

設定使用纜線的GRE通道

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簡介

本文包含有線環境中的通用路由封裝(GRE)的說明、設定和驗證。GRE是由Cisco開發的一種通道通訊協定，可將各種通訊協定封包型別封裝到IP通道中。

開始之前

慣例

如需文件慣例的詳細資訊，請參閱[思科技術提示慣例](#)。

必要條件

本文件沒有特定先決條件。

採用元件

本檔案中的資訊是根據以下軟體和硬體版本。

- 執行Cisco IOS®軟體版本12.1(5)T4的纜線資料機uBR924

註：雖然可以在其他Cisco纜線資料機平台（例如使用不同Cisco IOS版本的uBR904上）中設定GRE通道，但是在Cisco IOS 12.1(5)T4 for uBR920和從Cisco IOS 12.1(3)for uBR910上對此功能的正式支援是相同的。

| 纜線資料機平台 | Cisco IOS軟體版本 |
|---------|---------------|
|---------|---------------|

| | |
|--------|----------------|
| uBR920 | 12.1(5)T4 |
| uBR910 | 自 12.1(3)及更高版本 |

若要執行此組態，您需要在兩個纜線資料機之間具有IP連線。

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。如果您在即時網路中工作，請確保在使用任何命令之前瞭解其潛在影響。

背景理論

通道提供了一種在傳輸通訊協定中封裝外來通訊協定封包的方法。通道是作為虛擬介面實作，以提供簡單的介面來進行組態。通道介面並不與特定乘客或傳輸通訊協定掛鉤，但此架構的目的是提供實作任何標準點對點封裝方案所需的服務。隧道是點對點鏈路，您必須為每個鏈路配置單獨的隧道。

GRE通過IP網際網路建立到遠端點的Cisco路由器的虛擬點對點鏈路。通過在單協定主幹環境中連線多協定子網，使用GRE的IP隧道允許在單協定主幹環境中擴展網路。纜線資料機終端系統(CMTS)是與有線電纜資料服務介面規範(DOCSIS)相容的任何頭端纜線路由器，例如思科uBR7246、uBR7223或uBR7246VXR。

設定

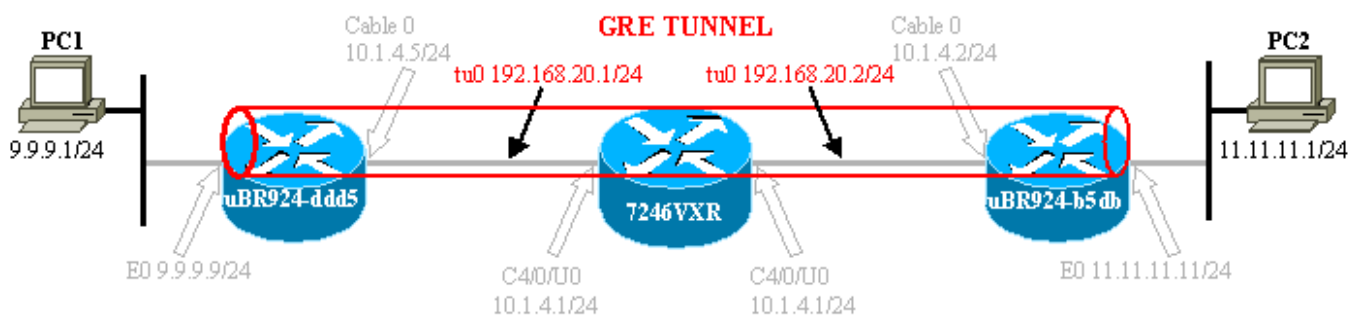
本節提供用於設定本文件中所述功能的資訊。

網路圖表

本文檔使用下圖所示的網路設定。

此安裝程式在兩個纜線資料機uBR924-ddd5和uBR924-b5db之間建立隧道。以下範例使用兩個uBR924s和一個uBR7246VXR。對於此設定，纜線資料機的名稱是ubr924-ddd5和ubr924-b5db，並且它們使用Cisco IOS版本12.1(5)T4。在全域性配置模式下通過發出interface tunnel 0命令動態建立通道介面。

