



ISDN Basic Rate Service Setup Commands

This chapter describes the commands available to configure ISDN basic rate interfaces for dial-up solutions on your router.

For configuration tasks and examples to get the ISDN line up and running, see the “Setting Up ISDN Basic Rate Service” chapter of the *Dial Solutions Configuration Guide*. To complete the configuration for dial-in or dial-out routing or bridging, see the relevant chapters in the “Dial-on-Demand Routing” part of the *Dial Solutions Configuration Guide*.

interface bri

To configure a Basic Rate Interface (BRI) interface and enter interface configuration mode, use the **interface bri** global configuration command.

```
interface bri number  
interface bri slot/port (Cisco 7200 series)
```

To configure a BRI subinterface only, use the following form of the **interface bri** global configuration command:

```
interface bri number.subinterface-number [multipoint | point-to-point]  
interface bri slot/port.subinterface-number [multipoint | point-to-point] (Cisco 7200 series)
```

Syntax Description

<i>number</i>	Port, connector, or interface card number. The numbers are assigned at the factory at the time of installation or when added to a system, and can be displayed with the show interfaces command.
<i>slot/port</i>	Backplane slot number and port number on the interface. See your hardware installation manual for the specific slot and port numbers.
<i>.subinterface-number</i>	Subinterface number in the range 1 to 4294967293. The <i>number</i> or <i>slot/port</i> that precedes the period (.) must match that of the interface this subinterface belongs to.
multipoint point-to-point	(Optional) Specifies a multipoint or point-to-point subinterface. The default is multipoint .

Default

The default mode for subinterfaces is multipoint.

Command Mode

Global configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 10.3.

This command was modified in Cisco IOS Release 11.2 P to include slot/port syntax for the PA-8B-ST and PA-4B-U port adapters on Cisco 7200 series routers.

Subinterfaces can be configured to support partially meshed Frame Relay networks. (Refer to the “Configuring Frame Relay” chapter in the *Wide-Area Networking Configuration Guide*.)

Example

The following example configures BRI 0 to call and receive calls from two sites, use Point-to-Point Protocol (PPP) encapsulation on outgoing calls, and use Challenge Handshake Authentication Protocol (CHAP) authentication on incoming calls:

```
interface bri 0
  encapsulation ppp
  no keepalive
  dialer map ip 131.108.36.10 name EB1 234
  dialer map ip 131.108 36.9 name EB2 456
  dialer-group 1
  isdn spid1 41346334600101 4633460
  isdn spid2 41346334610101 4633461
  isdn T200 1000
  ppp authentication chap
```

Related Commands

You can use the master indexes or search online to find documentation of related commands.

- dialer map**
- dialer-group**
- encapsulation ppp**
- isdn spid1**
- isdn spid2**
- ppp authentication chap**
- ppp authentication pap**
- show interfaces bri**

isdn answer1, isdn answer2

To have the router verify a called-party number or subaddress number in the incoming setup message for ISDN BRI calls, if the number is delivered by the switch, use the **isdn answer1** interface configuration command. To remove the verification request, use the **no** form of this command.

```
isdn answer1 [called-party-number][:subaddress]  
no isdn answer1 [called-party-number][:subaddress]
```

To have the router verify an *additional* called-party number or subaddress number in the incoming setup message for ISDN BRI calls, if the number is delivered by the switch, use the **isdn answer2** interface configuration command. To remove this second verification request, use the **no** form of this command.

```
isdn answer2 [called-party-number][:subaddress]  
no isdn answer2 [called-party-number][:subaddress]
```

Syntax Description

<i>called-party-number</i>	(Optional) Telephone number of the called party. At least one value— <i>called-party-number</i> or <i>subaddress</i> —must be specified.
:	Identifies the number that follows as a subaddress. Use the colon (:) when you configure both the called party number and the subaddress, or when you configure only the subaddress.
<i>subaddress</i>	(Optional) Subaddress number, 20 or fewer characters long, used for ISDN multipoint connections. At least one value— <i>called-party-number</i> or <i>subaddress</i> —must be specified.

Default

The router does not verify the called-party or subaddress number.

Command Mode

Interface configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 10.3.

If you do not specify the **isdn answer1** or **isdn answer2** command, all calls are processed and/or accepted. If you specify the **isdn answer1** or **isdn answer2** command, the router must verify the incoming called-party number and the subaddress before processing and/or accepting the call. The verification proceeds from right to left for the called-party number; it also proceeds from right to left for the subaddress number.

You can configure just the called-party number or just the subaddress. In such a case, only that part is verified. To configure a subaddress only, include the colon (:) before the subaddress number.

You can declare a digit a “don’t care” digit by configuring it as an *x* or *X*. In such a case, any incoming digit is allowed.

Examples

In the following example, 5552222 is the called-party number and 1234 is the subaddress:

```
interface bri 0
  isdn answer1 5552222:1234
```

In the following example, only the subaddress is configured:

```
interface bri 0
  isdn answer1 :1234
```

isdn caller

To configure ISDN caller ID screening, use the **isdn caller** interface configuration command. To disable ISDN caller ID screening, use the **no** form of this command.

isdn caller *number*
no isdn caller *number*

Syntax Description

number Telephone number for which to screen. Specify an *x* to represent a single “don’t-care” character. The maximum length of each number is 25 characters.

Default

Disabled

Command Mode

Interface configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 10.3.

This command configures the router to accept calls from the specified number.

Caller ID screening is available on Cisco platforms that have one or more BRIs.

Note Caller ID screening requires a local switch that is capable of delivering the caller ID to the router. If you enable caller ID screening but do not have such a switch, no calls are allowed in.

Examples

The following example configures the router to accept a call with a delivered caller ID equal to 4155551234:

```
isdn caller 4155551234
```

The following example configures the router to accept a call with a delivered caller ID having 41555512 and any numbers in the last two positions:

```
isdn caller 41555512xx
```

Related Commands

You can use the master indexes or search online to find documentation of related commands.

show dialer

isdn calling-number

To configure an ISDN BRI interface to present the calling number of the device making the outgoing call, use the **isdn calling-number** interface configuration command. To remove a previously configured calling number, use the **no** form of this command.

```
isdn calling-number calling-number  
no isdn calling number
```

Syntax Description

<i>calling-number</i>	Number of the device making the outgoing call; only one entry is allowed, and it is limited to 16 digits.
-----------------------	---

Default

No calling number is presented.

Command Mode

Interface configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 10.3.

An interface can have only one ISDN calling-number entry.

