通過兩個串列介面上的虛擬模板實現多鏈路

目錄

簡介

多重連結PPP(MLP)透過撥號器介面（例如ISDN、同步和非同步介面）平衡負載。MLP拆分資料包並通過並行電路傳送片段。這樣，MLP提高了吞吐量並減少了系統之間的延遲。MLP提供了一種跨多個邏輯資料鏈路對資料包進行拆分、重組和序列化的方法。MLP允許將資料包分段，並同時通過多個指向同一遠端地址的點對點鏈路傳送片段。

本文檔說明了通過虛擬模板配置在串列介面之間的多鏈路連線。

必要條件

需求

本文件沒有特定需求。

採用元件

本文中的資訊係根據以下軟體和硬體版本：

- Cisco IOS®軟體版本11.2或更高版本。
- 兩台Cisco 2503路由器，每台都有兩個WAN串列介面。這些路由器運行Cisco IOS軟體版本

12.2(7b)。

本文中的資訊是根據特定實驗室環境內的裝置所建立。文中使用到的所有裝置皆從已清除（預設）的組態來啟動。如果您的網路正在作用，請確保您已瞭解任何指令可能造成的影響。

相關產品

此配置也可用於這些硬體和軟體版本。

- 具有兩個WAN串列介面的任意兩台路由器。您可以使用WIC-1T、WIC-2T和固定WAN串列介面。

慣例

如需文件慣例的詳細資訊，請參閱思科技術提示慣例。

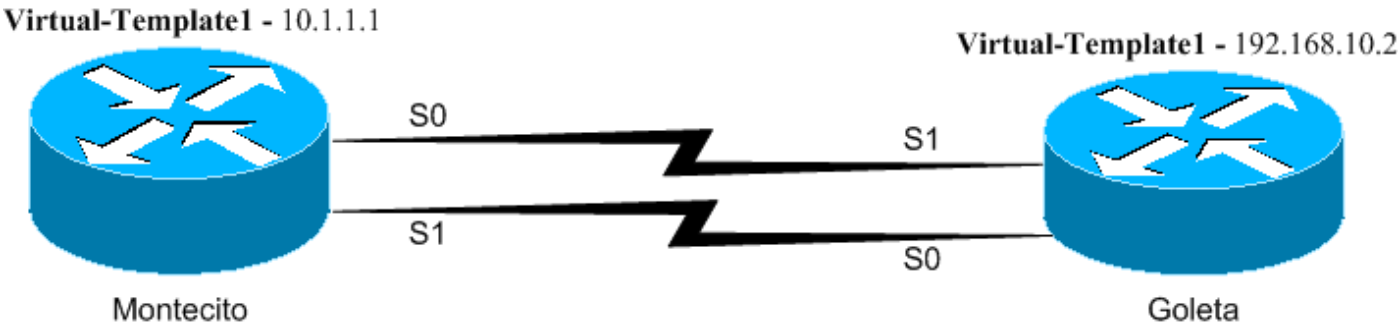
設定

本節提供用於設定本文件中所述功能的資訊。

註：使用Command Lookup Tool(僅限註冊客戶)查詢有關本文檔中使用的命令的更多資訊。

網路圖表

本檔案會使用以下網路設定：



路由器Montecito和Goleta通過介面Serial0和Serial1進行背對背連線。此配置在每個端使用虛擬模板、多鏈路點對點協定(PPP)，並在路由器之間橋接並路由IP和IPX。

