

# Cisco 3660 Router - PBX Interoperability: Ericsson MD110 v. BC11 using BRI with H.323

## Introduction

This note describes the interoperability of the Ericsson MD110 v.BC11 PBX and the Cisco 3660 using a 2BRI VIC.

Tandem trunking to an analog station connected to an FXS port on the router was also tested.

It is **crucial** that the dial peer configuration for the router pointing to the Ethernet H.323 link, include one of the G711 codec type.

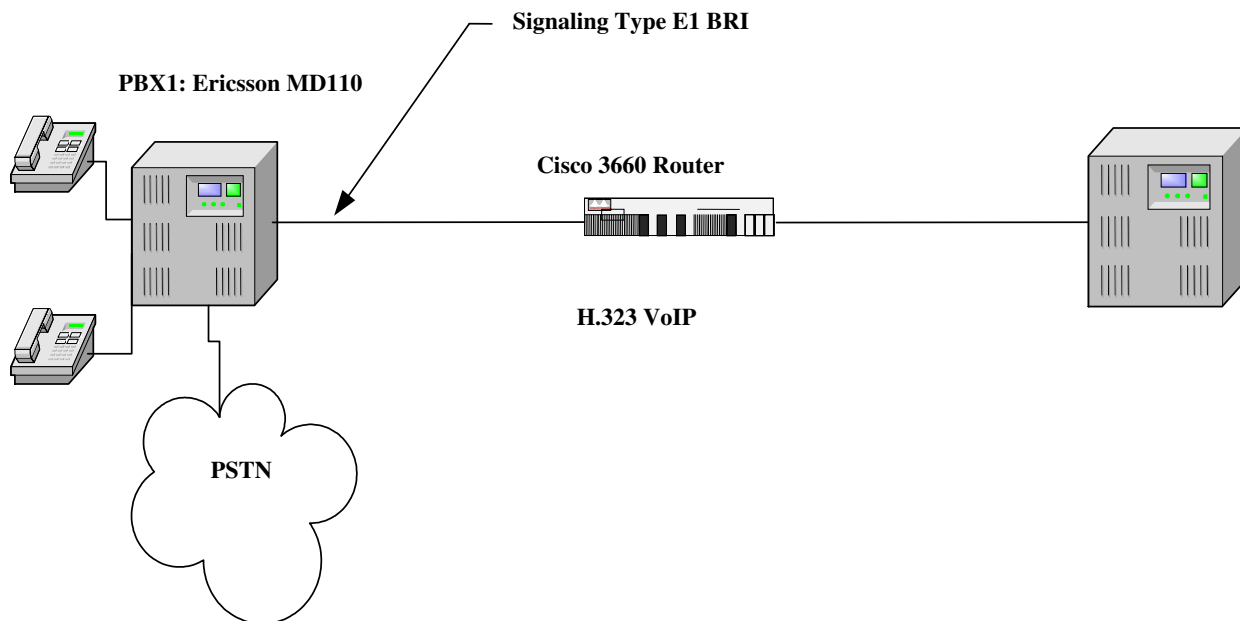
Otherwise, the conferencing features will work in one direction only.

The network topology diagram shows the end-to-end interoperability.

## Network Topology

Figure 1. Network Topology

### Basic Call Setup



## Limitations

Calling name is not supported.

Codec type (G711) must be specified for the dial peer pointing to the H323 link to support network conferencing.



## System Components

### Hardware Requirements

- Cisco 3660 router with 2 BRI Interfaces
- Ericsson MD110 v.BC11
- Ericsson TLU79 R 70 BRI ISDN interface

### Software Requirements

- Cisco IOS Release 12.2 (10b)
- PBX Software Release BC11

### Features Not Supported

- Calling name is not supported.
- Call forwarding could not be made to work with the Net3 ISDN protocol on the Ericsson Switch.

