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

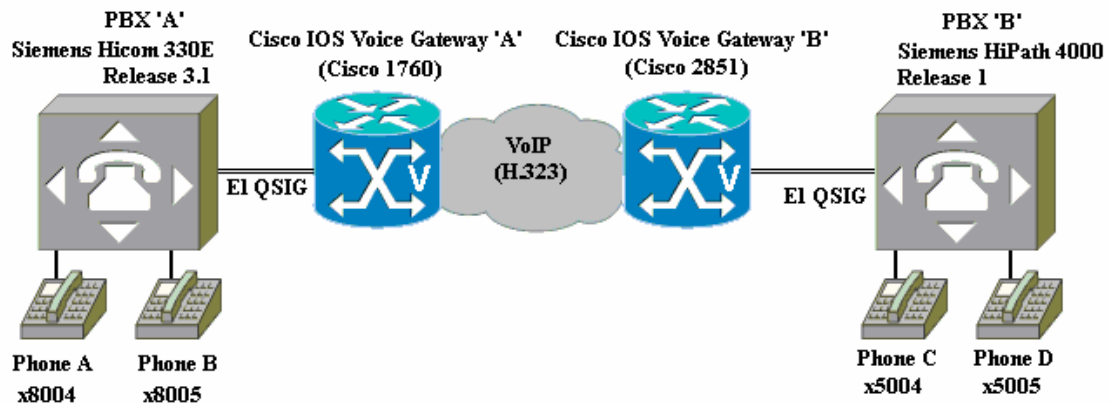**October 30, 2007 Revision 7**

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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 H.323 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 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. These limitations are detailed in the following sections and all were found to be inherent to the Siemens PBXs. Thus, H.323 toll bypass introduced no new restrictions to the available features or performance.

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 12.4(1.8)T or later.

Features

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

Features Not Supported

- Call Hold

- MWI

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 via 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 via 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 via 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. This is inherent to the PBXs and also occurs with the PBXs connected directly via an E1 QSIG trunk.

- 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            |
------------------------------------------------------------------------------
|                 |     CALL PROGRESS STATE    | DIGIT   | RESERVED/CONVERT   |
|      CODE       |          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            |
------------------------------------------------------------------------------
|                 |     CALL PROGRESS STATE    | DIGIT   | RESERVED/CONVERT   |
|      CODE       |          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            |
------------------------------------------------------------------------------
|                 |     CALL PROGRESS STATE    | DIGIT   | RESERVED/CONVERT   |
|      CODE       |          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                         |
-------------------------------------------------------------------------------------
|                  |     CALL PROGRESS STATE    | DIGIT    | RESERVED/CONVERT  |
|      CODE        |        1 11111 11112 22| ANALYSIS | DNI/ADD-INFO      |
|                  | 0 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                         |
-------------------------------------------------------------------------------------
|                  |     CALL PROGRESS STATE    | DIGIT    | RESERVED/CONVERT  |
|      CODE        |        1 11111 11112 22| ANALYSIS | DNI/ADD-INFO      |
|                  | 0 12345 67890 12345 67890 12| RESULT   | *=OWN NODE        |
-------------------------------------------------------------------------------------
| 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                         |
-------------------------------------------------------------------------------------
|                  |     CALL PROGRESS STATE    | DIGIT    | RESERVED/CONVERT  |
|      CODE        |        1 11111 11112 22| ANALYSIS | DNI/ADD-INFO      |
|                  | 0 12345 67890 12345 67890 12| RESULT   | *=OWN NODE        |
-------------------------------------------------------------------------------------
| *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   |    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                                |    |
    | V  |        1         2         3         4         5         6    |    |
    |    |123456789012345678901234567890123456789012345678901234567890123|COPIN|
    |    |>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  =               |
| TRTBL   = GDTR         SIDANI  = N           ATNTYP  = TIE           |
| CBMATTR = NONE         NWMUXTIM = 10         TCHARG  = N             |
| SUPPRESS = 0           DGTPR   =             CHIMAP  = N             |
| ISDNIP  =              ISDNNP  =                                      |
| 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           LWPAR   = 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


  +----------------------------------------------------------------------+
  | LOADWARE PARAMETERS     CIRCUIT TYPE: DIUS2  SOURCE:DB     BLOCK:    1 |
  +----------------------------------------------------------------------+
  | 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     =                                                           |
  +----------------------------------------------------------------------+

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
  +----------------------- 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   =              |
  | TRTBL   = GDTR         SIDANI   = N            ATNTYP   = TIE          |
  | CBMATTR = NONE         NWMUXTIM = 10           TCHARG   = N            |
  | SUPPRESS = 0           DGTPR    =              CHIMAP   = N            |
  | ISDNIP  =              ISDNNP   =                                     |
  | 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            LWPAR    = 0            |
  | 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
```

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

```
+------------------------------------------------------------------------+
|            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|
|              |         |          |   |      |      |      |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 =                                                   |
+-------+-----+-----+-----+------+----------+-----------+----------+------+
|       |     |     |     |      |  SCHEDULE | CARRIER   |          |      |
| LRTEL | LVAL| TGRP|  ODR| LAUTH| ABCDEFGH |      ZONE |    LATTR | LDSRT|
+-------+-----+-----+-----+------+----------+-----------+----------+------+
```

```
| 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      CONFTONE = 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                                          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                         IPPASSW =
 DTMFCTRD=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       |
 -------------------------------------------------------------------------
 |              |   CALL PROGRESS STATE      | DIGIT   | RESERVED/CONVERT |
 |     CODE     |           1 11111 11112 22| ANALYSIS| 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       |
 -------------------------------------------------------------------------
 |              |   CALL PROGRESS STATE      | DIGIT   | RESERVED/CONVERT |
 |     CODE     |           1 11111 11112 22| ANALYSIS| 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       |
 -------------------------------------------------------------------------
 |              |   CALL PROGRESS STATE      | DIGIT   | RESERVED/CONVERT |
 |     CODE     |           1 11111 11112 22| ANALYSIS| 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                  |
|                        |                             |          | 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 1 11111 11112 22 0 12345 67890 12345 67890 12	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 0 12345 67890 12345 67890 12	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 0 12345 67890 12345 67890 12	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             |
 ------------------------------------------------------------------------
|                 | CALL PROGRESS STATE      | DIGIT    | RESERVED/CONVERT |
|      CODE       |        1 11111 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;
```

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
-----+----------+--------+---+---+-+-----------+-----+--------+------------+
     | ASSIGNED  | MODULE |FCT|HWY| | INSERTED  |     |        | 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  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=|
  |    |12345678901234567890123456789012345678901234567890123456789012345678901234|LCRET|
  |    |>SERVICE INFORMATION                                        | LCR |
  +----+----+----|----+----|----+----|----+----|----+----|----+----|----+-----+
  | 32 |XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|  .  |
  |    |>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   =                                    |
   | 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     = 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   =                                       |
  | 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
  +------------------------------------------------------------------------+
  |            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 =                                                         |
  +-------+-------+-------+-----+-----+----------+------------+----+--------+
  |       |       |       |     |     | SCHEDULE | CARRIER    |BAND|        |
  | LRTEL | LVAL  | TGRP  | ODR |LAUTH| ABCDEFGH |       ZONE |WDTH| 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
                    SECR   =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=                 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;
    <
    <
```

Configuring the Cisco 1760

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

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

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#
```

Configuring the Cisco 2851

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$9Oh6$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

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

Acronyms

Acronym	Definitions

Important Information

THE SPECIFICATIONS AND INFORMATION REGARDING THE PRODUCTS IN THIS MANUAL ARE SUBJECT TO CHANGE

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