

使用RBE和DHCP配置Cisco 6400 ATM介面

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簡介

本檔案將提供連線到思科6130數位使用者線路存取多工器(DSLAM)的思科827數位使用者線路(DSL)路由器的範例設定，該路由器終止於思科6400通用存取集中器(UAC)上。

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：

- 採用IOS®軟體版本12.1(1)XB的思科827-4V使用者端裝置(CPE)。
- Cisco 6400 UAC-NRP IOS軟體版本12.1(1)DC1 (外部DHCP伺服器) 或12.2(2)B (IOS DHCP伺服器) 。
- Cisco 6400 UAC-NSP IOS軟體版本12.0(4)DB。
- Cisco 6130 DSLAM-NI2 IOS軟體版本12.1(1)DA。

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。

慣例

如需文件慣例的詳細資訊，請參閱[思科技術提示慣例](#)。

背景資訊

Cisco 827配置有RFC1483橋接和整合路由和橋接(IRB)。Cisco 827允許乙太網段上的PC從6400後面的DHCP伺服器或6400 IOS DHCP伺服器獲取地址。此外，還將BVI地址配置為從DHCP伺服器獲取地址和預設路由。Cisco 6400非同步傳輸模式(ATM)介面設定為路由橋接封裝(RBE)，並設定為與外部DHCP伺服器或NRP上的IOS DHCP伺服器協同運作。

對於Cisco 6400,Cisco 6400節點路由處理器(NRP)上的ATM RBE功能通過橋接RFC1483乙太網流量從未節橋接LAN路由IP。在路由橋接模式下設定的ATM介面上接收的橋接IP封包會透過IP標頭路由。這些介面利用了常用於DSL訪問的末節LAN拓撲的特性，提供了比IRB更高的效能和靈活性。

此外，DHCP客戶端的主機路由會在分配IP地址時自動新增到6400路由表中。釋放DHCP地址時，會從路由表中刪除主機路由。

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[命令查詢工具](#)([僅限註冊客戶](#))。

網路圖表

本文使用圖1和圖2所示的網路設定：

圖1 — 場景1

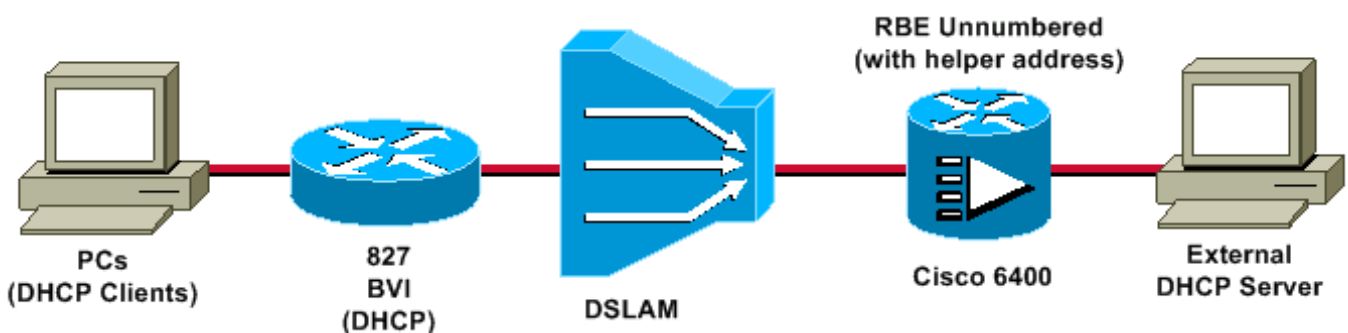
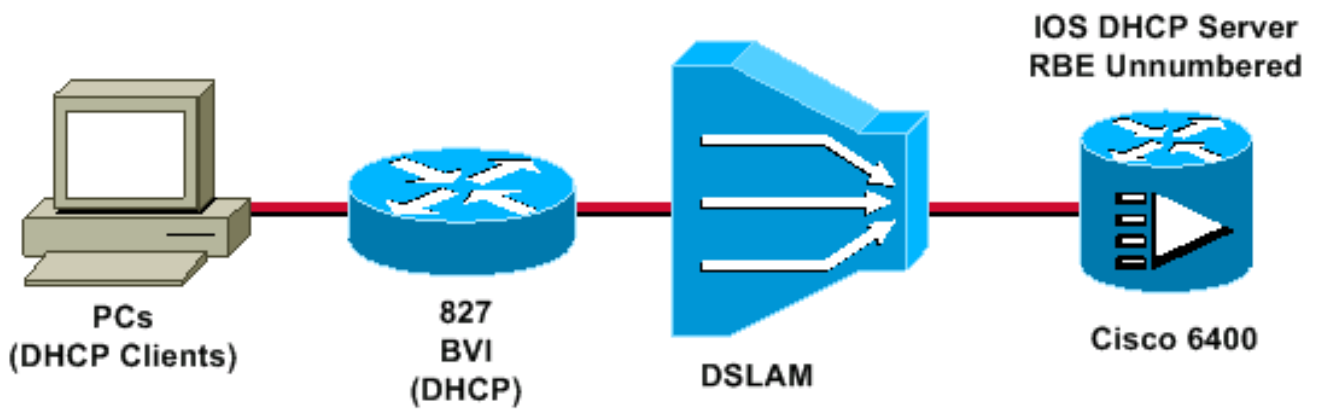