註：只要兩個纜線資料機之間存在IP連線，uBR900纜線資料機不必連線到同一個uBR7200 CMTS或同一個服務供應商的網路上。



組態

本文檔使用如下所示的配置。

注意：粗體文本指的是GRE相關的命令。註釋為藍色，請參考上行。

ubr924-ddd5

```
version 12.1
no service single-slot-reload-enable
no service pad
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname ubr924-ddd5
!
logging rate-limit console 10 except errors
!
clock timezone - -80
ip subnet-zero
no ip finger
!
call rsvp-sync
!
!
!
!
!
!
!
!
!
!
interface Tunnel0
!--- Tunnel interface 0. ip address 192.168.20.1
255.255.255.0 !--- IP address of the GRE tunnel
interface 0. tunnel source Ethernet0 !--- IP source of
the tunnel. It is best to make this an !--- interface
with a public, routable IP address so that !--- it is
reachable from the other endpoint of the tunnel. tunnel
destination 11.11.11.11 !--- IP destination of the
tunnel. Make sure this is !--- reachable via the ping
command !--- Otherwise, the tunnel will not be created
properly.
!
interface Ethernet0
ip address 9.9.9.9 255.255.255.0
ip rip send version 2
!--- Send RIP version 2 packets. ip rip receive version
2 !--- Receive RIP version 2 packets. ! interface cable-
modem0 ip rip send version 2 !--- Send RIP version 2
packets. ip rip receive version 2 !--- Receive RIP
version 2 packets. cable-modem downstream saved channel
525000000 40 1 cable-modem mac-timer t2 40000 no cable-
modem compliant bridge ! router rip version 2 passive-
interface Tunnel0 !--- This command is used to avoid
recursive routing. network 10.0.0.0 network 9.0.0.0 no
auto-summary ! ip default-gateway 10.1.4.1 ip classless
no ip http server no ip http cable-monitor ! snmp-server
packet-size 4096 snmp-server manager ! voice-port 0 input
gain -2 ! voice-port 1 input gain -2 ! ! line con 0
transport input none line vty 0 4 login ! end ubr924-
ddd5#
```

ubr924-b5db

```
version 12.1
no service single-slot-reload-enable
no service pad
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname ubr924-b5db
!
logging rate-limit console 10 except errors
enable password ww
!
clock timezone - -80
ip subnet-zero
no ip finger
!
mgcp
call rsvp-sync
!
!
!
!
!
!
!
!
!
!
!
!

interface Tunnel0
!--- Tunnel interface 0 ip address 192.168.20.2
255.255.255.0
!--- IP address of the gre tunnel interface 0 tunnel
source Ethernet0
!--- IP source of the tunnel. It is best to make this an
!--- interface with a public, routable IP address so
that !--- it is reachable from the other endpoint of the
tunnel. tunnel destination 9.9.9.9
!--- IP destination of the tunnel. Make sure this is !--
- reachable via the ping command !--- Otherwise, the
tunnel will not be created properly.
!
interface Ethernet0
 ip address 11.11.11.11 255.255.255.0
 ip rip send version 2
!--- Send RIP version 2 packets. ip rip receive version
2 !--- Receive RIP version 2 packets. ! no ip route-
cache no ip mroute-cache ! interface cable-modem0 ip rip
send version 2 !--- Send RIP version 2 packets. ip rip
receive version 2 !--- Receive RIP version 2 packets. no
ip route-cache no ip mroute-cache no cable-modem
compliant bridge ! router rip
 version 2
 passive-interface Tunnel0
!--- This command is used to avoid recursive routing.
network 10.0.0.0 network 11.0.0.0
 no auto-summary
!
ip default-gateway 10.1.4.1
ip classless
```

```
no ip http server
no ip http cable-monitor
!
snmp-server packetsize 4096
snmp-server manager
!
voice-port 0
  input gain -2
!
voice-port 1
  input gain -2
!
!
line con 0
  exec-timeout 0 0
  transport input none
line vty 0 4
  password ww
  login
!
end

ubr924-b5db#
```

