

Equilibrio de carga y Conmutación por falla L2TP

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[Introducción](#)

Este documento explica las capacidades de un L2TP Access Concentrator (LAC) que realiza las funciones del Equilibrio de carga y de la Conmutación por falla a los servidores de red múltiples L2TP (LNS).

[prerrequisitos](#)

[Requisitos](#)

No hay requisitos específicos para este documento.

[Componentes Utilizados](#)

Este documento no tiene restricciones específicas en cuanto a versiones de software y de hardware.

[Convenciones](#)

Consulte [Convenciones de Consejos Técnicos Cisco](#) para obtener más información sobre las convenciones del documento.

Equilibrio de carga LNS

Al usar el RADIUS para entregar la información del túnel del Virtual Private Dialup Network (VPDN) a un LAC, es posible remitir a los usuarios del mismo Dialed Number Identification Service (DNIS) o dominio al LNS múltiple. Esto es un requisito cuando los túneles y las sesiones entrantes necesitan ser compartidos a través de los LNS múltiples para ayudar en la distribución de carga y para ofrecer niveles más altos de Redundancia. Para habilitar la característica del Equilibrio de carga, los IP Addresses para cada LNS que está disponible pues un punto final del túnel se debe entregar en los pares del atributo/del valor del Atributo específico del proveedor (VSA) de Cisco.

```
Cisco:Avpair = "vpdn:ip-addresses=10.51.6.82,10.51.6.59"
```

“,” Se utiliza como delimitador para indicar que hay puntos finales múltiples disponibles para el LAC (usted puede también utilizar un espacio como el delimitador para indicar la prioridad equivalente de los puntos finales del túnel). El LAC selecciona que el punto final para utilizar basó en la Selección aleatoria de la primera dirección IP inactiva entregada. Si esto está ocupado (el LAC no puede conectar con la dirección IP) que se selecciona la dirección IP siguiente. Si no hay IP Addresses inactivos disponibles, la selección siguiente se basa en una dirección IP que esté en el “estado de túnel abierto”, y finalmente una dirección IP que sea “estado de túnel pendiente”.

Conmutación por falla LNS

El software de Cisco IOS® permite un máximo de seis niveles de prioridad al utilizar los LNS múltiples. Usando “/” como el delimitador, usted puede asignar a diversos grupos prioritarios al LNS que se descarguen al LAC. Esto permite que ciertos LNS actúen como el LNS primario y otros como respaldo. Como antes, los puntos finales del túnel se entregan en los pares del atributo/del valor de Cisco VSA.

```
Cisco:Avpair = "vpdn:ip-addresses=10.51.6.82/10.51.6.59"
```

“/” Delimitador indica que 10.51.6.82 está en el grupo prioritario 1 y 10.51.6.59 está en el grupo prioritario 2.

Equilibrio de carga y Conmutación por falla LNS

Es posible utilizar el Equilibrio de carga y la Conmutación por falla en el mismo perfil. Esto se alcanza usando `vpdn` de los pares del atributo/del valor de Cisco VSA el “: IP address”, como se muestra aquí:

```
Cisco:Avpair = "vpdn:ip-addresses=1.1.1.1,2.2.2.2/3.3.3.3,4.4.4.4/5.5.5.5,6.6.6.6"
```

Esto se interpreta como:

- los puntos finales del túnel 1.1.1.1 y 2.2.2.2 están en el grupo prioritario 1
- los puntos finales del túnel 3.3.3.3 y 4.4.4.4 están en el grupo prioritario 2
- los puntos finales del túnel 5.5.5.5 y 6.6.6.6 están en el grupo prioritario 3

La función del Equilibrio de carga se realiza en el grupo prioritario 1 - inactivo/NON-ocupado, abierto, pendiente. Si ningunos están disponibles en este nivel de prioridad, vaya al nivel de

prioridad siguiente, y continúe la lógica de selección.

