Application Note

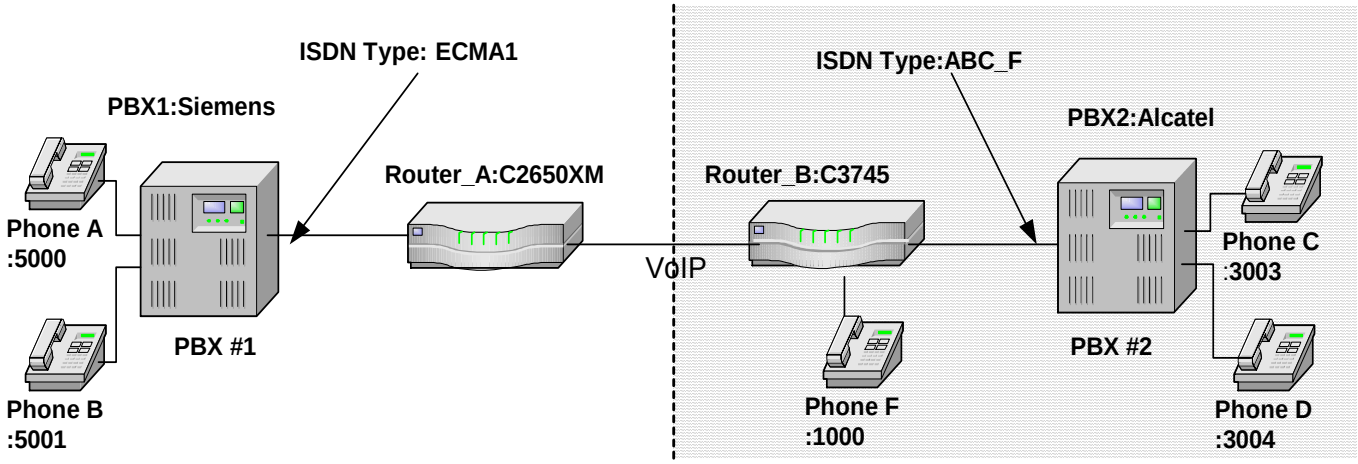
Cisco 2650XM-PBX Interoperability: Siemens Hicom 300E PBX using BRI-QSIG Interfaces with H.323

Introduction

This note describes the interoperability between the Siemens Hicom 330E R3.1 PBX to Cisco 2650XM router over a BRI-QSIG link. The Network Topology diagram shows the test set-up for end-to-end interoperability between the Siemens via the Cisco 2650 XM Router supporting a Basic-QSIG link.

Network Topology

Basic Call Setup End-to-End Configuration



Limitations

Basic Call

When a call is made from the Alcatel (Phone C) to the Siemens (Phone A), the Alcatel phone only displays the connected party's name.

Basic Call FXS Ports

Due to the slot allocation limitations of the Cisco 2650 XM Router when supporting a 2 NT/TE BRI card, installation of a FXS port was not possible.

System Components

Hardware Requirements

Cisco Hardware

Cisco 2650 XM Router with 1 off 2 BRI NT/TE Card

Siemens Hardware

Siemens Hicom 330E PBX

Hardware: DIU-N2

Software Requirements

Cisco IOS Software Release 12.2 (12.12)T

Siemens Hicom 330E PBX Software Version R3.1

Features Supported

Calling Name Identification Presentation

Calling Number Identification Presentation

Connected Name Identification Presentation

Connected Number Identification Presentation Updating

Connected Name and Number for Call Transfers

Updating Connected Name and Number for Call Forwarding

Configuration

Configuring the Siemens Hicom 330E PBX

Configure in the following sequence

Add the new access code to Dialing Plans using WABE + LDPLN.

Add the new trunk board using BCSU.

Configure Class of Trunk using COT.

Configure Class of Parameter for device handler using COP.

Configure Class of Service using COSSU.