驗證

本節提供的資訊可用於確認您的組態是否正常運作。

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。

驗證CMTS(7246VXR)配置是否正確，以及纜線資料機是否聯機。CMTS的配置如下所示。

```
7246VXR#show run
Building configuration...

Current configuration : 4579 bytes
!
! Last configuration change at 13:22:17 PDT Mon Feb 26 2001
! NVRAM config last updated at 13:22:46 PDT Mon Feb 26 2001
!
version 12.1
no service single-slot-reload-enable
no service pad
service timestamps debug datetime msec localtime
service timestamps log datetime localtime
no service password-encryption
service linenumbers
service udp-small-servers max-servers no-limit
!
hostname 7246VXR
!
logging buffered 1000000 debugging
logging rate-limit console 10 except errors
enable password cable
!
cable qos profile 8
cable qos profile 10
cable qos profile 10 grant-size 1500
```

```

cable qos profile 12 guaranteed-upstream 100000
no cable qos permission create
no cable qos permission update
cable qos permission modems
cable time-server
clock timezone PDT -8
clock summer-time PDT recurring
clock calendar-valid
ip subnet-zero
no ip finger
!
interface Ethernet2/0
 ip address 172.16.30.4 255.255.255.192
 no ip mroute-cache
 half-duplex
!

interface Cable4/0
 ip address 172.16.29.1 255.255.255.224 secondary
 ip address 10.1.4.1 255.255.255.0
 no keepalive
 cable downstream rate-limit token-bucket shaping
 cable downstream annex B
 cable downstream modulation 64qam
 cable downstream interleave-depth 32
 cable downstream frequency 555000000
 cable upstream 0 frequency 40000000
 cable upstream 0 power-level 0
 no cable upstream 0 shutdown
 cable upstream 1 shutdown
 cable upstream 2 shutdown
 cable upstream 3 shutdown
 cable upstream 4 shutdown
 cable upstream 5 shutdown
 cable dhcp-giaddr policy
 cable helper-address 172.16.30.2
!
interface Cable5/0
 ip address 172.16.29.225 255.255.255.224 secondary
 ip address 10.1.5.1 255.255.255.0
 load-interval 30
 no keepalive
 cable downstream rate-limit token-bucket shaping
 cable downstream annex B
 cable downstream modulation 64qam
 cable downstream interleave-depth 32
 cable downstream frequency 620000000
 cable upstream 0 frequency 25008000
 cable upstream 0 power-level 0
 no cable upstream 0 shutdown
 no cable upstream 1 shutdown
 cable dhcp-giaddr policy
!
router eigrp 202
 redistribute connected
 redistribute static
 network 10.0.0.0
 network 172.16.0.0
 no auto-summary
 no eigrp log-neighbor-changes
!
router rip
 version 2
 redistribute connected

```

```

redistribute static
network 10.0.0.0
network 172.16.0.0
no auto-summary
!
ip default-gateway 172.16.30.1
ip classless
ip route 0.0.0.0 0.0.0.0 172.16.30.1
ip route 172.16.30.0 255.255.255.0 Ethernet2/0
ip http server
ip http authentication local
!
access-list 188 permit tcp any any eq www log
access-list 188 permit ip any any
route-map docsis permit 10
!
snmp-server engineID local 00000009020000E01ED77E40
snmp-server community public RO
snmp-server community private RW

line con 0
  exec-timeout 0 0
  transport input none
line aux 0
  speed 19200
line vty 0 4
  session-timeout 60
  exec-timeout 0 0
!
ntp clock-period 17179973
end

```

7246VXR#show cable modem

| Interface | Prim Sid | Online State | Timing Offset | Rec Power | QoS | CPE | IP address | MAC address |
|--------------------|-----------|---------------|---------------|--------------|----------|----------|-----------------|-----------------------|
| Cable4/0/U0 | 69 | online | 2812 | 0.25 | 5 | 0 | 10.1.4.3 | 0002.1685.b5db |
| Cable4/0/U0 | 70 | online | 2288 | 0.00 | 5 | 0 | 10.1.4.6 | 0010.7bed.9b23 |
| Cable4/0/U0 | 71 | online | 2289 | 0.50 | 5 | 0 | 10.1.4.2 | 0010.7bed.9b45 |
| Cable4/0/U0 | 72 | online | 2812 | 0.00 | 5 | 0 | 10.1.4.4 | 0002.fdfa.0a63 |
| Cable4/0/U0 | 73 | online | 2812 | -0.75 | 5 | 0 | 10.1.4.5 | 0004.2752.ddd5 |
| Cable4/0/U0 | 74 | online | 2813 | 0.25 | 5 | 0 | 10.1.4.7 | 0001.64ff.e47d |

如果纜線資料機線上狀態未顯示online，請參閱[疑難排解uBR纜線資料機無法連線](#)文檔。

7246VXR#show ip interface brief

| Interface | IP-Address | OK? | Method | Status | Protocol |
|--------------------|-------------------|------------|---------------|------------------------------|-------------|
| FastEthernet0/0 | 192.168.7.253 | YES | NVRAM | up | down |
| Ethernet2/0 | 172.16.30.4 | YES | manual | up | up |
| Ethernet2/1 | unassigned | YES | NVRAM | administratively down | down |
| Ethernet2/2 | unassigned | YES | NVRAM | administratively down | down |
| Ethernet2/3 | unassigned | YES | NVRAM | administratively down | down |
| Cable3/0 | 10.1.3.1 | YES | manual | up | up |
| Cable4/0 | 10.1.4.1 | YES | manual | up | up |
| Cable5/0 | 10.1.5.1 | YES | manual | up | up |

