

使用Microsoft IAS為L2TP配置Cisco IOS和Windows 2000客戶端

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簡介

本文提供如何使用Microsoft的Internet身份驗證伺服器(IAS)為第2層隧道協定(L2TP)配置Cisco IOS®軟體和Windows 2000客戶端的說明。

請參閱[Windows 2000/XP PC和PIX/ASA 7.2之間的L2TP Over IPsec使用預共用金鑰配置示例](#)，以瞭解有關如何使用預共用金鑰和Microsoft Windows 2003 IAS RADIUS伺服器進行使用者身份驗證來將遠端Microsoft Windows 2000/2003和XP客戶端的L2TP over IPsec配置到PIX安全裝置公司辦公室的更多資訊。

有關如何使用加密方法將L2TP over IPsec從遠端Microsoft Windows 2000和XP客戶端配置到公司站點的詳細資訊，請參閱[使用預共用金鑰將L2TP over IPsec從Windows 2000或XP客戶端配置到Cisco VPN 3000系列集中器](#)。

必要條件

需求

本文件沒有特定先決條件。

採用元件

本文中的資訊係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

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](#)。

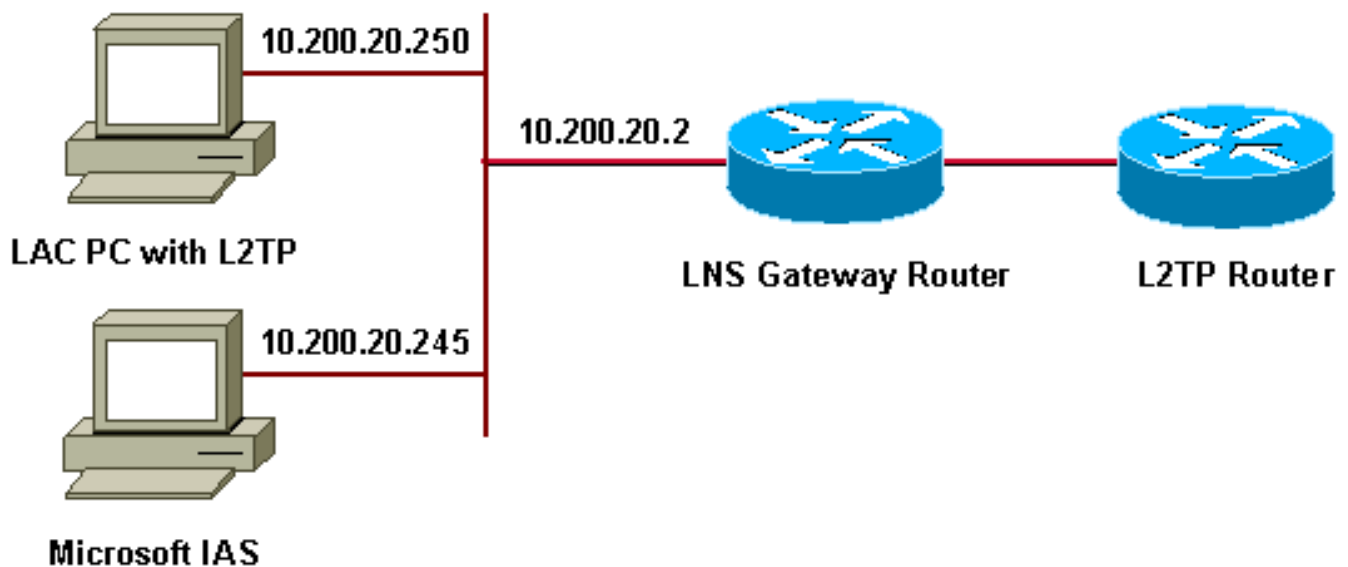
設定

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：



本檔案將以下IP池用於撥號使用者端：

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

[為Microsoft IAS配置Windows 2000高級伺服器](#)

確保已安裝Microsoft IAS。要安裝Microsoft IAS，請以管理員身份登入並完成以下步驟：

1. 在**Network Services**下，驗證是否已清除所有覈取方塊。
2. 選中**Internet Authentication Server(IAS)**覈取方塊，然後按一下**OK**。
3. 在「Windows元件」嚮導中，按一下**下一步**。如果出現提示，請插入Windows 2000 CD。
4. 複製所需檔案後，按一下**完成**，然後關閉所有視窗。您無需重新啟動。

[設定RADIUS使用者端](#)

請完成以下步驟：

1. 在**管理工具**中，開啟**Internet Authentication Server Console**，然後按一下**Clients**。
2. 在**Friendly Name**框中，輸入網路訪問伺服器(NAS)的IP地址。
3. 按一下「**Use This IP**」。
4. 在「**Client-Vendor**」下拉式清單中，確保選擇「**RADIUS Standard**」。
5. 在**Shared Secret**和**Confirm Shared Secret**框中，輸入密碼，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CiscoSecure不同，Windows 2000遠端身份驗證撥入使用者伺服器(RADIUS)使用者資料庫與Windows使用者資料庫緊密繫結。

- 如果在Windows 2000伺服器上安裝了Active Directory，請從**Active Directory使用者和電腦**建立**新撥號使用者**。
- 如果尚未安裝Active Directory，則可以使用**管理工具**中的**本地使用者和組**來建立新使用者。

[在Active Directory中配置使用者](#)

完成以下步驟，以便使用Active Directory配置使用者：

1. 在「**Active Directory Users and Computers**」控制檯中，展開域。
2. 按一下右鍵**Users Scroll**以選擇**New User**。
3. 建立一個名為tac的新使用者。
4. 在**Password**和**Confirm Password**對話方塊中輸入您的密碼。
5. 清除**User Must Change Password at Next Logon**選項，然後按一下**Next**。
6. 開啟使用者tac的**屬性**框。切換到**Dial-in**頁籤。
7. 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 \(如果未安裝Active Directory \)](#)

完成以下步驟，在未安裝Active Directory的情況下配置使用者：

1. 在Administrative Tools中，按一下Computer Management。
2. 展開Computer Management控制檯，然後按一下Local Users and Groups。
3. 按一下右鍵Users Scroll以選擇New User。
4. 在密碼和確認密碼對話方塊中輸入密碼。
5. 清除User Must Change Password at Next Logon選項，然後按一下Next。
6. 開啟新使用者tac的屬性框。切換到Dial-in頁籤。
7. 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

完成以下步驟以應用遠端訪問策略：

1. 在Administrative Tools中，開啟Internet Authentication Server控制檯，然後按一下Remote Access Policies。
2. 按一下Specify the Conditions to Match上的Add按鈕並新增Service-type。選擇可用型別作為Framed。將其新增到所選型別，然後按確定。
3. 按一下Specify the Conditions to Match上的Add按鈕並新增Framed Protocol。選擇可用型別為PPP。將其新增到所選型別，然後按確定。
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。選擇組並將其新增到所選型別。按OK。
5. 在Allow Access if Dial-in Permission is Enabled Properties上，選擇Grant Remote Access Permission。
6. 關閉控制檯。

為L2TP配置Windows 2000客戶端

完成以下步驟，以便為L2TP配置Windows 2000客戶端：

1. 在Start Menu中選擇Settings，然後執行以下路徑之一：控制面板>網路和撥號連線或網路和撥號連線> 新建連線
2. 使用嚮導建立名為L2TP的連線。此連線通過Internet連線到專用網路。您還需要指定L2TP隧道網關的IP地址或名稱。
3. 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，按一下右鍵編輯屬性。
4. 在Networking頁籤下，確保Type Of Server I Am Calling設定為L2TP。
5. 如果計畫通過本地池或DHCP從網關為此客戶端分配動態內部地址，請選擇TCP/IP協定。確保將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。在安全頁籤下，您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。
6. 配置連線後，您可以按兩下該連線以啟動登入螢幕，然後點選連線。

