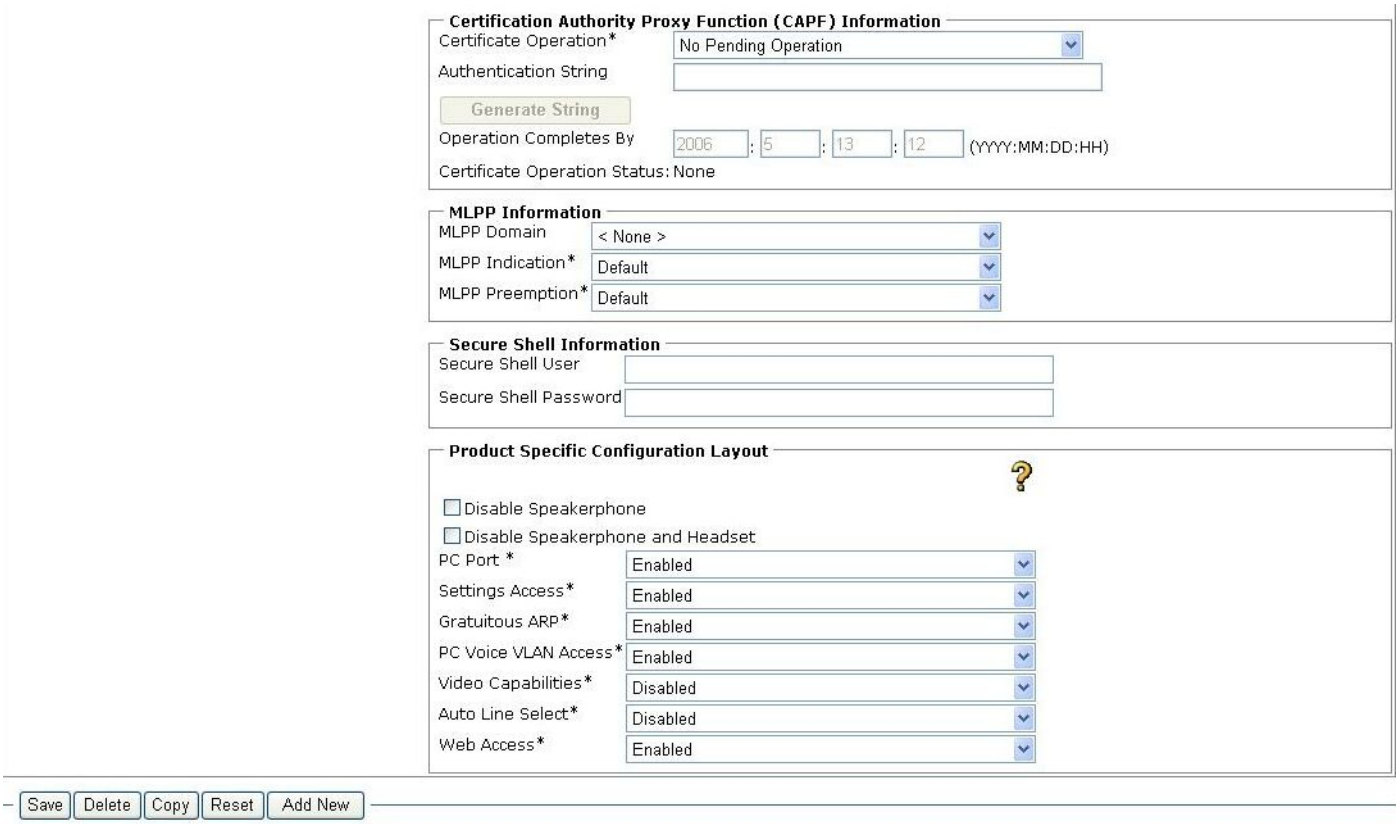
External Data Locations Information (Leave blank to use default)

Information	
Directory	
Messages	
Services	
Authentication Server	
Proxy Server	
Idle	
Idle Timer (seconds)	

