使用Microsoft IAS為PPTP配置Cisco IOS軟體和Windows 2000

目錄

簡介

在Cisco 7100和7200路由器平台上的Cisco IOS®軟體版本12.0.5.XE5中新增了點對點隧道協定(PPTP)支援。Cisco IOS軟體版本12.1.5.T新增了對更多平台的支援。

要求建議(RFC)2637描述了PPTP。根據此RFC，PPTP訪問集中器(PAC)是客戶端（即PC或呼叫者），PPTP網路伺服器(PNS)是伺服器（即被呼叫的路由器或裝置）。

必要條件

需求

本文檔假定您已使用這些文檔設定與路由器的PPTP連線，並且它們已在運行。該路由器具有本地

Microsoft質詢握手身份驗證協定(MS-CHAP)V1身份驗證（以及可選的Microsoft點對點加密
[MPPE]，需要MS-CHAP V1）。MPPE加密支援需要遠端身份驗證撥入使用者服務
(RADIUS);TACACS+適用於驗證，但不適用於MPPE金鑰。

採用元件

本檔案中的資訊是根據以下軟體和硬體版本。

- Microsoft IAS可選元件安裝在帶有Active Directory的Microsoft 2000高級伺服器上。
- Cisco 3600路由器。
- Cisco IOS軟體版本c3640-io3s56i-mz.121-5.T。

此配置使用安裝在Windows 2000高級伺服器上的Microsoft IAS作為RADIUS伺服器。

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。

慣例

如需文件慣例的詳細資訊，請參閱思科技術提示慣例。

背景理論

此示例配置演示如何設定PC以連線到路由器（地址為10.200.20.2），然後路由器在允許使用者進
入網路之前向Microsoft的Internet身份驗證伺服器(IAS)（地址為10.200.20.245）驗證使用者的身份
。適用於Windows的Cisco安全存取控制伺服器(ACS)版本2.5提供PPTP支援。但是，由於Cisco錯
誤ID CSCds92266，它可能對路由器無效。如果您使用的是Cisco Secure，我們建議使用Cisco
Secure 2.6版或更高版本。Cisco Secure UNIX不支援MPPE。另外兩個支援MPPE的RADIUS應用
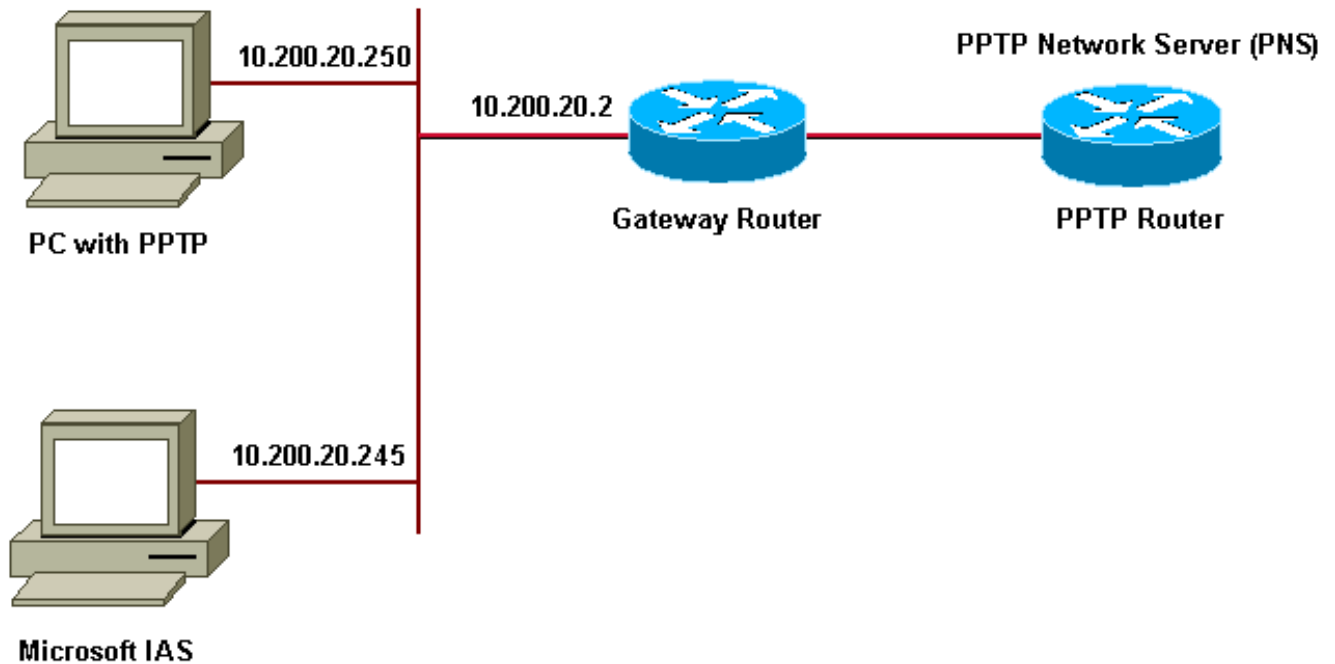程式是Microsoft RADIUS和Funk RADIUS。

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。

PPTP Access Concentrator (PAC)

10.200.20.250

PC with PPTP

PPTP Network Server (PNS)

10.200.20.2

Gateway Router

PPTP Router

10.200.20.245

Microsoft IAS

用於撥號客戶端的IP池：

- 網關路由器：192.168.1.2～192.168.1.254
- LNS:172.16.10.1～172.16.10.10

雖然上述設定使用撥號客戶端通過撥號連線到網際網路服務提供商(ISP)路由器，但您可以通過任何介質（例如LAN）連線PC和網關路由器。

為Microsoft IAS配置Windows 2000高級伺服器

本節介紹如何為Microsoft IAS配置Windows 2000高級伺服器：

1. 確保已安裝Microsoft IAS。要安裝Microsoft IAS，請以管理員身份登入。在**Network Services**下，驗證是否已清除所有覈取方塊。選中Internet Authentication Server覈取方塊，然後按一下**OK**。
2. 在「**Windows Components(Windows元件)」精靈**中，按一下「**Next（下一步）」**。如果出現提示，請插入Windows 2000 CD。
3. 複製所需檔案後，按一下**Finish**，然後關閉所有視窗。您無需重新啟動。

設定Radius使用者端

本節介紹設定radius使用者端的步驟：

1. 在**管理工具**中，開啟Internet Authentication Server控制檯，然後按一下**Clients**。
2. 在「**Friendly Name」**框中，鍵入網路訪問伺服器(NAS)的IP地址。
3. 按一下**Use this IP**選項。
4. 在「**Client-Vendor」**下拉選單框中，確保選中「**RADIUS Standard」**選項。
5. 在**Shared Secret**和**Confirm Shared Secret**框中，鍵入密碼，然後按一下**Finish**。
6. 在控制檯樹中，按一下右鍵Internet Authentication Service，然後按一下**Start**。
7. 關閉控制檯。

