

Cisco IOS Voice Gateway – PBX Interoperability: Siemens HiPath 4000 Release 1 and Siemens Hicom 330E Release 3.1 to E1 QSIG with H.323

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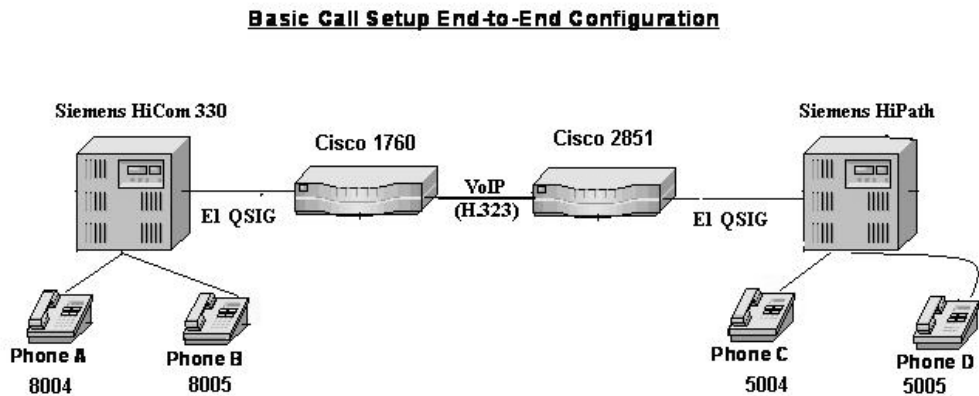
Introduction

- Although specific gateway router models were used to validate its content, this application note also applies to all 1700/2600/3600/3700/2800/3800 series Cisco IOS voice gateways.
- This application note provides configuration guidelines for a toll-bypass network using Cisco IOS voice gateways to connect Siemens HiPath 4000 Release 1 and Siemens Hicom 330E Release 3.1 PBXs. The PBXs are connected to the Cisco IOS voice gateways by E1 QSIG trunk circuits. The Cisco IOS voice gateways “extend” the E1 QSIG trunk circuits with VoIP, using the H.323 protocol.
- A Siemens HiPath 4000 Release 1 PBX and a Siemens Hicom 330E Release 3.1 PBX were each connected by E1 QSIG trunk circuits a Cisco IOS voice gateway. The two voice gateways were connected by IP over Ethernet, and configured for VoIP using H.323. End-to-end calls were placed between the PBXs to exercise and test basic calls as well as QSIG supplementary services such as call transfer, call conference, and call forward.
- Using the Siemens PBX configurations and Cisco IOS voice gateway configurations in this application note, successful toll bypass integration was achieved. This includes basic call, call transfer, call conference, and call forward, with some limitations on Caller ID features during transfer scenarios.



Network Topology

Figure 1. Network Topology



System Components

Hardware Requirements

- (2) Cisco IOS voice gateways with E1 VWICs (voice/WAN interface cards)
- (1) Siemens HiPath 4000 PBX
- (1) Siemens Hicom 330E PBX
- (2) Siemens HiPath digital station telephones
- (2) Siemens Hicom digital station telephones

Software Requirements

- Siemens HiPath PBX: V1.0 SA12 Patch0.
- Siemens Hicom PBX: Release 3.1 SA5 Rev14
- Cisco IOS voice gateways: Cisco IOS Release Version 12.4(1.8)T or later.



Features Supported

- Basic Call (ENBLOC and Overlap)
- Call Transfer: Supervised Local Transfer
- Call Transfer: Supervised Network/External Transfer
- Call Conference: Local
- Call Conference: Network/External
- Call Forward: Local
- Call Forward: Network/External

Limitations

- On basic calls, Connected Number was supported in lieu of Called (Alerting) Number. This is inherent to the PBXs and also occurs with the PBXs connected directly by an E1 QSIG trunk.
- On Supervised Transfers, the original Calling Name and Number were displayed on the final destination phone only after the destination answered and the transfer was completed. This is inherent to the PBXs and also occurs with the PBXs connected directly by an E1 QSIG trunk.
- On Supervised Transfers, the Called Name/Number were displayed on the originating phone only after the destination answered and the transfer was completed. This is inherent to the PBXs and also occurs with the PBXs connected directly by an E1 QSIG trunk.
- Call Hold was not tested as a separate feature. The call is held automatically during Transfers or Conferences, and the call hold is facilitated in NOTIFY message from Siemens HiPath/Hicom PBX. Aside from Transfers or Conferences, it is not possible to put a call on hold from one of the Siemens HiPath/Hicom digital station phones.
- MWI was not tested, as a local voice mail system was not available on the PBXs at the time of testing.



Configuration

Siemens HiPath 4000 Configuration

DPLN

```
<dis-wabe:gen;
DIS-WABE:GEN;
H500: AMO WABE STARTED
```

DIGIT INTERPRETATION		VALID FOR ALL DIAL PLANS						
CODE		CALL PROGRESS STATE				DIGIT ANALYSIS RESULT	RESERVED/CONVERT DNI/ADD-INFO	
		1	11111	11112	22			
		0	12345	67890	12345	67890	12	*=OWN NODE
0		. ****	. ****	** ..	.....	*	CO	R
001	- 009	* .....	.....	.....	.....	..	NETRTE	
111		. ****	*****	** ..	.....	*	TIE	
12	- 14	. ****	*****	** ..	.....	*	TIE	
21		. ....	.....	.....	.....	* ..	KNOVRKY	
22		. ....	.....	.....	.....	* ..	DNDKY	
222		. ****	*****	** ..	.....	*	TIE	
23		. ....	.....	.....	.....	* ..	FWDKY	
24		. ....	.....	.....	.....	* ..	MBKY	
25		. ....	.....	.....	.....	* ..	MSGRKY	
26		. ....	.....	.....	.....	* ..	DAKY	
27		. ....	.....	.....	.....	* ..	DSSKY	
28		. ....	.....	.....	.....	* ..	VCRKY	
29		. ....	.....	.....	.....	* ..	VCKY	
30		. ....	.....	.....	.....	* ..	CONFKY	

