Cisco AS5300 Universal Gateway-PBX Interoperability: Siemens Hicom 330E with E1 QSIG Signaling

This document describes the interoperability and configuration of a Cisco AS5300 voice gateway with a Siemens Hicom 330E PBX using E1 QSIG signaling. It includes the following sections:

- System Components
- Configuration Tasks
- Caveats

System Components

PBX Model	Siemens Hicom 330E
PBX Release	Version 3.1
Telephony Signaling	E1 QSIG
Voice Gateway	Cisco AS5300 universal gateway
Gateway Release	Cisco IOS 12.1(1)
VoX Protocol	H.323

Configuration Tasks

See the following sections for configuration tasks for this feature:

- Set Up
- Siemens Hicom 330E PBX Configuration
- Cisco AS5300 Gateway Configuration

Set Up

This section includes the following information:

- Connectivity Diagrams
- Set Up Notes

Connectivity Diagrams
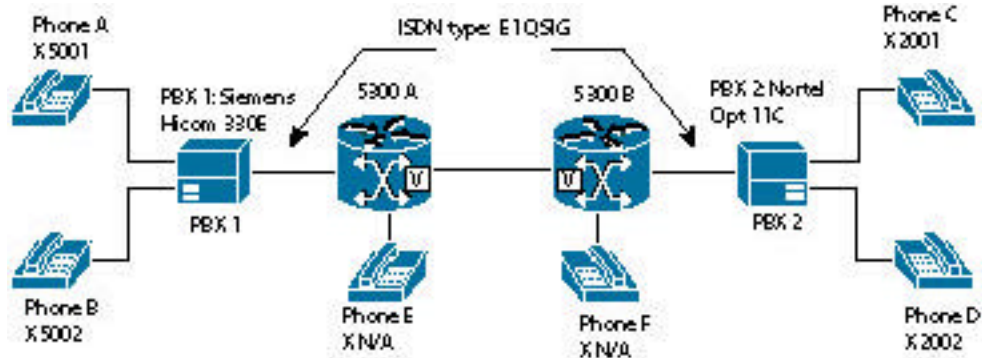
Figure 1: Test Configuration

Figure 1 represents the configuration used for testing: a Siemens Hicom 330E PBX connected to a Cisco AS5300 voice gateway via an E1 QSIG connection.

Set Up Notes

- The layer 1 configuration in the Siemens Hicom 330E PBX is assigned to the device type S2CONN via parameter "LWPAR" (Loadware Parameters). For Master side operation, the Siemens Hicom 330E was configured so that the LWPAR field under the <cha-tdcsu> command is:

  LWPAR = 4
  The applicable fields under LWPAR = 4 <cha-lwpar> are as follows:
  MASTER = Y
  SMD = Y

  For slave side operation:
  LWPAR = 1
  The applicable fields under LWPAR = 1 <cha-lwpar> are as follows:
  MASTER = N
  SMD = N

- The Cisco AS5300 router with ISDN switch type setting of **primary-qsig** supports both protocol sides by using the "isdn protocol-emulate network/user" command.

- Configuring the Siemens operation to be Master (or Network) side sets the Layers 2 & 3 protocol side setting to master as well. Therefore, the Cisco AS5300 gateway should be set to Slave protocol side by issuing the command: "isdn protocol-emulate user".

- If the Siemens operation is set for Slave (or user) side, layers 2 & 3 protocol side are set for slave side. The Cisco AS5300 gateway is set to Master protocol side by issuing the command: "isdn protocol-emulate network".

