



Siemens Hicom 300 E Release 3.1 using E1 ISO QSIG to Cisco Unified CallManager 4.1

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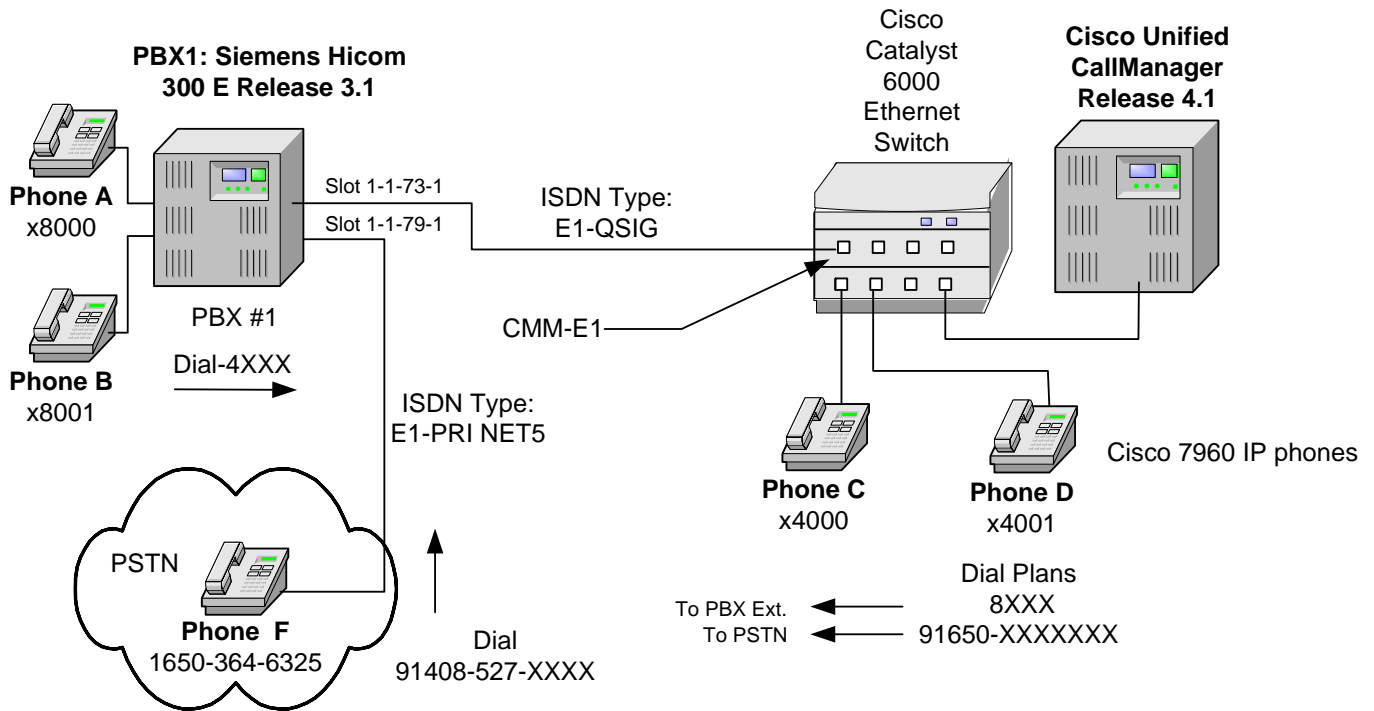
Introduction

- This is an application note for connectivity of Siemens Hicom 300 E Release 3.1 PBX with Cisco Unified CallManager (CUCM) Release 4.1 using Cisco Communication Media Module CMM-E1 QSIG as MGCP gateway.
- 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 CMM-E1 QSIG link as MGCP gateway.
- Connectivity is achieved by using the PRI QSIG E1 protocol type on the MGCP gateway and PSS1V2 switch type on the Siemens Hicom 300 E PBX.
- This Application Note uses the 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.

Network Topology

Figure 1. Network Topology

Basic Call Setup End-to-End Configuration



Limitations

B-Channel Mapping

- Siemens Hicom 300 E PBX uses sequential channel numbering (1-30) when ISO QSIG protocol "PSS1V2" is selected, therefore the Cisco CMM-E1 Gateway configuration for **Channel IE Type** field should be set to **Continuous Number**.

Connected Name and Number Restrictions

- Siemens phone displayed dialed number and trunk name when CUCM sends Connected Name and Number as restricted.

Additional Network Feature Path Replacement for Call Diversion

- Siemens Hicom 300 E PBX does not send Path Replacement proposal for Call Diversion by forward switching.

MWI

- When CUCM 4.1 is the Message Center PINX, Siemens Hicom 300 E PBX requires the CLI (Calling Line Identification) for the Voicemail Message Center in the incoming MWI setup messages in order to correctly signal MWI. Current CUCM 4.1 Q.SIG MWI



implementation however does not send the CLI in the MWI setup messages because it's optional in the Q.SIG standard. Since Siemens Hicom 300 E Q.SIG MWI implementation requires the CLI as mandatory information, CUCM 4.1 MWI will not interoperate with the Hicom 300 E PBX.

System Components

Hardware Requirements

- Cisco Hardware:
 - Cisco Catalyst 6000 switch with CMM-E1 Gateway
 - Cisco Unified CallManager Server
- Siemens Hicom 300 E PBX Hardware:
 - DIU-N2

Software Requirements

- PBX Software version 3.1
- Cisco Unified CallManager 4.1

Features

Features Supported

- CLIP-Calling Line (Number) Identification Presentation
- CLIR-Calling Line (Number) Identification Restriction
- CNIP-Calling Name Identification Presentation
- CNIR-Calling Name Identification Restriction
- COLP-Connected Line (Number) Identification Presentation
- COLR- Connected Line (Number) Identification Restriction
- CONP-Connected Name Identification Presentation
- CONR- Connected Name Identification Restriction
- Sending Alerting Name
- CT-Call Transfer (by join)
- CFU-Call Forwarding Unconditional (by join)
- CFB-Call Forwarding Busy (by join)
- CFNR-Call Forwarding No Reply (by join)
- CFU-Call Forwarding Unconditional (by Reroute)
- CFB-Call Forwarding Busy (by Reroute)
- CFNR-Call Forwarding No Reply (by Reroute)
- CCBS-Call Completion to Busy Subscriber
- CCNR-Call Completion No Reply
- ANF-PR-Additional Network Feature Path Replacement (for Call Transfer by join)



- ANF-PR-Additional Network Feature Path Replacement (for Call Diversion by forward switching)
- ANF-PR-Additional Network Feature Path Replacement (for Trombone connection)

Features Not Supported

- MWI- Message Waiting Indication (lamp ON, lamp OFF) ¹

Configuration

Configuring the Siemens Hicom 300 E PBX

1. Add the new access code to Dialing Plans using WABE + LDPLN.
2. Add the new trunk board using BCSU.
3. Configure Class of Trunk using COT.
4. Configure Class of Parameter for device handler using COP.
5. Configure Class of Service using COSSU.
6. Add the new trunk group access code using BUEND.
7. Configure trunk using TDCSU.
8. Configure Reference Clock using REFTA.
9. Configure trunk Least Cost Routing using LDAT + RICHT.
10. Configure LCR Out-dial Rules using LODR.
11. Enable In-Band DTMF signaling for the Digital Stations using RICHT.
12. Configure Message Center's Service Access Number for MWI application.
13. Configure Digital Station for Name and Number Restrictions.
14. Configure Digital Station's Class of Service for Mailbox MWI application.

Configuration Menus and Commands

DPLN

```
<dis-wabe:gen;
DISPLAY-WABE:TYPE=GEN;
H500: AMO WABE STARTED
```

DIGIT INTERPRETATION		VALID FOR ALL DIAL PLANS			
CODE	CALL PROGRESS STATE	DIGIT ANALYSIS RESULT	RESERVED/CONVERT DNI/ADD-INFO		
001 - 003	*	NETRTE			
004	*	NETRTE	R		
005 - 006	*	NETRTE			
1000	. ***** **	STN		DESTNO 25	
				DNNO 0- 0- 25	
11	. . . . . * . . . . .	MBKY			
111	. ***** **	TIE			
222	. ***** **	OWNNODE			
3000 - 3010	. ***** **	STN		DESTNO 33	
				DNNO 0- 0-333	
4000 - 4050	. ***** **	STN		DESTNO 111	
				DNNO 0- 0-111	

¹ MWI was tested with Cisco Unified CallManager 4.1 as the Message Center PINX and PBX users as remote subscribers.



CODE	CALL PROGRESS STATE				DIGIT ANALYSIS RESULT	RESERVED/CONVERT DNI/ADD-INFO *=OWN NODE
	0	1	2	22		
4051 - 4599	. ****	*****	**	...	STN	R DESTNO 0 DNNO 0- 0-222*
4700 - 4999	. ****	*****	**	...	STN	R DESTNO 0 DNNO 0- 0-222*
5000 - 5009	. ****	*****	**	...	STN	DESTNO 55 DNNO 0- 0- 55
5010	. ****	*.***	**	...	ATNDIND	R
5011 - 5020	. ****	*****	**	...	STN	DESTNO 55 DNNO 0- 0- 55
5021 - 5050	. ****	*****	**	...	STN	DESTNO 111 DNNO 0- 0-111
5051	. ****	*.***	**	...	ATNDIND	

DIGIT INTERPRETATION VALID FOR ALL DIAL PLANS

CODE	CALL PROGRESS STATE				DIGIT ANALYSIS RESULT	RESERVED/CONVERT DNI/ADD-INFO *=OWN NODE
	0	1	2	22		
5500 - 5501	. ****	*****	**	...	STN	DESTNO 56 DNNO 0- 0-560
555	. ****	*****	**	...	TIE	
560	. ****	*****	**	...	TIE	
6000	. ****	*****	**	...	STN	DESTNO 33 DNNO 0- 0-333
7000 - 7002	. ****	*****	**	...	STN	DESTNO 56 DNNO 0- 0-560
79	. ****	*****	**	...	TIE	
8000 - 8019	. ****	*****	**	...	STN	DESTNO 0 DNNO 0- 0-222*

DIGIT INTERPRETATION VALID FOR ALL DIAL PLANS

CODE	CALL PROGRESS STATE				DIGIT ANALYSIS RESULT	RESERVED/CONVERT DNI/ADD-INFO *=OWN NODE
	0	1	2	22		
8020	. ****	*****	**	...	STN	R DESTNO 0 DNNO 0- 0-222*
854	. ****	*****	**	...	NETW	R DESTNO 2 DNNO 0- 0- 0
9	. ****	*****	**	...	TIE	
*66 *	SIGNON	
*91 * *	MBOFF	
#66 *	SIGNOFF	
#91 * *	MBON	
##22 *	DAKY	
##24 *	DSSKY	
##25 *	FWDKY	
##26 *	HTKY	
##27 *	KNOVRKY	



##28	. . . . . * ..	MBKY	

DIGIT INTERPRETATION		VALID FOR ALL DIAL PLANS	

CODE	CALL PROGRESS STATE	DIGIT	RESERVED/CONVERT
	1 1111 11112 22	ANALYSIS	DNI/ADD-INFO
	0 12345 67890 12345 67890 12	RESULT	*=OWN NODE

##29	. . . . . * ..	MSGRKY	
##35	. . . . . * ..	TIMEKY	
##36	. . . . . * ..	VCKY	
##37	. . . . . * ..	VCRKY	
##38	. . . . . * ..	CCKY	
##39	. . . . . * ..	CONFKY	
##41	. . . . . * ..	NAMEKY	
##42	. . . . . * ..	PARKKY	
##43	. . . . . * ..	REMKY	
##44	. . . . . * ..	STKY	
##45	. . . . . * ..	CBKKY	
##46	. . . . . * ..	CONSKY	
##47	. . . . . * ..	DNDKY	
##48	. . . . . * ..	EXHOLDKY	
##49	. . . . . * ..	HOLDKY	
##50	. . . . . * ..	IUSEKY	
##51	. . . . . * ..	LNRRKY	

DIGIT INTERPRETATION		VALID FOR ALL DIAL PLANS	

CODE	CALL PROGRESS STATE	DIGIT	RESERVED/CONVERT
	1 1111 11112 22	ANALYSIS	DNI/ADD-INFO
	0 12345 67890 12345 67890 12	RESULT	*=OWN NODE