圖2 — 場景2



組態

本檔案會使用以下設定：

- 思科827
- Cisco 6400 NRP
- 6400偵錯 (對外部DHCP伺服器使用RBE)
- 6400調試 (使用RBE和IOS DHCP伺服器)

```
<#root>
```

```
Current configuration:
```

```
!
version 12.0
service timestamps debug datetime msec
service timestamps log datetime msec
```

```
!
hostname R1
```

```
!
ip subnet-zero
```

```
!
bridge irb
```

```
!
interface Ethernet0
no ip address
bridge-group 1
```

```
!--- Because the Ethernet0 is bridged to the WAN interface, !--- PCs behind the ethernet0 can be setup
```

```
!
interface ATM0
no ip address
no ip directed-broadcast
no ip mroute-cache
no atm ilmi-keepalive
pvc 4/100
encapsulation aal5snap
!
```

```

bundle-enable
bridge-group 1
hold-queue 224 in
!
interface BVI1
 ip address dhcp client-id Ethernet0

!--- This command tells the BVI interface to get the address !--- from DHCP, and also to get the default route
!
ip classless

!---

Note

: The default route will be inserted into !--- the routing table automatically from the DHCP server, and the DHCP server will be able to reach the BVI interface.

no ip http server
!
bridge 1 protocol ieee
 bridge 1 route ip
!
voice-port 1
 timing hookflash-in 0
!
voice-port 2
 timing hookflash-in 0
!
voice-port 3
 timing hookflash-in 0
!
voice-port 4
 timing hookflash-in 0
!
end

```

```

<#root>

Current configuration:
!
version 12.1
no service pad
service timestamps debug datetime msec
service timestamps log datetime msec
!
hostname NRP

!
redundancy
 main-cpu
 no auto-sync standard
 no secondary console enable
ip subnet-zero
!
interface Loopback1

```

```
ip address 198.1.1.1 255.255.255.0
no ip directed-broadcast
```

!--- This address and mask must match the intended !--- scope and network configured on the external D

```
!
interface ATM0/0/0
no ip address
no ip directed-broadcast
no ip mroute-cache
no ATM ilmi-keepalive
```

```
!
interface ATM0/0/0.4 point-to-point
```

!--- The interface ATM0/0/0.4 point-to-point uses IP !--- unnumbered Loopback1 for its IP address requ

```
ip unnumbered Loopback1
ip helper-address <dhcp server ip address>
atm route-bridged ip
PVC 4/100
encapsulation aal5snap
```

```
!
interface Ethernet0/0/1
no ip address
no ip directed-broadcast
```

```
!
interface Ethernet0/0/0
no ip directed-broadcast
```

```
!
interface FastEthernet0/0/0
no ip address
no ip directed-broadcast
full-duplex
```

```
!
ip classless
```

!---

Note

: For every DHCP client that is relayed an address, !--- a host route will be automatically inserted i
end

6400偵錯 (對外部DHCP伺服器使用RBE)

```
debug ip dhcp server events
```

Looks for existing binding. . .

```
00:10:56: find_or_create(): Look for existing binding for:
00:10:56: find_or_create(): dhcp->chaddr = 616EF9BC
00:10:56: find_or_create(): dhcp->hlen = 6
00:10:56: find_or_create(): dhcp->htype = 1
00:10:56: find_or_create: address = 124.124.124.1
00:10:56: find_or_create(): Creating new binding with data
00:10:56: find_or_create(): dhcp->chaddr = 616EF9BC
```

```
00:10:56: find_or_create(): dhcp->hlen = 6
00:10:56: find_or_create(): dhcp->htype = 1
00:10:56: find_or_create: address = 124.124.124.1
```