7246VXR#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 172.16.30.1 to network 0.0.0.0

```
172.16.0.0/16 is variably subnetted, 4 subnets, 3 masks
C    172.16.29.224/27 is directly connected, Cable5/0
C    172.16.29.0/27 is directly connected, Cable4/0
S    172.16.30.0/24 is directly connected, Ethernet2/0
C    172.16.30.0/26 is directly connected, Ethernet2/0
9.0.0.0/24 is subnetted, 1 subnets
R    9.9.9.0 [120/1] via 10.1.4.5, 00:00:09, Cable4/0
R    192.168.20.0/24 [120/1] via 10.1.4.5, 00:00:09, Cable4/0
10.0.0.0/8 is variably subnetted, 5 subnets, 2 masks
C    10.1.3.0/24 is directly connected, Cable3/0
R    10.5.5.0/24 [120/1] via 10.1.4.4, 00:00:01, Cable4/0
R    10.0.0.0/8 [120/1] via 172.16.30.10, 00:00:24, Ethernet2/0
C    10.1.5.0/24 is directly connected, Cable5/0
C    10.1.4.0/24 is directly connected, Cable4/0
11.0.0.0/24 is subnetted, 1 subnets
R    11.11.11.0 [120/1] via 10.1.4.3, 00:00:15, Cable4/0
S*  0.0.0.0/0 is directly connected
```

從纜線資料機端，確認兩台裝置的sh版本，如下所示。

```
ubr924-ddd5#sh ver
```

```
Cisco Internetwork Operating System Software
IOS (tm) 920 Software (UBR920-K1V4Y556I-M), Version 12.1(5)T4, RELEASE SOFTWARE (fc1)
TAC Support: http://www.cisco.com/pcgi-bin/ibld/view.pl?i=support
Copyright (c) 1986-2001 by cisco Systems, Inc.
Compiled Fri 02-Feb-01 10:55 by ccai
Image text-base: 0x800100A0, data-base: 0x806DB770
```

```
ROM: System Bootstrap, Version 12.0(6r)T3, RELEASE SOFTWARE (fc1)
ROM: 920 Software (UBR920-K1V4Y556I-M), Version 12.1(5)T4, RELEASE SOFTWARE (fc1)
```

```
ubr924-ddd5 uptime is 2 hours, 1 minute
System returned to ROM by reload at 12:45:25 - Fri Feb 23 2001
System restarted at 12:46:07 - Fri Feb 23 2001
System image file is "flash:ubr920-k1v4y556i-mz.121-5.T4"
```

```
cisco uBR920 CM (MPC850) processor (revision 4.d) with 15872K/1024K bytes of memory.
Processor board ID FAA0444Q14Z
Bridging software.
1 Ethernet/IEEE 802.3 interface(s)
1 Cable Modem network interface(s)
3968K bytes of processor board System flash (Read/Write)
1536K bytes of processor board Boot flash (Read/Write)
```

```
Configuration register is 0x2102
```

```
ubr924-b5db#show ver
```

```
Cisco Internetwork Operating System Software
IOS (tm) 920 Software (UBR920-K1V4Y556I-M), Version 12.1(5)T4, RELEASE SOFTWARE (fc1)
TAC Support: http://www.cisco.com/pcgi-bin/ibld/view.pl?i=support
Copyright (c) 1986-2001 by cisco Systems, Inc.
Compiled Fri 02-Feb-01 10:55 by ccai
Image text-base: 0x800100A0, data-base: 0x806DB770
```

```
ROM: System Bootstrap, Version 12.0(6r)T3, RELEASE SOFTWARE (fc1)
ROM: 920 Software (UBR920-K1V4Y556I-M), Version 12.1(5)T4, RELEASE SOFTWARE (fc1)
```

```
ubr924-b5db uptime is 1 hour, 53 minutes
System returned to ROM by reload at 12:55:34 - Fri Feb 23 2001
```


System restarted at 12:56:15 - Fri Feb 23 2001
System image file is "flash:ubr920-k1v4y556i-mz.121-5.T4"

cisco uBR920 CM (MPC850) processor (revision 3.e) with 15872K/1024K bytes of memory.
Processor board ID FAA0422Q04F
Bridging software.
1 Ethernet/IEEE 802.3 interface(s)
1 Cable Modem network interface(s)
3968K bytes of processor board System flash (Read/Write)
1536K bytes of processor board Boot flash (Read/Write)

Configuration register is 0x2102

只要存在以下情況，隧道就會顯示up/up:

- 它配置了有效的IP地址。
- 路由表中有一條路由通往通道目的地IP位址，而不是分配給通道遠端的IP位址。

無論是否能ping通目的地位址，情況都應該如此。錯誤的靜態路由或指向錯誤方向的預設路由將啟動隧道，但隧道無法工作。

驗證通道是否工作的第一步是驗證通道是否啟動。在兩條纜線資料機上發出show ip interface brief和show interface tunnel 0指令。命令輸出示例如下所示。

```
ubr924-ddd5#show ip interface brief
Interface                IP-Address      OK? Method Status Protocol
Ethernet0                9.9.9.9         YES manual up       up
Tunnel0                  192.168.20.1   YES manual up       up
cable-modem0            10.1.4.5        YES unset  up       up
```

```
ubr924-ddd5#show interface tunnel 0
Tunnel0 is up, line protocol is up
  Hardware is Tunnel
  Internet address is 192.168.20.1/24
  MTU 1514 bytes, BW 9 Kbit, DLY 500000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation TUNNEL, loopback not set
  Keepalive set (10 sec)
  Tunnel source 9.9.9.9 (Ethernet0), destination 11.11.11.11
  Tunnel protocol/transport GRE/IP, key disabled, sequencing disabled
  Checksumming of packets disabled
  Last input 00:15:25, output 00:14:27, output hang never
  Last clearing of "show interface" counters never
  Queueing strategy: fifo
  Output queue 0/0, 2 drops; input queue 0/75, 0 drops
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    146 packets input, 21024 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
    172 packets output, 57392 bytes, 0 underruns
    0 output errors, 0 collisions, 0 interface resets
    0 output buffer failures, 0 output buffers swapped out
```

```
ubr924-b5db#show ip interface brief
Interface                IP-Address      OK? Method Status Protocol
Ethernet0                11.11.11.11    YES manual up       up
Tunnel0                  192.168.20.2   YES manual up       up
cable-modem0            10.1.4.3        YES NVRAM  up       up
```

```
ubr924-b5db#show interface tunnel 0
Tunnel0 is up, line protocol is up
  Hardware is Tunnel
  Internet address is 192.168.20.2/24
  MTU 1514 bytes, BW 9 Kbit, DLY 500000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation TUNNEL, loopback not set
  Keepalive set (10 sec)
  Tunnel source 11.11.11.11 (Ethernet0), destination 9.9.9.9
  Tunnel protocol/transport GRE/IP, key disabled, sequencing disabled
  Checksumming of packets disabled
  Last input 00:16:42, output 00:17:40, output hang never
  Last clearing of "show interface" counters never
  Queueing strategy: fifo
  Output queue 0/0, 5 drops; input queue 0/75, 0 drops
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    118 packets input, 19144 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
    164 packets output, 49624 bytes, 0 underruns
    0 output errors, 0 collisions, 0 interface resets
    0 output buffer failures, 0 output buffers swapped out
```

驗證通道是否工作正常，以便ping通道目的地IP位址。這將僅檢驗IP連線，而不是隧道的實際功能。

```
From ubr924-ddd5 we ping 11.11.11.11
ubr924-ddd5#ping 11.11.11.11

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 11.11.11.11, timeout is 2 seconds:
!!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 12/14/17 ms
ubr924-ddd5#
```

從ubr924-b5db ping目的地地址9.9.9.9。

```
ubr924-b5db#ping 9.9.9.9

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 9.9.9.9, timeout is 2 seconds:
!!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 12/14/16 ms
ubr924-b5db#
```

若要驗證通道是否運作，請發出show ip route x.x.x.x命令，其中x.x.x.x是指定給通道遠端的IP位址。在這種情況下，它將是遠端路由器的回圈位址。如果顯示的唯一路由是到隧道介面，對該地址執行ping將證明隧道正常工作。

如果有在網路中將路由通告回隧道段的IP編址方案，則通往隧道介面遠端的多條路由將會出現。如果是這種情況，很難驗證隧道是否正常工作。通常，在這種情況下，您不希望到隧道網路的路由重複。應採取措施，防止通過網路上的路由協定通告路由。如果通道用於傳輸來自IP的不同協定的流量，則應用相同的基本驗證方法。

```
From ubr924-ddd5 we get
ubr924-ddd5#show ip route 192.168.20.2
Routing entry for 192.168.20.0/24
  Known via "connected", distance 0, metric 0 (connected, via interface)
  Routing Descriptor Blocks:
    * directly connected, via Tunnel0
      Route metric is 0, traffic share count is 1
```

```
From ubr924-b5db we get
ubr924-b5db#show ip route 192.168.20.1
Routing entry for 192.168.20.0/24
  Known via "connected", distance 0, metric 0 (connected, via interface)
  Routing Descriptor Blocks:
    * directly connected, via Tunnel0
      Route metric is 0, traffic share count is 1
```