在IAS上配置使用者

與Cisco Secure不同，Windows 2000 RADIUS使用者資料庫與Windows使用者資料庫緊密繫結。如果**Active Directory**安裝在Windows 2000伺服器上，請從**Active Directory使用者和電腦**建立新撥號使用者。如果未安裝**Active Directory**，請使用**Local Users and Groups** from **Administrative tools**來建立新使用者。

在Active Directory中配置使用者

本節介紹在Active Directory中配置使用者的步驟：

1. 在「**Active Directory Users and Computers**」控制檯中，展開域。按一下右鍵**Users**。滾動選擇**New User**。建立一個名為**tac**的新使用者。
2. 在**Password**和**Confirm Password**對話方塊中鍵入密碼。
3. 清除**User Must Change Password at Next Logon**欄位，然後按一下**Next**。
4. 開啟**使用者tac屬性**框。切換到**Dial-In**頁籤。在**Remote Access Permission(Dial-in or VPN)**下，按一下**Allow Access**，然後按一下**OK**。

配置使用者（如果未安裝Active Directory）

本節介紹在沒有安裝Active Directory的情況下配置使用者的步驟：

1. 在**Administrative Tools**部分，按一下**Computer Management**。展開**Computer Management**控制檯，然後按一下**Local Users and Groups**。按一下右鍵**Users**捲軸以選擇**New User**。建立一個名為**tac**的新使用者。
2. 在**Password**和**Confirm Password**對話方塊中鍵入密碼。
3. 清除**User Must Change Password at Next Logon**選項，然後按一下**Next**。
4. 開啟名為**tac**的屬性的新用戶框。切換到**Dial-in**頁籤。在**Remote Access Permission(Dial-in or VPN)**下，按一下**Allow Access**，然後按一下**OK**。

將遠端訪問策略應用於Windows使用者本節介紹將遠端訪問策略應用於Windows使用者的步驟：
1. 在**Administrative Tools**中，開啟**Internet Authentication Server Console**，然後按一下**Remote Access Policies**。
2. 按一下**Specify the Conditions to Match**上的**Add**按鈕，然後新增**Service-Type**。選擇可用型別**Framed**，並將其新增到**Selected Types**清單。按**OK**。
3. 按一下**Specify the Conditions to Match**上的**Add**按鈕並新增**Framed Protocol**。選擇可用型別作為**ppp**，並將其新增到**Selected Types**清單。按**OK**。
4. 按一下**Specify the Conditions to Match**上的**Add**按鈕並新增**Windows-Groups**，以新增使用者所屬的Windows組。選擇該組並將其新增到**Selected Types**中，然後按**OK**。
5. 在**Allow Access if Dial-in Permission is Enabled**屬性中，選擇**Grant remote Access permission**。
6. 關閉控制檯。

為PPTP配置Windows 2000客戶端以下部分顯示為PPTP配置Windows 2000客戶端的步驟：
1. 在「**Start**」選單中選擇「**Settings**」，然後選擇：控制面板和網路和撥號連線，或然後建立網路和撥號連線。使用嚮導建立名為**PPTP**的連線。此連線通過Internet連線到專用網路。您還需要指定PPTP網路伺服器(PNS)IP地址或名稱。
2. 新連線出現在「**Control Panel**（控制面板）」下的「**Network and Dial-up Connections**（網路和撥號連線）」視窗中。在此處，按一下右鍵可編輯其屬性。在**Networking**頁籤下，確保**Type**

of Server I Am Calling欄位設定為PPTP。如果計畫通過本地池或動態主機配置協定(DHCP)從網關為此客戶端分配動態內部地址，請選擇TCP/IP協定，並確保客戶端配置為自動獲取IP地址。您也可以自動發出DNS資訊。Advanced按鈕允許您定義靜態Windows Internet命名服務(WINS)和DNS資訊。Options頁籤允許您關閉IPSec或為連線分配不同的策略。

3. 在Security頁籤下，可以定義使用者身份驗證引數。例如，PAP、CHAP或MS-CHAP或Windows域登入。配置連線後，您可以按兩下它以顯示登入螢幕，然後進行連線。

組態使用下列路由器配置，即使RADIUS伺服器不可用（在尚未配置Microsoft IAS時，這是可能的），使用者也能夠使用使用者名稱tac和密碼admin進行連線。 以下示例配置概述了不帶IPSec的L2tp所需的命令。