##52	. . . . . * ..	PRIVKY	
##53	. . . . . * ..	RLSKY	
##54	. . . . . * ..	SNRKY	
##55	. . . . . * ..	TRNSKY	
##56	. . . . . * ..	RCTOFFKY	
##57	. . . . . * ..	TOGGLEKY	

AMO-WABE -111 DIALLING PLANS, FEATURE ACCESS CODES
 DISPLAY COMPLETED;

Enbloc Sending Dial Plan, DPLN

<DISPLAY-LDPLN:TYPE=LDP,LDPNO=38;
 DISPLAY-LDPLN:TYPE=LDP,LDPNO=38;

H500: AMO LDPLN STARTED

LDPNO :	38	LDP :	111-X			

		SPC : 22				

	DPLN	LRTE	LAUTH	DPLN	LRTE	LAUTH

	0	111	1	8	111	1
	1	111	1	9	111	1
	2	111	1	10	111	1
	3	111	1	11	111	1
	4	111	1	12	111	1
	5	111	1	13	111	1
	6	111	1	14	111	1
	7	111	1	15	111	1



```

-----+-----+-----+-----+-----+-----+-----+
AMO-LDPLN-111      ADMINISTRATION LCR DIALPLAN

```

```

DISPLAY COMPLETED;

```

Access code for Overlap Sending Dial Plan, DPLN

```

<DISPLAY-LDPLN:TYPE=LDP,LDPNO=43;
DISPLAY-LDPLN:TYPE=LDP,LDPNO=43;

```

```

H500: AMO LDPLN STARTED

```

```

-----+-----+-----+-----+-----+-----+-----+
| LDPNO : 43 | LDP : 38-X |
|             | SPC : 22   |
-----+-----+-----+-----+-----+-----+-----+
|           | DPLN | LRTE | LAUTH | DPLN | LRTE | LAUTH |
-----+-----+-----+-----+-----+-----+-----+
|           | 0    | 38   | 1     | 8    |      |      |
|           | 1    |      |       | 9    |      |      |
|           | 2    |      |       | 10   |      |      |
|           | 3    |      |       | 11   |      |      |
|           | 4    |      |       | 12   |      |      |
|           | 5    |      |       | 13   |      |      |
|           | 6    |      |       | 14   |      |      |
|           | 7    |      |       | 15   |      |      |
-----+-----+-----+-----+-----+-----+-----+

```

```

AMO-LDPLN-111      ADMINISTRATION LCR DIALPLAN
DISPLAY COMPLETED;

```

PSTN Dial Plan, DPLN

```

<DISPLAY-LDPLN:TYPE=LDP,LDPNO=34;
DISPLAY-LDPLN:TYPE=LDP,LDPNO=34;

```

```

H500: AMO LDPLN STARTED

```

```

-----+-----+-----+-----+-----+-----+-----+
| LDPNO : 34 | LDP : 9-1650-XXXXXXX |
|             | SPC : 22             |
-----+-----+-----+-----+-----+-----+-----+
|           | DPLN | LRTE | LAUTH | DPLN | LRTE | LAUTH |
-----+-----+-----+-----+-----+-----+-----+
|           | 0    | 916  | 1     | 8    |      |      |
|           | 1    |      |       | 9    |      |      |
|           | 2    |      |       | 10   |      |      |
|           | 3    |      |       | 11   |      |      |
|           | 4    |      |       | 12   |      |      |
|           | 5    |      |       | 13   |      |      |
|           | 6    |      |       | 14   |      |      |
|           | 7    |      |       | 15   |      |      |
-----+-----+-----+-----+-----+-----+-----+

```

```

AMO-LDPLN-111      ADMINISTRATION LCR DIALPLAN
DISPLAY COMPLETED;

```

BCSU

QSIG Board



```
<DISPLAY-BCSU:TYPE=TBL,LTG=1,LTU=1,SLOT=73;
DISPLAY-BCSU:TYPE=TBL,LTG=1,LTU=1,SLOT=73;
```

```
H500: AMO BCSU STARTED
```

```
ADDRESS : LTG 1 LTU 1
```

PEN	ASSIGNED MODULE	MODULE TYPE	FCT ID	HWY BDL	INSERTED MODULE	STATE	HW-INFO	MODULE STATUS
73	Q2196-X	DIU-N2	1	A	Q2196-X	1	-04 -	READY

```
AMO-BCSU -111 BOARD CONFIGURATION, SWITCHING UNIT
```

```
DISPLAY COMPLETED;
```

```
<
```

PSTN board

```
<DISPLAY-BCSU:TYPE=TBL,LTG=1,LTU=1,SLOT=79;
DISPLAY-BCSU:TYPE=TBL,LTG=1,LTU=1,SLOT=79;
```

```
H500: AMO BCSU STARTED
```

```
ADDRESS : LTG 1 LTU 1
```

PEN	ASSIGNED MODULE	MODULE TYPE	FCT ID	HWY BDL	INSERTED MODULE	STATE	HW-INFO	MODULE STATUS
79	Q2196-X	DIU-N2	1	A	Q2196-X	1	-06 -	READY

```
AMO-BCSU -111 BOARD CONFIGURATION, SWITCHING UNIT
```

```
DISPLAY COMPLETED;
```

Class of Trunk, COT

```
<dis-cot:4;
DISPLAY-COT:COTNO=4;
```

```
H500: AMO COT STARTED
```

```
COT: 4 INFO: 4:Q931 EXTERNAL
```

```
DEVICE: INDEP SOURCE: DB
```

```
PARAMETER:
```

PRIORITY FOR AC WILL BE DETERMINED FROM MESSAGE	PRI
RECALL IF USER HANGS UP IN CONSULTATION CALL	RCL
TRUNK CALL TRANSFER	XFER
TRUNK SIGNALING ANSWER	ANS
CHANGEOVER FROM HOLD TO RING TONE	CHRT
KNOCKING OVERRIDE POSSIBLE	KNOR
CALL EXTEND FOR BUSY, RING OR CALL STATE	CEBC
NETWORKWIDE AUTOMATIC CALLBACK ON BUSY	CBBN
NETWORKWIDE AUTOMATIC CALLBACK ON FREE	CBFN
DON'T RELEASE CALL TO BUSY HUNT GROUP	BSHT
SEND NO NODE NUMBER TO PARTNER	LWNC
CONNECTION TO ROUTE OPTIMIZATION NODE	ROPT
INCOMING CIRCUIT FROM SYSTEM WITHOUT LCR	NLCR
TSC-SIGNALING FOR NETWORKWIDE FEATURES (MANDATORY)	TSCS
INCOMING CDR BY ZONE OR FROM LINE	ICZL
INCOMING CIRCUIT FROM SYSTEM WITHOUT LCR (DATA)	NLRD
INTERWORKING CALLBACK - NO ANSWER AND MAILBOX CALLBACK	IWCB
AOC PER CALL (AUTOMATIC OR ON REQUEST), MAND. CORNET-NQ	AOCC
LINE WITH IMPLICIT NUMBERS	LINO
CONTROLLED TRUNK AND LINE SELECTION	CTLS



NO TONE

NTON

AMO-COT -111 CLASS OF TRUNK FOR CALL PROCESSING
DISPLAY COMPLETED;

For Call Forwarding by Reroute need to add FNAN and FWDN to COT4

<CHANGE-COT:COTNO=4,COTTYPE=COTADD,PAR=FNAN&FWDN;
CHANGE-COT:COTNO=4,COTTYPE=COTADD,PAR=FNAN&FWDN;

H500: AMO COT STARTED
H07: CHANGED COT STILL LINKED WITH FOLLOWING TRUNKS:

COT	TRUNK	BCGR	DEVICE
4	1- 1- 79- 0 1		S2CONN
	1- 1- 79- 1 1		S2CONN
	1- 1- 85- 2		S0CONN
	1- 1- 85- 3		S0CONN
	1- 1- 85- 6		S0CONN
	1- 1- 85- 7		S0CONN
	1- 1- 73- 0 1		S2CONN
	1- 1- 73- 1 1		S2CONN

H06: COT 4 CHANGED

AMO-COT -111 CLASS OF TRUNK FOR CALL PROCESSING
CHANGE COMPLETED;

<DISPLAY-COT:COTNO=4;
DISPLAY-COT:COTNO=4;

H500: AMO COT STARTED

COT: 4 INFO: 4:Q931 EXTERNAL
DEVICE: INDEP SOURCE: DB
PARAMETER:

PRIORITY FOR AC WILL BE DETERMINED FROM MESSAGE	PRI
RECALL IF USER HANGS UP IN CONSULTATION CALL	RCL
TRUNK CALL TRANSFER	XFER
TRUNK SIGNALING ANSWER	ANS
CHANGEOVER FROM HOLD TO RING TONE	CHRT
KNOCKING OVERRIDE POSSIBLE	KNOR
CALL EXTEND FOR BUSY, RING OR CALL STATE	CEBC
NETWORKWIDE AUTOMATIC CALLBACK ON BUSY	CBBN
NETWORKWIDE AUTOMATIC CALLBACK ON FREE	CBFN
NETWORKWIDE CALL FORWARDING PERMITTED	FWDN
NETWORKWIDE FORWARDING NO-ANSWER	FNAN
DON'T RELEASE CALL TO BUSY HUNT GROUP	BSHT
SEND NO NODE NUMBER TO PARTNER	LWNC
CONNECTION TO ROUTE OPTIMIZATION NODE	ROPT
INCOMING CIRCUIT FROM SYSTEM WITHOUT LCR	NLCR
TSC-SIGNALING FOR NETWORKWIDE FEATURES (MANDATORY)	TSCS
INCOMING CDR BY ZONE OR FROM LINE	ICZL
INCOMING CIRCUIT FROM SYSTEM WITHOUT LCR (DATA)	NLRD
INTERWORKING CALLBACK - NO ANSWER AND MAILBOX CALLBACK	IWCB
AOC PER CALL (AUTOMATICAL OR ON REQUEST), MAND. CORNET-NQ	AOCC
LINE WITH IMPLICIT NUMBERS	LINO
CONTROLLED TRUNK AND LINE SELECTION	CTLS
NO TONE	NTON

AMO-COT -111 CLASS OF TRUNK FOR CALL PROCESSING
DISPLAY COMPLETED;

Class of Parameter for Device Handler, COP



```
<DISPLAY-COP:COPNO=4;
DISPLAY-COP:COPNO=4;
```

```
H500: AMO COP STARTED
```

```
COP: 4 INFO: 4:Q931
DEVICE: INDEP SOURCE: DB
PARAMETER:
    LINE WITH END-OF-DIAL EOD
    SPECIAL MODE SFRM
    CODE CALLING RELEASE AFTER EVERY TASK CCR
    REGISTRATION OF LAYER 3 ADVISORIES L3AR
```

```
AMO-COP -111 CLASS OF PARAMETER FOR DEVICE HANDLER
DISPLAY COMPLETED;
```

Class of Service, COSSU

```
<DISPLAY-COSSU:TYPE=COS,COS=32;
```

```
DIS-COSSU:COS,32;
H500: AMO COSSU STARTED
```

COS	VOICE	FAX	TTX	VTX	DTE
32	>32:TRUNKS				
	TA	NOCO	NOCO	NOCO	TA
	TNOTCR	NOTIE	NOTIE	NOTIE	TNOTCR
					BASIC
					MSN
					CDRINT
					MULTRA

```
AMO-COSSU-111 CLASSES OF SERVICE, SWITCHING UNIT
DISPLAY COMPLETED;
```

```
<DISPLAY-COSSU:TYPE=LCOSV,LCOSV=32;
DISPLAY-COSSU:TYPE=LCOSV,LCOSV=32;
```

```
H500: AMO COSSU STARTED
```

LCOS	LAUTH						LCR
V	1	2	3	4	5	6	OPTS=
	123456789012345678901234567890123456789012345678901234						LCRET
	>SERVICE INFORMATION						LCR
32	XX						.
	>32:TRUNKS						

```
AMO-COSSU-111 CLASSES OF SERVICE, SWITCHING UNIT
DISPLAY COMPLETED;
```

Trunk Group Access Code, BUEND

```
<DISPLAY-BUEND:TGRP=38,FORMAT=L;
DISPLAY-BUEND:TGRP=38,FORMAT=L;
```

```
H500: AMO BUEND STARTED
```

