使用 BRI 和 Backup Interface 命令实现 DDR 备份

目录

简介

此配置演示了如何使用集成多业务数字网络(ISDN)基本速率接口(BRI)线路备份租用线路连接。**backup interface**命令将指定接口置于备用模式，直到主接口关闭。有关备份接口功能的详细信息，请参阅评估备份接口、浮动静态路由和DDR备份拨号器监视。

先决条件

要求

建议您参考文档配置DDR备份并排除故障以获取详细信息。

使用的组件

在本场景中，我们有一台Cisco 1604路由器通过串行连接连接到一台Cisco 3640路由器。两台路由器还配备BRI接口，用于备用链路。Cisco 1604运行Cisco IOS®软件版本12.1(5)T，Cisco 3640使用Cisco IOS 12.1(2)。

注意：此配置中的概念可用于具有BRI和WAN接口的任何路由器。

本文档中的信息都是基于特定实验室环境中的设备创建的。本文档中使用的所有设备最初均采用原始（默认）配置。如果您是在真实网络上操作，请确保您在使用任何命令前已经了解其潜在影响。

背景理论

本示例使用传统按需拨号路由(DDR)，该路由使用**dialer map**命令进行BRI连接。您还可以使用拨号程序配置文件，而不是传统DDR。有关拨号程序配置文件的详细信息，请参阅使用拨号程序配置文件配置ISDN DDR。

配置DDR备份介入二不同步骤：

1. 配置DDR以传统DDR或拨号配置文件。在实施备份配置前验证您的DDR连接正常工作。
2. 配置路由器以在主链路发生故障时启动DDR连接。此配置使用备份接口触发拨出。有关其他选项的详细信息，请参阅评估备份接口、浮动静态路由和DDR备份拨号器监视。

规则

有关文档规则的详细信息，请参阅 Cisco 技术提示规则。

配置

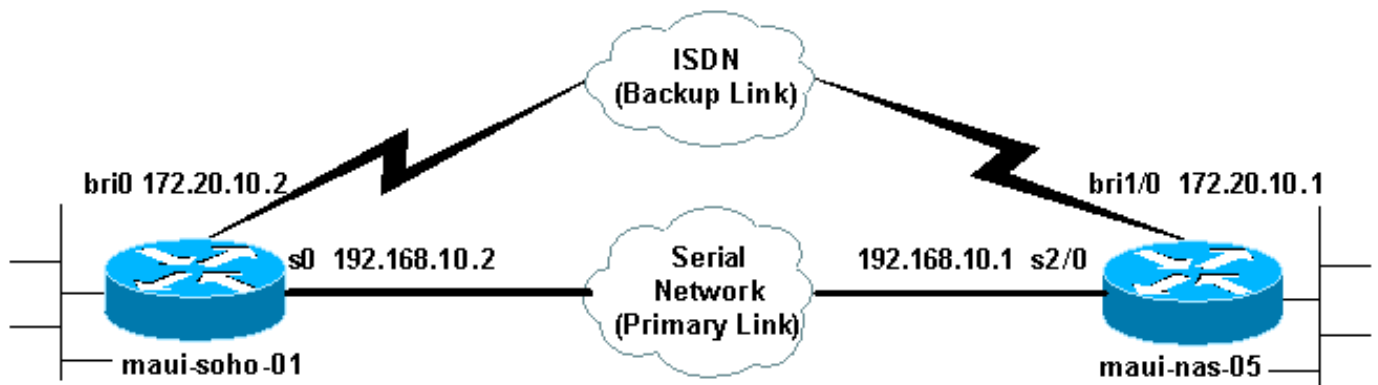本部分提供有关如何配置本文档所述功能的信息。

注意：要查找有关本文档中使用的命令的其他信息，请使用命令查找工具

网络图

本文档使用下图所示的网络设置。

配置

本文档使用如下所示的配置。

- maui-soho-01 (1600)
- maui-nas-05 (3640)