Extension Information

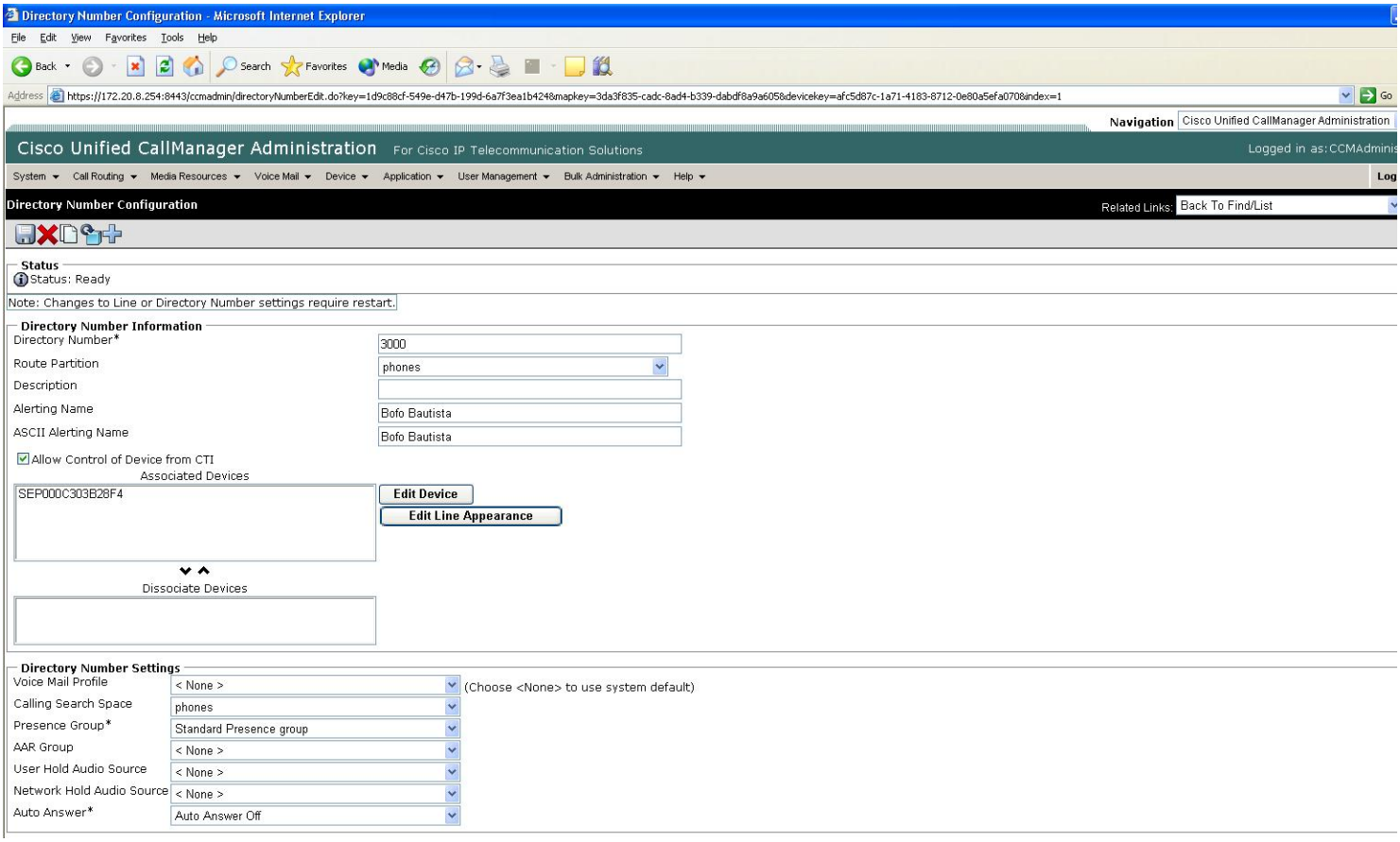
☐ Enable Extension Mobility

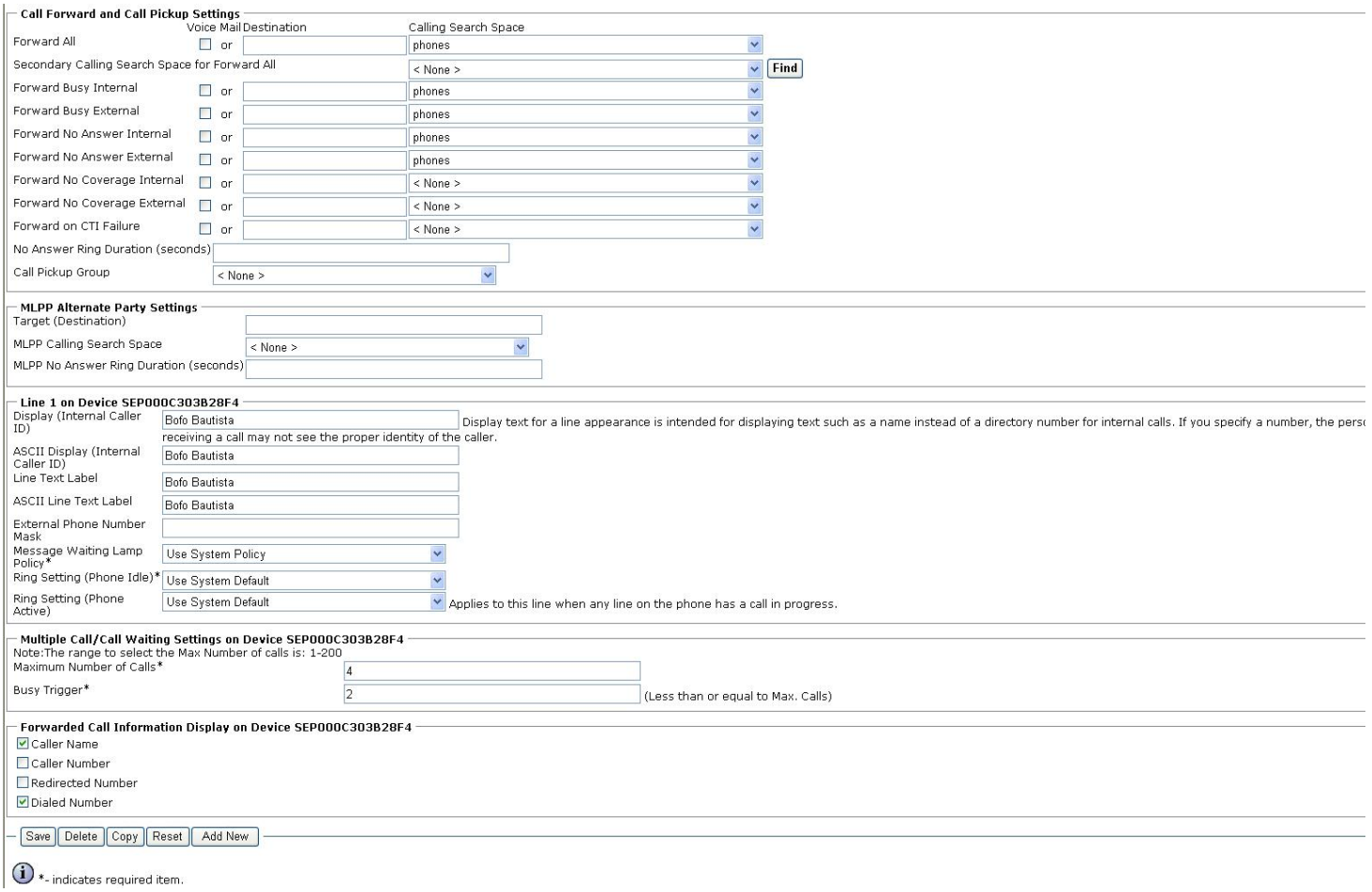
Log Out Profile	-- Not Selected --
Login in User ID	< None >
Log in Time	< None >
Log out Time	< None >