組態

本檔案會使用以下設定：

- 蒙特西托
- 戈利塔

蒙特西托

```
Montecito#write terminal
 Building configuration...
 Current configuration : 945 bytes
```

```
 !
 version 12.2
 service timestamps debug uptime
 service timestamps log uptime
 no service password-encryption
 !
 hostname Montecito
 !
 boot system flash c2500-d-l.122-7b.bin
 no logging buffered
 !
 ip subnet-zero
 no ip domain-lookup
 !
 !
 multilink virtual-template 1
 !--- Applies the virtual interface template to the
multilink bundle. !--- All multilink calls have virtual-
access interfaces cloned !--- from virtual-template 1. !
ipx routing 0000.0c31.aac2 ! interface Loopback0 ip
address 10.1.1.1 255.0.0.0 ipx network BEEF ! interface
Ethernet0 no ip address shutdown ! ! !--- Virtual-
template is a logical interface that creates virtual
access !--- interfaces dynamically, and applies them to
physical serial interfaces. interface Virtual-Template1
!--- Assumes the IP & IPX address of Loopback0. ip
unnumbered Loopback0 ipx ppp-client Loopback0 ppp
multilink !--- Enables Multilink PPP on the interface.
bridge-group 1 ! interface Serial0 no ip address
encapsulation ppp no ip route-cache no ip mroute-cache
no fair-queue !--- Enables Multilink PPP on the
interface. ppp multilink ! interface Serial1 no ip
address encapsulation ppp no ip route-cache no ip
mroute-cache no fair-queue !--- Enables Multilink PPP on
the interface. ppp multilink ! interface BRI0 no ip
address shutdown ! no ip classless ! bridge 1 protocol
ieee ! line con 0 line aux 0 line vty 0 4 login ! end
```

戈利塔

```
Goleta#write terminal
 Building configuration...
 Current configuration : 960 bytes
 version 12.2
 service timestamps debug uptime
 service timestamps log uptime
 no service password-encryption
 !
 hostname Goleta
 !
 !
 ip subnet-zero
 no ip domain-lookup
 !
 !
!--- Applies the virtual interface template to the
multilink bundle. !--- Skip this step for ISDN or dialer
interfaces. multilink virtual-template 1 ipx routing
0000.0c47.4e9a ! ! ! interface Loopback0 ip address
192.168.10.2 255.255.255.0 ipx network BEEF ! interface
Ethernet0 no ip address shutdown ! !--- Virtual-template
is a logical interface that Creates virtual access !---
interfaces dynamically and applies them to physical
```

```
serial interfaces. interface Virtual-Template1 !---
Assumes the IP & IPX address of Loopback0. ip unnumbered
Loopback0 ipx ppp-client Loopback0 ! !--- Enables
Multilink PPP on the interface. ppp multilink bridge-
group 1 ! interface Serial0 no ip address encapsulation
ppp no fair-queue clockrate 1000000 ! !--- Enables
Multilink PPP on the interface. ppp multilink !
interface Serial1 no ip address encapsulation ppp no
fair-queue clockrate 1000000 ! !--- Enables Multilink
PPP on the interface. ppp multilink ! interface BRI0 no
ip address shutdown ! ip classless ! bridge 1 protocol
ieee ! line con 0 line aux 0 line vty 0 4 ! end
```

驗證

使用本節內容，確認您的組態是否正常運作。

輸出直譯器工具(僅供已註冊客戶使用)(OIT)支援某些**show**命令。使用OIT檢視**show**命令輸出的分析。

- **show ppp multilink** — 顯示處於活動狀態的多鏈路捆綁的資訊。使用此命令驗證多鏈路連線。
- **show interface virtual-access** — 顯示有關特定虛擬訪問介面的狀態、流量資料和配置資訊。
- **show interface serial** — 用於排除串列介面的任何問題