DIGIT INTERPRETATION		VALID FOR ALL DIAL PLANS						
CODE		CALL PROGRESS STATE				DIGIT ANALYSIS RESULT	RESERVED/CONVERT DNI/ADD-INFO	
		1	11111	11112	22			
		0	12345	67890	12345	67890	12	*=OWN NODE
3000	- 3010	. ****	*****	** ..	.....	*	STN	DESTNO 30 DNNO 0- 0-222
3011	- 3020	. ****	*****	** ..	.....	*	STN	DESTNO 31 DNNO 0- 0- 31
3021	- 3030	. ****	*****	** ..	.....	*	STN	DESTNO 32 DNNO 0- 0- 32
3031	- 3040	. ****	*****	** ..	.....	*	STN	DESTNO 33 DNNO 0- 0- 33
3041	- 3050	. ****	*****	** ..	.....	*	STN	DESTNO 35 DNNO 0- 0- 35
31		. ....	.....	.....	.....	* ..	NAMEKY	
32		. ....	.....	.....	.....	* ..	PARKKY	



DIGIT INTERPRETATION		VALID FOR ALL DIAL PLANS					
CODE	CALL PROGRESS STATE				DIGIT	RESERVED/CONVERT	
	0	1	2	22	ANALYSIS	DNI/ADD-INFO	
	12345	67890	12345	67890	12	RESULT	*=OWN NODE
33	CCKY	
34	HTKY	
35	STKY	
36 - 37	.	****	.	****	**	CO	
38	TIMEKY	
39	.	****	****	****	**	TIE	
4000 - 4050	.	****	****	****	**	STN	DESTNO 111 DNNO 0- 0-111
4051 - 4566	.	****	****	****	**	STN	DESTNO 222 DNNO 0- 0-222
4567	.	****	****	****	**	STN	DESTNO 34 DNNO 0- 0-200

DIGIT INTERPRETATION		VALID FOR ALL DIAL PLANS					
CODE	CALL PROGRESS STATE				DIGIT	RESERVED/CONVERT	
	0	1	2	22	ANALYSIS	DNI/ADD-INFO	
	12345	67890	12345	67890	12	RESULT	*=OWN NODE
4568 - 4999	.	****	****	****	**	STN	DESTNO 222 DNNO 0- 0-222
5000 - 5040	.	****	****	****	**	STN	DESTNO 0 DNNO 0- 0-555*
5500 - 5501	.	****	****	****	**	STN	DESTNO 56 DNNO 0- 0-560
555	.	****	****	****	**	OWNNODE	
560	.	****	****	****	**	TIE	
59	.	****	****	****	**	TIE	
6000 - 6009	.	****	****	****	**	STN	R DESTNO 0 DNNO 0- 0-555*



DIGIT INTERPRETATION

VALID FOR ALL DIAL PLANS

CODE	CALL PROGRESS STATE				DIGIT ANALYSIS RESULT	RESERVED/CONVERT DNI/ADD-INFO *=OWN NODE
	0	1	2	3		
7000 - 7002	.	****	*****	**..	STN	DESTNO 56 DNNO 0- 0-560
8000 - 8050	.	****	*****	**..	STN	DESTNO 222 DNNO 0- 0-222
8060	.	****	*****	**..	TIE	
8070	.	****	*****	**..	TIE	
83	.	****	****	**..	SPDC1	
84	.	****	****	**..	SPDC2	
88*..	SCONSI	R
89*..	SCONSCO	R
9	.	****	*****	**..	TIE	
13	AHTVCE	
*15	.	*....	**..	SPLIT	
16	*.....	AREM	
*17	.	*....	**..	TRACE	

DIGIT INTERPRETATION

VALID FOR ALL DIAL PLANS

CODE	CALL PROGRESS STATE				DIGIT ANALYSIS RESULT	RESERVED/CONVERT DNI/ADD-INFO *=OWN NODE
	0	1	2	3		
18	ACOSX	
*19	.	*....	KNOVR	
20	ADND	
25	FWDTERM	
29*	AFFWDVCE	
91*	MBOFF	
#91**	MBON	
##27	.	*****	.*..	MWACT	
##28*	MWANS	
##29*	MWCAN	
##30	.	*****	****.	..****	MWCANORI	

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



Overlap Sending Dial Plan

```
<DISPLAY-LDPLN:TYPE=LDP,LDP="8060"- "X";  
DISPLAY-LDPLN:TYPE=LDP,LDP="8060"- "X";  
H500: AMO LDPLN STARTED
```

LDPNO : 16	LDP : 8060-X	
	SPC : 22	
	FDSFIELD : 0	SDSFIELD : 0 PINDP : N
DPLN	LROUTE	LAUTH
0	806	1
1	806	1
2	806	1
3	806	1
4	806	1
5	806	1
6	806	1
7	806	1
8	806	1
9	806	1
10	806	1
11	806	1
12	806	1
13	806	1
14	806	1
15	806	1

```
AMO-LDPLN-111 ADMINISTRATION LCR DIALPLAN  
DISPLAY COMPLETED;
```

ENBLOC Sending Dial Plan

```
<DISPLAY-LDPLN:TYPE=LDP,LDP="8060"- "XXXX";  
DISPLAY-LDPLN:TYPE=LDP,LDP="8060"- "XXXX";  
H500: AMO LDPLN STARTED
```

LDPNO : 16	LDP : 8060-XXXX	
	SPC : 22	
	FDSFIELD : 0	SDSFIELD : 0 PINDP : N
DPLN	LROUTE	LAUTH
0	806	1
1	806	1
2	806	1
3	806	1
4	806	1
5	806	1
6	806	1
7	806	1
8	806	1
9	806	1
10	806	1
11	806	1
12	806	1
13	806	1
14	806	1
15	806	1



AMO-LDPLN-111 ADMINISTRATION LCR DIALPLAN
 DISPLAY COMPLETED;