## Configuration

### Configuring the Ericsson MD110 PBX

#### BRI trunks

```
ROUTE CATEGORY DATA
ROU SEL          TRM SERV          NODG DIST DISL TRAF          SIG          BCAP
40 211000000070001 5 0010000011 0 30 128 00151515 111110000031 001100
```

```
STATUS INFORMATION AT 15:30:19 29JAN03
ROU TRU  TYPE TRAFFIC STATE/PTR  LINE STATE/PTR  ADD INFO
40 001-1  TL60  IDLE          #00D1 FREE          #00C0
40 001-2  TL60  IDLE          #00D0 FREE          #00C1
END
```

```
<RODAP:ROU=ALL;
ROUTE DATA
ROU  TYPE  VARC          VARI          VARO          FILTER
1   SL60  H'00001310    H'15440000    H'06400010    NO
6   TL30          H'00000036    H'00002016    NO
8   TL30  H'00000000    H'00002232    H'00002016    NO
39  SL60  H'00000310    H'05400000    H'06400000    NO
40  SL60  H'00000A14    H'3A820000    H'46414000    NO
41  SL60  H'00000A14    H'3A820000    H'46414000    NO
END
```

```
ROUTE EQUIPMENT DATA
ROU          TRU          EQU          SQU          INDDAT          CNTRL
1            001-1          001-0-30-01          H'000000000000
1            001-2          001-0-30-02          H'000000000000
1            001-3          001-0-30-03          H'000000000000
1            001-4          001-0-30-04          H'000000000000
1            001-5          001-0-30-05          H'000000000000
1            001-6          001-0-30-06          H'000000000000
1            001-7          001-0-30-07          H'000000000000
1            001-8          001-0-30-08          H'000000000000
1            001-9          001-0-30-09          H'000000000000
1            001-10         001-0-30-10          H'000000000000
1            001-11         001-0-30-11          H'000000000000
1            001-12         001-0-30-12          H'000000000000
1            001-13         001-0-30-13          H'000000000000
1            001-14         001-0-30-14          H'000000000000
1            001-15         001-0-30-15          H'000000000000
1            001-16         001-0-30-17          H'000000000000
1            001-17         001-0-30-18          H'000000000000
1            001-18         001-0-30-19          H'000000000000
1            001-19         001-0-30-20          H'000000000000
```



1	001-20	001-0-30-21	H'000000000000
1	001-21	001-0-30-22	H'000000000000
1	001-22	001-0-30-23	H'000000000000
1	001-23	001-0-30-24	H'000000000000
1	001-24	001-0-30-25	H'000000000000
1	001-25	001-0-30-26	H'000000000000
1	001-26	001-0-30-27	H'000000000000
1	001-27	001-0-30-28	H'000000000000
1	001-28	001-0-30-29	H'000000000000
1	001-29	001-0-30-30	H'000000000000
1	001-30	001-0-30-31	H'000000000000
8	001-1	001-0-00-01	
8	001-2	001-0-00-02	
8	001-3	001-0-00-03	
8	001-4	001-0-00-04	
8	001-5	001-0-00-05	
8	001-6	001-0-00-06	
8	001-7	001-0-00-07	
8	001-8	001-0-00-08	
8	001-9	001-0-00-09	
8	001-10	001-0-00-10	
8	001-11	001-0-00-11	
8	001-12	001-0-00-12	
8	001-13	001-0-00-13	
8	001-14	001-0-00-14	
8	001-15	001-0-00-15	
8	001-16	001-0-00-17	
8	001-17	001-0-00-18	
8	001-18	001-0-00-19	
8	001-19	001-0-00-20	
8	001-20	001-0-00-21	
8	001-21	001-0-00-22	
8	001-22	001-0-00-23	
8	001-23	001-0-00-24	
8	001-24	001-0-00-25	
8	001-25	001-0-00-26	
8	001-26	001-0-00-27	
8	001-27	001-0-00-28	
8	001-28	001-0-00-29	
8	001-29	001-0-00-30	
8	001-30	001-0-00-31	
40	001-1	001-0-42-00	H'000000000000
40	001-2	001-0-42-01	H'000000000000
41	001-1	001-0-42-02	H'000000000000
41	001-2	001-0-42-03	H'000000000000