FORMAT = L			
TGRP NUMBER :	38	TGRP NAME :	ETSI CCM
		CHARCON :	NEUTRAL
SUBGROUP NO.:	9	DEVICE TYPE :	S2CONN
		TRACENO :	0
		MAXIMUM NO. :	30



```
RESERVED      :      N   SEARCH MODE : CIRCULAR           ACD THRESHOLD :      *
NUMBER OF ASSOCIATED ROUTES      :      4           PRIORITY      :      2
THE FOLLOWING TRUNKS (LTG-LTU-SLOT-CCT) HAVE BEEN ALLOCATED:
-----
 1- 1- 73-1  B-CHL:  1 | 1- 1- 73-1  B-CHL:  2 | 1- 1- 73-1  B-CHL:  3
 1- 1- 73-1  B-CHL:  4 | 1- 1- 73-1  B-CHL:  5 | 1- 1- 73-1  B-CHL:  6
 1- 1- 73-1  B-CHL:  7 | 1- 1- 73-1  B-CHL:  8 | 1- 1- 73-1  B-CHL:  9
 1- 1- 73-1  B-CHL: 10 | 1- 1- 73-1  B-CHL: 11 | 1- 1- 73-1  B-CHL: 12
 1- 1- 73-1  B-CHL: 13 | 1- 1- 73-1  B-CHL: 14 | 1- 1- 73-1  B-CHL: 15
 1- 1- 73-1  B-CHL: 16 | 1- 1- 73-1  B-CHL: 17 | 1- 1- 73-1  B-CHL: 18
 1- 1- 73-1  B-CHL: 19 | 1- 1- 73-1  B-CHL: 20 | 1- 1- 73-1  B-CHL: 21
 1- 1- 73-1  B-CHL: 22 | 1- 1- 73-1  B-CHL: 23 | 1- 1- 73-1  B-CHL: 24
 1- 1- 73-1  B-CHL: 25 | 1- 1- 73-1  B-CHL: 26 | 1- 1- 73-1  B-CHL: 27
 1- 1- 73-1  B-CHL: 28 | 1- 1- 73-1  B-CHL: 29 | 1- 1- 73-1  B-CHL: 30
-----
```

AMO-BUEND-111 TRUNK GROUP
DISPLAY COMPLETED;

<DISPLAY-BUEND:TGRP=37,FORMAT=L;
DISPLAY-BUEND:TGRP=37,FORMAT=L;

H500: AMO BUEND STARTED

```
----- FORMAT = L -----
TGRP NUMBER : 37   TGRP NAME   : PRI TEST           MAXIMUM NO. : 30
                CHARCON      : NEUTRAL
SUBGROUP NO.: 10   DEVICE TYPE : S2CONN           TRACENO      : 0
RESERVED     : N    SEARCH MODE : CIRCULAR           ACD THRESHOLD : *
NUMBER OF ASSOCIATED ROUTES      : 4           PRIORITY      : 2
THE FOLLOWING TRUNKS (LTG-LTU-SLOT-CCT) HAVE BEEN ALLOCATED:
-----
 1- 1- 73-0  B-CHL:  1 | 1- 1- 73-0  B-CHL:  2 | 1- 1- 73-0  B-CHL:  3
 1- 1- 73-0  B-CHL:  4 | 1- 1- 73-0  B-CHL:  5 | 1- 1- 73-0  B-CHL:  6
 1- 1- 73-0  B-CHL:  7 | 1- 1- 73-0  B-CHL:  8 | 1- 1- 73-0  B-CHL:  9
 1- 1- 73-0  B-CHL: 10 | 1- 1- 73-0  B-CHL: 11 | 1- 1- 73-0  B-CHL: 12
 1- 1- 73-0  B-CHL: 13 | 1- 1- 73-0  B-CHL: 14 | 1- 1- 73-0  B-CHL: 15
 1- 1- 73-0  B-CHL: 16 | 1- 1- 73-0  B-CHL: 17 | 1- 1- 73-0  B-CHL: 18
 1- 1- 73-0  B-CHL: 19 | 1- 1- 73-0  B-CHL: 20 | 1- 1- 73-0  B-CHL: 21
 1- 1- 73-0  B-CHL: 22 | 1- 1- 73-0  B-CHL: 23 | 1- 1- 73-0  B-CHL: 24
 1- 1- 73-0  B-CHL: 25 | 1- 1- 73-0  B-CHL: 26 | 1- 1- 73-0  B-CHL: 27
 1- 1- 73-0  B-CHL: 28 | 1- 1- 73-0  B-CHL: 29 | 1- 1- 73-0  B-CHL: 30
-----
```

AMO-BUEND-111 TRUNK GROUP
DISPLAY COMPLETED;

<DISPLAY-BUEND:TGRP=71,FORMAT=L;

DISPLAY-BUEND:TGRP=71,FORMAT=L;
H500: AMO BUEND STARTED

```
----- FORMAT = L -----
TGRP NUMBER : 71   TGRP NAME   : CLOSED NUMBER E1  MAXIMUM NO. : 30
                CHARCON      : NEUTRAL
SUBGROUP NO.: 19   DEVICE TYPE : S2CONN           TRACENO      : 0
RESERVED     : N    SEARCH MODE : ASCENDING           ACD THRESHOLD : *
NUMBER OF ASSOCIATED ROUTES      : 3           PRIORITY      : 2
THE FOLLOWING TRUNKS (LTG-LTU-SLOT-CCT) HAVE BEEN ALLOCATED:
-----
 1- 1- 79-1  B-CHL:  1 | 1- 1- 79-1  B-CHL:  2 | 1- 1- 79-1  B-CHL:  3
 1- 1- 79-1  B-CHL:  4 | 1- 1- 79-1  B-CHL:  5 | 1- 1- 79-1  B-CHL:  6
 1- 1- 79-1  B-CHL:  7 | 1- 1- 79-1  B-CHL:  8 | 1- 1- 79-1  B-CHL:  9
 1- 1- 79-1  B-CHL: 10 | 1- 1- 79-1  B-CHL: 11 | 1- 1- 79-1  B-CHL: 12
 1- 1- 79-1  B-CHL: 13 | 1- 1- 79-1  B-CHL: 14 | 1- 1- 79-1  B-CHL: 15
-----
```



1- 1- 79-1	B-CHL: 16	1- 1- 79-1	B-CHL: 17	1- 1- 79-1	B-CHL: 18
1- 1- 79-1	B-CHL: 19	1- 1- 79-1	B-CHL: 20	1- 1- 79-1	B-CHL: 21
1- 1- 79-1	B-CHL: 22	1- 1- 79-1	B-CHL: 23	1- 1- 79-1	B-CHL: 24
1- 1- 79-1	B-CHL: 25	1- 1- 79-1	B-CHL: 26	1- 1- 79-1	B-CHL: 27
1- 1- 79-1	B-CHL: 28	1- 1- 79-1	B-CHL: 29	1- 1- 79-1	B-CHL: 30

AMO-BUEND-111 TRUNK GROUP
 DISPLAY COMPLETED;

Trunk Configuration, TDCSU

For Master-side Configuration

<dis-tdcsu:1-1-73-1;
 DISPLAY-TDCSU:PEN1=1-1-73-1;
 H500: AMO TDCSU STARTED

```

----- DIGITAL TRUNK (FORMAT=L) -----
      DEV = S2CONN                PEN = 1-01-073-1
-----
COTNO   = 4          COPNO   = 4          DPLN    = 0
ITR     = 0          COS     = 32         LCOSV   = 32
LCOSD   = 32        CCT     = HIPATH S2   DESTNO  = 111
PROTVAR = PSS1V2   SEGMENT = 1          TCHARG  = N
SUPPRESS = 0        DGTPR   =             CHIMAP  = N
ISDNCC  =           ISDNAC  =           ISDNLC  =
ISDNIP  =           ISDNNP  =
PNPL2C  =           PNPL1C  =           PNPLC   =
PNPL2P  =           PNPL1P  =           PNPAC   =
TRACOUNT = 31       SATCOUNT = MANY     NNO     = 111
ALARMNO = 0         FIDX    = 1          CARRIER = 1
ZONE    = EMPTY    COTX    = 4          FWDX    = 10
DOMTYPE =           DOMAINNO =          TPROFNO =
INIGHT  =
CCHDL   =           UUSCCX  = 16         UUSCCY  = 8
-----
TGRP    = 38        SRCHMODE = CIR          BCNEG   = Y
BCGR    = 1         INS      = Y           LWPAR  = 2
LWPP    = 0         LWLT    = 0          LWPS    = 0
LWR1    = 0         LWR2    = 0
BCHAN   1 && 30
  
```

AMOUNT OF B-CHANNELS IN THIS DISPLAY-OUTPUT: 30

AMO-TDCSU-111 DIGITAL TRUNKS
 DISPLAY COMPLETED;

<DISPLAY-LWPAR:FORMAT=L,BLNO=2,TYPE=DIUS2;
 DISPLAY-LWPAR:FORMAT=L,BLNO=2,TYPE=DIUS2;
 H500: AMO LWPAR STARTED

```

-----
LOADWARE PARAMETERS      CIRCUIT TYPE: DIUS2  SOURCE:DB  BLOCK: 2
-----
LNTYPE  = COPPER        VERSION   = S2          QUAL      = ON
MASTER = Y           DCHAN1   = 16          DCHAN2   = 0
PATTERN = D5H          QUAL1    = 10 SEC.    QUAL2    = 10 MIN.
SMD    = Y           PERMACT  = Y           FCBAB    = DFH
CDG     = N             FIXEDTEI = 0           CNTRNR   = 255
TEIVERIF = N          CRC4REP  = N
DEV     = INDEP
  
```



```
| INFO      = 2:COPPER-MASTER CLOCK.(CORNET) |
+-----+
```

```
AMO-LWPAR-111      LOADWARE PARAMETERS FOR NETWORKING MODULES
DISPLAY COMPLETED;
```

For Slave-side Configuration

```
<dis-tdcsu:1-1-73-1;
DISPLAY-TDCSU:PEN1=1-1-73-1;
H500: AMO TDCSU STARTED
```

```
+-----+
|          DIGITAL TRUNK (FORMAT=L)          |
|          DEV = S2CONN                      |
|          PEN = 1-01-073-1                  |
+-----+
| COTNO   = 4          COPNO   = 4          DPLN   = 0          |
| ITR     = 0          COS     = 32         LCOSV  = 32         |
| LCOSD   = 32        CCT     = HIPATH S2   DESTNO  = 111        |
| PROTVAR = PS1V2    SEGMENT = 1          TCHARG  = N          |
| SUPPRESS = 0        DGTPR   =            CHIMAP  = N          |
| ISDNCC  =           ISDNAC  =           ISDNLC  =           |
| ISDNIP  =           ISDNNP  =           PNPLC   =           |
| PNPL2C  =           PNPL1C  =           PNPAC   =           |
| PNPL2P  =           PNPL1P  =           NNO     = 111        |
| TRACOUNT = 31       SATCOUNT = MANY     CARRIER = 1          |
| ALARMNO = 0         FIDX    = 1          FWDX    = 10         |
| ZONE    = EMPTY    COTX    = 4          TPROFNO =           |
| DOMTYPE =           DOMAINNO =          UUSCCX  = 16         |
| INIGHT  =           UUSCCY  = 8          |
| CCHDL   =           |
+-----+
| TGRP    = 38        SRCHMODE = CIR        BCNEG   = Y          |
| BCGR    = 1         INS      = Y          LWPAR  = 3          |
| LWPP    = 0         LWLT    = 0          LWPS    = 0          |
| LWR1    = 0         LWR2    = 0          |
| BCHAN   = 1 && 30   |
+-----+
```

AMOUNT OF B-CHANNELS IN THIS DISPLAY-OUTPUT: 30

```
AMO-TDCSU-111      DIGITAL TRUNKS
DISPLAY COMPLETED;
```

```
<DISPLAY-LWPAR:FORMAT=L,BLNO=3,TYPE=DIUS2;
DISPLAY-LWPAR:FORMAT=L,BLNO=3,TYPE=DIUS2;
H500: AMO LWPAR STARTED
```

```
+-----+
| LOADWARE PARAMETERS      CIRCUIT TYPE: DIUS2  SOURCE:DB  BLOCK: 3 |
+-----+
| LNTYPE = COPPER          VERSION = S2          QUAL    = ON          |
| MASTER = N             DCHAN1  = 16         DCHAN2  = 0          |
| PATTERN = D5H           QUAL1   = 10 SEC.     QUAL2   = 10 MIN.    |
| SMD    = N             PERMACT = Y          FCBAB   = DFH        |
| CDG     = N             FIXEDTEI = 0          CNTRNR  = 255        |
| TEIVERIF = N           CRC4REP  = N          |
| DEV     = INDEP        |
| INFO    = 3:COPPER-DERIVE CLOCK(CORNET)    |
+-----+
```

```
AMO-LWPAR-111      LOADWARE PARAMETERS FOR NETWORKING MODULES
DISPLAY COMPLETED;
```

