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

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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 ISO 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 Cisco Unified CallManager Service parameter QSIG variant of ISO and ISO 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 Cisco Unified CallManager QSIG implementation does not depend on the physical interface.

Note: 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 or Test Setup



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 "CallTransferComplete" connected name and number restricted towards Cisco Unified 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 x3000 display shows "Alerting Name" is presented only during 'Alerting' state. When Dterm phone x4061 answers the call the display on the Cisco IP phone changes to "unknown". This behavior is due to NEC PBX sending Callforward update "**notificationWithoutDivertedToNr(1**)". Cisco Unified CallManager uses the "DivertingLegInfo1" data to update the IP phone display, in this CallForward scenario. Connected number is ignored by Cisco Unified CallManager.

Call Forward by join (network/external), Dterm Phone x4060 calling to Cisco IP phone x3000 that is forwarded to Dterm phone x4061. Calling Name is not displayed on Dterm phone x4061, the diverting number is displayed (3000).



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 dies not support Path Replacement on Call Forward by join.

Configuration

Note: 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

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:

 $\label{eq:arti} ARTD \rightarrow ARTI \rightarrow ATRK \rightarrow ARSC \rightarrow ARRC \rightarrow ADPC \rightarrow ACSC \rightarrow ACIC1 \rightarrow ACIC2 \rightarrow MBRT$

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

RT	17 (B-Cha	annels)						
CDN 001	OSGS	Data O	CDN 043	BT	Data 1	CDN 085	CSEU	Data 0
002	UNSG	2	044	PRV	0	080	CSEL	^o
003	ISGS	9	04.5	A/D	ř	087	CMP	N.
004	INSG	2	046	<u>Cw</u>	<u>v</u>	088	TALK	U O
005	TE	5	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	ΤQ	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	MESP	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	DES	0
034	GUARD	1	076	MC2	ō	118	BOB	ō
035	WINK	ō	077	MT	ō	119	HOICH	ō
036	VAD	ō	078	TONE	ō	120	IFR	ō
037	CLD	ō	079	PPTM	ō	121	CONV	ō
038	FA	ō	080	MPTM	ō	122	ORBT	õ
039	BC	ō	081	IPTM	õ	123	CNT	õ
040	TCM	õ	082	RSAX	õ	124	AOC	õ
041	TDMO	õ	083	CST	ō	125	MGCOT	õ
042	TRSC	õ	084	CSEG	ŏ	10000	19601	1002
				 A set of the local set of t				

Note: 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: 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	ō	044	PRV	Ô	086	CSEL	ō
003	ISGS	ō	04.5	A/D	ō	087	CMP	ō
004	TNSG	ō	046	CW	ō	088	TALK	ō
005	TE	ň	047	TPO	ň	089	FOT	ň
006	TCL	4	04.8	BI	ŏ	000	DST	ŏ
000		1	040	TOVE	ŏ	001	TOCT	ŏ
007		-	049	DDLY	^o	091	TOCI	×
000	RLP TO	0	050	DPLY	0	092	TOCD	^o
009	TQ	Š.	051	ACD	0	093	ODGD	×.
OTO	SMDR	Ŭ,	052	2W/4W	Ŭ,	094	RLS	v v
011	TD	0	053	FAAT	0	095	GWD	0
012	DR	0	054	GW	0	096	HI	Q
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	Ō	063	LYER1	1	105	TSC	0
022	MSW	ō	064	NET	ō	106	SATS	ō
023	TR	ō	065	TNT	10	107	RVPX	ō
024	0C	õ	066	DC .	ō	108	DO	ŏ
025	P/I	ŏ	067	HKS	ŏ	100	SLOV	ň
026	DVED	ŏ	069	SCE	ŏ	110	SDTO	ň
027		ŏ	060	SMDD4	ŏ	111		ŏ
020	ANG	1	070	JMDR4	ŏ	117	TND	Ň
020		-	070	TCMIN	0	112	TND	×
029	TELP	Ŷ,	071	NEC	⁰	114	001	Š.
030	PAD	2	072	MESP	0	114	DCH	ů.
031	OGRL	Ů,	073	KPST	Ú,	110	CMRT	U O
032	ICRL	U U	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	1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	2012 TR251	2010
2. 전 가지 않는	201223-0314	3,733	동 전 동 문 문 문	122202	3/73/			



ARTI RT 17 0 Û 0 0 RST RSCT IDRT COT 0 0 0 0 HMT ROCG ECCISTD **SS**7 TRCRST 0 RICG 0 MFCG2 0 NI2ID 0 0 0 0 0 TRSRST STSENQ OPCC CLRF T309LNK 000000 MMNPASS 0 ICTCON 0 0 TRC 0 0 T309CON VRD 0 DLTK OID ō 1 ō LLCRST CALN INTD PHG 0 0 Û VCM NETINT JECCIS VIR 0 IPINT2 0 POOL RETMSG CSMDS 0 0 DTRT ANI IPTRK FXD 0 ō 1 0 0 TMPRT SRV CTCF FXJS 0 TON 0 RERT 100 FXPT 0 CODEC PASS NPI 0 DCANS FXPS 0 ō ō 0 L/T IRL RND CPI 02 0 0 Û ECCIS E911 MTC CLBK 0 0 UALAW 0 TC ECCISTM RA_RT 0 TS 0 ECCISOB 0 MCTFAC CDCSPD 0 0 RE 1 ECCISIB 0 0 1 DVRST SPMET PR

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'.



				* Tr	unk Data List *			
		Star	ting			Er	ıding	
		RT TK	17 1			RT TK	18 32	
<u>RT</u> 17	<u>TK</u> 1	<u>LENS</u> 001121		<u>TN</u> 1				
17	2	001122		1				
17	4	001125		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		N				
17	15	001137		Y				

ATRK



ARSC

				*	Ro	ute I	lestri	c tio n	Clas	s L is	at *								
		Starti	ing						Ending										
	Т	'enant Route	1 17									Te R	nan .oute	t :	1 17				
										RS	C Da	ta Setti	ngs						
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
ARR	С																		

* 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 17 18	PC 3 3										

ACSC

				* C SC	Data List *					
		Starting			Ending					
	CSC	CG 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.