Prueba de laboratorio

La prueba en esta sección muestra tres diversos escenarios para usar las características del Equilibrio de carga y de la Conmutación por falla:

- El Equilibrio de carga LNS usando el atributo específico del proveedor/el valor de Cisco empareja
- La Conmutación por falla LNS usando el atributo específico del proveedor/el valor de Cisco empareja
- Equilibrio de carga y Conmutación por falla LNS usando los pares del atributo específico del proveedor/del valor de Cisco

El Equilibrio de carga LNS usando el atributo específico del proveedor/el valor de Cisco empareja

Perfil de RADIUS

Perfiles del usuario de RADIUS y del túnel en el servidor Merit RADIUS 3.6B:

```
2500-1 Password = "cisco"  
Service-Type = Framed,  
Framed-Protocol = PPP,  
Framed-IP-Address = 255.255.255.255
```

```
dnis:614629 Password = "cisco"  
Service-Type = Outbound,  
Cisco:Avpair = "vpdn:tunnel-type=l2tp",  
Cisco:Avpair = "vpdn:tunnel-id=hgw",  
Cisco:Avpair = "vpdn:ip-addresses=10.51.6.82,10.51.6.59",  
Cisco:Avpair = "vpdn:l2tp-tunnel-password=hello"
```

LAC - Configuración

```
aaa new-model  
!--- Enables Authentication, Authorization and Accounting functionality. aaa group server radius  
NSA_LAB server 10.51.6.3 auth-port 1645 acct-port 0 non-standard ! aaa authentication login  
default local aaa authentication ppp default local group NSA_LAB aaa authentication ppp DIAL  
group NSA_LAB local aaa authorization network default group NSA_LAB local aaa authorization  
network DIAL group NSA_LAB local !--- Authentication and Authorization will be implemented !---  
in sequence by the methods configured. vpdn enable !--- Enables the VPDN feature. no vpdn  
logging vpdn search-order dnis !--- Once LCP state is open, the dialed number is checked !--- to  
see if the remote is a VPDN user. interface Serial0:15 no ip address encapsulation ppp no  
logging event link-status dialer rotary-group 1 dialer-group 1 autodetect encapsulation ppp v120  
no snmp trap link-status isdn switch-type primary-net5 isdn incoming-voice modem compress stac !  
interface Dialer1 ip unnumbered Loopback0 encapsulation ppp no ip mroute-cache dialer-group 1  
autodetect encapsulation ppp v120 !--- Allows the encapsulation type to be dynamically set if  
the call !--- type is not identified in the ISDN Q.931 Lower Layer Compatibility. peer default  
ip address pool default compress stac ppp authentication chap pap DIAL ppp authorization DIAL !--  
-- The list-name DIAL is configured, that PPP Authentication and !--- Authorization will use.  
ppp chap hostname 5300-1 !--- The name 5300-1 is used for all CHAP challenge and response on !---  
- this interface. ppp multilink ! radius-server host 10.51.6.3 auth-port 1645 acct-port 1646  
non-standard !--- 'non-standard' indicates that the RADIUS Server will use !--- non standard  
RADIUS attributes.
```

LNS - Configuración

```
aaa new-model
!--- Enables Authentication, Authorization and Accounting functionality. aaa authentication
login default local aaa authentication enable default group radius enable aaa authentication ppp
default local aaa authentication ppp vpdn group radius none aaa authorization network default
local none aaa authorization network vpdn group radius local !--- Authentication and
Authorization will be implemented !--- in sequence by the methods configured. vpdn enable !---
Enables the VPDN feature. vpdn-group 1 accept-dialin protocol l2tp virtual-template 1 local name
l2tp-gw l2tp tunnel password 7 1211001B1E04 !--- The LNS will accept connections from the LAC
using L2TP !--- using All Virtual-Access Interfaces that are created will be cloned from !---
Virtual-Template 1. The name 'l2tp-gw' is used to identify the password, !--- that will
authenticate the tunnel, is encrypted. interface Ethernet5/0 ip address 10.51.6.59 255.255.252.0
! interface Virtual-Templatel ip unnumbered Ethernet5/0 no ip route-cache cef peer default ip
address pool default ppp authentication chap vpdn ppp authorization vpdn ! radius-server host
10.51.6.3 auth-port 1645 acct-port 1646 non-standard !--- 'non-standard' identifies the RADIUS
Server will be !--- using nonstandard RADIUS attributes.
```

