

Configuring ISDN Bridging with Dialer Profiles

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Introduction

This document illustrates bridging across ISDN using dialer profiles.

The goal of this configuration is to integrate two different IP networks at different locations without using routing. In this document, both routers are configured to dial each other as needed, and IP routing is disabled. IP addresses are configured on the interfaces to manage routers remotely, and for troubleshooting purposes.

Bridging on an ISDN connection tends to keep the connection active for very long periods of time, if not permanently. If your Telco charges for ISDN based on connection time, this can result in a very large bill. Consequently, this scenario is recommended only for those ISDN users who have unlimited-usage ISDN lines.

Note: You may configure the same IP address on both the BRI and Ethernet interfaces of each router. The reason for configuring the IP address is so that you can Telnet to the router for management purposes, or so that you can ping the interface for troubleshooting purposes.

Prerequisites

Requirements

There are no specific prerequisites for this document.

Components Used

The information in this document is based on the software and hardware versions below.

- Two Cisco 2500 Series Routers, each with at least one ISDN BRI interface

- Cisco IOS® Software Release 12.2(7b)

The information presented in this document was created from devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If you are working in a live network, ensure that you understand the potential impact of any command before using it.

Related Products

This configuration can be used with any router running Cisco IOS Software as mentioned above, and at least one ISDN BRI port.

Conventions

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

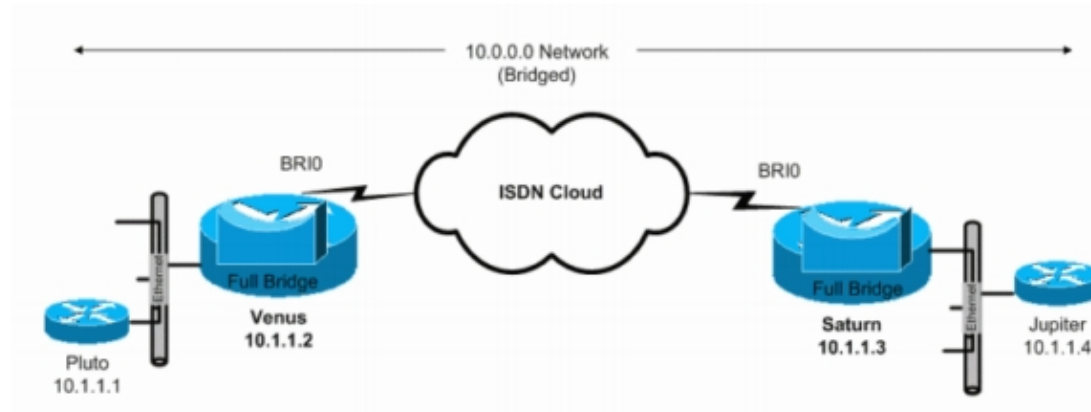
Configure

This section provides the information required to configure the features described in this document.

Note: To find additional information on the commands used in this document, use the Command Lookup Tool (registered customers only) .

Network Diagram

This document uses the network setup shown in the diagram below.



Configurations

This document uses the configurations shown below.

