Cisco AS5300 Gateway-PBX Interoperability: Ericsson MD-110 with E1 ISDN PRI Signaling

This document describes the interoperability and configuration of a Cisco AS5300 voice gateway with a Ericsson MD-110 PBX using E1 ISDN PRI signaling. It includes the following sections:

- System Components
- Configuration Tasks
- Caveats

System Components

PBX Model	Ericsson MD-110
PBX Release	ASB50104-R6-SES-R9-BC90D/CNI80
Telephony Signaling	E1 ISDN
Voice Gateway	Cisco AS5300
Gateway Release	Cisco IOS™ Version 12.2.1
VoX Protocol	H.323

Configuration Tasks

See the following sections for configuration tasks for this feature:

- Set Up
- Ericsson MD-110 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

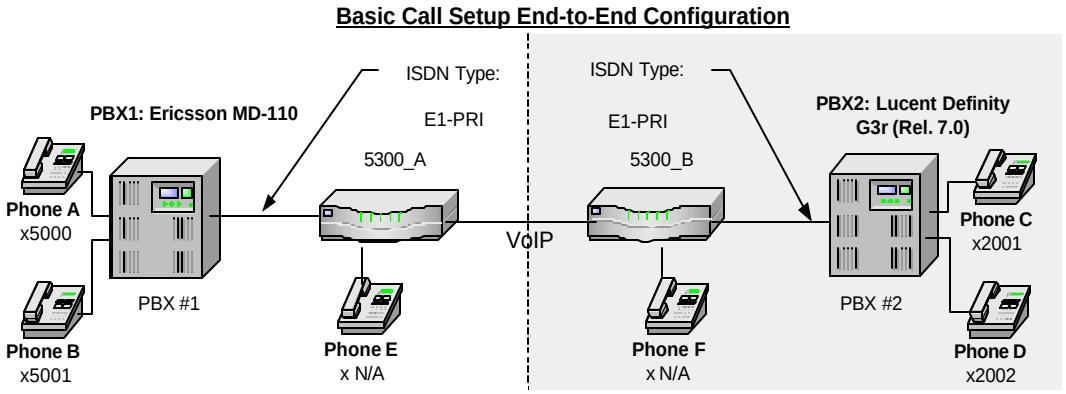

Figure 1 represents the configuration used for testing: a Ericsson MD-110 PBX connected to a Cisco AS5300 voice gateway via an E1 ISDN PRI connection.

Set Up Notes

- The Cisco AS5300 gateway with ISDN switch type setting of **primary-net5** supports both protocol sides by using the "isdn protocol-emulate network/user" command.
- Configuring the Ericsson operation to be Master (or Network) side sets the Layers 2 & 3 protocol side setting to master as well. Therefore, the Cisco 5300 gateway should be set to Slave protocol side by issuing the command: "isdn protocol-emulate user".
- If the Ericsson operation is set for Slave (or user) side, layers 2 & 3 protocol side are set for slave side. The Cisco 5300 gateway is set to Master protocol side by issuing the command: "isdn protocol-emulate network".
- The Ericsson MD-110, supports both "USER" (peer-slave) and "NETWORK" (peer-master) protocol sides by using **RODAI** command.
- The Ericsson MD-110 uses a command line interface where many switch features are changed with a single command. The PBX documentation must be consulted to make changes. Using **RODAI** command controls physical layer parameters.

Ericsson MD-110 PBX Configuration

Ericsson MD-110 PBX Sample Configuration

See the following sections for sample configuration information:

- Ericsson PBX Switch Version
- Class of Service and Class of Restriction
- E1-PRI D-Channel Signaling Parameters
- E1-PRI Trunk Status
- Telephone Key Mapping Table
- E1-PRI Route Data Blk, Protocol Side "User"
- List of Board Equipment

Ericsson PBX Switch Version

```
< CADAP;
CALENDAR DATA

IDENTITY=CISCO-SYSTEMS
VERSION=ASB50104-R6-SES-R9-BC90D/CNI80

CALENDAR TIME NOT VALID
03:32:31
TUE 15 MAY 2001
END
```

