ISDN BRI 链路上第二个 B 通道呼叫失败故障排除

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简介

多链路点对点协议(MPPP)使您能够在ISDN BRI连接中同时启用两个B信道。MPPP在ISDN终端设备之间提供128k(2 x 64kbps)的带宽。但是，在许多情况下，路由器只能与一个B信道连接，而另一个B信道则保持空闲。本文档讨论如何排除此类情况下的问题。

注意：此过程主要用于与一个BRI链路（即两个B信道）的连接。 如果使用MPPP捆绑两个或多个BRI（即至少三个B信道），请参阅配置带多个BRI接口的多链路PPP。

先决条件

要求

检验路由器是否可以使用一个B通道相互连接。本文档仅介绍与其他多链路通道相关的连接故障。如果无法连接一个通道，请参阅ISDN BRI故障排除流程图。

除非第一个通道成功连接，否则请勿继续执行本文档中的步骤。

Cisco 建议您了解以下主题：

- 一般ISDN和按需拨号路由(DDR)配置概念。有关详细信息，请参阅Cisco Learning Connection上提供的基本ISDN和DDR配置的培训演示文稿。
- 如何调试ISDN和PPP。您必须能够确定路由器是否拨号、在ISDN层连接和协商PPP。

使用的组件

本文档中的信息基于以下软件和硬件版本：

- 思科IOS®软件版本12.1(2)和12.2(2)TCisco在Cisco IOS®软件版本12.1(2)中引入了dialer redial命令。 之后，思科修改了该命令，在Cisco IOS软件版本12.2(2)T中包含其他选项。有关此功能的详细信息，请参阅重拨增强功能。
- 两台路由器连接到实时BRI电路。

本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原始（默认）配置。如果您使用的是真实网络，请确保您已经了解所有命令的潜在影响。