ACIO	C1							
				*	CIC Code l	Data l List *		
Starting Ending								
		PC	3			PC 3		
<u>PC</u> 3	<u>CSCG</u> 134			<u>PC</u>	<u>CSCG</u>	PC CSCG		



	+ CIC Colo Dodo Allint +		
	* CIC Code Data 2 List *		
Starting		E	inding
PC 3		PC	3
CIC 1		CIC	32
		010	52
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

Note: Assumes dummy route has been built and ARRC is assigned properly

ANPD

				* Numberii	ng Plan D	ata List *					
		St	arting		Ending						
	di Contra	Tenar	ut 1		Tenant 1						
			5	Normal	<u>.</u>	Hooking	95	— Busy —			
Tenant	1stDC		NND	BusyLamp 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	N	2	In Service	2	In Service	-	-			
	3	42	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	-	1 2	-	-			
	9		-	-14	-	-3	-	-			
	*		3	Out of Service	3	Out of Service	3	Out of Service			
	#		-	-18	-	-2	-	-			

ASPA

					* Sp	ecial Access C	od e L	ist*				ļ
			Star	ting					E	nding		
	Con	Tena Access Coo nection Inde	nt le ex	1 3 Normal			Co	T Access onnection l	enant Code Index	1 3 Busy		
<u>TN</u>	<u>ACC</u>	CI	<u>SRV</u>									
1 1 1	3 3 3	Normal Hooking Busy	LCR LCR LCR	RT RT RT	: 31 : 31 : 31	2ndDT 2ndDT 2ndDT	: 1 : 1 : 0	AH AH AH	: 0 : 0 : 0	SUB : SUB : SUB :	0 0 0	



AMND

		* Maximum Nec	essary Digits D	ata List *							
	Starting		10.00	Ending							
Tens	unt 1			Tenant	1						
DC	3			DC	3						
Tenant	DC	MND	TOLL	AN	<u>rate</u>	<u>A/D</u>					
1	3	4	0	0	0	1					

AFRS

Starting	2	Ĕ	nding
	2		
	100		
Tenant 1		Tenant	1
Route 31		Route	31
NPC 3		NPC	3
Tenant Route N	Jumber Pattern Code C	PR	
		110	

AOPR

			* Outgoing	Pattern Ro	uting Data Li	st *		
		Starting	10 E - 10	4 K.		E	nding	
	TDPTN	0				TDPTN	0	
	OPR	3				OPR	3	
	RA Order	0				RA Order	0	
TDPTN	OPR	RA Order	RA End	Route	SKIP	PNL	OVF	T PRSC
0	3	0	0	17	0	0	0	0



ARNP

[IPX-R15_IP::LRNP]

May 17, 2006

Starting	Ending
Route 4	Route 4

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	ни	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)

Starting		Ending
Tenant 1 Station 4060		Tenant 1 Station 4061
Tenant	Station	Name Display

4060 4061

1

1

Name Display Beasely Landon Donovan



ASFC SFI 94 (used to restrict Calling Number)

	st	* Serv arting	ice	Fe	ature	e Res	tri	ction	Clas	s Li Er	st * nding				
	Tenant SFI	1 94							Ten	ant SFI	1 94				
Tenant 1	Mode Day	SFI 94	0 0	1 0	2 3 0 0	SF 4 0	с А 5 0	ttribu 6 7 0 0	ute S 8 0	etti 91 00	ings .0 11) 0	12 0	13 0	14 0	15 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.

				* Se	rv ic	e Feat	tre Re:	stric	tion	Class	List *							
	Starting								Ending									
	Tena: SF	nt 1 VI 2									Τe	enar SF	t 1 I 2	1				
			42				- E	_ 2	FC.	Attribu	ute Setti	ngs	222					
<u>Tenant</u> 1	<u>Mode</u> Day	<u>SFI</u> 2	<u>0</u> 0	<u>1</u> 1	<u>2</u> 1	<u>3</u> 1	<u>4</u> 1	<u>5</u> 1	<u>6</u> 1	<u>7</u> 1	<u>8</u> 1	<u>9</u> 1	<u>10</u> 1	<u>11</u> 1	<u>12</u> 1	<u>13</u> 1	<u>14</u> 1	<u>15</u> 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.



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

ADSL (Assigning CallBack feature on Dterm softkey)



ADKS (Assigns soft key pattern to Dterm station)

		* Dterm Key Status	Data for LDM List *		
2	Starting			Ending	
Tenant Station	1 4060		Ti St	enant 1 ation 4061	
Tenant 1 1	Station 4060 4061	Soft Key Pattern 1 1	Line Key Pattem 3 1	Page Scroll Key O O	



Cisco Unified CallManager Configuration

ISO Protocol Service Parameter

🗿 Service Parameter Configuration - Microsoft Internet Explo	rer		
<u> E</u> ile <u>E</u> dit <u>V</u> iew F <u>a</u> vorites <u>T</u> ools <u>H</u> elp			
🔇 Back 🔹 🕥 - 🖹 😰 🏠 🔎 Search 👷 Favorites	🕐 Media 🥝 🔗 头 📓 - 📙 🎇		
Address 🗃 https://172.20.8.254:8443/ccmadmin/serviceParamEdit.do?serve	r=9a4c58d0-45dc-4862-87a9-306827d8bf538service=08showall=tru	e	N
Unknown Number Prefix			
Clusterwide Parameters (Device - PRI and MGCP Gate	way)		
ASN.1 ROSE OID Encoding *	Use Local Value	~	Use Local Value
QSIG Variant.*	ISO (Protocol Profile 0x9F)	*	ISO (Protocol Profile 0x9F)



CCM Gateway Configuration

🗿 Gateway Configuration - Micro	osoft Internet Explorer
<u>File E</u> dit <u>V</u> iew F <u>a</u> vorites <u>T</u> ools	Help
🌀 Back 🔹 🕥 - 💌 📓 🦿	🏠 🔎 Search 👷 Favorites 🜒 Media 🥝 🔗 🎍 🕋 🖵 🎇
Address 🕘 https://172.20.110.254:844	43/ccmadmin/gatewayEdit.do?key=2c449b01-1a2b-3bc1-2c0b-5fd38d5c7a83
	Navigation Cisco Unified CallManager Administration 😒 Go
Cisco Unified CallMa	anager Administration For Cisco IP Telecommunication Solutions Logged in as:CCMAdministrato
System 👻 Call Routing 👻 Media Re	asources Voice Mail V Device V Application V User Management V Bulk Administration V Help V Log Off
Gateway Configuration	Related Links: Back To Find/List 🔽 Go
⋳Х 9₽	
Status Status: Ready	
— Gateway Details ————	
Product	Communication Media Module
Protocol	MGCP
Domain Name *	CMM_Interop
Description	CMM_Interop
Cisco Unified CallManager Grou	P [*] Default
Configured Slots, VICs and E	Endpoints
Subunit 0 Subunit 0	
Module in Slot 2	
Module in Slot 3 < None >	
Module in Slot 4 None >	
<pre>None ></pre>	
— Product Specific Configuration	on
Global ISDN Switch Type	4ESS
Switchback Timing *	Graceful
Switchback uptime-delay (min)	10
Switchback schedule (hh:mm)	12:00
Fax mode *	Fay Relay
- Save Delete Reset Add	New

• indicates required item.