Add the new trunk group access code using BUEND

Configure trunk using TDCSU

Configure Reference Clock using REFTA

Configure trunk Least Cost Routing using LDAT + RICHT

Configure LCR Out-dial Rules using LODR

Configuration Menus and Commands

DPLN

```
  <dis-wabe

TYPE = ?

TYPE            : DESIRED OPTION
CHARACTERISTIC  : REQUIRED              CONDITIONAL
POSSIBLE VALUES : ARN        ALTERNATE REFERENCE NUMBER (7-8 DIGIT WABE)
                  DNNO       DISPLAY STATION OF DESTINATION NODE NUMBER
                  CPS        DISPLAY OF CPS FOR SPECIFIED DAR
                  STN        STATION
```

```
                  GEN        DISPLAY TYPE FOR GENERAL PURPOSES

TYPE = gen

CD = ;

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 - 002	*	NETRTE	R
11	. ...* ..	MBKY	
3001	. .**** ***** **...	STN	R
			DESTNO 0
			DNNO 1- 1-150*
3007	. ...* ..	MBKY	
3007	. .**** ***** **...	STN	
			DESTNO 0
			DNNO 1- 1-150*
4100 - 4500	. .**** ***** **...	STN	R
			DESTNO 72
			DNNO 0- 0- 0

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

5000 - 5007	.**** ***** **...	STN		
			DESTNO 0	
			DNNO 1- 1-150*	
5008 - 5009	.**** ***** **...	STN	R	
			DESTNO 99	
			DNNO 0- 0- 0	
5010	.**** *.*** **...	ATNDIND		
5011	.**** ***** **...	STN		
			DESTNO 0	
			DNNO 1- 1-150*	

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
5012 - 5050	.**** ***** **...	STN	R
			DESTNO 0
			DNNO 1- 1-150*
800	..... *...* **...	ATNDDID	
854	.**** ***** **...	NETW	R
			DESTNO 2
			DNNO 0- 0- 0
*66	....*	SIGNON	
*91	....* ....*	MBOFF	
#66	....*	SIGNOFF	
#91	....* ....*	MBON	
##22	....* ..	DAKY	

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
##24	. ...* ..	DSSKY	
##25	. ...* ..	FWDKY	
##26	. ...* ..	HTKY	
##27	. ...* ..	KNOVRKY	
##28	. ...* ..	MBKY	
##29	. ...* ..	MSGRKY	
##35	. ...* ..	TIMEKY	
##36	. ...* ..	VCKY	
##37	. ...* ..	VCRKY	
##38	. ...* ..	CCKY	
##39	. ...* ..	CONFKY	
##41	. ...* ..	NAMEKY	

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
##42	. ...* ..	PARKKY	
##43	. ...* ..	REMKY	
##44	. ...* ..	STKY	
##45	. ...* ..	CBKKY	
##46	. ...* ..	CONSKY	
##47	. ...* ..	DNDKY	
##48	. ...* ..	EXHOLDKY	
##49	. ...* ..	HOLDKY	
##50	. ...* ..	IUSEKY	

```
| ##51            |. ..... ..... ..... ....* ..| LNRKY    |                  |
| ##52            |. ..... ..... ..... ....* ..| PRIVKY   |                  |
| ##53            |. ..... ..... ..... ....* ..| RLSKY    |                  |
-------------------------------------------------------------------------------
| 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       |
-------------------------------------------------------------------------------
| ##54            |. ..... ..... ..... ....* ..| SNRKY    |                  |
| ##55            |. ..... ..... ..... ....* ..| TRNSKY   |                  |
| ##56            |. ..... ..... ..... ....* ..| RCTOFFKY |                  |
| ##57            |. ..... ..... ..... ....* ..| TOGGLEKY |                  |
-------------------------------------------------------------------------------

AMO-WABE -208       DIALLING PLANS, FEATURE ACCESS CODES
DISPLAY COMPLETED;
```

Dial plan, DPLN

```
  <dis-ldpln


TYPE = ldp;