為Windows 2000客戶端禁用IPSec

1. 編輯剛建立的撥號連線L2TP的屬性。按一下右鍵新連線L2TP以獲取L2TP Properties視窗。
2. 在「Networking」頁籤下，按一下「Internet Protocol(TCP/IP)properties」。按兩下Advanced頁籤。轉到選項索引標籤，按一下IP安全性屬性，如果選擇Do not use IPSEC，請將其雙重檢查。

注意：Microsoft Windows 2000客戶端具有預設遠端訪問和策略代理服務，預設情況下會為L2TP流

量建立策略。此預設策略不允許沒有IPSec和加密的L2TP流量。您可以通過編輯Microsoft客戶端登錄檔編輯器來禁用Microsoft預設行為。本節提供了編輯Windows登錄檔和為L2TP流量禁用IPSec預設策略的過程。有關編輯Windows登錄檔的資訊，請參閱Microsoft文檔。

使用登錄檔編輯器(Regedt32.exe)新增新的登錄檔項以禁用IPSec。有關詳細資訊，請參閱Microsoft的文檔或Regedt32.exe的Microsoft幫助主題。

您必須將ProhibitIpSec登錄檔值新增到L2TP或IPSec連線的每個基於Windows 2000的終端電腦，以防止建立L2TP和IPSec流量的自動過濾器。當ProhibitIpSec登錄檔值設定為1時，基於Windows 2000的電腦不會建立使用CA身份驗證的自動過濾器。而是檢查本地或Active Directory IPSec策略。若要將ProhibitIpSec登錄檔值新增到基於Windows 2000的電腦，請使用Regedt32.exe在登錄檔中查詢此項：

HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\Rasman\Parameters
將此登錄檔值新增到此項：

Value Name: ProhibitIpSec
Data Type: REG_DWORD
Value: 1

注意：要使更改生效，必須重新啟動基於Windows 2000的電腦。有關詳細資訊，請參閱以下Microsoft文章：

- Q258261 — 禁用用於L2TP的IPSEC策略
- Q240262 — 如何使用預共用金鑰配置L2TP/IPSec連線

[配置Cisco IOS for L2TP](#)