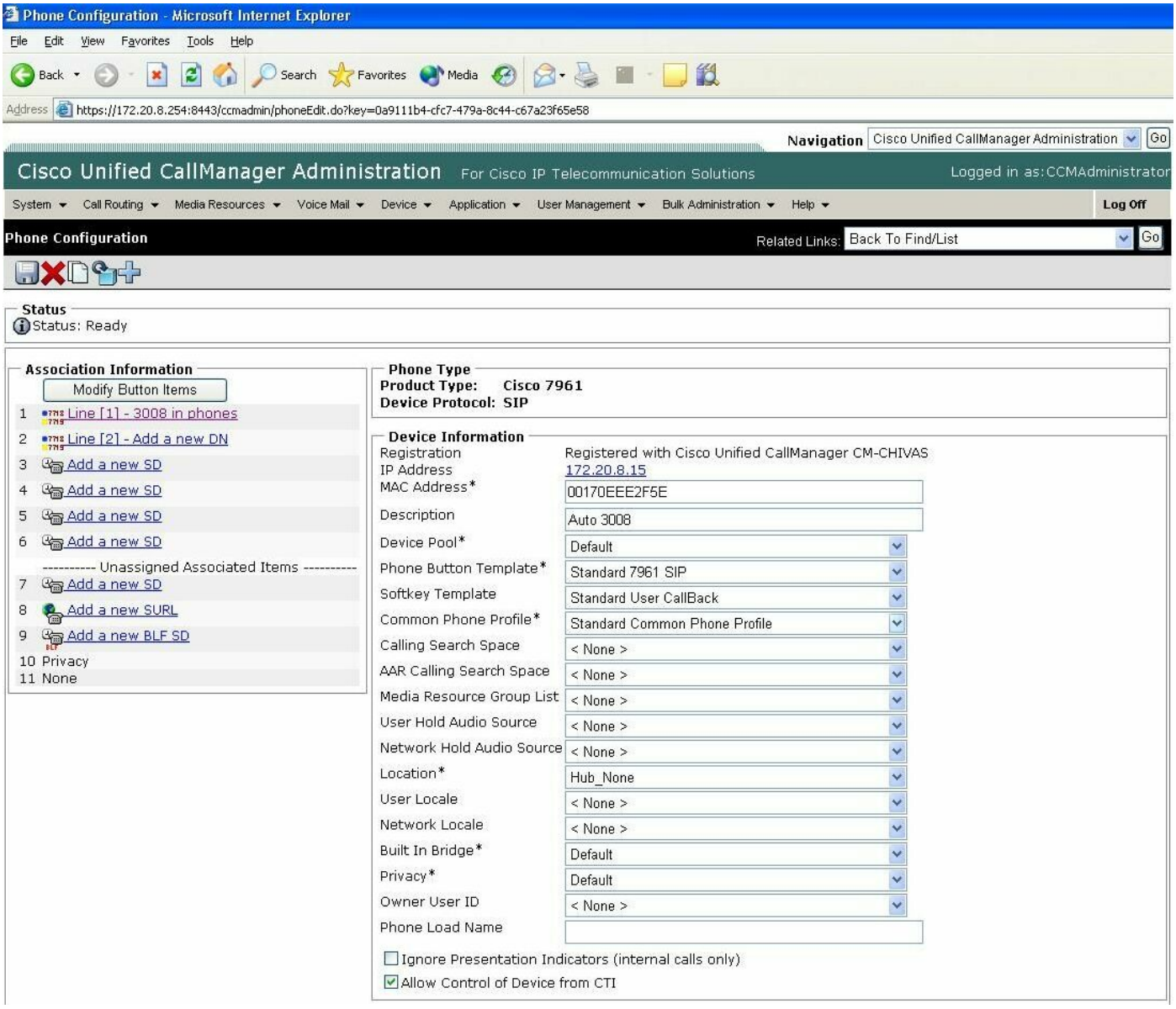
*- indicates required item.