BCSU

<DISPLAY-BCSU:TYPE=TBL,LTG=1,LTU=2,SLOT=49;
 DISPLAY-BCSU:TYPE=TBL,LTG=1,LTU=2,SLOT=49;
 H500: AMO BCSU STARTED

ADDRESS : LTG 1 LTU 2 SOURCE GROUP 1

PEN	ASSIGNED MODULE	MODULE TYPE	FCT ID	HWY BDL	INSERTED MODULE	STATE	HW-INFO	MODULE STATUS
49	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:21
 FORMAT = ;
 DIS-COT:21,;
 H500: AMO COT STARTED

COT: 21 INFO:
 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
CONNECTION TO ROUTE OPTIMIZATION NODE	ROPT
TSC-SIGNALING FOR NETWORKWIDE FEATURES (MANDATORY)	TSCS
INCOMING CDR BY ZONE OR FROM LINE	ICZL
AOC PER CALL (AUTOMATIC OR ON REQUEST), MAND. CORNET-NQ	AOCC
LINE WITH IMPLICIT NUMBERS	LINO
NO TONE	NTON

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



Class of Parameters for Device Handlers, COP

<DISPLAY-COP:COPNO=21;
DISPLAY-COP:COPNO=21;
H500: AMO COP STARTED

COP: 21 INFO:
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

CO TRUNK ACCESS:
TRUNK ACCESS TA

TOLL ACCESS:
TRUNK ACCESS TA

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

Class of Services, COSSU

<DISPLAY-COSSU:TYPE=COS,COS=10;
DISPLAY-COSSU:TYPE=COS,COS=10;
H500: AMO COSSU STARTED

COS	VOICE	FAX	DTE
10	>		
	TA	NOCO	NOCO
	TSUID	NOTIE	NOTIE
	TNOTCR		
	RKOABS		
	CDRINT		
	CDRS		
	CDRC		
	COSXCD		
	VCE		
	FWDNWK		
	MSN		
	FWDECA		
	CFB		
	CFNR		
	FWDEXT		

AMO-COSSU-111 CLASSES OF SERVICE
DISPLAY COMPLETED;

<DISPLAY-COSSU:TYPE=LCOSV,LCOSV=1;
DISPLAY-COSSU:TYPE=LCOSV,LCOSV=1;
H500: AMO COSSU STARTED

LCOS	LAUTH												COPIN		
V	1	2	3	4	5	6							NUM		
	123456789012345678901234567890123456789012345678901234														
	>SERVICE INFORMATION														
1	X.....														0
	>LCR ATTENDANT FOR VOICE														

AMO-COSSU-111 CLASSES OF SERVICE
DISPLAY COMPLETED;



Trunk Group, BUEND

<DISPLAY-BUEND:TGRP=20;
DISPLAY-BUEND:TGRP=20;
H500: AMO BUEND STARTED

```

----- FORMAT = L -----
TGRP NUMBER :      20  TGRP NAME   : PRI PSSV1      MAXIMUM NO. :      70
                   :                   CHARCON      : NEUTRAL
SUBGROUP NO. :       3  DEVICE TYPE : S2CONN      TRACENO      :       0
RESERVED     :        N  SEARCH MODE : ASCENDING   ACD THRESHOLD :      *
NUMBER OF ASSOCIATED ROUTES : 2
TDDRFLAG    :      ON  TDDRTHRESHOLD: 3           SOURCEGROUPIDX :      1
GDTRRULE    :        0  ACDPMGRP   : 0
THE FOLLOWING TRUNKS (LTG-LTU-SLOT-CCT) HAVE BEEN ALLOCATED:
-----
1- 2- 49-0    1 | 1- 2- 49-0    2 | 1- 2- 49-0    3
1- 2- 49-0    4 | 1- 2- 49-0    5 | 1- 2- 49-0    6
1- 2- 49-0    7 | 1- 2- 49-0    8 | 1- 2- 49-0    9
1- 2- 49-0   10 | 1- 2- 49-0   11 | 1- 2- 49-0   12
1- 2- 49-0   13 | 1- 2- 49-0   14 | 1- 2- 49-0   15
1- 2- 49-0   16 | 1- 2- 49-0   17 | 1- 2- 49-0   18
1- 2- 49-0   19 | 1- 2- 49-0   20 | 1- 2- 49-0   21
1- 2- 49-0   22 | 1- 2- 49-0   23 | 1- 2- 49-0   24
1- 2- 49-0   25 | 1- 2- 49-0   26 | 1- 2- 49-0   27
1- 2- 49-0   28 | 1- 2- 49-0   29 | 1- 2- 49-0   30
-----

```

AMO-BUEND-111 TRUNK GROUP
DISPLAY COMPLETED;

Trunk Configuration, TDCSU

<DISPLAY-TDCSU:PEN1=1-2-49-0;
DISPLAY-TDCSU:PEN1=1-2-49-0;
H500: AMO TDCSU STARTED

```

----- DIGITAL TRUNK (FORMAT=L) -----
DEV      = S2CONN      PEN      = 1-02-049-0  TGRP    = 20
-----
PROTVAR  = PSS1V2     INS      = N          SRCHMODE = ASC
COTNO    = 21         COPNO    = 21         DPLN     = 0
ITR      = 1         COS      = 10         LCOSV    = 1
LCOSD    = 1         CCT      = HICOM S2  DESTNO   = 1
SEGMENT  = 1         DEDSCC   =          DEDSVC   = NONE
FACILITY =          DITIDX   =          SRTIDX   =
TRTBLE  = GDTR      SIDANI   = N          ATNTYP   = TIE
CBMATTR  = NONE     NWMUXTIM = 10        TCHARG   = N
SUPPRESS = 0         DGTPR   =          CHIMAP   = N
ISDNIP   =          ISDNPN  =
PNPL2P   =          PNPL1P  =          PNPAC    =
TRACOUNT = 31       SATCOUNT = MANY   NNO      = 1  -1  -300
ALARMNO  = 0         FIDX    = 1          CARRIER = 1
ZONE     = EMPTY    COTX    = 21        FWDX     = 5
DOMTYPE  =          DOMAINNO =          TPROFNO  =
INIGHT   =
UUSCCX   = 16       UUSCCY  = 8          FNIDX    = 1
CLASSMRK = EC      & G711  & G729OPT  SRCGRP   =
TCCID    =
-----
BCNEG    = N         BCGR     = 1          LWPARR   = 1
LWPP     = 0         LWLT    = 0          LWPS     = 0
LWR1    = 0         LWR2    = 0
SVCDOM   =
BCHAN    = 1 && 30
-----