Gateway Configuration -	Microsoft Internet Explorer
<u>Eile E</u> dit <u>V</u> iew F <u>a</u> vorites	<u>I</u> ools <u>H</u> elp
Sack • S - 💌 [🖹 🐔 🔎 Search 🧙 Favorites 🔮 Media 🧐 🔗 🎍 🕋 🖵 🎇
Address 🕘 https://172.20.110.2	54:8443/ccmadmin/gatewayEdit.do?key=eeb93e1f-ca3f-fd85-010f-ab65718c5448
	Navigation Cisco Unified CallManager Administration 💟 Go
Cisco Unified Ca	IIManager Administration For Cisco IP Telecommunication Solutions Logged in as:CCMAdministrator
System 👻 Call Routing 👻 M	edia Resources 🔹 Voice Mail 👻 Device 👻 Application 👻 User Management 👻 Bulk Administration 👻 Help 👻 Log Off
Gateway Configuration	Related Links, Back to MGCP Configuration 💌 Go
Status Status: Ready	
— Device Information —	
Product Gateway Device Protocol Registration IP Address End-Point Name *	Cisco MGCP E1 Port CMM_Interop Digital Access PRI Registered with Cisco Unified CallManager CM-CHIVAS 172.20.8.29 S1/DS1-0@CMM_Interop
Description	S1/DS1-0@CMM_Interop
Device Pool*	Default
Call Classification*	Use System Default
NetworkLocale	< None >
Media Resource Group Lis	t < None >
Location*	Hub_None
AAR Group	< None >
Load Information	
Transmit UTF-8 for Call	ing Party Name
Multilevel Precedence a MLPP Domain < None MLPP Indication Not ava MLPP Preemption Not ava	and Preemption (MLPP) Information > V V Iable on this device Iable on this device
Interface Information - PRI Protocol Type*	
Protocol Side*	
Channel Selection Order*	
Channel IE Type*	
PCM Type*	
Delay for first restart (1/8	sec ticks)*
Delay hetween restarts (
 ✓ Inhibit restarts at PRI □ Enable status poll □ Unattended Port 	initialization
Call Routing Informatio	n - Inbound Calls
Significant Digits"	
Calling Search Space	PhonesCSS Y
PAR Calling Search Space	< None >
Prefix DN	



— PRI Protocol Type Specific Ir	iformation	
Display IE Delivery	Display IE Delivery	
Redirecting Number IE Delivery - Outbound		
Redirecting Number IE Delivery - Inbound		
🗌 Send Extra Leading Characti	Send Extra Leading Character in Display IE***	
Setup non-ISDN Progress In	Setup non-ISDN Progress Indicator IE Enable ****	
🗌 MCDN Channel Number Exte	nsian 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 Th	nrough UUIE	
Security Access Level* 2		
— Product Specific Configuratio	n	
Line Coding *	HDB3	
Framing *	CRC4	
Clock *	External	
Input Gain (-614 db) *	nput Gain (-614 db) *	
Output Attenuation (-614 db)	* 0	
Echo Cancellation Enable *	Enable 🔽	
Echo Cancel Coverage (ms) * 64		
- Save Delete Reset		
*- indicates required item.	*- indicates required item.	

(i) **- applies to DMS-100 protocol only.



Partitions Configuration

🗿 Find and List Partitions - Microsoft Internet Explorer		
<u>File E</u> dit <u>V</u> iew F <u>a</u> vorites <u>T</u> ools <u>H</u> elp		
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Address 🗃 https://172.20.8.254:8443/ccmadmin/partitionFindList.do?<%=reqParams%>&recCnt=0&colCnt=3		👻 🛃 Go
	Navigation Cisco Unified CallManager Administration 👻 Go	
Cisco Unified CallManager Administration For Cisco IP Telecommunic	cation Solutions Logged in as:CCMAdministrator	
System 👻 Call Routing 👻 Media Resources 👻 Voice Mail 👻 Device 👻 Application 👻 User Management 🛩	P Bulk Administration	
Find and List Partitions		
Status (1) 2 records found		
Search Options		
(name begins with any)	arch Within Results	
Cearch Results		
Partition Name	Description	
Incoming Trunk	Incoming Trunk	
F phones	phones	
Add New Select All Clear All Delete Selected Rows per Page 50 💌		

Calling Search Space Configuration

🕘 Calling Search Space Configuration - Microsoft Internet Explorer	
Elle Edit Yiew Favorites Tools Help	
🔾 Back 🔹 💿 🕆 🖹 🙆 🏠 🔎 Search 👷 Favorites 🜒 Media 🤣 🙆 = 🌺 🕋 = 🛄 鑬	
Address 🕘 https://172.20.8.254:8443/ccmadmin/cssEdit.do?key=69e67ac1-4a7d-a9d8-c26f-cff015f46ff6	💌 🄁 Go
Navigation Cisco Unified CallManager Administration 🔻 Go	
Cisco Unified CallManager Administration For Cisco IP Telecommunication Solutions Logged in as:CCMAdministrator	
System 👻 Call Routing 👻 Media Resources 👻 Voice Mail 👻 Device 👻 Application 👻 User Management 👻 Bulk Administration 👻 Help 👻 Log Off	
Calling Search Space Configuration Related Links: Back To Find/List 🕑 🖸	
Status	
() Status: Ready	
Calling Search Space Information	
Description	
Route Partitions for this Calling Search Space	
Available Partitions phones	
Ordered by highest priority)	
l l l l l l l l l l l l l l l l l l l	
- Save Delete Copy Add New	
UV *- indicates required item.	



🗿 Calling Search Space Configuration - Microsoft Internet Explorer	
Elle Edit View Favorites Tools Help	
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Address 🕘 https://172.20.8.254:8443/ccmadmin/cssEdit.do?key=fe223db4-f40e-6b05-0321-32b1606696a2	Go
Navigation Cisco Unified CallManager Administration 👻 Go	
Cisco Unified CallManager Administration For Cisco IP Telecommunication Solutions Logged in as: CCMAdministrator	
System - Call Routing - Media Resources - Voice Mail - Device - Application - User Management - Bulk Administration - Help - Log Off	
Calling Search Space Configuration Related Links: Back To Find/List 🔽 🕝	
Status	
(i) Status: Ready	
Calling Search Space Information	
Description	
- Pouto Dartitions for this Calling Sparch Space	
Available Partitions Incoming Trunk	
✓ ∧	
Selected Partitions	
^	
- Save Delete Copy Add New	
•- indicates required item.	



🗿 Calling Search Space Configuration - Microsoft Internet Explorer	
<u>Eile Edit Vi</u> ew Favorites <u>I</u> ools <u>H</u> elp	
🔇 Back + 🚫 - 💌 😰 🐔 🔎 Search 📌 Favorites 🜒 Media 🥝 😥 + 🌺 🖀 - 🛄 🕻	1
Address 🕘 https://172.20.8.254:8443/ccmadmin/cssEdit.do?key=5ca29d02-e7f5-70ce-c5d2-e6531981be96	
	Navigation Cisco Unified CallManager Administration 💌 Go
Cisco Unified CallManager Administration For Cisco IP Telecommunication So	lutions Logged in as:CCMAdministrator
System 👻 Call Routing 👻 Media Resources 👻 Voice Mail 👻 Device 👻 Application 👻 User Management 👻 Bulk Adm	ninistration - Help - Log Off
Calling Search Space Configuration	Related Links: Back To Find/List 🛛 🔽 Go
Status Status: Ready	
Calling Search Space Information	
Name* PathReplacementCSS	
Description	
Route Partitions for this Calling Search Space	
(Ordered by highest priority) phones	
	× l
- Sava Dalata Cany Add New	
Case Delere Cody Win 146M	
(i) *- indicates required item.	