此配置使用一个BRI电路备份串行链路。此配置还在两台路由器之间使用开放最短路径优先(OSPF)路由协议。激活备份连接后，必须确保更新路由表以使用新的备份路由。

maui-soho-01 (1600)

```
maui-soho-01#show running-config
Building configuration...

Current configuration : 1720 bytes
!
version 12.1
service timestamps debug datetime msec
service timestamps log datetime msec
service password-encryption
!
hostname maui-soho-01
!
aaa new-model
aaa authentication login default local
aaa authentication login NO_AUTHEN none
aaa authentication ppp default if-needed local
!--- This is basic aaa configuration for PPP calls.
enable secret 5 <deleted> ! username admin password 7
<deleted> username maui-nas-05 password 7 <deleted> !---
Username for remote router (maui-nas-05) and shared
secret !--- (used for CHAP authentication). Shared
secret must be the same on both sides. ip subnet-zero no
ip finger ! isdn switch-type basic-ni ! interface
Loopback0 ip address 172.17.1.1 255.255.255.0 !
interface Ethernet0 ip address 172.16.1.1 255.255.255.0
! interface Serial0 backup delay 10 30 !--- Backup link
is activated 10 seconds after primary link goes down. !-
-- Backup link is deactivated 30 seconds after primary
link is restored. backup interface BRI0 !--- BRI0 will
backup interface serial 0. ip address 192.168.10.2
255.255.255.252 encapsulation ppp no ip mroute-cache no
fair-queue ! interface BRI0 ip address 172.20.10.2
255.255.255.0 !--- IP address for the BRI interface
(backup link). encapsulation ppp dialer idle-timeout 900
!--- Idle timeout(in seconds)for this link. dialer map
ip 172.20.10.1 name maui-nas-05 broadcast 5551111 dialer
map ip 172.20.10.1 name maui-nas-05 broadcast 5551112 !-
-- Dialer maps for remote destination. !--- The 2
different phone numbers correspond to the b-channels of
the remote side. dialer load-threshold 1 outbound !---
Load level for traffic at which additional connections
!--- will be added to the MPPP bundle. !--- Load level
values range from 1 (unloaded) to 255 (fully loaded).
dialer-group 1 !--- Apply interesting traffic definition
from dialer-list 1. isdn switch-type basic-ni isdn spid1
51299699380101 9969938 isdn spid2 51299699460101 9969946
ppp authentication chap !--- Use CHAP authentication.
ppp multilink !--- Use multilink to bring up both BRI
channels. ! router ospf 5 !--- OSPF configuration. If
you use a different protocol !--- configure that here.
Make sure to include the BRI network in the RP. log-
adjacency-changes network 172.16.0.0 0.0.255.255 area 0
network 172.17.0.0 0.0.255.255 area 0 network
172.20.10.0 0.0.0.255 area 0 network 192.168.10.0
0.0.0.3 area 0 ! ip classless no ip http server !
access-list 101 remark Interesting traffic definition
for backup link access-list 101 permit ip any any !---
Interesting traffic definition. If you do not want OSPF
```

```
to bring up !--- the link, then mark it uninteresting.
dialer-list 1 protocol ip list 101 !--- Interesting
traffic is applied to BRI0 using dialer-group 1. ! line
con 0 exec-timeout 0 0 login authentication NO_AUTHEN
transport input none line vty 0 4 ! end !
```

验证客户端maui-soho-01(1600)配置中的以下点：

- 使用环回地址。这样，OSPF的路由器ID不会更改，并且备份链路在激活时可以建立对等体。
- 拨号器负载阈值设置为低。如果不需要128k多链路备份连接，可更改此值。
- 任何 IP 流量都将触发拨号（基于 dialer-list 1 和 dialer-group 1）。 因为备份链路要求触发数据流拨通备份链路，以验证您有生成触发数据流的数据流源。在本示例中，OSPF hello 数据包将触发拨号。如果您没有使用路由协议，您可以使用ICMP Ping来拨打备份链路。根据需要来调节相关流量。
- 使用OSPF。您可以使用任何您想要的路由协议。只需确保路由协议中包含主接口网络和备用接口网络。如果您希望使用静态路由而不是路由协议，则使用远程BRI接口的下一跳创建静态路由(根据实际情况，您可以把它创建为浮动静态路由)。