這些配置概括了沒有IPSec的L2TP所需的命令。此基本配置工作正常後，您還可以配置IPSec。

安琪拉

```
Building configuration...
Current configuration : 1595 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 ww ! 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/VPDN services and define
groups and !--- specific variables required for the
group. vpdn enable no vpdn logging ! vpdn-group
```

```
L2TP_Windows 2000Client !--- Default L2TP VPDN group. !-
-- Allow the Router to accept incoming requests. accept-
dialin protocol L2TP virtual-template 1 no L2TP tunnel
authentication !--- Users are authenticated at the NAS
or LNS !--- before the tunnel is established. This is
not !--- required for client-initiated tunnels. !! 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-Templatel
ip unnumbered Loopback0 peer default ip address pool
default 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 ww ! end angela# *Mar 12 23:10:54.176: L2TP:
I SCCRQ from RSHANMUG-W2K1.cisco.com tnl 5 *Mar 12
23:10:54.176: Tnl 8663 L2TP: New tunnel created for
remote RSHANMUG-W2K1.cisco.com, address 192.168.1.56
*Mar 12 23:10:54.176: Tnl 8663 L2TP: O SCCRQ to
RSHANMUG-W2K1.cisco.com tnlid 5 *Mar 12 23:10:54.180:
Tnl 8663 L2TP: Tunnel state change from idle to wait-
ctl-reply *Mar 12 23:10:54.352: Tnl 8663 L2TP: I SCCCN
from RSHANMUG-W2K1.cisco.com tnl 5 *Mar 12 23:10:54.352:
Tnl 8663 L2TP: Tunnel state change from wait-ctl-reply
to established *Mar 12 23:10:54.352: Tnl 8663 L2TP: SM
State established *Mar 12 23:10:54.356: Tnl 8663 L2TP: I
ICRQ from RSHANMUG-W2K1.cisco.com tnl 5 *Mar 12
23:10:54.356: Tnl/C1 8663/44 L2TP: Session FS enabled
*Mar 12 23:10:54.356: Tnl/C1 8663/44 L2TP: Session state
change from idle to wait-connect *Mar 12 23:10:54.356:
Tnl/C1 8663/44 L2TP: New session created *Mar 12
23:10:54.356: Tnl/C1 8663/44 L2TP: O ICRP to RSHANMUG-
W2K1.cisco.com 5/1 *Mar 12 23:10:54.544: Tnl/C1 8663/44
L2TP: I ICCN from RSHANMUG-W2K1.cisco.com tnl 5, cl 1
*Mar 12 23:10:54.544: Tnl/C1 8663/44 L2TP: Session state
change from wait-connect to established *Mar 12
23:10:54.544: Vil VPDN: Virtual interface created for
*Mar 12 23:10:54.544: Vil PPP: Phase is DOWN, Setup [0
sess, 0 load] *Mar 12 23:10:54.544: Vil VPDN: Clone from
Vtemplate 1 filterPPP=0 blocking *Mar 12 23:10:54.620:
Tnl/C1 8663/44 L2TP: Session with no hwidb *Mar 12
23:10:54.624: %LINK-3-UPDOWN: Interface Virtual-Access1,
changed state to up *Mar 12 23:10:54.624: Vil PPP: Using
set call direction *Mar 12 23:10:54.624: Vil PPP:
Treating connection as a callin *Mar 12 23:10:54.624:
Vil PPP: Phase is ESTABLISHING, Passive Open [0 sess, 0
load] *Mar 12 23:10:54.624: Vil LCP: State is Listen
*Mar 12 23:10:54.624: Vil VPDN: Bind interface
direction=2 *Mar 12 23:10:56.556: Vil LCP: I CONFREQ
[Listen] id 1 len 44 *Mar 12 23:10:56.556: Vil LCP:
MagicNumber 0x595E7636 (0x0506595E7636) *Mar 12
23:10:56.556: Vil LCP: PFC (0x0702) *Mar 12
23:10:56.556: Vil LCP: ACFC (0x0802) *Mar 12
23:10:56.556: Vil LCP: Callback 6 (0x0D0306) *Mar 12
23:10:56.556: Vil LCP: MRRU 1614 (0x1104064E) *Mar 12
23:10:56.556: Vil LCP: EndpointDisc 1 Local *Mar 12
23:10:56.556: Vil LCP:
(0x1317012E07E41982EB4EF790F1BF1862) *Mar 12
```

```
23:10:56.556: Vil LCP: (0x10D0AC00000002) *Mar 12
23:10:56.556: Vil AAA/AUTHOR/FSM: (0): LCP succeeds
trivially *Mar 12 23:10:56.556: Vil LCP: O CONFREQ
[Listen] id 1 len 15 *Mar 12 23:10:56.556: Vil LCP:
AuthProto MS-CHAP (0x0305C22380) *Mar 12 23:10:56.556:
Vil LCP: MagicNumber 0x4E1B09B8 (0x05064E1B09B8) *Mar 12
23:10:56.560: Vil LCP: O CONFREQ [Listen] id 1 len 34
*Mar 12 23:10:56.560: Vil LCP: Callback 6 (0x0D0306)
*Mar 12 23:10:56.560: Vil LCP: MRRU 1614 (0x1104064E)
*Mar 12 23:10:56.560: Vil LCP: EndpointDisc 1 Local *Mar
12 23:10:56.560: Vil LCP:
(0x1317012E07E41982EB4EF790F1BF1862) *Mar 12
23:10:56.560: Vil LCP: (0x10D0AC00000002) *Mar 12
23:10:56.700: Vil LCP: I CONFACK [REQsent] id 1 len 15
*Mar 12 23:10:56.700: Vil LCP: AuthProto MS-CHAP
(0x0305C22380) *Mar 12 23:10:56.704: Vil LCP:
MagicNumber 0x4E1B09B8 (0x05064E1B09B8) *Mar 12
23:10:56.704: Vil LCP: I CONFREQ [ACKrcvd] id 2 len 14
*Mar 12 23:10:56.704: Vil LCP: MagicNumber 0x595E7636
(0x0506595E7636) *Mar 12 23:10:56.704: Vil LCP: PFC
(0x0702) *Mar 12 23:10:56.704: Vil LCP: ACFC (0x0802)
*Mar 12 23:10:56.704: Vil LCP: O CONFACK [ACKrcvd] id 2
len 14 *Mar 12 23:10:56.708: Vil LCP: MagicNumber
0x595E7636 (0x0506595E7636) *Mar 12 23:10:56.708: Vil
LCP: PFC (0x0702) *Mar 12 23:10:56.708: Vil LCP: ACFC
(0x0802) *Mar 12 23:10:56.708: Vil LCP: State is Open
*Mar 12 23:10:56.708: Vil PPP: Phase is AUTHENTICATING,
by this end [0 sess, 0 load] *Mar 12 23:10:56.708: Vil
MS-CHAP: O CHALLENGE id 28 len 21 from angela *Mar 12
23:10:56.852: Vil LCP: I IDENTIFY [Open] id 3 len 18
magic 0x595E7636 MSRASV5.00 *Mar 12 23:10:56.872: Vil
LCP: I IDENTIFY [Open] id 4 len 27 magic 0x595E7636
MSRAS-1- RSHANMUG-W2K1 *Mar 12 23:10:56.880: Vil MS-
CHAP: I RESPONSE id 28 len 57 from tac *Mar 12
23:10:56.880: AAA: parse name=Virtual-Access1 idb
type=21 tty=-1 *Mar 12 23:10:56.880: AAA: name=Virtual-
Access1 flags=0x11 type=5 shelf=0 slot=0 adapter=0
port=1 channel=0 *Mar 12 23:10:56.884: AAA/MEMORY:
create_user (0x6273D024) user='tac' ruser=''
port='Virtual-Access1' rem_addr='' authen_type=MSCHAP
service=PPP priv=1 *Mar 12 23:10:56.884:
AAA/AUTHEN/START (3634835145): port='Virtual-Access1'
list='' action=LOGIN service=PPP *Mar 12 23:10:56.884:
AAA/AUTHEN/START (3634835145): using default list *Mar
12 23:10:56.884: AAA/AUTHEN/START (3634835145):
Method=radius (radius) *Mar 12 23:10:56.884: RADIUS:
ustruct sharecount=0 *Mar 12 23:10:56.884: RADIUS:
Initial Transmit Virtual-Access1 id 173
10.200.20.245:1645, Access-Request, len 129 *Mar 12
23:10:56.884: Attribute 4 6 0AC81402 *Mar 12
23:10:56.884: Attribute 5 6 00000001 *Mar 12
23:10:56.884: Attribute 61 6 00000001 *Mar 12
23:10:56.884: Attribute 1 5 7461631A *Mar 12
23:10:56.884: Attribute 26 16 000001370B0A0053 *Mar 12
23:10:56.884: Attribute 26 58 0000013701341C01 *Mar 12
23:10:56.884: Attribute 6 6 00000002 *Mar 12
23:10:56.884: Attribute 7 6 00000001 *Mar 12
23:10:56.900: RADIUS: Received from id 173
10.200.20.245:1645, Access-Accept, len 116 *Mar 12
23:10:56.900: Attribute 7 6 00000001 *Mar 12
23:10:56.900: Attribute 6 6 00000002 *Mar 12
23:10:56.900: Attribute 25 32 502605A6 *Mar 12
23:10:56.900: Attribute 26 40 000001370C22F6D5 *Mar 12
23:10:56.900: Attribute 26 12 000001370A061C4E *Mar 12
```

```
23:10:56.900: AAA/AUTHEN (3634835145): status = PASS
*Mar 12 23:10:56.900: Vll AAA/AUTHOR/LCP: Authorize LCP
*Mar 12 23:10:56.900: Vll AAA/AUTHOR/LCP (1995716469):
Port='Virtual-Access1' list='' service=NET *Mar 12
23:10:56.900: AAA/AUTHOR/LCP: Vll (1995716469)
user='tac' *Mar 12 23:10:56.900: Vll AAA/AUTHOR/LCP
(1995716469): send AV service=ppp *Mar 12 23:10:56.900:
Vll AAA/AUTHOR/LCP (1995716469): send AV protocol=lcp
*Mar 12 23:10:56.900: Vll AAA/AUTHOR/LCP (1995716469):
found list default *Mar 12 23:10:56.904: Vll
AAA/AUTHOR/LCP (1995716469): Method=radius (radius) *Mar
12 23:10:56.904: RADIUS: unrecognized Microsoft VSA type
10 *Mar 12 23:10:56.904: Vll AAA/AUTHOR (1995716469):
Post authorization status = PASS_REPL *Mar 12
23:10:56.904: Vll AAA/AUTHOR/LCP: Processing AV
service=ppp *Mar 12 23:10:56.904: Vll AAA/AUTHOR/LCP:
Processing AV
mschap_mppe_keys*lp1T11=lv101~11a1W11151\1V1M1#11Z1`1k1}
111 *Mar 12 23:10:56.904: Vll MS-CHAP: O SUCCESS id 28
len 4 *Mar 12 23:10:56.904: Vll PPP: Phase is UP [0
sess, 0 load] *Mar 12 23:10:56.904: Vll AAA/AUTHOR/FSM:
(0): Can we start IPCP? *Mar 12 23:10:56.904: Vll
AAA/AUTHOR/FSM (2094713042): Port='Virtual-Access1'
list='' service=NET *Mar 12 23:10:56.904:
AAA/AUTHOR/FSM: Vll (2094713042) user='tac' *Mar 12
23:10:56.904: Vll AAA/AUTHOR/FSM (2094713042): send AV
service=ppp *Mar 12 23:10:56.904: Vll AAA/AUTHOR/FSM
(2094713042): send AV protocol=ip *Mar 12 23:10:56.904:
Vll AAA/AUTHOR/FSM (2094713042): found list default *Mar
12 23:10:56.904: Vll AAA/AUTHOR/FSM (2094713042):
Method=radius (radius) *Mar 12 23:10:56.908: RADIUS:
unrecognized Microsoft VSA type 10 *Mar 12 23:10:56.908:
Vll AAA/AUTHOR (2094713042): Post authorization status =
PASS_REPL *Mar 12 23:10:56.908: Vll AAA/AUTHOR/FSM: We
can start IPCP *Mar 12 23:10:56.908: Vll IPCP: O CONFREQ
[Closed] id 1 len 10 *Mar 12 23:10:56.908: Vll IPCP:
Address 172.16.10.100 (0x0306AC100A64) *Mar 12
23:10:57.040: Vll CCP: I CONFREQ [Not negotiated] id 5
len 10 *Mar 12 23:10:57.040: Vll CCP: MS-PPC supported
bits 0x01000001 (0x120601000001) *Mar 12 23:10:57.040:
Vll LCP: O PROTREJ [Open] id 2 len 16 protocol CCP
(0x80FD0105000A120601000001) *Mar 12 23:10:57.052: Vll
IPCP: I CONFREQ [REQsent] id 6 len 34 *Mar 12
23:10:57.052: Vll IPCP: Address 0.0.0.0 (0x030600000000)
*Mar 12 23:10:57.052: Vll IPCP: PrimaryDNS 0.0.0.0
(0x810600000000) *Mar 12 23:10:57.052: Vll IPCP:
PrimaryWINS 0.0.0.0 (0x820600000000) *Mar 12
23:10:57.052: Vll IPCP: SecondaryDNS 0.0.0.0
(0x830600000000) *Mar 12 23:10:57.052: Vll IPCP:
SecondaryWINS 0.0.0.0 (0x840600000000) *Mar 12
23:10:57.052: Vll AAA/AUTHOR/IPCP: Start. Her address
0.0.0.0, we want 0.0.0.0 *Mar 12 23:10:57.056: Vll
AAA/AUTHOR/IPCP: Processing AV service=ppp *Mar 12
23:10:57.056: Vll AAA/AUTHOR/IPCP: Processing AV
mschap_mppe_keys*lp1T11=lv101~11a1W11151\1V1M1#11Z1`1k1}
111 *Mar 12 23:10:57.056: Vll AAA/AUTHOR/IPCP:
Authorization succeeded *Mar 12 23:10:57.056: Vll
AAA/AUTHOR/IPCP: Done. Her address 0.0.0.0, we want
0.0.0.0 *Mar 12 23:10:57.056: Vll IPCP: Pool returned
172.16.10.1 *Mar 12 23:10:57.056: Vll IPCP: O CONFREQ
[REQsent] id 6 len 28 *Mar 12 23:10:57.056: Vll IPCP:
PrimaryDNS 0.0.0.0 (0x810600000000) *Mar 12
23:10:57.056: Vll IPCP: PrimaryWINS 0.0.0.0
(0x820600000000) *Mar 12 23:10:57.056: Vll IPCP:
```



```

SecondaryDNS 0.0.0.0 (0x830600000000) *Mar 12
23:10:57.056: Vi1 IPCP: SecondaryWINS 0.0.0.0
(0x840600000000) *Mar 12 23:10:57.060: Vi1 IPCP: I
CONFACK [REQsent] id 1 len 10 *Mar 12 23:10:57.060: Vi1
IPCP: Address 172.16.10.100 (0x0306AC100A64) *Mar 12
23:10:57.192: Vi1 IPCP: I CONFREQ [ACKrcvd] id 7 len 10
*Mar 12 23:10:57.192: Vi1 IPCP: Address 0.0.0.0
(0x030600000000) *Mar 12 23:10:57.192: Vi1
AAA/AUTHOR/IPCP: Start. Her address 0.0.0.0, we want
172.16.10.1 *Mar 12 23:10:57.192: Vi1 AAA/AUTHOR/IPCP:
Processing AV service=ppp *Mar 12 23:10:57.192: Vi1
AAA/AUTHOR/IPCP: Processing AV
mschap_mppe_keys*1p1T11=lv101~11a1W11151\1V1M1#11Z1`1k1}
111 *Mar 12 23:10:57.192: Vi1 AAA/AUTHOR/IPCP:
Authorization succeeded *Mar 12 23:10:57.192: Vi1
AAA/AUTHOR/IPCP: Done. Her address 0.0.0.0, we want
172.16.10.1 *Mar 12 23:10:57.192: Vi1 IPCP: O CONFNAK
[ACKrcvd] id 7 len 10 *Mar 12 23:10:57.192: Vi1 IPCP:
Address 172.16.10.1 (0x0306AC100A01) *Mar 12
23:10:57.324: Vi1 IPCP: I CONFREQ [ACKrcvd] id 8 len 10
*Mar 12 23:10:57.324: Vi1 IPCP: Address 172.16.10.1
(0x0306AC100A01) *Mar 12 23:10:57.324: Vi1
AAA/AUTHOR/IPCP: Start. Her address 172.16.10.1, we want
172.16.10.1 *Mar 12 23:10:57.324: Vi1 AAA/AUTHOR/IPCP
(413757991): Port='Virtual-Access1' list='' service=NET
*Mar 12 23:10:57.324: AAA/AUTHOR/IPCP: Vi1 (413757991)
user='tac' *Mar 12 23:10:57.324: Vi1 AAA/AUTHOR/IPCP
(413757991): send AV service=ppp *Mar 12 23:10:57.324:
Vi1 AAA/AUTHOR/IPCP (413757991): send AV protocol=ip
*Mar 12 23:10:57.324: Vi1 AAA/AUTHOR/IPCP (413757991):
send AV addr*172.16.10.1 *Mar 12 23:10:57.324: Vi1
AAA/AUTHOR/IPCP (413757991): found list default *Mar 12
23:10:57.324: Vi1 AAA/AUTHOR/IPCP (413757991):
Method=radius (radius) *Mar 12 23:10:57.324: RADIUS:
unrecognized Microsoft VSA type 10 *Mar 12 23:10:57.324:
Vi1 AAA/AUTHOR (413757991): Post authorization status =
PASS_REPL *Mar 12 23:10:57.324: Vi1 AAA/AUTHOR/IPCP:
Reject 172.16.10.1, using 172.16.10.1 *Mar 12
23:10:57.328: Vi1 AAA/AUTHOR/IPCP: Processing AV
service=ppp *Mar 12 23:10:57.328: Vi1 AAA/AUTHOR/IPCP:
Processing AV
mschap_mppe_keys*1p1T11=lv101~11a1W11151\1V1M1#11Z1`1k1}
111 *Mar 12 23:10:57.328: Vi1 AAA/AUTHOR/IPCP:
Processing AV addr*172.16.10.1 *Mar 12 23:10:57.328: Vi1
AAA/AUTHOR/IPCP: Authorization succeeded *Mar 12
23:10:57.328: Vi1 AAA/AUTHOR/IPCP: Done. Her address
172.16.10.1, we want 172.16.10.1 *Mar 12 23:10:57.328:
Vi1 IPCP: O CONFACK [ACKrcvd] id 8 len 10 *Mar 12
23:10:57.328: Vi1 IPCP: Address 172.16.10.1
(0x0306AC100A01) *Mar 12 23:10:57.328: Vi1 IPCP: State
is Open *Mar 12 23:10:57.332: Vi1 IPCP: Install route to
172.16.10.1 *Mar 12 23:10:57.904: %LINEPROTO-5-UPDOWN:
Line protocol on Interface Virtual-Access1, changed
state to up *Mar 12 23:11:06.324: Vi1 LCP: I ECHOREP
[Open] id 1 len 12 magic 0x595E7636 *Mar 12
23:11:06.324: Vi1 LCP: Received id 1, sent id 1, line up