show輸出示例

建立連線後Montecito上的show命令

```
Montecito#show interface virtual-access 1
  Virtual-Access1 is up, line protocol is up
  Hardware is Virtual Access interface
  Interface is unnumbered. Using address of Loopback0 (10.1.1.1)
  MTU 1500 bytes, BW 3088 Kbit, DLY 100000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation PPP, loopback not set
  Keepalive set (10 sec)
  DTR is pulsed for 5 seconds on reset
  LCP Open, multilink Open
  Open: BRIDGECP, IPCP, IPXCP
  Last input 00:00:00, output never, output hang never
  Last clearing of "show interface" counters 00:02:09
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue :0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     22 packets input, 743 bytes, 0 no buffer
     Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     8 packets output, 124 bytes, 0 underruns
     0 output errors, 0 collisions, 0 interface resets
     0 output buffer failures, 0 output buffers swapped out
     0 carrier transitions

   Montecito#show interface serial 0
   Serial0 is up, line protocol is up
```

```
Hardware is HD64570
MTU 1500 bytes, BW 1544 Kbit, DLY 20000 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation PPP, loopback not set
Keepalive set (10 sec)
LCP Open, multilink Open
Last input 00:00:00, output 00:00:06, output hang never
Last clearing of "show interface" counters 02:04:30
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue :0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
3320 packets input, 107170 bytes, 0 no buffer
Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
1483 packets output, 24622 bytes, 0 underruns
0 output errors, 0 collisions, 6 interface resets
0 output buffer failures, 0 output buffers swapped out
8 carrier transitions
DCD=up DSR=up DTR=up RTS=up CTS=up

Montecito#show interface serial 1
Serial1 is up, line protocol is up
Hardware is HD64570
MTU 1500 bytes, BW 1544 Kbit, DLY 20000 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation PPP, loopback not set
Keepalive set (10 sec)
LCP Open, multilink Open
Last input 00:00:00, output 00:00:00, output hang never
Last clearing of "show interface" counters 02:04:32
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue :0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
3320 packets input, 107161 bytes, 0 no buffer
Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
1482 packets output, 24646 bytes, 0 underruns
0 output errors, 0 collisions, 6 interface resets
0 output buffer failures, 0 output buffers swapped out
8 carrier transitions
DCD=up DSR=up DTR=up RTS=up CTS=up

Montecito#show ppp multilink
Virtual-Access1, bundle name is Goleta
Bundle up for 00:01:39
0 lost fragments, 0 reordered, 0 unassigned
0 discarded, 0 lost received, 1/255 load
0x3D received sequence, 0xB sent sequence
Member links: 2 (max not set, min not set)
Serial1, since 00:01:40, last rcvd seq 00003C
Serial0, since 00:01:39, last rcvd seq 00003B

Montecito#show bridge group
Bridge Group 1 is running the IEEE compatible Spanning Tree protocol
Port 10 (Virtual-Access1) of bridge group 1 is forwarding
Port 9 (Virtual-Template1) of bridge group 1 is down
Montecito#
```

建立連線後Goleta上的show命令

```
Goleta#show interface virtual-access 1
   Virtual-Access1 is up, line protocol is up
   Hardware is Virtual Access interface
   Interface is unnumbered. Using address of Loopback0 (192.168.10.2)