maui-nas-05 (3640)

```
maui-nas-05#show running-config
Building configuration...

Current configuration:
!
version 12.1
service timestamps debug datetime msec
service timestamps log datetime msec
service password-encryption
!
hostname maui-nas-05
!
aaa new-model
aaa authentication login default local
aaa authentication login NO_AUTHEN none
aaa authentication ppp default if-needed local
!--- Basic AAA configuration for PPP calls. enable
secret 5 <deleted> ! username admin password 7 <deleted>
username maui-soho-01 password 7 <deleted> !--- Username
for remote router (maui-soho-01) and shared secret !---
(used for CHAP authentication). The shared secret must
be the same on both sides. ! ip subnet-zero ! isdn
switch-type basic-ni ! interface Loopback0 ip address
172.22.1.1 255.255.255.0 ! interface Ethernet0/0 no ip
address shutdown ! interface Ethernet0/1 no ip address
shutdown ! interface BRI1/0 ip address 172.20.10.1
255.255.255.0 !--- IP address for the BRI interface
(backup link). encapsulation ppp dialer idle-timeout 900
dialer map ip 172.20.10.2 name maui-soho-01 broadcast !-
-- Dialer map for remote destination. !--- The name
should match the authentication username provided by the
remote side. !--- Even though this router is not dialing
out, the dialer map statement !--- should be used.
dialer-group 1 !--- Apply interesting traffic defined in
dialer-list 1. isdn switch-type basic-ni isdn spid1
51255511110101 5551111 isdn spid2 51255511120101 5551112
ppp authentication chap ppp multilink !--- Use multilink
to bring up both B-channels. ! !--- Output removed. !
interface Serial2/0 ip address 192.168.10.1
```

```
255.255.255.252 encapsulation ppp no fair-queue
clockrate 64000 ! !--- Output removed. ! router ospf 5
network 172.20.10.0 0.0.0.255 area 0 network 172.22.1.0
0.0.0.255 area 0 network 192.168.10.0 0.0.0.3 area 0 !
ip classless no ip http server ! dialer-list 1 protocol
ip any !--- This defines all IP traffic as interesting.
! Line con 0 login authentication NO_AUTHEN transport
input none line 97 102 line AUX 0 line vty 0 4 ! end
```

在服务器 maui-nas-05 (3640) 的配置中，验证以下几点：

- 为远程站点配置了拨号器映射语句。不正确的dialer map语句可能导致连接的备用链路上出现路由问题。
- 所有IP流量都定义为相关流量。这将重置空闲超时并保持连接，直到主连接恢复。如果不需要固定备份链路，可以更改此设置。

验证

本部分所提供的信息可用于确认您的配置是否正常工作。

输出解释器工具支持某些 show 命令（只限于注册用户），通过它可以查看 show 命令输出的分析。

- **show interface bri0** — 这表示BRI接口是否处于启用状态。如果主链路处于打开状态，则BRI接口将处于备*用*状态。只有当主链路断开时，BRI接口才会*打开*。
- **show isdn status** — 使用此命令确保路由器与ISDN交换机正确通信。在输出中，验证第1层状态态是否为活跃状态，是否第2层状态=MULTIPLE_FRAME_ESTABLISHED出现。此指令也显示活动的呼叫的数量。

show ip route 输出示例

主链路运行的客户端maui-soho-01(1600)的路由表如下所示：

```
maui-soho-01#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     192.168.10.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.10.0/30 is directly connected, Serial0
C       192.168.10.1/32 is directly connected, Serial0
     172.17.0.0/24 is subnetted, 1 subnets
C       172.17.1.0 is directly connected, Loopback0
     172.16.0.0/24 is subnetted, 1 subnets
C       172.16.1.0 is directly connected, Ethernet0
     172.20.0.0/24 is subnetted, 1 subnets
O       172.20.10.0 [110/1626] via 192.168.10.1, 00:00:22, Serial0
     172.22.0.0/32 is subnetted, 1 subnets
```

```
O      172.22.1.1 [110/65] via 192.168.10.1, 00:00:23, Serial0
```

上图所示的show ip route输出显示了使用主链路(serial 0)从对等体获取的OSPF路由。 现在，我们关闭主链路并激活备用链路。

注意： 在主接口上**发**出shutdown命令不会导致备份BRI拨号。如果发出**shutdown**命令以关闭主连接，则Cisco IOS软件不会自动启动备份连接。必须通过拔掉电缆或某种等效方法物理断开主连接才能打开备用接口。