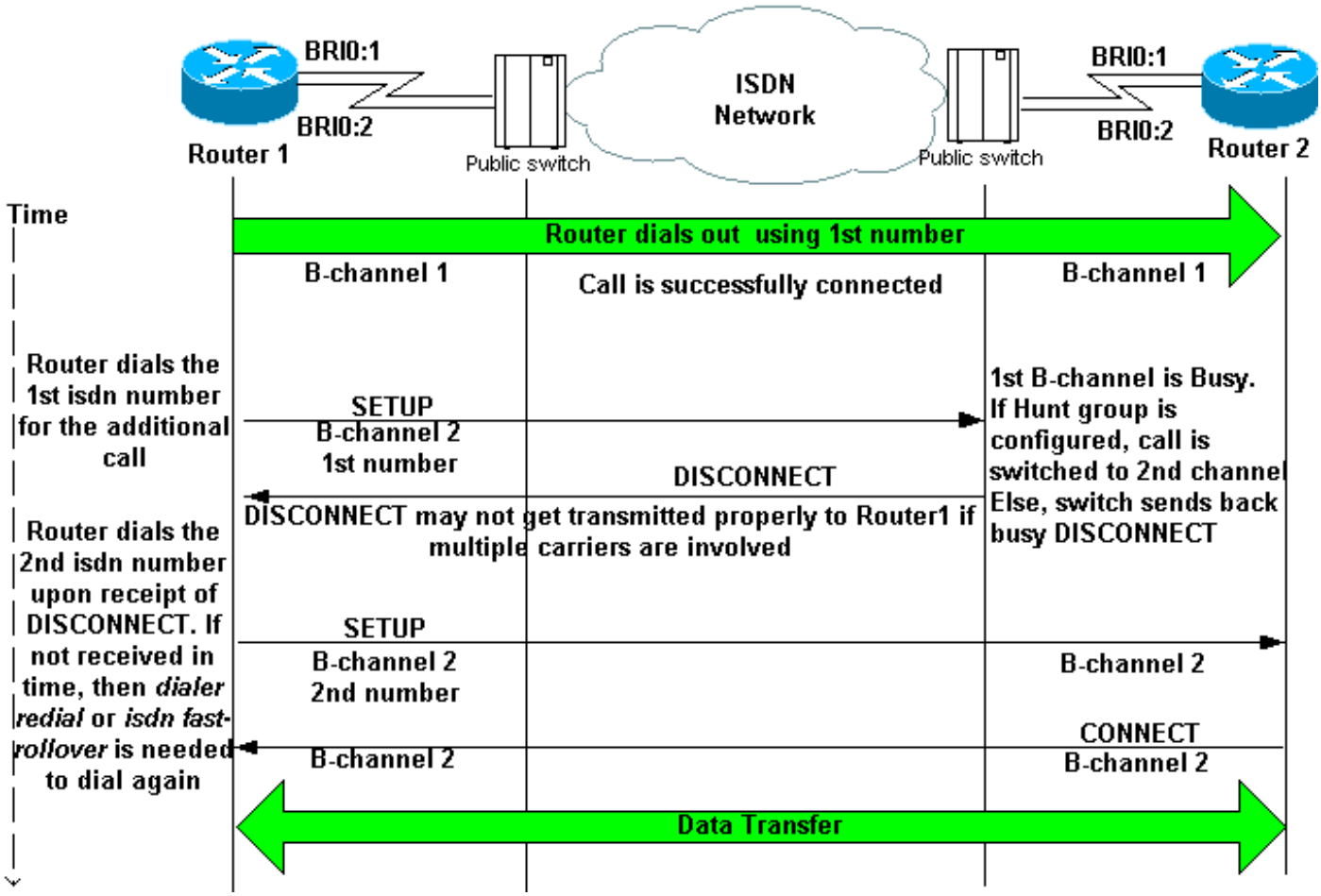
规则

有关文档规则的详细信息，请参阅 Cisco 技术提示规则。

问题说明

路由器在BRI上启动两个B信道，以尝试连接到ISDN对等体。与对等体的连接成功。但是，只有一个B通道成功连接。多链路PPP尝试启用其他B信道，但呼叫持续失败。

下图说明成功呼叫的呼叫流：



您必须向Telco提出的问题

在配置多链路并排除故障时，请向被叫路由器的电信公司提出以下问题：

1. **问题**：是否需要拨打一个或两个号码才能连接到两个远程B信道？**答案：一个数字：在本地路由器的物理或拨号器接口上（如果适用）配置单个拨号器字符串**或拨号器映射。有关详细信息，请参阅步骤4。继续问题2。**两个数字：在本地路由器上，为每个远程B信道ISDN号码配置**拨号器**映射或拨号器字符串。**有关详细信息，请参阅步骤4。
2. **问题**：是否在寻线组中配置了两个B信道号？**答案：Yes:**这是只需要一个数字才能连接到两个B信道的电路的预期设置。寻线组绑定两个B信道号（因此呼叫方只需要一个号码即可呼叫）。 在第一个B信道连接后，主叫路由器再次拨打同一号码。位于最靠近被叫路由器的远程端的交换机识别出第一个B信道正忙，并将呼叫转接到第二个B信道，从而实现绑定。**否：**要求电信公司在寻线组中配置两个B信道号码，并在第一个号码忙时自动将呼叫滚动到第二个号码。如果电信公司未配置寻线组，请按照“故障排除”部分的步骤5所述配置**dialer redial**或**isdn fast-rollver delay**命令。

故障排除

注意：在使用此过程之前，请验证路由器是否通过一个B通道彼此连接。如果无法与一个通道连接，请参阅ISDN BRI故障排除流程图。

1. 打开以下debug命令：**debug dialer**、 **debug isdn q931**和debug **ppp negotiation**。
2. 启动发往远程设备的流量。确保有足够的流量来发起额外的呼叫。**提示：**您可以使用扩展ping实用程序来改变数据报/数据包大小和ping数量。有关如何使用扩展ping命令和扩展traceroute命令的详细信息，请参阅。
3. 检查路由器是否尝试进行第二次呼叫。调试如下所示：

```
*Mar  1 01:30:55.295: BRI3/0 DDR: rotor dialout [priority]
!--- Use BRI 3/0 to dial out. *Mar 1 01:30:55.295: BRI3/0 DDR: Dialing cause ip
(s=10.1.1.1, d=172.22.53.201)
!--- DDR dialing cause is a ping to the remote router. *Mar 1 01:30:55.295: BRI3/0 DDR:
Attempting to dial 5558888
!--- Dial the remote number. *Mar 1 01:30:55.295: ISDN BR3/0: TX -> SETUP pd = 8 callref =
0x07 *Mar 1 01:30:55.299: Bearer Capability i = 0x8890218F *Mar 1 01:30:55.299: Channel ID
i = 0x83 *Mar 1 01:30:55.299: Keypad Facility i = '5558888'
```