要驗證PC1可以訪問PC2，反之亦然，請在電纜數據機上執行擴展ping，同時從PC執行ping。

對ubr924-b5db執行從乙太網介面(11.11.11.11)到ubr924-ddd5乙太網介面(9.9.9.9)的擴展ping。

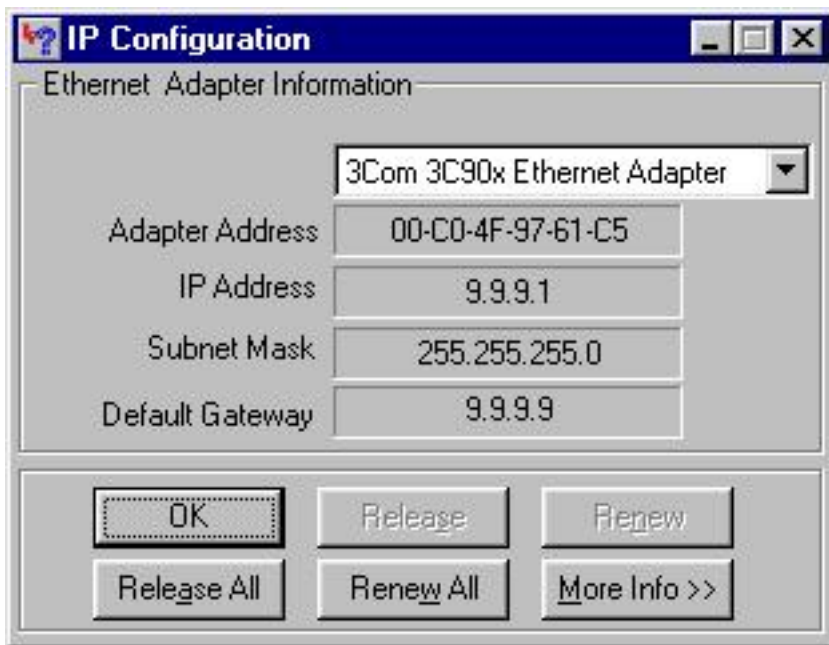
```
ubr924-b5db#ping ip
Target IP address: 9.9.9.9
!--- ubr924-ddd5 Ethernet's IP address. Repeat count [5]: Datagram size [100]: Timeout in
seconds [2]: Extended commands [n]: y Source address or interface: 11.11.11.11
!--- ubr924-b5db Ethernet's IP address. Type of service [0]: Set DF bit in IP header? [no]:
Validate reply data? [no]: Data pattern [0xABCD]: Loose, Strict, Record, Timestamp,
Verbose[none]: Sweep range of sizes [n]: Type escape sequence to abort. Sending 5, 100-byte ICMP
Echos to 9.9.9.9, timeout is 2 seconds: !!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 12/16/28 ms
ubr924-b5db#
```

執行相反操作，測試另一端的連通性。

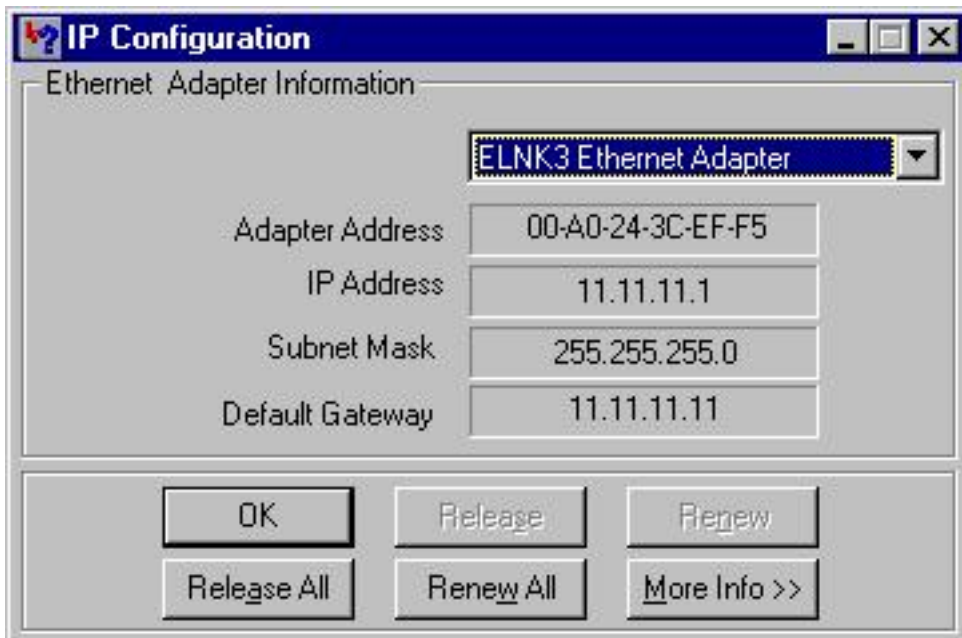
```
ubr924-ddd5#ping ip
Target IP address: 11.11.11.11
!--- ubr924-b5db Ethernet's IP address. Repeat count [5]: Datagram size [100]: Timeout in
seconds [2]: Extended commands [n]: y Source address or interface: 9.9.9.9
!--- ubr924-ddd5 Ethernet's IP address. Type of service [0]: Set DF bit in IP header? [no]:
Validate reply data? [no]: Data pattern [0xABCD]: Loose, Strict, Record, Timestamp,
Verbose[none]: Sweep range of sizes [n]: Type escape sequence to abort. Sending 5, 100-byte ICMP
Echos to 11.11.11.11, timeout is 2 seconds: !!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 12/14/16 ms
ubr924-ddd5#
```