激活备用链路后，交换OSPF表，并安装使用备用链路的新路由。此时，流量将流过备份链路。此命令示例如下：

```
maui-soho-01#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     172.17.0.0/24 is subnetted, 1 subnets
C       172.17.1.0 is directly connected, Loopback0
     172.16.0.0/24 is subnetted, 1 subnets
C       172.16.1.0 is directly connected, Ethernet0
     172.20.0.0/16 is variably subnetted, 2 subnets, 2 masks
C       172.20.10.0/24 is directly connected, BRI0
C       172.20.10.1/32 is directly connected, BRI0
     172.22.0.0/32 is subnetted, 1 subnets
O       172.22.1.1 [110/1563] via 172.20.10.1, 00:00:22, BRI0
```

Show interface 输出示例

show interface命令可以验证PPP的LCP、ICP和多链路阶段是否成功通过。

```
maui-soho-01#show interface BRI 0
   BRI0 is up, line protocol is up
     Hardware is BRI with U interface and external S bus interface
     Internet address is 172.20.10.2, subnet mask is 255.255.255.0
     MTU 1500 bytes, BW 256 Kbit, DLY 100000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
     Encapsulation PPP, loopback not set
     DTR is pulsed for 5 seconds on reset
     LCP Open, multilink Open
     Open: IPCP
   .........................
```

故障排除

本部分提供的信息可用于对配置进行故障排除。

故障排除命令

输出解释器工具支持某些 show 命令（只限于注册用户），通过它可以查看 show 命令输出的分析。

注意：在发出debug**命令之前，请参**[阅有关Debug命令的重要信息](#)。

- debug dialer — 用于查看按需拨号路由信息。
- debug isdn events - 用于查看发生在ISDN接口用户端上的ISDN活动。
- debug isdn q931 — 此部分显示ISDN网络连接（第3层）的呼叫建立和拆除，可用于隔离问题。
- debug ppp negotiation — 在协商PPP组件(包括链路控制协议(LCP)、身份验证和网络控制协议(NCP))时，显示有关PPP流量和交换的信息。成功的PPP协商将首先打开LCP状态，然后进行身份验证，最后协商NCP。
- debug ppp authentication — 显示PPP身份验证协议消息，包括质询身份验证协议(CHAP)数据包交换和密码身份验证协议(PAP)交换。如果您发现故障，则请验证是否正确配置了 CHAP 用户名和口令。
- debug ppp error — 显示与PPP连接协商和操作相关的协议错误和错误统计信息。