Debugs tomados del LAC

```
Jan 1 00:32:54.847: %LINK-3-UPDOWN: Interface Serial0:0, changed state to up
Jan 1 00:32:55.027: Se0:0 PPP: Treating connection as a callin
Jan 1 00:32:55.027: Se0:0 PPP: Phase is ESTABLISHING, Passive Open
Jan 1 00:32:55.027: Se0:0 CHAP: Using alternate hostname 5300-1
Jan 1 00:32:55.027: Se0:0 LCP: State is Listen
Jan 1 00:32:55.027: Se0:0 LCP: I CONFREQ [Listen] id 112 len 10
- snip -
Jan 1 00:32:55.063: Se0:0 LCP: State is Open Jan 1 00:32:55.063: Se0:0 PPP: Phase is
AUTHENTICATING, by this end Jan 1 00:32:55.063: Se0:0 CHAP: Using alternate hostname 5300-1 Jan
1 00:32:55.063: Se0:0 CHAP: O CHALLENGE id 14 len 27 from "5300-1" Jan 1 00:32:55.083: Se0:0
CHAP: I RESPONSE id 14 len 27 from "2500-1" Jan 1 00:32:55.083: Se0:0 PPP: Phase is FORWARDING
Jan 1 00:32:55.083: Se0:0 VPDN: Got DNIS string 614629 Jan 1 00:32:55.083: Se0:0 VPDN: Looking
for tunnel -- dnis:614629 -- Jan 1 00:32:55.083: Serial0:0 AAA/AUTHOR/VPDN (480033158):
Port='Serial0:0' list='default' service=NET Jan 1 00:32:55.083: AAA/AUTHOR/VPDN: Serial0:0
(480033158) user='dnis:614629' Jan 1 00:32:55.087: Serial0:0 AAA/AUTHOR/VPDN (480033158): send
AV service=ppp Jan 1 00:32:55.087: Serial0:0 AAA/AUTHOR/VPDN (480033158): send AV protocol=vpdn
Jan 1 00:32:55.087: Serial0:0 AAA/AUTHOR/VPDN (480033158): found list "default" Jan 1
00:32:55.087: Serial0:0 AAA/AUTHOR/VPDN (480033158): Method=NSA_LAB (radius) Jan 1 00:32:55.087:
RADIUS: Initial Transmit Serial0:0 id 50 10.51.6.3:1645, Access-Request, len 100 Jan 1
00:32:55.087: Attribute 4 6 0A330644 Jan 1 00:32:55.087: Attribute 5 6 00000000 Jan 1
00:32:55.087: Attribute 26 17 00000009020B5365 Jan 1 00:32:55.087: Attribute 61 6 00000002 Jan 1
00:32:55.087: Attribute 1 13 646E6973 Jan 1 00:32:55.087: Attribute 30 8 36313436 Jan 1
00:32:55.087: Attribute 2 18 F0AF3BC4 Jan 1 00:32:55.087: Attribute 6 6 00000005 Jan 1
00:32:55.091: RADIUS: Received from id 50 10.51.6.3:1645, Access-Accept, len 167 Jan 1
00:32:55.091: Attribute 6 6 00000005 Jan 1 00:32:55.091: Attribute 26 29 0000000901177670 Jan 1
00:32:55.091: Attribute 26 26 0000000901147670 Jan 1 00:32:55.091: Attribute 26 47
0000000901297670 Jan 1 00:32:55.091: Attribute 26 39 0000000901217670 !--- LAC receives a call,
negotiates PPP, LCP is declared Open, !--- the dialed number is queried to ascertain if this is
a VPDN customer. !--- VPDN attempts to find an existing tunnel for the user, queries RADIUS for
!--- the tunnel information. Jan 1 00:32:55.091: RADIUS: saved authorization data for user
61F40024 at 61F9813C Jan 1 00:32:55.091: RADIUS: cisco AVPair "vpdn:tunnel-type=l2tp" Jan 1
00:32:55.091: RADIUS: cisco AVPair "vpdn:tunnel-id=hgw" Jan 1 00:32:55.091: RADIUS: cisco AVPair
"vpdn:ip-addresses=10.51.6.82,10.51.6.59" Jan 1 00:32:55.095: RADIUS: cisco AVPair "vpdn:l2tp-
tunnel-password=hello" Jan 1 00:32:55.095: AAA/AUTHOR (480033158): Post authorization status =
PASS_ADD Jan 1 00:32:55.095: AAA/AUTHOR/VPDN: Processing AV service=ppp Jan 1 00:32:55.095:
AAA/AUTHOR/VPDN: Processing AV protocol=vpdn Jan 1 00:32:55.095: AAA/AUTHOR/VPDN: Processing AV
tunnel-type=l2tp Jan 1 00:32:55.095: AAA/AUTHOR/VPDN: Processing AV tunnel-id=hgw Jan 1
00:32:55.095: AAA/AUTHOR/VPDN: Processing AV ip-addresses= 10.51.6.82,10.51.6.59 Jan 1
00:32:55.095: AAA/AUTHOR/VPDN: Processing AV l2tp-tunnel-password=hello Jan 1 00:32:55.095:
Se0:0 VPDN/RPMS/: Got tunnel info for dnis:614629 Jan 1 00:32:55.095: Se0:0 VPDN/RPMS/: LAC hgw
Jan 1 00:32:55.095: Se0:0 VPDN/RPMS/: l2tp-busy-disconnect yes Jan 1 00:32:55.095: Se0:0
VPDN/RPMS/: l2tp-tunnel-password xxxxxx Jan 1 00:32:55.095: Se0:0 VPDN/RPMS/: 2 IP addresses Jan
1 00:32:55.095: Se0:0 VPDN/RPMS/: IP 10.51.6.82 Priority 1 Jan 1 00:32:55.095: Se0:0 VPDN/RPMS/:
```