安琪拉

```
angela#show running-config
Building configuration...
Current configuration : 1606 bytes
!
version 12.1
no service single-slot-reload-enable
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname angela
!
logging rate-limit console 10 except errors
!---Enable AAA services here aaa new-model aaa
authentication login default group radius local aaa
authentication login console none aaa authentication ppp
default group radius local aaa authorization network
default group radius local enable password ! username
tac password 0 admin memory-size iomem 30 ip subnet-zero
! ! no ip finger no ip domain-lookup ip host rund
172.17.247.195 ! ip audit notify log ip audit po max-
events 100 ip address-pool local !---Enable VPN/Virtual
Private Dialup Network (VPDN) services !---and define
groups and their respective parameters. vpdn enable no
vpdn logging ! ! vpdn-group PPTP_WIN2KClient !---Default
PPTP VPDN group !---Allow the router to accept incoming
Requests accept-dialin protocol pptp virtual-template 1
! ! ! call rsvp-sync ! ! ! ! ! ! ! controller E1 2/0 ! !
interface Loopback0 ip address 172.16.10.100
255.255.255.0 ! interface Ethernet0/0 ip address
10.200.20.2 255.255.255.0 half-duplex ! interface
Virtual-Template1 ip unnumbered Loopback0 peer default
ip address pool default !--- The following encryption
command is optional !--- and could be added later. ppp
encrypt mppe 40 ppp authentication ms-chap ! ip local
pool default 172.16.10.1 172.16.10.10 ip classless ip
route 0.0.0.0 0.0.0.0 10.200.20.1 ip route 192.168.1.0
255.255.255.0 10.200.20.250 no ip http server ! radius-
server host 10.200.20.245 auth-port 1645 acct-port 1646
radius-server retransmit 3 radius-server key cisco !
dial-peer cor custom ! ! ! ! ! line con 0 exec-timeout 0
0 login authentication console transport input none line
33 50 modem InOut line aux 0 line vty 0 4 exec-timeout 0
0 password ! end angela#show debug
General OS:
AAA Authentication debugging is on
AAA Authorization debugging is on
PPP:
MPPE Events debugging is on
```

```
PPP protocol negotiation debugging is on
VPN:
L2X protocol events debugging is on
L2X protocol errors debugging is on
VPDN events debugging is on
VPDN errors debugging is on
Radius protocol debugging is on

angela#
*Mar  7 04:21:07.719: L2X: TCP connect reqd from
0.0.0.0:2000
*Mar  7 04:21:07.991: Tnl 29 PPTP: Tunnel created; peer
initiated
*Mar  7 04:21:08.207: Tnl 29 PPTP: SCCRQ-ok ->
state change wt-sccrq to estabd
*Mar  7 04:21:09.267: VPDN: Session vaccess task running
*Mar  7 04:21:09.267: Vi1 VPDN: Virtual interface
created
*Mar  7 04:21:09.267: Vi1 VPDN: Clone from Vtemplate 1
*Mar  7 04:21:09.343: Tnl/Cl 29/29 PPTP: VAccess created
*Mar  7 04:21:09.343: Vi1 Tnl/Cl 29/29 PPTP: vacc-ok ->
#state change wt-vacc to estabd
*Mar  7 04:21:09.343: Vi1 VPDN: Bind interface
direction=2
*Mar  7 04:21:09.347: %LINK-3-UPDOWN: Interface Virtual-
Access1, changed
state to up
*Mar  7 04:21:09.347: Vi1 PPP: Using set call direction
*Mar  7 04:21:09.347: Vi1 PPP: Treating connection as a
callin
*Mar  7 04:21:09.347: Vi1 PPP: Phase is ESTABLISHING,
Passive Open [0 sess, 0 load]
*Mar  7 04:21:09.347: Vi1 LCP: State is Listen
*Mar  7 04:21:10.347: %LINEPROTO-5-UPDOWN: Line protocol
on Interface
Virtual-Access1, changed state to up
*Mar  7 04:21:11.347: Vi1 LCP: TIMEout: State Listen
*Mar  7 04:21:11.347: Vi1 AAA/AUTHOR/FSM: (0): LCP
succeeds trivially
*Mar  7 04:21:11.347: Vi1 LCP: O CONFREQ [Listen] id 7
len 15
*Mar  7 04:21:11.347: Vi1 LCP:    AuthProto MS-CHAP
(0x0305C22380)
*Mar  7 04:21:11.347: Vi1 LCP:    MagicNumber 0x3050EB1F
(0x05063050EB1F)
*Mar  7 04:21:11.635: Vi1 LCP: I CONFACK [REQsent] id 7
len 15
*Mar  7 04:21:11.635: Vi1 LCP:    AuthProto MS-CHAP
(0x0305C22380)
*Mar  7 04:21:11.635: Vi1 LCP:    MagicNumber 0x3050EB1F
(0x05063050EB1F)
*Mar  7 04:21:13.327: Vi1 LCP: I CONFREQ [ACKrcvd] id 1
len 44
*Mar  7 04:21:13.327: Vi1 LCP:    MagicNumber 0x35BE1CB0
(0x050635BE1CB0)
*Mar  7 04:21:13.327: Vi1 LCP:    PFC (0x0702)
*Mar  7 04:21:13.327: Vi1 LCP:    ACFC (0x0802)
*Mar  7 04:21:13.327: Vi1 LCP:    Callback 6  (0x0D0306)
*Mar  7 04:21:13.327: Vi1 LCP:    MRRU 1614 (0x1104064E)
*Mar  7 04:21:13.327: Vi1 LCP:    EndpointDisc 1 Local
*Mar  7 04:21:13.327: Vi1 LCP:
(0x1317016AC616B006CC4281A1CA941E39)
*Mar  7 04:21:13.331: Vi1 LCP:    (0xB9182600000008)
*Mar  7 04:21:13.331: Vi1 LCP: O CONFREJ [ACKrcvd] id 1
```

```
len 34
*Mar  7 04:21:13.331: Vi1 LCP:    Callback 6  (0x0D0306)
*Mar  7 04:21:13.331: Vi1 LCP:    MRRU 1614 (0x1104064E)
*Mar  7 04:21:13.331: Vi1 LCP:    EndpointDisc 1 Local
*Mar  7 04:21:13.331: Vi1 LCP:
(0x1317016AC616B006CC4281A1CA941E39)
*Mar  7 04:21:13.331: Vi1 LCP:    (0xB9182600000008)