   MTU 1500 bytes, BW 3088 Kbit, DLY 100000 usec,
   reliability 255/255, txload 1/255, rxload 1/255
   Encapsulation PPP, loopback not set
   Keepalive set (10 sec)
   DTR is pulsed for 5 seconds on reset
   LCP Open, multilink Open
   Open: BRIDGECP, IPCP, IPXCP
   Last input 00:00:10, output never, output hang never
   Last clearing of "show interface" counters 00:02:18
   Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
   Queueing strategy: fifo
   Output queue :0/40 (size/max)
   5 minute input rate 0 bits/sec, 0 packets/sec
   5 minute output rate 0 bits/sec, 0 packets/sec
   4 packets input, 52 bytes, 0 no buffer
   Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
   0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
   28 packets output, 892 bytes, 0 underruns
   0 output errors, 0 collisions, 0 interface resets
   0 output buffer failures, 0 output buffers swapped out
   0 carrier transitions

   Goleta#show interface serial 0
   Serial0 is up, line protocol is up
   Hardware is HD64570
   MTU 1500 bytes, BW 1544 Kbit, DLY 20000 usec,
   reliability 255/255, txload 1/255, rxload 1/255
   Encapsulation PPP, loopback not set
   Keepalive set (10 sec)
   LCP Open, multilink Open
   Last input 01:52:28, output 00:00:00, output hang never
   Last clearing of "show interface" counters 02:55:09
   Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
   Queueing strategy: fifo
   Output queue :0/40 (size/max)
   5 minute input rate 0 bits/sec, 0 packets/sec
   5 minute output rate 0 bits/sec, 0 packets/sec
   2364 packets input, 41972 bytes, 0 no buffer
   Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
   0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
   4465 packets output, 134689 bytes, 0 underruns
   0 output errors, 0 collisions, 148 interface resets
   0 output buffer failures, 0 output buffers swapped out
   294 carrier transitions
   DCD=up DSR=up DTR=up RTS=up CTS=up

   Goleta#show interface serial 1
   Serial1 is up, line protocol is up
   Hardware is HD64570
   MTU 1500 bytes, BW 1544 Kbit, DLY 20000 usec,
   reliability 255/255, txload 1/255, rxload 1/255
   Encapsulation PPP, loopback not set
   Keepalive set (10 sec)
   LCP Open, multilink Open
   Last input 01:52:38, output 00:00:00, output hang never
   Last clearing of "show interface" counters 02:55:18
   Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
   Queueing strategy: fifo
```

```
Output queue :0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
2366 packets input, 42030 bytes, 0 no buffer
Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
4472 packets output, 134930 bytes, 0 underruns
0 output errors, 0 collisions, 147 interface resets
0 output buffer failures, 0 output buffers swapped out
289 carrier transitions
DCD=up DSR=up DTR=up RTS=up CTS=up

Goleta#sh ppp multilink
Virtual-Access1, bundle name is Montecito
Bundle up for 00:01:35
0 lost fragments, 0 reordered, 0 unassigned
0 discarded, 0 lost received, 1/255 load
0xB received sequence, 0x3B sent sequence
Member links: 2 (max not set, min not set)
Serial0, since 00:01:36, last rcvd seq 00000A
Serial1, since 00:01:35, last rcvd seq 000009

Goleta#show bridge group
Bridge Group 1 is running the IEEE compatible Spanning Tree protocol
Port 10 (Virtual-Access1) of bridge group 1 is forwarding
Port 9 (Virtual-Template1) of bridge group 1 is down
```