4. 路由器是否尝试进行第二次呼叫？**Yes:**继续执行步骤 5。**否：**这意味着路由器未正确配置多链路PPP。配置以下命令：有关多链路PPP的配置选项的详细信息，请参阅DDR的多链路PPP — 基本配置和验证。
5. 在物理或拨号器接口下配置以下命令之一：**dialer redial interval 5 attempts 3** — 拨号尝试之间的间隔为五秒，最多为三次尝试。此间隔允许在重拨尝试之前完全断开旧呼叫。**isdn fast-rollover-delay 5** — 将滚动延迟设置为5秒。提供此延迟，以便在尝试新呼叫之前完全断开旧呼叫。在某些ISDN交换机上，此命令是必需的，因为新呼叫尝试可能在旧呼叫完全断开之前发生。这会导致第二个呼叫失败。

示例输出

本节提供成功和不成功呼叫的配置示例和调试输出。使用此部分作为参考，检查您观察到的调试是否与此处显示的调试匹配：


```
interface BRI1/0
 ip address 192.168.1.111 255.255.255.0
 encapsulation ppp
 dialer map ip 192.168.1.1 name asc001 13305551111
 dialer map ip 192.168.1.1 name asc001 13305551112
 !--- Notice that the dialer map statements are identical except for !--- the phone numbers to
dial. !--- The numbers correspond to the ISDN numbers of the remote BRI. !--- This router will
use the first dialer map, then the second dialer map. dialer load-threshold 1 either !--- Set
the load-threshold to the required value and direction dialer-group 1. isdn switch-type basic-ni
isdn spid1 25255588880101 5558888 isdn spid2 25255588890101 5558889 isdn fast-rollover-delay 5
!--- Rollover delay is set to 5 seconds. ppp authentication chap pap callin ppp multilink !---
Enable multilink on the interface.
```