IP 10.51.6.59 Priority 1 Jan 1 00:32:55.095: Se0:0 VPDN/: curlvl 1 Address 0: 10.51.6.82, priority 1 Jan 1 00:32:55.095: Se0:0 VPDN/: Select non-active address 10.51.6.82, priority 1 !---
- The tunnel information is downloaded, using Cisco VSA. Two LNS IP !--- Addresses are used with a ',' as the delimiter, indicating that both !--- have equal priority. In this case 10.51.6.82 is selected as the tunnel !--- endpoint. Jan 1 00:32:55.095: Se0:0 VPDN: Find LNS process created Jan 1 00:32:55.095: Tnl 49467 L2TP: SM State idle Jan 1 00:32:55.095: Tnl 49467 L2TP: O SCCRQ Jan 1 00:32:55.099: Tnl 49467 L2TP: Tunnel state change from idle to wait-ctl-reply Jan 1 00:32:55.099: Tnl 49467 L2TP: SM State wait-ctl-reply **Jan 1 00:32:55.099: Se0:0 VPDN: Forward to address 10.51.6.82** Jan 1 00:32:55.099: Se0:0 VPDN: Pending Jan 1 00:32:55.099: Se0:0 VPDN: Process created Jan 1 00:32:55.191: Tnl 49467 L2TP: I SCCRP from l2tp-gw Jan 1 00:32:55.191: Tnl 49467 L2TP: Got a challenge from remote peer, l2tp-gw Jan 1 00:32:55.191: Tnl 49467 L2TP: Got a response from remote peer, l2tp-gw Jan 1 00:32:55.191: Tnl 49467 L2TP: Tunnel Authentication success **Jan 1 00:32:55.191: Tnl 49467 L2TP: Tunnel state change from wait-ctl-reply to established** Jan 1 00:32:55.191: Tnl 49467 L2TP: O SCCCN to l2tp-gw tnlid 62193 Jan 1 00:32:55.195: Tnl 49467 L2TP: SM State established Jan 1 00:32:55.195: Tnl/Cl 49467/16 L2TP: Session FS enabled Jan 1 00:32:55.195: Tnl/Cl 49467/16 L2TP: Session state change from idle to wait-for-tunnel Jan 1 00:32:55.195: Se0:0 Tnl/Cl 49467/16 L2TP: Create session Jan 1 00:32:55.195: Tnl 49467 L2TP: SM State established Jan 1 00:32:55.195: Se0:0 Tnl/Cl 49467/16 L2TP: O ICRQ to l2tp-gw 62193/0 Jan 1 00:32:55.195: Se0:0 Tnl/Cl 49467/16 L2TP: Session state change from wait-for-tunnel to wait-reply Jan 1 00:32:55.195: Se0:0 VPDN: 2500-1 is forwarded Jan 1 00:32:55.327: Se0:0 Tnl/Cl 49467/16 L2TP: O ICCN to l2tp-gw 62193/17 **Jan 1 00:32:55.327: Se0:0 Tnl/Cl 49467/16 L2TP: Session state change from wait-reply to established** Jan 1 00:32:56.195: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0:0, changed state to up Jan 1 00:33:00.851: %ISDN-6-CONNECT:Interface Serial0:0 is now connected to 2500-1 Jan 1 00:33:06.111: %ISDN-6-CONNECT: Interface Serial0:1 is now connected to N/A N/A !--- *Second call is received by the LAC, !--- the dialed number is a VPDN customer.* Jan 1 00:33:35.027: As1 LCP: I CONFREQ [Closed] id 1 len 23 - snip - **Jan 1 00:33:39.275: As1 LCP: State is Open** Jan 1 00:33:39.275: As1 PPP: Phase is AUTHENTICATING, by this end Jan 1 00:33:39.275: As1 CHAP: Using alternate hostname 5300-1 Jan 1 00:33:39.275: As1 CHAP: O CHALLENGE id 2 len 27 from "5300-1" Jan 1 00:33:39.383: As1 CHAP: I RESPONSE id 2 len 25 from "paul" Jan 1 00:33:39.383: As1 PPP: Phase is FORWARDING **Jan 1 00:33:39.383: As1 VPDN: Got DNIS string 614629 Jan 1 00:33:39.383: As1 VPDN: Looking for tunnel -- dnis:614629 --** Jan 1 00:33:39.387: Async1 AAA/AUTHOR/VPDN (3019717950): Port='Async1' list='default' service=NET Jan 1 00:33:39.387: AAA/AUTHOR/VPDN: Async1 (3019717950) user='dnis:614629' Jan 1 00:33:39.387: Async1 AAA/AUTHOR/VPDN (3019717950): send AV service=ppp Jan 1 00:33:39.387: Async1 AAA/AUTHOR/VPDN (3019717950): send AV protocol=vpdn Jan 1 00:33:39.387: Async1 AAA/AUTHOR/VPDN (3019717950): found list "default" Jan 1 00:33:39.387: Async1 AAA/AUTHOR/VPDN (3019717950): Method=NSA_LAB (radius) Jan 1 00:33:39.387: RADIUS: Initial Transmit Async1 id 52 10.51.6.3:1645, Access-Request, len 97 Jan 1 00:33:39.387: Attribute 4 6 0A330644 Jan 1 00:33:39.387: Attribute 5 6 00000001 Jan 1 00:33:39.387: Attribute 26 14 0000000902084173 Jan 1 00:33:39.387: Attribute 61 6 00000000 Jan 1 00:33:39.387: Attribute 1 13 646E6973 Jan 1 00:33:39.387: Attribute 30 8 36313436 Jan 1 00:33:39.387: Attribute 2 18 E9164E4C Jan 1 00:33:39.387: Attribute 6 6 00000005 Jan 1 00:33:39.391: RADIUS: Received from id 52 10.51.6.3:1645, Access-Accept, len 167 Jan 1 00:33:39.391: Attribute 6 6 00000005 Jan 1 00:33:39.391: Attribute 26 29 0000000901177670 Jan 1 00:33:39.391: Attribute 26 26 0000000901147670 Jan 1 00:33:39.391: Attribute 26 47 0000000901297670 Jan 1 00:33:39.391: Attribute 26 39 0000000901217670 Jan 1 00:33:39.391: RADIUS: saved authorization data for user 621904CC at 61FAB9EC Jan 1 00:33:39.391: RADIUS: cisco AVPair "vpdn:tunnel-type=l2tp" Jan 1 00:33:39.391: RADIUS: cisco AVPair "vpdn:tunnel-id=hgw" Jan 1 00:33:39.391: RADIUS: cisco AVPair "vpdn:ip-addresses=10.51.6.82,10.51.6.59" Jan 1 00:33:39.391: RADIUS: cisco AVPair "vpdn:l2tp-tunnel-password=hello" Jan 1 00:33:39.395: AAA/AUTHOR (3019717950): Post authorization status = PASS_ADD Jan 1 00:33:39.395: AAA/AUTHOR/VPDN: Processing AV service=ppp Jan 1 00:33:39.395: AAA/AUTHOR/VPDN: Processing AV protocol=vpdn Jan 1 00:33:39.395: AAA/AUTHOR/VPDN: Processing AV tunnel-type=l2tp Jan 1 00:33:39.395: AAA/AUTHOR/VPDN: Processing AV tunnel-id=hgw Jan 1 00:33:39.395: AAA/AUTHOR/VPDN: Processing AV ip-addresses=10.51.6.82,10.51.6.59 Jan 1 00:33:39.395: AAA/AUTHOR/VPDN: Processing AV l2tp-tunnel-password=hello Jan 1 00:33:39.395: As1 VPDN/RPMS/: Got tunnel info for dnis:614629 Jan 1 00:33:39.395: As1 VPDN/RPMS/: LAC hgw Jan 1 00:33:39.395: As1 VPDN/RPMS/: l2tp-busy-disconnect yes Jan 1 00:33:39.395: As1 VPDN/RPMS/: l2tp-tunnel-password xxxxxx Jan 1 00:33:39.395: As1 VPDN/RPMS/: 2 IP addresses Jan 1 00:33:39.395: As1 VPDN/RPMS/: IP 10.51.6.82 Priority 1 Jan 1 00:33:39.395: As1 VPDN/RPMS/: IP 10.51.6.59 Priority 1 Jan 1 00:33:39.395: As1 VPDN/: curlvl 1 Address 1: 10.51.6.59, priority 1 **Jan 1 00:33:39.395: As1 VPDN/: Select non-active address 10.51.6.59, priority 1 !--- The second non-active endpoint is selected 10.51.6.59 !--- and the control connection is established.** Jan 1 00:33:39.395: As1 VPDN: Find LNS process created Jan 1 00:33:39.395: Tnl 20770 L2TP: SM State idle Jan 1 00:33:39.395: Tnl 20770 L2TP: O SCCRQ Jan 1 00:33:39.399: Tnl 20770 L2TP: Tunnel