疑難排解

使用本節內容，對組態進行疑難排解。

疑難排解資源

根據需要使用這些故障排除資源：

- 串列線路故障排除
- HDLC背對背連線
- 對租用線路進行故障排除

疑難排解指令

輸出直譯器工具(僅供已註冊客戶使用)(OIT)支援某些**show**命令。使用OIT檢視**show**命令輸出的分析。

附註：使用 **debug** 指令之前，請先參閱有關 Debug 指令的重要資訊。

- **debug ppp negotiation** — 指示客戶端是否通過PPP協商。也會檢查位址交涉。
- **debug ppp authentication** — 指示客戶端是否通過身份驗證。如果您使用Cisco IOS軟體版本11.2或更新版本，請使用此命令。
- **debug ppp chap** — 指示客戶端是否通過身份驗證。如果您使用低於11.2版的Cisco IOS軟體版本，請使用此命令。
- **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。
- **debug vtemplate** — 使您可以檢視使用的虛擬模板配置。
- **debug vprofile** — 使您能夠檢視哪些配置選項應用於虛擬訪問介面。

調試輸出示例

以下是成功呼叫的一些調試輸出。請注意粗體字體部分。將獲得的輸出與下面顯示的結果進行比較：

Montecito上的PPP調試

```
Montecito#debug ppp negotiation
     PPP protocol negotiation debugging is on
     Montecito#
     00:07:30: %LINK-3-UPDOWN: Interface Serial1, changed state to up
     00:07:30: Se1 PPP: Treating connection as a dedicated line
     00:07:30: Se1 PPP: Phase is ESTABLISHING, Active Open [0 sess, 2 load]
     00:07:30: Se1 LCP: O CONFREQ [Closed] id 4 len 26
     00:07:30: Se1 LCP:    MagicNumber 0x6063D57E (0x05066063D57E)
     00:07:30: Se1 LCP:    MRRU 1524 (0x110405F4)
     00:07:30: Se1 LCP:    EndpointDisc 1 Montecito (0x130C014D6F6E74656369746F)
     00:07:30: Se1 LCP: I CONFREQ [REQsent] id 101 len 23
     00:07:30: Se1 LCP:    MagicNumber 0x60944B81 (0x050660944B81)
     00:07:30: Se1 LCP:    MRRU 1524 (0x110405F4)
     00:07:30: Se1 LCP:    EndpointDisc 1 Goleta (0x130901476F6C657461)
     00:07:30: Se1 LCP: O CONFACK [REQsent] id 101 len 23
     00:07:30: Se1 LCP:    MagicNumber 0x60944B81 (0x050660944B81)
     00:07:30: Se1 LCP:    MRRU 1524 (0x110405F4)
     00:07:30: Se1 LCP:    EndpointDisc 1 Goleta (0x130901476F6C657461)
     00:07:30: Se1 LCP: I CONFACK [ACKsent] id 4 len 26
     00:07:30: Se1 LCP:    MagicNumber 0x6063D57E (0x05066063D57E)
     00:07:30: Se1 LCP:    MRRU 1524 (0x110405F4)
     00:07:30: Se1 LCP:    EndpointDisc 1 Montecito (0x130C014D6F6E74656369746F)
     00:07:30: Se1 LCP: State is Open
     00:07:30: Se1 PPP: Phase is VIRTUALIZED [0 sess, 1 load]
     00:07:31: Vi1 PPP: Phase is DOWN, Setup [0 sess, 0 load]
     00:07:31: Vi1 PPP: Phase is ESTABLISHING [0 sess, 0 load]
     00:07:31: %LINK-3-UPDOWN: Interface Serial0, changed state to up
     00:07:31: Se0 PPP: Treating connection as a dedicated line
     00:07:31: Se0 PPP: Phase is ESTABLISHING, Active Open [0 sess, 0 load]
     00:07:31: Se0 LCP: O CONFREQ [Closed] id 4 len 26
     00:07:31: Se0 LCP:    MagicNumber 0x6063D8DC (0x05066063D8DC)
     00:07:31: Se0 LCP:    MRRU 1524 (0x110405F4)
     00:07:31: Se0 LCP:    EndpointDisc 1 Montecito (0x130C014D6F6E74656369746F)
     00:07:31: %LINK-3-UPDOWN: Interface Virtual-Access1, changed state to up
     00:07:31: Vi1 PPP: Treating connection as a dedicated line
     00:07:31: Vi1 LCP: O CONFREQ [Closed] id 1 len 26
     00:07:31: Vi1 LCP:    MagicNumber 0x6063D8F9 (0x05066063D8F9)
     00:07:31: Vi1 LCP:    MRRU 1524 (0x110405F4)
     00:07:31: Vi1 LCP:    EndpointDisc 1 Montecito (0x130C014D6F6E74656369746F)
     00:07:31: Vi1 PPP: Phase is UP [0 sess, 0 load]
     00:07:31: Vi1 BNCP: O CONFREQ [Closed] id 1 len 4
     00:07:31: Vi1 IPCP: O CONFREQ [Closed] id 1 len 10