- Venus
- Saturn

Venus
<pre>! version 12.2 ! hostname Venus ! enable password cisco</pre>

```
!  
username Saturn password 0 same  
  
!--- The username and password are required for  
!--- PPP Challenge Handshake Authentication Protocol (CHAP)  
!--- during dialup.  
  
ip subnet-zero  
no ip routing  
  
!--- This command turns off routing.  
  
no ip domain-lookup  
!  
isdn switch-type basic-5ess  
  
!--- This is the ISDN switch type for this circuit.  
!--- Obtain this information from the Telco. This  
!--- ISDN switch type is USA-specific, and could be  
!--- changed depending on the country and Telco  
!--- requirements.  
  
!  
interface Ethernet0  
  ip address 10.1.1.2 255.0.0.0  
  
!--- This IP address is for management  
!--- purposes only.  
  
  no ip route-cache  
  no ip mroute-cache  
  bridge-group 1  
  
!--- Assign this interface to Bridge Group 1.  
!--- Frames are bridged only among interfaces in the same group.  
!--- Note: The dialer1 interface is also in  
!--- this Bridge Group 1.  
  
!  
interface BRI0  
  description ISDN to Saturn  
  no ip address  
  no ip route-cache  
  no ip mroute-cache  
  dialer pool-member 1  
  
!--- Dialer profiles configured with same dialer pool number  
!--- (in this case, dialer1) bind to this interface.  
  
  isdn switch-type basic-5ess  
  
!--- Check with your Telco for the correct switch  
!--- type values.  
  
!  
interface Dialer1  
  
!--- Configure the dialer profile.  
  
  ip address 10.1.1.2 255.0.0.0  
  
!--- This IP address is for management  
!--- purposes only.  
  
  encapsulation ppp  
  dialer pool 1
```

```

!--- Use the physical interfaces configured with same pool
!--- number (in this case, bri0) during dialup.

dialer remote-name Saturn

!--- This command specifies the remote CHAP name.

dialer string 5552000

!--- This command specifies the number to dial when
!--- interesting traffic arrives (in this case,
!--- any bridge traffic).

dialer-group 1

!--- This command defines the interesting traffic
!--- as configured in the dialer-list command.

ppp authentication chap

!--- As shown above, use CHAP as the
!--- authentication method.

bridge-group 1

!--- Assign this interface to Bridge Group 1.
!--- Frames are bridged only among interfaces in the same group.
!--- Note: the Ethernet interface 0 is also
!--- in this Bridge Group 1.

!
access-list 200 permit 0x0000 0xFFFF

!--- This command permits all bridged traffic.
!--- Adjust this to the desired range.

dialer-list 1 protocol bridge list 200

!--- This command defines the interesting traffic.
!--- In this case, it indicates all bridged traffic.

!
bridge 1 protocol ieee

!--- Define the type of STP used for
!--- the interface in Bridge Group 1. This example uses the
!--- IEEE STP. The IEEE 802.1d STP is the preferred way of
!--- running the bridge.

!

```

Saturn

```

!
version 12.2
!
hostname Saturn
!
username Venus password 0 same

!--- The username and password are required for PPP
!--- CHAP during dialup.

```

```
ip subnet-zero
no ip routing

!--- This command turns off routing.

no ip domain-lookup
!
isdn switch-type basic-5ess

!--- This is the ISDN switch type for this circuit.
!--- Obtain this information from the Telco. This
!--- ISDN switch type is USA-specific, and could
!--- be changed depending on the country and Telco
!--- requirements.

!
interface Ethernet0
 ip address 10.1.1.3 255.0.0.0

!--- This IP address is for management
!--- purposes only.

no ip route-cache
no ip mroute-cache
bridge-group 1

!--- Assign this interface to Bridge Group 1.
!--- Frames are bridged only among interfaces
!--- in the same group.
!--- Note: The dialer1 interface is also in
!--- this Bridge Group 1.

!
interface BRI0
 description ISDN to Venus
 no ip address
 no ip route-cache
 no ip mroute-cache
 dialer pool-member 1

!--- Dialer profiles configured with same dialer pool number
!--- (in this case, dialer1) bind to this interface.

 isdn switch-type basic-5ess
!
interface Dialer1
 ip address 10.1.1.3 255.0.0.0

!--- This IP address is for management
!--- purposes only.

encapsulation ppp
no ip route-cache
no ip mroute-cache
dialer pool 1

!--- Use physical interfaces configured with same
!--- pool number (in this case, bri0) during dialup.

dialer remote-name Venus

!--- This command specifies the remote CHAP name.

dialer string 5551000

!--- This command specifies the number to dial when
```

```

!--- interesting traffic arrives (in this case,
!--- any bridge traffic).

dialer-group 1

!--- This command defines the interesting traffic as
!--- configured in the dialer-list command.

ppp authentication chap

!--- Use CHAP as the authentication method.

bridge-group 1

!--- Assign this interface to Bridge Group 1.
!--- Frames are bridged only among interfaces in the same group.
!--- Note: the Ethernet interface 0 is also in
!--- this Bridge Group 1.

!
dialer-list 1 protocol bridge permit

!--- This command defines the interesting traffic
!--- (in this case, all bridged traffic). This is another
!--- way of specifying all bridged traffic without
!--- using the access-list command. If
!--- filtering for specific bridged protocols is required,
!--- use the access-list model used on the Venus router.

!
bridge 1 protocol ieee

!--- Define the type of STP
!--- used for the interface in Bridge Group 1. In this case,
!--- the IEEE STP is used. The IEEE 802.1d
!--- STP is the preferred way of running the bridge.

!

```

Verify

This section provides information you can use to confirm that your configuration is working properly.

Certain **show** commands are supported by the Output Interpreter Tool (registered customers only), which allows you to view an analysis of **show** command output.