Siemens Hicom 330E PBX Configuration

Siemens Hicom 330E PBX Version Information

- Software: Version 3.1

Siemens Hicom 330E PBX Sample Configuration

See the following sections for sample configuration information:

- Master side configuration
- Slave Side Configuration
- Route Configuration
- Board Configuration
- Station (Phone) Configuration
- Least Cost Routing Configuration
- Class of Service
- System Information

Master side configuration

```
<dis-tdcsu

PEN1 = 1-1-73-0;
DIS-TDCSU:1-1-73-0;
H500:  AMO TDCSU STARTED

   +----------------------- DIGITAL TRUNK (FORMAT=L) -----------------------+
   |          DEV = S2CONN                   PEN =  1-01-073-0               |
   |------------------------------------------------------------------------|
   |  COTNO    = 4           COPNO    = 4           DPLN     = 0             |
   |  ITR      = 0           COS      = 32          LCOSV    = 31            |
   |  LCOSD    = 31          CCT      = qsig        DESTNO   = 99            |
   |  PROTVAR  = ECMA1       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      = 1  -1  -999   |
   |  ALARMNO  = 2           FIDX     = 1           CARRIER  = 1             |
   |  ZONE     = EMPTY       COTX     = 4           FWDX     = 10            |
   |  DOMTYPE  =             DOMAINNO =             TPROFNO  =               |
   |  INIGHT   =                                                             |
   |  CCHDL    =             UUSCCX   = 16          UUSCCY   = 8             |
   |------------------------------------------------------------------------|
   |  TGRP     = 37          SRCHMODE = CIR         BCNEG    = N             |
   |  BCGR     = 1           INS      = Y           LWPAR    = 4             |
   |  LWPP     = 0           LWLT     = 0           LWPS     = 0             |
   |  LWR1     = 0           LWR2     = 0                                    |
   |  BCHAN    1 && 30                                                       |
   |                                                                        |
   +------------------------------------------------------------------------+

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


AMO-TDCSU-82       DIGITAL TRUNKS

DISPLAY COMPLETED;
```

Slave Side Configuration

```
<dis-tdcsu

PEN1 = 1-1-73-0;
DIS-TDCSU:1-1-73-0;
H500:  AMO TDCSU STARTED

    +----------------------- DIGITAL TRUNK (FORMAT=L) -----------------------+
    |           DEV = S2CONN                   PEN =  1-01-073-0             |
    |------------------------------------------------------------------------|
    | COTNO    = 4            COPNO    = 4            DPLN     = 0            |
    | ITR      = 0            COS      = 32           LCOSV    = 31           |
    | LCOSD    = 31           CCT      = qsig         DESTNO   = 99           |
    | PROTVAR  = ECMA1        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      = 1  -1  -999  |
    | ALARMNO  = 2            FIDX     = 1            CARRIER  = 1            |
    | ZONE     = EMPTY        COTX     = 4            FWDX     = 10           |
    | DOMTYPE  =             DOMAINNO =             TPROFNO  =              |
    | INIGHT   =                                                             |
    | CCHDL    =             UUSCCX   = 16           UUSCCY   = 8            |
    |------------------------------------------------------------------------|
    | TGRP     = 37           SRCHMODE = CIR          BCNEG    = N            |
    | BCGR     = 1            INS      = Y            LWPAR    = 1            |
    | LWPP     = 0            LWLT     = 0            LWPS     = 0            |
    | LWR1     = 0            LWR2     = 0                                    |
    | BCHAN    1 && 30                                                       |
    |                                                                        |
    +------------------------------------------------------------------------+

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


AMO-TDCSU-82        DIGITAL TRUNKS

DISPLAY COMPLETED;


<dis-lwpar;


DIS-LWPAR;
H500:  AMO LWPAR STARTED


    +------------------------------------------------------------------------+
    | LOADWARE PARAMETERS      CIRCUIT TYPE: DIUS2  SOURCE:DB    BLOCK:  1   |
    +------------------------------------------------------------------------+
    | 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     = 1:COPPER-DERIVE CLOCK FROM LINE(I421)                       |
    +------------------------------------------------------------------------+


    +------------------------------------------------------------------------+
    | LOADWARE PARAMETERS      CIRCUIT TYPE: DIUS2  SOURCE:DB    BLOCK:  4   |
    +------------------------------------------------------------------------+
    | 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      = Y                FIXEDTEI = 0             CNTRNR   = 255      |
|  TEIVERIF = N                CRC4REP = N                                  |
|  DEV      = INDEP                                                         |
|  INFO     = 4:COPPER-MASTER CLOCK(DPNSS A-END)                            |
+--------------------------------------------------------------------------+
```

```
<dis-buend


TGRP = 37
FORMAT = l;
DIS-BUEND:37,L;
H500:  AMO BUEND STARTED
```