     00:07:31: Vi1 IPCP:    Address 10.1.1.1 (0x03060A010101)
     00:07:31: Vi1 IPXCP: O CONFREQ [Closed] id 1 len 18
     00:07:31: Vi1 IPXCP:    Network 0x0000BEEF (0x01060000BEEF)
     00:07:31: Vi1 IPXCP:    Node 0000.0c31.aac2 (0x020800000C31AAC2)
     00:07:31: Vi1 MLP: Added first link Se1 to bundle Goleta
     00:07:31: Se0 LCP: I CONFREQ [REQsent] id 101 len 23
     00:07:31: Se0 LCP:    MagicNumber 0x60944EF7 (0x050660944EF7)
     00:07:31: Se0 LCP:    MRRU 1524 (0x110405F4)
     00:07:31: Se0 LCP:    EndpointDisc 1 Goleta (0x130901476F6C657461)
     00:07:31: Se0 LCP: O CONFACK [REQsent] id 101 len 23
     00:07:31: Se0 LCP:    MagicNumber 0x60944EF7 (0x050660944EF7)
```

```
00:07:31: Se0 LCP:    MRRU 1524 (0x110405F4)
00:07:31: Se0 LCP:    EndpointDisc 1 Goleta (0x130901476F6C657461)
00:07:31: Se1 BNCP: MLP bundle interface is built, process packets now
00:07:31: Se1 BNCP: Redirect packet to Vi1
00:07:31: Vi1 BNCP: I CONFREQ [REQsent] id 1 len 4
00:07:31: Vi1 BNCP: O CONFACK [REQsent] id 1 len 4
00:07:31: Vi1 IPCP: I CONFREQ [REQsent] id 1 len 10
00:07:31: Vi1 IPCP:    Address 192.168.10.2 (0x0306C0A80A02)
00:07:31: Vi1 IPCP: O CONFACK [REQsent] id 1 len 10
00:07:31: Vi1 IPCP:    Address 192.168.10.2 (0x0306C0A80A02)
00:07:31: Vi1 IPXCP: I CONFREQ [REQsent] id 1 len 18
00:07:31: Vi1 IPXCP:    Network 0x0000BEEF (0x01060000BEEF)
00:07:31: Vi1 IPXCP:    Node 0000.0c47.4e9a (0x020800000C474E9A)
00:07:31: Vi1 IPXCP: O CONFACK [REQsent] id 1 len 18
00:07:31: Vi1 IPXCP:    Network 0x0000BEEF (0x01060000BEEF)
00:07:31: Vi1 IPXCP:    Node 0000.0c47.4e9a (0x020800000C474E9A)
00:07:31: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial1,
changed state to up
00:07:31: Se0 LCP: I CONFACK [ACKsent] id 4 len 26
00:07:31: Se0 LCP:    MagicNumber 0x6063D8DC (0x05066063D8DC)
00:07:31: Se0 LCP:    MRRU 1524 (0x110405F4)
00:07:31: Se0 LCP:    EndpointDisc 1 Montecito (0x130C014D6F6E74656369746F)
00:07:31: Se0 LCP: State is Open
00:07:31: Se0 PPP: Phase is VIRTUALIZED [0 sess, 2 load]
00:07:31: Vi1 MLP: Added link Se0 to bundle Goleta
00:07:31: Vi1 BNCP: I CONFACK [ACKsent] id 1 len 4
00:07:31: Vi1 BNCP: State is Open
00:07:31: Vi1 IPCP: I CONFACK [ACKsent] id 1 len 10
00:07:31: Vi1 IPCP:    Address 10.1.1.1 (0x03060A010101)
00:07:31: Vi1 IPCP: State is Open
00:07:31: Vi1 IPXCP: I CONFACK [ACKsent] id 1 len 18
00:07:31: Vi1 IPXCP:    Network 0x0000BEEF (0x01060000BEEF)
00:07:31: Vi1 IPXCP:    Node 0000.0c31.aac2 (0x020800000C31AAC2)
00:07:31: Vi1 IPXCP: State is Open
00:07:31: Vi1 IPCP: Install route to 192.168.10.2
00:07:32: %LINEPROTO-5-UPDOWN: Line protocol on Interface Virtual-Access1,
changed state to up
00:07:32: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0,
changed state to up
Montecito#

Montecito#ping  192.168.10.2
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.10.2, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 8/9/12 ms

Montecito#ping ipx
Target IPX address: BEEF.0000.0c47.4e9a
Repeat count [5]:
Datagram size [100]:
Timeout in seconds [2]:
Verbose [n]:
Type escape sequence to abort.
Sending 5, 100-byte IPX Novell Echoes to BEEF.0000.0c47.4e9a,
timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 8/10/12 ms
Montecito#
```