*Mar  7 04:21:13.347: Vi1 LCP: TIMEout: State ACKrcvd
*Mar  7 04:21:13.347: Vi1 LCP: O CONFREQ [ACKrcvd] id 8
len 15
*Mar  7 04:21:13.347: Vi1 LCP:    AuthProto MS-CHAP
(0x0305C22380)
*Mar  7 04:21:13.347: Vi1 LCP:    MagicNumber 0x3050EB1F
(0x05063050EB1F)
*Mar  7 04:21:13.647: Vi1 LCP: I CONFREQ [REQsent] id 2
len 14
*Mar  7 04:21:13.651: Vi1 LCP:    MagicNumber 0x35BE1CB0
(0x050635BE1CB0)
*Mar  7 04:21:13.651: Vi1 LCP:    PFC (0x0702)
*Mar  7 04:21:13.651: Vi1 LCP:    ACFC (0x0802)
*Mar  7 04:21:13.651: Vi1 LCP: O CONFACK [REQsent] id 2
len 14
*Mar  7 04:21:13.651: Vi1 LCP:    MagicNumber 0x35BE1CB0
(0x050635BE1CB0)
*Mar  7 04:21:13.651: Vi1 LCP:    PFC (0x0702)
*Mar  7 04:21:13.651: Vi1 LCP:    ACFC (0x0802)
*Mar  7 04:21:13.723: Vi1 LCP: I CONFACK [ACKsent] id 8
len 15
*Mar  7 04:21:13.723: Vi1 LCP:    AuthProto MS-CHAP
(0x0305C22380)
*Mar  7 04:21:13.723: Vi1 LCP:    MagicNumber 0x3050EB1F
(0x05063050EB1F)
*Mar  7 04:21:13.723: Vi1 LCP: State is Open
*Mar  7 04:21:13.723: Vi1 PPP: Phase is AUTHENTICATING,
by this end [0 sess, 0 load]
*Mar  7 04:21:13.723: Vi1 MS-CHAP: O CHALLENGE id 20 len
21 from "angela "
*Mar  7 04:21:14.035: Vi1 LCP: I IDENTIFY [Open] id 3
len 18 magic
0x35BE1CB0 MSRASV5.00
*Mar  7 04:21:14.099: Vi1 LCP: I IDENTIFY [Open] id 4
len 24 magic
0x35BE1CB0 MSRAS-1-RSHANMUG
*Mar  7 04:21:14.223: Vi1 MS-CHAP: I RESPONSE id 20 len
57 from "tac"
*Mar  7 04:21:14.223: AAA: parse name=Virtual-Access1
idb type=21 tty=-1
*Mar  7 04:21:14.223: AAA: name=Virtual-Access1
flags=0x11 type=5 shelf=0
slot=0 adapter=0 port=1 channel=0
*Mar  7 04:21:14.223: AAA/MEMORY: create_user
(0x62740E7C) user='tac' ruser=''
port='Virtual-Access1' rem_addr='' authen_type=MSCHAP
service=PPP priv=1
*Mar  7 04:21:14.223: AAA/AUTHEN/START (2474402925):
port='Virtual-Access1'
list='' action=LOGIN service=PPP
*Mar  7 04:21:14.223: AAA/AUTHEN/START (2474402925):
using "default" list
*Mar  7 04:21:14.223: AAA/AUTHEN/START (2474402925):
Method=radius (radius)
*Mar  7 04:21:14.223: RADIUS: ustruct sharecount=0
*Mar  7 04:21:14.223: RADIUS: Initial Transmit Virtual-
Access1 id 116
```

```
10.200.20.245:1645, Access-Request, len 129
*Mar  7 04:21:14.227:         Attribute 4 6 0AC81402
*Mar  7 04:21:14.227:         Attribute 5 6 00000001
*Mar  7 04:21:14.227:         Attribute 61 6 00000005
*Mar  7 04:21:14.227:         Attribute 1 5 7461631A
*Mar  7 04:21:14.227:         Attribute 26 16
000001370B0AFD11
*Mar  7 04:21:14.227:         Attribute 26 58
0000013701341401
*Mar  7 04:21:14.227:         Attribute 6 6 00000002
*Mar  7 04:21:14.227:         Attribute 7 6 00000001
*Mar  7 04:21:14.239: RADIUS: Received from id 116
10.200.20.245:1645,
Access-Accept, len 116
*Mar  7 04:21:14.239:         Attribute 7 6 00000001
*Mar  7 04:21:14.239:         Attribute 6 6 00000002
*Mar  7 04:21:14.239:         Attribute 25 32 64080750
*Mar  7 04:21:14.239:         Attribute 26 40
000001370C223440
*Mar  7 04:21:14.239:         Attribute 26 12
000001370A06144E
*Mar  7 04:21:14.239: AAA/AUTHEN (2474402925): status =
PASS
*Mar  7 04:21:14.243: Vi1 AAA/AUTHOR/LCP: Authorize LCP
*Mar  7 04:21:14.243: Vi1 AAA/AUTHOR/LCP (2434357606):
Port='Virtual-Access1' list='' service=NET
*Mar  7 04:21:14.243: AAA/AUTHOR/LCP: Vi1 (2434357606)
user='tac'
*Mar  7 04:21:14.243: Vi1 AAA/AUTHOR/LCP (2434357606):
send AV service=ppp
*Mar  7 04:21:14.243: Vi1 AAA/AUTHOR/LCP (2434357606):
send AV protocol=lcp
*Mar  7 04:21:14.243: Vi1 AAA/AUTHOR/LCP (2434357606):
found list "default"
*Mar  7 04:21:14.243: Vi1 AAA/AUTHOR/LCP (2434357606):
Method=radius
(radius)
*Mar  7 04:21:14.243: RADIUS: unrecognized Microsoft VSA
type 10
*Mar  7 04:21:14.243: Vi1 AAA/AUTHOR (2434357606): Post
authorization
status = PASS_REPL
*Mar  7 04:21:14.243: Vi1 AAA/AUTHOR/LCP: Processing AV
service=ppp
*Mar  7 04:21:14.243: Vi1 AAA/AUTHOR/LCP: Processing AV
mschap_mppe_keys*1p1T11=1v1O1~11a1W11151\1V1M1#11Z1`1k1}
111
*Mar  7 04:21:14.243: Vi1 MS-CHAP: O SUCCESS id 20 len 4
*Mar  7 04:21:14.243: Vi1 PPP: Phase is UP [0 sess, 0
load]
*Mar  7 04:21:14.247: Vi1 AAA/AUTHOR/FSM: (0): Can we
start IPCP?
*Mar  7 04:21:14.247: Vi1 AAA/AUTHOR/FSM (1553311212):
Port='Virtual-Access1' list='' service=NET
*Mar  7 04:21:14.247: AAA/AUTHOR/FSM: Vi1 (1553311212)
user='tac'
*Mar  7 04:21:14.247: Vi1 AAA/AUTHOR/FSM (1553311212):
send AV service=ppp
*Mar  7 04:21:14.247: Vi1 AAA/AUTHOR/FSM (1553311212):
send AV protocol=ip
*Mar  7 04:21:14.247: Vi1 AAA/AUTHOR/FSM (1553311212):
found list "default"
*Mar  7 04:21:14.247: Vi1 AAA/AUTHOR/FSM (1553311212):
Method=radius
```

```
(radius)
*Mar  7 04:21:14.247: RADIUS: unrecognized Microsoft VSA
type 10
*Mar  7 04:21:14.247: Vi1 AAA/AUTHOR (1553311212): Post