Enbloc Route Pattern Configuration

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Image: Search with the search withe search with the search with the search wit	
Address 2 https://172.20.8.254:8443/ccmadmin/routePattern2Edit.do?key=7cf2df65-183d-2f34-c6ca-94612a0195ea	
Navigation Clsco United Calimanager Administration	
CISCO UNIFIED CallManager Administration For Cisco IP Telecommunication Solutions Logged in as: CCMAdmini	trator
System Call Routing Media Resources Voice Mail Device Application User Management Bulk Administration Help Log	Off
Route Pattern Configuration Related Links: Back To Find/List	Go
Status Status: Ready	
Route Pattern* 40XX	
Route Partition < None >	
Numbering Plan	
Route Filter < None >	
MLPP Precedence* Default	
Gateway/Route List * S1/DS1-0@CMM_Interop 🕑 (Edit) Find	
Route Option Route this pattern	
O Block this pattern No Error	
Require Forced Authorization Code	
Authorization Level* 0	
Require Client Matter Code	
Calling Party Transformations	
Use Calling Party's External Phone Number Mask Calling Party Transform Mask	
Prefix Digits (Outgoing Calls)	
Calling Line ID Presentation*	
Calling Name Presentation* Default	
- Consected Darks Transformations	
Connected Party Transformations	
Connected Name Presentation* Default	
Called Party Transformations	
Discard Digits <a>None >	
Called Party Transform Mask	
Prefix Digits (Outgoing Calls)	
ISDN Network-Specific Facilities Information Element	
Network Service Protocol Not Selected	
Network Service Service Parameter Name Service Parameter Value Not Selected Not Exist >	
- Save Delete Copy Add New	

(i) *- indicates required item.

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Overlap Sending Route Pattern

🗿 Route Pattern Config	iguration - Microsoft Internet Explorer	
<u>File E</u> dit <u>V</u> iew F <u>a</u> vorite	ites <u>T</u> ools <u>H</u> elp	
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Address 🕘 https://172.20.8).8.254:8443/ccmadmin/routePattern2Edit.do?key=6b39564d-6d56-a9cb-15a1-9334ca592382	
Cisco Unified	CallManager Administration For Cisco IP Telecommunication Solutions Logged in as:CCMAdminist	rator
System 👻 Call Routing 👻	Media Resources Voice Mail Device Application User Management Bulk Administration Help Log C	Xff i
Route Pattern Configu	uration Related Links: Back To Find/List 👻	Go
Status Status: Ready		
Pattern Definition –		
Route Pattern*	9.X	h
Route Partition	< None >	
Numbering Disp		
Route Filter	Not Selected	
MLPP Precedence*	Default	
Gateway/Route List *	* S1/DS1-D@CMM Interon V (Edit) Find	
Route Option	Route this pattern	
	O Block this pattern No Error	
Call Classification*	OnNet 💽	
Allow Device Overri	rride 🗹 Provide Outside Dial Tone 🗹 Allow Overlap Sending 🗌 Urgent Priority	
Authorization Level*	uthorization Code	
Require Client Matt	tter Code	
- Calling Darty Teanof	-formation -	
Use Calling Party Transf	's External Phone Number Mask	ľ
Calling Party Transform	rm Mask	
Prefix Digits (Outgoing	ng Calls)	
Calling Line ID Presen	ntation* Default	
Calling Name Presenta	tation* Default	
Connected Party Tra	ransformations	
Connected Line ID Pre	resentation* Default	h
Connected Name Pres	esentation" Default	
Called Party Transfo	formations	
Called Party Transform		
Prefix Digits (Outgoing	ng Calls)	
ISDN Network-Spec	ecific Facilities Information Element	
Network Service Proto	Code	
Network Service	Service Parameter Name Service Parameter Value	
Not Selected		
	Add New	-



PSTN Route Pattern Configuration

🗿 Route Pattern Config	guration - Microsoft Internet Explorer	
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Address 🙆 https://172.20.	8.254:8443/ccmadmin/routePattern2Edit.do?key=0b720645-56b2-5016-70c8-83902c546cb0	
Cisco Unified	CallManager Administration For Cisco IP Telecommunication Solutions Logged in as: CCMAdministrator	
System 👻 Call Routing 👻	Media Resources Voice Mail Voice Mail Pevice Application User Management Bulk Administration Help Log Off	
Route Pattern Configu	iration Related Links: Back To Find/List 😒 🚱	
Gillion Status: Ready		
Pattern Definition -		
Route Partition		
Description	< None >	
Numbering Plan	PSIN Route Gateway	
Route Filter	Nor Selected M	
MLPP Precedence*		
Gateway/Route List *	S1/DS1-D@CMM Interon V (Edit) Find	
Route Option	Route this nattern	
	O Block this pattern No Error	
Call Classification*	OnNet	
Allow Device Over	ride Provide Outside Dial Tone Allow Overlap Sending Urgent Priority	
Require Forced Authorization Code		
Authorization Level*		
Require Client Mat	ter Code	
Calling Party Trans	formations	
Use Calling Party'	s External Phone Number Mask	
Prefix Digits (Outgoin		
Calling Line ID Preser		
Calling Name Present	ation* Default	
	Default	
Connected Party Tr	ansformations	
Connected Name Pre-	sentation* Default	
Called Party Transf	ormations	
Called Party Transform		
Prefix Digits (Outgoin	g Calls)	
- ISDN Network-Sne	cific Facilities Information Element	
Network Service Proto	ocol Not Selected 💌	
Carrier Identification	Code	
Network Service	Service Parameter Name Service Parameter Value	
Not Selected	Not Exist >	
- Save Delete Cop	y Add New	