Class of Service and Class of Restriction

```
Route Information- Note PRI uses Route 9

< RODDP:DEST=ALL;
EXTERNAL DESTINATION ROUTE DATA

DEST  DRN ROU CHO CUST ADC                TRC SRT NUMACK PRE

2         9            1005000000000025000 0   1   0
30        1            1005000000000025000 0   3   0
31        2            1005000000000025000 0   3   0
32        3            1005000000000025000 0   3   0
33        4            1005000000000025000 0   3   0
34        5            1005000000000025000 0   3   0
35        6            0005000000000025000 0   3   0
36        7            0005000000000025000 0   3   0
37        8            0005000000000025000 0   3   0
39        10           1005000000000025000 0   3   0
40        11           1005000000000025000 0   3   0

END
```

E1-PRI D-Channel Signaling Parameters

```
Route Category Data

< ROCAP:ROU=9;
ROUTE CATEGORY DATA

ROU SEL          TRM SERV       NODG DIST DISL TRAF     SIG          BCAP

9   711000000000 7   3110000010  0   5    20   03151515 211100000031 111111

END
```

```
---------E1-PRI B-channel physical parameters-----------------------

< ROEDP:ROU=9,TRU=ALL;
ROUTE EQUIPMENT DATA

ROU              TRU              EQU              SQU              INDDAT

9                001-1            001-1-40-01                       H'000000000000
9                001-2            001-1-40-02                       H'000000000000
9                001-3            001-1-40-03                       H'000000000000
9                001-4            001-1-40-04                       H'000000000000
9                001-5            001-1-40-05                       H'000000000000
9                001-6            001-1-40-06                       H'000000000000
9                001-7            001-1-40-07                       H'000000000000
9                001-8            001-1-40-08                       H'000000000000
9                001-9            001-1-40-09                       H'000000000000
9                001-10           001-1-40-10                       H'000000000000
9                001-11           001-1-40-11                       H'000000000000
9                001-12           001-1-40-12                       H'000000000000
9                001-13           001-1-40-13                       H'000000000000
9                001-14           001-1-40-14                       H'000000000000
9                001-15           001-1-40-15                       H'000000000000
9                001-17           001-1-40-17                       H'000000000000
9                001-18           001-1-40-18                       H'000000000000
9                001-19           001-1-40-19                       H'000000000000
9                001-20           001-1-40-20                       H'000000000000
9                001-21           001-1-40-21                       H'000000000000
9                001-22           001-1-40-22                       H'000000000000
9                001-23           001-1-40-23                       H'000000000000
9                001-24           001-1-40-24                       H'000000000000
9                001-25           001-1-40-25                       H'000000000000
9                001-26           001-1-40-26                       H'000000000000
9                001-27           001-1-40-27                       H'000000000000
9                001-28           001-1-40-28                       H'000000000000
9                001-29           001-1-40-29                       H'000000000000
9                001-30           001-1-40-30                       H'000000000000
9                001-31           001-1-40-31                       H'000000000000

END
```