- **show isdn status** This command displays the Layer 1 (L1), Layer 2 (L2), and Layer (L3) status of the ISDN interfaces.
- **show dialer** This command displays the status of the dialer and the individual status of the ISDN channels.
- **show bridge** This command allows you to view classes of entries in the bridge forwarding database; issue the **show bridge** privileged EXEC command for this purpose.
- **show interface** This command allows you to view the status of the various interfaces, including the serial and BRI interfaces.
- **show spanning-tree** This command displays the STP topology known to the router.

Show Commands on Venus after Dialing into Saturn

Venus#**show bridge**

Total of 300 station blocks, 298 free
Codes: P - permanent, S - self
Bridge Group 1:
Address Action Interface Age RX count TX count
0000.0c76.2882 forward Dialer1 0 4 3

!--- This is the Mac address of host Jupiter.

00d0.58ad.ae13 forward Ethernet0 0 5 4

!--- This is the Mac address of host Pluto.

Venus#**show spanning-tree**

Bridge group 1 is executing the ieee compatible Spanning Tree protocol
Bridge Identifier has priority 32768, address 0060.5cf4.a9a8
Configured hello time 2, max age 20, forward delay 15
Current root has priority 32768, address 0009.7c2e.ba00
Root port is 2 (Ethernet0), cost of root path is 100
Topology change flag not set, detected flag not set
Number of topology changes 3 last change occurred 00:21:14 ago
from Dialer1
Times: hold 1, topology change 35, notification 2
hello 2, max age 20, forward delay 15
Timers: hello 0, topology change 0, notification 0, aging 300
Port 2 (Ethernet0) of **Bridge group 1 is forwarding**
Port path cost 100, Port priority 128, Port Identifier 128.2.
Designated root has priority 32768, address 0009.7c2e.ba00
Designated bridge has priority 32768, address 0009.7c2e.ba00
Designated port id is 128.13, designated path cost 0
Timers: message age 2, forward delay 0, hold 0
Number of transitions to forwarding state: 1
BPDU: sent 3, received 5531
Port 10 (Dialer1) of **Bridge group 1 is forwarding**
Port path cost 17857, Port priority 128, Port Identifier 128.10.
Designated root has priority 32768, address 0009.7c2e.ba00
Designated bridge has priority 32768, address 0060.5cf4.a9a8
Designated port id is 128.10, designated path cost 100
Timers: message age 0, forward delay 0, hold 0
Number of transitions to forwarding state: 1
BPDU: sent 5414, received 3

Venus#**show dialer**

BRI0 - dialer type = ISDN
Dial String Successes Failures Last DNIS Last status
0 incoming call(s) have been screened.
0 incoming call(s) rejected for callback.
BRI0:1 - dialer type = ISDN
Idle timer (120 secs), Fast idle timer (20 secs)
Wait for carrier (30 secs), Re-enable (15 secs)
Dialer state is idle
BRI0:2 - dialer type = ISDN
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: **bridge (0x0800)**
Interface bound to profile Dil
Time until disconnect 111 secs
Current call connected 00:00:32
Connected to 5552000 (5552000)
Dil - dialer type = DIALER PROFILE
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
Number of active calls = 1
Dial String Successes Failures Last DNIS Last status
5552000 9 0 00:00:34 successful Default
```

```
Venus#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 = 78, Ces = 1, SAPI = 0, State = MULTIPLE_FRAME_ESTABLISHED
```

!--- ISDN L2 is up.

```
I_Queue_Len 0, UI_Queue_Len 0
Layer 3 Status:
1 Active Layer 3 Call(s)
```

!--- ISDN L3 is up.

```
CCB:callid=8009, sapi=0, ces=1, B-chan=2, calltype=DATA
Active dsl 0 CCBs = 1
The Free Channel Mask: 0x80000001
Number of L2 Discards = 0, L2 Session ID = 27
Total Allocated ISDN CCBs = 1
Venus#
```

Show Commands on Saturn after Venus Dials In

```
Saturn#show bridge
Total of 300 station blocks, 298 free
Codes: P - permanent, S - self
Bridge Group 1:
Address Action Interface Age RX count TX count
0000.0c76.2882 forward Ethernet0 0 9 8
```

!--- This is the Mac address of host Jupiter.

```
00d0.58ad.ae13 forward Dialer1 0 9 9
```

!--- This is the Mac address of host Pluto.