```

angela#show vpdn

```

L2TP Tunnel and Session Information Total tunnels 1 sessions 1
LocID RemID Remote Name State Remote Address Port Sessions
8663 5 RSHANMUG-W2K1.c est 192.168.1.56 1701 1
LocID RemID TunID Intf Username State Last Chg Fastswitch
44 1 8663 Vi1 tac est 00:00:18 enabled

```

```
%No active L2F tunnels
%No active PPTP tunnels
%No active PPPoE tunnels
*Mar 12 23:11:16.332: Vi1 LCP: I ECHOREP [Open] id 2 len 12 magic
0x595E7636
*Mar 12 23:11:16.332: Vi1 LCP: Received id 2, sent id 2, line upsh caller
ip
Line      UserIP AddressLocal NumberRemote Number<->
Vi1      tac172.16.10.1--in

angela#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 10.200.20.1 to network 0.0.0.0
172.16.0.0/16 is variably subnetted, 2 subnets, 2 masks
C172.16.10.0/24 is directly connected, Loopback0
C172.16.10.1/32 is directly connected, Virtual-Access1
10.0.0.0/24 is subnetted, 1 subnets
C10.200.20.0 is directly connected, Ethernet0/0
S    192.168.1.0/24 [1/0] via 10.200.20.250
S*   0.0.0.0/0 [1/0] via 10.200.20.1
```

```
*Mar 12 23:11:26.328: Vi1 LCP: I ECHOREP [Open] id 3 len 12 magic
0x595E7636
*Mar 12 23:11:26.328: Vi1 LCP: Received id 3, sent id 3, line up172.16.10.1
```

```
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 = 156/160/168 ms
```