E1-PRI Trunk Status

```
< SUSIP:ROU=9, TRU=ALL;
STATUS INFORMATION AT 00:00:00 01JAN00

ROU  TRU     TYPE   TRAFFIC STATE/PTR    LINE STATE/PTR     ADD INFO

9    001-1   TL60   IDLE          #009B  FREE       #0061
9    001-2   TL60   IDLE          #009A  FREE       #0060
9    001-3   TL60   IDLE          #0099  FREE       #005F
9    001-4   TL60   IDLE          #0098  FREE       #005E
9    001-5   TL60   IDLE          #0097  FREE       #005D
9    001-6   TL60   IDLE          #0096  FREE       #005C
9    001-7   TL60   IDLE          #0095  FREE       #005B
9    001-8   TL60   IDLE          #0094  FREE       #005A
9    001-9   TL60   IDLE          #0093  FREE       #0059
9    001-10  TL60   IDLE          #0092  FREE       #0058
9    001-11  TL60   IDLE          #0091  FREE       #0057
9    001-12  TL60   IDLE          #0090  FREE       #0056
9    001-13  TL60   IDLE          #008F  FREE       #0055
9    001-14  TL60   IDLE          #008E  FREE       #0054
9    001-15  TL60   IDLE          #008D  FREE       #0053
9    001-17  TL60   IDLE          #007D  FREE       #0070
9    001-18  TL60   IDLE          #007C  FREE       #006F
9    001-19  TL60   IDLE          #007B  FREE       #006E
9    001-20  TL60   IDLE          #007A  FREE       #006D
9    001-21  TL60   IDLE          #0079  FREE       #006C
9    001-22  TL60   IDLE          #0078  FREE       #006B
9    001-23  TL60   IDLE          #0077  FREE       #006A
9    001-24  TL60   IDLE          #0076  FREE       #0069
9    001-25  TL60   IDLE          #0075  FREE       #0068
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```
9    001-26  TL60   IDLE          #0074  FREE       #0067
9    001-27  TL60   IDLE          #0073  FREE       #0066
9    001-28  TL60   IDLE          #0072  FREE       #0065
9    001-29  TL60   IDLE          #0071  FREE       #0064
9    001-30  TL60   IDLE          #0070  FREE       #0063
9    001-31  TL60   IDLE          #006F  FREE       #0062
END

---------Telephone COS, Restrictions, Naming conventions, etc.-------

< KSCAP:DIR=ALL;
KEY SYSTEM CATEGORY PRINT

DIR    TRAF      SERV      CDIV       ROC   ITYPE  TRM  ADC

5000   03151515  02001207  011151111  7237  21     1    00100013010
5001   03151515  02001207  011151111  7237  21     1    00100013010
5002   03151515  02001207  011151111  7237  21     1    00100013010
5003   03151515  02001207  011151111  7237  21     1    00100013010
5006   03151515  02001207  011151111  7237  21     1    00100013010
5007   03151515  02001207  011151111  7237  21     1    00100013010

END
```

Telephone Key Mapping Table

```
< KSFKP:DIR=ALL;
KEY SYSTEM FUNCTION KEY DATA PRINT


DIR = 5000

KEY          KTYPE        VALUE        DIG

 00          PGM
 01          FCN          TNS
 02          FCN          TNS
 03          FCN          CNF
 04          SKI          F1
 05          SKI          F2
 06          SKI          F3
 07          SKI          F4
 08          SKI          MENU
 09          ODN          5000
 10          ODN          5000
 11          ODN          5000
 13          FCN          TNS
 14          FCN          CAD
 15          FCN          TNS
 16          FCN          TNS
 17          FCN          TNS
 18          FCN          TNS
 19          FCN          TNS
 20          FCN          TNS
 21          FCN          TNS
 22          FCN          TNS
 23          FCN          TNS
 24          FCN          TNS
 25          FCN          TNS
 26          FCN          TNS
 27          FCN          TNS
 28          FCN          TNS
 29          FCN          TNS
 30          FCN          TNS
 31          FCN          TNS
 32          FCN          TNS
 33          FCN          TNS
 34          FCN          TNS
 35          FCN          TNS
 36          FCN          TNS
 37          FCN          TNS
```

```
 38          FCN          TNS
 39          FCN          TNS
 40          FCN          TNS


DIR = 5001

KEY          KTYPE        VALUE        DIG

 00          PGM
 01          FCN          TNS
 02          FCN          TNS
 03          FCN          CNF
 04          SKI          F1
 05          SKI          F2
 06          SKI          F3
 07          SKI          F4
 08          SKI          MENU
 09          ODN          5001
 10          ODN          5001
 11          ODN          5001
 13          FCN          TNS
 14          FCN          CAD
 15          FCN          TNS
 16          FCN          TNS
 17          FCN          TNS
 18          FCN          TNS
 19          FCN          TNS
 20          FCN          TNS
 21          FCN          TNS
 22          FCN          TNS
 23          FCN          TNS
 24          FCN          TNS
 25          FCN          TNS
 26          FCN          TNS
 27          FCN          TNS
 28          FCN          TNS
 29          FCN          TNS
 30          FCN          TNS
 31          FCN          TNS
 32          FCN          TNS
 33          FCN          TNS
 34          FCN          TNS
 35          FCN          TNS
 36          FCN          TNS
 37          FCN          TNS
 38          FCN          TNS
 39          FCN          TNS
 40          FCN          TNS


DIR = 5002

KEY          KTYPE        VALUE        DIG

 00          PGM
 01          FCN          TNS
 02          FCN          TNS
 03          FCN          CNF
 04          SKI          F1
 05          SKI          F2
 06          SKI          F3
 07          SKI          F4
 08          SKI          MENU
 09          ODN          5002
 10          ODN          5002
 11          ODN          5002
 13          FCN          TNS
 14          FCN          CAD
 15          FCN          TNS
 16          FCN          TNS
 17          FCN          TNS
```

```
 18          FCN          TNS
 19          FCN          TNS
 20          FCN          TNS
 21          FCN          TNS
 22          FCN          TNS
 23          FCN          TNS
 24          FCN          TNS
 25          FCN          TNS
 26          FCN          TNS
 27          FCN          TNS
 28          FCN          TNS
 29          FCN          TNS
 30          FCN          TNS
 31          FCN          TNS
 32          FCN          TNS
 33          FCN          TNS
 34          FCN          TNS
 35          FCN          TNS
 36          FCN          TNS
 37          FCN          TNS
 38          FCN          TNS
 39          FCN          TNS
 40          FCN          TNS

END
```