DIS-LDPLN:LDP;
H500:  AMO LDPLN STARTED
   +--------------+-----------------------------------------+
   |              |                                         |
   | LDPNO :   45 | LDP : 31-XXXX                           |
   |              | SPC : 22                                |
   +--------------+------+------+------++------+------+------+
   |              | DPLN | LRTE | LAUTH|| DPLN | LRTE | LAUTH|
```

		0	31	1	8			
		1			9			
		2			10			
		3			11			
		4			12			
		5			13			
		6			14			
		7			15			
LDPNO : 39	LDP : 33-XXXX							
	SPC : 22							
	DPLN	LRTE	LAUTH		DPLN	LRTE	LAUTH	
	0	33	1		8			
	1				9			
	2				10			
	3				11			
	4				12			
	5				13			
	6				14			
	7				15			
LDPNO : 40	LDP : 37-XXXX							
	SPC : 22							
	DPLN	LRTE	LAUTH		DPLN	LRTE	LAUTH	
	0	37	1		8			

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

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

LDPNO : 46	LDP : 40-XXXX							
	SPC : 22							
	DPLN	LRTE	LAUTH		DPLN	LRTE	LAUTH	
	0	40	1		8			
	1				9			
	2				10			

```
   |              |   3  |      |      ||  11  |      |      |
   |              |   4  |      |      ||  12  |      |      |
   |              |   5  |      |      ||  13  |      |      |
   |              |   6  |      |      ||  14  |      |      |
   |              |   7  |      |      ||  15  |      |      |
   +--------------+-------------------------------------------+
   |              |                                           |
   | LDPNO :   44 | LDP : 9-X                                 |
   |              | SPC : 22                                  |
   +--------------+------+------+------++------+------+------+
   |              | DPLN | LRTE | LAUTH|| DPLN | LRTE | LAUTH|
   |              +------+------+------++------+------+------+
   |              |   0  |    1 |   1  ||   8  |      |      |
   |              |   1  |      |      ||   9  |      |      |
   |              |   2  |      |      ||  10  |      |      |
   |              |   3  |      |      ||  11  |      |      |
   |              |   4  |      |      ||  12  |      |      |
   |              |   5  |      |      ||  13  |      |      |
   |              |   6  |      |      ||  14  |      |      |
   |              |   7  |      |      ||  15  |      |      |
   +--------------+------+------+------++------+------+------+

AMO-LDPLN-208       ADMINISTRATION LCR DIALPLAN
DISPLAY COMPLETED;
```

BCSU

```
  <dis-bcsu

TYPE = tbl;

DIS-BCSU:TBL;
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     |
-----+-----------+---------+---+---+-+------------+-----+--------+------------+
  37 | Q2261-X     DSCX       2    | | Q2261-X    |  1  | D994-E | READY      |
  49 | Q2159-X140  TM2LP         A | | Q2159-X140 |  1  | -03 -  | READY      |
  55 | Q2139-X     PSIO          A | | Q2139-X    |  1  | D321-C | READY      |
  61 | Q2233-X     SIUX       2    | | Q2233-X    |  1  | D802-B | READY      |
  67 | Q2286-X     TMLRB         A | | Q2286-X    |  2  | B008-D | READY      |
  73 | Q2196-X     DIU-N2     1  A | | Q2196-X    |  1  | -04 -  | READY      |
  79 | Q2180-X     SLOP2      1  A | | Q2180-X    |  1  | -03 -  | READY      |
  85 | Q2163-X     STMD2      1  A | | Q2163-X    |  1  | -09 -  | READY      |
  91 | Q2246-X     SLMA24        A | | Q2246-X    |  1  | -07 -  | READY      |
  97 | Q2292-X100  TMEW2         A | | Q2292-X100 |  1  | -B1 -  | READY      |
 103 | Q2292-X100  TMEW2         A | | Q2292-X100 |  1  | -B1 -  | READY      |