This command is intended for use when the ISDN network offers TS014 tariffing, in which devices present the calling (billing) number.

Note This command cannot be used with German 1TR6 ISDN BRI switches. It can be used with all other switches.

Example

In the following example, the ISDN BRI interface is configured to present the number 5551212 when it makes outgoing calls:

```
interface bri 0  
  isdn calling-number 5551212
```

Related Commands

You can use the master indexes or search online to find documentation of related commands.

interface bri

isdn fast-rollover-delay

To control the timing between successive attempts, use the **isdn fast-rollover-delay** interface configuration command. Use the **no** form of this command to remove or change a value.

isdn fast-rollover-delay *seconds*
no isdn fast-rollover-delay

Syntax Description

seconds Number of seconds between dial attempts.

Default

No default timer.

Command Mode

Interface configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 11.1.

This command provides a timer separate from the dialer wait-for-carrier timer to control the amount of time that elapses before calls are redialed. This delay is provided to allow the old call to be torn down completely before the new call is attempted.

This command is necessary on some ISDN switches because the new call may be attempted before the old call is completely torn down. This causes the second call or the call back to fail.

Use this command when *all* the following conditions are true:

- A BRI has two phone numbers configured, one for each B-channel.
- You are dialing into this BRI.
- You have a dialer map or dialer string for each phone number.
- The first call succeeds but the second call continuously fails.

If this has occurred, set **isdn fast-rollover-delay** to 5 seconds and try again.

When these conditions occur, set the **isdn fast-rollover-delay** command to 5 seconds and try again. A delay of 5 seconds should cover most cases. Configure sufficient delay to make sure the ISDN RELEASE_COMPLETE message has been sent or received before making the fast rollover call. Use the **debug isdn q931** command to display this information.

When the **isdn fast-rollover-delay** command is configured on a client requesting callback, the callback client first confirms whether or not the callback server has placed a call back to the callback client before dialing any subsequent numbers.

Example

The following partial example sets the fast-rollover delay that is suggested when all the conditions specified above are true.

```
isdn fast-rollover-delay 5
```

Related Commands

You can use the master indexes or search online to find documentation of related commands.

dialer map
dialer wait-for-carrier
ppp callback

isdn incoming-voice data

To answer incoming voice calls at a configured rate (overriding the incoming data rate in the call), use the **isdn incoming-voice data** interface configuration command. Use the **no** form of this command to remove the configured incoming data rate.

isdn incoming-voice data [56 | 64]
no isdn incoming-voice data

Syntax Description

56	(Optional) Answers all voice calls at 56 kbps.
64	(Optional) Answers all voice calls at 64 kbps.

Default

Isdn incoming-voice data is not applied.

Command Mode

Interface configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

When used without a keyword, this command checks the bearer capacity.

If this command is used, the dialing side must dial at 56 kbps.

Ordinarily, a data device ignores incoming voice calls, but the tariff structure for data and voice calls might make “data over voice” calls less expensive.

Example

The following example configures BRI interface 0 to answer all incoming voice calls at 56 kbps:

```
interface bri 0
  isdn incoming-voice data 56
```

isdn negotiate-bchan

To enable the router to accept a B channel that is different from the B channel requested in the outgoing call setup message, use the **isdn negotiate-bchan** interface configuration command. To restore the default condition, use the **no** form of this command.

isdn negotiate-bchan

no isdn negotiate-bchan

Syntax Description

This command has no arguments or keywords.

Default

B-channel negotiation is not enabled. Most PRI switch types set the default channel ID to Exclusive in the setup message.

Command Mode

Interface configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 11.3.

The **isdn negotiate-bchan** command enables the router to negotiate the B channel by setting the channel ID information element to Preferred in the setup message. If this command is not configured, the channel ID is set to the default of the switch, which is usually Exclusive. Exclusive means that only the requested B channel is accepted; if the requested B channel is not available, the call is cleared.

The **isdn negotiate-bchan** command is supported for all PRI switch types.

Example

The following example enables an alternate B channel for serial interface 0:23:

```
interface serial0:23
 isdn negotiate-bchan
```

Related Commands

isdn bchan-number-order
isdn switch-type (PRI)

isdn not-end-to-end

For incoming calls, to override the speed that the network reports it will use to deliver the call data, use the **isdn not-end-to-end** interface configuration command. Use the **no** form of this command to disable the configured end-to-end speed.

isdn not-end-to-end {56 | 64}
no isdn not-end-to-end

Syntax Description

- 56** Answers all voice calls at 56 kbps.
- 64** Answers all voice calls at 64 kbps.

Default

The default line speed is 64 kbps.

Command Mode

Interface configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 10.3.

This command might be needed to handle incoming calls properly. Although a call might originate at a speed of 56 kbps, the network or internetworking networks might improperly deliver the call to the user at a speed of 64 kbps. This creates a speed mismatch and causes the data to be garbled. Enabling this command makes the router look more closely at the information elements of the incoming call to determine a speed.

A speed mismatch can occur when the source and destination ISDN ports do not belong to the same network.

Example

The following example sets the line speed for incoming calls to 56 kbps:

```
isdn not-end-to-end 56
```

isdn sending-complete

To specify that the Sending Complete information element (IE) is included in the outgoing Setup message, use the **isdn sending-complete** interface configuration command. Use the **no** form of this command to disable the Sending Complete information element.

isdn sending-complete
no isdn sending-complete

Syntax Description

This command has no arguments and keywords.

Default

This command is disabled by default.

Command Mode

Interface configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

Some switches in some countries want a Sending Complete information element to be included in the outgoing Setup message to indicate that the entire number is included. The Sending Complete IE is required in Hong Kong and Taiwan, and the **isdn sending-complete** command forces it to be sent.

Example

In the following example, the **isdn sending-complete** command applies to an ISDN BRI interface:

```
interface BRI0
  description connected to PBX 61886
  ip address 172.1.1.1 255.255.255.0
  encapsulation ppp
  isdn sending-complete
  dialer idle-timeout 20
  dialer map ip 172.1.1.2 name rudder 61884
  dialer map ip 172.1.1.3 name bosun 61885
  dialer-group 1
  ppp authentication chap
!
```

isdn spid1

Use the **isdn spid1** interface configuration command on the router to define the service profile identifier (SPID) number that has been assigned by the ISDN service provider for the B1 channel. Use the **no** form of this command to disable the specified SPID, thereby preventing access to the switch.

```
isdn spid1 spid-number [ldn]  
no isdn spid1 spid-number [ldn]
```

Syntax Description

<i>spid-number</i>	Number identifying the service to which you have subscribed. This value is assigned by the ISDN service provider and is usually a 10-digit telephone number with additional digits.
<i>ldn</i>	(Optional) Local directory number (LDN), which is a 7-digit number assigned by the service provider. This information is delivered by the switch in the incoming setup message. If you include the local directory number in the no form of this command, access to the switch is permitted, but the other B channel may not be able to receive incoming calls.