E1-PRI Route Data Blk, Protocol Side "User"

```
< RODAP:ROU=9;
ROUTE DATA

ROU   TYPE  VARC        VARI        VARO        FILTER

9     SL60  H'00000010  H'05400000  H'061 10000  NO

END
```

```
---------E1-PRI Route Data Blk,  protocol side "Network"-------------

< RODAP:ROU=9;
ROUTE DATA

ROU   TYPE  VARC        VARI        VARO        FILTER

9     SL60  H'00000010  H'05400000  H'063 10000  NO

END
```

List of Board Equipment

```
< SYEDP:LIM=1;

     SYSTEM EQUIPMENT DATA

     EQU           BOARDID   TYPE     DIR     ROU/TRU

     001-0-00-00        71   SL 63             1/001-01
     001-0-00-01        71   SL 63             1/001-02
     001-0-00-02        71   SL 63             1/001-03
     001-0-00-03        71   SL 63             1/001-04
     001-0-00-04        71   SL 63             1/001-05
     001-0-00-05        71   SL 63             1/001-06
     001-0-00-06        71   SL 63             1/001-07
     001-0-00-07        71   SL 63             1/001-08
     001-0-00-08        71   SL 63             1/001-09
     001-0-00-09        71   SL 63             1/001-10
     001-0-00-10        71   SL 63             1/001-11
     001-0-00-11        71   SL 63             1/001-12
     001-0-00-12        71   SL 63             1/001-13
```

```
001-0-00-13        71   SL 63              1/001-14
001-0-00-14        71   SL 63              1/001-15
001-0-00-15        71   SL 63              1/001-16
001-0-00-16        71   SL 63              1/001-17
001-0-00-17        71   SL 63              1/001-18
001-0-00-18        71   SL 63              1/001-19
001-0-00-19        71   SL 63              1/001-20
001-0-00-20        71   SL 63              1/001-21
001-0-00-21        71   SL 63              1/001-22
001-0-00-22        71   SL 63              1/001-23
001-0-00-23        71    -
001-0-10-00       102   AD 0
001-0-10-01       102   AD 0
001-0-10-02       102   AD 0
001-0-10-03       102   AD 0
001-0-10-04       102   AD 0
001-0-10-05       102   AD 0
001-0-10-06       102   AD 0
001-0-10-07       102   AD 0
001-0-10-08       102   AD 0
001-0-10-09       102   AD 0
001-0-10-10       102   AD 0
001-0-10-11       102   AD 0
001-0-10-12       102   AD 0
001-0-10-13       102   AD 0
001-0-10-14       102   AD 0
001-0-10-15       102   AD 0
001-0-10-16       102   AD 0
001-0-10-17       102   AD 0
001-0-10-18       102   AD 0
001-0-10-19       102   AD 0
001-0-10-20       102   AD 0
001-0-10-21       102   AD 0
001-0-10-22       102   AD 0
001-0-10-23       102   AD 0
001-0-10-24       102   AD 0
001-0-10-25       102   AD 0
001-0-10-26       102   AD 0
001-0-10-27       102   AD 0
001-0-10-28       102   AD 0
001-0-10-29       102   AD 0
001-0-10-30       102   AD 0
001-0-10-31       102   AD 0
001-0-20-00        71   SL 63              2/001-01
001-0-20-01        71   SL 63              2/001-02
001-0-20-02        71   SL 63              2/001-03
001-0-20-03        71   SL 63              2/001-04
001-0-20-04        71   SL 63              2/001-05
001-0-20-05        71   SL 63              2/001-06
001-0-20-06        71   SL 63              2/001-07
001-0-20-07        71   SL 63              2/001-08
001-0-20-08        71   SL 63              2/001-09
001-0-20-09        71   SL 63              2/001-10
001-0-20-10        71   SL 63              2/001-11
001-0-20-11        71   SL 63              2/001-12
001-0-20-12        71   SL 63              2/001-13
001-0-20-13        71   SL 63              2/001-14
001-0-20-14        71   SL 63              2/001-15
001-0-20-15        71   SL 63              2/001-16
001-0-20-16        71   SL 63              2/001-17
001-0-20-17        71   SL 63              2/001-18
001-0-20-18        71   SL 63              2/001-19
001-0-20-19        71   SL 63              2/001-20
001-0-20-20        71   SL 63              2/001-21