Translation Pattern for Incoming Calls

🚈 Translation Pattern	Configuration - Microsoft Internet Explorer	
<u>Eile E</u> dit <u>V</u> iew F <u>a</u> voril	tes Iools Help	
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Address 🕘 https://172.20.	8.254:8443/ccmadmin/translationEdit.do?key=ec898e0f-cf88-adcd-f67a-cd976de7a12c	
	Navigation Cisco Unified CallManager Administration 🔽 Go	
Cisco Unified	CallManager Administration For Cisco IP Telecommunication Solutions Logged in as:CCMAdministrator	
System 👻 Call Routing 🖣	r Media Resources ▼ Voice Mail ▼ Device ▼ Application ▼ User Management ▼ Bulk Administration ▼ Help ▼ Log Off	
Translation Pattern C	onfiguration Related Links: Back To Find/List 👱 Go	
GStatus: Ready		
Pattern Definition -		
Translation Pattern	30XX	
Partition	Incoming Trunk	
Description		
Numbering Plan	< None >	
Route Filter	< None >	
MLPP Precedence*	Default 👻	
Calling Search Space	phones 👻	
Route Option	Route this pattern	
	O Block this pattern No Error	
Provide Outside E	Dial Tone 🗹 Urgent Priority	
— Calling Party Trans	formations	
Use Calling Party	s External Phone Number Mask	
Durfin Dirita (Outrain		
Prenx Digits (Odtgoin		
Calling Line ID Preser	ntation * Default	
Calling Name Present	adon" Default	
Connected Party Tr	ansformations	
Connected Line ID Pr	esentation* Default	
Connected Name Pre	sentation* Default	
Called Party Transf Discard Digits	formations	
Called Party Transform Mask		
Prefix Digits (Outgoing Calls)		
- Save Delete Cop	y Add New	

• indicates required item.

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CLIR Route Pattern Config

🚈 Route Pattern Config	iguration - Microsoft Internet Explorer		
<u>File E</u> dit <u>V</u> iew F <u>a</u> vorit	rites <u>T</u> ools <u>H</u> elp		and the second
🚱 Back 🔹 🌍 🕤 🛓	蟚 💰 🌈 Search 🤺 Favorites 🌒 Media 🤣 🍃	• 🎍 🔳 • 🛄 🛍	
Address 🙆 https://172.20.).8.254:8443/ccmadmin/routePattern2Edit.do?key=7cf2df65-183d-2f34-c6ca-	94612a0195ea	
Cisco Unified	CallManager Administration For Cisco IP 1	Telecommunication Solutions	Logged in as:CCMAdministrator
System 👻 Call Routing 👻	✓ Media Resources ✓ Voice Mail ✓ Device ✓ Application ✓ Usice	er Management 👻 Bulk Administration 👻 Help 👻	Log Off
Route Pattern Configu	juration		Related Links: Back To Find/List 🔽 Go
Status Status: Ready			
Pattern Definition -			
Route Pattern*	40XX		
Description	< None >		
Numbering Plan			
Route Filter	< None >		
MLPP Precedence*	Default		
Gateway/Route List *	* S1/DS1-0@CMM_Interop 🕑 (Edit) Find		
Route Option	O Route this pattern		
Call Classification*	O Block this pattern No Error		
	rride Provide Outside Dial Tone Allow Overlan Sending	Urgent Priority	
Require Forced Au	uthorization Code		
Authorization Level*	0		
Require Client Mat	itter Code		
Calling Party Trans	sformations		
Calling Party Calling Party Transfor	y's External Phone Number Mask	1	
Prefix Digits (Outgoin	ng Calls)		
Calling Line ID Preser	entation* Restricted		
Calling Name Present	itation* Default		
Connected Party Tr	ransformations	· 	
Connected Line ID Pr	resentation* Default		
Connected Name Pre	asentation" Default	<u>×</u>	
 Called Party Transf Discard Digits 	iformations	2	
Called Party Transfor	rm Mask		
Prefix Digits (Outgoin	ng Calls)		
– ISDN Network-Spe Network Service Prot	ecific Facilities Information Element		
Carrier Identification	1 Code		
Network Service	Service Parameter Name	Service Parameter Value	
Not Selected	< Not Exist >		
- Save Delete Cop	py Add New		



CNIR Route Pattern Config

🗿 Route Pattern Config	guration - Microsoft Internet Explorer
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Address 🛃 https://172.20.	8.254:8443/ccmadmin/routePattern2Edit.do?key=7cf2df65-183d-2f34-c6ca-94612a0195ea
Cisco Unified	CallManager Administration For Cisco IP Telecommunication Solutions Logged in as:CCMAdministrato
System - Call Routing -	Media Resources Voice Mail Device Application User Management Bulk Administration Help Log Off Log Off
Pouto Dattorn Configu	uration Real: To Find/List 😨 Go
Status	
🛈 Status: Ready	
— Pattern Definition –	
Route Pattern*	40XX
Route Partition	< None >
Description	
Numbering Plan	Not Selected
Route Filter	<pre></pre>
Gateway/Poute List *	
Route Option	S1/DS1-0@CMM_Interop (Edit) (Ind
	Route this pattern
Call Classification*	
Allow Device Over	ride Provide Outside Dial Tone Allow Overlap Sending Urgent Priority
Require Forced Au	thorization Code
Authorization Level*	0
🔲 Require Client Mat	ter Code
Calling Party Trans	formations
Use Calling Party'	s External Phone Number Mask
Calling Party Transfor	
Prefix Digits (Outgoin	g Calls)
Calling Line ID Preser	ntation* Default
Calling Name Present	action Restricted
Connected Party Tr	ansformations
Connected Line ID Pr	esentation* Default
Connected Name Pre:	sentation* Default
Called Party Transf	formations
Discard Digits	< None >
Called Party Transform	m Mask
Prefix Digits (Outgoin)	g Calls)
ISDN Network-Spe	cific Facilities Information Element
Network Service Proto	ocol Not Selected
Carrier Identification	Code
Network Service	Service Parameter Name Service Parameter Value
- NOT Selected	
- Save Delete Cop	y] Add New



COLR Translation Pattern Configuration

Translation Pattern Con	nfiguration - Microsoft Internet Explorer			
File Edit View Favorites Tools Help				
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Address 🕘 https://172.20.8.2	254:8443/ccmadmin/translationEdit.do?key=ec898e0f-cf88-adcd-f67a-cd976de7a12c			
	Navigation Cisco Unified CallManager Administration 🔜 Go			
Cisco Unified C	allManager Administration For Cisco IP Telecommunication Solutions Logged in as: CCMAdministrator			
System Call Routing	Media Resources Voice Mail V Device Application User Management Bulk Administration Help V			
Translation Pattern Conf	figuration Related Links: Back To Find/List 🚽 Go			
Status				
(j) Status: Ready				
Pattern Definition				
Partition				
Description				
Numbering Plan	None			
Route Filter	None >			
MLPP Precedence*	efault 🗸			
Calling Search Space ph	nones 👻			
Route Option 💿	Route this pattern			
0	Block this pattern No Error			
Provide Outside Dial	I Tone 🗹 Urgent Priority			
Calling Party Transfor	rmations			
Use Calling Party's E	External Phone Number Mask			
Calling Party Transform				
Colling Ling ID Responde				
Calling Line ID Presenta	ion* Default			
	Default			
Connected Party Tran	isformations			
Connected Name Prese	encauon Restricted			
	Detault			
Called Party Transfor	mations			
Called Darty Transform M	< None > Y			
Prefix Digits (Outgoing Calls)				
- Save Delete Copy	Add New			