Trunk Configuration to HiPath node, TDCSU

```
<DISPLAY-TDCSU:PEN1=1-1-73-0;
```



DIS-TDCSU:1-1-73-0;
H500: AMO TDCSU STARTED

```
----- DIGITAL TRUNK (FORMAT=L) -----  
DEV = S2CONN PEN = 1-01-073-0  
-----  
COTNO = 5 COPNO = 4 DPLN = 0  
ITR = 0 COS = 32 LCOSV = 32  
LCOSD = 32 CCT = DESTNO = 55  
PROTVAR = PSS1V2 SEGMENT = 1 TCHARG = N  
SUPPRESS = 0 DGTPR = CHIMAP = N  
ISDNCC = ISDNAC = ISDNLC =  
ISDNIP = ISDNNP =  
PNPL2C = PNPL1C = PNPLC =  
PNPL2P = PNPL1P = PNPAC =  
TRACOUNT = 31 SATCOUNT = MANY NNO = 55  
ALARMNO = 0 FIDX = 1 CARRIER = 1  
ZONE = EMPTY COTX = 4 FWDX = 10  
DOMTYPE = DOMAINNO = TPROFNO =  
INIGHT =  
CCHDL = UUSCCX = 16 UUSCCY = 8  
-----  
TGRP = 37 SRCHMODE = CIR BCNEG = N  
BCGR = 1 INS = Y LWPAR = 3  
LWPP = 0 LWLT = 0 LWPS = 0  
LWR1 = 0 LWR2 = 0  
BCHAN 1 && 30  
-----
```

AMOUNT OF B-CHANNELS IN THIS DISPLAY-OUTPUT: 30

AMO-TDCSU-111 DIGITAL TRUNKS

DISPLAY COMPLETED;

PSTN Trunk Configuration, TDCSU

<dis-tdcsu:1-1-79-1;

DIS-TDCSU:1-1-79-1;
H500: AMO TDCSU STARTED

```
----- DIGITAL TRUNK (FORMAT=L) -----  
DEV = S2CONN PEN = 1-01-079-1  
-----  
COTNO = 4 COPNO = 4 DPLN = 0  
ITR = 0 COS = 32 LCOSV = 32  
LCOSD = 32 CCT = DESTNO = 59  
PROTVAR = ETSI SEGMENT = 1 TCHARG = N  
SUPPRESS = 0 DGTPR = CHIMAP = N  
ISDNCC = ISDNAC = ISDNLC =  
ISDNIP = ISDNNP =  
PNPL2C = PNPL1C = PNPLC =  
PNPL2P = PNPL1P = PNPAC =  
TRACOUNT = 31 SATCOUNT = MANY NNO = 59  
ALARMNO = 0 FIDX = 1 CARRIER = 1  
ZONE = EMPTY COTX = 4 FWDX = 10  
DOMTYPE = DOMAINNO = TPROFNO =  
INIGHT =  
CCHDL = UUSCCX = 16 UUSCCY = 8  
-----  
TGRP = 71 SRCHMODE = ASC BCNEG = N  
BCGR = 1 INS = N LWPAR = 2  
LWPP = 0 LWLT = 0 LWPS = 0  
LWR1 = 0 LWR2 = 0  
BCHAN 1 && 30  
-----
```



AMOUNT OF B-CHANNELS IN THIS DISPLAY-OUTPUT: 30

AMO-TDCSU-111 DIGITAL TRUNKS
 DISPLAY COMPLETED;

Reference Clock Configuration, REFTA

For Master-side Configuration

```
<DISPLAY-REFTA:TYPE=CIRCUIT,PEN=1-1-73-1,KIND=ALL;
DISPLAY-REFTA:TYPE=CIRCUIT,PEN=1-1-73-1;
H500: AMO REFTA STARTED
```

R E F E R E N C E C L O C K C I R C U I T S							
PEN	MODULE	DEVICE	PRI	ERROR	BLOCK	SUPP.	READY BUT ASYN.
1- 1- 73- 1	DIU-N2	S2CONN	0	47200	N		N

AMO-REFTA-111 REFERENCE CLOCK TABLE
 DISPLAY COMPLETED;

For Slave-side Configuration

```
<DISPLAY-REFTA:TYPE=CIRCUIT,PEN=1-1-73-1,KIND=ALL;
DISPLAY-REFTA:TYPE=CIRCUIT,PEN=1-1-73-1;
H500: AMO REFTA STARTED
```

R E F E R E N C E C L O C K C I R C U I T S							
PEN	MODULE	DEVICE	PRI	ERROR	BLOCK	SUPP.	READY BUT ASYN.
1- 1- 73- 1	DIU-N2	S2CONN	11	47200	N		N

AMO-REFTA-111 REFERENCE CLOCK TABLE
 DISPLAY COMPLETED;

Trunk Least Cost Routing Configuration

LDAT

```
<DISPLAY-LDAT:TYPE=LCR,LROUTE=111;
DISPLAY-LDAT:TYPE=LCR,LROUTE=111;
H500: AMO LDAT STARTED
```

LROUTE = 111 LDPLN NAME = ROPT CCM SERVICE = ALL									
TYPE = LCR DNN OF ROUTE = 111									
SERVICE INFO =									
LRTEL	LVAL	TGRP	ODR	LAUTH	SCHEDULE ABCDEFGH	CARRIER ZONE	BAND WDTH	LATR	



```

+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 1 | 1 | 38 | 4 | 1 | ***** | 1 | EMPTY | 1 | NONE |
| | | DNNO = | 111 | | | | | | | |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+

```

AMO-LDAT -111 LCR-DIRECTIONS
 DISPLAY COMPLETED;

<DISPLAY-LDAT:TYPE=LCR,LROUTE=38;
 DISPLAY-LDAT:TYPE=LCR,LROUTE=38;
 H500: AMO LDAT STARTED

```

+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| LROUTE = 38 | LDPLN | NAME = PRI | SERVICE = ALL | |
| TYPE = LCR | | | DNNO OF ROUTE = 111 |
| SERVICE INFO = | | | | |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| LRTEL | LVAL | TGRP | ODR | LAUTH | SCHEDULE | CARRIER | BAND |
| | | | | | ABCDEFGH | ZONE | WIDTH | LATTR |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 1 | 1 | 38 | 1 | 1 | ***** | 1 | EMPTY | 1 | NONE |
| | | DNNO = 1 -1 -999 | | | | | | | |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+

```

AMO-LDAT -111 LCR-DIRECTIONS
 DISPLAY COMPLETED;

<DISPLAY-LDAT:TYPE=LCR,LROUTE=555;

DISPLAY-LDAT:TYPE=LCR,LROUTE=555;
 H500: AMO LDAT STARTED

```

+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| LROUTE = 555 | LDPLN | NAME = ROPT HIPATH | SERVICE = ALL | |
| TYPE = LCR | | | DNNO OF ROUTE = 55 |
| SERVICE INFO = | | | | |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| LRTEL | LVAL | TGRP | ODR | LAUTH | SCHEDULE | CARRIER | BAND |
| | | | | | ABCDEFGH | ZONE | WIDTH | LATTR |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 1 | 1 | 37 | 4 | 1 | ***** | 1 | EMPTY | 1 | NONE |
| | | DNNO = 55 | | | | | | | |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+

```

AMO-LDAT -111 LCR-DIRECTIONS
 DISPLAY COMPLETED;

<DISPLAY-LDAT:TYPE=LCR,LROUTE=916;

DISPLAY-LDAT:TYPE=LCR,LROUTE=916;
 H500: AMO LDAT STARTED

```

+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| LROUTE = 916 | LDPLN | NAME = 91650 PSTN | SERVICE = ALL | |
| TYPE = LCR | | | DNNO OF ROUTE = 59 |
| SERVICE INFO = | | | | |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| LRTEL | LVAL | TGRP | ODR | LAUTH | SCHEDULE | CARRIER | BAND |
| | | | | | ABCDEFGH | ZONE | WIDTH | LATTR |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 1 | 1 | 71 | 6 | 1 | ***** | 1 | EMPTY | 1 | NONE |
| | | DNNO = 99 | | | | | | | |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+

```

AMO-LDAT -111 LCR-DIRECTIONS
 DISPLAY COMPLETED;

RICHT



<DISPLAY-RICT:MODE=LRTE,LRTE=111;

DISPLAY-RICT:MODE=LRTE,LRTE=111;
H500: AMO RICHT STARTED

```
+-----+
| LRTE = 111   NAME = ROPT CCM           (NEUTRAL)  SRVC = ALL  |
| DNNO =      111  DESTNO = 111          |
| ROUTOPT = YES  REROUT = YES  PLB = NO    FWDBL = NO    |
| MFV: CNV=WITHOUT DSP=WITHOUT TEXT=      PULS=          |
| ROUTENO =    15  BUGS = LIN  ROUTATT = NO  MAINGRP =   15  |
| INFO =                                               |
+-----+
| TGRP =   38  LDAT ETSI CCM             (NEUTRAL)  SUBGROUP =   9  |
+-----+
```

AMO-RICT-111 TRUNK ROUTING
DISPLAY COMPLETED;

<DISPLAY-RICT:MODE=LRTE,LRTE=38;

DISPLAY-RICT:MODE=LRTE,LRTE=38;
H500: AMO RICHT STARTED

```
+-----+
| LRTE = 38    NAME = PRI                 (NEUTRAL)  SRVC = ALL  |
| DNNO =      111                          |
| ROUTOPT = YES  REROUT = YES  PLB = NO    FWDBL = NO    |
| MFV: CNV=FIX   DSP=WITHOUT TEXT=        PULS=PP300   |
| ROUTENO =     8  BUGS = LIN  ROUTATT = NO  MAINGRP =    8  |
| INFO =                                               |
+-----+
| TGRP =   38  LDAT ETSI CCM             (NEUTRAL)  SUBGROUP =   9  |
+-----+
```

AMO-RICT-111 TRUNK ROUTING
DISPLAY COMPLETED;

PSTN RICHT

<DISPLAY-RICT:MODE=LRTE,LRTE=916;

DISPLAY-RICT:MODE=LRTE,LRTE=916;
H500: AMO RICHT STARTED

```
+-----+
| LRTE = 916   NAME = 91650 PSTN         (NEUTRAL)  SRVC = ALL  |
| DNNO =      59  DESTNO = 59            |
| ROUTOPT = YES  REROUT = YES  PLB = NO    FWDBL = NO    |
| MFV: CNV=WITHOUT DSP=WITHOUT TEXT=      PULS=          |
| ROUTENO =    20  BUGS = LIN  ROUTATT = NO  MAINGRP =   20  |
| INFO =                                               |
+-----+
| TGRP =   71  LDAT CLOSED NUMBER E1     (NEUTRAL)  SUBGROUP =   19  |
+-----+
```

AMO-RICT-111 TRUNK ROUTING
DISPLAY COMPLETED;

LCR Out-dial Rules, LODR

<DISPLAY-LODR:ODR=1,FORMAT=L;

DISPLAY-LODR:ODR=1,FORMAT=L;



H500: AMO LODR STARTED

ODR	POSITION	CMD	PARAMETER
1	1	ECHO	2
	2	END	

INFO:PSTN

H03: THE NEXT FREE ODR IS 7

AMO-LODR -111 ADMINISTRATION OF LCR OUTDIAL RULES
DISPLAY COMPLETED;

<DISPLAY-LODR:ODR=4,FORMAT=L;
DISPLAY-LODR:ODR=4,FORMAT=L;
H500: AMO LODR STARTED

ODR	POSITION	CMD	PARAMETER
4	1	ECHO	1
	2	ECHO	2
	3	END	

H03: THE NEXT FREE ODR IS 7

AMO-LODR -111 ADMINISTRATION OF LCR OUTDIAL RULES
DISPLAY COMPLETED;

In order to enable In-band DTMF signaling on digital stations for Voicemail applications, the RICHT has to be changed so that the parameter DTMFCNV=FIX.