啟用加密

在interface virtual-template 1下新增ppp encrypt mppe 40命令。確保在Microsoft客戶端中也選擇了加密。

```
*Mar 12 23:27:36.608: L2TP: I SCCRQ from RSHANMUG-W2K1.cisco.com tnl 13
*Mar 12 23:27:36.608: Tnl 31311 L2TP: New tunnel created for remote
RSHANMUG-W2K1.cisco.com, address 192.168.1.56
*Mar 12 23:27:36.608: Tnl 31311 L2TP: O SCCRP to RSHANMUG-W2K1.cisco.com
tnlid 13
*Mar 12 23:27:36.612: Tnl 31311 L2TP: Tunnel state change from idle to
wait-ctl-reply
*Mar 12 23:27:36.772: Tnl 31311 L2TP: I SCCCN from RSHANMUG-W2K1.cisco.com
tnl 13
*Mar 12 23:27:36.772: Tnl 31311 L2TP: Tunnel state change from
wait-ctl-reply to established
*Mar 12 23:27:36.776: Tnl 31311 L2TP: SM State established
*Mar 12 23:27:36.780: Tnl 31311 L2TP: I ICRQ from RSHANMUG-W2K1.cisco.com
tnl 13
*Mar 12 23:27:36.780: Tnl/Cl 31311/52 L2TP: Session FS enabled
*Mar 12 23:27:36.780: Tnl/Cl 31311/52 L2TP: Session state change from idle
to wait-connect
*Mar 12 23:27:36.780: Tnl/Cl 31311/52 L2TP: New session created
*Mar 12 23:27:36.780: Tnl/Cl 31311/52 L2TP: O ICRP to
```

RSHANMUG-W2K1.cisco.com 13/1

*Mar 12 23:27:36.924: Tnl/Cl 31311/52 L2TP: I ICCN from

RSHANMUG-W2K1.cisco.com tnl 13, cl 1

*Mar 12 23:27:36.928: Tnl/Cl 31311/52 L2TP: Session state change from wait-connect to established

*Mar 12 23:27:36.928: Vif VPDN: Virtual interface created for

*Mar 12 23:27:36.928: Vif PPP: Phase is DOWN, Setup [0 sess, 0 load]

*Mar 12 23:27:36.928: Vif VPDN: Clone from Vtemplate 1 filterPPP=0 blocking

*Mar 12 23:27:36.972: Tnl/Cl 31311/52 L2TP: Session with no hwidb

*Mar 12 23:27:36.976: %LINK-3-UPDOWN: Interface Virtual-Access1, changed state to up

*Mar 12 23:27:36.976: Vif PPP: Using set call direction

*Mar 12 23:27:36.976: Vif PPP: Treating connection as a callin

*Mar 12 23:27:36.976: Vif PPP: Phase is ESTABLISHING, Passive Open [0 sess, 0 load]

*Mar 12 23:27:36.976: Vif LCP: State is Listen

*Mar 12 23:27:36.976: Vif VPDN: Bind interface direction=2

*Mar 12 23:27:38.976: Vif LCP: TIMEOUT: State Listen

*Mar 12 23:27:38.976: Vif AAA/AUTHOR/FSM: (0): LCP succeeds trivially

*Mar 12 23:27:38.976: Vif LCP: O CONFREQ [Listen] id 1 len 15

*Mar 12 23:27:38.976: Vif LCP: AuthProto MS-CHAP (0x0305C22380)

*Mar 12 23:27:38.976: Vif LCP: MagicNumber 0x4E2A5593 (0x05064E2A5593)

*Mar 12 23:27:38.984: Vif LCP: I CONFREQ [REQsent] id 1 len 44

*Mar 12 23:27:38.984: Vif LCP: MagicNumber 0x4B4817ED (0x05064B4817ED)

*Mar 12 23:27:38.984: Vif LCP: PFC (0x0702)

*Mar 12 23:27:38.984: Vif LCP: ACFC (0x0802)

*Mar 12 23:27:38.984: Vif LCP: Callback 6 (0x0D0306)

*Mar 12 23:27:38.984: Vif LCP: MRRU 1614 (0x1104064E)

*Mar 12 23:27:38.984: Vif LCP: EndpointDisc 1 Local

*Mar 12 23:27:38.984: Vif LCP: (0x1317012E07E41982EB4EF790F1BF1862)

*Mar 12 23:27:38.984: Vif LCP: (0x10D0AC00000000A)

*Mar 12 23:27:38.984: Vif LCP: O CONFREQ [REQsent] id 1 len 34

*Mar 12 23:27:38.984: Vif LCP: Callback 6 (0x0D0306)

*Mar 12 23:27:38.984: Vif LCP: MRRU 1614 (0x1104064E)

*Mar 12 23:27:38.984: Vif LCP: EndpointDisc 1 Local

*Mar 12 23:27:38.988: Vif LCP: (0x1317012E07E41982EB4EF790F1BF1862)

*Mar 12 23:27:38.988: Vif LCP: (0x10D0AC00000000A)

*Mar 12 23:27:39.096: Vif LCP: I CONFACK [REQsent] id 1 len 15

*Mar 12 23:27:39.096: Vif LCP: AuthProto MS-CHAP (0x0305C22380)

*Mar 12 23:27:39.096: Vif LCP: MagicNumber 0x4E2A5593 (0x05064E2A5593)

*Mar 12 23:27:39.128: Vif LCP: I CONFREQ [ACKrcvd] id 2 len 14

*Mar 12 23:27:39.128: Vif LCP: MagicNumber 0x4B4817ED (0x05064B4817ED)

*Mar 12 23:27:39.128: Vif LCP: PFC (0x0702)

*Mar 12 23:27:39.128: Vif LCP: ACFC (0x0802)

*Mar 12 23:27:39.128: Vif LCP: O CONFACK [ACKrcvd] id 2 len 14

*Mar 12 23:27:39.128: Vif LCP: MagicNumber 0x4B4817ED (0x05064B4817ED)

*Mar 12 23:27:39.128: Vif LCP: PFC (0x0702)

*Mar 12 23:27:39.128: Vif LCP: ACFC (0x0802)

*Mar 12 23:27:39.128: Vif LCP: State is Open

*Mar 12 23:27:39.128: Vif PPP: Phase is AUTHENTICATING, by this end [0 sess, 0 load]

*Mar 12 23:27:39.128: Vif MS-CHAP: O CHALLENGE id 32 len 21 from angela

*Mar 12 23:27:39.260: Vif LCP: I IDENTIFY [Open] id 3 len 18 magic 0x4B4817ED MSRASV5.00

*Mar 12 23:27:39.288: Vif LCP: I IDENTIFY [Open] id 4 len 27 magic 0x4B4817ED MSRAS-1- RSHANMUG-W2K1

*Mar 12 23:27:39.296: Vif MS-CHAP: I RESPONSE id 32 len 57 from tac

*Mar 12 23:27:39.296: AAA: parse name=Virtual-Access1 idb type=21 tty=-1

*Mar 12 23:27:39.296: AAA: name=Virtual-Access1 flags=0x11 type=5 shelf=0 slot=0 adapter=0 port=1 channel=0

*Mar 12 23:27:39.296: AAA/MEMORY: create_user (0x6273D528) user='tac' ruser='' port='Virtual-Access1' rem_addr='' authen_type=MSCHAP service=PPP priv=1