H02: LTU  1.2     IS NOT ASSIGNED


H02: LTU  1.3     IS NOT ASSIGNED


H02: LTU  1.4     IS NOT ASSIGNED


AMO-BCSU -108       BOARD CONFIGURATION, SWITCHING UNIT
DISPLAY COMPLETED;
```

COT

```
  <dis-cot: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
         INTERWORKING CALLBACK - NO ANSWER AND MAILBOX CALLBACK       IWCB
         AOC PER CALL (AUTOMATICAL OR ON REQUEST), MAND. CORNET-NQ    AOCC
         CONTROLLED TRUNK AND LINE SELECTION                          CTLS
         NO TONE                                                      NTON

AMO-COT  -108       CLASS OF TRUNK FOR CALL PROCESSING
```

COP

```
  <dis-cop

COPNO = 4

FORMAT = ;

DIS-COP: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  -208       CLASS OF PARAMETER FOR DEVICE HANDLER
DISPLAY COMPLETED;
```

COSSU

```
  <dis-cossu: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-108       CLASSES OF SERVICE, SWITCHING UNIT
DISPLAY COMPLETED;
```

BUEND

```
  <dis-buend

TGRP = 43;

DIS-BUEND:43;
H500:  AMO BUEND STARTED


+------------------------------ FORMAT = L ----------------------------------+
|  TGRP NUMBER :    43   TGRP NAME   : BRI2              MAXIMUM NO.   :    4 |
|  SUBGROUP NO.:    15   DEVICE TYPE : S0CONN            TRACENO       :    0 |
|  RESERVED    :     N   SEARCH MODE : CIRCULAR          ACD THRESHOLD :    * |
|  NUMBER OF ASSOCIATED ROUTES       :   1               PRIORITY      :    2 |
|  THE FOLLOWING TRUNKS (LTG-LTU-SLOT-CCT) HAVE BEEN ALLOCATED:                |
+------------------------------------------------------------------------------+
|   1- 1- 85-7   B-CHL:  1 |  1- 1- 85-7   B-CHL:  2 |                   :    |
+------------------------------------------------------------------------------+

AMO-BUEND-108       TRUNK GROUP
DISPLAY COMPLETED;
```

TDCSU

```
  <dis-tdcsu

PEN1 = 1-1-85-7;

DIS-TDCSU:1-1-85-7;
H500:  AMO TDCSU STARTED
  +------------------------ DIGITAL TRUNK (FORMAT=L) -------------------------+
  |             DEV = S0CONN                   PEN =  1-01-085-7              |
  |-------------------------------------------------------------------------- |
  | COTNO    = 4             COPNO    = 4             DPLN     = 0            |
  | ITR      = 0             COS      = 32            LCOSV    = 31           |
  | LCOSD    = 31            CCT      =               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  = 0              FIDX     = 1              CARRIER  = 1             |
   | ZONE     = EMPTY          COTX     = 4              FWDX     = 1             |
   | DOMTYPE  =                DOMAINNO =                TPROFNO  =               |
   | INIGHT   =                                                                  |
   | CCHDL    =                UUSCCX   = 16             UUSCCY   = 8             |
   |-----------------------------------------------------------------------------|
   | INS      = N              TGRP     = 43             SRCHMODE = CIR           |
   | MASTER   = Y              SMD      = Y              CNTRNR   = 0             |
   | BCNEG    = N                                                                |
   +-----------------------------------------------------------------------------+
   AMOUNT OF B-CHANNELS IN THIS DISPLAY-OUTPUT: 2

AMO-TDCSU-108       DIGITAL TRUNKS
DISPLAY COMPLETED;
```

REFTA

```
   <dis-refta

TYPE = circuit

PEN = 1-1-85-7;

DIS-REFTA:CIRCUIT,1-1-85-7;
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- 85- 7 | STMD    | S0CONN   |    0 |  16000 |    N |        |  N  |
   +--------------+---------+----------+------+--------+------+--------+-----+