```
Saturn#show spanning-tree
Bridge group 1 is executing the ieee compatible Spanning Tree protocol
Bridge Identifier has priority 32768, address 0060.5cf4.a955
Configured hello time 2, max age 20, forward delay 15
Current root has priority 32768, address 0009.7c2e.ba00
Root port is 8 (Dialer1), cost of root path is 17957
Topology change flag not set, detected flag not set
Number of topology changes 10 last change occurred 00:03:56 ago
Times: hold 1, topology change 35, notification 2
hello 2, max age 20, forward delay 15
Timers: hello 0, topology change 0, notification 0, aging 300
Port 2 (Ethernet0) of Bridge group 1 is forwarding
Port path cost 100, Port priority 128, Port Identifier 128.2.
Designated root has priority 32768, address 0009.7c2e.ba00
Designated bridge has priority 32768, address 0060.5cf4.a955
Designated port id is 128.2, designated path cost 17957
Timers: message age 0, forward delay 0, hold 0
Number of transitions to forwarding state: 1
BPDUs: sent 577, received 4927
Port 8 (Dialer1) of Bridge group 1 is forwarding
```

```

Port path cost 17857, Port priority 128, Port Identifier 128.8.
Designated root has priority 32768, address 0009.7c2e.ba00
Designated bridge has priority 32768, address 0060.5cf4.a9a8
Designated port id is 128.10, designated path cost 100
Timers: message age 2, forward delay 0, hold 0
Number of transitions to forwarding state: 1
BPDU: sent 4810, received 555
Saturn#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 = 73, Ces = 1, SAPI = 0, State = MULTIPLE_FRAME_ESTABLISHED

!--- ISDN L2 is up.

I_Queue_Len 0, UI_Queue_Len 0
Layer 3 Status:
1 Active Layer 3 Call(s)

!--- ISDN L3 is up.

CCB:callid=C, sapi=0, ces=1, B-chan=2, calltype=DATA
Active dsl 0 CCBS = 1
The Free Channel Mask: 0x80000001
Number of L2 Discards = 0, L2 Session ID = 7
Total Allocated ISDN CCBS = 1

```

```

Saturn#show dialer
BRI0 - dialer type = ISDN
Dial String Successes Failures Last DNIS Last status
  0 incoming call(s) have been screened.
  0 incoming call(s) rejected for callback.
BRI0:1 - dialer type = ISDN
Idle timer (120 secs), Fast idle timer (20 secs)
Wait for carrier (30 secs), Re-enable (15 secs)
Dialer state is idle
BRI0:2 - dialer type = ISDN
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
Interface bound to profile Di1
Time until disconnect 83 secs
Current call connected 00:01:01
Connected to 5551000 (Venus)
Di1 - dialer type = DIALER PROFILE
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
Number of active calls = 1
Dial String Successes Failures Last DNIS Last status
5551000 3 0 00:19:35 successful Default

```

Troubleshoot

This section provides information you can use to troubleshoot your configuration.

Troubleshooting Resources

Troubleshooting procedures for incoming and outgoing ISDN calls are explained in *Dialup Technology: Troubleshooting Techniques*.

Additional information on how to troubleshoot ISDN L1, L2, and L3 issues are given in Using the show isdn status Command for BRI Troubleshooting and Troubleshooting ISDN BRI Layer 3 using the debug isdn q931 Command.

Debug Commands

Certain **show** commands are supported by the Output Interpreter Tool (registered customers only) , which allows you to view an analysis of **show** command output.

Note: Before issuing **debug** commands, please see Important Information on Debug Commands.

- **debug dialer** This command allows you to see when interesting traffic has been detected, and when dialing is initiated.
- **debug isdn event** This command debugs ISDN activity occurring on the user side of the ISDN interface; similar to the **debug isdn q931** command.
- **debug isdn q931** This command provides information about call setup and teardown of ISDN network connections (L3) between the local router (user side) and the network.
- **debug isdn q921** This command provides information about data link layer (L2) access procedures that are taking place at the router on the D-channel (LAPD) of its ISDN interface.
- **debug ppp negotiation** This command enables you to review the negotiation of PPP options and Network Control Protocol (NCP) parameters.
- **debug ppp authentication** This command allows you to review the exchange of CHAP and Password Authentication Protocol (PAP) packets.

Before attempting any of the above **debug** commands, please see Important Information on Debug Commands.

Debugs on Venus when Interesting Bridging Traffic Arrives