```



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

AMO-TDCSU-111 DIGITAL TRUNKS
DISPLAY COMPLETED;
<DISPLAY-LWPAR:DEV=INDEP,TYPE=DIUS2,BLNO=0;
DISPLAY-LWPAR:DEV=INDEP,TYPE=DIUS2,BLNO=0;
H500: AMO LWPAR STARTED

Table with columns: LOADWARE PARAMETERS, CIRCUIT TYPE: DIUS2, SOURCE:DB, BLOCK: 1. Rows include parameters like LNTYPE, MASTER, PATTERN, SMD, CDG, TEIVERIF, DEV, INFO.

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

For Slave Side Configuration

<DISPLAY-TDCSU:PEN1=1-2-49-0;
DISPLAY-TDCSU:PEN1=1-2-49-0;
H500: AMO TDCSU STARTED

Table with columns: DEV = S2CONN, PEN = 1-02-049-0, TGRP = 20. Rows include parameters like PROTVAR, COTNO, ITR, LCOSD, SEGMENT, FACILITY, TRTBL, CBMATTR, SUPPRESS, ISDNIP, PNPL2P, TRACOUNT, ALARMNO, ZONE, DOMTYPE, INIGHT, UUSCCX, CLASSMRK, TCCID, BCNEG, LWPP, LWR1, SVCDOM, BCHAN.

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

AMO-TDCSU-111 DIGITAL TRUNKS
DISPLAY COMPLETED;
<DISPLAY-LWPAR:DEV=INDEP,TYPE=DIUS2,BLNO=0;
DISPLAY-LWPAR:DEV=INDEP,TYPE=DIUS2,BLNO=0;
H500: AMO LWPAR STARTED



```

+-----+
| LOADWARE PARAMETERS      CIRCUIT TYPE: DIUS2  SOURCE:DB  BLOCK: 0 |
+-----+
| 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 =                 |
+-----+

```

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

Reference Clock Configuration, REFTA

For Master-side configuration

<DISPLAY-REFTA:TYPE=CIRCUIT,PEN=1-2-49-0;
 DISPLAY-REFTA:TYPE=CIRCUIT,PEN=1-2-49-0;
 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|SRCGRP| | | | | |
|          |        |        |  |    |    |    |    |    |    | |
|          |        |        |  |    |    |    |    |    |    | |
| 1- 2- 49- 0 | DIU-N2 | S2CONN | 1|  0|  N|    |  N|    |  1| |
+-----+

```

AMO-REFTA-111 REFERENCE CLOCK TABLE
 DISPLAY COMPLETED;

For Slave-side configuration

<DISPLAY-REFTA:TYPE=CIRCUIT,PEN=1-2-49-0;
 DISPLAY-REFTA:TYPE=CIRCUIT,PEN=1-2-49-0;
 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|SRCGRP| | | | | |
|          |        |        |  |    |    |    |    |    |    | |
|          |        |        |  |    |    |    |    |    |    | |
| 1- 2- 49- 0 | DIU-N2 | S2CONN | 0|  0|  N|    |  N|    |  1| |
+-----+

```

AMO-REFTA-111 REFERENCE CLOCK TABLE
 DISPLAY COMPLETED;



Trunk Least Cost Routing Configuration

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

```

+-----+
| LROUTE = 806   LDPLN      NAME = OPEN NUMBER      SERVICE = ALL |
| TYPE = LCR                DNNNO OF ROUTE =      99 |
| SERVICE INFO = |
+-----+-----+-----+-----+-----+-----+-----+
| LRTEL | LVAL | TGRP | ODR | LAUTH | SCHEDULE | CARRIER |   | LATTR | LDSRT |
|-----|-----|-----|-----|-----|-----|-----|   |-----|-----|
|   1   |   1   |  20  | 15  |   1   | ***** |   1   |  |  EMPTY |  NONE |
|-----|-----|-----|-----|-----|-----|-----|   |-----|-----|
|           | DNNNO =      99 |
+-----+-----+-----+-----+-----+-----+-----+

```

RICHT

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

```

+-----+
| LRTE = 806   NAME = OPEN NUMBER      (NEUTRAL)  LSVC = ALL |
| DNNNO =      99  PDNNNO =      0   DESTNO = 99 |
| ROUTOPT = YES  REROUT = YES  PLB = NO   FWDBL = NO |
| DTMFCNV = WITHOUT DTMFDSP = WITHOUT DTMFTEXT = |
| DTMFPULS =     BUGS = LIN  ROUTATT = NO   MAINGRP = 32 |
| EMCYRTT = NO   CONFONE = NO  RERINGRP = NO  RTENO = 32 |
| INFO = |
| NOPRCFWD = NO |
+-----+-----+-----+-----+-----+-----+
| TGRP = 20  LDAT  PRI  PSSV1      (NEUTRAL)  SUBGROUP = 3 |
+-----+-----+-----+-----+-----+-----+

```

AMO-RICHT-111 TRUNK ROUTING
DISPLAY COMPLETED;

Out-going Dialing Rule, LODR

<dis-lodr
ODR = ;
DIS-LODR;;
H500: AMO LODR STARTED

```

+-----+-----+-----+-----+
| ODR  | POSITION | CMD  | PARAMETER |
+-----+-----+-----+-----+
| 15   | 1       | ECHO | 2         |
|-----+-----+-----+-----+
|     | 2       | END  |           |
+-----+-----+-----+-----+