**- Device reset is not required for changes to Packet Capture Mode and Packet Capture Duration.





Cisco IP Phone Configuration (SIP)



Protocol Specific Information

Packet Capture Mode*	None
Packet Capture Duration	0
Presence Group*	Standard Presence group
SIP Dial Rules	< None >
MTP Preferred Originating Codec*	711ulaw
SIP Phone Security Profile*	Standard SIP Profile for Auto Registration
Rerouting Calling Search Space	< None >
SUBSCRIBE Calling Search Space	< None >
SIP Profile*	Standard SIP Profile
Digest User	< None >

☐ Media Termination Point Required
☐ Unattended Port
☐ Require DTMF Reception

External Data Locations Information (Leave blank to use default)

Information	
Directory	
Messages	
Services	
Authentication Server	
Proxy Server	
Idle	
Idle Timer (seconds)	

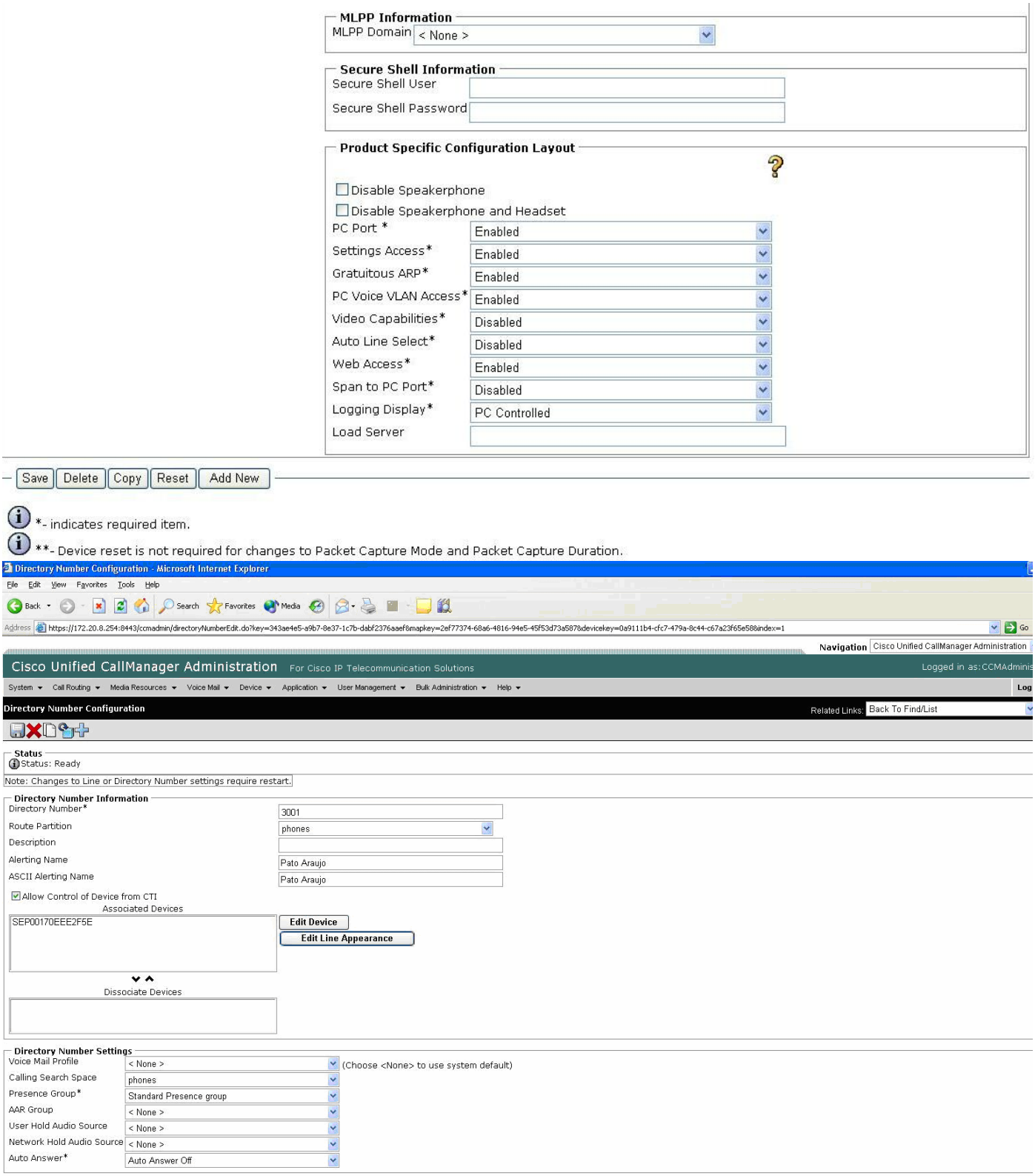
Extension Information

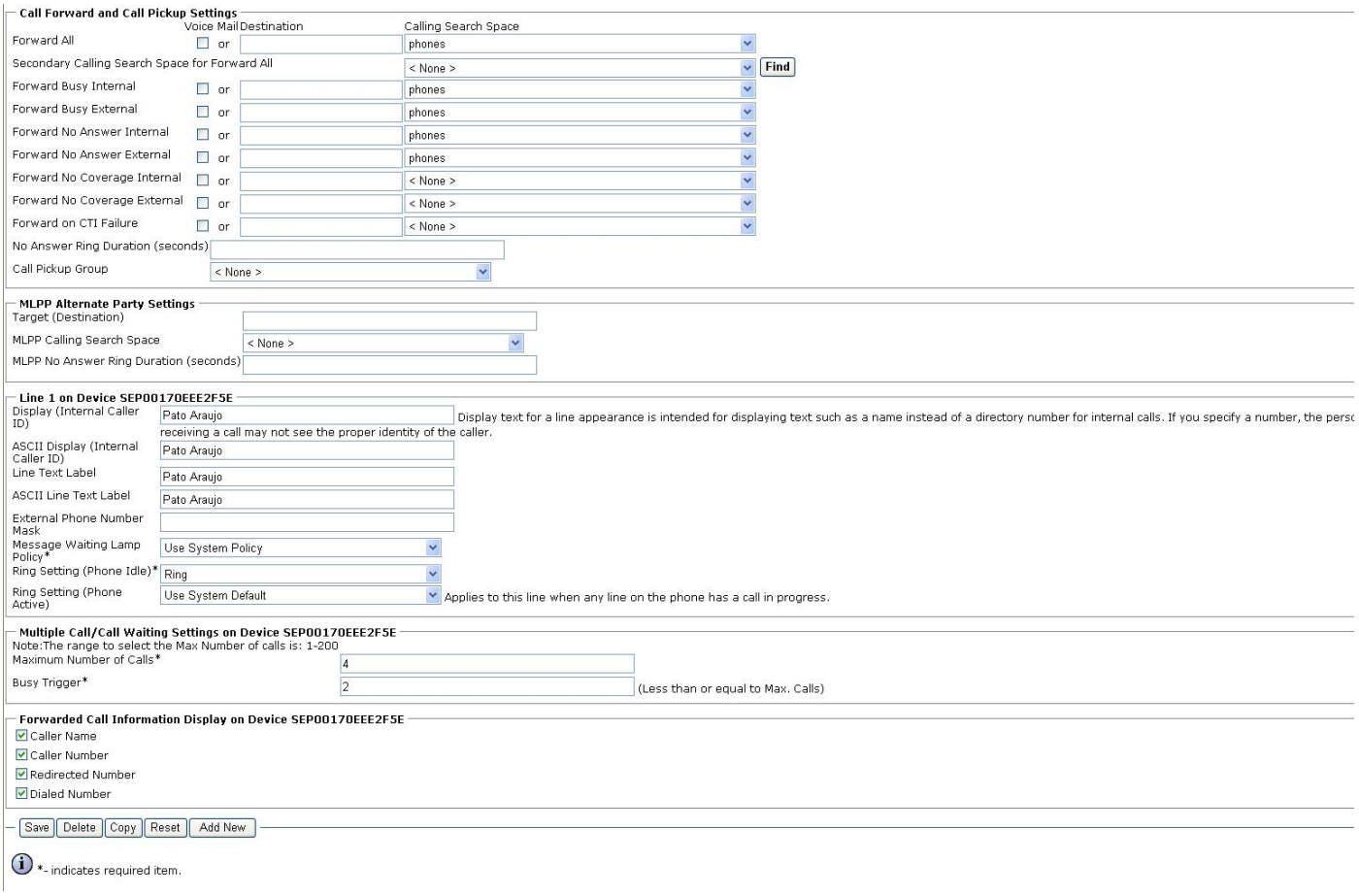
☐ Enable Extension Mobility

Log Out Profile: -- Not Selected --
Login in User ID: < None >
Log in Time: < None >
Log out Time: < None >

