Understanding ISDN BRI Voice Interface Cards

Contents

Introduction
Prerequisites
Requirements
Components Used
Conventions
Product Numbers
Features
Features not Supported
Configuration
Platform Support
Known Issues
Application
Related Information

Introduction

ISDN Voice Interface Cards (VICs) such as VIC-2BRI-S/T-TE connect directly to Public Switched Telephone Networks (PSTNs), Private Branch Exchanges (PBX), and Private Access Branch Exchanges (PABX), supporting both on-premise and off-premise connections.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

The document discusses the following ISDN BRI VICs:

- VIC-2BRI-S/T-TE
- VIC-2BRI-NT/TE
- VIC2-2BRI-NT/TE

Conventions

For more information on document conventions, refer to the Cisco Technical Tips Conventions.

Product Numbers

Product Number	Description
VIC-2BRI-S/T-TE	Two-port ISDN BRI VIC, S/T interface, Terminal Equipment (TE)
VIC-2BRI-NT/TE	Two-port ISDN BRI VIC, S/T interface, Network Termination (NT) or TE
VIC2-2BRI-NT/TE	Two-port ISDN BRI VIC, S/T interface, NT or TE

Features

This table lists the features that are supported on ISDN BRI VICs:

Feature	Description
Voice Ports	Two ISDN BRI, total of four B channels, therefore four voice calls per VIC.
ISDN Interface	ISDN BRI S/T RJ-45
Connections	**VIC-2BRI-S/T-TE**—Provides TE ISDN interface. Connects to the telco central office switch or a PBX that provides NT. You cannot connect ISDN phones or faxes to this VIC (it would require NT implementation). **VIC-2BRI-NT/TE**—Provides TE or NT. **VIC2-2BRI-NT/TE**—Provides TE or NT. Connects as network side or user side to PBX or key system as off-premises connections (ISDN voice BRI). Supports patent-pending flexible Layer 2 (L2) and Layer 3 (L3) configurations.
ISDN Switch Types	Supports all Cisco IOS® Software ISDN BRI switch types.

The VIC2-2BRI-NT/TE cards are new generation VICs that are a hardware refresh of the older cards of the similar functionality, with resolved manufacture component issues. New functionality is also introduced on these BRI cards (which reduces the number of Stock Keeping Units (SKUs) required).

The VIC2-2BRI-NT/TE is supported on NM-HD-1V, NM-HD-2V, and NM-HD-2VE, where as the VIC-2BRI-S/T-TE and VIC-2BRI-NT/TE are currently supported on NM-1V/2V.

Features not Supported

This is a list of the features that are not supported on ISDN BRI VICs:

- ISDN supplementary services
- Data calls on the B channels
- Group 4 fax (ISDN digital fax)
- Calls on the ISDN D channel
- When you use the VIC-2BRI-S/T-TE with a NM-1V, you are only able to place two calls. The second BRI port is shut down.
- When you use the VIC-2BRI-S/T-TE with a NM-2V, you can place four calls. If you have another VIC in the second slot, the second BRI port on the VIC-2BRI-S/T-TE is shut down.
- The ISDN BRI VICs are only supported for connectivity to another switching system (for example: a PBX or to the PSTN). Connectivity to ISDN BRI phones is not supported.

Configuration

The ISDN parameters are configured similar to a data ISDN BRI interface.

Note: The **isdn incoming-voice modem** command is required to route the voice call to the digital signal processor (DSP) on the Voice Network Module. For additional information on this command, refer to isdn incoming-voice modem.

For the configuration of voice features in Cisco IOS Software, refer to Voice over IP for the Cisco 3600 Series.

Note: In Cisco IOS Software, issue the **voice-port *<slot>/<VIC slot>/<unit>*** global configuration command in order to configure the voice port parameters.

The commands used to configure VoIP on Cisco routers are very similar on all of the router platforms shown in this table.

For configuration of voice features in Catalyst OS (CatOS) on a Catalyst 4000, refer to Configuring the Voice Interfaces.