```

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



Digital Station Configuration

```
<DISPLAY-SBCSU:STNO=5004;
DISPLAY-SBCSU:STNO=5004;
H500: AMO SBCSU STARTED
```

```
----- USER DATA -----
STNO   =5004      OPT   =OPTI   COS1   =2      DPLN   =1
MAINO  =5004      CONN  =DIR    COS2   =2      ITR    =1
PEN    = 1- 3- 31- 4      LCOSV1 =6      COSX   =0
INS    =Y        ASYNCT =500   LCOSV2 =6
                PERMACT =      LCOSD1 =6
SSTNO  =N        EXTBUS =      LCOSD2 =6      CBKEMAX =5
TRACE  =N                                RCBKB  =N
ALARMNO =0      DFSVCANA=      SPDI   =0      RCBKNA =N
HMUSIC =0      FLASH  =      SPDC1  =      CBKNAMB =Y
PMIDX  =1                                SPDC2  =
                COMGRP =0

SECR   =N        DIGNODIS=N     DSSTNA =N
STD    =55      CALLOG  =NONE   DSSTNB =Y      TEXTSEL =ENGLISH

REP    =0        OPTICOM =N     OPTIUSB :      VPI     =
IDCR   =N        OPTICA  =1     OPTIS0A :0     VCI     =
                OPTIDA  =1     OPTISPA :0     PATTERN =
                OPTIABA :0

DCFWBUSY=N      HEADSET =N      APICLASS=
DNIDSP =N      HSKEY  =NORMAL  ACFAPPL =
DTMFBLK =N
DTMFCTRDR=Y      BASICSVCS=
DVCFIG =OPTISET  TSI    =1      SPROT  =      SOPTIDX =
                DPROT  =      DOPTIDX =
                FPROT  =      FOPTIDX =
----- ACTIVATION IDENTIFIERS FOR FEATURES -----
FWDS   :N      HTOS   :N      DND    :N
FWDD   :N      HTOD   :N      VCP    :Y      TWLOGIN :N
FWDF   :N      HTOF   :N      CWT    :N
----- FEATURES AND GROUP MEMBERSHIPS -----
PUGR   :      ESSTN  :
KEYSYS :N      NOPTNO :
HUNT CD :N
----- SUBSCRIBER ATTRIBUTES (AMO SDAT) -----
NONE
```

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



Siemens Hicom 330E Configuration

DPLN

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

DIGIT INTERPRETATION		VALID FOR ALL DIAL PLANS					
CODE		CALL PROGRESS STATE				DIGIT ANALYSIS RESULT	RESERVED/CONVERT DNI/ADD-INFO
		1	11111	11112	22		
		0	12345	67890	12345	67890	12
001 - 010	*	NETRTE	
1000	. *****	*****	**	STN	DESTNO 25 DNNO 0- 0- 25
11 *	MBKY	
111	. *****	*****	**	TIE	
222	. *****	*****	**	OWNNODE	
3000 - 3010	. *****	*****	**	STN	DESTNO 33 DNNO 0- 0-333
3011 - 3020	. *****	*****	**	STN	DESTNO 43 DNNO 0- 0-444
3021 - 3030	. *****	*****	**	STN	DESTNO 53 DNNO 0- 0-445
DIGIT INTERPRETATION		VALID FOR ALL DIAL PLANS					
CODE		CALL PROGRESS STATE				DIGIT ANALYSIS RESULT	RESERVED/CONVERT DNI/ADD-INFO
		1	11111	11112	22		
		0	12345	67890	12345	67890	12
3031 - 3040	. *****	*****	**	STN	DESTNO 63 DNNO 0- 0-446
3041 - 3050	. *****	*****	**	STN	DESTNO 73 DNNO 0- 0-447
3051 - 3060	. *****	*****	**	STN	DESTNO 83 DNNO 0- 0-448
32	. *****	*****	**	TIE	
34 - 36	. *****	*****	**	TIE	
39	. *****	*****	**	TIE	
4000 - 4050	. *****	*****	**	STN	DESTNO 111 DNNO 0- 0-111



DIGIT INTERPRETATION

VALID FOR ALL DIAL PLANS

CODE	CALL PROGRESS STATE				DIGIT ANALYSIS RESULT	RESERVED/CONVERT DNI/ADD-INFO *=OWN NODE	
	1	11111	11112	22			
4051 - 4599	0	12345	67890	12345	67890	12	STN R DESTNO 0 DNNO 0- 0-222*
4700 - 4999	0	12345	67890	12345	67890	12	STN R DESTNO 0 DNNO 0- 0-222*
5000 - 5009	0	12345	67890	12345	67890	12	STN DESTNO 55 DNNO 0- 0- 55
5010	0	12345	67890	12345	67890	12	ATNDIND R
5011 - 5020	0	12345	67890	12345	67890	12	STN DESTNO 55 DNNO 0- 0- 55
5021 - 5050	0	12345	67890	12345	67890	12	STN DESTNO 111 DNNO 0- 0-111
5051	0	12345	67890	12345	67890	12	ATNDIND

DIGIT INTERPRETATION

VALID FOR ALL DIAL PLANS

CODE	CALL PROGRESS STATE				DIGIT ANALYSIS RESULT	RESERVED/CONVERT DNI/ADD-INFO *=OWN NODE	
	1	11111	11112	22			
5500 - 5501	0	12345	67890	12345	67890	12	STN DESTNO 56 DNNO 0- 0-560
555	0	12345	67890	12345	67890	12	TIE
560	0	12345	67890	12345	67890	12	TIE
6000	0	12345	67890	12345	67890	12	STN DESTNO 33 DNNO 0- 0-333
7000 - 7002	0	12345	67890	12345	67890	12	STN DESTNO 56 DNNO 0- 0-560
79	0	12345	67890	12345	67890	12	TIE
8000 - 8019	0	12345	67890	12345	67890	12	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	
	1	11111	11112	22			
	0	12345	67890	12345	67890	12	
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 ANALYSIS RESULT	RESERVED/CONVERT DNI/ADD-INFO *=OWN NODE	
	1	11111	11112	22			
	0	12345	67890	12345	67890	12	
##29*	MSGRKY		
##35*	TIMEKY		
##36*	VCKY		
##37*	VCRKY		
##38*	CKKY		
##39*	CONFKY		
##41*	NAMEKY		
##42*	PARKKY		
##43*	REMKY		
##44*	STKY		
##45*	CBKKY		
##46*	CONSKY		
##47*	DNDKY		
##48*	EXHOLDKY		
##49*	HOLDKY		
##50*	IUSEKY		
##51*	LNRY		