激活**debug isdn q931**和**debug ppp negotiation**，并启动对远程终端IP地址的ping。

```
asc011#ping 192.168.1.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.1.1, timeout is 2 seconds:
Aug 24 16:30:35.651 est: ISDN BR1/0: TX -> SETUP pd = 8 callref = 0x3B
Aug 24 16:30:35.655 EST: Bearer Capability i = 0x8890218F
Aug 24 16:30:35.655 EST: Channel ID i = 0x83
Aug 24 16:30:35.659 EST: Keypad Facility i = '13305551111'
!--- Calling out with the number specified in the first dialer map. Aug 24 16:30:35.896 EST:
ISDN BR1/0: RX <- CALL_PROC pd = 8 callref = 0xBB Aug 24 16:30:35.896 EST: Channel ID i = 0x89
Aug 24 16:30:35.900 EST: Locking Shift to Codeset 5 Aug 24 16:30:35.900 EST: Codeset 5 IE 0x2A i
= 0x80880B,'13305551111', 0x8001098001148001148001l4.. Aug 24 16:30:38.877 EST: ISDN BR1/0: RX
<- ALERTING pd = 8 callref = 0xBB Aug 24 16:30:38.881 EST: Signal i = 0x01 - Ring back tone on
Aug 24 16:30:38.929 EST: ISDN BR1/0: RX <- CONNECT pd = 8 callref =0xBB Aug 24 16:30:38.929 EST:
Signal i = 0x3F - Tones off Aug 24 16:30:38.937 EST: %LINK-3-UPDOWN: Interface BRI1/0:1, changed
state to up Aug 24 16:30:38.941 EST: BR1/0:1 PPP: Treating connection as a callout Aug 24
16:30:38.945 EST: BR1/0:1 PPP: Phase is ESTABLISHING, Active Open [0 sess , 0 load] Aug 24
16:30:38.945 EST: BR1/0:1 PPP: No remote authentication for call-out Aug 24 16:30:38.945 EST:
BR1/0:1 LCP: O CONFREQ [Closed] id 5 len 23 Aug 24 16:30:38.945 EST: BR1/0:1 LCP: MagicNumber
0x55EE5FC7 (0x050655EE5FC7) Aug 24 16:30:38.945 EST: BR1/0:1 LCP: MRRU 1524 (0x110405F4) Aug 24
16:30:38.949 EST: BR1/0:1 LCP: EndpointDisc 1 Local (0x130901617363303131) Aug 24 16:30:38.949
EST: ISDN BR1/0: TX -> CONNECT_ACK pd = 8 callref = 0x3B ... !--- Output omitted. ... Aug 24
16:30:39.009 EST: BR1/0:1 LCP: I CONFACK [ACKsent] id 5 Len 23 Aug 24 16:30:39.009 EST: BR1/0:1
LCP: MagicNumber 0x55EE5FC7(0x050655EE5FC7) Aug 24 16:30:39.009 EST: BR1/0:1 LCP: MRRU 1524
(0x110405F4) Aug 24 16:30:39.009 EST: BR1/0:1 LCP: EndpointDisc 1 Local (0x130901617363303131)
Aug 24 16:30:39.013 EST: BR1/0:1 LCP: State is Open Aug 24 16:30:39.013 EST: BR1/0:1 PPP:Phase
is AUTHENTICATING, by the peer [0 sess, 0 load] Aug 24 16:30:39.057 EST: BR1/0:1 CHAP: I
CHALLENGE id 151 Len 27 from "asc001" Aug 24 16:30:39.061 EST: BR1/0:1 CHAP: O RESPONSE id 151
Len 27 from "asc011" Aug 24 16:30:39.109 EST: BR1/0:1 CHAP: I SUCCESS id 151 Len 4!---
Authentication is successful. Aug 24 16:30:39.109 EST: BR1/0:1 PPP: Phase is VIRTUALIZED [0
sess, 0 load] Aug 24 16:30:39.113 EST: Vi1 PPP: Phase is DOWN, Setup [0 sess, 0 load] Aug 24
16:30:39.121 EST: %LINK-3-UPDOWN: Interface Virtual-Access1, changed state to up Aug 24
16:30:39.121 EST: Vi1 PPP: Treating connection as a callout Aug 24 16:30:39.121 EST: Vi1 PPP:
Phase is ESTABLISHING, Active Open [0sess, 0load] Aug 24 16:30:39.125 EST: Vi1 PPP: No remote
authentication for call-out Aug 24 16:30:39.125 EST: Vi1 LCP: O CONFREQ [Closed] id 1 Len 23 Aug
```

24 16:30:39.125 EST: Vi1 LCP: MagicNumber 0x55EE6079(0x050655EE6079) Aug 24 16:30:39.125 EST: Vi1 LCP: MRRU 1524 (0x110405F4) Aug 24 16:30:39.125 EST: Vi1 LCP: EndpointDisc 1 Local (0x130901617363303131) Aug 24 16:30:39.129 EST: Vi1 PPP: Phase is UP [0 sess, 0 load] Aug 24 16:30:39.129 EST: Vi1 IPCP: O CONFREQ [Closed] id 1 Len 10 Aug 24 16:30:39.129 EST: Vi1 IPCP: Address 192.168.1.111(0x0306C0A8016F) Aug 24 16:30:39.137 EST: Vi1 IPCP: I CONFREQ [REQsent] id 1 Len 10 Aug 24 16:30:39.137 EST: Vi1 IPCP: Address 192.168.1.1 (0x0306C0A80101) Aug 24 16:30:39.137 EST: Vi1 IPCP: O CONFACK [REQsent] id 1 Len 10 Aug 24 16:30:39.137 EST: Vi1 IPCP: Address 192.168.1.1 (0x0306C0A80101) Aug 24 16:30:39.177 EST: Vi1 IPCP: I CONFACK [ACKsent] id 1 Len 10 Aug 24 16:30:39.177 EST: Vi1 IPCP: Address 192.168.1.111 (0x0306C0A8016F) Aug 24 16:30:39.181 EST: Vi1 IPCP: State is Open Aug 24 16:30:39.185 EST: **BR1/0 IPCP: Install route to 192.168.1.1**

!--- First call is successful. We will now initiate the additional call. Aug 24 16:30:39.754 EST: ISDN BR1/0: TX -> SETUP pd = 8 callref = 0x3C Aug 24 16:30:39.754 EST: Bearer Capability i = 0x8890218F Aug 24 16:30:39.758 EST: Channel ID i = 0x83 Aug 24 16:30:39.762 EST: Keypad Facility i = '**13305551111**'