For Closed (Uniformed) Numbering Plan:

<CHANGE-RICHT:MODE=CD,CD=001,SVC=VCE,TYPE=DTMF,DTMFCNV=FIX;
CHANGE-RICHT:MODE=CD,CD=001,SVC=VCE,TYPE=DTMF,DTMFCNV=FIX;
H500: AMO RICHT STARTED

AMO-RICHT-111 TRUNK ROUTING
CHANGE COMPLETED;

Close numbering RICHT

<DISPLAY-RICHT:MODE=CD;
DISPLAY-RICHT:MODE=CD;
H500: AMO RICHT STARTED

ROUTES FOR ALL DPLN										SVC = VCE	
CODE	NAME, CQMAX, DESTNO AND CPS	TGRP CCNO	P	DTMF				LRTE	CPAR	U	F
	1 11111 12345 67890 12345		B	CNV	DSP	TEXT	PULS			I	D
							PAUSE			T	B
001	.....	38	F		W		PP300	888			
NEUTRAL	ETSI CCM DNN0: 111 DESTNO : 111 ROUTOPT : YES REROUT : YES										



002	.....	37	W	W	999
NEUTRAL	ETSI HIPATH				
	DNNO: 55				
	DESTNO : 55				
	ROUTOPT : YES				
	REROUT : YES				
003	.....	60	W	W	561
NEUTRAL	CLOSEDDPNSS				
	DNNO: 560				
	DESTNO : 56				
	ROUTOPT : YES				
	REROUT : YES				
005	.....	71	W	W	3000
NEUTRAL	CLOSED E1				
	DNNO: 333				
	DESTNO : 33				
	REROUT : YES				
006	.....	40	W	W	2500
NEUTRAL	BRI CLOSED				
	DNNO: 25				
	DESTNO : 25				
	REROUT : YES				

For Open (use of access codes) Numbering Plan:

```
<CHANGE-RICT:MODE=LRTE,LRTE=38,DTMFCNV=FIX;
CHANGE-RICT:MODE=LRTE,LRTE=38,DTMFCNV=FIX;
H500: AMO RICHT STARTED
```

```
AMO-RICT-111 TRUNK ROUTING
CHANGE COMPLETED;
```

```
<DISPLAY-RICT:MODE=LRTE,LRTE=38;
DISPLAY-RICT:MODE=LRTE,LRTE=38;
H500: AMO RICHT STARTED
```

```
+-----+
| LRTE = 38   NAME = PRI           (NEUTRAL)  SRVC = ALL |
| DNNO =     111 |
| ROUTOPT = YES  REROUT = YES  PLB = NO      FWDBL = NO |
| MFV: CNV=FIX   DSP=WITHOUT TEXT=          PULS=PP300 |
| ROUTENO =     8  BUGS = LIN  ROUTATT = NO   MAINGRP = 8 |
| INFO = |
+-----+
| TGRP = 38 LDAT ETSI CCM           (NEUTRAL)  SUBGROUP = 9 |
+-----+
```

```
AMO-RICT-111 TRUNK ROUTING
DISPLAY COMPLETED;
```

Configure Message Center's Service Access Number for MWI Application:

Since the MWI was tested with the Message Center integrated on Cisco Unified CallManager side, the PBX needs to configure an identifier for the Message Center's Service Access Number in order to correctly signal MWI. Without this identifier the MWI will not work.

```
<ADD-RICT:MODE=PM,IDX=1,SAN=4005;
ADD-RICT:MODE=PM,IDX=1,SAN=4005;
H500: AMO RICHT STARTED
```



AMO-RICHT-111 TRUNK ROUTING
ADD COMPLETED;

<DISP-RICHT
MODE = PM
DISP-RICHT:PM;
H500: AMO RICHT STARTED

IDX	SAN	NAME
1	4005	PHONEMAIL

AMO-RICHT-111 TRUNK ROUTING
DISPLAY COMPLETED;
<

Digital Station's Class of Service for Mailbox MWI application

<DISPLAY-COSSU:TYPE=COS,COS=7;
DISPLAY-COSSU:TYPE=COS,COS=7;
H500: AMO COSSU STARTED

COS	VOICE	FAX	TTX	VTX	DTE
7	>7: STANDARD/FWDNWK - NOANSA&FWDBSY				
	TA	NOCO	NOCO	NOCO	TA
	TSUID	NOTIE	NOTIE	NOTIE	TNOTCR
	TNOTCR				BASIC
	CDRINT				MSN
	CDRS				CDRINT
	CDRC				MULTRA
	MB				
	COSXCD				
	VCE				
	SPKR				
	DATA				
	NOANSA				
	FWDNWK				
	RERING				
	MSN				
	FWDBSY				
	FWDECA				
	CCBS				
	FWDEXT				

AMO-COSSU-111 CLASSES OF SERVICE, SWITCHING UNIT
DISPLAY COMPLETED;
<

Digital Station Configuration for Name and Number Restrictions

<DISPLAY-SBCSU:STNO=8000;
DISPLAY-SBCSU:STNO=8000;
H500: AMO SBCSU STARTED

----- USER DATA -----
STNO =8000 OPT =OPTI COS1 =7 DPLN =0 SPDI =Y



```

MAINO =8000   CONN =DIR   COS2 =7   ITR =0   SPDC1 =0
PEN = 1- 1- 55- 1   LCOSV1 =31   COSX =0   SPDC2 =1
INS =Y   STD =3   LCOSV2 =31   SERVID =0   CBKBMAX=5
          SECR =N   LCOSD1 =31   DSSTNA =N   RCBKB =N
SSTNO =Y   DIGNODIS=N   LCOSD2 =31   DSSTNB =Y   RCBKNA =N
TRACE =N   HFREE =   ASYNCT =500   PERMACT=   CBKNAMB=Y
ALARMNO =0   HMUSIC =0   API =N   TEXTSEL=ENGLISH
EXTBUS =   REP =0   OPTICOM=N   OPTISPA:0   DLAUT =
CALLOG =NONE   IDCR =N   OPTICA =0   OPTIS0A:0   DLMAN =
          HEADSET =N   OPTIDA =0   OPTIABA:0   PRIO =
          HSKEY =NORMAL   ATMADDR=   VPI =
          DFSVCANA=   TFAGRP =   PATTERN=   VCI =
DVCFIG =OPTISET   TSI =1   SOPTIDX=   SPROT =
          DOPTIDX=   DPROT =
          FOPTIDX=   FPROT =
          TOPTIDX=   TPROT =
          VOPTIDX=   VPROT =

```

```

----- ACTIVATION IDENTIFIERS FOR FEATURES -----
FWDS :N   FWDT :N   FWDV :N   FWDF :N   FWDD :N
HTOS :N   HTOT :N   HTOV :N   HTOF :N   HTOD :N
DND :N   VCP :Y   CWT :N   TCLOGIN:N

```

```

----- FEATURES AND GROUP MEMBERSHIPS -----
ESSTN :
PUGR :   HUNTING GROUP : N
KEYSYS :N   NIGHT OPTION : N   ASSOCIATED STN : N

```

```

----- SUBSCRIBER ATTRIBUTES (AMO SDAT) -----
NONE
-----

```

AMO-SBCSU-111 STATION AND S0-BUS CONFIGURATION OF SWITCHING UNIT
 DISPLAY COMPLETED;

<DISPLAY-PERSI:TYPE=NAME,STNO=8000;
 DISPLAY-PERSI:TYPE=NAME,STNO=8000;
 H500: AMO PERSI STARTED

STNO	CHRISTIAN AND SURNAME	ORGANIZATIONAL UNIT
8000	DT0*	

AMO-PERSI-111 PERSONAL IDENTIFICATION DATA
 DISPLAY COMPLETED;

Configuring the Cisco Unified CallManager

CMM-E1 Gateway Configuration

Cisco CallManager Administration

For Cisco IP Telephony Solutions

CISCO SYSTEMS

Gateway Configuration

[Back to MGCP Configuration](#)
[Back to Find/List Gateways](#)
[Dependency Records](#)

Product : Communication Media Module
Gateway : S1/DS1-0@CMM-E1
Device Protocol: Digital Access PRI
Registration: Registered with Cisco CallManager CM-MARS
IP Address: 172.20.231.51

Status: Ready

Device Information

End-Point Name*	<input type="text" value="S1/DS1-0@CMM-E1"/>
Description	<input type="text" value="CM-MARS to Hicom"/>
Device Pool*	<input type="text" value="Default"/>
Call Classification*	<input type="text" value="Use System Default"/>
Network Locale	<input type="text" value="United States"/>
Media Resource Group List	<input type="text" value=" < None >"/>
Location	<input type="text" value=" < None >"/>
AAR Group	<input type="text" value=" < None >"/>
Load Information	<input type="text"/>

Multilevel Precedence and Preemption (MLPP) Information

MLPP Domain (e.g., "0000FF")	<input type="text"/>
MLPP Indication	Not available on this device
MLPP Preemption	Not available on this device

Interface Information


PRI Protocol Type*	<input type="text" value="PRI QSIG E1"/>
Protocol Side*	<input type="text" value="User"/>
Channel Selection Order*	<input type="text" value="Top Down"/>
Channel IE Type*	<input type="text" value="Continuous Number"/>

PCM Type*	A-law
Delay for first restart (1/8 sec ticks)	32
Delay between restarts (1/8 sec ticks)	4
<input checked="" type="checkbox"/> Inhibit restarts at PRI initialization <input type="checkbox"/> Enable status poll	
Call Routing Information	
Inbound Calls	
Significant Digits*	All
Calling Search Space	Incoming Trunk
AAR Calling Search Space	< None >
Prefix DN	
Outbound Calls	
Calling Line ID Presentation*	Default
Calling Party Selection*	Originator
Called party IE number type unknown*	National
Calling party IE number type unknown*	National
Called Numbering Plan*	Private
Calling Numbering Plan*	Private
Number of digits to strip*	0
Caller ID DN	
SMDI Base Port*	0
PRI Protocol Type Specific Information	
<input type="checkbox"/> Display IE Delivery <input type="checkbox"/> Redirecting Number IE Delivery - Outbound <input type="checkbox"/> Redirecting Number IE Delivery - Inbound <input checked="" type="checkbox"/> Send Extra Leading Character In DisplayIE*** <input type="checkbox"/> Setup non-ISDN Progress Indicator IE Enable****	

<input type="checkbox"/>	Display IE Delivery
<input type="checkbox"/>	Redirecting Number IE Delivery - Outbound
<input type="checkbox"/>	Redirecting Number IE Delivery - Inbound
<input checked="" type="checkbox"/>	Send Extra Leading Character In DisplayIE****
<input type="checkbox"/>	Setup non-ISDN Progress Indicator IE Enable****
<input type="checkbox"/>	MCDN Channel Number Extension Bit Set to Zero**
<input type="checkbox"/>	Send Calling Name In Facility IE
<input type="checkbox"/>	Interface Identifier Present**
Interface Identifier Value**	<input type="text" value="0"/>
Connected Line ID Presentation (QSIG Inbound Call)*	<input type="text" value="Default"/>

UUIE Configuration

<input type="checkbox"/>	Passing Precedence Level Through UUIE
Security Access Level	<input type="text" value="2"/>

Product Specific Configuration 

Line Coding*	<input type="text" value="HDB3"/>
Framing*	<input type="text" value="CRC4"/>
Clock*	<input type="text" value="External"/>
Input Gain (-6..14 db)*	<input type="text" value="0"/>
Output Attenuation (-6..14 db)*	<input type="text" value="0"/>
Echo Cancellation Enable*	<input type="text" value="Enable"/>
Echo Cancel Coverage (ms)*	<input type="text" value="64"/>

* indicates required item
 ** applicable to DMS-100 protocol only
 *** applicable to DMS-100 protocol and DMS-250 protocol only
 **** may be required to force ringback from some PBXs

[Back to MGCP Configuration](#)
[Back to Find/List Gateways](#)

Partitions Configuration

System Route Plan Service Feature Device User Application Help

Cisco CallManager Administration
For Cisco IP Telephony Solutions

CISCO SYSTEMS

Find and List Partitions [Add a New Partition](#)

2 matching record(s) for Partition Name begins with ""

Find Partitions where Partition Name

and show items per page

To list all items, click Find without entering any search text.