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CONR Route Pattern Configuration

🖆 Translation Pattern Configuration - Microsoft Internet Explorer
File Edit View Favorites Tools Help
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Address 🗃 https://172.20.8.254:8443/ccmadmin/translationEdit.do?key=ec898e0f-cf88-adcd-f67a-cd976de7a12c
Navigation Cisco Unified CallManager Administration 🔽 🖸
Cisco Unified CallManager Administration For Cisco IP Telecommunication Solutions Logged in as:CCMAdministration
System 👻 Call Routing 👻 Media Resources 👻 Voice Mail 👻 Device 👻 Application 👻 User Management 👻 Bulk Administration 👻 Help 👻 Log Off
Translation Pattern Configuration Related Links: Back To Find/List 🝸 Go
Status: Ready
Pattern Definition
Translation Pattern 30XX
Partition Incoming Trunk
Description
Numbering Plan < None >
Route Filter < None >
MLPP Precedence* Default
Calling Search Space phones
Route Option 💿 Route this pattern
O Block this pattern No Error
🗹 Provide Outside Dial Tone 🗹 Urgent Priority
Calling Party Transformations
Vse Calling Party's External Phone Number Mask
Calling Party Transform Mask
Prefix Digits (Outgoing Calls)
Calling Line ID Presentation* Default
Calling Name Presentation* Default
Connected Party Transformations
Connected Line ID Presentation* Default
Connected Name Presentation* Restricted
Called Party Transformations
Discard Digits < None >
Called Party Transform Mask
Prefix Digits (Outgoing Calls)
- Save Delete Copy Add New

(i) *- indicates required item.



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 >	Image: A start of the start
No Path Reservation *	True	True
Set Private Numbering Plan for CallBack *	False	False

CallBack Softkey Configuration

🖄 Softkey Template Configuration - Microsoft Internet Explorer 👘		
<u>File E</u> dit <u>V</u> iew F <u>a</u> vorites <u>T</u> ools <u>H</u> elp		
🔇 Back 🝷 🕥 - 🖹 🛃 🏠 🔎 Search 👷 Favorites 📢 I	Media 🚱 🎯 - 🍑 🖺 - 🗾 🎇	
Address 🕘 https://172.20.8.254:8443/ccmadmin/softkeyTemplateEdit.do?key=e87	9e0a1-b65c-48bd-b86a-223a38786641	
		Navigation Cisco Unified CallManager Administration 🔽 Go
Cisco Unified CallManager Administration	For Cisco IP Telecommunication Solutions	Logged in as:CCMAdministrator
System ▼ Call Routing ▼ Media Resources ▼ Voice Mail ▼ Device ▼ .	Application 👻 User Management 👻 Bulk Administration 👻	Help 👻 Log Off
Softkey Template Configuration		Related Links: Configure Softkey Layout 💌 Go
Status Status: Ready		
Name* Standard Lloor CallBook		
Applications*		
Applications Cisco CallManager	Add Application Remove Application	
- Save Delete Copy Add New Reset		
(i) *- indicates required item.		



🖆 Softkey Template Configuration - Microsoft Internet Explorer				
Eile Edit Yiew Favorites Iools Help				
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Address 🗃 https://172.20.8.254:8443/ccmadmin/softkeyTemplateLayoutEdit.do?key=e879e0a1-b65c-48bd-b86a-223a38786641				
	Navigation Cisco Unified CallManager Administration 💌 Go			
Cisco Unified CallManager Administration For Cisco IP Telecommunication Solutio	ons Logged in as:CCMAdministrator			
System 👻 Call Routing 👻 Media Resources 👻 Voice Mail 👻 Device 👻 Application 👻 User Management 👻 Bulk Administr	ration 👻 Help 👻 Log Off			
Softkey Template Configuration	Related Links: Softkey Template Configuration 💌 Go			
Status Status: Ready				
Softkey Layout Configuration Softkey Template: Standard User CallBack Select a call state to configure On Hook Unselected Softkeys Conference List (ConfList) Direct Transfer (DirTrft) Group Pick Up (GPickUp) Immediate Divert (IDivert) Join (Join) Meet Me (MeetMe) Other Pickup (oPickUp) Pick Up (PickUp) Pick Up (OPickUp) Pick Up (OPickUp) Pick Up (OPickUp) Pick Up (OPickUp) Pick Up (OPickUp) Quality Report Tool (QRT) Remove Last Conference Party (RmLstC) Select (Select) Undefined (Undefined) Video Mode Command (VidMode)				

*- indicates required item.
 **- indicates mandatory fields



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Address 🗿 https://172.20.8.254/8443/crmadmin/coftkeyTemplateLayoutEdit_do2key=e879e0a1_b65c-48bd_b86a-223a387866418callState=8	
Navigation Cisco L	Inified CallManager Administration 😴 Go
Cisco Unified CallManager Administration For Cisco IP Telecommunication Solutions	Logged in as:CCMAdministrator
System 👻 Call Routing 👻 Media Resources 👻 Voice Mail 👻 Device 👻 Application 👻 User Management 👻 Bulk Administration 👻 Help 👻	Log Off
Softkey Template Configuration Related Links:	Softkey Template Configuration 💌 🖸
Status Status: Ready	
Softkey Layout Configuration Softkey Template: Standard User CallBack Select a call state to configure Ring Out Unselected Softkeys Undefined (Undefined) **End Call (EndCall) Call Back (CallBack) Call Back (CallBack)	

indicates required item.
 **- indicates mandatory fields



Path Replacement Service Parameter

 Clusterwide Parameters (Feature - Path Replacement Path Replacement Enabled * 	Talse	😺 False
Path Replacement on Tromboned Calls *	True	True
Start Path Replacement Minimum Delay Time *	2	
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



IP phone Configuration (SCCP)