Default

No SPID number is defined.

Command Mode

Interface configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 10.3.

This command is required for DMS-100 and National ISDN switches only.

Typically, DMS-100 and National ISDN switch implementations using BRI interfaces with SPIDS require two two TEIs, two SPIDS, and two phone numbers. If you want to take advantage of both B channels, it is advised you configure the router with the LDN value after the SPID.

The ISDN switch checks for the LDN to determine whether both channels can be used to transmit and receive data. If there isn't an LDN present, then only the B1 channel can be used for full-duplex communication. However, the B2 channel can still be used to make outgoing calls.

Note Some DMS-100 and National ISDN switch installations may be configured as a “hunt group” whereby all calls are initially forwarded to the primary number. Under these circumstances, you should not configure the LDN. You can determine this by enabling the **debug isdn q931** command. If the end point identifier (EID) information element is delivered in the incoming setup message, then the switch is addressing the TEIs with the EID, instead of the LDN.

Example

The following example defines, on the router, a SPID and LDN for the B1 channel:

```
isdn spid1 41555512130101 5551213
```

isdn spid2

Use the **isdn spid2** interface configuration command on the router to define the service profile identifier (SPID) number that has been assigned by the ISDN service provider for the B1 channel. Use the **no** form of this command to disable the specified SPID, thereby preventing access to the switch.

```
isdn spid2 spid-number [ldn]  
no isdn spid2 spid-number [ldn]
```

Syntax Description

<i>spid-number</i>	Number identifying the service to which you have subscribed. This value is assigned by the ISDN service provider and is usually a 10-digit telephone number with additional digits.
<i>ldn</i>	(Optional) Local directory number (LDN), which is a 7-digit number assigned by the service provider. This information is delivered by the switch in the incoming setup message. If you include the local directory number in the no form of this command, access to the switch is permitted, but the other B channel may not be able to receive incoming calls.

Default

No SPID number is defined.

Command Mode

Interface configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 10.3.

This command is required DMS-100 and National ISDN switches only.

Typically, DMS-100 and National ISDN switch implementations using BRI interfaces with SPIDS require two two TEIs, two SPIDS, and two phone numbers. If you want to take advantage of both B channels, it is advised you configure the router with the LDN value after the SPID.

The ISDN switch checks for the LDN to determine whether both channels can be used to transmit and receive data. If there isn't an LDN present, then only the B1 channel can be used for full-duplex communication. However, the B2 channel can still be used to make outgoing calls.

Note Some DMS-100 and National ISDN switch installations may be configured as a “hunt group” whereby all calls are initially forwarded to the primary number. Under these circumstances, you should not configure the LDN. You can determine this by enabling the **debug isdn q931** command. If the end point identifier (EID) information element is delivered in the incoming setup message, then the switch is addressing the TEIs with the EID, instead of the LDN.

Example

The following example defines, on the router, a SPID and LDN for the B2 channel:

```
isdn spid2 41555512140101 5551214
```

isdn switch-type

To specify the central office switch type on the ISDN interface, use the **isdn switch-type** global and interface configuration command.

isdn switch-type *switch-type*

Syntax Description

switch-type Service provider switch type; see Table 35 for a list of supported switches.

Default

The switch type defaults to **none**, which disables the switch on the ISDN interface.

Command Mode

Global and interface configuration

Usage Guidelines

This command first appeared as a global command in Cisco IOS Release 9.21
 This command first appeared as an interface command in Cisco IOS Release 11.3T.

To disable the switch on the ISDN interface, specify **isdn switch-type none**.

Table 35 lists supported BRI switch types by geographic area.

Note If you are using the Multiple ISDN Switch Types feature to apply ISDN switch types to different interfaces, refer to the “Setting Up ISDN Basic Rate Service” chapter in the *Dial Solutions Configuration Guide* for additional details

Table 35 ISDN Service Provider BRI Switch Types

Keywords by Area	Switch Type
none	No switch defined
Australia and Europe	
basic-1tr6	German 1TR6 ISDN switches
basic-net3	NET3 ISDN, Norway NET3, Australia NET3, and New Zealand NET3 switches (covers the Euro-ISDN E-DSS1 signaling system and is ETSI-compliant)
vn3	French VN3 and VN4 ISDN BRI switches
Japan	
ntt	Japanese NTT ISDN switches
North America	
basic-5ess	AT&T basic rate switches
basic-dms100	Northern Telecom DMS-100 basic rate switches
basic-ni	National ISDN switches

Note Cisco IOS Release 11.3T introduced ISDN switch type changes. The command parser will still accept the following switch types: basic-nwnet3, vn2, and basic-net3; however, when viewing the NVRAM configuration, the basic-net3 or vn3 switch types are displayed respectively.

Examples

The first example configures the French VN3 ISDN switch type:

```
isdn switch-type vn3
```

The following example uses the Multiple ISDN Switch Types feature and shows the global ISDN switch type of basic-ni (formerly basic-ni1) and an interface level switch type of basic-net3. ISDN switch type basic-net3 is applied to BRI interface 0 and overrides the global switch setting.

```
isdn switch-type basic-ni
!
interface BRI0
  isdn switch-type basic-net3
```

isdn tei

To configure when Layer 2 becomes active and ISDN terminal endpoint identifier (TEI) negotiation occurs, use the **isdn tei** interface configuration and global configuration command. To remove TEI negotiation from an interface, use the **no** form of this command.

isdn tei [first-call | powerup]
no isdn tei

Syntax Description

- first-call** (Optional) ISDN TEI negotiation should occur when the first ISDN call is placed or received.
- powerup** (Optional) ISDN TEI negotiation should occur when the router is powered on.

Default

powerup

Command Mode

Interface configuration and global configuration

Usage Guidelines

This command first appeared as a global configuration command in Cisco IOS Release 9.21. This command first appeared as an interface level configuration command in Cisco IOS Release 11.3 T.

This command is for BRI configuration only.

This command is useful for switches that may deactivate Layers 1 and 2 when there are no active calls or primary-dms100 switches which activate TEI when the first ISDN call is placed or received.