*Mar 12 23:27:39.296: AAA/AUTHEN/START (2410248116): port='Virtual-Access1'

```
list='' action=LOGIN service=PPP
*Mar 12 23:27:39.296: AAA/AUTHEN/START (2410248116): using default list
*Mar 12 23:27:39.296: AAA/AUTHEN/START (2410248116): Method=radius (radius)
*Mar 12 23:27:39.296: RADIUS: ustruct sharecount=0
*Mar 12 23:27:39.300: RADIUS: Initial Transmit Virtual-Access1 id 181
10.200.20.245:1645, Access-Request, len 129
*Mar 12 23:27:39.300: Attribute 4 6 0AC81402
*Mar 12 23:27:39.300: Attribute 5 6 00000001
*Mar 12 23:27:39.300: Attribute 61 6 00000001
*Mar 12 23:27:39.300: Attribute 1 5 7461631A
*Mar 12 23:27:39.300: Attribute 26 16 000001370B0AFC72
*Mar 12 23:27:39.300: Attribute 26 58 0000013701342001
*Mar 12 23:27:39.300: Attribute 6 6 00000002
*Mar 12 23:27:39.300: Attribute 7 6 00000001
*Mar 12 23:27:39.312: RADIUS: Received from id 181 10.200.20.245:1645,
Access-Accept, len 116
*Mar 12 23:27:39.312: Attribute 7 6 00000001
*Mar 12 23:27:39.312: Attribute 6 6 00000002
*Mar 12 23:27:39.312: Attribute 25 32 502E05AE
*Mar 12 23:27:39.312: Attribute 26 40 000001370C225042
*Mar 12 23:27:39.312: Attribute 26 12 000001370A06204E
*Mar 12 23:27:39.312: AAA/AUTHEN (2410248116): status = PASS
*Mar 12 23:27:39.316: Vi1 AAA/AUTHOR/LCP: Authorize LCP
*Mar 12 23:27:39.316: Vi1 AAA/AUTHOR/LCP (2365724222):
Port='Virtual-Access1' list='' service=NET
*Mar 12 23:27:39.316: AAA/AUTHOR/LCP: Vi1 (2365724222) user='tac'
*Mar 12 23:27:39.316: Vi1 AAA/AUTHOR/LCP (2365724222): send AV service=ppp
*Mar 12 23:27:39.316: Vi1 AAA/AUTHOR/LCP (2365724222): send AV protocol=lcp
*Mar 12 23:27:39.316: Vi1 AAA/AUTHOR/LCP (2365724222): found list default
*Mar 12 23:27:39.316: Vi1 AAA/AUTHOR/LCP (2365724222): Method=radius
(radius)
*Mar 12 23:27:39.316: RADIUS: unrecognized Microsoft VSA type 10
*Mar 12 23:27:39.316: Vi1 AAA/AUTHOR (2365724222): Post authorization
status = PASS_REPL
*Mar 12 23:27:39.316: Vi1 AAA/AUTHOR/LCP: Processing AV service=ppp
*Mar 12 23:27:39.316: Vi1 AAA/AUTHOR/LCP: Processing AV
mschap_mppe_keys*1p1T11=1v101~11a1W11151\1V1M1#11Z1`1k1}111
*Mar 12 23:27:39.316: Vi1 MS-CHAP: 0 SUCCESS id 32 len 4
*Mar 12 23:27:39.316: Vi1 PPP: Phase is UP [0 sess, 0 load]
*Mar 12 23:27:39.316: Vi1 AAA/AUTHOR/FSM: (0): Can we start IPCP?
*Mar 12 23:27:39.320: Vi1 AAA/AUTHOR/FSM (1499311111):
Port='Virtual-Access1' list='' service=NET
*Mar 12 23:27:39.320: AAA/AUTHOR/FSM: Vi1 (1499311111) user='tac'
*Mar 12 23:27:39.320: Vi1 AAA/AUTHOR/FSM (1499311111): send AV service=ppp
*Mar 12 23:27:39.320: Vi1 AAA/AUTHOR/FSM (1499311111): send AV protocol=ip
*Mar 12 23:27:39.320: Vi1 AAA/AUTHOR/FSM (1499311111): found list default
*Mar 12 23:27:39.320: Vi1 AAA/AUTHOR/FSM (1499311111): Method=radius
(radius)
*Mar 12 23:27:39.320: RADIUS: unrecognized Microsoft VSA type 10
*Mar 12 23:27:39.320: Vi1 AAA/AUTHOR (1499311111): Post authorization
status = PASS_REPL
*Mar 12 23:27:39.320: Vi1 AAA/AUTHOR/FSM: We can start IPCP
*Mar 12 23:27:39.320: Vi1 IPCP: 0 CONFREQ [Closed] id 1 len 10
*Mar 12 23:27:39.320: Vi1 IPCP: Address 172.16.10.100 (0x0306AC100A64)
*Mar 12 23:27:39.320: Vi1 AAA/AUTHOR/FSM: (0): Can we start CCP?
*Mar 12 23:27:39.320: Vi1 AAA/AUTHOR/FSM (327346364):
Port='Virtual-Access1' list='' service=NET
*Mar 12 23:27:39.324: AAA/AUTHOR/FSM: Vi1 (327346364) user='tac'
*Mar 12 23:27:39.324: Vi1 AAA/AUTHOR/FSM (327346364): send AV service=ppp
*Mar 12 23:27:39.324: Vi1 AAA/AUTHOR/FSM (327346364): send AV protocol=ccp
*Mar 12 23:27:39.324: Vi1 AAA/AUTHOR/FSM (327346364): found list default
*Mar 12 23:27:39.324: Vi1 AAA/AUTHOR/FSM (327346364): Method=radius
(radius)
*Mar 12 23:27:39.324: RADIUS: unrecognized Microsoft VSA type 10
```

```
*Mar 12 23:27:39.324: Vi1 AAA/AUTHOR (327346364): Post authorization status
= PASS_REPL
*Mar 12 23:27:39.324: Vi1 AAA/AUTHOR/FSM: We can start CCP
*Mar 12 23:27:39.324: Vi1 CCP: O CONFREQ [Closed] id 1 len 10
*Mar 12 23:27:39.324: Vi1 CCP: MS-PPC supported bits 0x01000020
(0x120601000020)
*Mar 12 23:27:39.460: Vi1 CCP: I CONFREQ [REQsent] id 5 len 10
*Mar 12 23:27:39.460: Vi1 CCP: MS-PPC supported bits 0x01000001
(0x120601000001)
*Mar 12 23:27:39.460: Vi1 AAA/AUTHOR/FSM: Check for unauthorized mandatory
AV's
*Mar 12 23:27:39.460: Vi1 AAA/AUTHOR/FSM: Processing AV service=ppp
*Mar 12 23:27:39.460: Vi1 AAA/AUTHOR/FSM: Processing AV
mschap_mppe_keys*1p1T11=1v101~11a1W11151\1V1M1#11Z1`1k1}111
*Mar 12 23:27:39.460: Vi1 AAA/AUTHOR/FSM: Succeeded
*Mar 12 23:27:39.464: Vi1 CCP: O CONFNAK [REQsent] id 5 len 10
*Mar 12 23:27:39.464: Vi1 CCP: MS-PPC supported bits 0x01000020
(0x120601000020)
*Mar 12 23:27:39.472: Vi1 IPCP: I CONFREQ [REQsent] id 6 len 34
*Mar 12 23:27:39.472: Vi1 IPCP: Address 0.0.0.0 (0x030600000000)
*Mar 12 23:27:39.472: Vi1 IPCP: PrimaryDNS 0.0.0.0 (0x810600000000)
*Mar 12 23:27:39.472: Vi1 IPCP: PrimaryWINS 0.0.0.0 (0x820600000000)
*Mar 12 23:27:39.472: Vi1 IPCP: SecondaryDNS 0.0.0.0 (0x830600000000)
*Mar 12 23:27:39.472: Vi1 IPCP: SecondaryWINS 0.0.0.0 (0x840600000000)
*Mar 12 23:27:39.472: Vi1 AAA/AUTHOR/IPCP: Start. Her address 0.0.0.0, we
want 0.0.0.0
*Mar 12 23:27:39.472: Vi1 AAA/AUTHOR/IPCP: Processing AV service=ppp
*Mar 12 23:27:39.472: Vi1 AAA/AUTHOR/IPCP: Processing AV
mschap_mppe_keys*1p1T11=1v101~11a1W11151\1V1M1#11Z1`1k1}111
*Mar 12 23:27:39.472: Vi1 AAA/AUTHOR/IPCP: Authorization succeeded
*Mar 12 23:27:39.472: Vi1 AAA/AUTHOR/IPCP: Done. Her address 0.0.0.0, we
want 0.0.0.0
*Mar 12 23:27:39.472: Vi1 IPCP: Pool returned 172.16.10.1
*Mar 12 23:27:39.476: Vi1 IPCP: O CONFREQ [REQsent] id 6 len 28
*Mar 12 23:27:39.476: Vi1 IPCP: PrimaryDNS 0.0.0.0 (0x810600000000)
*Mar 12 23:27:39.476: Vi1 IPCP: PrimaryWINS 0.0.0.0 (0x820600000000)
*Mar 12 23:27:39.476: Vi1 IPCP: SecondaryDNS 0.0.0.0 (0x830600000000)
*Mar 12 23:27:39.476: Vi1 IPCP: SecondaryWINS 0.0.0.0 (0x840600000000)
*Mar 12 23:27:39.480: Vi1 IPCP: I CONFACK [REQsent] id 1 len 10
*Mar 12 23:27:39.484: Vi1 IPCP: Address 172.16.10.100 (0x0306AC100A64)
*Mar 12 23:27:39.488: Vi1 CCP: I CONFACK [REQsent] id 1 len 10
*Mar 12 23:27:39.488: Vi1 CCP: MS-PPC supported bits 0x01000020
(0x120601000020)
*Mar 12 23:27:39.596: Vi1 CCP: I CONFREQ [ACKrcvd] id 7 len 10
*Mar 12 23:27:39.596: Vi1 CCP: MS-PPC supported bits 0x01000020
(0x120601000020)
*Mar 12 23:27:39.596: Vi1 AAA/AUTHOR/FSM: Check for unauthorized mandatory
AV's
*Mar 12 23:27:39.596: Vi1 AAA/AUTHOR/FSM: Processing AV service=ppp
*Mar 12 23:27:39.596: Vi1 AAA/AUTHOR/FSM: Processing AV
mschap_mppe_keys*1p1T11=1v101~11a1W11151\1V1M1#11Z1`1k1}111
*Mar 12 23:27:39.596: Vi1 AAA/AUTHOR/FSM: Succeeded
*Mar 12 23:27:39.596: Vi1 CCP: O CONFACK [ACKrcvd] id 7 len 10
*Mar 12 23:27:39.596: Vi1 CCP: MS-PPC supported bits 0x01000020
(0x120601000020)
*Mar 12 23:27:39.596: Vi1 CCP: State is Open
*Mar 12 23:27:39.600: Vi1 MPPE: Generate keys using RADIUS data
*Mar 12 23:27:39.600: Vi1 MPPE: Initialize keys
*Mar 12 23:27:39.600: Vi1 MPPE: [40 bit encryption] [stateless mode]
*Mar 12 23:27:39.620: Vi1 IPCP: I CONFREQ [ACKrcvd] id 8 len 10
*Mar 12 23:27:39.620: Vi1 IPCP: Address 0.0.0.0 (0x030600000000)
*Mar 12 23:27:39.620: Vi1 AAA/AUTHOR/IPCP: Start. Her address 0.0.0.0, we
want 172.16.10.1
*Mar 12 23:27:39.620: Vi1 AAA/AUTHOR/IPCP: Processing AV service=ppp
```

```

*Mar 12 23:27:39.620: Vi1 AAA/AUTHOR/IPCP: Processing AV
mschap_mppe_keys*1p1T11=lv101~11a1W11151\1V1M1#11Z1`1k1}111
*Mar 12 23:27:39.620: Vi1 AAA/AUTHOR/IPCP: Authorization succeeded
*Mar 12 23:27:39.620: Vi1 AAA/AUTHOR/IPCP: Done. Her address 0.0.0.0, we
want 172.16.10.1
*Mar 12 23:27:39.624: Vi1 IPCP: O CONFNAK [ACKrcvd] id 8 len 10
*Mar 12 23:27:39.624: Vi1 IPCP: Address 172.16.10.1 (0x0306AC100A01)
*Mar 12 23:27:39.756: Vi1 IPCP: I CONFREQ [ACKrcvd] id 9 len 10
*Mar 12 23:27:39.756: Vi1 IPCP: Address 172.16.10.1 (0x0306AC100A01)
*Mar 12 23:27:39.756: Vi1 AAA/AUTHOR/IPCP: Start. Her address 172.16.10.1,
we want 172.16.10.1
*Mar 12 23:27:39.756: Vi1 AAA/AUTHOR/IPCP (2840659706):
Port='Virtual-Access1' list='' service=NET
*Mar 12 23:27:39.756: AAA/AUTHOR/IPCP: Vi1 (2840659706) user='tac'
*Mar 12 23:27:39.756: Vi1 AAA/AUTHOR/IPCP (2840659706): send AV service=ppp
*Mar 12 23:27:39.756: Vi1 AAA/AUTHOR/IPCP (2840659706): send AV protocol=ip
*Mar 12 23:27:39.756: Vi1 AAA/AUTHOR/IPCP (2840659706): send AV
addr*172.16.10.1
*Mar 12 23:27:39.756: Vi1 AAA/AUTHOR/IPCP (2840659706): found list
default
*Mar 12 23:27:39.756: Vi1 AAA/AUTHOR/IPCP (2840659706): Method=radius
(radius)
*Mar 12 23:27:39.756: RADIUS: unrecognized Microsoft VSA type 10
*Mar 12 23:27:39.756: Vi1 AAA/AUTHOR (2840659706): Post authorization
status = PASS_REPL
*Mar 12 23:27:39.756: Vi1 AAA/AUTHOR/IPCP: Reject 172.16.10.1, using
172.16.10.1
*Mar 12 23:27:39.760: Vi1 AAA/AUTHOR/IPCP: Processing AV service=ppp
*Mar 12 23:27:39.760: Vi1 AAA/AUTHOR/IPCP: Processing AV
mschap_mppe_keys*1p1T11=lv101~11a1W11151\1V1M1#11Z1`1k1}111
*Mar 12 23:27:39.760: Vi1 AAA/AUTHOR/IPCP: Processing AV addr*172.16.10.1
*Mar 12 23:27:39.760: Vi1 AAA/AUTHOR/IPCP: Authorization succeeded
*Mar 12 23:27:39.760: Vi1 AAA/AUTHOR/IPCP: Done. Her address 172.16.10.1,
we want 172.16.10.1
*Mar 12 23:27:39.760: Vi1 IPCP: O CONFACK [ACKrcvd] id 9 len 10
*Mar 12 23:27:39.760: Vi1 IPCP: Address 172.16.10.1 (0x0306AC100A01)
*Mar 12 23:27:39.760: Vi1 IPCP: State is Open
*Mar 12 23:27:39.764: Vi1 IPCP: Install route to 172.16.10.1
*Mar 12 23:27:40.316: %LINEPROTO-5-UPDOWN: Line protocol on Interface
Virtual-Access1, changed state to up
*Mar 12 23:27:46.628: Vi1 LCP: I ECHOREP [Open] id 1 len 12 magic
0x4B4817ED
*Mar 12 23:27:46.628: Vi1 LCP: Received id 1, sent id 1, line up
*Mar 12 23:27:56.636: Vi1 LCP: I ECHOREP [Open] id 2 len 12 magic
0x4B4817ED
*Mar 12 23:27:56.636: Vi1 LCP: Received id 2, sent id 2, line upcaller ip
Line UserIP AddressLocal NumberRemote Number<->
Vi1 tac172.16.10.1--in