END



## Configuring the Cisco 3660 Router

The following sample output shows the router configuration for the interoperability with the PBX.

```
Router#sh running-config
```

```
Building configuration...
```

```
Current configuration : 4514 bytes
!
version 12.2
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname 3660-A
!
voice-card 4
!
voice-card 6
!
ip subnet-zero
!
no ip domain-lookup
!
isdn switch-type primary-qsig
call rsvp-sync
!
voice service voip
!
fax interface-type fax-mail
mta receive maximum-recipients 0
!
controller T1 4/0
framing esf
clock source internal
linecode b8zs
pri-group timeslots 1-24
!
controller T1 4/1
framing esf
clock source internal
linecode b8zs
pri-group timeslots 1-24
!
controller E1 6/0
!
controller E1 6/1
!
interface FastEthernet0/0
ip address 10.1.1.205 255.255.255.0
ip accounting output-packets
duplex auto
speed auto
no cdp enable
!
interface Ethernet1/0
ip address 10.10.10.227 255.255.255.0
ip accounting output-packets
ip accounting precedence input
ip accounting precedence output
half-duplex
no cdp enable
!
interface Serial1/0
no ip address
shutdown
no fair-queue
no cdp enable
```



```
!  
interface BRI5/0  
no ip address  
isdn switch-type basic-net3  
isdn overlap-receiving  
isdn protocol-emulate network  
isdn tei-negotiation preserve  
isdn layer1-emulate network  
isdn incoming-voice voice  
isdn skipsend-idverify  
!  
interface BRI5/1  
no ip address  
isdn switch-type basic-net3  
isdn overlap-receiving  
isdn protocol-emulate network  
isdn tei-negotiation preserve  
isdn layer1-emulate network  
isdn incoming-voice voice  
isdn skipsend-idverify  
!  
interface Group-Async1  
physical-layer async  
ip address negotiated  
encapsulation ppp  
dialer in-band  
dialer string 2000X123456789012345678901234567  
dialer-group 5  
!  
router eigrp 1  
network 10.0.0.0  
no auto-summary  
no eigrp log-neighbor-changes  
!  
ip classless  
no ip http server  
ip pim bidir-enable  
!  
dialer-list 5 protocol ip permit  
no cdp run  
!  
snmp-server manager  
!  
voice-port 2/0/0  
!  
voice-port 2/0/1  
!  
voice-port 2/1/0  
!  
voice-port 2/1/1  
!  
voice-port 4/0:23  
!  
voice-port 4/1:23  
!  
voice-port 5/0/0  
compand-type a-law  
!  
voice-port 5/0/1  
compand-type a-law  
!  
dial-peer cor custom  
!  
dial-peer voice 7 voip  
destination-pattern 3900  
session target ipv4:10.1.1.204  
!  
dial-peer voice 4900 pots  
destination-pattern 4900  
port 2/0/0  
forward-digits all
```



```
!  
dial-peer voice 4901 pots  
  destination-pattern 4901  
  no digit-strip  
  port 2/0/1  
  forward-digits all  
!  
dial-peer voice 212 voip  
  destination-pattern 60.  
  session target ipv4:10.1.1.199  
  codec g711alaw  
!  
dial-peer voice 205 pots  
  destination-pattern 500.  
  direct-inward-dial  
  forward-digits all  
!  
dial-peer voice 305 voip  
  destination-pattern 500.  
  session target ipv4:10.1.1.227  
!  
dial-peer voice 110 voip  
  destination-pattern 4000  
  translate-outgoing called 10  
  session target ipv4:10.1.1.227  
!  
dial-peer voice 1002 pots  
  shutdown  
  destination-pattern 1025  
  direct-inward-dial  
  port 4/1:23  
  forward-digits all  
!  
dial-peer voice 111 voip  
  destination-pattern 4001  
  translate-outgoing called 10  
  session target ipv4:10.1.1.227  
!  
dial-peer voice 1001 pots  
  shutdown  
  destination-pattern 10.  
  direct-inward-dial  
  port 4/1:23  
  forward-digits all  
!  
dial-peer voice 605 pots  
  destination-pattern 1001  
  port 5/0/0  
  forward-digits all  
!  
dial-peer voice 606 pots  
  destination-pattern 1002  
  port 5/0/1  
  forward-digits all  
!  
dial-peer voice 610 voip  
  destination-pattern 200.  
  session target ipv4:10.10.10.10  
  codec g711ulaw  
!  
dial-peer voice 711 pots  
  destination-pattern 34....  
  port 5/0/0  
  forward-digits all  
!  
gatekeeper  
  shutdown  
!  
line con 0  
  exec-timeout 0 0  
line aux 0
```



```
line vty 0 4
  exec-timeout 0 0
  password cisco
  login
!
end
```