Matching record(s) 1 to 2 of 2

<input type="checkbox"/>	Partition Name	Description
<input type="checkbox"/>	Incoming Trunk	Incoming Trunk
<input type="checkbox"/>	phones	phones

First Previous Next Last Page of 1



Calling Search Space Configuration

System Route Plan Service Feature Device User Application Help

Cisco CallManager Administration
For Cisco IP Telephony Solutions

CISCO SYSTEMS

Calling Search Space Configuration

[Add New Calling Search Space](#)
[Back to Find/List Calling Search Spaces](#)
[Dependency Records](#)

Calling Search Space: Incoming Trunk (in use)
Status: Ready

Copy Update Delete Restart Devices

Calling Search Space Information

Calling Search Space Name* Incoming Trunk

Description

Route Partitions for this Calling Search Space

Find Partitions containing Find

Available Partitions

phones

Selected Partitions* (ordered by highest priority)

Incoming Trunk

* indicates required item

Calling Search Space Configuration

[Add New Calling Search Space](#)
[Back to Find/List Calling Search Spaces](#)
[Dependency Records](#)

Calling Search Space: phones (in use)

Status: Ready

Calling Search Space Information

Calling Search Space Name*

Description

Route Partitions for this Calling Search Space

Find Partitions containing

Available Partitions



Selected Partitions*
(ordered by highest priority)



* indicates required item

Calling Search Space Configuration

[Add New Calling Search Space](#)
[Back to Find/List Calling Search Spaces](#)
[Dependency Records](#)

Calling Search Space: PathReplacementCSS

Status: Ready

Calling Search Space Information

Calling Search Space Name*

Description

Route Partitions for this Calling Search Space


Find Partitions containing

Available Partitions



Selected Partitions*
(ordered by highest priority)

Incoming Trunk phones



* indicates required item



Enbloc Route Pattern Configuration

Route Pattern: 8XXX

Status: Ready
Note: Any update to this Route Pattern automatically resets the associated gateway or Route List

Pattern Definition

Route Pattern*	<input type="text" value="8XXX"/>	
Partition	<input type="text" value=" < None >"/>	
Description	<input type="text" value="CM-MARS to Hicom"/>	
Numbering Plan*	<input type="text" value="North American Numbering Plan"/>	
Route Filter	<input type="text" value=" < None >"/>	
MLPP Precedence	<input type="text" value="Default"/>	
Gateway or Route List*	<input type="text" value="S1/DS1-0@CMM-E1"/> (Edit)	
Route Option	<input checked="" type="radio"/> Route this pattern <input type="radio"/> Block this pattern <input type="text" value=" — Not Selected —"/>	
Call Classification*	<input type="text" value="OffNet"/> <input type="checkbox"/> Allow Device Override	
<input checked="" type="checkbox"/> Provide Outside Dial Tone	<input type="checkbox"/> Allow Overlap Sending	<input type="checkbox"/> Urgent Priority
<input type="checkbox"/> Require Forced Authorization Code	Authorization Level <input type="text" value="0"/>	
<input type="checkbox"/> Require Client Matter Code		

Calling Party Transformations

Use Calling Party's External Phone Number Mask

Calling Party Transform Mask	<input type="text"/>
Prefix Digits (Outgoing Calls)	<input type="text"/>
Calling Line ID Presentation	<input type="text" value="Default"/>
Calling Name Presentation	<input type="text" value="Default"/>

Connected Party Transformations

Connected Line ID Presentation	<input type="text" value="Default"/>
Connected Name Presentation	<input type="text" value="Default"/>

Called Party Transformations

Discard Digits	<input type="text" value=" < None >"/>
Called Party Transform Mask	<input type="text"/>
Prefix Digits (Outgoing Calls)	<input type="text"/>

TSP Network Specific Facility Transformation Element



Route Pattern: 222
Status: Ready
Note: Any update to this Route Pattern automatically resets the associated gateway or Route List

Pattern Definition

Route Pattern*	<input type="text" value="222"/>
Partition	<input type="text" value="< None >"/>
Description	<input type="text" value="CM-MARS to Hicom"/>
Numbering Plan*	<input type="text" value="North American Numbering Plan"/>
Route Filter	<input type="text" value="< None >"/>
MLPP Precedence	<input type="text" value="Default"/>
Gateway or Route List*	<input type="text" value="S1/DS1-0@CMM-E1"/> (Edit)
Route Option	<input checked="" type="radio"/> Route this pattern <input type="radio"/> Block this pattern <input type="text" value="— Not Selected —"/>
Call Classification*	<input type="text" value="OffNet"/> <input type="checkbox"/> Allow Device Override
<input checked="" type="checkbox"/> Provide Outside Dial Tone	<input type="checkbox"/> Allow Overlap Sending <input type="checkbox"/> Urgent Priority
<input type="checkbox"/> Require Forced Authorization Code	
Authorization Level	<input type="text" value="0"/>
<input type="checkbox"/> Require Client Matter Code	

Calling Party Transformations

Use Calling Party's External Phone Number Mask

Calling Party Transform Mask	<input type="text"/>
Prefix Digits (Outgoing Calls)	<input type="text"/>
Calling Line ID Presentation	<input type="text" value="Default"/>
Calling Name Presentation	<input type="text" value="Default"/>

Connected Party Transformations

Connected Line ID Presentation	<input type="text" value="Default"/>
Connected Name Presentation	<input type="text" value="Default"/>

Called Party Transformations

Discard Digits	<input type="text" value="< None >"/>
Called Party Transform Mask	<input type="text"/>
Prefix Digits (Outgoing Calls)	<input type="text"/>

ISDN Network-Specific Facility Transformation Element



Route Pattern: 5XXX
Status: Ready
Note: Any update to this Route Pattern automatically resets the associated gateway or Route List

Pattern Definition

Route Pattern*
Partition
Description
Numbering Plan*
Route Filter
MLPP Precedence
Gateway or Route List* [\(Edit\)](#)
Route Option
 Route this pattern
 Block this pattern
Call Classification* Allow Device Override
 Provide Outside Dial Tone Allow Overlap Sending Urgent Priority
 Require Forced Authorization Code
Authorization Level
 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

Connected Party Transformations

Connected Line ID Presentation
Connected Name Presentation

Called Party Transformations

Discard Digits
Called Party Transform Mask
Prefix Digits (Outgoing Calls)

TDD Network: One-to-One Calling Transformation Element



Route Pattern: 555
Status: Ready
Note: Any update to this Route Pattern automatically resets the associated gateway or Route List

Copy Update Delete

Pattern Definition

Route Pattern* 555
Partition < None >
Description CM-MARS to HiPath
Numbering Plan* North American Numbering Plan
Route Filter < None >
MLPP Precedence Default
Gateway or Route List* S1/DS1-1@CMM-E1 (Edit)
Route Option
 Route this pattern
 Block this pattern — Not Selected —
Call Classification* OffNet Allow Device Override
 Provide Outside Dial Tone Allow Overlap Sending Urgent Priority
 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 Default
Calling Name Presentation Default

Connected Party Transformations

Connected Line ID Presentation Default
Connected Name Presentation Default

Called Party Transformations

Discard Digits < None >
Called Party Transform Mask
Prefix Digits (Outgoing Calls)

ISDN Network-Specific Facilities Information Element



Overlap Sending Route Pattern Configuration

Route Pattern: 9.8
Status: Ready
Note: Any update to this Route Pattern automatically resets the associated gateway or Route List

Pattern Definition

Route Pattern*

Partition

Description

Numbering Plan*

Route Filter

MLPP Precedence

Gateway or Route List* [\(Edit\)](#)

Route Option
 Route this pattern
 Block this pattern

Call Classification* Allow Device Override

Provide Outside Dial Tone Allow Overlap Sending Urgent Priority

Require Forced Authorization Code
Authorization Level

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

Connected Party Transformations

Connected Line ID Presentation

Connected Name Presentation

Called Party Transformations

Discard Digits

Called Party Transform Mask

Prefix Digits (Outgoing Calls)

TDD Network Overlay Facility Transformation Element



PSTN Route Pattern Configuration

Route Pattern: 91650364XXXX

Status: Ready
Note: Any update to this Route Pattern automatically resets the associated gateway or Route List

Pattern Definition

Route Pattern*	<input type="text" value="91650364XXXX"/>
Partition	<input style="border: none;" type="text" value=" < None > "/>
Description	<input type="text" value="PSTN gateway"/>
Numbering Plan*	<input type="text" value="North American Numbering Plan"/>
Route Filter	<input style="border: none;" type="text" value=" < None > "/>
MLPP Precedence	<input type="text" value="Default"/>
Gateway or Route List*	<input type="text" value="S1/DS1-0@CMM-E1"/> (Edit)
Route Option	<input checked="" type="radio"/> Route this pattern <input type="radio"/> Block this pattern <input style="border: none;" type="text" value=" — Not Selected — "/>
Call Classification*	<input type="text" value="OnNet"/> <input type="checkbox"/> Allow Device Override
<input type="checkbox"/> Provide Outside Dial Tone	<input type="checkbox"/> Allow Overlap Sending <input type="checkbox"/> Urgent Priority
<input type="checkbox"/> Require Forced Authorization Code	
Authorization Level	<input type="text" value="0"/>
<input type="checkbox"/> Require Client Matter Code	

Calling Party Transformations

Use Calling Party's External Phone Number Mask

Calling Party Transform Mask	<input type="text"/>
Prefix Digits (Outgoing Calls)	<input type="text"/>
Calling Line ID Presentation	<input type="text" value="Default"/>
Calling Name Presentation	<input type="text" value="Default"/>

Connected Party Transformations

Connected Line ID Presentation	<input type="text" value="Default"/>
Connected Name Presentation	<input type="text" value="Default"/>

Called Party Transformations

Discard Digits	<input style="border: none;" type="text" value=" < None > "/>
Called Party Transform Mask	<input type="text"/>
Prefix Digits (Outgoing Calls)	<input type="text"/>

ISDN Network-Specific Facilities Information Element



Translation Pattern for Incoming Calls

Translation Pattern Configuration

[Add a New Translation Pattern](#)
[Back to Find/List Translation Patterns](#)

Translation Pattern: 4XXX
Status: Ready

Pattern Definition

Translation Pattern	<input type="text" value="4XXX"/>
Partition	<input type="text" value="Incoming Trunk"/>
Description	<input type="text"/>
Numbering Plan*	<input type="text" value="North American Numbering Plan"/>
Route Filter	<input type="text" value="< None >"/>
Calling Search Space	<input type="text" value="phones"/>
MLPP Precedence	<input type="text" value="Default"/>
Route Option	<input checked="" type="radio"/> Route this pattern <input type="radio"/> Block this pattern <input type="text" value="-- Not Selected --"/>
<input checked="" type="checkbox"/> Provide Outside Dial Tone	<input checked="" type="checkbox"/> Urgent Priority

Calling Party Transformations

Use Calling Party's External Phone Number Mask

Calling Party Transform Mask	<input type="text"/>
Prefix Digits (Outgoing Calls)	<input type="text"/>
Calling Line ID Presentation	<input type="text" value="Default"/>
Calling Name Presentation	<input type="text" value="Default"/>

Connected Party Transformations

Connected Line ID Presentation	<input type="text" value="Default"/>
Connected Name Presentation	<input type="text" value="Default"/>

Called Party Transformations

Discard Digits	<input type="text" value="< None >"/>
Called Party Transform Mask	<input type="text"/>
Prefix Digits (Outgoing Calls)	<input type="text"/>

* indicates required item.



