



Siemens HiPath 4000 Release 1 and Siemens Hicom 330E Release 3.1 to Cisco IOS Voice Gateway using E1 QSIG with SIP

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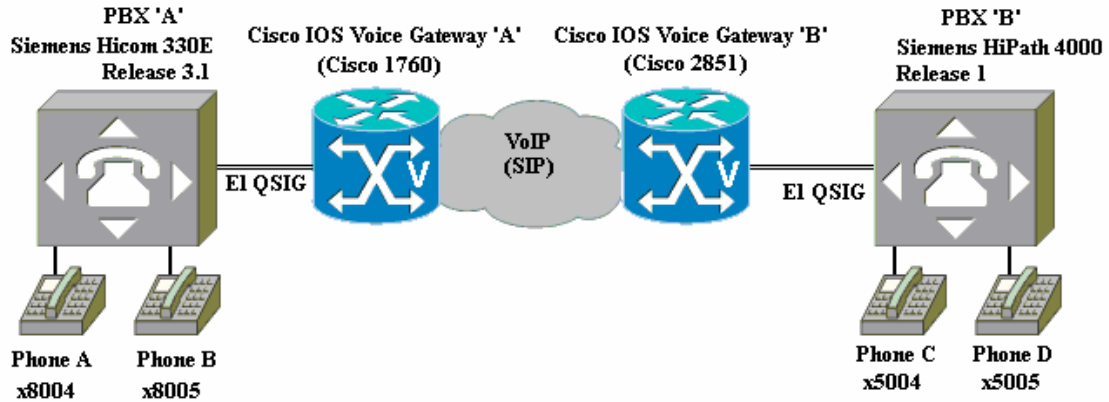
Introduction

- Although specific gateway router models were used to validate its content, this application note also applies to all Cisco 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 SIP protocol.
- A Siemens HiPath 4000 Release 1 PBX and a Siemens Hicom 330E Release 3.1 PBX were each connected via E1 QSIG trunk circuits a Cisco IOS voice gateway. The two voice gateways were connected via IP over Ethernet, and configured for VoIP using SIP. 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 for basic calls and Calling Name/Number. Supplementary services, including Call transfer, Call Conference, Call Forward, and Called Name/Number were not supported for the SIP toll bypass implementation. If these Supplementary Services are needed, it is recommended that MGCP or H.323 be used as the connection between the Cisco IOS gateways.



Network Topology

Figure 1. Network Topology or Test Setup



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 12.3(11) or later.



Features

Features Supported

- Basic Call (ENBLOC and Overlap)
- Calling Name and Number
- Call Conference (Limited)

Features Not Supported

- Call Hold
- Called/Connected Name and Number
- Call Transfer
- Call Forward
- MWI

Notes and Limitations

- All Call Transfers resulted in dropped calls.
- All Call Conference scenarios resulted in dropped calls if certain parties dropped out of the conference.
- On Conference Calls, the Connected Name/Number was not updated on the originating phone display when a conferee dropped out.
- All Call Forward scenarios that were originated by a Network/External (i.e., not Local) call resulted in dropped calls.
- Call Forward scenarios that were originated by a Local call resulted in successful call completion, and the original Calling Name/Number were successfully passed to the final destination phone. However, the Called Name/Number of the forwarding phone were not passed to the final destination phone, nor were the Connected Name/Number updated at the originating phone to reflect the name/number of the final destination.
- 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

Configuring the Siemens HiPath 4000

DPLN

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

DIGIT INTERPRETATION		VALID FOR ALL DIAL PLANS							
CODE		CALL PROGRESS STATE				DIGIT	RESERVED/CONVERT		
		1	11111	11112	22	ANALYSIS	DNI/ADD-INFO		
		0	12345	67890	12345	67890	12	RESULT	*=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	RESERVED/CONVERT		
		1	11111	11112	22	ANALYSIS	DNI/ADD-INFO		
		0	12345	67890	12345	67890	12	RESULT	*=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		
		1	11111	11112	22	ANALYSIS	DNI/ADD-INFO		
		0	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 ANALYSIS	RESERVED/CONVERT DNI/ADD-INFO
	1 1111 11112 22	0 12345 67890 12345 67890 12		
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	RESERVED/CONVERT DNI/ADD-INFO
	1 1111 11112 22	0 12345 67890 12345 67890 12		
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	RESERVED/CONVERT DNI/ADD-INFO
	1 1111 11112 22	0 12345 67890 12345 67890 12		
*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