authorization
status = PASS_REPL
*Mar  7 04:21:14.247: Vi1 AAA/AUTHOR/FSM: We can start
IPCP
*Mar  7 04:21:14.247: Vi1 IPCP: O CONFREQ [Not
negotiated] id 4 len 10
*Mar  7 04:21:14.247: Vi1 IPCP:    Address 172.16.10.100
(0x0306AC100A64)
*Mar  7 04:21:14.247: Vi1 AAA/AUTHOR/FSM: (0): Can we
start CCP?
*Mar  7 04:21:14.247: Vi1 AAA/AUTHOR/FSM (3663845178):
Port='Virtual-Access1' list='' service=NET
*Mar  7 04:21:14.251: AAA/AUTHOR/FSM: Vi1 (3663845178)
user='tac'
*Mar  7 04:21:14.251: Vi1 AAA/AUTHOR/FSM (3663845178):
send AV service=ppp
*Mar  7 04:21:14.251: Vi1 AAA/AUTHOR/FSM (3663845178):
send AV protocol=ccp
*Mar  7 04:21:14.251: Vi1 AAA/AUTHOR/FSM (3663845178):
found list "default"
*Mar  7 04:21:14.251: Vi1 AAA/AUTHOR/FSM (3663845178):
Method=radius
(radius)
*Mar  7 04:21:14.251: RADIUS: unrecognized Microsoft VSA
type 10
*Mar  7 04:21:14.251: Vi1 AAA/AUTHOR (3663845178): Post
authorization
status = PASS_REPL
*Mar  7 04:21:14.251: Vi1 AAA/AUTHOR/FSM: We can start
CCP
*Mar  7 04:21:14.251: Vi1 CCP: O CONFREQ [Closed] id 3
len 10
*Mar  7 04:21:14.251: Vi1 CCP:    MS-PPC supported bits
0x01000020
(0x120601000020)
*Mar  7 04:21:14.523: Vi1 CCP: I CONFREQ [REQsent] id 5
len 10
*Mar  7 04:21:14.523: Vi1 CCP:    MS-PPC supported bits
0x010000F1
(0x1206010000F1)
*Mar  7 04:21:14.523: Vi1 MPPE: don't understand all
options, NAK
*Mar  7 04:21:14.523: Vi1 AAA/AUTHOR/FSM:
Check for unauthorized mandatory AV's
*Mar  7 04:21:14.523: Vi1 AAA/AUTHOR/FSM: Processing AV
service=ppp
*Mar  7 04:21:14.523: Vi1 AAA/AUTHOR/FSM: Processing AV
mschap_mppe_keys*1p1T11=1v1O1~11a1W11151\1V1M1#11Z1`1k1}
111
*Mar  7 04:21:14.523: Vi1 AAA/AUTHOR/FSM: Succeeded
*Mar  7 04:21:14.523: Vi1 CCP: O CONFNAK [REQsent] id 5
len 10
*Mar  7 04:21:14.523: Vi1 CCP:    MS-PPC supported bits
0x01000020
(0x120601000020)
*Mar  7 04:21:14.607: Vi1 IPCP: I CONFREQ [REQsent] id 6
len 34
*Mar  7 04:21:14.607: Vi1 IPCP:    Address 0.0.0.0
(0x030600000000)
*Mar  7 04:21:14.607: Vi1 IPCP:    PrimaryDNS 0.0.0.0
```

```
(0x810600000000)
*Mar  7 04:21:14.607: Vi1 IPCP:    PrimaryWINS 0.0.0.0
(0x820600000000)
*Mar  7 04:21:14.607: Vi1 IPCP:    SecondaryDNS 0.0.0.0
(0x830600000000)
*Mar  7 04:21:14.607: Vi1 IPCP:    SecondaryWINS 0.0.0.0
(0x840600000000)
*Mar  7 04:21:14.607: Vi1 AAA/AUTHOR/IPCP: Start.
Her address 0.0.0.0, we want 0.0.0.0
*Mar  7 04:21:14.607: Vi1 AAA/AUTHOR/IPCP: Processing AV
service=ppp
*Mar  7 04:21:14.607: Vi1 AAA/AUTHOR/IPCP: Processing AV
mschap_mppe_keys*1p1T11=1v1O1~11a1W11151\1V1M1#11Z1`1k1}
111
*Mar  7 04:21:14.607: Vi1 AAA/AUTHOR/IPCP: Authorization
succeeded
*Mar  7 04:21:14.607: Vi1 AAA/AUTHOR/IPCP: Done.
Her address 0.0.0.0, we want 0.0.0.0
*Mar  7 04:21:14.607: Vi1 IPCP: Pool returned
172.16.10.1
*Mar  7 04:21:14.607: Vi1 IPCP: O CONFREJ [REQsent] id 6
len 28
*Mar  7 04:21:14.607: Vi1 IPCP:    PrimaryDNS 0.0.0.0
(0x810600000000)
*Mar  7 04:21:14.611: Vi1 IPCP:    PrimaryWINS 0.0.0.0
(0x820600000000)
*Mar  7 04:21:14.611: Vi1 IPCP:    SecondaryDNS 0.0.0.0
(0x830600000000)
*Mar  7 04:21:14.611: Vi1 IPCP:    SecondaryWINS 0.0.0.0
(0x840600000000)
*Mar  7 04:21:14.675: Vi1 IPCP: I CONFACK [REQsent] id 4
len 10
*Mar  7 04:21:14.675: Vi1 IPCP:    Address 172.16.10.100
(0x0306AC100A64)
*Mar  7 04:21:14.731: Vi1 CCP: I CONFACK [REQsent] id 3
len 10
*Mar  7 04:21:14.731: Vi1 CCP:    MS-PPC supported bits
0x01000020
(0x120601000020)
*Mar  7 04:21:14.939: Vi1 CCP: I CONFREQ [ACKrcvd] id 7
len 10
*Mar  7 04:21:14.939: Vi1 CCP:    MS-PPC supported bits
0x01000020
(0x120601000020)
*Mar  7 04:21:14.939: Vi1 AAA/AUTHOR/FSM:
Check for unauthorized mandatory AV's
*Mar  7 04:21:14.939: Vi1 AAA/AUTHOR/FSM: Processing AV
service=ppp
*Mar  7 04:21:14.939: Vi1 AAA/AUTHOR/FSM: Processing AV
mschap_mppe_keys*1p1T11=1v1O1~11a1W11151\1V1M1#11Z1`1k1}
111
*Mar  7 04:21:14.939: Vi1 AAA/AUTHOR/FSM: Succeeded
*Mar  7 04:21:14.939: Vi1 CCP: O CONFACK [ACKrcvd] id 7
len 10
*Mar  7 04:21:14.939: Vi1 CCP:    MS-PPC supported bits
0x01000020
(0x120601000020)
*Mar  7 04:21:14.943: Vi1 CCP: State is Open
*Mar  7 04:21:14.943: Vi1 MPPE: Generate keys using
RADIUS data
*Mar  7 04:21:14.943: Vi1 MPPE: Initialize keys
*Mar  7 04:21:14.943: Vi1 MPPE: [40 bit encryption]
[stateless mode]
*Mar  7 04:21:14.991: Vi1 IPCP: I CONFREQ [ACKrcvd] id 8
```

```
len 10
*Mar  7 04:21:14.991: Vi1 IPCP:    Address 0.0.0.0
(0x030600000000)
*Mar  7 04:21:14.991: Vi1 AAA/AUTHOR/IPCP: Start.
Her address 0.0.0.0, we want 172.16.10.1
*Mar  7 04:21:14.991: Vi1 AAA/AUTHOR/IPCP: Processing AV
service=ppp
*Mar  7 04:21:14.995: Vi1 AAA/AUTHOR/IPCP: Processing AV
mschap_mppe_keys*1p1T11=1v1O1~11a1W11151\1V1M1#11Z1`1k1}
111
*Mar  7 04:21:14.995: Vi1 AAA/AUTHOR/IPCP: Authorization