Example

The following example applies **isdn tei first-call** to BRI interface 0. BRI interface 1 will use **isdn tei negotiation powerup**, which is the default setting. Default settings do not appear in the router configuration.

```
isdn switch-type basic-net
!
interface bri0
! Configure the ISDN switch type on this interface and set TEI negotiation to
! first-call
isdn switch-type basic-ni
isdn tei first-call
! BRI interface 1 uses the default TEI negotiation value
interface bri1
```

isdn twait-disable

To delay a National ISDN BRI switch a random time before activating the Layer 2 interface when the switch starts up, use the **isdn twait-disable** interface configuration command.

isdn twait-disable

Syntax Description

This command has no arguments and keywords.

Default

This command is enabled by default.

Command Mode

Interface configuration

Usage Guidelines

This command first appeared as a global configuration command in Cisco IOS Release 11.3.

This random-length delay prevents mass power failures from causing the network ISDN switches to be overwhelmed when power returns and all the devices startup at the same time.

The random delay is in the range 1 to 300 seconds.

Example

The following example configures a random wait period after a power failure:

```
isdn twait-disable
```

show controllers bri

To display information about the ISDN Basic Rate Interface (BRI), use the **show controllers bri** privileged EXEC command.

show controllers bri *number*
show controllers bri *slot/port* (Cisco 7200 series)

Syntax Description

<i>number</i>	Interface number. The value is 0 through 7 if the router has one 8-port BRI network interface module (NIM), or 0 through 15 if the router has two 8-port BRI NIMs. Interface number values will vary, depending on the hardware platform used. The Cisco 3600 series router for example, can have up to 48 interfaces.
<i>slot/port</i>	Backplane slot number and port number on the interface. See your hardware installation manual for the specific slot and port numbers.

Command Mode

Privileged EXEC

Usage Guidelines

This command first appeared in Cisco IOS Release 10.3.

This command was modified in Cisco IOS Release 11.2 P to include slot/port syntax for the PA-8B-ST and PA-4B-U port adapters on Cisco 7200 series routers.

Sample Display

The following is sample output from the **show controllers bri** command:

```
Router# show controllers bri 0

BRI unit 0
D Chan Info:
Layer 1 is ACTIVATED
idb 0x32089C, ds 0x3267D8, reset_mask 0x2
buffer size 1524
RX ring with 2 entries at 0x2101600 : Rxhead 0
00 pak=0x4122E8 ds=0x412444 status=D000 pak_size=0
01 pak=0x410C20 ds=0x410D7C status=F000 pak_size=0
TX ring with 1 entries at 0x2101640: tx_count = 0, tx_head = 0, tx_tail = 0
00 pak=0x000000 ds=0x000000 status=7C00 pak_size=0
0 missed datagrams, 0 overruns, 0 bad frame addresses
0 bad datagram encapsulations, 0 memory errors
0 transmitter underruns
B1 Chan Info:
Layer 1 is ACTIVATED
idb 0x3224E8, ds 0x3268C8, reset_mask 0x0
buffer size 1524
RX ring with 8 entries at 0x2101400 : Rxhead 0
00 pak=0x421FC0 ds=0x42211C status=D000 pak_size=0
01 pak=0x4085E8 ds=0x408744 status=D000 pak_size=0
02 pak=0x422EF0 ds=0x42304C status=D000 pak_size=0
03 pak=0x4148E0 ds=0x414A3C status=D000 pak_size=0
```

```

04 pak=0x424D50 ds=0x424EAC status=D000 pak_size=0
05 pak=0x423688 ds=0x4237E4 status=D000 pak_size=0
06 pak=0x41AB98 ds=0x41ACF4 status=D000 pak_size=0
07 pak=0x41A400 ds=0x41A55C status=F000 pak_size=0
TX ring with 4 entries at 0x2101440: tx_count = 0, tx_head = 0, tx_tail = 0
00 pak=0x000000 ds=0x000000 status=5C00 pak_size=0
01 pak=0x000000 ds=0x000000 status=5C00 pak_size=0
02 pak=0x000000 ds=0x000000 status=5C00 pak_size=0
03 pak=0x000000 ds=0x000000 status=7C00 pak_size=0
0 missed datagrams, 0 overruns, 0 bad frame addresses
0 bad datagram encapsulations, 0 memory errors
0 transmitter underruns
B2 Chan Info:
Layer 1 is ACTIVATED
idb 0x324520, ds 0x3269B8, reset_mask 0x2
buffer size 1524
RX ring with 8 entries at 0x2101500 : Rxhead 0
00 pak=0x40FCF0 ds=0x40FE4C status=D000 pak_size=0
01 pak=0x40E628 ds=0x40E784 status=D000 pak_size=0
02 pak=0x40F558 ds=0x40F6B4 status=D000 pak_size=0
03 pak=0x413218 ds=0x413374 status=D000 pak_size=0
04 pak=0x40EDC0 ds=0x40EF1C status=D000 pak_size=0
05 pak=0x4113B8 ds=0x411514 status=D000 pak_size=0
06 pak=0x416ED8 ds=0x417034 status=D000 pak_size=0
07 pak=0x416740 ds=0x41689C status=F000 pak_size=0
TX ring with 4 entries at 0x2101540: tx_count = 0, tx_head = 0, tx_tail = 0
00 pak=0x000000 ds=0x000000 status=5C00 pak_size=0
01 pak=0x000000 ds=0x000000 status=5C00 pak_size=0
02 pak=0x000000 ds=0x000000 status=5C00 pak_size=0
03 pak=0x000000 ds=0x000000 status=7C00 pak_size=0
0 missed datagrams, 0 overruns, 0 bad frame addresses
0 bad datagram encapsulations, 0 memory errors
0 transmitter underruns

```

Table 36 describes the significant fields in the display.

Table 36 Show Controllers BRI Field Descriptions

Field	Description
BRI unit 0	Interface type and unit number.
Chan Info	D and B channel numbers.
Layer 1 is ACTIVATED	Status can be DEACTIVATED, PENDING ACTIVATION, or ACTIVATED.
idb ds reset_mask	Information about internal data structures and parameters.
buffer size	Number of bytes allocated for buffers.
RX ring with - entries at -	Information about the Receiver Queue.
Rxhead	Start of the Receiver Queue.
pak ds status pak_size	Information about internal data structures and parameters.
TX ring with - entries at -	Information about the Transmitter Queue.
tx_count	Number of packets to transmit.
tx_head	Start of the transmit list.