AMO-REFTA-108       REFERENCE CLOCK TABLE

DISPLAY COMPLETED;
```

LDAT

```
<dis-ldat


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 = 33    LDPLN      NAME = BRI 2                    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 |     0 |    43 |   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 |
+-------------------------------------------------------------------------+
| LROUTE = 38    LDPLN      NAME = PRI2                     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 |    38 |   1 |   1 | ******** | 1    EMPTY |  1 |    NONE |
```

```
   |       | DNNO = 1 -1  -999                                        |         |
   +---------------------------------------------------------------------------+
   | 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 -208       LCR-DIRECTIONS
DISPLAY COMPLETED;
```

RICHT

```
  <<dis-richt

MODE = lrte

LRTE = 37;

DIS-RICHT:LRTE,37;
H500:  AMO RICHT STARTED
+-----------------------------------------------------------------+
| LRTE = 37     NAME = PRI TEST                     SRVC = ALL    |
| DNNO = 1 -1  -999                                               |
| ROUTOPT = NO     REROUT = YES   PLB = NO     FWDBL = NO         |
| MFV: CNV=WITHOUT DSP=WITHOUT TEXT=                  PULS=       |
| ROUTENO =    11 BUGS = LIN                     MAINGROUP =   11 |
| INFO =                                                          |
+-----------------------------------------------------------------+
| TGRP =  37   LDAT      PRI TEST               SUBGROUP =   10   |
+-----------------------------------------------------------------+
```

```
AMO-RICHT-208       TRUNK ROUTING
DISPLAY COMPLETED;
```

LODR

```
  <dis-lodr
ODR = 1
INFOPAT = ;
DIS-LODR:1,;
H500:  AMO LODR  STARTED
   +-----------------------------------------------------+
   |  ODR     POSITION  CMD         PARAMETER            |
   +--------+--------------------------------------------+
   |    1   |      1    ECHO        2                    |
   |        |      2    END                              |
   +--------+--------------------------------------------+
   |INFO:PSTN                                            |
   +-----------------------------------------------------+
H03: THE NEXT FREE ODR IS 4
AMO-LODR -208       ADMINISTRATION OF LCR OUTDIAL RULES
DISPLAY COMPLETED;
  <
```

Siemens Digital Phone configuration

```
  <dis-sbcsu
STNO = 5000
TYPE = termdata;
```

```
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-108       STATION AND S0-BUS CONFIGURATION OF SWITCHING UNIT

DISPLAY COMPLETED;
```

Configuring the Cisco 2650XM Router

Sho Version

```
Cisco Internetwork Operating System Software
IOS (tm) C2600 Software (C2600-IS-M), Version 12.2(12.12)T,  MAINTENANCE INTERIM
 SOFTWARE
TAC Support: http://www.cisco.com/tac
Copyright (c) 1986-2002 by cisco Systems, Inc.
Compiled Mon 14-Oct-02 02:57 by ccai
Image text-base: 0x80008098, data-base: 0x8183168C

ROM: System Bootstrap, Version 12.2(7r) [cmong 7r], RELEASE SOFTWARE (fc1)

2650XM_BRI uptime is 5 days, 19 hours, 45 minutes
System returned to ROM by reload
System image file is "flash:c2600-is-mz.122-12.12.T"

cisco 2650XM (MPC860P) processor (revision 0x100) with 126976K/4096K bytes of me
mory.
Processor board ID JAD06150HXS (761445799)
M860 processor: part number 5, mask 2
Bridging software.
X.25 software, Version 3.0.0.
Basic Rate ISDN software, Version 1.1.
1 FastEthernet/IEEE 802.3 interface(s)
2 ISDN Basic Rate interface(s)
4 Voice NT or TE BRI interface(s)
32K bytes of non-volatile configuration memory.
49152K bytes of processor board System flash (Read/Write)