state change from idle to wait-ctl-reply Jan 1 00:33:39.399: Tnl 20770 L2TP: SM State wait-ctl-reply **Jan 1 00:33:39.399: As1 VPDN: Forward to address 10.51.6.59** Jan 1 00:33:39.399: As1 VPDN: Pending Jan 1 00:33:39.399: As1 VPDN: Process created Jan 1 00:33:39.399: Tnl 20770 L2TP: I SCCRP from l2tp-gw Jan 1 00:33:39.399: Tnl 20770 L2TP: Got a challenge from remote peer, l2tp-gw Jan 1 00:33:39.399: Tnl 20770 L2TP: Got a response from remote peer, l2tp-gw Jan 1 00:33:39.399: Tnl 20770 L2TP: Tunnel Authentication success Jan 1 00:33:39.399: Tnl 20770 L2TP: Tunnel state change from wait-ctl-reply to established Jan 1 00:33:39.403: Tnl 20770 L2TP: O SCCCN to l2tp-gw tnlid 42921 Jan 1 00:33:39.403: Tnl 20770 L2TP: SM State established Jan 1 00:33:39.403: As1 VPDN: Forwarding... Jan 1 00:33:39.403: Tnl/Cl 20770/17 L2TP: Session FS enabled Jan 1 00:33:39.403: Tnl/Cl 20770/17 L2TP: Session state change from idle to wait-for-tunnel Jan 1 00:33:39.403: As1 Tnl/Cl 20770/17 L2TP: Create session Jan 1 00:33:39.403: Tnl 20770 L2TP: SM State established Jan 1 00:33:39.403: As1 Tnl/Cl 20770/17 L2TP: O ICRQ to l2tp-gw 42921/0 Jan 1 00:33:39.403: As1 Tnl/Cl 20770/17 L2TP: Session state change from wait-for-tunnel to wait-reply Jan 1 00:33:39.403: As1 VPDN: paul is forwarded Jan 1 00:33:39.407: As1 Tnl/Cl 20770/17 L2TP: O ICCN to l2tp-gw 42921/16 **Jan 1 00:33:39.407: As1 Tnl/Cl 20770/17 L2TP: Session state change from wait-reply to established**