succeeded
*Mar  7 04:21:14.995: Vi1 AAA/AUTHOR/IPCP: Done.
Her address 0.0.0.0, we want 172.16.10.1
*Mar  7 04:21:14.995: Vi1 IPCP: O CONFNAK [ACKrcvd] id 8
len 10
*Mar  7 04:21:14.995: Vi1 IPCP:    Address 172.16.10.1
(0x0306AC100A01)
*Mar  7 04:21:15.263: Vi1 IPCP: I CONFREQ [ACKrcvd] id 9
len 10
*Mar  7 04:21:15.263: Vi1 IPCP:    Address 172.16.10.1
(0x0306AC100A01)
*Mar  7 04:21:15.263: Vi1 AAA/AUTHOR/IPCP: Start.
Her address 172.16.10.1, we want 172.16.10.1
*Mar  7 04:21:15.267: Vi1 AAA/AUTHOR/IPCP (2052567766):
Port='Virtual-Access1' list='' service=NET
*Mar  7 04:21:15.267: AAA/AUTHOR/IPCP: Vi1 (2052567766)
user='tac'
*Mar  7 04:21:15.267: Vi1 AAA/AUTHOR/IPCP (2052567766):
send AV service=ppp
*Mar  7 04:21:15.267: Vi1 AAA/AUTHOR/IPCP (2052567766):
send AV protocol=ip
*Mar  7 04:21:15.267: Vi1 AAA/AUTHOR/IPCP (2052567766):
send AV
addr*172.16.10.1
*Mar  7 04:21:15.267: Vi1 AAA/AUTHOR/IPCP (2052567766):
found list
"default"
*Mar  7 04:21:15.267: Vi1 AAA/AUTHOR/IPCP (2052567766):
Method=radius
(radius)
*Mar  7 04:21:15.267: RADIUS: unrecognized Microsoft VSA
type 10
*Mar  7 04:21:15.267: Vi1 AAA/AUTHOR (2052567766): Post
authorization
status = PASS_REPL
*Mar  7 04:21:15.267: Vi1 AAA/AUTHOR/IPCP: Reject
172.16.10.1, using
172.16.10.1
*Mar  7 04:21:15.267: Vi1 AAA/AUTHOR/IPCP: Processing AV
service=ppp
*Mar  7 04:21:15.267: Vi1 AAA/AUTHOR/IPCP: Processing AV
mschap_mppe_keys*1p1T11=1v1O1~11a1W11151\1V1M1#11Z1`1k1}
111
*Mar  7 04:21:15.267: Vi1 AAA/AUTHOR/IPCP: Processing AV
addr*172.16.10.1
*Mar  7 04:21:15.267: Vi1 AAA/AUTHOR/IPCP: Authorization
succeeded
*Mar  7 04:21:15.267: Vi1 AAA/AUTHOR/IPCP: Done.
Her address 172.16.10.1, we want 172.16.10.1
*Mar  7 04:21:15.271: Vi1 IPCP: O CONFACK [ACKrcvd] id 9
len 10
*Mar  7 04:21:15.271: Vi1 IPCP:    Address 172.16.10.1
(0x0306AC100A01)
```

```
*Mar  7 04:21:15.271: Vi1 IPCP: State is Open
*Mar  7 04:21:15.271: Vi1 IPCP: Install route to
172.16.10.1
*Mar  7 04:21:22.571: Vi1 LCP: I ECHOREP [Open] id 1 len
12 magic
0x35BE1CB0
*Mar  7 04:21:22.571: Vi1 LCP: Received id 1, sent id 1,
line up
*Mar  7 04:21:30.387: Vi1 LCP: I ECHOREP [Open] id 2 len
12 magic
0x35BE1CB0
*Mar  7 04:21:30.387: Vi1 LCP: Received id 2, sent id 2,
line up

angela#show vpdn
%No active L2TP tunnels
%No active L2F tunnels
PPTP Tunnel and Session Information Total tunnels 1
sessions 1
LocID Remote Name     State     Remote Address  Port
Sessions
29                    estabd   192.168.1.47    2000  1
LocID RemID TunID Intf    Username        State   Last Chg
29    32768 29    Vi1     tac             estabd  00:00:31
%No active PPPoE tunnels
angela#

*Mar  7 04:21:40.471: Vi1 LCP: I ECHOREP [Open] id 3 len
12 magic
0x35BE1CB0
*Mar  7 04:21:40.471: Vi1 LCP: Received id 3, sent id 3,
line up
*Mar  7 04:21:49.887: Vi1 LCP: I ECHOREP [Open] id 4 len
12 magic
0x35BE1CB0
*Mar  7 04:21:49.887: Vi1 LCP: Received id 4, sent id 4,
line up

angela#ping 192.168.1.47
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.1.47, timeout
is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip
min/avg/max = 484/584/732 ms

*Mar  7 04:21:59.855: Vi1 LCP: I ECHOREP [Open] id 5 len
12 magic
0x35BE1CB0
*Mar  7 04:21:59.859: Vi1 LCP: Received id 5, sent id 5,
line up
*Mar  7 04:22:06.323: Tnl 29 PPTP: timeout -> state
change estabd to estabd
*Mar  7 04:22:08.111: Tnl 29 PPTP: EchoRQ -> state
change estabd to estabd
*Mar  7 04:22:08.111: Tnl 29 PPTP: EchoRQ -> echo state
change Idle to Idle
*Mar  7 04:22:09.879: Vi1 LCP: I ECHOREP [Open] id 6 len
12 magic
0x35BE1CB0
*Mar  7 04:22:09.879: Vi1 LCP: Received id 6, sent id 6,
line up

angela#ping 172.16.10.1
```

```
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 172.16.10.1, timeout
is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip
min/avg/max = 584/707/1084 ms


*Mar  7 04:22:39.863: Vi1 LCP: I ECHOREP [Open] id 7 len
12 magic
0x35BE1CB0
*Mar  7 04:22:39.863: Vi1 LCP: Received id 7, sent id 7,
line up

angela#clear vpdn tunnel pptp tac
Could not find specified tunnel

angela#show vpdn tunnel
%No active L2TP tunnels
%No active L2F tunnels
PPTP Tunnel Information Total tunnels 1 sessions 1
LocID Remote Name     State     Remote Address  Port
Sessions
29                    estabd    192.168.1.47    2000  1
%No active PPPoE tunnels

angela#
*Mar  7 04:23:05.347: Tnl 29 PPTP: timeout -> state
change estabd to estabd

angela#
*Mar  7 04:23:08.019: Tnl 29 PPTP: EchoRQ -> state
change estabd to estabd
*Mar  7 04:23:08.019: Tnl 29 PPTP: EchoRQ -> echo state
change Idle to Idle

angela#
*Mar  7 04:23:09.887: Vi1 LCP: I ECHOREP [Open] id 10
len 12 magic 0x35BE1CB0
*Mar  7 04:23:09.887: Vi1 LCP: Received id 10, sent id
10, line up
```

