使用DDR撥號器對映配置BRI到BRI撥號

目錄

簡介

本文描述如何在具有BRI介面的兩台路由器之間配置按需撥號路由(DDR)。在此配置中，小型辦公室、家庭辦公室(SOHO)路由器在需要將流量傳送到中央網路時撥打中央站點路由器。如果使用者定義的時間段內沒有流量，則連線會自動關閉。此網路還使用開放最短路徑優先(OSPF)路由協定和**ip ospf demand-circuit**命令，以防止在DDR鏈路中斷時刪除遠端側網路的任何路由。但是，無需路由協定即可通過該鏈路運行。

必要條件

需求

以下幾點描述了配置DDR鏈路之前應確定的幾個設計因素。

- DDR實施：您可以使用撥號器對應（傳統DDR）或撥號器設定檔。有關這兩種實現之間的差異的詳細資訊，請參閱使用撥號器配置檔案配置ISDN DDR。在此配置中，我們使用撥號器對映。
- 單或雙向撥號：您可以將每台路由器配置為通過撥打另一端來啟動DDR鏈路，或者只能讓一端（通常是SOHO）啟動撥號連線。檢查您的流量模式，並在決定使用哪種撥號方法之前考慮以下資訊：如果兩台路由器都撥號：當有流量發往另一台路由器的網路時，任一站點都可以啟動鏈路。兩台路由器可能同時撥號，從而導致消息繁忙。如果撥號限制在SOHO路由器：如果鏈路未開啟，則從中央站點發往SOHO路由器的流量將失敗。您將避免因「衝突」呼叫而出現忙

消息。**注意**：在本示例中，只有SOHO路由器啟動DDR鏈路。
- 路由協定：您可以選擇在鏈路上運行路由協定，但必須確保定期更新（如hello）被標籤為無趣，以便鏈路不會無限期保持運行。此外，路由協定應保持路由表不變，並且鏈路關閉後不應丟棄路由。這可以通過**ip ospf demand-circuit**命令或快照路由來完成。如果不想使用路由協定，則可以在下一跳指向另一路由器的BRI介面的每台路由器上配置靜態路由。
- 有趣的流量：定義DDR相關流量時一定要小心。在任一端未正確定義相關流量可能會阻止鏈路在需要時啟動、過早斷開或甚至根本未斷開。例如，您可能希望將所有路由協定流量標籤為無趣，因此定期更新不會無限期保持鏈路正常運行。

採用元件

此配置是使用以下軟體和硬體版本開發和測試的：

- 一台運行Cisco IOS®軟體版本12.1(5)T的Cisco 1604 SOHO路由器，帶有一個BRI U介面
- 運行Cisco IOS 12.1(2)的Cisco 3640路由器，其上有NM-4B-U（四個BRI U介面）