```
Venus#show debug
PPP:
  PPP authentication debugging is on
  PPP protocol negotiation debugging is on
ISDN:
  ISDN events debugging is on
  ISDN Q921 packets debugging is on
  ISDN Q931 packets debugging is on
Venus#
Aug  9 14:36:16.707: ISDN BR0: Outgoing call id = 0x8009, dsl 0
Aug  9 14:36:16.711: ISDN BR0: Event: Call to 5552000 at 64 Kb/s
Aug  9 14:36:16.715: ISDN BR0: process_bri_call(): call id 0x8009,
called_number 5552000, speed 64, call type DATA
Aug  9 14:36:16.719: CCBRI_Go Fr Host InPkgInfo (Len=22) :
Aug  9 14:36:16.719: 1 0 1 80 9 0 4 2 88 90 18 1 83 2C 7 35 35 35 32 30 30 30
Aug  9 14:36:16.727:
Aug  9 14:36:16.731: CC_CHAN_GetIdleChanbri: dsl 0
Aug  9 14:36:16.735:      Found idle channel B1
Aug  9 14:36:16.751: ISDN BR0: TX -> INFOc sapi=0 tei=78 ns=8 nr=6
i=0x08010905040288901801832C0735353532303030
Aug  9 14:36:16.771:      SETUP pd = 8  callref = 0x09
Aug  9 14:36:16.775:      Bearer Capability i = 0x8890
Aug  9 14:36:16.783:      Channel ID i = 0x83
Aug  9 14:36:16.787:      Keypad Facility i = '5552000'
Aug  9 14:36:17.051: ISDN BR0: RX <- INFOc sapi=0 tei=78 ns=6
nr=9 i=0x0801890218018A
Aug  9 14:36:17.059:      CALL_PROC pd = 8  callref = 0x89
Aug  9 14:36:17.067:      Channel ID i = 0x8A
Aug  9 14:36:17.079: ISDN BR0: TX -> RRr sapi=0 tei=78 nr=7
Aug  9 14:36:17.087: CCBRI_Go Fr L3 pkt (Len=7) :
```