Platform Support

Cisco IOS Support [1]	**1751, 1760[3]**	**2600**	**2600XM /2650XM**	**3620[4], 3640 [2]**	**3660 [2]**	**2691, 3725, 3745**	**VG200**
VIC-2BRI-S/T-TE 2-Port ISDN BRI VIC, S/T	Not Supported	12.0(2)XD, 12.0(3)T, 12.0XK, 12.1(1), 12.1(1)T,	All Cisco IOS Software Versions		12.0(7)XK, 12.1(1)T, 12.1(5)YB,	All Versions	All Cisco IOS Software Ver

interface, TE		12.2(1), 12.2(2)T ,12.2(2)XT, 12.2(11)YT, 12.3(1)			12.1(5)YD, 12.2(1), 12.2(2)T, 12.2(2)XT, 12.2(11)YT, 12.2(15)ZJ, 12.3(1), 12.3(2)T		sions
VIC-2BRI-NT-TE 2-Port ISDN BRI VIC, S/T interface, NT, TE	All Versions	12.1(3)XI, 12.1(5)T ,12.1(5)YB, 12.1(5)YD, 12.2(1), 12.2(2)T , 12.2(2)XT, 12.2(11)YT, 12.3(1)	12.2(8)T1,12.2(11)T, 12.2(11)YT, 12.2(12) , 12.2(15)ZJ, 12.3(1), 12.3(2)T	12.1(3)XI, 12.1(5)T, 12.1(5)YB, 12.1(5)YD, 12.2(1), 12.2(2)T, 12.2(2)XT, 12.2(11)YT, 12.2(15)ZJ, 12.3(1)	12.1(3)XI, 12.1(5)T, 12.1(5)YB, 12.1(5)YD, 12.2(1), 12.2(2)T, 12.2(2)XT, 12.2(11)YT, 12.2(15)ZJ, 12.3(1)	12.2(11)YT, 12.2(13)T, 12.2(15)ZJ, 12.3(1), 12.3(2)T, 12.3(4)XD	12.1(5)T, 12.2(1) , 12.2(2)T, 12.3(1)
VIC2-2BRI-NT-TE 2-Port ISDN BRI	12.2(15)ZL, 12.3(2)XA,	Not Supported	12.2(15)ZJ, 12.3(4)T	12.2(15)ZJ, 12.3(4)T (Not	12.2(15)ZJ, 12.3(4)T	12.2(15)ZJ, 12.3(4)T, 12.3	Not Supported

VIC, S/T interface, NT, TE	12.3(2)XC, 12.3(2)XE, 12.3(4)T, 12.3(5)			supported for Cisco 3620.[4])		(4)XD	

[1] Voice requires a Cisco IOS Software Voice feature set on the 1700 series router, and a Cisco IOS Software Plus feature set on the 2600/3600 series router.

[2] Voice is not supported on the 3631 router.

[3]Cisco 1750 router platforms do not support the BRI VICs.

[4]Cisco 3620 series routers do not support the VIC2-2BRI-NT-TE cards.

Known Issues

Some of the known issues with the BRI VICs are discussed in this section.

When the BRI voice interfaces are configured, this error message is received:

```
%C542-1-INSUFFICIENT_DSPS: VNM(1), cannot support all voice channels on VICs.
```

This is because the VIC-2BRI-S/T-TE can have more B channels than the Voice Network Module can handle. The NM-1V can handle two voice calls (has two DSPs). The NM-2V can handle four voice calls (four DSPs). For more information on this, refer to the error message %C542-1-INSUFFICIENT_DSPS (registered customers only) in the Error Message Decoder (registered customers only)

Another known problem is due to Cisco bug ID CSCdv00152 (registered customers only) .

The **compand-type a-law** command does not exist on the CLI for a BRI port.

This bug restricted the use of the to North America, as it resulted in the wrong compand decoding being applied and caused distorted voice. It was introduced in Cisco IOS Software Releases12.2(2) and 12.2(3)T, and corrected in the 12.2(5) and 12.2(8)T releases.

Application

One of the applications of the BRI VICs is shown in this example. Observe that the BRI VIC can be directly connected to the PSTN or the ISDN PBX.

Note: The Cisco IOS software releases provided are typically the minimum version required to support the platform, module, or feature in question. To find out a complete list of Cisco IOS

Software releases a feature, module, interface card, or chassis is supported in, refer to the Software Advisor (registered customers only) tool.

Note: Refer to the Command Lookup Tool (registered customers only) for more information on the commands given in this document.

Related Information

- **Configuring an ISDN BRI NT/TE Interface on Voice Interface Cards and ISDN BRI Voice Modules**
- **Configuring Network Side ISDN BRI Voice Interface Cards**
- **Using the show isdn status Command for BRI Troubleshooting**
- **Voice Technology Support**
- **Voice and Unified Communications Product Support**
- **Troubleshooting Cisco IP Telephony**
- **Technical Support & Documentation - Cisco Systems**