调试输出示例

有关DDR备份故障排除的信息，请参阅文档[配置DDR备份并排除故障](#)。

以下调试输出是使用前面介绍的调试生成的。输出显示主链路发生故障和备用链路激活：

*Mar 1 **03:37:42**.350: **%LINK-3-UPDOWN: Interface Serial0, changed state to down**
!--- Primary Link is unplugged. *Mar 1 03:37:42.358: Se0 IPCP: State is Closed *Mar 1
03:37:42.362: Se0 CDPCP: State is Closed *Mar 1 03:37:42.366: Se0 PPP: Phase is TERMINATING [0
sess, 1 load] *Mar 1 03:37:42.370: Se0 LCP: State is Closed *Mar 1 03:37:42.370: Se0 PPP: Phase
is DOWN [0 sess, 1 load] *Mar 1 03:37:42.386: Se0 IPCP: Remove route to 192.168.10.1 *Mar 1
03:37:42.394: %OSPF-5-ADJCHG: Process 5, Nbr 172.22.1.1 on Serial0 from FULL to DOWN, Neighbor
Down: Interface down or detached *Mar 1 03:37:43.358: %LINEPROTO-5-UPDOWN: Line protocol on
Interface Serial0, changed state to down *Mar 1 **03:37:52**.302: **%LINK-3-UPDOWN: Interface BRI0:1,
changed state to down**
*!--- The backup interface is changed to from "standby" to "down". !--- The backup interface was
activated 10 seconds after the primary link !--- went down. !--- This interval was defined with
the backup delay command in maui-soho-01 !--- (the 1600).* *Mar 1 03:37:52.306: BR0:1 LCP: State
is Closed *Mar 1 03:37:52.310: BR0:1 DDR: disconnecting call *Mar 1 03:37:52.314: %LINK-3-
UPDOWN: Interface BRI0:2, changed state to down *Mar 1 03:37:52.318: BR0:2 LCP: State is Closed
*Mar 1 03:37:52.322: BR0:2 DDR: disconnecting call *Mar 1 03:37:52.417: %LINK-3-UPDOWN:
Interface BRI0, changed state to up *Mar 1 03:37:52.477: ISDN BR0: Event: Syncing Discards: L2
Discards 4, L2D_Task Counter 2 *Mar 1 03:37:52.489: BR0 DDR: **Dialing cause ip** (s=172.20.10.2,
d=224.0.0.5)
!--- OSPF hellos cause the router to dial. *Mar 1 03:37:52.493: BR0 DDR: Attempting to dial
5551111 *!--- This is the phone number of the remote router that is dialed.* *Mar 1 03:37:54.477:
ISDN BR0: Event: Syncing Discards: L2 Discards 4, L2D_Task Counter 3 *Mar 1 03:37:56.528: %ISDN-
6-LAYER2UP: Layer 2 for Interface BR0, TEI 112 changed to up *Mar 1 03:37:56.556: ISDN BR0: TX -
> INFORMATION pd = 8 callref = (null) SPID Information i = '51299699380101' *Mar 1 03:37:56.627:
ISDN BR0: TX -> SETUP pd = 8 callref = 0x1F *Mar 1 03:37:56.635: Bearer Capability i = 0x8890
*Mar 1 03:37:56.643: Channel ID i = 0x83 *Mar 1 03:37:56.651: Keypad Facility i = '5551111' *Mar
1 03:37:56.667: ISDN BR0: RX <- INFORMATION pd = 8 callref = (null) ENDPOINT IDent i = 0x8081
*Mar 1 03:37:56.703: ISDN BR0: Received EndPoint ID *Mar 1 03:37:56.738: ISDN BR0: RX <-
INFORMATION pd = 8 callref = (null) Locking Shift to Codeset 5 *Mar 1 03:37:56.750: Codeset 5 IE
0x2A i = 0x808001, 'P' *Mar 1 03:37:56.857: %ISDN-6-LAYER2UP: Layer 2 for Interface BR0, TEI 65
changed to up *Mar 1 03:37:56.881: ISDN BR0: TX -> INFORMATION pd = 8 callref = (null) SPID
Information i = '51299699460101' *Mar 1 03:37:56.917: ISDN BR0: RX <- CALL_PROC pd = 8 callref =
0x9F *Mar 1 03:37:56.925: Channel ID i = 0x89 *Mar 1 03:37:56.949: ISDN BR0: RX <- INFORMATION
pd = 8 callref = (null) ENDPOINT IDent i = 0x8181 *Mar 1 03:37:56.984: ISDN BR0: Received