[Comutación por falla LNS usando los pares del atributo específico del proveedor/del valor de Cisco](#)

[Perfil de RADIUS](#)

Perfiles del usuario de RADIUS y del túnel en el servidor Merit RADIUS 3.6B:

```
2500-1 Password = "cisco"  
Service-Type = Framed,  
Framed-Protocol = PPP,  
Framed-IP-Address = 255.255.255.255
```

```
dnis:614629 Password = "cisco"  
Service-Type = Outbound,  
Cisco:Avpair = "vpdn:tunnel-type=l2tp",  
Cisco:Avpair = "vpdn:tunnel-id=hgw",  
Cisco:Avpair = "vpdn:ip-addresses=10.51.6.82/10.51.6.59",  
Cisco:Avpair = "vpdn:l2tp-tunnel-password=hello"
```

[LAC y configuración LNS](#)

Lo mismo que anteriores.

[Debugs tomados del LAC](#)

```
Jan 1 02:00:35.767: As2 LCP: State is Open Jan 1 02:00:35.767: As2 PPP: Phase is AUTHENTICATING,  
by this end [0 sess, 0 load] Jan 1 02:00:35.767: As2 CHAP: Using alternate hostname 5300-1 Jan 1  
02:00:35.767: As2 CHAP: O CHALLENGE id 1 len 27 from "5300-1" Jan 1 02:00:35.959: As2 CHAP: I  
RESPONSE id 1 len 25 from "paul" Jan 1 02:00:35.959: As2 PPP: Phase is FORWARDING [0 sess, 0  
load] Jan 1 02:00:35.959: As2 VPDN: Got DNIS string 614629 Jan 1 02:00:35.959: As2 VPDN: Looking  
for tunnel -- dnis:614629 -- Jan 1 02:00:35.959: AAA/AUTHOR/VPDN: Async2 (3581154520)  
user='dnis:614629' Jan 1 02:00:35.963: Async2 AAA/AUTHOR/VPDN (3581154520): send AV service=ppp  
Jan 1 02:00:35.963: Async2 AAA/AUTHOR/VPDN (3581154520): send AV protocol=vpdn Jan 1  
02:00:35.963: Async2 AAA/AUTHOR/VPDN (3581154520): found list "default" Jan 1 02:00:35.963:  
Async2 AAA/AUTHOR/VPDN (3581154520): Method=NSA_LAB (radius) Jan 1 02:00:35.963: RADIUS: Initial  
Transmit Async2 id 56 10.51.6.3:1645, Access-Request, len 109 Jan 1 02:00:35.963: Attribute 4 6  
0A330644 Jan 1 02:00:35.963: Attribute 5 6 00000000 Jan 1 02:00:35.963: Attribute 26 14  
0000000902084173 Jan 1 02:00:35.963: Attribute 61 6 00000000 Jan 1 02:00:35.963: Attribute 1 13  
646E6973 Jan 1 02:00:35.963: Attribute 30 8 36313436 Jan 1 02:00:35.963: Attribute 31 12  
31363139 Jan 1 02:00:35.963: Attribute 2 18 2A5AF04C Jan 1 02:00:35.963: Attribute 6 6 00000005  
Jan 1 02:00:35.967: RADIUS: Received from id 56 10.51.6.3:1645, Access-Accept, len 167 Jan 1  
02:00:35.967: Attribute 6 6 00000005 Jan 1 02:00:35.967: Attribute 26 29 0000000901177670 Jan 1
```