!--- We once again dial out with the first dialer map (the expected behavior). !--- This call fails and router rolls over to use the second dialer map. Aug 24 16:30:39.995 EST: ISDN BR1/0: RX <- CALL_PROC pd = 8 callref = 0xBC Aug 24 16:30:39.995 EST: Channel ID i = 0x8A Aug 24 16:30:39.999 EST: Locking Shift to Codeset 5 Aug 24 16:30:39.999 EST: Codeset 5 IE 0x2A i = 0x80880B,'13305551111',0x8001098001148001148001l4 Aug 24 16:30:40.111 EST: %LINEPROTO-5-UPDOWN: Line protocol on Interface BRI1/0:1, changed state to up Aug 24 16:30:40.131 EST: %LINEPROTO-5-UPDOWN: Line protocol on Interface Virtual-Access1, changed state to up Aug 24 16:30:41.209 EST: BR1/0:1 LCP: I ECHOREQ [Open] id 1 Len 12 magic 0x8EFDDF16 Aug 24 16:30:41.209 EST: BR1/0:1 LCP: O ECHOREP [Open] id 1 Len 12 magic 0x55EE5FC7 Aug 24 16:30:42.779 EST: ISDN BR1/0: **RX <- DISCONNECT** pd = 8 callref = 0xBC
Aug 24 16:30:42.783 EST: Cause i = 0x8291 - **User busy**
Aug 24 16:30:42.783 EST: Signal i = 0x04 - Busy tone on

!--- The call fails. The remote switch sends a message that the B-channel is busy. !--- Upon receipt of this disconnect, the router dials the second dialer map. !--- If you do not receive this Disconnect within a certain timeframe, the router !--- does not attempt another call. The **dialer redial** or **isdn fast-rollover** !--- commands can fix this issue.

Aug 24 16:30:42.795 EST: %ISDN-6-CONNECT: Interface BRI1/0:1 is now connected to
  13305551111 asc001
Aug 24 16:30:42.807 EST: ISDN BR1/0: TX -> RELEASE pd = 8 callref = 0x3C
Aug 24 16:30:42.831 EST: ISDN BR1/0: TX -> SETUP pd = 8 callref = 0x3D
Aug 24 16:30:42.835 EST: Bearer Capability i = 0x8890218F
Aug 24 16:30:42.835 EST: Channel ID i = 0x83
Aug 24 16:30:42.839 EST: Keypad Facility i = '**13305551112**'

!--- Dial with the second dialer map. Aug 24 16:30:42.927 EST: ISDN BR1/0: RX <- RELEASE_COMP pd = 8 callref = 0xBC Aug 24 16:30:42.931 EST: Signal i = 0x3F - Tones off Aug 24 16:30:43.096 EST: ISDN BR1/0: RX <- CALL_PROC pd = 8 callref = 0xBD Aug 24 16:30:43.096 EST: Channel ID i = 0x8A Aug 24 16:30:43.100 EST: Locking Shift to Codeset 5 asc011# Aug 24 16:30:43.100 EST: Codeset 5 IE 0x2A i = 0x80880B, '13305551112' ,0x8001098001148001148001l4 Aug 24 16:30:46.329 EST: ISDN BR1/0: RX <- ALERTING pd = 8 callref = 0xBD Aug 24 16:30:46.329 EST: Signal i = 0x01 - Ring back tone on Aug 24 16:30:46.361 EST: ISDN BR1/0: RX <- CONNECT pd = 8 callref = 0xBD Aug 24 16:30:46.361 EST: Signal i = 0x3F - Tones off Aug 24 16:30:46.373 EST: %LINK-3-UPDOWN: Interface BRI1/0:2, changed state to up Aug 24 16:30:46.373 EST: BR1/0:2 PPP: Treating connection as a callout ... *!--- Output omitted.* ... Aug 24 16:30:46.445 EST: BR1/0:2 LCP: State is Open Aug 24 16:30:46.445 EST: BR1/0:2 PPP: Phase is AUTHENTICATING, by the peer [0 sess, 1 load] Aug 24 16:30:46.489 EST: BR1/0:2 CHAP: I CHALLENGE id 31 Len 27 from "asc001" Aug 24 16:30:46.493 EST: BR1/0:2 CHAP: O RESPONSE id 31 Len 27 from "asc011" Aug 24 16:30:46.542 EST: BR1/0:2 CHAP: I SUCCESS id 31 Len 4 Aug 24 16:30:46.542 EST: BR1/0:2 PPP: Phase is VIRTUALIZED [0 sess, 1 load] Aug 24 16:30:46.546 EST: BR1/0:2 MLP: asc001, multilink up Aug 24 16:30:47.343 EST: BR1/0:1 LCP: I ECHOREP [Open] id 1 Len 12 magic 0x8EFDDF16 Aug 24 16:30:47.343 EST: BR1/0:1 LCP: Received id 1, sent id 1, line up Aug 24 16:30:47.343 EST: BR1/0:2 LCP: I ECHOREP [Open] id 1 Len 12 magic 0x8EFDFC22 Aug 24 16:30:47.347 EST: BR1/0:2 LCP: Received id 1, sent id 1, line up Aug 24 16:30:47.543 EST: %LINEPROTO-5-UPDOWN: Line protocol on Interface BRI1/0:2, changed state to up