DIGIT INTERPRETATION		VALID FOR ALL DIAL PLANS					
CODE	CALL PROGRESS STATE				DIGIT ANALYSIS RESULT	RESERVED/CONVERT DNI/ADD-INFO *=OWN NODE	
	1	11111	11112	22			
	0	12345	67890	12345	67890	12	
##52*	PRIVKY		
##53*	RLSKY		
##54*	SNRKY		
##55*	TRNSKY		
##56*	RCTOFFKY		
##57*	TOGGLEKY		

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



Overlap Sending Dial Plan

<DISPLAY-LDPLN;TYPE=LDP,LDPNO=35;
DISPLAY-LDPLN:TYPE=LDP,LDPNO=35;
H500: AMO LDPLN STARTED

LDPNO : 35	LDP : 79-X					
	SPC : 22					
DPLN	LRTE	LAUTH	DPLN	LRTE	LAUTH	
0	79	1	8	79	1	
1	79	1	9	79	1	
2	79	1	10	79	1	
3	79	1	11	79	1	
4	79	1	12	79	1	
5	79	1	13	79	1	
6	79	1	14	79	1	
7	79	1	15	79	1	

AMO-LDPLN-111 ADMINISTRATION LCR DIALPLAN
DISPLAY COMPLETED;

Enbloc Sending Dial Plan

<DISPLAY-LDPLN:TYPE=LDP,LDPNO=35;
DISPLAY-LDPLN:TYPE=LDP,LDPNO=35;
H500: AMO LDPLN STARTED

LDPNO : 35	LDP : 79-XXXX					
	SPC : 22					
DPLN	LRTE	LAUTH	DPLN	LRTE	LAUTH	
0	79	1	8	79	1	
1	79	1	9	79	1	
2	79	1	10	79	1	
3	79	1	11	79	1	
4	79	1	12	79	1	
5	79	1	13	79	1	
6	79	1	14	79	1	
7	79	1	15	79	1	

AMO-LDPLN-111 ADMINISTRATION LCR DIALPLAN

BCSU

DISPLAY COMPLETED;
<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

```
<DISPLAY-COT:COTNO=5;
DISPLAY-COT:COTNO=5;
H500: AMO COT   STARTED
```

```
COT:   5  INFO: 5:ECMA1 V2.0
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
CONNECTION TO ROUTE OPTIMIZATION NODE	ROPT
TSC-SIGNALING FOR NETWORKWIDE FEATURES (MANDATORY)	TSCS
INCOMING CDR BY ZONE OR FROM LINE	ICZL
AOC PER CALL (AUTOMATICAL OR ON REQUEST), MAND. CORNET-NQ	AOCC
LINE WITH IMPLICIT NUMBERS	LINO
NO TONE	NTON

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

Class of Parameters for Device Handlers, 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 Services, COSSU

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

```
<DISPLAY-BUEND:TGRP=70;
DISPLAY-BUEND:TGRP=70;
H500: AMO BUEND STARTED
```

```
----- FORMAT = L -----
```

TGRP NUMBER :	70	TGRP NAME :	OPEN NUMBER E1	MAXIMUM NO. :	30
SUBGROUP NO.:	18	CHARCON :	NEUTRAL	TRACENO :	0
RESERVED :	N	DEVICE TYPE :	S2CONN	ACD THRESHOLD :	*
NUMBER OF ASSOCIATED ROUTES :	2	SEARCH MODE :	ASCENDING	PRIORITY :	2
THE FOLLOWING TRUNKS (LTG-LTU-SLOT-CCT) HAVE BEEN ALLOCATED:					
1- 1- 79-0	B-CHL: 1	1- 1- 79-0	B-CHL: 2	1- 1- 79-0	B-CHL: 3
1- 1- 79-0	B-CHL: 4	1- 1- 79-0	B-CHL: 5	1- 1- 79-0	B-CHL: 6
1- 1- 79-0	B-CHL: 7	1- 1- 79-0	B-CHL: 8	1- 1- 79-0	B-CHL: 9
1- 1- 79-0	B-CHL: 10	1- 1- 79-0	B-CHL: 11	1- 1- 79-0	B-CHL: 12
1- 1- 79-0	B-CHL: 13	1- 1- 79-0	B-CHL: 14	1- 1- 79-0	B-CHL: 15
1- 1- 79-0	B-CHL: 16	1- 1- 79-0	B-CHL: 17	1- 1- 79-0	B-CHL: 18
1- 1- 79-0	B-CHL: 19	1- 1- 79-0	B-CHL: 20	1- 1- 79-0	B-CHL: 21
1- 1- 79-0	B-CHL: 22	1- 1- 79-0	B-CHL: 23	1- 1- 79-0	B-CHL: 24
1- 1- 79-0	B-CHL: 25	1- 1- 79-0	B-CHL: 26	1- 1- 79-0	B-CHL: 27
1- 1- 79-0	B-CHL: 28	1- 1- 79-0	B-CHL: 29	1- 1- 79-0	B-CHL: 30

```
AMO-BUEND-111 TRUNK GROUP
DISPLAY COMPLETED;
```



Trunk Configuration, TDCSU

<DISPLAY-TDCSU: PEN1=1-1-79-0;
DISPLAY-TDCSU: PEN1=1-1-79-0;
H500: AMO TDCSU STARTED