## Important Information

THE SPECIFICATIONS AND INFORMATION REGARDING THE PRODUCTS IN THIS MANUAL ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL STATEMENTS, INFORMATION, AND RECOMMENDATIONS IN THIS MANUAL ARE BELIEVED TO BE ACCURATE BUT ARE PRESENTED WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. USERS MUST TAKE FULL RESPONSIBILITY FOR THEIR APPLICATION OF ANY PRODUCTS.

IN NO EVENT SHALL CISCO OR ITS SUPPLIERS BE LIABLE FOR ANY INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOST PROFITS OR LOSS OR DAMAGE TO DATA ARISING OUT OF THE USE OR INABILITY TO USE THIS MANUAL, EVEN IF CISCO OR ITS SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.



### Corporate Headquarters

Cisco Systems, Inc.  
170 West Tasman Drive  
San Jose, CA 95134-1706  
USA  
www.cisco.com  
Tel: 408 526-4000  
800 553-NETS (6387)  
Fax: 408 526-4100

### European Headquarters

Cisco Systems International  
BV  
Haarlerbergpark  
Haarlerbergweg 13-19  
1101 CH Amsterdam  
The Netherlands  
www-europe.cisco.com  
Tel: 31 0 20 357 1000  
Fax: 31 0 20 357 1100

### Americas Headquarters

Cisco Systems, Inc.  
170 West Tasman Drive  
San Jose, CA 95134-1706  
USA  
www.cisco.com  
Tel: 408 526-7660  
Fax: 408 527-0883

### Asia Pacific Headquarters

Cisco Systems, Inc.  
Capital Tower  
168 Robinson Road  
#22-01 to #29-01  
Singapore 068912  
www.cisco.com  
Tel: +65 317 7777  
Fax: +65 317 7799

Cisco Systems has more than 200 offices in the following countries and regions. Addresses, phone numbers, and fax numbers are listed on **the Cisco Web site at [www.cisco.com/go/offices](http://www.cisco.com/go/offices).**

Argentina • Australia • Austria • Belgium • Brazil • Bulgaria • Canada • Chile • China PRC • Colombia • Costa Rica • Croatia • Czech Republic • Denmark • Dubai, UAE • Finland • France • Germany • Greece • Hong Kong SAR • Hungary • India • Indonesia • Ireland • Israel • Italy • Japan • Korea • Luxembourg • Malaysia • Mexico • The Netherlands • New Zealand • Norway • Peru • Philippines • Poland • Portugal • Puerto Rico • Romania • Russia • Saudi Arabia • Scotland • Singapore • Slovakia • Slovenia • South Africa • Spain • Sweden • Switzerland • Taiwan • Thailand • Turkey • Ukraine • United Kingdom • United States • Venezuela • Vietnam • Zimbabwe

Copyright 2003 Cisco Systems, Inc. All rights reserved. Cisco, Cisco Systems, and the Cisco Systems logo are registered trademarks or trademarks of Cisco Systems, Inc. and/or its affiliates in the U.S. and certain other countries. All other trademarks mentioned in this document or Web site are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (0301R)