Goleta上的PPP調試

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Goleta#debug ppp negotiation
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PPP protocol negotiation debugging is on

Goleta#
01:00:26: Se0 PPP: Treating connection as a dedicated line
01:00:26: Se0 PPP: Phase is ESTABLISHING, Active Open [0 sess, 0 load]
01:00:26: Se0 LCP: O CONFREQ [Closed] id 101 len 23
01:00:26: Se0 LCP: MagicNumber 0x60944B81 (0x050660944B81)
01:00:26: Se0 LCP: MRRU 1524 (0x110405F4)
01:00:26: Se0 LCP: EndpointDisc 1 Goleta (0x130901476F6C657461)
01:00:26: Se0 LCP: I CONFREQ [REQsent] id 4 len 26
01:00:26: Se0 LCP: MagicNumber 0x6063D57E (0x05066063D57E)
01:00:26: Se0 LCP: MRRU 1524 (0x110405F4)
01:00:26: Se0 LCP: EndpointDisc 1 Montecito (0x130C014D6F6E74656369746F)
01:00:26: Se0 LCP: O CONFACK [REQsent] id 4 len 26
01:00:26: Se0 LCP: MagicNumber 0x6063D57E (0x05066063D57E)
01:00:26: Se0 LCP: MRRU 1524 (0x110405F4)
01:00:26: Se0 LCP: EndpointDisc 1 Montecito (0x130C014D6F6E74656369746F)
01:00:26: Se0 LCP: I CONFACK [ACKsent] id 101 len 23
01:00:26: Se0 LCP: MagicNumber 0x60944B81 (0x050660944B81)
01:00:26: Se0 LCP: MRRU 1524 (0x110405F4)
01:00:26: Se0 LCP: EndpointDisc 1 Goleta (0x130901476F6C657461)
01:00:26: Se0 LCP: State is Open
01:00:26: Se0 PPP: Phase is VIRTUALIZED [0 sess, 0 load]
01:00:26: Vi1 PPP: Phase is DOWN, Setup [0 sess, 0 load]
01:00:26: Vi1 PPP: Phase is ESTABLISHING [0 sess, 0 load]
01:00:27: %LINK-3-UPDOWN: Interface Serial1, changed state to up
01:00:27: Se1 PPP: Treating connection as a dedicated line
01:00:27: Se1 PPP: Phase is ESTABLISHING, Active Open [0 sess, 0 load]
01:00:27: Se1 LCP: O CONFREQ [Closed] id 101 len 23
01:00:27: Se1 LCP: MagicNumber 0x60944EF7 (0x050660944EF7)
01:00:27: Se1 LCP: MRRU 1524 (0x110405F4)
01:00:27: Se1 LCP: EndpointDisc 1 Goleta (0x130901476F6C657461)
01:00:27: %LINK-3-UPDOWN: Interface Virtual-Access1, changed state to up
01:00:27: Vi1 PPP: Treating connection as a dedicated line
01:00:27: Vi1 LCP: O CONFREQ [Closed] id 1 len 23
01:00:27: Vi1 LCP: MagicNumber 0x60944F10 (0x050660944F10)
01:00:27: Vi1 LCP: MRRU 1524 (0x110405F4)
01:00:27: Vi1 LCP: EndpointDisc 1 Goleta (0x130901476F6C657461)
01:00:27: Vi1 PPP: Phase is UP [0 sess, 0 load]
01:00:27: Vi1 BNCP: O CONFREQ [Closed] id 1 len 4
01:00:27: Vi1 IPCP: O CONFREQ [Closed] id 1 len 10
01:00:27: Vi1 IPCP: Address 192.168.10.2 (0x0306C0A80A02)
01:00:27: Vi1 IPXCP: O CONFREQ [Closed] id 1 len 18
01:00:27: Vi1 IPXCP: Network 0x0000BEEF (0x01060000BEEF)
01:00:27: Vi1 IPXCP: Node 0000.0c47.4e9a (0x020800000C474E9A)
01:00:27: Vi1 MLP: Added first link Se0 to bundle Montecito
01:00:27: Se1 LCP: I CONFREQ [REQsent] id 4 len 26
01:00:27: Se1 LCP: MagicNumber 0x6063D8DC (0x05066063D8DC)
01:00:27: Se1 LCP: MRRU 1524 (0x110405F4)
01:00:27: Se1 LCP: EndpointDisc 1 Montecito (0x130C014D6F6E74656369746F)
01:00:27: Se1 LCP: O CONFACK [REQsent] id 4 len 26