001-0-20-21        71   SL 63              2/001-22
001-0-20-22        71   SL 63              2/001-23
001-0-20-23        71    -
001-0-30-00        71   SL 63              3/001-01
001-0-30-01        71   SL 63              3/001-02
001-0-30-02        71   SL 63              3/001-03
001-0-30-03        71   SL 63              3/001-04
001-0-30-04        71   SL 63              3/001-05
```

```
001-0-30-05        71   SL 63              3/001-06
001-0-30-06        71   SL 63              3/001-07
001-0-30-07        71   SL 63              3/001-08
001-0-30-08        71   SL 63              3/001-09
001-0-30-09        71   SL 63              3/001-10
001-0-30-10        71   SL 63              3/001-11
001-0-30-11        71   SL 63              3/001-12
001-0-30-12        71   SL 63              3/001-13
001-0-30-13        71   SL 63              3/001-14
001-0-30-14        71   SL 63              3/001-15
001-0-30-15        71   SL 63              3/001-16
001-0-30-16        71   SL 63              3/001-17
001-0-30-17        71   SL 63              3/001-18
001-0-30-18        71   SL 63              3/001-19
001-0-30-19        71   SL 63              3/001-20
001-0-30-20        71   SL 63              3/001-21
001-0-30-21        71   SL 63              3/001-22
001-0-30-22        71   SL 63              3/001-23
001-0-30-23        71    -
001-0-40-00        52   TL 45              4/001-01
001-0-40-01        52   TL 45              4/001-02
001-0-40-02        52   TL 45              4/001-03
001-0-40-03        52   TL 45              4/001-04
001-0-40-04        52   TL 45              4/001-05
001-0-40-05        52   TL 45              4/001-06
001-0-40-06        52   TL 45              4/001-07
001-0-40-07        52   TL 45              4/001-08
001-0-40-08        52   TL 45              4/001-09
001-0-40-09        52   TL 45              4/001-10
001-0-40-10        52   TL 45              4/001-11
001-0-40-11        52   TL 45              4/001-12
001-0-40-12        52   TL 45              4/001-13
001-0-40-13        52   TL 45              4/001-14
001-0-40-14        52   TL 45              4/001-15
001-0-40-15        52   TL 45              4/001-16
001-0-40-16        52   TL 45              4/001-17
001-0-40-17        52   TL 45              4/001-18
001-0-40-18        52   TL 45              4/001-19
001-0-40-19        52   TL 45              4/001-20
001-0-40-20        52   TL 45              4/001-21
001-0-40-21        52   TL 45              4/001-22
001-0-40-22        52   TL 45              4/001-23
001-0-40-23        52   TL 45              4/001-24
001-0-50-00        31   OL 1      5011
001-0-60-00        69    -
001-0-60-01        69    -
001-0-60-02        69    -
001-0-60-03        69    -
001-0-70-00        42    -
001-0-70-01        42    -
001-0-70-02        42    -
001-0-70-03        42    -
001-0-70-04        42    -
001-0-70-05        42    -
001-0-70-06        42    -
001-0-70-07        42    -
001-0-70-08        42    -
001-0-70-09        42    -
001-0-70-10        42    -
001-0-70-11        42    -
001-0-70-12        42    -
001-0-70-13        42    -
001-0-70-14        42    -
001-0-70-15        42    -
001-0-70-16        42    -
001-0-70-17        42    -
001-0-70-18        42    -
001-0-70-19        42    -
001-0-70-20        42    -
001-0-70-21        42    -
001-0-70-22        42    -
001-0-70-23        42    -
```

```
001-0-70-24        42    -
001-0-70-25        42    -
001-0-70-26        42    -
001-0-70-27        42    -
001-0-70-28        42    -
001-0-70-29        42    -
001-0-70-30        42    -
001-0-70-31        42    -
001-1-00-00        52   TL 45              5/001-01
001-1-00-01        52   TL 45              5/001-02
001-1-00-02        52   TL 45              5/001-03
001-1-00-03        52   TL 45              5/001-04