```

```

angela#show ppp mppe virtual-Access 1
Interface Virtual-Access1 (current connection)
Software encryption, 40 bit encryption, Stateless mode
packets encrypted = 0 packets decrypted= 16
sent CCP resets = 0 receive CCP resets = 0
next tx coherency = 0 next rx coherency= 16
tx key changes = 0 rx key changes= 16
rx pkt dropped = 0 rx out of order pkt= 0
rx missed packets = 0
*Mar 12 23:28:06.604: Vi1 LCP: I ECHOREP [Open] id 3 len 12 magic
0x4B4817ED
*Mar 12 23:28:06.604: Vi1 LCP: Received id 3, sent id 3, 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 = 188/196/204 ms
```

```
angela#show ppp mppe virtual-Access 1
Interface Virtual-Access1 (current connection)
Software encryption, 40 bit encryption, Stateless mode
packets encrypted = 5      packets decrypted= 22
sent CCP resets   = 0      receive CCP resets = 0
next tx coherency = 5      next rx coherency= 22
tx key changes    = 5      rx key changes= 22
rx pkt dropped    = 0      rx out of order pkt= 0
rx missed packets = 0
```

```
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 = 184/200/232 ms
```

```
angela#ping 172.16.10.1sh ppp mppe virtual-Access 1
Interface Virtual-Access1 (current connection)
Software encryption, 40 bit encryption, Stateless mode
packets encrypted = 10     packets decrypted= 28
sent CCP resets   = 0      receive CCP resets = 0
next tx coherency = 10     next rx coherency= 28
tx key changes    = 10     rx key changes= 28
rx pkt dropped    = 0      rx out of order pkt= 0
rx missed packets = 0
angela#
```

debug和show命令

使用 **debug** 指令之前，請先參閱[有關 Debug 指令的重要資訊](#)。

[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

。

如果操作失敗，則最小的**debug**命令包括：

- **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，其中協商了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。