Table 36 Show Controllers BRI Field Descriptions (continued)

Field	Description
tx_tail	End of the transmit list.
missed datagrams	Incoming packets missed due to internal errors.
overruns	Number of times the receiver hardware was unable to hand received data to a hardware buffer because the input rate exceeded the receiver's ability to handle the data.
bad frame addresses	Frames received with a cyclic redundancy check (CRC) error and noninteger number of octets.
bad datagram encapsulations	Packets received with bad encapsulation.
memory errors	Internal direct memory access (DMA) memory errors.
transmitter underruns	Number of times that the transmitter has been running faster than the router can handle.

The following is a partial sample output from the **show controllers bri** command on a Cisco 7200 series router:

```

BRI slot 2 interface 0 with integrated NT1
Layer 1 is ACTIVATED. (ISDN L1 State F7)
Master clock for slot 2 is bri interface 0.
Total chip configuration successes: 193, failures: 0, timeouts: 0
D Channel Information:
Channel state: UP Channel IDB: 6092AC64
RX ring entries: 5, buffer size 512
RX descriptor ring: head = 165F4D8, tail = 165F508
RX buffer ring: head = 6093A260, tail = 6093A290
00 params=0x2000000 status=0x0 data ptr=0x1650F84 next ptr=0x165F4D8
01 params=0x2000000 status=0xC0080000 data ptr=0x1651884 next ptr=0x165F4E8
02 params=0x2000000 status=0xC0080000 data ptr=0x1651644 next ptr=0x165F4F8
03 params=0x2000000 status=0x0 data ptr=0x1651404 next ptr=0x165F508
04 params=0x42000000 status=0x0 data ptr=0x16511C4 next ptr=0x165F4C8
TX ring entries: 5, in use: 0, buffer size 512
TX descriptor ring: head = 3C2049C0, tail = 3C2049C0
TX buffer ring: head = 608EC0C4, tail = 608EC0C4
00 params=0x80000000 data ptr=0x0000000 next ptr=0x4D0049A8
01 params=0x80000000 data ptr=0x0000000 next ptr=0x4D0049B4
02 params=0x80000000 data ptr=0x0000000 next ptr=0x4D0049C0
03 params=0xC0000000 data ptr=0x0000000 next ptr=0x4D0049CC
04 params=0x0 data ptr=0x0000000 next ptr=0x4D00499C
List of timeslots (sw): 2
    
```

Table 37 describes the significant fields in the display.

Table 37 Show Controllers BRI Field Descriptions

Field	Description
BRI slot 2 interface 0 with integrated NT1	Interface type and slot and port number.
Layer 1 is ACTIVATED	Status can be DEACTIVATED, PENDING ACTIVATION, or ACTIVATED.
Master clock	The first interface that comes up on an MBRI port adapter holds the master clock. This clock is used for all interfaces on that port adapter. If the master clock interface goes down, the second interface that came up becomes the master clock interface.

Table 37 Show Controllers BRI Field Descriptions (continued)

Field	Description
Total chip configuration successes	Counters of successful chip configuration.
failures	Counters of bad chip configuration.
timeouts	Counters of failing to initialize chip.
D Channel Information	Information related to D-channel status.
Channel state	Channel state can be UNUSED, IDLE, DOWN, STANDBY, UP, THROTTLED, ILLEGAL.
Channel IDB	Internal interface channel description.
RX (or TX) ring entries	Internal receive queue.
RX (or TX) descriptor ring	Internal receive queue to manage hardware chip
RX (or TX) buffer ring	Internal receive queue to hold inbound packets.
Rxhead	Start of the receiver queue.
params, status, data ptr, next ptr	Information about internal data structures and params.
List of timeslots (sw)	Timeslots assigned to this channel.

show dialer interface bri

To display general diagnostic information for ISDN BRI interfaces configured for DDR, use the **show dialer interface bri EXEC** command.

show dialer interface bri *number*

Syntax Description

number BRI interface number.

Command Mode

EXEC

Usage Guidelines

This command first appeared in Cisco IOS Release 9.21.

Sample Displays

If you enter the **show dialer interface bri** command for the D channel of an ISDN BRI, the command output also displays the B channels. That is, the command **show dialer interface bri 0** displays information of interfaces bri 0, bri 0:1, and bri 0:2. Similarly, use of the related command **show dialer interface serial 0:23** (for a channelized T1 line configured for ISDN PRI) displays information for serial interfaces 0:23, 0:0, 0:1, and so forth to 0:22.

If you have defined a dialer group that consists of the interfaces serial 0, serial 1, and bri 2, the command **show dialer interface dialer 1** displays information for interfaces bri 0, bri 0:1, bri 0:2, serial 1, and serial 0.

The following is sample output from the **show dialer interface bri** command for a BRI interface when dialer profiles are configured:

```
impulse# show dialer interface bri 0

BRI0 - dialer type = ISDN

Dial String      Successes   Failures    Last called   Last status

0 incoming call(s) have been screened.

BRI0: B-Channel 1
Idle timer (120 secs), Fast idle timer (20 secs)
Wait for carrier (30 secs), Re-enable (15 secs)

Dialer state is data link layer up

Dial reason: ip (s=6.1.1.8, d=6.1.1.1)

Interface bound to profile Dialer0

Time until disconnect 102 secs
Current call connected 00:00:19
Connected to 5773872 (wolfman)

BRI0: B-Channel 2
Idle timer (120 secs), Fast idle timer (20 secs)
```

```
Wait for carrier (30 secs), Re-enable (15 secs)
Dialer state is idle
```

Table 38 describes significant fields shown in the display.

Table 38 Show Dialer Interface BRI Field Descriptions

Field	Description
BRI0 - dialer type = ISDN	ISDN dialer.
Dial string	Dial strings of logged calls (telephone numbers). On ISDN BRI interfaces, if you have specified a subaddress number in the dialer string , this number is included in the dial string after a colon.
Successes	Successful connections (even if no data is passed).
Failures	Failed connections; call not successfully completed.
Last called	Time that last call occurred to specific dial string.
Last status	Status of last call to specific dial string (successful or failed).
0 incoming call(s) have been screened.	Number of calls subjected to Dialer Profiles screening to determine how the call is to be treated.
BRI0: B-Channel 1	Header indicating the following data is for B channel 1.
Idle timer (120 secs), Fast idle timer (20 secs)	Settings (in seconds) for the idle timer and the fast idle timer.
Wait for carrier (30 secs), Re-enable (15 secs)	Settings (in seconds) for the wait for carrier timer and the reenable timer.
Dialer state is data link layer up	The message “data link layer up” suggests that the dialer came up properly; if it says anything else then dialer did not come up properly. The message “physical layer up” means the line protocol (LCP) came up, but the NCP did not come up. The show interfaces command also provides the similar information.
Dial reason: ip (s=6.1.1.8, d=6.1.1.1)	What initiated the dial, namely an IP packet, plus source and destination address in the packet.
Interface bound to profile Dialer0	Dialer profile that is bound to this interface or B channel.
Time until disconnect	Time until line is configured to disconnect. This field is displayed if the interface is currently connected to a destination.
Current call connected	Time at which the current call was connected.
Connected to	Dial string to which line is currently connected.