001-1-00-04        52   TL 45              5/001-05
001-1-00-05        52   TL 45              5/001-06
001-1-00-06        52   TL 45              5/001-07
001-1-00-07        52   TL 45              5/001-08
001-1-00-08        52   TL 45              5/001-09
001-1-00-09        52   TL 45              5/001-10
001-1-00-10        52   TL 45              5/001-11
001-1-00-11        52   TL 45              5/001-12
001-1-00-12        52   TL 45              5/001-13
001-1-00-13        52   TL 45              5/001-14
001-1-00-14        52   TL 45              5/001-15
001-1-00-15        52   TL 45              5/001-16
001-1-00-16        52   TL 45              5/001-17
001-1-00-17        52   TL 45              5/001-18
001-1-00-18        52   TL 45              5/001-19
001-1-00-19        52   TL 45              5/001-20
001-1-00-20        52   TL 45              5/001-21
001-1-00-21        52   TL 45              5/001-22
001-1-00-22        52   TL 45              5/001-23
001-1-00-23        52   TL 45              5/001-24
001-1-10-00       102   AD 0
001-1-10-01       102   AD 0
001-1-10-02       102   AD 0
001-1-10-03       102   AD 0
001-1-10-04       102   AD 0
001-1-10-05       102   AD 0
001-1-10-06       102   AD 0
001-1-10-07       102   AD 0
001-1-10-08       102   AD 0
001-1-10-09       102   AD 0
001-1-10-10       102   AD 0
001-1-10-11       102   AD 0
001-1-10-12       102   AD 0
001-1-10-13       102   AD 0
001-1-10-14       102   AD 0
001-1-10-15       102   AD 0
001-1-10-16       102   AD 0
001-1-10-17       102   AD 0
001-1-10-18       102   AD 0
001-1-10-19       102   AD 0
001-1-10-20       102   AD 0
001-1-10-21       102   AD 0
001-1-10-22       102   AD 0
001-1-10-23       102   AD 0
001-1-10-24       102   AD 0
001-1-10-25       102   AD 0
001-1-10-26       102   AD 0
001-1-10-27       102   AD 0
001-1-10-28       102   AD 0
001-1-10-29       102   AD 0
001-1-10-30       102   AD 0
001-1-10-31       102   AD 0
001-1-20-00        77   KL 1     5000
001-1-20-01        77   KL 1     5001
001-1-20-02        77   KL 1     5002
001-1-20-03        77   KL 1     5003
001-1-20-04        77   KL 1     5006
001-1-20-05        77   KL 1     5007
001-1-22-00        87   EL 6     5004
001-1-22-01        87   EL 6     5005
```

```
001-1-30-00        27    -
001-1-30-01        27   TL 30            11/001-01
001-1-30-02        27   TL 30            11/001-02
001-1-30-03        27   TL 30            11/001-03
001-1-30-04        27   TL 30            11/001-04
001-1-30-05        27   TL 30            11/001-05
001-1-30-06        27   TL 30            11/001-06
001-1-30-07        27   TL 30            11/001-07
001-1-30-08        27   TL 30            11/001-08
001-1-30-09        27   TL 30            11/001-09
001-1-30-10        27   TL 30            11/001-10
001-1-30-11        27   TL 30            11/001-11
001-1-30-12        27   TL 30            11/001-12
001-1-30-13        27   TL 30            11/001-13
001-1-30-14        27   TL 30            11/001-14
001-1-30-15        27   TL 30            11/001-15
001-1-30-17        27   TL 30            11/001-16
001-1-30-18        27   TL 30            11/001-17
001-1-30-19        27   TL 30            11/001-18
001-1-30-20        27   TL 30            11/001-19
001-1-30-21        27   TL 30            11/001-20
001-1-30-22        27   TL 30            11/001-21
001-1-30-23        27   TL 30            11/001-22
001-1-30-24        27   TL 30            11/001-23
001-1-30-25        27   TL 30            11/001-24
001-1-30-26        27   TL 30            11/001-25
001-1-30-27        27   TL 30            11/001-26
001-1-30-28        27   TL 30            11/001-27
001-1-30-29        27   TL 30            11/001-28
001-1-30-30        27   TL 30            11/001-29
001-1-30-31        27   TL 30            11/001-30