Certification Authority Proxy Function (CAPF) Information

Certificate Operation*: No Pending Operation
Authentication String:
Generate String
Operation Completes By: 2006 : 5 : 13 : 12 (YYYY:MM:DD:HH)
Certificate Operation Status: None





Cisco CMM-E1 Configuration

```
CMM_Interop#sh ver
Cisco IOS Software, Cat6K-lc Software (wscmm-IPVOICE-M), Version 12.4(5a), RELEA
SE SOFTWARE (fc3)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2006 by Cisco Systems, Inc.
Compiled Sat 14-Jan-06 04:52 by alnguyen

ROM: System Bootstrap, Version 12.2(1r)T2, RELEASE SOFTWARE (fc1)

CMM_Interop uptime is 2 weeks, 22 hours, 21 minutes
System returned to ROM by reload
System image file is "bootflash:wscmm-ipvoice-mz.124-5a.bin"

cisco WS-SVC-CMM Cat6k Voice Linecard (R7000) processor (revision 0xFF) with 196
608K/65536K bytes of memory.
Processor board ID SAD0825032A
R7000 CPU at 400MHz, Implementation 39, Rev 3.3, 256KB L2 Cache
Last reset from power-on
1 FastEthernet interface
1 Gigabit Ethernet interface
93 Serial interfaces
6 Channelized E1/PRI ports
32768K bytes of processor board bootflash (Read/Write)

Configuration register is 0x2

CMM_Interop#

CMM_Interop#sh run
Building configuration...

Current configuration : 2246 bytes
!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname CMM_Interop
!
boot-start-marker
boot-end-marker
!
enable password cisco
!
no aaa new-model
!
resource policy
!
mmi polling-interval 60
no mmi auto-configure
no mmi pvc
mmi snmp-timeout 180
!
!
```

```
no ip domain lookup
ip host CM-CHIVAS 172.20.8.254
!
isdn switch-type primary-qsig
!
!
controller E1 1/0
 pri-group timeslots 1-24 service mgcp
!
controller E1 1/1
 pri-group timeslots 1-24 service mgcp
!
controller E1 1/2
!
controller E1 1/3
!
controller E1 1/4
 !
controller E1 1/5
!
!
!
interface GigabitEthernet1/0
 ip address 172.20.8.29 255.255.255.0
 no ip proxy-arp
 no negotiation auto
 no keepalive
!
interface Serial1/0:23
 no ip address
 encapsulation hdlc
 no logging event link-status
 isdn switch-type primary-qsig
 isdn incoming-voice voice
 isdn bind-l3 ccm-manager
 no cdp enable
!
interface Serial1/1:23
 no ip address
 encapsulation hdlc
 no logging event link-status
 isdn switch-type primary-qsig
 isdn protocol-emulate network
 isdn incoming-voice voice
 isdn T310 120000
 isdn bind-l3 ccm-manager
 no cdp enable
!
ip default-gateway 172.20.8.1
ip route 0.0.0.0 0.0.0.0 172.20.8.1
!
no ip http server
!
!
control-plane
!
!
voice-port 1/0:23
 !
```

```
voice-port 1/1:23
!
ccm-manager mgcp
ccm-manager music-on-hold
ccm-manager config server CM-CHIVAS
ccm-manager config
!
mgcp
mgcp call-agent CM-CHIVAS 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
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
!
!
!
!
!
line con 0
 password cisco
line vty 0 4
 password cisco
 login
!
!
end
```

CMM_Interop#

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 CallManager
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
CMM	Communication Media Module (CMM) is a Cisco Catalyst® 6500 Series and Cisco 7600 Series line card that provides flexible and high-density T1/E1 gateways
CNIP	Calling Name Identification Presentation
CNIR	Calling Name Identification Restriction
COLP	Connected Line (Number) Identification Presentation
COLR	Connected Line (Number) Identification Restriction
CONP	Connected Name Identification Presentation
CONR	Connected Name Identification Restriction
CT	Call Transfer
MWI	Message Waiting Indicator
PSTN	Public Switched Telephone Network

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