	ASSIGNED	MODULE	FCT	HWY	INSERTED			MODULE
PEN	MODULE	TYPE	ID	BDL	MODULE	STATE	HW-INFO	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 (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=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 TSUID TNOTCR RKOABS CDRINT CDRS CDRC COSXCD VCE FWDNWK MSN FWDECA CFB CFNR FWDEXT	NOCO NOTIE	NOCO NOTIE

```
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	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	NUM
>	SERVICE INFORMATION																								NUM
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                PRIORITY      :    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   =            ISDNPNP  =                |
| 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   =            |                CCHDL    = |
| UUSCCX   = 16        UUSCCY   = 8              FNIDX    = 1 |
| CLASSMRK = EC        & G711   & G729OPT        SRCGRP    = |
| TCCID    = |
+-----+
| BCNEG    = N          BCGR     = 1              LWPARG    = 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, PEN, TGRP, and various 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

```

+-----+
| REFERENCE CLOCK CIRCUITS |
+-----+
| PEN      MODULE  DEVICE  PRI  ERROR  BLOCK  SUPP.  READY  SRCGRP |
|          |          |          |    |      |      |      | BUT  |
|          |          |          |    |      |      |      | ASYN. |
+-----+
| 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

```

+-----+
| REFERENCE CLOCK CIRCUITS |
+-----+
| PEN      MODULE  DEVICE  PRI  ERROR  BLOCK  SUPP.  READY  SRCGRP |
|          |          |          |    |      |      |      | BUT  |
|          |          |          |    |      |      |      | ASYN. |
+-----+
| 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                                DNNO OF ROUTE = 99 |
| SERVICE INFO = |
+-----+
| LRTEL | LVAL | TGRP | ODR | LAUTH | SCHEDULE | CARRIER | LATR | LDSRT |
|        |      |      |     |      | ABCDEFGH |         |     |      |
+-----+

```



1	1	20	15	1	*****	1	EMPTY	NONE
	DNNO =		99					



RICHT

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

```

+-----+
| LRTE = 806   NAME = OPEN NUMBER   (NEUTRAL)  LSVC = ALL
| DNNO =      99 PDNNO =      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       CBKBMAX =5
TRACE  =N
ALARMNO =0     DFSVCANA=      SPDI   =0       RCBKB  =N
HMUSIC =0     FLASH  =      SPDC1  =        RCBKNA =N
PMIDX  =1     SPDC2  =        CBKNAMB =Y
                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    IPPASSW =
DTMFCTRDR=Y  BASICSVC=

```



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;
<



Configuring the Siemens Hicom 330E

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	RESERVED/CONVERT		
	1 1111 11112 22		DNI/ADD-INFO		
	0 12345 67890 12345 67890 12	RESULT	*=OWN NODE		
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	RESERVED/CONVERT		
	1 1111 11112 22		DNI/ADD-INFO		
	0 12345 67890 12345 67890 12	RESULT	*=OWN NODE		
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	RESERVED/CONVERT		
	1 1111 11112 22		DNI/ADD-INFO		
	0 12345 67890 12345 67890 12	RESULT	*=OWN NODE		
4051 - 4599	. ***** **	STN	R		
			DESTNO 0		
			DNNO 0- 0-222*		
4700 - 4999	. ***** **	STN	R		



5000 - 5009	. **** *	STN	DESTNO 0 DNNO 0- 0-222*
5010	. **** *	ATNDIND	DESTNO 55 DNNO 0- 0- 55
5011 - 5020	. **** *	STN	R
5021 - 5050	. **** *	STN	DESTNO 55 DNNO 0- 0- 55
5051	. **** *	ATNDIND	DESTNO 111 DNNO 0- 0-111

DIGIT INTERPRETATION VALID FOR ALL DIAL PLANS

CODE	CALL PROGRESS STATE 1 11111 11112 22	DIGIT ANALYSIS RESULT	RESERVED/CONVERT
			DNI/ADD-INFO *=OWN NODE
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 1 11111 11112 22	DIGIT ANALYSIS RESULT	RESERVED/CONVERT
			DNI/ADD-INFO *=OWN NODE
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 1 11111 11112 22	DIGIT ANALYSIS RESULT	RESERVED/CONVERT
			DNI/ADD-INFO *=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	. . . . .	* ..	LNRKY