```

+----- DIGITAL TRUNK (FORMAT=L) -----+
|          DEV = S2CONN          PEN = 1-01-079-0          |
+-----+-----+-----+
| 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  =           PNPLC    =           |
| PNPL2C  =           PNPL1C  =           PNPL1P   =           |
| 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  =           UUSCCX  = 16         UUSCCY   = 8          |
+-----+-----+-----+
| TGRP    = 70         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;
<DISPLAY-LWPAR: INFOPAT="2";
DISPLAY-LWPAR: INFOPAT="2";
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

<DISPLAY-TDCSU: PEN1=1-1-79-0;
DISPLAY-TDCSU: PEN1=1-1-79-0;
H500: AMO TDCSU STARTED

```

+-----DIGITAL TRUNK (FORMAT=L)-----+
|          DEV = S2CONN          PEN = 1-01-079-0          |
+-----+-----+-----+
| 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  =           ISDNLCL =           |
| 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    = 70         SRCHMODE = ASC       BCNEG    = N          |
| BCGR    = 1          INS      = N         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: TYPE=DIUS2, BLNO=3;
DISPLAY-LWPAR: TYPE=DIUS2, BLNO=3;
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;



Reference Clock Configuration, REFTA

For Master-side configuration

```
<DISPLAY-REFTA:TYPE=CIRCUIT,PEN=1-1-79-0;
DISPLAY-REFTA:TYPE=CIRCUIT,PEN=1-1-79-0;
H500: AMO REFTA STARTED
```

REFERENCE CLOCK CIRCUITS							
PEN	MODULE	DEVICE	PRI	ERROR	BLOCK	SUPP.	READY BUT ASYN.
1- 1- 79- 0	DIU-N2	S2CONN	0	35	N		N

```
AMO-REFTA-111 REFERENCE CLOCK TABLE
DISPLAY COMPLETED;
```

For Slave-side configuration

```
<DISPLAY-REFTA:TYPE=CIRCUIT,PEN=1-1-79-0;
DISPLAY-REFTA:TYPE=CIRCUIT,PEN=1-1-79-0;
H500: AMO REFTA STARTED
```

REFERENCE CLOCK CIRCUITS							
PEN	MODULE	DEVICE	PRI	ERROR	BLOCK	SUPP.	READY BUT ASYN.
1- 1- 79- 0	DIU-N2	S2CONN	11	535	N		N

```
AMO-REFTA-111 REFERENCE CLOCK TABLE
DISPLAY COMPLETED;
```

<

Trunk Least Cost Routing Configuration

```
<DISPLAY-LDAT:TYPE=LCR,LROUTE=79;
DISPLAY-LDAT:TYPE=LCR,LROUTE=79;
H500: AMO LDAT STARTED
```

LRTELETYPE										
LROUTE = 79		LDPLN	NAME = OPEN NUMBER E1				SERVICE = ALL			
TYPE = LCR						DNNO OF ROUTE = 999				
SERVICE INFO =										
LRTEL	LVAL	TGRP	ODR	LAUTH	SCHEDULE ABCDEFGH	CARRIER ZONE	BAND WIDTH	LATTR		
1	1	70	1	1	*****	1	EMPTY	1	NONE	
DNNO =		999								

```
AMO-LDAT -111 LCR-DIRECTIONS
DISPLAY COMPLETED;
```



RICHT

```
<DISPLAY-RICHT:MODE=LRTE,LRTE=79;
DISPLAY-RICHT:MODE=LRTE,LRTE=79;
H500: AMO RICHT STARTED
```

```
+-----+
| LRTE = 79      NAME = OPEN NUMBER E1      (NEUTRAL)  SRVC = ALL
| DNNO =          999  DESTNO = 99
| ROUTOPT = YES  REROUT = YES  PLB = NO      FWDBL = NO
| MFV: CNV=WITHOUT DSP=WITHOUT TEXT=          PULS=
| ROUTENO =     17  BUGS = LIN  ROUTATT = NO    MAINGRP = 17
| INFO =
+-----+
| TGRP = 70 LDAT OPEN NUMBER E1      (NEUTRAL)  SUBGROUP = 18
+-----+
```

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

Out-going Dialing Rule, LODR

```
<DISPLAY-LODR:ODR=1;
DISPLAY-LODR:ODR=1;
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;
```




Digital Station Configuration

```
<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
          SECUR     =N      LCOSD1   =31     DSSTNA   =N      RCBKB     =N
SSTNO     =N        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  =
          DFSVCANA =      TFAGRP   =      PATTERN   =      VPI       =
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;
<
<
```



Cisco 1760 Configuration

1760-West#sho ver

Cisco IOS Software, C1700 Software (C1700-IPVOICE-M), Version 12.4(1.8)T, INTERI
M SOFTWARE

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

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Compiled Fri 06-May-05 02:25 by kellmill

ROM: System Bootstrap, Version 12.2(7r)XM2, RELEASE SOFTWARE (fc1)

1760-West uptime is 5 days, 6 hours, 50 minutes

System returned to ROM by reload

System image file is "flash:c1700-ipvoice-mz.124-1.8.T"

Cisco 1760 (MPC860P) processor (revision 0x600) with 116089K/14983K bytes of mem
ory.

Processor board ID FOC09150JHR (2412779291), with hardware revision 0000

MPC860P processor: part number 5, mask 2

1 FastEthernet interface

31 Serial interfaces

1 Channelized E1/PRI port

32K bytes of NVRAM.

32768K bytes of processor board System flash (Read/Write)

Configuration register is 0x2102

1760-West#sho run

Building configuration...

Current configuration : 1509 bytes

!

version 12.4

service timestamps debug datetime msec

service timestamps log datetime msec