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。

- show vpdn — 顯示VPDN中有關作用中第2層轉送(L2F)通訊協定通道和訊息識別符號的資訊。

您還可以使用show vpdn ?檢視其他VPDN特定的show命令。疑難排解本節提供的資訊可用於對組態進行疑難排解。疑難排解指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。注意：發出debug指令之前，請先參閱有關Debug指令的重要資訊。

- debug aaa authentication — 顯示有關AAA/TACACS+身份驗證的資訊。
- debug aaa authorization — 顯示有關AAA/TACACS+授權的資訊。
- debug ppp negotiation — 顯示在PPP啟動期間傳輸的PPP資料包，其中會協商PPP選項。
- debug ppp authentication — 顯示身份驗證協定消息，包括質詢身份驗證協定(CHAP)資料包交換和密碼身份驗證協定(PAP)交換。
- debug radius — 顯示與RADIUS關聯的詳細調試資訊。如果身份驗證有效，但MPPE加密出現問題，請使用以下其中一個debug命令。
- debug ppp mppe packet — 顯示所有傳入傳出MPPE流量。
- debug ppp mppe event — 顯示關鍵MPPE事件。
- debug ppp mppe detailed — 顯示詳細的MPPE資訊。

- debug vpdn l2x-packets — 顯示有關L2F協定標頭和狀態的消息。
- debug vpdn events — 顯示有關屬於正常隧道建立或關閉一部分的事件的消息。
- debug vpdn errors — 顯示阻止建立通道的錯誤或導致關閉已建立通道的錯誤。
- debug vpdn packets — 顯示交換的每個協定資料包。此選項可能導致大量調試消息，通常只能在具有單個活動會話的調試機箱上使用。

分割通道假設網關路由器是ISP路由器。當PC上出現PPTP隧道時，PPTP路由的度量高於以前的預設值，因此會丟失Internet連線。要解決此問題，請修改Microsoft路由以刪除預設路由並重新安裝預設路由(這需要知道已分配PPTP客戶端的IP地址；當前範例為172.16.10.1):

```
route delete 0.0.0.0
route add 0.0.0.0 mask 0.0.0.0 192.168.1.47 metric 1
route add 172.16.10.1 mask 255.255.255.0 192.168.1.47 metric 1
```

如果客戶端未配置加密在用於PPTP會話的撥號連線的Security頁籤下，可以定義使用者身份驗證引數。例如，可以是PAP、CHAP、MS-CHAP或Windows域登入。如果您在VPN連線的屬性部分中選擇了No Encryption Allowed（如果伺服器要求加密，則斷開連線）選項，則可能會在客戶端上看到PPTP錯誤消息：

```
Registering your computer on the network..
Error 734:  The PPP link control protocol was terminated.
Debugs on the  router:
*Mar  8 22:38:52.496: Vi1 AAA/AUTHOR/FSM: Check for unauthorized mandatory
AV's
*Mar  8 22:38:52.496: Vi1 AAA/AUTHOR/FSM: Processing AV service=ppp
*Mar  8 22:38:52.496: Vi1 AAA/AUTHOR/FSM: Processing AV protocol=ccp
*Mar  8 22:38:52.496: Vi1 AAA/AUTHOR/FSM: Succeeded
*Mar  8 22:38:52.500: Vi1 CCP: O CONFACK [ACKrcvd] id 7 len 10
*Mar  8 22:38:52.500: Vi1 CCP:     MS-PPC supported bits 0x01000020
(0x120601000020)
*Mar  8 22:38:52.500: Vi1 CCP: State is Open
*Mar  8 22:38:52.500: Vi1 MPPE: RADIUS keying material missing
*Mar  8 22:38:52.500: Vi1 CCP: O TERMREQ [Open] id 5 len 4
*Mar  8 22:38:52.524: Vi1 IPCP: I CONFREQ [ACKrcvd] id 8 len 10
*Mar  8 22:38:52.524: Vi1 IPCP:     Address 0.0.0.0 (0x030600000000)
*Mar  8 22:38:52.524: Vi1 AAA/AUTHOR/IPCP: Start.
Her address 0.0.0.0, we want 172.16.10.1
*Mar  8 22:38:52.524: Vi1 AAA/AUTHOR/IPCP: Processing AV service=ppp
*Mar  8 22:38:52.524: Vi1 AAA/AUTHOR/IPCP: Processing AV protocol=ip
*Mar  8 22:38:52.524: Vi1 AAA/AUTHOR/IPCP: Authorization succeeded
*Mar  8 22:38:52.524: Vi1 AAA/AUTHOR/IPCP: Done.
Her address 0.0.0.0, we want 172.16.10.1
*Mar  8 22:38:52.524: Vi1 IPCP: O CONFNAK [ACKrcvd] id 8 len 10
*Mar  8 22:38:52.524: Vi1 IPCP:     Address 172.16.10.1 (0x0306AC100A01)
*Mar  8 22:38:52.640: Vi1 CCP: I TERMACK [TERMsent] id 5 len 4
*Mar  8 22:38:52.640: Vi1 CCP: State is Closed
*Mar  8 22:38:52.640: Vi1 MPPE: Required encryption not negotiated
*Mar  8 22:38:52.640: Vi1 IPCP: State is Closed
*Mar  8 22:38:52.640: Vi1 PPP: Phase is TERMINATING [0 sess, 0 load]
*Mar  8 22:38:52.640: Vi1 LCP: O TERMREQ [Open] id 13 len 4
*Mar  8 22:38:52.660: Vi1 IPCP: LCP not open, discarding packet
*Mar  8 22:38:52.776: Vi1 LCP: I TERMACK [TERMsent] id 13 len 4
*Mar  8 22:38:52.776: Vi1 AAA/AUTHOR/FSM: (0): LCP succeeds trivially
*Mar  8 22:38:52.780: Vi1 LCP: State is Closed
*Mar  8 22:38:52.780: Vi1 PPP: Phase is DOWN [0 sess, 0 load]
*Mar  8 22:38:52.780: Vi1 VPDN: Cleanup
*Mar  8 22:38:52.780: Vi1 VPDN: Reset
*Mar  8 22:38:52.780: Vi1
Tnl/Cl 33/33 PPTP: close -> state change estabd to terminal
*Mar  8 22:38:52.780: Vi1 Tnl/Cl 33/33 PPTP:
Destroying session, trace follows:
*Mar  8 22:38:52.780: -Traceback= 60C4A150 60C4AE48 60C49F68 60C4B5AC
60C30450 60C18B10 60C19238 60602CC4 605FC380 605FB730 605FD614 605F72A8
6040DE0C 6040DDF8
```

```
*Mar  8 22:38:52.784: Vi1 Tnl/Cl 33/33 PPTP:
Releasing idb for tunnel 33 session 33
*Mar  8 22:38:52.784: Vi1 VPDN: Reset
*Mar  8 22:38:52.784: Tnl 33 PPTP:
no-sess -> state change estabd to wt-stprp
*Mar  8 22:38:52.784: Vi1 VPDN: Unbind interface
*Mar  8 22:38:52.784: Vi1 VPDN: Unbind interface
*Mar  8 22:38:52.784: Vi1 VPDN: Reset
*Mar  8 22:38:52.784: Vi1 VPDN: Unbind interface
```