慣例

如需文件慣例的詳細資訊，請參閱思科技術提示慣例。

設定

本節提供用於設定本文件中所述功能的資訊。

注意：要查詢有關本文檔中使用的命令的其他資訊，請使用IOS命令查詢工具

網路圖表

本文檔使用下圖所示的網路設定。

組態

本文檔使用如下所示的配置。

注意：本文檔中的資訊來自隔離的實驗室環境。使用前，請確認您已瞭解任何指令可能對網路造成的影響。

maui-soho-01(1600)
maui-soho-01#**show running-config** Building configuration...

```
Current configuration : 1656 bytes
!
version 12.1
no service single-slot-reload-enable
service timestamps debug datetime msec
service timestamps log datetime msec

!
hostname maui-soho-01
!
logging rate-limit console 10 except errors
aaa new-model
aaa authentication login default local
aaa authentication login NO_AUTHEN none
aaa authentication ppp default local
!--- basic AAA configuration for PPP calls enable secret
5 <deleted> ! username admin password <deleted> username
maui-nas-05 password cisco !--- 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 ! isdn switch-type basic-
ni ! interface Loopback0 ip address 172.17.1.1
255.255.255.0 !--- The loopback address will be used by
OSPF for the router ID. ! interface Ethernet0 ip address
172.16.1.1 255.255.255.0 ! interface Serial0 no ip
address shutdown no fair-queue ! interface BRI0 !--- BRI
interface used for DDR dialout ip address 172.20.10.2
255.255.255.0 !--- IP address !--- The remote address is
in the same subnet. encapsulation ppp ip ospf demand-
circuit !--- This forces OSPF to keep the routing table
intact when the DDR link !--- is down. This should only
be configured on one router for a !--- point-to-point
circuit. dialer idle-timeout 900 !--- Idle timeout is
set to 900 seconds (15 minutes). !--- The link will be
disconnected if there is no interesting traffic !--- for
900 secs. 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 map statements for
the remote router !--- The name must match the one used
by the remote router to identify !--- itself. The
broadcast keyword is required to send broadcast traffic
!--- over the link(for OSPF). The two different phone
numbers correspond !--- to the b-channels of the remote
side. The multiple statements allow !--- the router to
dial the second number if the first number is busy.

 dialer load-threshold 80 outbound
!--- This set the load level for traffic at which
additional connections !--- will be added to the
Multilink PPP bundle. !--- Load level values range from
1 (unloaded) to 255 (fully loaded). !--- The threshold
in this case is 80/255 = 32%. dialer-group 1 !--- apply
interesting traffic definition from dialer-list 1 isdn
switch-type basic-ni isdn spid1 51255522220101 5552222
isdn spid2 51255522230101 5552223 ppp authentication
chap !--- Use chap authentication. ppp multilink !---
Use multilink to bring up both BRI channels. ! router
ospf 5 log-adjacency-changes network 172.16.1.0
0.0.0.255 area 0 network 172.17.1.0 0.0.0.255 area 0
network 172.20.10.0 0.0.0.255 area 0 ! ip classless ip
route 172.20.0.0 255.255.0.0 172.20.10.0 no ip http
server ! access-list 101 remark Define Interesting
Traffic access-list 101 deny ospf any any !--- mark OSPF
```

```
as uninteresting !--- This will prevent OSPF hellos from
keeping the link up. access-list 101 permit ip any any
dialer-list 1 protocol ip list 101 !--- Interesting
traffic is defined by access-list 101. !--- This 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
```

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
!
hostname maui-nas-05
!
aaa new-model
aaa authentication login default local
aaa authentication login NO_AUTHEN none
aaa authentication ppp default local
!--- basic AAA configuration for PPP calls enable secret
5 <deleted> ! username admin password 7 <deleted>
username maui-soho-01 password 7 cisco !--- username for
remote router (maui-soho-01) and shared secret !---
(used for CHAP authentication) !--- 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 !--- The loopback address is
used by OSPF for the router ID. ! interface Ethernet0/0
ip address 172.22.53.105 255.255.255.0 ! interface
Ethernet0/1 no ip address shutdown ! interface BRI1/0 !-
-- BRI interface used to accept dialin ip address
172.20.10.1 255.255.255.0 !--- IP address !--- The
remote address is in the same subnet. encapsulation ppp
dialer idle-timeout 900 !--- Idle timeout is set to 900
seconds (15 minutes). !--- Set this value to be equal to
or higher than the idle-timeout on the !--- client side.
A higher idle-timeout permits the client side to !---
determine when to bring down the link. ! dialer map ip
172.20.10.2 name maui-soho-01 broadcast !--- dialer map
statement for the BRI interface of the remote router !--
- The name must be the one used by the remote router to
identify !--- itself. The broadcast keyword is required
to send broadcast traffic !--- over the link(for OSPF).
Note: There is no phone number, as we are !--- not
configuring this side to dial. If you want this router
to dial, !--- add the remote side phone number to the
dialer map statement dialer-group 1 !--- apply
interesting traffic definition from dialer-list 1 isdn
switch-type basic-ni isdn spid1 51255511110101 5551111
isdn spid2 51255511120101 5551112 ppp authentication
chap ppp multilink !--- allow multilink connections ! !
<<--unused interface configurations have been 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 172.22.53.0
0.0.0.255 area 0 default-information originate always !-
-- transmit OSPF default information !--- This may be
required for remote router to use the BRI DDR link. ! ip
```

```
classless ip route 0.0.0.0 0.0.0.0 Ethernet0/0 ip route
172.22.0.0 255.255.0.0 172.22.53.0 no ip http server !
dialer-list 1 protocol ip permit !--- All IP traffic is
defined interesting. !--- This is applied to BRI0 using
dialer-group 1.