🖆 Phone Configuration - Microsoft Internet Explorer				
<u>File E</u> dit <u>Vi</u> ew F <u>a</u> vorites <u>T</u> ools <u>H</u> elp				
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Address & https://172.20.8.254:8443/ccmadmin/phoneEdit.do?ke	y=afc5d87c-1a71-4183-8712-0e80a5	era070		
			Navigation Cisco Unified	d CallManager Administration 📉 Go
Cisco Unified CallManager Admin	istration For Cisco IP	Telecommunication Solutions		Logged in as:CCMAdministrator
System 👻 Call Routing 👻 Media Resources 👻 Voice Mail 🔹	 Device	er Management 👻 Bulk Administration 👻	Help 👻	Log Off
Phone Configuration		Rel	ated Links: Back To Find/Li	st 😽 Go
Status Peady				
(Journey)				
Association Information	Phone Type	102		
Modify Button Items	Product Type: Cisco 79 Device Protocol: SCCP	40		
1 Line [1] - 3000 in phones				
2 @ <u>Add a new SD</u>	— Device Information — Registration	Registered with Cisco Unified Cal	Manager CM-CHIVAS	
	IP Address	172.20.8.11		
4 Res Add a new SD	MAC Address*	000C303B28F4		
5 Add a new SURL	Description	Auto 3000		
6 Con Add a new BLE SD	Device Pool*	Default	~	
7 Privacy	Phone Button Template*	Standard 7940 SCCP	~	
8 None	Softkey Template	Standard User CallBack	~	
	Common Phone Profile*	Standard Common Phone Profile	~	
	Calling Search Space	< None >	~	
	AAR Calling Search Space	< None >	~	
	Media Resource Group List	< None >	~	
	User Hold Audio Source	< None >	~	
	Network Hold Audio Source	< None >	*	
	Location*	Hub_None	~	
	User Locale	< None >	~	
	Network Locale	< None >	~	
	Built In Bridge*	Default	*	
	Privacy*	Default	*	
	Owner User ID	< None >	*	
	Prione Load Name			
	Retry Video Call as Audi			
	Ignore Presentation Ind	licators (internal calls only)		
	Allow Control of Device f	from CTI		



– Protocol Speci	ific Information					
Packet Capture	Mode*	None	*			
Packet Capture	Duration	0				
Presence Group	*	Standard Presence group	~			
SCCP Phone Sec	curity Profile*	Standard SCCP Profile for Auto Registration	~			
SUBSCRIBE Calli	ng Search Space	< None >	~			
Unattended I	Port					
🗌 Require DTM	F Reception					
RFC2833 Dis	abled					
– External Data	Locations Infor	mation (Leave blank to use default) ———				
Information						
Directory						
Messages						
Services						
Authentication 9	Server					
Proxy Server						
Idle	-					
Idle Timer (seco	nds)					
– Extension Info	ormation ———					
	Enable Extension	n Mobility				
Log Out Profile	out Profile Not Selected					
Login in User ID	< None >					
Log in Time	< None >					
Log out nine						

Certification Authority Proxy Function (CAPF) Information
No Pending Operation
Generate String
Operation Completes By 2006 : 5 : 13 : 12 (YYYY:MM:DD:HH)
Certificate Operation Status: None
MLPP Information
MLPP Domain < None >
MLPP Indication* Default
MLPP Preemption* Default
- Secure Shell Information
Secure Shell User
Secure Shell Password
Product Specific Configuration Layout
8
Disable Speakerphone
Disable Speakerphone and Headset
Enabled
Settings Access T Enabled
Gratuitous AKP* Enabled
PC Voice VLAN Access* Enabled
Video Capabilities* Disabled
Auto Line Select* Disabled
Web Access* Enabled

- Save Delete Copy Reset Add New -

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



Directory Number Configur	ation - Microsoft Internet Explorer		
<u>File E</u> dit <u>View</u> F <u>a</u> vorites <u>T</u> or	ols <u>H</u> elp		
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Address a https://172.20.8.254:84	143/ccmadmin/directoryNumberEdit.do?key=1d9	c88cf-549e-d47b-199d-6a7f3ea1b4248mapkey=3da3f835-cadc-8ad4-b339-dabdf8a9a6058devicekey=afc5d87c-1a71-4183-8712-0e80a5efa070&index=1	💌 🛃 😡
			Navigation Cisco Unified CallManager Administration
Cisco Unified Call	Manager Administration	For Cisco IP Telecommunication Solutions	Logged in as:CCMAdminis
System - Call Routing - Media	a Resources 👻 Voice Mail 👻 Device 👻	Application 👻 User Management 👻 Bulk Administration 👻 Help 👻	Log
Directory Number Configura	tion		Related Links: Back To Find/List 💌
Status Status: Ready			
Note: Changes to Line or Dire	ectory Number settings require resta	rt.	
Directory Number Inform Directory Number*	ation	000	
Route Partition		phones v	
Description			
Alerting Name		Bofo Bautista	
ASCII Alerting Name		Bofo Bautista	
Allow Control of Device fr	rom CTI		
Assoc	iated Devices		
SEP000C303B28F4		Edit Device	
		Edit Line Appearance	
	**		
Disso	ciate Devices		
Directory Number Setting	s		
Calling Search Space	< None >	Choose <none> to use system default)</none>	
Presence Group*	Prones Standard Bracance group		
AAR Group	< None >		
User Hold Audio Source	< None >	×	
Network Hold Audio Source	< None >		
Auto Answer*	Auto Answer Off		



- Call Forward and Call Pickup St	ettings			
Voi	ice Mail Destination	Calling Search Space		
Forward All [_ or	phones	~	
Secondary Calling Search Space for	or Forward All	< None >	~	Find
Forward Busy Internal	or	phones	~	
Forward Busy External] or	phones	~	
Forward No Answer Internal	🗌 or	phones	~	
Forward No Answer External] or	phones	~	
Forward No Coverage Internal] or	< None >	~	
Forward No Coverage External] or	< None >	*	
Forward on CTI Failure	🗌 or	< None >	~	
No Answer Ring Duration (second	5)			
Call Pickup Group	< None >	×		
— MLPP Alternate Party Settings				
Target (Destination)				
MLPP Calling Search Space	< None >	~		
MLPP No Answer Ring Duration (se	aconds)			
- Line 1 on Device SEP000C303	B28F4			
Display (Internal Caller Bofo Ba	autista	Display text for a line appearanc	e is intended for displa	aying text such as a name instead of a directory number for internal calls. If you specify a number, the perso
ASCII Display (Internal In-6 p.	ig a call may not see the proper id	entity of the caller.		
Caller ID)	JUIISTA			
Line Text Label Bofo Ba	autista			
ASCII Line Text Label Bofo Ba	autista			
External Phone Number Mask				
Message Waiting Lamp Use Sy Policy*	/stem Policy	*		
Ring Setting (Phone Idle)* Use Sy	/stem Default	~		
Ring Setting (Phone Use S) Active)	/stem Default	Applies to this line when any line o	n the phone has a call	l in progress.
— Multiple Call/Call Waiting Setti	ngs on Device SEP000C303B28f	4		
Note: The range to select the Max	Number of calls is: 1-200			
Maximum Number of Calls	4			
Busy Ingger*	2		(Less than or equal to) Max. Calls)
Forwarded Call Information Dis Caller Name	play on Device SEP000C303B28;	3F4		
Caller Number				
Redirected Number				
Dialed Number				
- Save Delete Copy Reset	Add New			

indicates required item.