如果客戶端已配置為加密，而路由器沒有在PC上可以看到以下消息：

```
Registering your computer on the network..
Errror 742: The remote computer doesnot support the required data
encryption type.
On the Router:
*Mar  9 01:06:00.868: Vi2 CCP: I CONFREQ [Not negotiated] id 5 len 10
*Mar  9 01:06:00.868: Vi2 CCP:    MS-PPC supported bits 0x010000B1
(0x1206010000B1)
*Mar  9 01:06:00.868: Vi2 LCP: O PROTREJ [Open] id 18 len 16 protocol CCP
(0x80FD0105000A1206010000B1)
*Mar  9 01:06:00.876: Vi2 IPCP: I CONFREQ [REQsent] id 6 len 34
*Mar  9 01:06:00.876: Vi2 IPCP:    Address 0.0.0.0 (0x030600000000)
*Mar  9 01:06:00.876: Vi2 IPCP:    PrimaryDNS 0.0.0.0 (0x810600000000)
*Mar  9 01:06:00.876: Vi2 IPCP:    PrimaryWINS 0.0.0.0 (0x820600000000)
*Mar  9 01:06:00.876: Vi2 IPCP:    SecondaryDNS 0.0.0.0 (0x830600000000)
*Mar  9 01:06:00.876: Vi2 IPCP:    SecondaryWINS 0.0.0.0 (0x840600000000)
*Mar  9 01:06:00.880: Vi2 AAA/AUTHOR/IPCP: Start.
Her address 0.0.0.0, we want 0.0.0.0
*Mar  9 01:06:00.880: Vi2 AAA/AUTHOR/IPCP: Processing AV service=ppp
*Mar  9 01:06:00.880: Vi2 AAA/AUTHOR/IPCP: Processing AV
mschap_mppe_keys*1p1T11=1v1O1~11a1W11151\1V1M1#1
1Z1`1k1}111
*Mar  9 01:06:00.880: Vi2 AAA/AUTHOR/IPCP: Authorization succeeded
*Mar  9 01:06:00.880: Vi2 AAA/AUTHOR/IPCP: Done.
Her address 0.0.0.0, we want 0.0.0.0
*Mar  9 01:06:00.880: Vi2 IPCP: Pool returned 172.16.10.1
*Mar  9 01:06:00.880: Vi2 IPCP: O CONFREJ [REQsent] id 6 len 28
*Mar  9 01:06:00.880: Vi2 IPCP:    PrimaryDNS 0.0.0.0 (0x810600000000)
*Mar  9 01:06:00.880: Vi2 IPCP:    PrimaryWINS 0.0.0.0 (0x820600000000)
*Mar  9 01:06:00.880: Vi2 IPCP:    SecondaryDNS 0.0.0.0 (0x830600000000)
*Mar  9 01:06:00.880: Vi2 IPCP:    SecondaryWINS 0.0.0.0 (0x840600000000)
*Mar  9 01:06:00.884: Vi2 IPCP: I CONFACK [REQsent] id 8 len 10
*Mar  9 01:06:00.884: Vi2 IPCP:    Address 172.16.10.100 (0x0306AC100A64)
*Mar  9 01:06:01.024: Vi2 LCP: I TERMREQ [Open] id 7 len 16
(0x79127FBE003CCD74000002E6)
*Mar  9 01:06:01.024: Vi2 LCP: O TERMACK [Open] id 7 len 4
*Mar  9 01:06:01.152: Vi2 Tnl/Cl 38/38 PPTP: ClearReq -> state change
estabd to terminal
*Mar  9 01:06:01.152: Vi2 Tnl/Cl 38/38 PPTP: Destroying session, trace
follows:
*Mar  9 01:06:01.152: -Traceback= 60C4A150 60C4AE48 60C49F68 60C4B2CC
60C4B558 60C485E0 60C486E0 60C48AB8 6040DE0C 6040DDF8
*Mar  9 01:06:01.156: Vi2 Tnl/Cl 38/38 PPTP: Releasing idb for tunnel 38
session 38
*Mar  9 01:06:01.156: Vi2 VPDN: Reset
*Mar  9 01:06:01.156: Tnl 38 PPTP: no-sess -> state change estabd to
wt-stprp
*Mar  9 01:06:01.160: %LINK-3-UPDOWN: Interface Virtual-Access2, changed
state to down
*Mar  9 01:06:01.160: Vi2 LCP: State is Closed
*Mar  9 01:06:01.160: Vi2 IPCP: State is Closed
*Mar  9 01:06:01.160: Vi2 PPP: Phase is DOWN [0 sess, 0 load]
*Mar  9 01:06:01.160: Vi2 VPDN: Cleanup
*Mar  9 01:06:01.160: Vi2 VPDN: Reset
```

```
*Mar   9 01:06:01.160: Vi2 VPDN: Unbind interface
*Mar   9 01:06:01.160: Vi2 VPDN: Unbind interface
*Mar   9 01:06:01.160: Vi2 VPDN: Reset
*Mar   9 01:06:01.160: Vi2 VPDN: Unbind interface
*Mar   9 01:06:01.160: AAA/MEMORY: free_user (0x6273D528) user='tac' ruser=''
port='Virtual-Access2' rem_addr='' authen_type=MSCHAP service=PPP priv=1
*Mar   9 01:06:01.324: Tnl 38 PPTP: StopCCRQ -> state change wt-stprp to wt-stprp
*Mar   9 01:06:01.324: Tnl 38 PPTP: Destroy tunnel
*Mar   9 01:06:02.160: %LINEPROTO-5-UPDOWN: Line protocol on Interface
Virtual-Access2, changed state to down
```

當PC配置為加密時禁用MS-CHAP在PC上可以看到以下消息：

```
The current encryption selection requires EAP or some version of
MS-CHAP logon security methods.
```

如果使用者指定的使用者名稱或密碼不正確，我們可以看到以下輸出。在PC上：

```
Verifying Username and Password..
Error 691: Access was denied because the username and/or password
was invalid on the domain.
```

在路由器上：

```
*Mar   9 01:13:43.192: RADIUS: Received from id 139 10.200.20.245:1645,
Access-Reject, len 42
*Mar   9 01:13:43.192: Attribute 26 22 0000013702101545
*Mar   9 01:13:43.192: AAA/AUTHEN (608505327): status = FAIL
*Mar   9 01:13:43.192: Vi2 CHAP: Unable to validate Response. Username tac:
Authentication failure
*Mar   9 01:13:43.192: Vi2 MS-CHAP: O FAILURE id 21 len 13 msg is "E=691 R=0"
*Mar   9 01:13:43.192: Vi2 PPP: Phase is TERMINATING [0 sess, 0 load]
*Mar   9 01:13:43.192: Vi2 LCP: O TERMREQ [Open] id 20 len 4
*Mar   9 01:13:43.196: AAA/MEMORY: free_user (0x62740E7C) user='tac'
ruser='' port='Virtual-Access2' rem_addr='' authen_type=MSCHAP service=PPP
priv=1
```

當Radius伺服器無法通訊時在路由器上可以看到以下輸出：

```
*Mar   9 01:18:32.944: RADIUS: Retransmit id 141
*Mar   9 01:18:42.944: RADIUS: Tried all servers.
*Mar   9 01:18:42.944: RADIUS: No valid server found. Trying any viable server
*Mar   9 01:18:42.944: RADIUS: Tried all servers.
*Mar   9 01:18:42.944: RADIUS: No response for id 141
*Mar   9 01:18:42.944: Radius: No response from server
*Mar   9 01:18:42.944: AAA/AUTHEN (374484072): status = ERROR
```

相關資訊

- 含MPPE的PPTP
- PPTP技術頁面
- 瞭解VPDN
- 瞭解Radius
- 為Windows路由器PPTP身份驗證配置CiscoSecure ACS
- 技術支援與文件 - Cisco Systems