!
line con 0
 login authentication NO_AUTHEN
 transport input none
line 97 102
line aux 0
line vty 0 4
!
end
```

注意：如果路由器是OSPF點對點拓撲（2台路由器）的一部分，則只需使用**ip ospf demand-circuit命令配置需求電路的一端**。但是，所有路由器必須在區域內載入此功能，並且必須支援**ip ospf demand-circuit**命令。如果路由器是OSPF點對多點拓撲（例如中心輻射和分支）的一部分，則只能使用此命令配置多點終端。

顯示輸出示例

show命令

輸出直譯器工具支援某些**show**命令，該工具允許您檢視**show**命令輸出的分析。

- **show dialer interface [*type number*]** — 顯示為DDR配置的介面的一般診斷資訊，並顯示計時器的配置和連線超時前的時間。您應該驗證以下消息：「Dialer state is data link layer up」 — 撥號器正常啟動。「Physical layer up」 — 線路協定啟動，但網路控制協定(NCP)未啟動。「撥號原因」該選項顯示發起撥號的資料包的源地址和目的地址。
- **show isdn status** — 確保路由器與ISDN交換機正確通訊。此命令還顯示活動呼叫數您應驗證以下消息："第1層狀態為ACTIVE","第2層狀態狀態= MULTIPLE_FRAME_ESTABLISHED"**注意**：有關詳細資訊，請參閱使用show isdn status命令進行BRI故障排除。
- **show caller user *username* detail** — 顯示詳細的LCP協商引數。

顯示輸出示例

show ip route命令在DDR鏈路接通後顯示soho上的路由表。請注意，遠端站點的OSPF路由已安裝。

```
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 - ISIS level-1, L2 - ISIS level-2, ia - ISIS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is 172.20.10.1 to network 0.0.0.0

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, 3 subnets, 3 masks
C       172.20.10.0/24 is directly connected, BRI0
C       172.20.10.1/32 is directly connected, BRI0
S       172.20.0.0/16 [1/0] via 172.20.10.0
     172.22.0.0/16 is variably subnetted, 2 subnets, 2 masks
O       172.22.53.0/24 [110/1572] via 172.20.10.1, 00:01:37, BRI0
O       172.22.1.1/32 [110/1563] via 172.20.10.1, 00:01:37, BRI0
O*E2 0.0.0.0/0 [110/1] via 172.20.10.1, 00:01:37, BRI0
```

注意：來自遠端端的OSPF路由（尤其是預設路由）將新增到路由表中。這允許客戶端(maui-soho-01)在需要通過BRI鏈路傳送流量時撥打BRI鏈路。由於這是OSPF需求電路，因此當鏈路因撥號器空閒超時過期而關閉時，不會刪除（老化）路由表中的**OSPF條目**。

在**show caller user *username*** detail輸出中，注意連線的空閒超時。

```
maui-soho-01#show caller user maui-nas-05 detail

  User: maui-nas-05, line BR0:1, service PPP
        Active time 00:02:33, Idle time 00:00:00
  Timeouts:            Absolute  Idle
      Limits:          -         -
      Disconnect in:   -         -
  PPP: LCP Open, multilink Open, CHAP (AAA <--> AAA)
  LCP: -> peer, AuthProto, MagicNumber, MRRU, EndpointDisc
       <- peer, AuthProto, MagicNumber, MRRU, EndpointDisc
  NCP: Closed IPCP, CDPCP
  Dialer: Connected to 5551111, outbound
          Type is ISDN, group BR0
          Cause: ip (s=172.20.10.2, d=172.20.10.1)
  IP: Local 172.20.10.2/24
  Bundle: Member of maui-nas-05, last input 00:00:00
  Counts: 945 packets input, 147302 bytes, 0 no buffer
          0 input errors, 0 CRC, 0 frame, 0 overrun
          972 packets output, 150964 bytes, 0 underruns
          0 output errors, 0 collisions, 0 interface resets