如果驗證有效，但Microsoft點對點加密(MPPE)加密出現問題，請使用以下命令之一：

- **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2級轉發(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** — 顯示阻止隧道建立的錯誤或導致已建立的隧道關閉的錯誤。
- **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。
- **show vpdn** — 顯示有關虛擬專用撥接網路(VPDN)中作用中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 ?` 命令檢視其他 vpdn 特定的 `show` 命令。

[分割通道](#)

假設網關路由器是 Internet 服務提供商 (ISP) 路由器。當 PC 上啟動點對點通道通訊協定 (PPTP) 通道時，PPTP 路由所安裝的度量高於之前的預設值，因此會失去網際網路連線。為了解決此問題，請修改 Microsoft 路由以刪除預設路由並重新安裝預設路由 (需要知道分配了 PPTP 客戶端的 IP 地址；目前的範例為 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
```

[疑難排解](#)

本節提供的資訊可用於對組態進行疑難排解。

[問題1:未禁用IPSec](#)

症狀

PC 使用者看到以下消息：

```
Error connecting to L2TP:
Error 781: The encryption attempt failed because
no valid certificate was found.
```

解決方案

轉到 **Virtual Private Connection** 視窗的 **Properties** 部分，然後按一下 **Security** 頁籤。禁用 **Require Data Encryption** 選項。

[問題2:錯誤789](#)

症狀

L2TP 連線嘗試失敗，因為安全層在與遠端電腦的初始協商期間遇到處理錯誤。

由於 L2TP 不提供加密，因此 Microsoft 遠端訪問和策略代理服務會建立用於 L2TP 流量的策略。這適用於 Microsoft Windows 2000 Advanced Server、Microsoft Windows 2000 Server 和 Microsoft Windows 2000 Professional。

解決方案

使用登錄檔編輯器 (Regedt32.exe) 新增新的登錄檔項以禁用 IPSec。有關 Regedt32.exe，請參閱 Microsoft 文檔或 Microsoft 幫助主題。

您必須將 ProhibitIpSec 登錄檔值新增到 L2TP 或 IPSec 連線的每個基於 Windows 2000 的終端電腦，以

防止建立L2TP和IPSec流量的自動過濾器。當ProhibitIpSec登錄檔值設定為1時，基於Windows 2000的電腦不會建立使用CA身份驗證的自動過濾器。而是檢查本地或Active Directory IPSec策略。若要將ProhibitIpSec登錄檔值新增到基於Windows 2000的電腦，請使用Regedt32.exe在登錄檔中查詢此項：

HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\Rasman\Parameters
將此登錄檔值新增到此項：

Value Name: ProhibitIpSec
Data Type: REG_DWORD
Value: 1

注意：要使更改生效，必須重新啟動基於Windows 2000的電腦。

問題3:通道驗證問題

建立通道之前，使用者在NAS或LNS進行驗證。客戶端啟動的隧道（如來自Microsoft客戶端的L2TP）不需要此功能。

PC使用者看到以下消息：

```
Connecting to 10.200.20.2..
Error 651: The modem(or other connecting device) has reported an error.
Router debugs:

*Mar 12 23:03:47.124: L2TP: I SCCRQ from RSHANMUG-W2K1.cisco.com tnl 1
*Mar 12 23:03:47.124: Tnl 30107 L2TP: New tunnel created for remote
RSHANMUG-W2K1.cisco.com, address 192.168.1.56
*Mar 12 23:03:47.124: Tnl 30107 L2TP: O SCCRP to RSHANMUG-W2K1.cisco.com
tnlid 1
*Mar 12 23:03:47.124: Tnl 30107 L2TP: Tunnel state change from idle to
wait-ctl-reply
*Mar 12 23:03:47.308: Tnl 30107 L2TP: I SCCCN from RSHANMUG-W2K1.cisco.com
tnl 1
*Mar 12 23:03:47.308: Tnl 30107 L2TP: Got a Challenge Response in SCCCN
from RSHANMUG-W2K1.cisco.com
*Mar 12 23:03:47.308: AAA: parse name= idb type=-1 tty=-1
*Mar 12 23:03:47.308: AAA/MEMORY: create_user (0x6273D528) user='angela'
ruser='' port='' rem_addr='' authen_type=CHAP service=PPP priv=1
*Mar 12 23:03:47.308: AAA/AUTHEN/START (4077585132): port='' list='default'
action=SENDAUTH service=PPP
*Mar 12 23:03:47.308: AAA/AUTHEN/START (4077585132): found list default
*Mar 12 23:03:47.308: AAA/AUTHEN/START (4077585132): Method=radius (radius)
*Mar 12 23:03:47.308: AAA/AUTHEN/SENDAUTH (4077585132): no authenstruct
hwidb
*Mar 12 23:03:47.308: AAA/AUTHEN/SENDAUTH (4077585132): Failed sendauthen
for angela
*Mar 12 23:03:47.308: AAA/AUTHEN (4077585132): status = FAIL
*Mar 12 23:03:47.308: AAA/AUTHEN/START (4077585132): Method=LOCAL
*Mar 12 23:03:47.308: AAA/AUTHEN (4077585132): SENDAUTH no password for
angela
*Mar 12 23:03:47.308: AAA/AUTHEN (4077585132): status = ERROR
*Mar 12 23:03:47.308: AAA/AUTHEN/START (4077585132): no methods left to try
*Mar 12 23:03:47.308: AAA/AUTHEN (4077585132): status = ERROR
*Mar 12 23:03:47.308: AAA/AUTHEN/START (4077585132): failed to authenticate
*Mar 12 23:03:47.308: VPDN: authentication failed, couldn't find user
information for angela
```

```
*Mar 12 23:03:47.308: AAA/MEMORY: free_user (0x6273D528) user='angela'
ruser='' port='' rem_addr='' authen_type=CHAP service=PPP priv=1
*Mar 12 23:03:47.312: Tnl 30107 L2TP: O StopCCN to
RSHANMUG-W2K1.cisco.com tnlid 1
*Mar 12 23:03:47.312: Tnl 30107 L2TP: Tunnel state change from
wait-ctl-reply to shutting-down
*Mar 12 23:03:47.320: Tnl 30107 L2TP: Shutdown tunnel
*Mar 12 23:03:47.320: Tnl 30107 L2TP: Tunnel state change from
shutting-down to idle
*Mar 12 23:03:47.324: L2TP: Could not find tunnel for tnl 30107, discarding
ICRQ ns 3 nr 1
*Mar 12 23:03:47.448: L2TP: Could not find tunnel for tnl 30107, discarding
ICRQ ns 3 nr 2
```

[相關資訊](#)

- [第二層通道通訊協定\(L2TP\)](#)
- [使用數位證書的Windows 2000和VPN 3000集中器之間的L2TP Over IPsec配置示例](#)
- [使用證書在PIX防火牆和Windows 2000 PC之間配置L2TP Over IPsec](#)
- [第2層通道通訊協定](#)
- [配置虛擬專用網路](#)
- [使用RADIUS設定第2層通道通訊協定驗證](#)
- [技術支援與文件 - Cisco Systems](#)