Endpoint ID *Mar 1 03:37:57.175: **ISDN BR0: RX <- CONNECT** pd = 8 callref = 0x9F
!--- The call is connected. *Mar 1 03:37:57.199: %LINK-3-UPDOWN: Interface BRI0:1, changed state
to up *Mar 1 03:37:57.218: BR0:1 PPP: Treating connection as a callout *!--- PPP negotiation
begins.* *Mar 1 03:37:57.222: BR0:1 **PPP**: Phase is ESTABLISHING, Active Open
   [0 sess, 1 load]
*Mar 1 03:37:57.230: BR0:1 LCP: O CONFREQ [Closed] id 18 len 34
*Mar 1 03:37:57.234: BR0:1 LCP: AuthProto CHAP (0x0305C22305)
*Mar 1 03:37:57.242: BR0:1 LCP: MagicNumber 0x1144F392 (0x05061144F392)
*Mar 1 03:37:57.246: BR0:1 LCP: MRRU 1524 (0x110405F4)
*Mar 1 03:37:57.250: BR0:1 LCP: EndpointDisc 1 Local
   (0x130F016D6175692D736F686F2D3031)
*Mar 1 03:37:57.262: ISDN BR0: TX -> CONNECT_ACK pd = 8 callref = 0x1F
*Mar 1 03:37:57.282: BR0:1 LCP: I CONFREQ [REQsent] id 43 Len 33
*Mar 1 03:37:57.286: BR0:1 LCP: AuthProto CHAP (0x0305C22305)
*Mar 1 03:37:57.294: BR0:1 LCP: MagicNumber 0x363030C5 (0x0506363030C5)
*Mar 1 03:37:57.298: BR0:1 LCP: MRRU 1524 (0x110405F4)
*Mar 1 03:37:57.302: BR0:1 LCP: EndpointDisc 1 Local
   (0x130E016D6175692D6E61732D3035)
*Mar 1 03:37:57.310: BR0:1 LCP: O CONFACK [REQsent] id 43 Len 33
*Mar 1 03:37:57.314: BR0:1 LCP: AuthProto CHAP (0x0305C22305)
*Mar 1 03:37:57.318: BR0:1 LCP: MagicNumber 0x363030C5 (0x0506363030C5)
*Mar 1 03:37:57.326: BR0:1 LCP: MRRU 1524 (0x110405F4)
*Mar 1 03:37:57.330: BR0:1 LCP: EndpointDisc 1 Local
   (0x130E016D6175692D6E61732D3035)
*Mar 1 03:37:57.341: BR0:1 LCP: I CONFACK [ACKsent] id 18 Len 34
*Mar 1 03:37:57.345: BR0:1 LCP: AuthProto CHAP (0x0305C22305)
*Mar 1 03:37:57.349: BR0:1 LCP: MagicNumber 0x1144F392 (0x05061144F392)
*Mar 1 03:37:57.353: BR0:1 LCP: MRRU 1524 (0x110405F4)
*Mar 1 03:37:57.361: BR0:1 LCP: EndpointDisc 1 Local
   (0x130F016D6175692D736F686F2D3031)
*Mar 1 03:37:57.365: BR0:1 LCP: State is Open
*Mar 1 03:37:57.369: BR0:1 PPP: Phase is AUTHENTICATING, by both
   [0 sess, 1 load]
 !--- PPP authentication begins. *Mar 1 03:37:57.373: BR0:1 CHAP: O CHALLENGE id 17 Len 33 from
"**maui-soho-01**"
 *!--- The username for CHAP is challenge. The remote router must have this !--- username
configured along with it's shared secret password.* *Mar 1 03:37:57.381: BR0:1 CHAP: I CHALLENGE
id 30 Len 32 from "maui-nas-05" *!--- The incoming username for CHAP is challenge. !--- This