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

```
AMO-BUEND-82          TRUNK GROUP

DISPLAY COMPLETED;

<dis-refta

TYPE = circuit
PEN = 1-1-73-0;
DIS-REFTA:CIRCUIT,1-1-73-0;
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- 73- 0  | DIU-N2  | S2CONN   |  11  | 11023  |  N   |     X  |  N  |
+--------------+---------+----------+------+--------+------+--------+-----+
```

```
AMO-REFTA-82       REFERENCE CLOCK TABLE

DISPLAY COMPLETED;
```

Route Configuration

```
<dis-richt

MODE = all
DIS-RICHT:ALL;
H500:  AMO RICHT STARTED

+--
+----------------------------------------------------------------+
| LRTE = 37      NAME =  TEST                     SRVC = ALL    |
| DNNO = 1 -1  -999                                              |
| ROUTOPT = NO     REROUT = YES    PLB = NO     FWDBL = NO       |
| MFV: CNV=FIX     DSP=WITHOUT TEXT=                  PULS=PP300 |
| ROUTENO =     4 BUGS = LIN                  MAINGROUP =    4  |
| INFO =                                                         |
+----------------------------------------------------------------+
| TGRP =  37    LDAT      PRI             SUBGROUP =   10       |
| TGRP =  38    LDAT      QSIG            SUBGROUP =    9       |
+----------------------------------------------------------------+
| LRTE = 39      NAME = BRISLAVE                  SRVC = ALL    |
| DNNO = 1 -1  -1                                                |
| ROUTOPT = NO     REROUT = YES    PLB = NO     FWDBL = NO       |
| MFV: CNV=WITHOUT DSP=WITHOUT TEXT=                  PULS=      |
| ROUTENO =     7 BUGS = LIN                  MAINGROUP =    7  |
| INFO =                                                         |
+----------------------------------------------------------------+
| TGRP =  39             BRI             SUBGROUP =    8       |
+----------------------------------------------------------------+
| LRTE = 40      NAME = BRI TRUNK                 SRVC = ALL    |
| DNNO = 1 -1  -999  DESTNO =   99                               |
| ROUTOPT = NO     REROUT = YES    PLB = NO     FWDBL = NO       |
| MFV: CNV=FIX     DSP=WITHOUT TEXT=                  PULS=PP300 |
| ROUTENO =     3 BUGS = LIN                  MAINGROUP =    3  |
| INFO =                                                         |
+----------------------------------------------------------------+
| TGRP =  40    LDAT      BRI MASTER      SUBGROUP =   13       |
+----------------------------------------------------------------+
+-------+----------------------+-------------------------------+


AMO-RICHT-82         TRUNK ROUTING

DISPLAY COMPLETED;
```

Board Configuration

```
<dis-bcsu

TYPE = tbl
LTG = 1
LTU = 1
SLOT = 73
DIS-BCSU:TBL,1,1,73;

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      |
------+-----------+---------+---+---+-+------------+-----+--------+-------------+
  73  | Q2196-X   DIU-N2      1   A | | Q2196-X    | 1   | -04 -  | READY       |

AMO-BCSU -82        BOARD CONFIGURATION, SWITCHING UNIT

DISPLAY COMPLETED
```

Station (Phone) Configuration

```
  <dis-sbcsu

STNO = 5000

TYPE = all

DIS-SBCSU:5000,TERMDATA;

H500:  AMO SBCSU STARTED

  ----------------------------- USER DATA ------------------------------------
  STNO   =5000    OPT    =OPTI   COS1  =7    DPLN  =0         SPDI  =Y
  MAINO  =5000    CONN   =DIR    COS2  =7    ITR   =0         SPDC1 =0
  PEN    = 1- 1- 79- 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-95       STATION AND S0-BUS CONFIGURATION OF SWITCHING UNIT

DISPLAY COMPLETED
```