  User: maui-nas-05, line Vi1, service PPP Bundle
        Active time 00:02:32, Idle time 00:02:32
  Timeouts:            Absolute  Idle
      Limits:          -         00:15:00
      Disconnect in:   -         00:12:26
!--- time after which this call will be disconnected unless it receives !--- interesting traffic
PPP: LCP Open, multilink Open, IPCP, CDPCP LCP: -> peer, MagicNumber, MRRU, EndpointDisc <- peer
NCP: Open IPCP, CDPCP IPCP: <- peer, Address -> peer, Address Dialer: Connected to 5551111,
outbound Idle timer 900 secs, idle 153 secs Type is IN-BAND SYNC, group BR0 IP: Local
172.20.10.2/24, remote 172.20.10.1 Bundle: First link of maui-nas-05, 1 link, last input
00:02:33 Counts: 20 packets input, 2916 bytes, 0 no buffer 0 input errors, 0 CRC, 0 frame, 0
overrun 23 packets output, 2683 bytes, 0 underruns 0 output errors, 0 collisions, 0 interface
resets
```

疑難排解

debug指令

注意：發出**debug指令之前，請先參閱**有關Debug指令的重要資訊。

- **debug isdn q931** — 顯示ISDN網路連線（第3層）的呼叫建立和斷開。

- **debug isdn q921** — 顯示路由器和ISDN交換機之間D通道上的資料鏈路層消息（第2層）。如果**show isdn status**命令不顯示第1層和第2層為up，請使用此調試。
- **debug dialer [events | packets]** -顯示有關撥號器介面上接收的資料包的DDR調試資訊。
- **debug ppp negotiation** — 在協商PPP元件(包括鏈路控制協定(LCP)、身份驗證和NCP時，顯示有關PPP流量和交換的資訊。成功的PPP協商將首先開啟LCP狀態，然後進行身份驗證，最後協商NCP（通常是IPCP）。
- **debug ppp authentication** — 顯示PPP身份驗證協定消息，包括質詢身份驗證協定(CHAP)資料包交換和口令身份驗證協定(PAP)交換。
- **debug ppp error** — 顯示與PPP連線協商和操作相關的協定錯誤和錯誤統計資訊。

請參閱撥號技術：故障排除技術，瞭解有關此DDR連線故障排除的詳細資訊。

調試輸出示例

debug輸出顯示對遠端路由器BRI介面的ICMP ping觸發的DDR呼叫。調試顯示soho路由器撥號、連線到中心站點、協商ppp以及執行CHAP身份驗證。

```
maui-soho-01#debug dialer
Dial on demand events debugging is on
maui-soho-01#debug ppp negotiation
PPP protocol negotiation debugging is on
maui-soho-01#debug ppp authentication
PPP authentication debugging is on
maui-soho-01#debug isdn q931
ISDN Q931 packets debugging is on
maui-soho-01#
maui-soho-01#
maui-soho-01#
maui-soho-01#ping 172.20.10.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 172.20.10.1, timeout is 2 seconds:

*Mar  1 21:57:42.625: BR0 DDR: Dialing cause ip (s=172.20.10.2, d=172.20.10.1)
!--- The ping destined for 172.20.10.1 dials the BRI.
*Mar  1 21:57:42.629: BR0 DDR: Attempting to dial 5551111
!--- phone number of the remote router that is dialed *Mar 1 21:57:42.653: ISDN BR0: TX -> SETUP
pd = 8 callref = 0x09 *Mar 1 21:57:42.661: Bearer Capability i = 0x8890 *Mar 1 21:57:42.669:
Channel ID i = 0x83 *Mar 1 21:57:42.677: Keypad Facility i = '5551111' *Mar 1 21:57:43.002: ISDN
BR0: RX <- CALL_PROC pd = 8 callref = 0x89 *Mar 1 21:57:43.010: Channel ID i = 0x89 *Mar 1
21:57:43.189: ISDN BR0: RX <- CONNECT pd = 8 callref = 0x89 *Mar 1 21:57:43.216: %LINK-3-UPDOWN:
Interface BRI0:1, changed state to up *Mar 1 21:57:43.236: BR0:1 PPP: Treating connection as a
callout !--- PPP negotiation begins. *Mar 1 21:57:43.236: BR0:1 PPP: Phase is ESTABLISHING,
Active Open [0 sess, 1 load] *Mar 1 21:57:43.248: BR0:1 LCP: O CONFREQ [Closed] id 10 len 34
*Mar 1 21:57:43.252: BR0:1 LCP: AuthProto CHAP (0x0305C22305) *Mar 1 21:57:43.256: BR0:1 LCP:
MagicNumber 0x153BEFE7 (0x0506153BEFE7) *Mar 1 21:57:43.260: BR0:1 LCP: MRRU 1524 (0x110405F4)
*Mar 1 21:57:43.268: BR0:1 LCP: EndpointDisc 1 Local (0x130F016D6175692D736F686F2D3031) *Mar 1
21:57:43.280: ISDN BR0: TX -> CONNECT_ACK pd = 8 callref = 0x09 *Mar 1 21:57:43.300: BR0:1 LCP:
I CONFREQ [REQsent] id 7 Len 33 *Mar 1 21:57:43.304: BR0:1 LCP: AuthProto CHAP (0x0305C22305)
*Mar 1 21:57:43.308: BR0:1 LCP: MagicNumber 0x354AAC53 (0x0506354AAC53) *Mar 1 21:57:43.312:
BR0:1 LCP: MRRU 1524 (0x110405F4) *Mar 1 21:57:43.320: BR0:1 LCP: EndpointDisc 1 Local
(0x130E016D6175692D6E61732D3035) *Mar 1 21:57:43.327: BR0:1 LCP: O CONFACK [REQsent] id 7 Len 33
*Mar 1 21:57:43.331: BR0:1 LCP: AuthProto CHAP (0x0305C22305) *Mar 1 21:57:43.335: BR0:1 LCP:
MagicNumber 0x354AAC53 (0x0506354AAC53) *Mar 1 21:57:43.339: BR0:1 LCP: MRRU 1524 (0x110405F4)
*Mar 1 21:57:43.347: BR0:1 LCP: EndpointDisc 1 Local (0x130E016D6175692D6E61732D3035) *Mar 1
21:57:43.359: BR0:1 LCP: I CONFACK [ACKsent] id 10 Len 34 *Mar 1 21:57:43.363: BR0:1 LCP:
AuthProto CHAP (0x0305C22305) *Mar 1 21:57:43.367: BR0:1 LCP: MagicNumber 0x153BEFE7
(0x0506153BEFE7) *Mar 1 21:57:43.371: BR0:1 LCP: MRRU 1524 (0x110405F4) *Mar 1 21:57:43.379:
```