01:00:27: Se1 LCP: MagicNumber 0x6063D8DC (0x05066063D8DC)
01:00:27: Se1 LCP: MRRU 1524 (0x110405F4)
01:00:27: Se1 LCP: EndpointDisc 1 Montecito (0x130C014D6F6E74656369746F)
01:00:27: Se0 BNCP: MLP bundle interface is built, process packets now
01:00:27: Se0 BNCP: Redirect packet to Vi1
01:00:27: Vi1 BNCP: I CONFREQ [REQsent] id 1 len 4
01:00:27: Vi1 BNCP: O CONFACK [REQsent] id 1 len 4
01:00:27: Se0 IPCP: MLP bundle interface is built, process packets now
01:00:27: Se0 IPCP: Redirect packet to Vi1
01:00:27: Vi1 IPCP: I CONFREQ [REQsent] id 1 len 10
01:00:27: Vi1 IPCP: Address 10.1.1.1 (0x03060A010101)
01:00:27: Vi1 IPCP: O CONFACK [REQsent] id 1 len 10
01:00:27: Vi1 IPCP: Address 10.1.1.1 (0x03060A010101)
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01:00:27: Se0 IPXCP: MLP bundle interface is built, process packets now
01:00:27: Se0 IPXCP: Redirect packet to Vi1
01:00:27: Vi1 IPXCP: I CONFREQ [REQsent] id 1 len 18
01:00:27: Vi1 IPXCP: Network 0x0000BEEF (0x01060000BEEF)
01:00:27: Vi1 IPXCP: Node 0000.0c31.aac2 (0x020800000C31AAC2)
01:00:27: Vi1 IPXCP: O CONFACK [REQsent] id 1 len 18
01:00:27: Vi1 IPXCP: Network 0x0000BEEF (0x01060000BEEF)
01:00:27: Vi1 IPXCP: Node 0000.0c31.aac2 (0x020800000C31AAC2)
01:00:27: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0,
changed state to up
01:00:27: Se1 LCP: I CONFACK [ACKsent] id 101 len 23
01:00:27: Se1 LCP: MagicNumber 0x60944EF7 (0x050660944EF7)
01:00:27: Se1 LCP: MRRU 1524 (0x110405F4)
01:00:27: Se1 LCP: EndpointDisc 1 Goleta (0x130901476F6C657461)
01:00:27: Se1 LCP: State is Open
01:00:27: Se1 PPP: Phase is VIRTUALIZED [0 sess, 4 load]
01:00:27: Vi1 BNCP: I CONFACK [ACKsent] id 1 len 4
01:00:27: Vi1 BNCP: State is Open
01:00:27: Vi1 MLP: Added link Se1 to bundle Montecito
01:00:27: Vi1 IPCP: I CONFACK [ACKsent] id 1 len 10
01:00:27: Vi1 IPCP: Address 192.168.10.2 (0x0306C0A80A02)
01:00:27: Vi1 IPCP: State is Open
01:00:27: Vi1 IPXCP: I CONFACK [ACKsent] id 1 len 18
01:00:27: Vi1 IPXCP: Network 0x0000BEEF (0x01060000BEEF)
01:00:27: Vi1 IPXCP: Node 0000.0c47.4e9a (0x020800000C474E9A)
01:00:27: Vi1 IPXCP: State is Open
01:00:27: Vi1 IPCP: Install route to 10.1.1.1
01:00:28: %LINEPROTO-5-UPDOWN: Line protocol on Interface Virtual-Access1,
changed state to up
01:00:28: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial1,
changed state to up
Goleta#

Goleta#ping 10.1.1.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.1.1.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 8/10/12 ms

Goleta#ping ipx
Target IPX address: BEEF.0000.0c31.aac2
Repeat count [5]:
Datagram size [100]:
Timeout in seconds [2]:
Verbose [n]:
Type escape sequence to abort.
Sending 5, 100-byte IPX Novell Echoes to BEEF.0000.0c31.aac2,
timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 8/10/12 ms
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相關資訊

- 存取技術支援頁面
- 技術支援與文件 - Cisco Systems