Configuration register is 0x2
```

Sho Diag

```
2650XM_BRI#sho diag
Slot 0:
        C2650XM 1FE Mainboard Port adapter, 1 port
        Port adapter is analyzed
        Port adapter insertion time unknown
        EEPROM contents at hardware discovery:
        Hardware Revision        : 1.0
        PCB Serial Number        : JAD06150HXS (761445799)
        Part Number              : 73-7755-02
        RMA History              : 00
        RMA Number               : 0-0-0-0
        Board Revision           : A0
        Deviation Number         : 0-0
        EEPROM format version 4
        EEPROM contents (hex):
          0x00: 04 FF 40 03 6E 41 01 00 C1 17 4A 41 44 30 36 31
          0x10: 35 30 48 58 53 20 28 37 36 31 34 34 35 37 39 39
          0x20: 29 82 49 1E 4B 02 04 00 81 00 00 00 00 42 41 30
          0x30: 80 00 00 00 00 FF FF FF FF FF FF FF FF FF FF FF
          0x40: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
```

```
          0x50: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
          0x60: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
          0x70: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF

Slot 1:
        4 PORT Voice PM for C2600 Port adapter
        Port adapter is analyzed
        Port adapter insertion time unknown
        EEPROM contents at hardware discovery:
        Hardware revision 1.1           Board revision C0
        Serial number     10560635      Part number    800-02491-02
        FRU Part Number:  NM-2V=

        Test history      0x0           RMA number     00-00-00
        EEPROM format version 1
        EEPROM contents (hex):
          0x20: 01 65 01 01 00 A1 24 7B 50 09 BB 02 00 00 00 00
          0x30: 60 00 00 00 98 10 24 17 FF FF FF FF FF FF FF FF

        VIC Slot 0:
        NT or TE BRI Voice daughter card (2 port)
        Hardware revision 1.0           Board revision E0
        Serial number     28528711      Part number    800-07272-03
        Test history      0x0           RMA number     00-00-00

                                Connector type    PCI
        EEPROM format version 1
        EEPROM contents (hex):
          0x20: 01 32 01 00 01 B3 50 47 50 1C 68 03 00 00 00 00
          0x30: 70 00 00 00 02 08 02 00 FF FF FF FF FF FF FF FF


2650XM_BRI#
```

Show Config

```
2650XM_BRI#sho config
Using 1308 out of 29688 bytes
!
version 12.2
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname 2650XM_BRI
!
boot system flash:c2600-is-mz.122-12.12.T
!
ip subnet-zero
!
!
no ip domain lookup
ip host danube 171.69.17.14
ip host dirt 171.69.1.129
ip host whiz 171.69.1.162
!
isdn switch-type basic-qsig
!
!
voice call carrier capacity active
!
!
!
```

```
!
!
!
!
!
!
mta receive maximum-recipients 0
!
!
!
!
interface FastEthernet0/0
 ip address 100.100.100.1 255.255.255.0
 duplex auto
 speed auto
!
interface BRI1/0
 no ip address
 isdn switch-type basic-qsig
 isdn overlap-receiving
 isdn incoming-voice voice
 isdn skipsend-idverify
!
interface BRI1/1
 no ip address
 isdn switch-type basic-qsig
!
ip classless
no ip http server
!
!
dialer-list 1 protocol ip permit
!
call rsvp-sync
!
voice-port 1/0/0
 compand-type a-law
!
voice-port 1/0/1
!
!
mgcp profile default
!
!
!
dial-peer cor custom
!
!
!
dial-peer voice 1 pots
 destination-pattern 5...
 direct-inward-dial
 port 1/0/0
 prefix 5
!
dial-peer voice 3 voip
 destination-pattern 3...
 session target ipv4:100.100.100.2
!
dial-peer voice 2 voip
 destination-pattern 4000
 session target ipv4:100.100.100.2
!
dial-peer voice 5 pots
```

```
 destination-pattern 5005
!
!
line con 0
line aux 0
line vty 0 4
 login
line vty 5 15
 login
!
!
end
```

Important Information

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