If an interface is connected to a destination, a display is provided that indicates the idle time before the line is disconnected. (The value decrements each second.) Then the duration of the current connection is shown. The following shows an example of this display; it appears after the third line in the **show dialer** display:

```
Time until disconnect 596 secs
Current call connected 0:00:25
```

show dialer interface bri

After a call disconnects, the system displays the time remaining before being it can dial again. The following is an example of this display; it appears after the third line in the **show dialer** display:

```
Time until interface enabled 8 secs
```

If caller ID screening is configured on an ISDN BRI, the **show dialer** command display includes a line similar to the following:

```
1 incoming call(s) have been screened.
```

This line reports the number of calls that have been screened.

show interfaces bri

Use the **show interfaces bri** privileged EXEC command to display information about the BRI D channel or about one or more B channels.

```
show interfaces bri number[:bchannel] | [first] [last] [accounting]  
show interfaces bri slot/port (Cisco 7200 series)
```

Syntax Description

<i>number</i>	Interface number. The value is 0 through 7 if the router has one 8-port BRI NIM, or 0 through 15 if the router has two 8-port BRI NIMs. Interface number values will vary, depending on the hardware platform used. The Cisco 3600 series router for example, can have up to 48 interfaces. Specifying just the number will display the D channel for that BRI interface.
<i>slot/port</i>	On the Cisco 7200 series, slot location and port number of the interface.
<i>:bchannel</i>	(Optional) Colon (:) followed by a specific B channel number.
<i>first</i>	(Optional) Specifies the first of the B channels; the value can be either 1 or 2.
<i>last</i>	(Optional) Specifies the last of the B channels; the value can only be 2, indicating B channels 1 and 2.
accounting	(Optional) Displays the number of packets of each protocol type that have been sent through the interface.

Command Mode

Privileged EXEC

Usage Guidelines

This command first appeared in Cisco IOS Release 10.3.

This command was modified in Cisco IOS Release 11.2 P to include slot/port syntax for the PA-8B-ST and PA-4B-U port adapters on Cisco 7200 series routers.

Use either the *:bchannel-number* argument or the *first* or *last* arguments to display information about specified B channels.

Use the **show interfaces bri** *number* form of the command (without the optional *:bchannel*, or *first* and *last* arguments) to obtain D channel information.

Use the command syntax sample combinations in Table 39 to display the associated output.

Table 39 Sample Show Interfaces BRI Combinations

Command Syntax	Displays
show interfaces	All interfaces in the router
show interfaces bri 2	Channel D for BRI interface 2
show interfaces bri 2:1	Channel B1 on BRI interface 2
show interfaces bri 2:2	Channel B2 on BRI interface 2
show interfaces bri 4 1	Channel B1 on BRI interface 4

Table 39 Sample Show Interfaces BRI Combinations (continued)

Command Syntax	Displays
show interfaces bri 4 2	Channel B2 on BRI interface 4
show interfaces bri 4 1 2	Channels B1 and B2 on BRI interface 4
show interfaces bri	Error message: "% Incomplete command."

Sample Displays

The following is sample output from the **show interfaces bri** command:

```
Router# show interfaces bri 0:1

BRI0:1 is down, line protocol is down
  Hardware is BRI
  MTU 1500 bytes, BW 64 Kbit, DLY 20000 usec, rely 255/255, load 1/255
  Encapsulation PPP, loopback not set, keepalive not set
  LCP Closed
  Closed: IPCP
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
  Queueing strategy: fifo
  Output queue 0/40, 0 drops; input queue 0/75, 0 drops
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    0 packets input, 0 bytes, 0 no buffer
    Received 0 broadcasts, 0 runts, 0 giants
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
    0 packets output, 0 bytes, 0 underruns
    0 output errors, 0 collisions, 7 interface resets
    0 output buffer failures, 0 output buffers swapped out
    0 carrier transitions
```

The following is sample output from the **show interfaces bri** command on a Cisco 7200 series router:

```
Router# show interfaces bri 2/0

BRI2/0 is up, line protocol is up (spoofing)
  Hardware is BRI
  Internet address is 11.1.1.3/27
  MTU 1500 bytes, BW 64 Kbit, DLY 20000 usec, rely 255/255, load 1/255
  Encapsulation PPP, loopback not set
  Last input 00:00:01, output 00:00:01, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0 (size/max/drops); Total output drops: 0
  Queueing strategy: weighted fair
  Output queue: 0/64/0 (size/threshold/drops)
    Conversations 0/1 (active/max active)
    Reserved Conversations 0/0 (allocated/max allocated)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    609 packets input, 2526 bytes, 0 no buffer
    Received 0 broadcasts, 0 runts, 0 giants
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
    615 packets output, 2596 bytes, 0 underruns
    0 output errors, 0 collisions, 5 interface resets
    0 output buffer failures, 0 output buffers swapped out
    3 carrier transitions
```

Table 40 describes the fields shown in the display.