```
Aug 9 14:36:17.087: 2 1 9 98 18 1 8A
Aug 9 14:36:17.091:
Aug 9 14:36:17.095: ISDN BR0: LIF_EVENT: ces/callid 1/0x8009 HOST_PROCEEDING
Aug 9 14:36:17.099: ISDN BR0: HOST_PROCEEDING
Aug 9 14:36:17.099: ISDN BR0: HOST_MORE_INFO
Aug 9 14:36:17.519: ISDN BR0: RX <- INFOc sapi=0 tei=78 ns=7 nr=9 i=0x08018907
Aug 9 14:36:17.523: CONNECT pd = 8 callref = 0x89
Aug 9 14:36:17.539: ISDN BR0: TX -> RRr sapi=0 tei=78 nr=8
Aug 9 14:36:17.547: CCBRI_Go Fr L3 pkt (Len=4) :
Aug 9 14:36:17.551: 7 1 9 91
Aug 9 14:36:17.551:
Aug 9 14:36:17.555: ISDN BR0: LIF_EVENT: ces/callid 1/0x8009 HOST_CONNECT
03:04:31: %LINK-3-UPDOWN: Interface BRI0:2, changed state to up
Aug 9 14:36:17.563: BR0:2 PPP: Phase is DOWN, Setup [0 sess, 1 load]
Aug 9 14:36:17.567: BR0:2 PPP: No remote authentication for call-out
Aug 9 14:36:17.571: BR0:2 PPP: Treating connection as a callout
Aug 9 14:36:17.575: BR0:2 PPP: Phase is ESTABLISHING, Active Open [0 sess, 1 load]
Aug 9 14:36:17.575: BR0:2 PPP: No remote authentication for call-out
Aug 9 14:36:17.579: BR0:2 LCP: O CONFREQ [Closed] id 1 len 10
Aug 9 14:36:17.583: BR0:2 LCP: MagicNumber 0x6105E4E4 (0x05066105E4E4)
03:04:31: %DIALER-6-BIND: Interface BR0:2 bound to profile Dil
Aug 9 14:36:17.603: ISDN: get_isdn_service_state():
idb 0x2410C4 bchan 3 is_isdn 1 Not a Pri
Aug 9 14:36:17.607: BR0:2 PPP: Treating connection as a callout
Aug 9 14:36:17.611: ISDN BR0: Event: Connected to 5552000 on B2 at 64 Kb/s
Aug 9 14:36:17.623: ISDN BR0: TX -> INFOc sapi=0 tei=78 ns=9 nr=8 i=0x0801090F
Aug 9 14:36:17.627: CONNECT_ACK pd = 8 callref = 0x09
Aug 9 14:36:17.639: BR0:2 LCP: I CONFREQ [REQsent] id 1 len 15
Aug 9 14:36:17.643: BR0:2 LCP: AuthProto CHAP (0x0305C22305)
Aug 9 14:36:17.643: BR0:2 LCP: MagicNumber 0x610588B1 (0x0506610588B1)
Aug 9 14:36:17.647: BR0:2 LCP: O CONFACK [REQsent] id 1 len 15
Aug 9 14:36:17.651: BR0:2 LCP: AuthProto CHAP (0x0305C22305)
Aug 9 14:36:17.655: BR0:2 LCP: MagicNumber 0x610588B1 (0x0506610588B1)
Aug 9 14:36:17.659: BR0:2 LCP: I CONFACK [ACKsent] id 1 len 10
Aug 9 14:36:17.663: BR0:2 LCP: MagicNumber 0x6105E4E4 (0x05066105E4E4)
Aug 9 14:36:17.667: BR0:2 LCP: State is Open
Aug 9 14:36:17.667: BR0:2 PPP: Phase is AUTHENTICATING, by the peer [0 sess, 1 load]
Aug 9 14:36:17.715: ISDN BR0: RX <- RRr sapi=0 tei=78 nr=10
Aug 9 14:36:17.743: BR0:2 CHAP: I CHALLENGE id 9 len 27 from "Saturn"
Aug 9 14:36:17.747: BR0:2 CHAP: O RESPONSE id 9 len 26 from "Venus"
Aug 9 14:36:17.775: BR0:2 CHAP: I SUCCESS id 9 len 4
Aug 9 14:36:17.779: BR0:2 PPP: Phase is UP [0 sess, 0 load]
Aug 9 14:36:17.783: BR0:2 BNCP: O CONFREQ [Closed] id 1 len 4
Aug 9 14:36:17.787: BR0:2 IPCP: O CONFREQ [Closed] id 1 len 10
Aug 9 14:36:17.791: BR0:2 IPCP: Address 10.1.1.2 (0x03060A010102)
Aug 9 14:36:17.795: BR0:2 CDPCP: O CONFREQ [Closed] id 1 len 4
Aug 9 14:36:17.803: BR0:2 BNCP: I CONFREQ [REQsent] id 1 len 4
Aug 9 14:36:17.803: BR0:2 BNCP: O CONFACK [REQsent] id 1 len 4
Aug 9 14:36:17.811: BR0:2 IPCP: I CONFREQ [REQsent] id 1 len 10
Aug 9 14:36:17.815: BR0:2 IPCP: Address 10.1.1.3 (0x03060A010103)
Aug 9 14:36:17.819: BR0:2 IPCP: O CONFACK [REQsent] id 1 len 10
Aug 9 14:36:17.823: BR0:2 IPCP: Address 10.1.1.3 (0x03060A010103)
Aug 9 14:36:17.827: BR0:2 CDPCP: I CONFREQ [REQsent] id 1 len 4
Aug 9 14:36:17.831: BR0:2 CDPCP: O CONFACK [REQsent] id 1 len 4
Aug 9 14:36:17.835: BR0:2 BNCP: I CONFACK [ACKsent] id 1 len 4
Aug 9 14:36:17.839: BR0:2 BNCP: State is Open
Aug 9 14:36:17.843: BR0:2 IPCP: I CONFACK [ACKsent] id 1 len 10
Aug 9 14:36:17.847: BR0:2 IPCP: Address 10.1.1.2 (0x03060A010102)
Aug 9 14:36:17.847: BR0:2 IPCP: State is Open
Aug 9 14:36:17.855: BR0:2 CDPCP: I CONFACK [ACKsent] id 1 len 4
Aug 9 14:36:17.859: BR0:2 CDPCP: State is Open
Aug 9 14:36:17.867: Dil IPCP: Install route to 10.1.1.3
03:04:32: %LINEPROTO-5-UPDOWN: Line protocol on Interface BRI0:2, changed state to up
03:04:37: %ISDN-6-CONNECT: Interface BRI0:2 is now connected to 5552000 unknown
```

Debugs on Saturn at the Same Moment

Saturn#show deb

PPP:

PPP authentication debugging is on
PPP protocol negotiation debugging is on

ISDN:

ISDN events debugging is on
ISDN Q921 packets debugging is on
ISDN Q931 packets debugging is on

Saturn#