!--- The 2 B-channel Call connects. asc011#

使用**show isdn active** 命令检查连接。注意每个出站呼叫的被叫号码。

```
ISDN ACTIVE CALLS
--------------------------------------------------------------------------------
Call   Calling   Called  Remote  Seconds  Seconds   Seconds  Charges
Type    Number   Number  Name     Used    Left      Idle     Units/Currency
--------------------------------------------------------------------------------
Out         +3305551111 asc001         55 Unavail    0         0
Out         +3305551112 asc001         48 Unavail    0         0
--------------------------------------------------------------------------------
```

此示例显示FAILED调用。省略了一些无关的输出。

```
asc008#ping 192.168.1.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.1.1, timeout is 2 seconds:
Aug 21 09:33:17.627 EST: BR1/0 DDR: Dialing cause ip (s=192.168.1.108,d=192.168.1.1)
Aug 21 09:33:17.627 EST: BR1/0 DDR: Attempting to dial 13305551111
Aug 21 09:33:17.635 EST: ISDN BR1/0: TX -> SETUP pd = 8 callref = 0x0C
Aug 21 09:33:17.639 EST: Bearer Capability i = 0x8890
Aug 21 09:33:17.639 EST: Channel ID i = 0x83
Aug 21 09:33:17.639 EST: Keypad Facility i = '13305551111'
!--- Calling out with the number specified in the first dialer map. Aug 21 09:33:18.184 EST:
ISDN BR1/0: RX <- CALL_PROC pd = 8 callref = 0x8C Aug 21 09:33:18.184 EST: Channel ID i = 0x89.
Aug 21 09:33:20.532 EST: ISDN BR1/0: RX <- ALERTING pd = 8 callref =0x8C Aug 21 09:33:20.536
EST: Signal i = 0x01 - Ring back tone on Aug 21 09:33:20.564 EST: ISDN BR1/0: RX <- CONNECT pd =
8 callref =0x8C Aug 21 09:33:20.568 EST: Signal i = 0x3F - Tones off Aug 21 09:33:20.572 EST:
%LINK-3-UPDOWN: Interface BRI1/0:1, changed state to up Aug 21 09:33:20.576 EST: BR1/0:1 PPP:
Treating connection as a callout Aug 21 09:33:20.580 EST: BR1/0:1 PPP: Phase is ESTABLISHING,
Active Open [0 sess, 1 load] ... ! --Output omitted. ... Aug 21 09:33:20.660 EST: BR1/0:1 LCP:
State is Open Aug 21 09:33:20.660 EST: BR1/0:1 PPP: Phase is AUTHENTICATING, by the peer [0
sess, 1 load] Aug 21 09:33:20.720 EST: BR1/0:1 CHAP: I CHALLENGE id 127 Len 27 from "asc001" Aug
21 09:33:20.720 EST: BR1/0:1 CHAP: O RESPONSE id 127 Len 27 from "asc008" Aug 21 09:33:20.784
EST: BR1/0:1 CHAP: I SUCCESS id 127 Len 4
!--- Authentication is successful. Aug 21 09:33:20.784 EST: BR1/0:1 PPP: Phase is VIRTUALIZED [0
sess, 1 load] Aug 21 09:33:20.784 EST: Vi1 PPP: Phase is DOWN, Setup [0 sess, 1 load] Aug 21
09:33:20.792 EST: %LINK-3-UPDOWN: Interface Virtual-Access1, changed state to up ... !--- Output
omitted. ... Aug 21 09:33:20.864 EST: Vi1 IPCP: Address 192.168.1.108(0x0306C0A8016C) Aug 21
09:33:20.864 EST: Vi1 IPCP: State is Open Aug 21 09:33:20.868 EST: Vi1 DDR: dialer protocol up
Aug 21 09:33:20.868 EST: BR1/0 IPCP: Install route to 192.168.1.1 Aug 21 09:33:21.089 EST: BR1/0