DIGIT INTERPRETATION		VALID FOR ALL DIAL PLANS	
CODE	CALL PROGRESS STATE	DIGIT ANALYSIS RESULT	RESERVED/CONVERT DNI/ADD-INFO
	1 11111 11112 22		*=OWN NODE
0 12345 67890 12345 67890 12			

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

AMO-WABE -111 DIALLING 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 | FCT | HWY | | INSERTED | STATE | HW-INFO | MODULE |
-----+-----+-----+-----+-----+-----+-----+
  PEN | MODULE   | TYPE   | ID  | BDL | | MODULE   | STATE | HW-INFO | 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 AOC
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 TNOTCR	NOCO NOTIE	NOCO NOTIE	NOCO NOTIE	TA 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	V	1	2	3	4	5	6	LCR
		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
CHARCON	:			:	NEUTRAL		:	
SUBGROUP NO.	:	18	DEVICE TYPE	:	S2CONN	TRACENO	:	0
RESERVED	:	N	SEARCH MODE	:	ASCENDING	ACD THRESHOLD	:	*
NUMBER OF ASSOCIATED ROUTES	:			:	2	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  =           ISDNLC   =           |
| ISDNIP  =           ISDNNP  =           PNPLC    =           |
| PNPL2C  =           PNPL1C  =           PNPAC    =           |
| PNPL2P  =           PNPL1P  =           NNO      = 55         |
| TRACOUNT = 31       SATCOUNT = MANY     CARRIER = 1          |
| ALARMNO  = 0        FIDX    = 1          FWDX     = 10         |
| ZONE     = EMPTY   COTX    = 4          TPROFNO  =           |
| DOMTYPE  =           DOMAINNO =         UUSCCX   = 16         |
| INIGHT   =           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
```

```

+-----+
|           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- 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
```

```

+-----+
|           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- 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
```

```

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

```

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




```
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;
<
<
```



Configuring the Cisco 1760

1760-West#sho ver

Cisco IOS Software, C1700 Software (C1700-IPVOICE-M), Version 12.3(11)T5, RELEAS

E SOFTWARE (fc1)

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

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Compiled Sat 02-Apr-05 18:50 by yiyan

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

1760-West uptime is 1 day, 4 hours, 57 minutes

System returned to ROM by reload

System image file is "flash:c1700-ipvoice-mz.123-11.T5.bin"

Cisco 1760 (MPC860P) processor (revision 0x600) with 114907K/16165K bytes of memory.

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 : 1540 bytes
```

```
!
```

```
version 12.3
```

```
service timestamps debug datetime msec
```

```
service timestamps log datetime msec
```

```
no service password-encryption
```

```
!
```

```
hostname 1760-West
```

```
!
```

```
boot-start-marker
```

```
boot-end-marker
```

```
!
```

```
!
```

```
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
```

```
!
```

```
no aaa new-model
```

```
ip subnet-zero
```

```
ip cef
```

```
!
```

```
!
```

```
no ftp-server write-enable
```



```
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 supp-service name calling
isdn bchan-number-order ascending
isdn sending-complete
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
shutdown
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
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#



Configuring the Cisco 2851

2851_West# sho ver

Cisco IOS Software, 2800 Software (C2800NM-IPVOICE-M), Version 12.3(14)T2, RELEA
SE SOFTWARE (fc4)

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

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Compiled Wed 11-May-05 21:45 by hqluong

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

2851_West uptime is 4 hours, 46 minutes

System returned to ROM by reload at 21:11:56 UTC Tue Jun 7 2005

System image file is "flash:c2800nm-ipvoice-mz.123-14.T2.bin"

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 : 2735 bytes

!
version 12.3

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$9Oh6$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  
no ftp-server write-enable  
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 supp-service name calling  
isdn T310 120000  
isdn sending-complete  
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
shutdown
destination-pattern 8...
session target ipv4:172.20.4.105
codec g711alaw
ip qos dscp cs5 media
!
dial-peer voice 519 voip
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
```

```
2851_West#
```




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