```
Aug 9 14:36:14.343: ISDN BR0: RX <- UI c/r=1 sapi=0 tei=127
i=0x080118050402889018018A7008C135353532303030
Aug 9 14:36:14.367: SETUP pd = 8 callref = 0x18
Aug 9 14:36:14.371: Bearer Capability i = 0x8890
Aug 9 14:36:14.379: Channel ID i = 0x8A
Aug 9 14:36:14.383: Called Party Number i = 0xC1,
'5552000', Plan:ISDN, Type:Subscriber(local)
Aug 9 14:36:14.407: CCBRI_Go Fr L3 pkt (Len=21) :
Aug 9 14:36:14.411: 5 1 98 90 4 2 88 90 18 1 8A 70 8 C1 35 35 35 32 30 30 30
Aug 9 14:36:14.419:
Aug 9 14:36:14.419: ISDN BR0: Incoming call id = 0x000C, dsl 0
Aug 9 14:36:14.423: ISDN BR0: LIF_EVENT: ces/callid 1/0xC HOST_INCOMING_CALL
Aug 9 14:36:14.431: ISDN BR0: HOST_INCOMING_CALL: (non-POTS) DATA
Aug 9 14:36:14.431: ISDN BR0: HOST_INCOMING_CALL: (1) call_type = DATA
Aug 9 14:36:14.435: extract_sa: no 0x71 ie to extract
Aug 9 14:36:14.435: ISDN BR0: HOST_INCOMING_CALL: voice_answer_data = FALSE
call type is DATA
Aug 9 14:36:14.439: ISDN BR0: Event:
Received a DATA call from <unknown> on B2 at 64 Kb/s
Aug 9 14:36:14.443: ISDN BR0: Event: Accepting the call id 0xC
Aug 9 14:36:14.443: BR0:2 PPP: Phase is DOWN, Setup [0 sess, 1 load]
Aug 9 14:36:14.451: BR0:2 PPP: No remote authentication for call-in
03:04:07: %DIALER-6-BIND: Interface BR0:2 bound to profile Dil
Aug 9 14:36:14.463: ISDN BR0: RM returned call_type 0 resource type 0 response 1
Aug 9 14:36:14.467: CCBRI_Go Fr Host InPkgInfo (Len=9) :
Aug 9 14:36:14.467: 7 0 1 0 C 3 18 1 8A
Aug 9 14:36:14.471:
Aug 9 14:36:14.479: ISDN BR0: isdn_send_connect(): msg 4, call id 0xC, ces 1 bchan 1,
call type DATA
03:04:07: %LINK-3-UPDOWN: Interface BRI0:2, changed state to up
Aug 9 14:36:14.495: ISDN: get_isdn_service_state(): idb 0x2410C4 bchan 3 is_isdn 1
Not a Pri
Aug 9 14:36:14.499: BR0:2 PPP: Treating connection as a callin
Aug 9 14:36:14.499: BR0:2 PPP: Phase is ESTABLISHING, Passive Open [0 sess, 1 load]
Aug 9 14:36:14.503: BR0:2 LCP: State is Listen
Aug 9 14:36:14.503: CCBRI_Go Fr Host InPkgInfo (Len=6) :
Aug 9 14:36:14.507: 4 0 1 0 C 0
Aug 9 14:36:14.511:
Aug 9 14:36:14.523: ISDN BR0: TX -> INFOc sapi=0 tei=73 ns=40 nr=29 i=0x0801980218018A
Aug 9 14:36:14.535: CALL_PROC pd = 8 callref = 0x98
Aug 9 14:36:14.539: Channel ID i = 0x8A
Aug 9 14:36:14.643: ISDN BR0: RX <- RRr sapi=0 tei=73 nr=41
Aug 9 14:36:14.655: ISDN BR0: TX -> INFOc sapi=0 tei=73 ns=41 nr=29 i=0x08019807
Aug 9 14:36:14.663: CONNECT pd = 8 callref = 0x98
Aug 9 14:36:14.835: ISDN BR0: RX <- INFOc sapi=0 tei=73 ns=29 nr=42 i=0x0801180F
Aug 9 14:36:14.843: CONNECT_ACK pd = 8 callref = 0x18
Aug 9 14:36:14.859: ISDN BR0: TX -> RRr sapi=0 tei=73 nr=30
Aug 9 14:36:14.863: CCBRI_Go Fr L3 pkt (Len=4) :
Aug 9 14:36:14.867: F 1 98 92
Aug 9 14:36:14.871:
Aug 9 14:36:14.871: ISDN BR0: LIF_EVENT: ces/callid 1/0xC HOST_CONNECT