```
no service password-encryption
!
hostname 1760-West
!
boot-start-marker
boot-end-marker
!
!
no aaa new-model
!
resource policy
!
tdm clock E1 0/0 both export line
mmi polling-interval 60
no mmi auto-configure
no mmi pvc
mmi snmp-timeout 180
voice-card 0
!
ip subnet-zero
ip cef
!
!
no ip dhcp use vrf connected
!
!
isdn switch-type primary-qsig
!
!
voice service voip
  signaling forward unconditional
  sip
!
!
controller E1 0/0
  pri-group timeslots 1-31
  description ECN-2
!
```



```
!  
interface FastEthernet0/0  
  ip address 172.20.4.105 255.255.255.0  
  speed auto  
!  
interface Serial0/0:15  
  description D-channel for ECN-2  
  no ip address  
  no logging event link-status  
  isdn switch-type primary-qsig  
  isdn overlap-receiving  
  isdn incoming-voice voice  
  isdn bchan-number-order ascending  
  no cdp enable  
!  
ip classless  
ip route 0.0.0.0 0.0.0.0 FastEthernet0/0  
!  
no ip http server  
!  
!  
control-plane  
!  
!  
voice-port 0/0:15  
!  
!  
dial-peer voice 323 voip  
  destination-pattern 5...  
  session target ipv4:172.20.4.107  
  codec g711alaw  
  ip qos dscp cs5 media  
!  
dial-peer voice 15 pots  
  description voice port for ECN-2  
  destination-pattern 8...  
  direct-inward-dial  
  port 0/0:15
```



```
forward-digits all
!
dial-peer voice 519 voip
shutdown
destination-pattern 5...
session protocol sipv2
session target ipv4:172.20.4.107
supplementary-service pass-through
!
!
line con 0
line aux 0
line vty 0 4
login
!
end
```

1760-West#



Cisco 2851 Configuration

```
2851_West#sho ver
```

```
Cisco IOS Software, 2800 Software (C2800NM-IPVOICE-M), Version 12.4(1.8)T, INTER  
IM SOFTWARE
```

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

```
Copyright (c) 1986-2005 by Cisco Systems, Inc.
```

```
Compiled Fri 06-May-05 00:27 by kellmill
```

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

```
2851_West uptime is 5 days, 6 hours, 46 minutes
```

```
System returned to ROM by reload at 18:21:06 UTC Thu Jun 9 2005
```

```
System image file is "flash:c2800nm-ipvoice-mz.124-1.8.T"
```

```
Cisco 2851 (revision 53.51) with 249856K/12288K bytes of memory.
```

```
Processor board ID FHK0847F03W
```

```
2 Gigabit Ethernet interfaces
```

```
31 Serial interfaces
```

```
2 Channelized E1/PRI ports
```

```
DRAM configuration is 64 bits wide with parity enabled.
```

```
239K bytes of non-volatile configuration memory.
```

```
62592K bytes of ATA CompactFlash (Read/Write)
```

```
Configuration register is 0x2102
```

```
2851_West# sho run
```

```
Building configuration...
```

```
Current configuration : 2653 bytes
```

```
!
```

```
version 12.4
```

```
service timestamps debug datetime msec
```

```
service timestamps log datetime msec
```



```
no service password-encryption
!
hostname 2851_West
!
boot-start-marker
boot system flash
boot-end-marker
!
logging buffered 51200 warnings
enable secret 5 $1$90h6$eYY8Wqr/FOH5/vTlmtf.x/
!
no aaa new-model
!
resource policy
!
no network-clock-participate slot 1
ip subnet-zero
!
!
ip cef
no ip dhcp use vrf connected
!
!
ip domain name yourdomain.com
isdn switch-type primary-qsig
!
voice-card 0
  no dspfarm
!
voice-card 1
  no dspfarm
!
!
voice service voip
  signaling forward unconditional
  sip
!
!
```



```
username deepa
!
!
controller E1 1/0/0
  pri-group timeslots 1-31
  description ECN-8
!
controller E1 1/0/1
!
!
interface GigabitEthernet0/0
  description $ETH-LAN$ETH-SW-LAUNCH$$INTF-INFO-GE 0/0$
  ip address 172.20.4.107 255.255.255.0
  duplex auto
  speed auto
!
interface GigabitEthernet0/1
  no ip address
  shutdown
  duplex auto
  speed auto
!
interface Serial1/0/0:15
  description D-channel for ECN-8
  no ip address
  no logging event link-status
  isdn switch-type primary-qsig
  isdn overlap-receiving
  isdn protocol-emulate network
  isdn incoming-voice voice
  isdn T310 120000
  no cdp enable
!
ip classless
!
ip http server
ip http authentication local
!
```




```
!  
control-plane  
!  
!  
!  
voice-port 1/0/0:15  
  description voice port for ECN-8  
!  
!  
dial-peer voice 10015 pots  
  destination-pattern 5...  
  direct-inward-dial  
  port 1/0/0:15  
  forward-digits all  
!  
dial-peer voice 323 voip  
  destination-pattern 8...  
  session target ipv4:172.20.4.105  
  codec g711alaw  
  ip qos dscp cs5 media  
!  
dial-peer voice 519 voip  
  shutdown  
  destination-pattern 8...  
  session protocol sipv2  
  session target ipv4:172.20.4.105  
  supplementary-service pass-through  
!  
banner login ^C  
-----  
Cisco Router and Security Device Manager (SDM) is installed on this device. This  
feature requires the one time use, initial credentials, of username "cisco"  
with password "cisco".  
  
Please change these publicly known initial credentials through SDM or IOS CLI.  
Here's the Cisco IOS command:  
  
no username cisco
```



NOTE: Please add a new username to be able to launch SDM for router management.

For more information about SDM please follow the instructions in the QUICK
START GUIDE for your router or at
<http://www.cisco.com/go/sdm>

```
-----  
^C  
!  
line con 0  
line aux 0  
line vty 0 4  
  privilege level 15  
  login local  
  transport input telnet  
line vty 5 15  
  privilege level 15  
  login local  
  transport input telnet  
!  
scheduler allocate 20000 1000  
!  
end
```