IP phone Configuration (SIP)

Phone Configuration - Microsoft Internet Explorer					
<u>File E</u> dit <u>Vi</u> ew F <u>a</u> vorites <u>T</u> ools <u>H</u> elp	10 J. 10				
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Address ahttps://172.20.8.254:8443/ccmadmin/phoneEdit.do?key	=0a9111b4-cfc7-479a-8c44-c67a23f6	5e58			
			Navigation Cisco Un	ified CallManager Administration 👿 Go	
Cisco Unified CallManager Adminis	stration For Cisco IP Te	elecommunication Solutions		Logged in as:CCMAdministrator	
System Call Routing Media Resources Voice Mail	Device - Application - User	Management - Bulk Administration -	Help 🔻	Log Off	
Phone Configuration		-	Personal Back To Fins	d/l int	
		Rei	ated Links: Dack TU Find		
Status					
G Status: Ready					
- Association Information	— Phone Type ————				
Modify Button Items	Product Type: Cisco 79	61			
1 <u>m: Line [1] - 3008 in phones</u>	Device Flotocol. SIF				
2 Ine [2] - Add a new DN	Device Information Registration	Reaistered with Cisco Unified Ca	allManager CM-CHIVAS		
3 Can Add a new SD	IP Address	172.20.8.15		5	
4 🖓 Add a new SD	MAC Address"	00170EEE2F5E			
5 🖓 Add a new SD	Description	Auto 3008			
6 🖓 Add a new SD	Device Pool*	Default	~		
Unassigned Associated Items 7 See Add a new SD	Phone Button Template*	Standard 7961 SIP	~		
8 S Add a new SURL	Softkey Template	Standard User CallBack	~		
9 Sa Add a new BLF SD	Common Phone Profile*	Standard Common Phone Profile	*		
10 Privacy	Calling Search Space	< None >	*		
11 None	AAR Calling Search Space	< None >	~		
	Media Resource Group List	< None >	~		
	User Hold Audio Source	< None >	*		
	Network Hold Audio Source	< None >	~		
	Location "	Hub_None	~		
	User Locale	< None >	~		
	Network Locale	< None >	~		
	Drivou*	Detault	~		
	Owner Licer ID	Default	~		
	Dhone Load Name	< None >	×		
	I gnore Presentation Ind	licators (internal calls only)			
		TOILCT			



- Protocol Specific Information -	
Packet Capture Node	None
	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 Requi Unattended Port Require DTMF Reception 	red
External Data Locations Inform Information Directory Messages Services Authentication Server	ation (Leave blank to use default)
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 For Certificate Operation*	unction (CAPF) Information
Authentication String	
Generate String	
Operation Completes By 2008	; 5 ; 13 ; 12 (YYYY:MM:DD:HH)
Certificate Operation Status: None	



		construction (decision) and the second se			
		MLPP Domain < None	>	*	
				1	
		Secure Shell Inform	nation		
		Secure Shell Password			
			ofiguration Lauget		
		Product Specific Co	niiguration Layout	2	
				a.	
		Disable Speakerph	ione		
		Disable Speakerph	ione and Headset	(800)	
			Enabled		
		Settings Access*	Enabled	×	
		Gratuitous ARP*	Enabled	~	
		PC Voice VLAN Access	* Enabled	~	
		Video Capabilities*	Disabled	~	
		Auto Line Select*	Disabled	~	
		Web Access*	Enabled	~	
		Span to PC Port*	Disabled	×	
		Logging Display*	DC Controlled		
		Load Comer	Let Controlled		
		Luau Server			
in the course of the cour	set is not required for char guration - Microsoft Internet Explorer Iools Help	nges to Packet Capture Mode an	d Packet Capture Duration.		
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Address 🕘 https://172.20.8.254	1:8443/ccmadmin/directoryNumberEdit.do?key=3	g rreuð 💓 🔯 🤹 💷 🤐 📖	374-68a6-4816-94e5-45f53d73a5878devicekey=0a9111b4-cfc7	479a-8c44-c67a23f65e588andex=1 Navigation Cisco Un	ified CallManager Administration
Address a https://172.20.8.254 Cisco Unified Ca	:8443/ccmadmin/directoryNumberEdit.do?key=3	n mawa 🦦 😰 🦋 🥥 💼 🤐 🔍 343ae4e5-a9b7-8e37-1c7b-dabř2376aaef8mapkey=2ef773 N For Cisco IP Telecommunication <u>Solutic</u>	974-68a6-4816-94e5-45f53d73a5878devicekey=0a9111b4-cfc7	479a-8c44-c67a23f65e588index=1 Navigation Cisco Un	ified CallManager Administration Logged in as:CCMAdmini
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— Call Forward and Call P	ickup Settings						
Converd All	Voice Mail	Destination	Calling Search Spac	e			
Forward All	🔲 or		phones		~		
Secondary Calling Search	Space for Forw	ard All	< None >		~	Find	
Forward Busy Internal	🔲 or		phones		*		
Forward Busy External	🔲 or		phones		~		
Forward No Answer Interr	nal 🔲 or		phones		~		
Forward No Answer Exten	nal 🔲 or		phones		×		
Forward No Coverage Inte	ernal 🔲 or		< None >		~		
Forward No Coverage Ext	ernal 🔲 or		< None >		~		
Forward on CTI Failure	🔲 or		< None >		~		
No Answer Ring Duration	(seconds)						
Call Pickup Group	< No	ne >	*				
MLPP Alternate Party S	ettings	35					
Target (Destination)							
MLPP Calling Search Space	e	< None >		~			
MLPP No Answer Ring Dur	ation (seconds)						
Line 1 on Device SEPOC	1170EEE2E5E						
Display (Internal Caller	Pato Araujo		Display te	xt for a line annearan	nce is intended for disr	laving text	t such as a name instead of a directory number for internal calls. If you specify a number, the perso
10)	receiving a cal	I may not see the proper i	entity of the caller.				
ASCII Display (Internal Caller ID)	Pato Araujo						
Line Text Label	Pato Araujo						
ASCII Line Text Label	Pato Araujo						
External Phone Number	-						
Message Waiting Lamp	Use System P	olicy	*				
Ring Setting (Phone Idle)*	* Ring		~				
Ring Setting (Phone Active)	Use System D	efault	Y Applies to th	is line when any line	on the phone has a ca	all in progre	ess.
— Multiple Call/Call Waiti	na Settinas on	Device SEPOO170EEE2E	iF -				
Note:The range to select	the Max Numbe	r of calls is: 1-200	-		-		
Maximum Number of Calls		4					
Busy Trigger*		2			(Less than or equal	to Max. Cal	lls)
- Forwarded Call Informa	ation Display o	n Device SEP00170EEE2	5E				
🗹 Caller Name							
🗹 Caller Number							
Redirected Number							
Dialed Number							
- Save Delete Conv F	Reset Add Ne						

(i) *- indicates required item.



Cisco CMM-E1 Configuration

CMM_Interop#show version 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 1 version 12.4 service timestamps debug datetime msec service timestamps log datetime msec no service password-encryption 1 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 1 !

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-13 ccm-manager
no cdp enable
I
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-13 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
1
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 04 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.
ССМ	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
СММ	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
СТ	Call Transfer
MWI	Message Waiting Indicator
PSTN	Public Switched Telephone Network



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