Aug 9 14:36:14.875: ISDN BR0: Event: Connected to <unknown> on B2 at 64 Kb/s
Aug 9 14:36:14.923: BR0:2 LCP: I CONFREQ [Listen] id 1 len 10
Aug 9 14:36:14.927: BR0:2 LCP: MagicNumber 0x6105E4E4 (0x05066105E4E4)
Aug 9 14:36:14.931: BR0:2 LCP: O CONFREQ [Listen] id 1 len 15
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Aug 9 14:36:14.935: BR0:2 LCP: AuthProto CHAP (0x0305C22305)
Aug 9 14:36:14.939: BR0:2 LCP: MagicNumber 0x610588B1 (0x0506610588B1)
Aug 9 14:36:14.943: BR0:2 LCP: O CONFACK [Listen] id 1 len 10
Aug 9 14:36:14.947: BR0:2 LCP: MagicNumber 0x6105E4E4 (0x05066105E4E4)
Aug 9 14:36:15.047: BR0:2 LCP: I CONFACK [ACKsent] id 1 len 15
Aug 9 14:36:15.051: BR0:2 LCP: AuthProto CHAP (0x0305C22305)
Aug 9 14:36:15.055: BR0:2 LCP: MagicNumber 0x610588B1 (0x0506610588B1)
Aug 9 14:36:15.059: BR0:2 LCP: State is Open
Aug 9 14:36:15.059: BR0:2 PPP: Phase is AUTHENTICATING, by this end [0 sess, 0 load]
Aug 9 14:36:15.063: BR0:2 CHAP: O CHALLENGE id 9 len 27 from "Saturn"
Aug 9 14:36:15.091: BR0:2 CHAP: I RESPONSE id 9 len 26 from "Venus"
Aug 9 14:36:15.099: BR0:2 CHAP: O SUCCESS id 9 len 4
Aug 9 14:36:15.107: BR0:2 PPP: Phase is UP [0 sess, 0 load]
Aug 9 14:36:15.111: BR0:2 BNCP: O CONFREQ [Closed] id 1 len 4
Aug 9 14:36:15.115: BR0:2 IPCP: O CONFREQ [Closed] id 1 len 10
Aug 9 14:36:15.119: BR0:2 IPCP: Address 10.1.1.3 (0x03060A010103)
Aug 9 14:36:15.123: BR0:2 CDPCP: O CONFREQ [Closed] id 1 len 4
Aug 9 14:36:15.131: BR0:2 BNCP: I CONFREQ [REQsent] id 1 len 4
Aug 9 14:36:15.135: BR0:2 BNCP: O CONFACK [REQsent] id 1 len 4
Aug 9 14:36:15.139: BR0:2 IPCP: I CONFREQ [REQsent] id 1 len 10
Aug 9 14:36:15.143: BR0:2 IPCP: Address 10.1.1.2 (0x03060A010102)
Aug 9 14:36:15.147: BR0:2 IPCP: O CONFACK [REQsent] id 1 len 10
Aug 9 14:36:15.151: BR0:2 IPCP: Address 10.1.1.2 (0x03060A010102)
Aug 9 14:36:15.155: BR0:2 CDPCP: I CONFREQ [REQsent] id 1 len 4
Aug 9 14:36:15.159: BR0:2 CDPCP: O CONFACK [REQsent] id 1 len 4
Aug 9 14:36:15.163: BR0:2 BNCP: I CONFACK [ACKsent] id 1 len 4
Aug 9 14:36:15.167: BR0:2 BNCP: State is Open
Aug 9 14:36:15.171: BR0:2 IPCP: I CONFACK [ACKsent] id 1 len 10
Aug 9 14:36:15.175: BR0:2 IPCP: Address 10.1.1.3 (0x03060A010103)
Aug 9 14:36:15.179: BR0:2 IPCP: State is Open
Aug 9 14:36:15.183: BR0:2 CDPCP: I CONFACK [ACKsent] id 1 len 4
Aug 9 14:36:15.187: BR0:2 CDPCP: State is Open
Aug 9 14:36:15.195: Di1 IPCP: Install route to 10.1.1.2
03:04:09: %LINEPROTO-5-UPDOWN: Line protocol on Interface BRI0:2,
changed state to up
03:04:13: %ISDN-6-CONNECT: Interface BRI0:2 is now connected to 5551000 Venus
Saturn#
```

Related Information

- [Bridging Across ISDN](#)
- [Backup Bridging over ISDN](#)
- [Configuring Transparent Bridging](#)
- [More Information on Dial-Backup Commands](#)
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