Table 40 Show Interfaces BRI Field Descriptions

Field	Description
BRI... is {up down administratively down}	Indicates whether the interface hardware is currently active (whether line signal is present) and if it has been taken down by an administrator.
line protocol is {up down administratively down}	Indicates whether the software processes that handle the line protocol consider the line usable (that is, whether keepalives are successful).
Hardware is	Hardware type.
Internet address is	IP address and subnet mask, followed by packet size.
MTU	Maximum transmission unit of the interface.
BW	Bandwidth of the interface in kilobits per second.
DLY	Delay of the interface in microseconds.
rely	Reliability of the interface as a fraction of 255 (255/255 is 100 percent reliability), calculated as an exponential average over 5 minutes.
load	Load on the interface as a fraction of 255 (255/255 is completely saturated), calculated as an exponential average over 5 minutes.
Encapsulation	Encapsulation method assigned to interface.
loopback	Indicates whether loopback is set or not.
keepalive	Indicates whether keepalives are set or not.
Last input	Number of hours, minutes, and seconds since the last packet was successfully received by an interface. Useful for knowing when a nonfunctioning interface failed.
output	Number of hours, minutes, and seconds since the last packet was successfully transmitted by an interface.
output hang	Number of hours, minutes, and seconds (or never) since the interface was last reset because of a transmission that took too long. When the number of hours in any of the "last" fields exceeds 24 hours, the number of days and hours is printed. If that field overflows, asterisks (***) are printed.
Output queue, drops Input queue, drops	Number of packets in output and input queues. Each number is followed by a slash (/), the maximum size of the queue, and the number of packets dropped due to a full queue.
Five minute input rate Five minute output rate	Average number of bits and packets transmitted per second in the last 5 minutes.
packets input	Total number of error-free packets received by the system.
bytes	Total number of bytes, including data and media access control (MAC) encapsulation, in the error-free packets received by the system.
no buffer	Number of received packets discarded because there was no buffer space in the main system. Compare with ignored count. Broadcast storms on Ethernets and bursts of noise on serial lines are often responsible for no input buffer events.
broadcasts	Total number of broadcast or multicast packets received by the interface.
runts	Number of packets that are discarded because they are smaller than the medium's minimum packet size.
giants	Number of packets that are discarded because they exceed the medium's maximum packet size.

Table 40 Show Interfaces BRI Field Descriptions (continued)

Field	Description
input errors	Total number of no buffer, runts, giants, CRCs, frame, overrun, ignored, and abort counts. Other input-related errors can also increment the count, so this sum may not balance with the other counts.
CRC	Cyclic redundancy checksum generated by the originating station or far-end device does not match the checksum calculated from the data received. On a serial link, CRCs usually indicate noise, gain hits, or other transmission problems on the data link.
frame	Number of packets received incorrectly having a CRC error and a noninteger number of octets. On a serial line, this is usually the result of noise or other transmission problems.
overrun	Number of times the serial receiver hardware was unable to hand received data to a hardware buffer because the input rate exceeded the receiver's ability to handle the data.
ignored	Number of received packets ignored by the interface because the interface hardware ran low on internal buffers. Broadcast storms and bursts of noise can increase the ignored count.
abort	Illegal sequence of one bits on a serial interface. This usually indicates a clocking problem between the serial interface and the data link equipment.
packets output	Total number of messages transmitted by the system.
bytes	Total number of bytes, including data and MAC encapsulation, transmitted by the system.
underruns	Number of times that the transmitter has been running faster than the router can handle. This may never be reported on some interfaces.
output errors	Sum of all errors that prevented the final transmission of datagrams out of the interface being examined. Note that this may not balance with the sum of the enumerated output errors, because some datagrams may have more than one error, and others may have errors that do not fall into any of the specifically tabulated categories.
collisions	Number of collisions. These can occur when you have several devices connected on a multiport line.
interface resets	Number of times an interface has been completely reset. This can happen if packets queued for transmission were not sent within several seconds. On a serial line, this can be caused by a malfunctioning modem that is not supplying the transmit clock signal or by a cable problem. If the system recognizes that the carrier detect line of a serial interface is up, but the line protocol is down, it periodically resets the interface in an effort to restart it. Interface resets can also occur when an interface is looped back or shut down.
restarts	Number of times the controller was restarted because of errors.
carrier transitions	Number of times the carrier detect signal of a serial interface has changed state. Check for modem or line problems if the carrier detect line is changing state often.

show isdn

To display the information about calls, history, memory, status, and Layer 2 and Layer 3 timers, use the **show isdn EXEC** command.

```
show isdn { active | history | memory | status [dsl | interface-type number] | timers }
```

Syntax Description

active	Displays current call information, including called number, the time until the call is disconnected, AOC charging units used during the call, and whether the AOC information is provided during calls or at end of calls.
history	Displays historic and current call information, including the called number, the time until the call is disconnected, AOC charging time units used during the call, and whether the AOC information is provided during calls or at the end of calls.
memory	Displays memory pool statistics. This keyword is for use by technical development staff only.
status [<i>dsl</i> <i>interface-type number</i>]	Displays the status of all ISDN interfaces or, optionally, a specific digital signal link (DSL) or a specific ISDN interface. The <i>dsl</i> range can vary, depending on the hardware platform. <i>Interface-type</i> can be bri or serial .
timers	Displays the values of Layer 2 and Layer 3 timers.

Command Mode

EXEC

Sample Displays

The following is sample output from the **show isdn active** command:

```
Router# show isdn active

-----
                          ISDN ACTIVE CALLS
-----
History Table MaxLength = 320 entries
History Retain Timer = 15 Minutes
-----
Call Calling      Called      Duration  Remote   Time until  Recorded Charges
Type Number      Number      Seconds   Name     Disconnect  Units/Currency
-----
Out              9876543222  Active(10) idacom    11        u(E)
Out              9876543210  Active(34) idacom 115      5         u(D)
-----
```

The following is sample output from the **show isdn history** command:

```
Router# show isdn history

-----
                          ISDN CALL HISTORY
-----
History Table MaxLength = 320 entries
History Retain Timer = 15 Minutes
-----
Call Calling      Called      Duration  Remote   Time until  Recorded Charges
Type Number      Number      Seconds   Name     Disconnect  Units/Currency
-----
Out              47887654    240      blackcanary
In   67893        90         delorean
Out              56745678    Active(90) blackcanary 240    13    u(D)
-----
```

Table 41 describes the fields in the **show isdn active** and **show isdn history** output displays.

Table 41 Show ISDN Active and Show ISDN History Field Descriptions

Field	Description
History Table MaxLength	Maximum number of entries that can be retained in the Call History table.
History Retain Timer	Maximum number of seconds any entry can be retained in Call History table.
Call Type	Type of call: incoming or outgoing.
Calling Number	For incoming calls, the number from which the call was received.
Called Number	For outgoing calls, the number to which the call was placed.
Duration Seconds	Number of seconds the call lasted. Indicates whether the call is still active, and how many seconds it has lasted so far.
Remote Name	Name of the host placing the call or the host called.
Time until Disconnect	Number of seconds before the call is configured to disconnect because of the static idle timer for the map class or the interface.
Recorded Charges Units/Currency	For outgoing calls, number of ISDN AOC charging units used or the currency cost of the call.