Least Cost Routing Configuration

```
<dis-ldat
 TYPE = ?
 TYPE              : DISPLAY TYPE CHARACTERISTIC  : OPTIONAL
POSSIBLE VALUES : LCR        ONLY LROUTES FOR LCR                     NWLCR     ONLY
LROUTES WITH CLOSED NUMBERING BY LCR                      ALL        ALL TYPE = lcr
 LROUTE = ;
 DIS-LDAT:LCR,; H500:  AMO LDAT   STARTED
+----------------------------------------------------------------------------+
| LROUTE = 1     LDPLN      NAME = CENTRAL OFFICE           SERVICE =  ALL    |
| TYPE = LCR                                     DNNO OF ROUTE  = 1 -1  -999  |
| SERVICE INFO =                                                             |
```

```
+-------+-------+-------+-----+-----+----------+------------+----+---------+
|       |       |       |     |     | SCHEDULE | CARRIER    |BAND|         |
| LRTEL | LVAL  | TGRP  | ODR |LAUTH| ABCDEFGH |       ZONE |WDTH|  LATTR  |
+-------+-------+-------+-----+-----+----------+------------+----+---------+
|   1 | |   1 | |   30 | 1 | |   1 | ******** | 1   EMPTY  | 1 | |  NONE   |
+-------+-------+-------+-----+-----+----------+------------+----+---------+
| LROUTE = 31   LDPLN      NAME = E&M                      SERVICE = VCE |
| TYPE = LCR                            DNNO OF ROUTE  = 1 -1  -999 |
| SERVICE INFO =                                                        |
+-------+-------+-------+-----+-----+----------+------------+----+---------+
|       |       |       |     |     | SCHEDULE | CARRIER    |BAND|         |
| LRTEL | LVAL  | TGRP  | ODR |LAUTH| ABCDEFGH |       ZONE |WDTH|  LATTR  |
+-------+-------+-------+-----+-----+----------+------------+----+---------+
|   1 | |   1 | |   31 | 1 | |   1 | ******** | 1   EMPTY  | 1 | |  NONE   |
+-------+-------+-------+-----+-----+----------+------------+----+---------+
| LROUTE = 37   LDPLN      NAME = PRI TEST                 SERVICE =  ALL |
| TYPE = LCR                            DNNO OF ROUTE  = 1 -1  -999 |
| SERVICE INFO =                                                        |
+-------+-------+-------+-----+-----+----------+------------+----+---------+
|       |       |       |     |     | SCHEDULE | CARRIER    |BAND|         |
| LRTEL | LVAL  | TGRP  | ODR |LAUTH| ABCDEFGH |       ZONE |WDTH|  LATTR  |
+-------+-------+-------+-----+-----+----------+------------+----+---------+
|   1 | |   1 | |   37 | 1 | |   1 | ******** | 1   EMPTY  | 1 | |  NONE   |
|   2 | |   1 | |   38 | 1 | |   1 | ******** | 1   EMPTY  | 1 | |  NONE   |
+-------+-------+-------+-----+-----+----------+------------+----+---------+
| LROUTE = 40   LDPLN      NAME = BRI TRUNK               SERVICE =  ALL |
| TYPE = LCR                 DNNO OF ROUTE  = 1 -1  -999               |
| SERVICE INFO =                                                        |
+-------+-------+-------+-----+-----+----------+------------+----+---------+
|       |       |       |     |     | SCHEDULE | CARRIER    |BAND|         |
| LRTEL | LVAL  | TGRP  | ODR |LAUTH| ABCDEFGH |       ZONE |WDTH|  LATTR  |
+-------+-------+-------+-----+-----+----------+------------+----+---------+
|   1 | |   1 | |   40 | 1 | |   1 | ******** | 1   EMPTY  | 1 | |  NONE   |
+-------+-------+-------+-----+-----+----------+------------+----+---------+
AMO-LDAT -187      LCR-DIRECTIONS
DISPLAY COMPLETED;
```