```
BR0:1 LCP: EndpointDisc 1 Local (0x130F016D6175692D736F686F2D3031) *Mar 1 21:57:43.383: BR0:1
LCP: State is Open *Mar 1 21:57:43.383: BR0:1 PPP: Phase is AUTHENTICATING, by both
 [0 sess, 1 load]
!--- PPP Authentication begins. *Mar 1 21:57:43.391: BR0:1 CHAP: O CHALLENGE id 6 Len 33 from
"maui-soho-01"
 !--- outgoing challenge for the remote router !--- This username should be configured in the
dialer map statement !--- at the remote router. *Mar 1 21:57:43.399: BR0:1 CHAP: I CHALLENGE id
6 Len 32 from "maui-nas-05"
 !--- incoming challenge from remote router !--- This username should be configured in the
dialer map statement. *Mar 1 21:57:43.415: BR0:1 CHAP: O RESPONSE id 6 Len 33 from "maui-soho-
01" *Mar 1 21:57:43.443: BR0:1 CHAP: I SUCCESS id 6 Len 4
!--- Incoming CHAP Authentication is successful. *Mar 1 21:57:43.450: BR0:1 CHAP: I RESPONSE id
6 Len 32 from "maui-nas-05" *Mar 1 21:57:43.466: BR0:1 CHAP: O SUCCESS id 6 Len 4 !--- Outgoing
CHAP Authentication is successful. *Mar 1 21:57:43.474: BR0:1 PPP: Phase is VIRTUALIZED [0 sess,
1 load] *Mar 1 21:57:43.581: Vi1 PPP: Phase is DOWN, Setup [0 sess, 1 load] *Mar 1 21:57:43.601:
BR0:1 IPCP: Packet buffered while building MLP bundle interface *Mar 1 21:57:43.605: BR0:1
CDPCP: Packet buffered while building MLP bundle interface *Mar 1 21:57:43.609: %LINK-3-UPDOWN:
Interface Virtual-Access1,
changed state to up
!--- Virtual access interface is automatically created (needed for multilink). *Mar 1
21:57:43.613: Vi1 DDR: Dialer statechange to up *Mar 1 21:57:43.617: Vi1 DDR: Dialer call has
been placed *Mar 1 21:57:43.625: Vi1 PPP: Treating connection as a callout *Mar 1 21:57:43.625:
Vi1 PPP: Phase is ESTABLISHING, Active Open [0 sess, 1 load] *Mar 1 21:57:43.637: Vi1 LCP: O
CONFREQ [Closed] id 1 Len 34 *Mar 1 21:57:43.641: Vi1 LCP: AuthProto CHAP (0x0305C22305) *Mar 1
21:57:43.645: Vi1 LCP: MagicNumber 0x153BF171 (0x0506153BF171) *Mar 1 21:57:43.649: Vi1 LCP:
MRRU 1524 (0x110405F4) *Mar 1 21:57:43.653: Vi1 LCP: EndpointDisc 1 Local
(0x130F016D6175692D736F686F2D3031) *Mar 1 21:57:43.665: Vi1 PPP: Phase is UP [0 sess, 1 load]
*Mar 1 21:57:43.677: Vi1 IPCP: O CONFREQ [Closed] id 1 Len 10 *Mar 1 21:57:43.681: Vi1 IPCP:
Address 172.20.10.2 (0x0306AC140A02) *Mar 1 21:57:43.693: Vi1 CDPCP: O CONFREQ [Closed] id 1 Len
4 *Mar 1 21:57:43.697: BR0:1 MLP: maui-nas-05, multilink up, first link *Mar 1 21:57:43.700: Vi1
PPP: Pending ncpQ size is 2 *Mar 1 21:57:43.700: BR0:1 IPCP: Redirect packet to Vi1 *Mar 1
21:57:43.708: Vi1 IPCP: I CONFREQ [REQsent] id 1 Len 10 *Mar 1 21:57:43.712: Vi1 IPCP: Address
172.20.10.1 (0x0306AC140A01) *Mar 1 21:57:43.716: Vi1 IPCP: O CONFACK [REQsent] id 1 Len 10 *Mar
1 21:57:43.724: Vi1 IPCP: Address 172.20.10.1 (0x0306AC140A01) *Mar 1 21:57:43.728: BR0:1 CDPCP:
Redirect packet to Vi1 *Mar 1 21:57:43.732: Vi1 CDPCP: I CONFREQ [REQsent] id 1 Len 4 *Mar 1
21:57:43.736: Vi1 CDPCP: O CONFACK [REQsent] id 1 Len 4 *Mar 1 21:57:43.744: Vi1 IPCP: I CONFACK
[ACKsent] id 1 Len 10 *Mar 1 21:57:43.752: Vi1 IPCP: Address 172.20.10.2 (0x0306AC140A02) *Mar 1
21:57:43.756: Vi1 IPCP: State is Open
!--- IPCP state is open. *Mar 1 21:57:43.764: Vi1 CDPCP: I CONFACK [ACKsent] id 1 Len 4 *Mar 1
21:57:43.768: Vi1 CDPCP: State is Open *Mar 1 21:57:43.772: Vi1 DDR: dialer protocol up *Mar 1
21:57:43.784: BR0 IPCP: Install route to 172.20.10.1 !--- Install route to remote side. *Mar 1
21:57:44.462: %LINEPROTO-5-UPDOWN: Line protocol on Interface BRI0:1, changed state to up *Mar 1
21:57:44.657: %LINEPROTO-5-UPDOWN: Line protocol on Interface Virtual-Access1, changed state to
up *Mar 1 21:57:49.180: %ISDN-6-CONNECT: Interface BRI0:1 is now connected to
 5551111 maui-nas-05
!--- BRI Dial on Demand Routing (DDR) Link is operational. maui-soho-01#
```

相關資訊

- 使用show isdn status命令進行BRI故障排除
- 設定基本ISDN服務
- 技術支援 - Cisco Systems