001-1-40-00        57    -
001-1-40-01        57   SL 60             9/001-01
001-1-40-02        57   SL 60             9/001-02
001-1-40-03        57   SL 60             9/001-03
001-1-40-04        57   SL 60             9/001-04
001-1-40-05        57   SL 60             9/001-05
001-1-40-06        57   SL 60             9/001-06
001-1-40-07        57   SL 60             9/001-07
001-1-40-08        57   SL 60             9/001-08
001-1-40-09        57   SL 60             9/001-09
001-1-40-10        57   SL 60             9/001-10
001-1-40-11        57   SL 60             9/001-11
001-1-40-12        57   SL 60             9/001-12
001-1-40-13        57   SL 60             9/001-13
001-1-40-14        57   SL 60             9/001-14
001-1-40-15        57   SL 60             9/001-15
001-1-40-17        57   SL 60             9/001-17
001-1-40-18        57   SL 60             9/001-18
001-1-40-19        57   SL 60             9/001-19
001-1-40-20        57   SL 60             9/001-20
001-1-40-21        57   SL 60             9/001-21
001-1-40-22        57   SL 60             9/001-22
001-1-40-23        57   SL 60             9/001-23
001-1-40-24        57   SL 60             9/001-24
001-1-40-25        57   SL 60             9/001-25
001-1-40-26        57   SL 60             9/001-26
001-1-40-27        57   SL 60             9/001-27
001-1-40-28        57   SL 60             9/001-28
001-1-40-29        57   SL 60             9/001-29
001-1-40-30        57   SL 60             9/001-30
001-1-40-31        57   SL 60             9/001-31
001-1-50-00        57    -
001-1-50-01        57   SL 60            10/001-01
001-1-50-02        57   SL 60            10/001-02
001-1-50-03        57   SL 60            10/001-03
001-1-50-04        57   SL 60            10/001-04
001-1-50-05        57   SL 60            10/001-05
001-1-50-06        57   SL 60            10/001-06
001-1-50-07        57   SL 60            10/001-07
001-1-50-08        57   SL 60            10/001-08
001-1-50-09        57   SL 60            10/001-09
```

```
     001-1-50-10        57   SL 60            10/001-10
     001-1-50-11        57   SL 60            10/001-11
     001-1-50-12        57   SL 60            10/001-12
     001-1-50-13        57   SL 60            10/001-13
     001-1-50-14        57   SL 60            10/001-14
     001-1-50-15        57   SL 60            10/001-15
     001-1-50-17        57   SL 60            10/001-17
     001-1-50-18        57   SL 60            10/001-18
     001-1-50-19        57   SL 60            10/001-19
     001-1-50-20        57   SL 60            10/001-20
     001-1-50-21        57   SL 60            10/001-21
     001-1-50-22        57   SL 60            10/001-22
     001-1-50-23        57   SL 60            10/001-23
     001-1-50-24        57   SL 60            10/001-24
     001-1-50-25        57   SL 60            10/001-25
     001-1-50-26        57   SL 60            10/001-26
     001-1-50-27        57   SL 60            10/001-27
     001-1-50-28        57   SL 60            10/001-28
     001-1-50-29        57   SL 60            10/001-29
     001-1-50-30        57   SL 60            10/001-30
     001-1-50-31        57   SL 60            10/001-31
     001-1-60-00         7   TL 1              7/001-01
     001-1-60-01         7   TL 1              7/001-02
     001-1-60-02         7   TL 1              7/001-03
     001-1-60-03         7   TL 1              7/001-04
     001-1-62-00         8   TL 12             6/001-01
     001-1-62-01         8   TL 12             6/001-02
     001-1-62-02         8   TL 12             6/001-03
     001-1-62-03         8   TL 12             6/001-04
     001-1-63-00        26   TL 22             8/001-01
     001-1-63-01        26   TL 22             8/001-02
     001-1-63-02        26   TL 22             8/001-03

END
```