Class of Service

```
<dis-cot


COTNO = 4;


DIS-COT:4;

H500:  AMO COT   STARTED



   COT:   4  INFO: 4:Q931 EXTERNAL

   DEVICE: INDEP       SOURCE: DB

   PARAMETER:

        PRIORITY FOR AC WILL BE DETERMINED FROM MESSAGE        PRI
        RECALL IF USER HANGS UP IN CONSULTATION CALL           RCL
        TRUNK CALL TRANSFER                                    XFER
        TRUNK SIGNALING ANSWER                                 ANS
        CHANGEOVER FROM HOLD TO RING TONE                      CHRT
        KNOCKING OVERRIDE POSSIBLE                             KNOR
        CALL EXTEND FOR BUSY, RING OR CALL STATE               CEBC
        NETWORKWIDE AUTOMATIC CALLBACK ON BUSY                 CBBN
        NETWORKWIDE AUTOMATIC CALLBACK ON FREE                 CBFN
        DON'T RELEASE CALL TO BUSY HUNT GROUP                  BSHT
        SEND NO NODE NUMBER TO PARTNER                         LWNC
        INCOMING CIRCUIT FROM SYSTEM WITHOUT LCR               NLCR
        TSC-SIGNALING FOR NETWORKWIDE FEATURES (MANDATORY)     TSCS
```

```
        INCOMING CDR BY ZONE OR FROM LINE                         ICZL
        INCOMING CIRCUIT FROM SYSTEM WITHOUT LCR (DATA)           NLRD
        AOC PER CALL (AUTOMATIC OR ON REQUEST), MAND. CORNET-NQ   AOCC
        CONTROLLED TRUNK AND LINE SELECTION                       CTLS
        NO TONE                                                   NTON


AMO-COT  -95        CLASS OF TRUNK FOR CALL PROCESSING

DISPLAY COMPLETED;

   <dis-cop


COPNO = 4;


DIS-COP:4;

H500:  AMO COP   STARTED



   COP:   4  INFO: 4:Q931
   DEVICE: INDEP        SOURCE: DB
   PARAMETER:
        SPECIAL MODE                                        SFRM
        REGISTRATION OF LAYER 3 ADVISORIES                  L3AR


AMO-COP  -95        CLASS OF PARAMETER FOR DEVICE HANDLER

DISPLAY COMPLETED;

  <dis-cossu

TYPE = cos
COS = 32;
DIS-COSSU:COS,32;
H500:  AMO COSSU STARTED

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

AMO-COSSU-82        CLASSES OF SERVICE, SWITCHING UNIT

DISPLAY COMPLETED;

  <dis-cossu

TYPE = lcos
LCOS = 31;
DIS-COSSU:LCOS,31;
H500:  AMO COSSU STARTED

   THE LCR CLASSMARKS ARE CONTAINED IN THE FOLLOWING LCOS:

   +----+-------------------------------------------------------------+
   |LCOS|          LCOSV               |          LCOSD              |
   |    |123456789012345678901234567890122|123456789012345678901234567890012|
   |    |>SERVICE INFORMATION                                         |
```

```
+----+----+---- |----+---- |----+---- |--+----+----|----+----|----+----|--+
|  31|                                XX|                                XX|
+----+-------------------------------------------------------------------+
```

```
AMO-COSSU-82        CLASSES OF SERVICE, SWITCHING UNIT

DISPLAY COMPLETED
```