CLIR Route Pattern Configuration

Route Pattern: 8XXX
Status: Ready
Note: Any update to this Route Pattern automatically resets the associated gateway or Route List

Copy Update Delete

Pattern Definition

Route Pattern* 8XXX

Partition < None >

Description CM-MARS to Hicom

Numbering Plan* North American Numbering Plan

Route Filter < None >

MLPP Precedence Default

Gateway or Route List* S1/DS1-0@CMM-E1 (Edit)

Route Option
 Route this pattern
 Block this pattern — Not Selected —

Call Classification* OffNet Allow Device Override

Provide Outside Dial Tone Allow Overlap Sending Urgent Priority

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 Restricted

Calling Name Presentation Default

Connected Party Transformations

Connected Line ID Presentation Default

Connected Name Presentation Default

Called Party Transformations

Discard Digits < None >

Called Party Transform Mask

Prefix Digits (Outgoing Calls)

CNIR Route Pattern Configuration



Route Pattern: 8XXX
Status: Ready
Note: Any update to this Route Pattern automatically resets the associated gateway or Route List

Pattern Definition

Route Pattern*
Partition
Description
Numbering Plan*
Route Filter
MLPP Precedence
Gateway or Route List* [\(Edit\)](#)
Route Option
 Route this pattern
 Block this pattern
Call Classification* Allow Device Override
 Provide Outside Dial Tone Allow Overlap Sending Urgent Priority
 Require Forced Authorization Code
Authorization Level
 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

Connected Party Transformations

Connected Line ID Presentation
Connected Name Presentation

Called Party Transformations

Discard Digits
Called Party Transform Mask
Prefix Digits (Outgoing Calls)

IPDN Network Specific Facility Information Element



COLR Translation Pattern Configuration

Translation Pattern Configuration

[Add a New Translation Pattern](#)
[Back to Find/List Translation Patterns](#)

Translation Pattern: 4XXX
Status: Ready

Pattern Definition

Translation Pattern	<input type="text" value="4XXX"/>
Partition	<input type="text" value="Incoming Trunk"/>
Description	<input type="text"/>
Numbering Plan*	<input type="text" value="North American Numbering Plan"/>
Route Filter	<input type="text" value="< None >"/>
Calling Search Space	<input type="text" value="phones"/>
MLPP Precedence	<input type="text" value="Default"/>
Route Option	<input checked="" type="radio"/> Route this pattern <input type="radio"/> Block this pattern <input type="text" value="-- Not Selected --"/>
<input checked="" type="checkbox"/> Provide Outside Dial Tone	<input checked="" type="checkbox"/> Urgent Priority

Calling Party Transformations

Use Calling Party's External Phone Number Mask

Calling Party Transform Mask	<input type="text"/>
Prefix Digits (Outgoing Calls)	<input type="text"/>
Calling Line ID Presentation	<input type="text" value="Default"/>
Calling Name Presentation	<input type="text" value="Default"/>

Connected Party Transformations

Connected Line ID Presentation	<input type="text" value="Restricted"/>
Connected Name Presentation	<input type="text" value="Default"/>

Called Party Transformations

Discard Digits	<input type="text" value="< None >"/>
Called Party Transform Mask	<input type="text"/>
Prefix Digits (Outgoing Calls)	<input type="text"/>

* indicates required item.

CONR Translation Pattern Configuration

Translation Pattern Configuration

[Add a New Translation Pattern](#)
[Back to Find/List Translation Patterns](#)

Translation Pattern: 4XXX

Status: Ready

Pattern Definition

Translation Pattern	<input type="text" value="4XXX"/>
Partition	<input type="text" value="Incoming Trunk"/>
Description	<input type="text"/>
Numbering Plan*	<input type="text" value="North American Numbering Plan"/>
Route Filter	<input type="text" value=" < None >"/>
Calling Search Space	<input type="text" value="phones"/>
MLPP Precedence	<input type="text" value="Default"/>
Route Option	<input checked="" type="radio"/> Route this pattern <input type="radio"/> Block this pattern <input type="text" value="— Not Selected —"/>
<input checked="" type="checkbox"/> Provide Outside Dial Tone	<input checked="" type="checkbox"/> Urgent Priority

Calling Party Transformations

Use Calling Party's External Phone Number Mask

Calling Party Transform Mask	<input type="text"/>
Prefix Digits (Outgoing Calls)	<input type="text"/>
Calling Line ID Presentation	<input type="text" value="Default"/>
Calling Name Presentation	<input type="text" value="Default"/>

Connected Party Transformations

Connected Line ID Presentation	<input type="text" value="Default"/>
Connected Name Presentation	<input type="text" value="Restricted"/>

Called Party Transformations

Discard Digits	<input type="text" value=" < None >"/>
Called Party Transform Mask	<input type="text"/>
Prefix Digits (Outgoing Calls)	<input type="text"/>

* indicates required item.

MWI lamp On/Off Configuration

System Route Plan Service Feature Device User Application Help

Cisco CallManager Administration
For Cisco IP Telephony Solutions

CISCO SYSTEMS

Message Waiting Configuration

[Add a New Message Waiting Number](#)
[Back to Find/List Message Waiting Numbers](#)

Message Waiting Number : 7001
Status: Ready

Copy Update Delete

Message Waiting Number*

Description

Message Waiting Indicator On Off

Partition

Calling Search Space

* indicates required item

System Route Plan Service Feature Device User Application Help

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For Cisco IP Telephony Solutions

CISCO SYSTEMS

Message Waiting Configuration

[Add a New Message Waiting Number](#)
[Back to Find/List Message Waiting Numbers](#)

Message Waiting Number : 7000
Status: Ready

Copy Update Delete

Message Waiting Number*

Description

Message Waiting Indicator On Off

Partition

Calling Search Space

* indicates required item



MWI Activate Translation Pattern Configuration

Translation Pattern Configuration

[Add a New Translation Pattern](#)
[Back to Find/List Translation Patterns](#)

Translation Pattern: 7701
Status: Ready

Pattern Definition

Translation Pattern	<input type="text" value="7701"/>
Partition	<input type="text" value="phones"/>
Description	<input type="text"/>
Numbering Plan*	<input type="text" value="North American Numbering Plan"/>
Route Filter	<input type="text" value="< None >"/>
Calling Search Space	<input type="text" value="phones"/>
MLPP Precedence	<input type="text" value="Default"/>
Route Option	<input checked="" type="radio"/> Route this pattern <input type="radio"/> Block this pattern <input type="text" value="— Not Selected —"/>
<input checked="" type="checkbox"/> Provide Outside Dial Tone	<input checked="" type="checkbox"/> Urgent Priority

Calling Party Transformations

Use Calling Party's External Phone Number Mask

Calling Party Transform Mask	<input type="text" value="8000"/>
Prefix Digits (Outgoing Calls)	<input type="text"/>
Calling Line ID Presentation	<input type="text" value="Default"/>
Calling Name Presentation	<input type="text" value="Default"/>

Connected Party Transformations

Connected Line ID Presentation	<input type="text" value="Default"/>
Connected Name Presentation	<input type="text" value="Default"/>

Called Party Transformations

Discard Digits	<input type="text" value="< None >"/>
Called Party Transform Mask	<input type="text" value="7001"/>
Prefix Digits (Outgoing Calls)	<input type="text"/>

* indicates required item.



MWI Deactivate Translation Pattern Configuration

Translation Pattern Configuration

[Add a New Translation Pattern](#)
[Back to Find/List Translation Patterns](#)

Translation Pattern: 7700
Status: Ready

Pattern Definition

Translation Pattern	<input type="text" value="7700"/>
Partition	<input type="text" value="phones"/>
Description	<input type="text"/>
Numbering Plan*	<input type="text" value="North American Numbering Plan"/>
Route Filter	<input type="text" value=" < None >"/>
Calling Search Space	<input type="text" value="phones"/>
MLPP Precedence	<input type="text" value="Default"/>
Route Option	<input checked="" type="radio"/> Route this pattern <input type="radio"/> Block this pattern <input type="text" value=" — Not Selected —"/>

Provide Outside Dial Tone Urgent Priority

Calling Party Transformations

Use Calling Party's External Phone Number Mask

Calling Party Transform Mask	<input type="text" value="8000"/>
Prefix Digits (Outgoing Calls)	<input type="text"/>
Calling Line ID Presentation	<input type="text" value="Default"/>
Calling Name Presentation	<input type="text" value="Default"/>

Connected Party Transformations

Connected Line ID Presentation	<input type="text" value="Default"/>
Connected Name Presentation	<input type="text" value="Default"/>

Called Party Transformations

Discard Digits	<input type="text" value=" < None >"/>
Called Party Transform Mask	<input type="text" value="7000"/>
Prefix Digits (Outgoing Calls)	<input type="text"/>

* indicates required item.



CallBack Service Parameters

Parameter Name	Parameter Value	Suggested Value
Callback Notification Audio File Name*	<input type="text" value="CallBack.raw"/>	CallBack.raw
Connection Proposal Type*	<input type="text" value="Connection Retention"/>	Connection Release
Connection Response Type*	<input type="text" value="Default to Connection Retention"/>	Default to Connection Retention
Callback Request Protection Timer (T1) (sec)*	<input type="text" value="10"/>	10
Callback Recall Timer (T3) (sec)*	<input type="text" value="20"/>	20
Callback Calling Search Space	<input type="text" value="< None >"/>	



CallBack Softkey Configuration

System Route Plan Service Feature Device User Application Help

Cisco CallManager Administration
For Cisco IP Telephony Solutions

Cisco SYSTEMS

Softkey Template Configuration

[Add New Softkey Template](#)
[Configure Softkey Layout](#)
[Dependency Records](#)
[Back to Find/List Softkey Templates](#)

Softkey Template: Standard User CallBack
Status: Ready

Copy Update Delete Restart Devices

Softkey Template Name* Standard User CallBack

Description Standard Softkey Template for CallManager only

Add Application Delete Application

Application Cisco CallManager

* indicates required item

System Route Plan Service Feature Device User Application Help

Cisco CallManager Administration
For Cisco IP Telephony Solutions

CISCO SYSTEMS

Softkey Layout Configuration

[Softkey Template Configuration](#)

Call States

- Connected
- Connected Conference
- Connected Transfer
- Digits After First
- Off Hook
- Off Hook With Feature
- On Hold
- On Hook**
- Remote In Use
- Ring In
- Ring Out

Softkey Template: Standard User CallBack

Status: Ready

Unselected Softkeys

- Conference List (30)(ConfList)
- Direct Transfer (28)(DirTrfr)
- Immediate Divert (31)(iDivert)
- Join (15)(Join)
- Quality Report Tool (22)(QRT)
- Remove Last Conference Party (19)
- Select (29)(Select)
- Undefined (0)(Undefined)
- Video Mode Command (33)(VidMoc)

▶

◀

Selected Softkeys (ordered by position)**

- Redial (1)(Redial)
- **NewCall (2)(NewCall)
- Forward All (5)(CfwdAll)
- Call Back (20)(CallBack)

** indicates mandatory fields

* indicates required item

System Route Plan Service Feature Device User Application Help

Cisco CallManager Administration
For Cisco IP Telephony Solutions

CISCO SYSTEMS

Softkey Layout Configuration

[Softkey Template Configuration](#)

Call States

- Connected
- Connected Conference
- Connected Transfer
- Digits After First
- Off Hook
- Off Hook With Feature
- On Hold
- On Hook
- Remote In Use
- Ring In
- Ring Out**

Softkey Template: Standard User CallBack

Status: Ready

Unselected Softkeys

Undefined (0)(Undefined)

Selected Softkeys (ordered by position)**

Undefined (0)(Undefined)
 **End Call (9)(EndCall)
 Call Back (20)(CallBack)

** indicates mandatory fields
* indicates required item




Path Replacement Service Parameters

Cluster Wide Parameters (Feature - Path Replacement)		
Parameter Name	Parameter Value	Suggested Value
Path Replacement Enabled*	<input type="text" value="True"/>	False
Path Replacement on Tromboned Calls*	<input type="text" value="True"/>	True
Start Path Replacement Minimum Delay Time (sec)*	<input type="text" value="2"/>	0
Start Path Replacement Maximum Delay Time (sec)*	<input type="text" value="4"/>	0
Path Replacement T1 Timer (sec)*	<input type="text" value="30"/>	30
Path Replacement T2 Timer (sec)*	<input type="text" value="15"/>	15
Path Replacement PINX Id	<input type="text" value="111"/>	
Path Replacement Calling Search Space	<input type="text" value="PathReplacementCSS"/>	

System Route Plan Service Feature Device User Application Help

Cisco CallManager Administration
For Cisco IP Telephony Solutions



Call Pickup Configuration

[Add a New Call Pickup Number](#)
[Back to Find/List Call Pickup Numbers](#)
[Dependency Records](#)

Call Pickup Number: 111 - Incoming Trunk

Status: Ready

Call Pickup Number*

Description

Partition ▼

* indicates required item



Forward by Reroute Service Parameter

Clusterwide Parameters (Feature - Forward)		
Parameter Name	Parameter Value	Suggested Value
Forward Maximum Hop Count*	<input type="text" value="12"/>	12
Forward No Answer Timer (sec)*	<input type="text" value="12"/>	12
Max Forwards Hops to DN*	<input type="text" value="12"/>	12
Retain Forward Information*	<input type="text" value="False"/>	False
Forward By Reroute Enabled*	<input type="text" value="True"/>	False
Forward By Reroute T1 Timer (sec)*	<input type="text" value="15"/>	15

Cluster Wide Parameters (Feature - Path Replacement)



IP phone Configuration

[Add a new phone](#)
[Add/Update Speed Dials](#)
[Subscribe/Unsubscribe Services](#)
[Dependency Records](#)
[Back to Find/List Phones](#)

Phone Configuration

Directory Numbers

Base Phone

7912 7919 Line 1 - 4000 in phones
7912 7919 Line 2 - Add new DN

Phone: SEP003094C331AD (Auto 4000)
Registration: Registered with Cisco CallManager 172.20.231.254
IP Address: 172.20.231.102