username must be locally configured.* *Mar 1 03:37:57.397: BR0:1 CHAP: O RESPONSE id 30 Len 33
from "maui-soho-01" *Mar 1 03:37:57.425: BR0:1 CHAP: I SUCCESS id 30 Len 4 *Mar 1 03:37:57.433:
BR0:1 CHAP: I RESPONSE id 17 Len 32 from "maui-nas-05" *Mar 1 03:37:57.445: BR0:1 CHAP: O
SUCCESS id 17 Len 4 *!--- CHAP authentication is successful.* *Mar 1 03:37:57.453: BR0:1 PPP:
Phase is VIRTUALIZED [0 sess, 1 load] *Mar 1 03:37:57.460: Vi1 PPP: Phase is DOWN, Setup [0
sess, 1 load] *Mar 1 03:37:57.480: BR0:1 IPCP: Packet buffered while building MLP bundle
interface *Mar 1 03:37:57.484: BR0:1 CDPCP: Packet buffered while building MLP bundle interface
*Mar 1 03:37:57.488: %LINK-3-UPDOWN: Interface **Virtual-Access1**,
   changed state to up
!--- Virtual Access Interface is created for the multilink !--- (2 b-channel) connection. *Mar 1
03:37:57.496: Vi1 DDR: Dialer statechange to up *Mar 1 03:37:57.500: Vi1 DDR: Dialer call has
been placed *Mar 1 03:37:57.504: Vi1 PPP: Treating connection as a callout *Mar 1 03:37:57.508:
Vi1 PPP: Phase is ESTABLISHING, Active Open [0 sess, 1 load] *Mar 1 03:37:57.516: Vi1 LCP: O
CONFREQ [Closed] id 1 Len 34 *Mar 1 03:37:57.520: Vi1 LCP: AuthProto CHAP (0x0305C22305) *Mar 1
03:37:57.524: Vi1 LCP: MagicNumber 0x1144F4B0 (0x05061144F4B0) *Mar 1 03:37:57.528: Vi1 LCP:
MRRU 1524 (0x110405F4) *Mar 1 03:37:57.536: Vi1 LCP: EndpointDisc 1 Local
(0x130F016D6175692D736F686F2D3031) *Mar 1 03:37:57.548: Vi1 PPP: Phase is UP [0 sess, 1 load]
*Mar 1 03:37:57.556: Vi1 IPCP: O CONFREQ [Closed] id 1 Len 10 *Mar 1 03:37:57.560: Vi1 IPCP:
Address 172.20.10.2 (0x0306AC140A02) *Mar 1 03:37:57.572: Vi1 CDPCP: O CONFREQ [Closed] id 1 Len
4 *Mar 1 03:37:57.576: BR0:1 MLP: maui-nas-05, multilink up, first link *Mar 1 03:37:57.580: Vi1
PPP: Pending ncpQ size is 2 *Mar 1 03:37:57.583: BR0:1 IPCP: Redirect packet to Vi1 *Mar 1
03:37:57.587: Vi1 IPCP: I CONFREQ [REQsent] id 1 Len 10 *Mar 1 03:37:57.591: Vi1 IPCP: Address
172.20.10.1 (0x0306AC140A01) *Mar 1 03:37:57.599: Vi1 IPCP: O CONFACK [REQsent] id 1 Len 10 *Mar
1 03:37:57.603: Vi1 IPCP: Address 172.20.10.1 (0x0306AC140A01) *Mar 1 03:37:57.607: BR0:1 CDPCP:
Redirect packet to Vi1 *Mar 1 03:37:57.611: Vi1 CDPCP: I CONFREQ [REQsent] id 1 Len 4 *Mar 1
03:37:57.615: Vi1 CDPCP: O CONFACK [REQsent] id 1 Len 4 *Mar 1 03:37:57.623: Vi1 IPCP: I CONFACK