最後的測試是從PC1 ping PC2，然後從PC2 ping PC1。

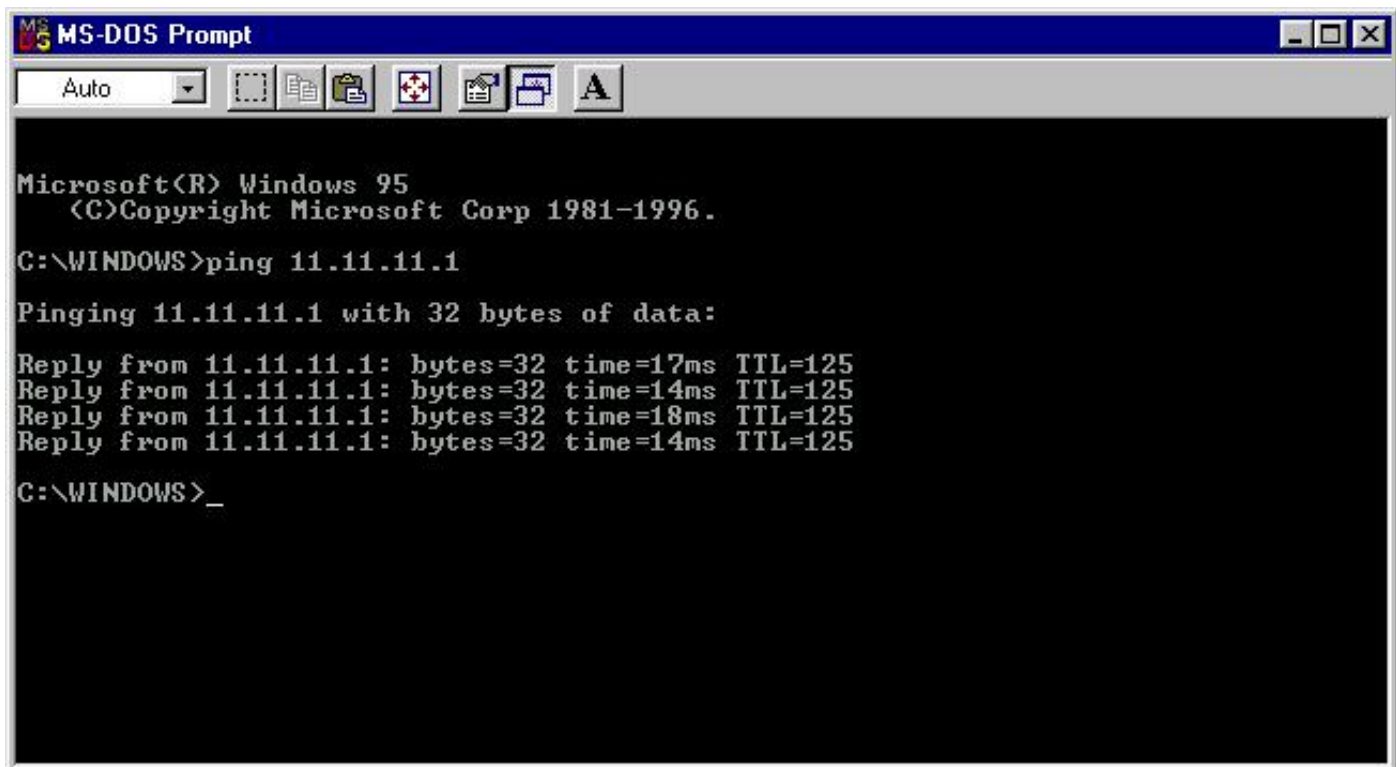
PC1的IP地址為9.9.9.1。



PC2的和IP地址為11.11.11.1。

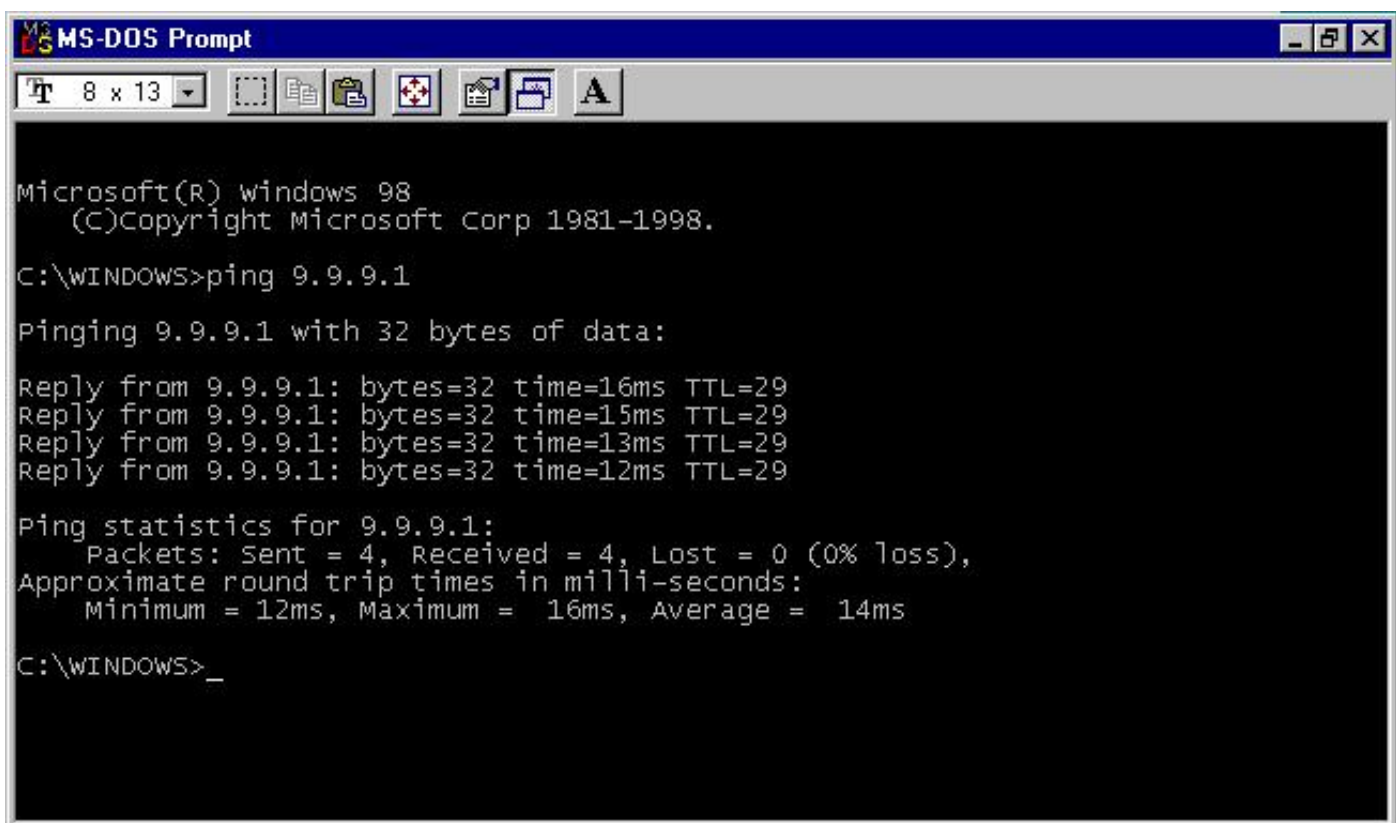


從PC1 ping PC2。



```
MS-DOS Prompt
Auto
Microsoft(R) Windows 95
(C)Copyright Microsoft Corp 1981-1996.
C:\WINDOWS>ping 11.11.11.1
Pinging 11.11.11.1 with 32 bytes of data:
Reply from 11.11.11.1: bytes=32 time=17ms TTL=125
Reply from 11.11.11.1: bytes=32 time=14ms TTL=125
Reply from 11.11.11.1: bytes=32 time=18ms TTL=125
Reply from 11.11.11.1: bytes=32 time=14ms TTL=125
C:\WINDOWS>_
```

從PC2 ping PC1。



```
MS-DOS Prompt
8 x 13
Microsoft(R) windows 98
(C)Copyright Microsoft Corp 1981-1998.
C:\WINDOWS>ping 9.9.9.1
Pinging 9.9.9.1 with 32 bytes of data:
Reply from 9.9.9.1: bytes=32 time=16ms TTL=29
Reply from 9.9.9.1: bytes=32 time=15ms TTL=29
Reply from 9.9.9.1: bytes=32 time=13ms TTL=29
Reply from 9.9.9.1: bytes=32 time=12ms TTL=29
Ping statistics for 9.9.9.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 12ms, Maximum = 16ms, Average = 14ms
C:\WINDOWS>_
```

疑難排解

目前尚無適用於此組態的具體疑難排解資訊。

相關資訊

- [排除uBR纜線資料機無法聯機故障](#)
- [技術支援 - Cisco Systems](#)