Status: Ready

Phone Configuration (Model = Cisco 7960)

Device Information

MAC Address*	<input type="text" value="003094C331AD"/>
Description	<input type="text" value="Auto 4000"/>
Owner User ID	<input type="text"/> (Select User ID)
Device Pool*	Default <input type="button" value="v"/> (View details)
Calling Search Space	< None > <input type="button" value="v"/>
AAR Calling Search Space	< None > <input type="button" value="v"/>
Media Resource Group List	< None > <input type="button" value="v"/>
User Hold Audio Source	1 - SampleAudioSource <input type="button" value="v"/>
Network Hold Audio Source	< None > <input type="button" value="v"/>
Location	< None > <input type="button" value="v"/>
User Locale	< None > <input type="button" value="v"/>
Network Locale	< None > <input type="button" value="v"/>
Device Security Mode	Use System Default <input type="button" value="v"/>
Signal Packet Capture Mode	None <input type="button" value="v"/>
Packet Capture Duration	<input type="text" value="0"/>
Built In Bridge	Default <input type="button" value="v"/>
Privacy	Default <input type="button" value="v"/>

Retry Video Call as Audio
 Ignore Presentation Indicators (internal calls only)

Phone Button Template Information

Phone Button Template*	Standard 7960 <input type="button" value="v"/> (View button list)
------------------------	---

Softkey Template Information

Softkey Template	Standard User CallBack <input type="button" value="v"/>
------------------	---



Expansion Module Information	
Module 1	< None >
Module 2	< None >
Firmware Load Information (leave blank to use default)	
Phone Load Name	
Module 1 Load Name	(Module 1 selection required)
Module 2 Load Name	(Module 2 selection required)
Cisco IP Phone - External Data Locations (leave blank to use default)	
Information	
Directory	
Messages	
Services	
Authentication Server	
Proxy Server	
Idle	
Idle Timer (seconds)	
Extension Mobility (Device Profile) Information	
<input type="checkbox"/> Enable Extension Mobility Feature	
Log Out Profile	— Not Selected —
Log In User ID	< None >
Log In Time	< None >
Log Out Time	< None >
Certification Authority Proxy Function (CAPF) Information	
Certificate Operation	No Pending Operation
Authentication Mode	By Authentication String
Authentication String	<input type="text"/> <input type="button" value="Generate String"/>
Key Size (bits)	1024
Operation Completes By**	: : : (YYYY : MM : DD : HH)
Certificate Operation Status : None	
Multilevel Precedence and Preemption (MLPP) Information	
MLPP Domain	(e.g., "0000FF")
MLPP Indication	Default

Multilevel Precedence and Preemption (MLPP) Information	
MLPP Domain	<input type="text" value=""/> (e.g., "0000FF")
MLPP Indication	Default
MLPP Preemption	Default

Product Specific Configuration	
Disable Speakerphone	<input type="checkbox"/>
Disable Speakerphone and Headset	<input type="checkbox"/>
Forwarding Delay*	Disabled
PC Port*	Enabled
Settings Access*	Enabled
Gratuitous ARP*	Enabled
PC Voice VLAN Access*	Enabled
Video Capabilities*	Disabled
Auto Line Select*	Disabled

* indicates a required item.
** Indicates time on Publisher.

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[Back to Find/List Phones](#)



Directory Number Configuration

[Configure Device \(SEP003094C331AD\)](#)
[Dependency Records](#)

Associated With

SEP003094C331AD
7960 (Line 1)

Directory Number: 4000 (phones)

Status: Ready

Note: Any update to this Directory Number automatically resets the associated devices

Directory Number

Directory Number*

Partition

Directory Number Settings

Voice Mail Profile
(Choose <None> to use default)

Calling Search Space

AAR Group

User Hold Audio Source

Network Hold Audio Source

Auto Answer

Call Forward and Pickup Settings

	Voice Mail	Coverage/ Destination	Calling Search Space
Forward All	<input type="checkbox"/>	<input type="text"/>	<input type="text" value="< None >"/>
Forward Busy Internal	<input type="checkbox"/>	<input type="text"/>	<input type="text" value="< None >"/>
Forward Busy External	<input type="checkbox"/>	<input type="text"/>	<input type="text" value="< None >"/>
Forward No Answer Internal	<input type="checkbox"/>	<input type="text"/>	<input type="text" value="< None >"/>
Forward No Answer External	<input type="checkbox"/>	<input type="text"/>	<input type="text" value="< None >"/>
Forward No Coverage Internal	<input type="checkbox"/>	<input type="text"/>	<input type="text" value="< None >"/>
Forward No Coverage External	<input type="checkbox"/>	<input type="text"/>	<input type="text" value="< None >"/>

No Answer Ring Duration (seconds)

Call Pickup Group

MLPP Alternate Party Settings

Target (Destination)

Calling Search Space

No Answer Ring Duration (seconds)



No Answer Ring Duration	<input type="text"/> (seconds)
Call Pickup Group	< None > ▾
MLPP Alternate Party Settings	
Target (Destination)	<input type="text"/>
Calling Search Space	< None > ▾
No Answer Ring Duration	<input type="text"/> (seconds)
Line Settings for all Devices	
Alerting Name	MARS 0
Line Settings for this Device	
Display (Internal Caller ID)	MARS 0
Line Text Label	MARS 0
External Phone Number Mask	<input type="text"/>
Message Waiting Lamp Policy	Use System Policy ▾
Ring Setting (Phone Idle)	Use System Default ▾
Ring Setting (Phone Active)**	Use System Default ▾
Multiple Call / Call Waiting Settings	
Maximum Number of Calls*	4 (1 - 200)
Busy Trigger*	2 (<= Max. Calls)
Forwarded Call Information Display	
<input checked="" type="checkbox"/> Caller Name	<input checked="" type="checkbox"/> Caller Number
<input checked="" type="checkbox"/> Redirected Number	<input checked="" type="checkbox"/> Dialed Number
* indicates required item; changes to Line or Directory Number settings require restart.	
** Ring Setting (Phone Active) applies to this line when any line on the phone has a call in progress.	
Note: If you are using a language other than English for Display (Internal Caller ID) or Line Text Label text, make sure the correct character set (shown below) is selected. Text displays incorrectly if the wrong charset is selected. (English characters are included in all character sets.)	
Character Set	Western European (Latin 1) ▾



Configuring the Cisco CMM-E1 MGCP Router

```
CMM-E1#
CMM-E1#sh ver
Cisco Internetwork Operating System Software
IOS (tm) Cat6K-lc Software (wscmm-I6S-M), Version 12.2(13)ZP3, EARLY DEPLOYMENT
RELEASE SOFTWARE (fc1)
TAC Support: http://www.cisco.com/tac
Copyright (c) 1986-2004 by cisco Systems, Inc.
Compiled Thu 05-Feb-04 17:38 by pwade
Image text-base: 0x60010940, data-base: 0x60D80000

ROM: System Bootstrap, Version 12.2(1r)T2, RELEASE SOFTWARE (fc1)
ROM: Cat6K-lc Software (wscmm-I6S-M), Version 12.2(13)ZP3, EARLY DEPLOYMENT RELE
ASE SOFTWARE (fc1)
```

```
CMM-E1 uptime is 9 minutes
System returned to ROM by power-on
System image file is "bootflash:wscmm-i6s-mz.122-13.ZP3.bin"
```

```
cisco WS-SVC-CMM Cat6k Voice Linecard (R7000) processor (revision 0xFF) with 196
608K/65536K bytes of memory.
R7000 CPU at 400Mhz, Implementation 39, Rev 3.3, 256KB L2 Cache
Last reset from power-on
Bridging software.
Primary Rate ISDN software, Version 1.1.
Channelized E1, Version 1.0.
1 FastEthernet/IEEE 802.3 interface(s)
1 Gigabit Ethernet/IEEE 802.3 interface(s)
186 Serial network interface(s)
6 Channelized E1/PRI port(s)
32768K bytes of processor board bootflash (Read/Write)
```

```
Configuration register is 0x2
```

```
CMM-E1#sh run
Building configuration...
```

```
Current configuration : 3490 bytes
!
version 12.2
no service config
no service pad
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname CMM-E1
!
!
ip subnet-zero
ip tcp synwait-time 13
ip host CM-MARS 172.20.231.254
!
isdn switch-type primary-4ess
!
!
```



```
ccm-manager mgcp
ccm-manager music-on-hold
ccm-manager config server CM-MARS
ccm-manager config
ms dsp firmware 0 bundled
ms dsp firmware 1 bundled
ms dsp firmware 2 bundled
!
!
controller E1 1/0
  pri-group timeslots 1-31 service mgcp
!
controller E1 1/1
  pri-group timeslots 1-31 service mgcp
!
controller E1 1/2
  pri-group timeslots 1-31 service mgcp
!
controller E1 1/3
  pri-group timeslots 1-31 service mgcp
!
controller E1 1/4
  pri-group timeslots 1-31 service mgcp
!
controller E1 1/5
  pri-group timeslots 1-31 service mgcp
!
!
interface GigabitEthernet1/0
  ip address 172.20.231.51 255.255.255.0
  no ip proxy-arp
  no negotiation auto
  no keepalive
!
interface Serial1/0:15
  no ip address
  no logging event link-status
  isdn switch-type primary-qsig
  isdn incoming-voice voice
  isdn bind-13 ccm-manager
  no cdp enable
!
interface Serial1/1:15
  no ip address
  no logging event link-status
  isdn switch-type primary-qsig
  isdn protocol-emulate network
  isdn incoming-voice voice
  isdn bind-13 ccm-manager
  no cdp enable
!
interface Serial1/2:15
  no ip address
  no logging event link-status
  isdn switch-type primary-qsig
  isdn protocol-emulate network
  isdn incoming-voice voice
  isdn bind-13 ccm-manager
  no cdp enable
!
```




```
interface Serial1/3:15
  no ip address
  no logging event link-status
  isdn switch-type primary-qsig
  isdn incoming-voice voice
  isdn bind-13 ccm-manager
  no cdp enable
!
interface Serial1/4:15
  no ip address
  no logging event link-status
  isdn switch-type primary-qsig
  isdn incoming-voice voice
  isdn bind-13 ccm-manager
  no cdp enable
!
interface Serial1/5:15
  no ip address
  no logging event link-status
  isdn switch-type primary-qsig
  isdn incoming-voice voice
  isdn bind-13 ccm-manager
  no cdp enable
!
ip classless
ip route 0.0.0.0 0.0.0.0 172.20.231.1
no ip http server
!
!
arp 127.0.0.30 0000.0300.0000 ARPA
arp 127.0.0.12 0000.2100.0000 ARPA
arp 127.0.0.11 0000.1100.0000 ARPA
call rsvp-sync
!
voice-port 1/0:15
  echo-cancel coverage 64
!
voice-port 1/1:15
  echo-cancel coverage 64
!
voice-port 1/2:15
  echo-cancel coverage 64
!
voice-port 1/3:15
  echo-cancel coverage 64
!
voice-port 1/4:15
  echo-cancel coverage 64
!
voice-port 1/5:15
  echo-cancel coverage 64
!
mgcp
mgcp call-agent CM-MARS 2427 service-type mgcp version 0.1
mgcp dtmf-relay voip codec all mode out-of-band
mgcp rtp unreachable timeout 1000 action notify
mgcp modem passthrough voip mode nse
mgcp package-capability rtp-package
no mgcp package-capability res-package
mgcp package-capability sst-package
```



```
no mgcp timer receive-rtcp
mgcp sdp simple
mgcp fax t38 inhibit
mgcp rtp payload-type g726r16 static
!
mgcp profile default
!
dial-peer voice 1 pots
  application mgcpapp
!
dial-peer voice 2 pots
  application mgcpapp
!
dial-peer voice 3 pots
  application mgcpapp
!
dial-peer voice 4 pots
  application mgcpapp
  port 1/3:15
!
dial-peer voice 5 pots
  application mgcpapp
  port 1/4:15
!
dial-peer voice 6 pots
  application mgcpapp
  port 1/5:15
!
dial-peer voice 9991015 pots
  application mgcpapp
  port 1/0:15
!
dial-peer voice 9991115 pots
  application mgcpapp
  port 1/1:15
!
dial-peer voice 9991215 pots
  application mgcpapp
  port 1/2:15
!
!
line con 0
line vty 0 4
  login
!
!
end

CMM-E1#
```



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.
CUCM	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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