[ACKsent] id 1 Len 10 *Mar 1 03:37:57.631: Vi1 IPCP: Address 172.20.10.2 (0x0306AC140A02) *Mar 1 03:37:57.635: **Vi1 IPCP: State is Open**
!--- IPCP state is open and route will be installed. *Mar 1 03:37:57.643: Vi1 CDPCP: I CONFACK [ACKsent] id 1 Len 4 *Mar 1 03:37:57.643: Vi1 CDPCP: State is Open *Mar 1 03:37:57.651: Vi1 DDR: dialer protocol up *Mar 1 03:37:57.663: BR0 IPCP: Install route to 172.20.10.1 *Mar 1 03:37:58.072: BR0 DDR: **Attempting to dial 5551111**
!--- Router is dialing. *Mar 1 03:37:58.199: ISDN BR0: TX -> SETUP pd = 8 callref = 0x20 *Mar 1 03:37:58.206: Bearer Capability i = 0x8890 *Mar 1 03:37:58.218: Channel ID i = 0x83 *Mar 1 03:37:58.226: Keypad Facility i = '5551111' *Mar 1 03:37:58.445: %LINEPROTO-5-UPDOWN: Line protocol on Interface BRI0:1, changed state to up *Mar 1 03:37:58.512: ISDN BR0: RX <- CALL_PROC pd = 8 callref = 0xA0 *Mar 1 03:37:58.524: Channel ID i = 0x8A *Mar 1 03:37:58.548: %LINEPROTO-5-UPDOWN: Line protocol on Interface Virtual-Access1, changed state to up *Mar 1 03:37:58.599: BR0:1 LCP: I ECHOREQ [Open] id 1 Len 12 magic 0x363030C5 *Mar 1 03:37:58.603: BR0:1 LCP: O ECHOREP [Open] id 1 Len 12 magic 0x1144F392 *Mar 1 03:37:58.746: ISDN BR0: RX <- CONNECT pd = 8 callref = 0xA0 *Mar 1 03:37:58.774: %LINK-3-UPDOWN: Interface BRI0:2, changed state to up *Mar 1 03:37:58.786: %ISDN-6-CONNECT: Interface BRI0:1 is now connected to 5551111 maui-nas-05 *Mar 1 03:37:58.794: BR0:2 PPP: Treating connection as a callout *Mar 1 03:37:58.798: BR0:2 PPP: Phase is ESTABLISHING, Active Open [0 sess, 0 load] *Mar 1 03:37:58.810: BR0:2 LCP: O CONFREQ [Closed] id 16 Len 34 *Mar 1 03:37:58.814: BR0:2 LCP: AuthProto CHAP (0x0305C22305) *Mar 1 03:37:58.818: BR0:2 LCP: MagicNumber 0x1144F9C9 (0x05061144F9C9) *Mar 1 03:37:58.821: BR0:2 LCP: MRRU 1524 (0x110405F4) *Mar 1 03:37:58.825: BR0:2 LCP: EndpointDisc 1 Local (0x130F016D6175692D736F686F2D3031) *Mar 1 03:37:58.837: ISDN BR0: TX -> CONNECT_ACK pd = 8 callref = 0x20 *Mar 1 03:37:58.861: BR0:2 LCP: I CONFREQ [REQsent] id 33 Len 33 *Mar 1 03:37:58.865: BR0:2 LCP: AuthProto CHAP (0x0305C22305) *Mar 1 03:37:58.869: BR0:2 LCP: MagicNumber 0x363036F1 (0x0506363036F1) *Mar 1 03:37:58.873: BR0:2 LCP: MRRU 1524 (0x110405F4) *Mar 1 03:37:58.877: BR0:2 LCP: EndpointDisc 1 Local (0x130E016D6175692D6E61732D3035) *Mar 1 03:37:58.889: BR0:2 LCP: O CONFACK [REQsent] id 33 Len 33 *Mar 1 03:37:58.893: BR0:2 LCP: AuthProto CHAP (0x0305C22305) *Mar 1 03:37:58.897: BR0:2 LCP: MagicNumber 0x363036F1 (0x0506363036F1) *Mar 1 03:37:58.901: BR0:2 LCP: MRRU 1524 (0x110405F4) *Mar 1 03:37:58.905: BR0:2 LCP: EndpointDisc 1 Local (0x130E016D6175692D6E61732D3035) *Mar 1 03:37:58.917: BR0:2 LCP: I CONFACK [ACKsent] id 16 Len 34 *Mar 1 03:37:58.921: BR0:2 LCP: AuthProto CHAP (0x0305C22305) *Mar 1 03:37:58.929: BR0:2 LCP: MagicNumber 0x1144F9C9 (0x05061144F9C9) *Mar 1 03:37:58.933: BR0:2 LCP: MRRU 1524 (0x110405F4) *Mar 1 03:37:58.937: BR0:2 LCP: EndpointDisc 1 Local (0x130F016D6175692D736F686F2D3031) *Mar 1 03:37:58.941: BR0:2 LCP: State is Open *Mar 1 03:37:58.945: BR0:2 PPP: Phase is AUTHENTICATING, by both [0 sess, 0 load] *Mar 1 03:37:58.952: BR0:2 CHAP: O CHALLENGE id 15 Len 33 from "maui-soho-01" *Mar 1 03:37:58.956: BR0:2 CHAP: I CHALLENGE id 22 Len 32 from "maui-nas-05" *Mar 1 03:37:58.976: BR0:2 CHAP: O RESPONSE id 22 Len 33 from "maui-soho-01" *Mar 1 03:37:59.008: BR0:2 **CHAP: I SUCCESS** id 22 Len 4
*Mar 1 03:37:59.012: BR0:2 CHAP: I RESPONSE id 15 Len 32 from "maui-nas-05"
*Mar 1 03:37:59.028: BR0:2 **CHAP: O SUCCESS** id 15 Len 4
!--- Authentication (for the 2nd call) is successful. *Mar 1 03:37:59.036: BR0:2 PPP: Phase is VIRTUALIZED [0 sess, 0 load] *Mar 1 03:37:59.044: BR0:2 MLP: maui-nas-05, multilink up *Mar 1 03:38:00.036: %LINEPROTO-5-UPDOWN: Line protocol on Interface BRI0:2, changed state to up *Mar 1 03:38:02.555: %OSPF-5-ADJCHG: Process 5, Nbr 172.22.1.1 on BRI0 from LOADING to FULL, Loading Done *Mar 1 03:38:04.742: **%ISDN-6-CONNECT: Interface BRI0:2 is now connected to 5551111 maui-nas-05**
!--- Second B-channel (BRI0:2) is connected. *Mar 1 03:38:08.599: BR0:1 LCP: I ECHOREQ [Open] id 2 Len 12 magic 0x363030C5 *Mar 1 03:38:08.603: BR0:1 LCP: O ECHOREP [Open] id 2 Len 12 magic 0x1144F392 maui-soho-01#

相关信息

- [DDR 备份的配置与故障排除](#)
- [用于 DDR 备份的备份接口、浮动静态路由与 Dialer Watch 的比较](#)
- [使用 show isdn status 命令用于 BRI 故障排除](#)
- [技术支持 - Cisco Systems](#)