Cisco AS5300 Gateway Configuration

The following is the configuration of the Cisco AS5300 voice gateway connected to the Ericsson MD-110 PBX E1 PRI interface.

Cisco AS5300 Voice Gateway Version Information

```
5300_A#
5300_A#sho 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 (fc1)
BOOTFLASH: 5300 Software (C5300-BOOT-M), Version 12.0(4)T1,  RELEASE SOFTWARE (fc1)

5300_A uptime is 1 hour, 44 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

5300_A#
5300_A#sho diag
          ^
% Invalid input detected at '^' marker.

5300_A#sho controllers e1 0
E1 0 is down.
  Applique type is Channelized E1 - balanced
  Far End Block Errors Detected
  Receiver has loss of signal.
  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 (104 seconds elapsed):
     0 Line Code Violations, 0 Path Code Violations
     104 Slip Secs, 104 Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins
     0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 104 Unavail Secs
5300_A#
5300_A#
5300_A#sho run
Building configuration...

Current configuration : 2053 bytes
!
version 12.2
no service single-slot-reload-enable
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname 5300_A
!
logging rate-limit console 10 except errors
enable secret 5 $1$/.SG$h05ycqcEN3shrrgYfUUo91
enable password cisco
!
!
!
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-net5
!
!
```

```
!
!
!
fax interface-type vfc
mta receive maximum-recipients 0
!
!
controller E1 0
 clock source line primary
 pri-group timeslots 1-31
!
controller E1 1
 shutdown
!
controller E1 2
 shutdown
 clock source line secondary 2
!
controller E1 3
 shutdown
 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-net5
 isdn overlap-receiving
 isdn incoming-voice modem
 isdn T309-enable
 isdn T203 30000
 isdn T310 60000
 isdn bchan-number-order ascending
 no cdp enable
!
interface FastEthernet0
 ip address 1.1.1.1 255.255.255.0
 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 2...
 progress_ind setup enable 1
 session target ipv4:1.1.1.2
!
dial-peer voice 1 pots
 destination-pattern 5...
 direct-inward-dial
 port 0:D
 prefix 5

!
!
line con 0
 exec-timeout 0 0
 logging synchronous
 transport input none
line aux 0
line vty 0 4
 password cisco
 login
!
scheduler interval 1000
end

5300_A#
```

Caveats

Warning:
The Ericsson MD-110 PBX user interface is very cryptic. All parameters and options are mapped to position-dependent numeric fields within the various commands listed below. The user must have the correct revision of the Ericsson MD-110 PBX Administration manual to be able to decipher each field position to determine its meaning. Therefore it is advised not to make changes to an MD-110 PBX unless you know exactly what you are doing. A single number out of place in a command string can cause unusual behavior on the PBX.