!--- Forwards DHCP DISCOVER packet from the client to the !--- external DHCP server.

```
00:10:56: DHCPD: Received DHCPDISCOVER on UNNUM-IF
00:10:56: DHCPD: Forwarding reply on un-numbered intf
```

!--- Forwards the DHCP OFFER packet from the external DHCP server !--- to the client.

```
00:10:56: DHCPD: Unnum: Received DHCP OFFER
00:10:56: DHCPD: Server Address = 200.200.200.2
00:10:56: DHCPD: Giaddr Address = 124.124.124.1
00:10:56: find_or_create(): Look for existing binding for:
00:10:56: find_or_create(): dhcp->chaddr = 616EF9BC
00:10:56: find_or_create(): dhcp->hlen = 6
00:10:56: find_or_create(): dhcp->htype = 1
00:10:56: find_or_create: address = 124.124.124.1
```

!--- Forwards the DHCP REQUEST packet from the client to the external !--- DHCP server.

```
00:10:56: DHCPD: Received DHCPREQUEST on UNNUM-IF
00:10:56: DHCPD: request_on_unnumif ():Real Server = 200.200.200.2
00:10:56: DHCPD: Forwarding reply on un-numbered intf
```

!--- Forwards the DHCP ACK packet from the DHCP server to the client.

```
00:10:56: DHCPD: Unnum: Received DHCPACK
00:10:56: DHCPD: lease time = 86400
```

!--- Adds a dynamic host route to the client into the routing table.

```
00:10:56: DHCPD: dhcpd_lookup_route: host = 124.124.124.2
00:10:56: DHCPD: dhcpd_lookup_route: index = 126
00:10:56: DHCPD: Adding new route to host 124.124.124.2
00:10:56: DHCPD: dhcpd_lookup_route: host = 124.124.124.2
00:10:56: DHCPD: dhcpd_lookup_route: index = 126
00:10:56: DHCPD: dhcpd_create_and_hash_route: host = 124.124.124.2
00:10:56: DHCPD: dhcpd_create_and_hash_route index = 126
00:10:56: DHCPD: dhcpd_add_route: lease = 86400
00:10:56: DHCPD: Server ID saved in Binding = 200.200.200.2
00:10:56: DHCPD: Server ID saved in Route block = 200.200.200.2
00:10:56: DHCPD: Giaddr Address = 124.124.124.1
```

6400調試 (使用RBE和IOS DHCP伺服器)

```
debug ip dhcp server events
```

Assigns an address to the client from the IOS DHCP server.

```
23:19:09: DHCPD: assigned IP address 124.124.124.3 to
client 0063.6973.636f.2d30.3030.302e.3063.3036.2e32.3339.342d.4256.31.
23:19:10: DHCPD: lease time = 86400
```

Adds a dynamic host route to the client into the routing table.

```
23:19:10: DHCPD: dhcpd_lookup_route: host = 124.124.124.3
23:19:10: DHCPD: dhcpd_lookup_route: index = 127
23:19:10: DHCPD: Adding new route to host 124.124.124.3
23:19:10: DHCPD: dhcpd_lookup_route: host = 124.124.124.3
23:19:10: DHCPD: dhcpd_lookup_route: index = 127
23:19:10: DHCPD: dhcpd_create_and_hash_route: host = 124.124.124.3
23:19:10: DHCPD: dhcpd_create_and_hash_route index = 127
23:19:10: DHCPD: dhcpd_add_route: lease = 86400
```

驗證

目前沒有適用於此組態的驗證程序。

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

- [使用RFC1483橋接，在RBE模式下在Cisco 6400上配置Cisco 827路由器](#)
- [DSL產品支援頁面](#)

關於此翻譯

思科已使用電腦和人工技術翻譯本文件，讓全世界的使用者能夠以自己的語言理解支援內容。請注意，即使是最佳機器翻譯，也不如專業譯者翻譯的內容準確。Cisco Systems, Inc. 對這些翻譯的準確度概不負責，並建議一律查看原始英文文件（提供連結）。