System Information

```
<dis-dbc
 VERBOSE = ?
 VERBOSE          : LIST OF ACTIVE DB SUBSYSTEMS CHARACTERISTIC  : OPTIONAL
POSSIBLE VALUES : Y          YES                      N          NO VERBOSE = y
 DIS-DBC:Y; H500:  AMO DBC    STARTED
+-----------------------------------------------------------------------------+
| SYSTEM CLASSIFICATION   : SYSTEM 80          (H80   )                        |
| HARDWARE ASSEMBLY       : EXTENDED COMPACT CXE (CXE   )                      |
| DEVELOPMENT LINE        : EUROPE DEVELOPMENT  (H300)                         |
| OPERATING MODE          : SIMPLEX                                            |
| RESTART TYPE            : SYM                                                |
| HW-ARCHITECTURE         : 330E                                              |
| HW-ARCHITECTURE TYPE    : 4                                                  |
|                                                                             |
| 'NO OF' HW VALUES                                                           |
|   LTG'S     :    1  LTU'S        :  4  LOG.LINES :  8000  MTS BD /GSN:   1   |
|   SIUP'S/LTU:    4  TMD24'S PER LTU:  4  PHYS.PORTS: 2688 HWY /MTS BD:  64   |
|   HDLC /DCL :    5  PBC /DCL  :  1  PBC'S    :    17                        |
| LOG. SIU LINES         :   26                                               |
| LOG. CONF LINES        :   35                                               |
| LOG. DCL LINES         :   36                                               |
| DB DIMENSIONING-NAME   : 350EMSTD        CONF-TABLE VERSION:   1            |
| DB SUSY'S:                                                                  |
| SWITCH NUMBER : L31900Q2999A00001                                           |
| DB                                                                          |
| SYSTEM_ID      : PKP091000                                                  |
+-----------------------------------------------------------------------------+
```

Cisco AS5300 Gateway Configuration

The following is the configuration of the Cisco AS5300 voice gateway connected to the Siemens Hicom 330E PBX E1 ISDN interface.

Cisco AS5300 Voice Gateway Version Information

```
AS5300_B#sh ver
Cisco Internetwork Operating System Software
IOS (
tm) 5300 Software (C5300-JS-M), Version 12.2(1), RELEASE SOFTWARE (fc2)
Copyright (c) 1986-2001 by cisco Systems, Inc.
Compiled Fri 27-Apr-01 00:59 by cmong
Image text-base: 0x60008958, data-base: 0x611DA000

ROM: System Bootstrap, Version 12.0(2)XD1, EARLY DEPLOYMENT RELEASE SOFTWARE (fc
1)

AS5300_B uptime is 3 hours, 12 minutes
System returned to ROM by reload
System image file is "flash:c5300-js-mz.122-1"

cisco AS5300 (R4K) processor (revision A.32) with 131072K/16384K bytes of memory
.
Processor board ID 13241546
```

```
R4700 CPU at 150Mhz, Implementation 33, Rev 1.0, 512KB L2 Cache
Channelized E1, Version 1.0.
Bridging software.
X.25 software, Version 3.0.0.
SuperLAT software (copyright 1990 by Meridian Technology Corp).
TN3270 Emulation software.
Primary Rate ISDN software, Version 1.1.
Backplane revision 2
Manufacture Cookie Info:
 EEPROM Type 0x0001, EEPROM Version 0x01, Board ID 0x30,
 Board Hardware Version 3.1, Item Number 800-2544-03,
 Board Revision D0, Serial Number 13241546,
 PLD/ISP Version 0.0,  Manufacture Date 17-May-2000.
1 Ethernet/IEEE 802.3 interface(s)
1 FastEthernet/IEEE 802.3 interface(s)
35 Serial network interface(s)
4 Channelized E1/PRI port(s)
60 Voice resource(s)
128K bytes of non-volatile configuration memory.
16384K bytes of processor board System flash (Read/Write)
8192K bytes of processor board Boot flash (Read/Write)

Configuration register is 0x2102

AS5300_B#
```