The following is sample output from the **show isdn timers** command:

```
Router# show isdn timers
ISDN BRI0 Timers (dsl 0) Switchtype = basic-net3
  ISDN Layer 2 values
    K      = 1  outstanding I-frames
    N200 = 3  max number of retransmits
    N202 = 2  max number of retransmits of TEI ID Request
    T200 = 1  seconds
    T202 = 2  seconds
    T203 = 10 seconds
  ISDN Layer 3 values
    T303 = 4  seconds
    T305 = 30 seconds
    T308 = 4  seconds
    T310 = 40 seconds
    T313 = 4  seconds
    T316 = 0 seconds
    T318 = 4  seconds
    T319 = 4  seconds
```

Table 42 displays some typical values of the timers shown in the **show isdn timers** display. The values of the timers depend on the switch type and typically are used only for homologation purposes. See the Q.921 specifications for detailed technical definitions of the Layer 2 timers; see the Q.931 specifications for detailed technical definitions of the Layer 3 timers.

Table 42 Show ISDN Timers Command Output

Field	Typical Value
ISDN Layer 2 values:	
K = 0 outstanding I-frames	1
N200 = 0 max number of retransmits	3
T200 = 0 seconds	1
T202 = 2 seconds	2
T203 = 0 seconds	10
ISDN Layer 3 values:	
T303 = 0 seconds	4
T305 = 0 seconds	30
T308 = 0 seconds	4
T310 = 0 seconds	40
T313 = 0 seconds	0
T316 = 0 seconds	4
T318 = 0 seconds	4
T319 = 0 seconds	4

The following is sample output from the **show isdn status** command when no calls are active for a Cisco 4500 with 8 BRIs and 1 E1 PRI:

```
Router# show isdn status

Global ISDN Switchtype = basic-5ess
ISDN BRI0 interface
    dsl 0, interface ISDN Switchtype = basic-5ess
    Layer 1 Status:
        ACTIVE
    Layer 2 Status:
        TEI = 64, Ces = 1, SAPI = 0, State = MULTIPLE_FRAME_ESTABLISHED
    Layer 3 Status:
        0 Active Layer 3 Call(s)
    Activated dsl 0 CCBs = 0
ISDN BRI1 interface
    dsl 1, interface ISDN Switchtype = basic-5ess
    Layer 1 Status:
        DEACTIVATED
    Layer 2 Status:
        Layer 2 NOT Activated
    Layer 3 Status:
        0 Active Layer 3 Call(s)
    Activated dsl 1 CCBs = 0
ISDN BRI2 interface
    dsl 2, interface ISDN Switchtype = basic-5ess
    Layer 1 Status:
        DEACTIVATED
    Layer 2 Status:
        Layer 2 NOT Activated
    Layer 3 Status:
        0 Active Layer 3 Call(s)
    Activated dsl 2 CCBs = 0
ISDN BRI3 interface
    dsl 3, interface ISDN Switchtype = basic-5ess
    Layer 1 Status:
        ACTIVE
    Layer 2 Status:
        TEI = 75, Ces = 1, SAPI = 0, State = MULTIPLE_FRAME_ESTABLISHED
    Layer 3 Status:
        0 Active Layer 3 Call(s)
    Activated dsl 3 CCBs = 0
ISDN BRI4 interface
    dsl 4, interface ISDN Switchtype = basic-5ess
    Layer 1 Status:
        DEACTIVATED
    Layer 2 Status:
        Layer 2 NOT Activated
    Layer 3 Status:
        0 Active Layer 3 Call(s)
    Activated dsl 4 CCBs = 0
ISDN BRI5 interface
    dsl 5, interface ISDN Switchtype = basic-5ess
    Layer 1 Status:
        DEACTIVATED
    Layer 2 Status:
        Layer 2 NOT Activated
    Layer 3 Status:
        0 Active Layer 3 Call(s)
    Activated dsl 5 CCBs = 0
ISDN BRI6 interface
    dsl 6, interface ISDN Switchtype = basic-5ess
    Layer 1 Status:
        DEACTIVATED
    Layer 2 Status:
```

```

        Layer 2 NOT Activated
Layer 3 Status:
    0 Active Layer 3 Call(s)
Activated dsl 6 CCBs = 0
ISDN BRI7 interface
    dsl 7, interface ISDN Switchtype = basic-5ess
Layer 1 Status:
    DEACTIVATED
Layer 2 Status:
    Layer 2 NOT Activated
Layer 3 Status:
    0 Active Layer 3 Call(s)
Activated dsl 7 CCBs = 0
ISDN Serial0:15 interface
    dsl 8, interface ISDN Switchtype = primary-ni
Layer 1 Status:
    ACTIVE
Layer 2 Status:
    TEI = 0, Ces = 1, SAPI = 0, State = MULTIPLE_FRAME_ESTABLISHED
Layer 3 Status:
    0 Active Layer 3 Call(s)
Activated dsl 8 CCBs = 0
Total Allocated ISDN CCBs = 0

```

The following is sample output from the **show isdn status** command with one active call:

Router# show isdn status

```

The current ISDN Switchtype = ntt
ISDN BRI0 interface
Layer 1 Status:
    ACTIVE
Layer 2 Status:
    TEI = 64, State = MULTIPLE_FRAME_ESTABLISHED
Layer 3 Status:
    1 Active Layer 3 Call(s)
Activated dsl 0 CCBs = 1
    CCB:callid=8003, callref=0, sapi=0, ces=1, B-chan=1
Number of active calls = 1
Number of available B-channels = 1
Total Allocated ISDN CCBs = 1

```

Table 43 describes the fields in the **show isdn status** command output.

Table 43 Show ISDN Status Field Descriptions

Field	Description
Layer 1 Status	
ACTIVE	Status of ISDN Layer 1.
Layer 2 Status	
TEI = 65, State = MULTIPLE_FRAME_ESTABLISHED	Status of ISDN Layer 2. Terminal endpoint identifier number and multiframe structure state.
Spid Status	
TEI 65, ces = 1, state = 5(init)	Terminal endpoint identifier number and state.
spid1 configured, no LDN, spid1 sent, spid1 valid	SPID configuration information. For example, local directory number is defined.
Endpoint ID Info: epsf = 0, usid = 3, tid = 7F	Endpoint identifier information.

Table 43 Show ISDN Status Field Descriptions (continued)

Field	Description
Layer 3 Status:	
1 Active Layer 3 Call(s)	Number of active calls.
Activated dsl 0 CCBs =	Number of the Digital Signal Link activated. Number of call control blocks in use.
CCB:callid=8003, callref=0, sapi=0, ces=1, B-chan=1	Information about the active call.
Number of active calls =	Number of active calls.
Number of available B-channels =	Number of B channels that are not being used.
Total Allocated ISDN CCBs =	Number of ISDN call control blocks that are allocated.