DDR: Attempting to dial 13305551111 Aug 21 09:33:21.093 EST: ISDN BR1/0: TX -> SETUP pd = 8
callref = 0x0D Aug 21 09:33:21.097 EST: Bearer Capability i = 0x8890 Aug 21 09:33:21.097 EST:
Channel ID i = 0x83 Aug 21 09:33:21.101 EST: Keypad Facility i = '13305551111'
!--- The second call is dialed out with the first dialer map. !--- The first B-channel on the
remote BRI is in use. You must receive a !--- Disconnect(cause code:busy). Aug 21 09:33:21.581
EST: ISDN BR1/0: RX <- CALL_PROC pd = 8 callref =0x8D Aug 21 09:33:21.581 EST: Channel ID i =
0x8A Aug 21 09:33:21.786 EST: %LINEPROTO-5-UPDOWN: Line protocol on InterfaceBRI1/0:1, changed
state to up Aug 21 09:33:21.802 EST: %LINEPROTO-5-UPDOWN: Line protocol on Interface Virtual -
Access1, changed state to up Aug 21 09:33:23.577 EST: ISDN BR1/0: RX <- PROGRESS pd = 8 callref
= 0x8D
Aug 21 09:33:23.577 EST: Cause i = 0x8491 - User busy
Aug 21 09:33:23.581 EST: Progress Ind i = 0x8488 - In-band info or appropriate
  now available
!--- In this case, the "Rx <- PROGRESS" is returned, the CALLED !--- router does not even try to
call out on the second number because the router !--- assumes the call is in progress. You must
receive a DISCONNECT for the router !--- to dial the second number. Aug 21 09:33:26.578 EST:
%ISDN-6-CONNECT: Interface BRI1/0:1 is now connected to 13305551111 asc001 Aug 21 09:33:51.091
EST: BRI1/0: wait for isdn carrier timeout, call nbid=0x8010 Aug 21 09:33:51.091 EST: BR1/0 DDR:
Attempting to dial 13305551112 Aug 21 09:33:51.099 EST: ISDN BR1/0: TX -> DISCONNECT pd = 8
callref = 0x0D
Aug 21 09:33:51.103 EST: Cause i = 0x8090 - Normal call clearing
Aug 21 09:33:51.147 EST: ISDN BR1/0: RX <- RELEASE pd = 8 callref = 0x8D
```

```
Aug 21 09:33:51.155 EST: ISDN BR1/0: TX -> RELEASE_COMP pd = 8 callref = 0x0Di
 !--- No CONNECT follows the PROGRESS, and so the ISDN carrier times out. !--- Interestingly the
ISDN dialer calls out, but the IOS !--- disconnects the same (due to the expiry of certain
dialer timers).
```

使用**show isdn active**命令检查连接。请注意，只有一个连接处于活动状态。

```
-------------------------------------------------------------------------------
ISDN ACTIVE CALLS
-------------------------------------------------------------------------------
Call     Calling    Called    Remote    Seconds    Seconds  Seconds    Charges
Type     Number     Number     Name       Used      Left       Idle
Units/Currency
-------------------------------------------------------------------------------
Out             +3305551111  asc001       25       Unavail      0         0
-------------------------------------------------------------------------------
```

相关信息

- DDR 多链路 PPP - 基本配置和验证
- ISDN BRI 故障排除流程图
- 使用debug isdn q931命令排除ISDN BRI第3层故障
- 如何提高添加 ISDN B 信道到多链路 PPP 捆绑的速度
- 技术支持和文档 - Cisco Systems