Cisco AS5300 Voice Gateway Controller Information

```
AS5300_B#sh controllers e1 0
E1 0 is up.
  Applique type is Channelized E1 - balanced
  No alarms detected.
  alarm-trigger is not set
  Version info of slot 0:  HW: 1, PLD Rev: 11
  Framer Version: 0x8

Manufacture Cookie Info:
 EEPROM Type 0x0001, EEPROM Version 0x01, Board ID 0x4B,
 Board Hardware Version 3.1, Item Number 800-3881-02,
 Board Revision B0, Serial Number 20744904,
 PLD/ISP Version 0.1,  Manufacture Date 23-Jun-2000.

  Framing is CRC4, Line Code is HDB3, Clock Source is Line Primary.
  Data in current interval (107 seconds elapsed):
     0 Line Code Violations, 0 Path Code Violations
     0 Slip Secs, 0 Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins
     0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 0 Unavail Secs
AS5300_B#
```

Cisco AS5300 Voice Gateway VCWare Information

```
AS5300_B#sh vfc 2 version vcware

Voice Feature Card in Slot 2:
     VCware Version     :  7.16
     ROM Monitor Version:  1.3
     DSPware Version    :  3.4.27l
     Technology         :  C549

AS5300_B#
```

Cisco AS5300 Voice Gateway DSPWare Information

```
AS5300_B#sh vfc 2 version dspware
Version of Dspware in VFC slot 2 is 3.4.27l

AS5300_B#
```

Cisco AS5200 Voice Gateway Sample Configuration

```
AS5300_B#sh conf
Using 2077 out of 124920 bytes
!
version 12.2
service config
no service single-slot-reload-enable
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname AS5300_B
!
logging rate-limit console 10 except errors
enable secret 5 $1$/.SG$h05ycqcEN3shrrgYfUUo91
enable password lab
!
!
!
resource-pool disable
!
call rsvp-sync
ip subnet-zero
no ip finger
no ip domain-lookup
!
no ip dhcp-client network-discovery
isdn switch-type primary-qsig
!
!
!
!
!
fax interface-type vfc
mta receive maximum-recipients 0
!
!
controller E1 0
 clock source line primary
 pri-group timeslots 1-31
!
controller E1 1
 clock source line secondary 1
!
controller E1 2
 clock source line secondary 2
!
controller E1 3
 clock source line secondary 3
!
!
interface Ethernet0
 ip address 10.1.1.203 255.255.255.0
 no cdp enable
!
interface Serial0
```

```
 no ip address
 shutdown
 no fair-queue
 clockrate 2015232
!
interface Serial1
 no ip address
 shutdown
 no fair-queue
 clockrate 2015232
 no cdp enable
!
interface Serial2
 no ip address
 shutdown
 no fair-queue
 clockrate 2015232
 no cdp enable
!
interface Serial3
 no ip address
 shutdown
 no fair-queue
 clockrate 2015232
 no cdp enable
!
interface Serial0:15
 no ip address
 no logging event link-status
 isdn switch-type primary-qsig
 isdn protocol-emulate network
 isdn incoming-voice modem
 no isdn T309-enable
 isdn T203 30000
 isdn T310 60000
 isdn bchan-number-order ascending
 no cdp enable
!
interface FastEthernet0
 ip address 1.1.1.2 255.255.255.0
 duplex auto
 speed auto
 no cdp enable
!
router rip
 network 1.0.0.0
!
ip kerberos source-interface any
ip classless
no ip http server
!
dialer-list 1 protocol ip permit
dialer-list 1 protocol ipx permit
!
!
!
voice-port 0:D
!
dial-peer voice 2 voip
 destination-pattern 5...
 progress_ind setup enable 1
 session target ipv4:1.1.1.1
!
dial-peer voice 1 pots
 destination-pattern 2...
 direct-inward-dial
```

```
 port 0:D
 prefix 2
!
!
line con 0
 exec-timeout 0 0
 logging synchronous
 transport input none
line aux 0
line vty 0 4
 password lab
 login
!
scheduler interval 1000
end

AS5300_B#
```

Caveats

- Overlap Sending or Receiving is not supported on the Siemens Hicom 330E.