02:00:35.967: Attribute 26 26 0000000901147670 Jan 1 02:00:35.967: Attribute 26 47
0000000901297670 Jan 1 02:00:35.967: Attribute 26 39 0000000901217670 Jan 1 02:00:35.967:
RADIUS: cisco AVPair "vpdn:tunnel-type=l2tp" Jan 1 02:00:35.967: RADIUS: cisco AVPair
"vpdn:tunnel-id=hgw" Jan 1 02:00:35.967: RADIUS: cisco AVPair "vpdn:ip-
addresses=10.51.6.82/10.51.6.59" Jan 1 02:00:35.967: RADIUS: cisco AVPair "vpdn:l2tp-tunnel-
password=hello" Jan 1 02:00:35.967: AAA/AUTHOR (3581154520): Post authorization status =
PASS_ADD Jan 1 02:00:35.967: AAA/AUTHOR/VPDN: Processing AV service=ppp Jan 1 02:00:35.967:
AAA/AUTHOR/VPDN: Processing AV protocol=vpdn Jan 1 02:00:35.967: AAA/AUTHOR/VPDN: Processing AV
tunnel-type=l2tp Jan 1 02:00:35.967: AAA/AUTHOR/VPDN: Processing AV tunnel-id=hgw Jan 1
02:00:35.967: AAA/AUTHOR/VPDN: Processing AV ip-addresses= 10.51.6.82/10.51.6.59 Jan 1
02:00:35.967: AAA/AUTHOR/VPDN: Processing AV l2tp-tunnel-password=hello *!--- LAC receives a
call, negotiates PPP, LCP is declared Open, !--- the dialed number is queried to ascertain if
this is a VPDN customer. !--- VPDN attempts to find an existing tunnel for the user, queries
RADIUS for !--- the tunnel information.* Jan 1 02:00:35.967: As2 VPDN/RPMS/: Got tunnel info for
dnis:614629 Jan 1 02:00:35.971: As2 VPDN/RPMS/: LAC hgw Jan 1 02:00:35.971: As2 VPDN/RPMS/:
l2tp-busy-disconnect yes Jan 1 02:00:35.971: As2 VPDN/RPMS/: l2tp-tunnel-password xxxxxx Jan 1
02:00:35.971: As2 VPDN/RPMS/: 2 IP addresses **Jan 1 02:00:35.971: As2 VPDN/RPMS/: IP 10.51.6.82
Priority 1 Jan 1 02:00:35.971: As2 VPDN/RPMS/: IP 10.51.6.59 Priority 2 Jan 1 02:00:35.971: As2
VPDN/: curlvl 1 Address 0: 10.51.6.82, priority 1 Jan 1 02:00:35.971: As2 VPDN/: Select non-
active address 10.51.6.82, priority 1 !--- The tunnel information is downloaded, using Cisco
VSA. !--- Two RADIUS server IP Address's are used with a '/' as the delimiter, !--- indicating
that there are two priority groups. In this case 10.51.6.82, !--- as Priority level 1, is
selected as the tunnel endpoint.** Jan 1 02:00:35.971: Tnl 17044 L2TP: SM State idle Jan 1
02:00:35.971: Tnl 17044 L2TP: O SCCRQ Jan 1 02:00:35.971: Tnl 17044 L2TP: Tunnel state change
from idle to wait-ctl-reply Jan 1 02:00:35.971: Tnl 17044 L2TP: SM State wait-ctl-reply Jan 1
02:00:35.971: As2 VPDN: Find LNS process created Jan 1 02:00:35.971: As2 VPDN: Forward to
address 10.51.6.82 Jan 1 02:00:35.971: As2 VPDN: Pending Jan 1 02:00:35.971: As2 VPDN: Process
created Jan 1 02:00:35.983: Tnl 17044 L2TP: I SCCRP from l2tp-gw Jan 1 02:00:35.983: Tnl 17044
L2TP: Got a challenge from remote peer, l2tp-gw Jan 1 02:00:35.983: Tnl 17044 L2TP: Got a
response from remote peer, l2tp-gw Jan 1 02:00:35.983: Tnl 17044 L2TP: Tunnel Authentication
success **Jan 1 02:00:35.983: Tnl 17044 L2TP: Tunnel state change from wait-ctl-reply to
established** Jan 1 02:00:35.983: Tnl 17044 L2TP: O SCCCN to l2tp-gw tnlid 9017 Jan 1
02:00:35.983: Tnl 17044 L2TP: SM State established Jan 1 02:00:35.983: As2 VPDN: Forwarding...
Jan 1 02:00:35.987: Tnl/Cl 17044/2 L2TP: Session FS enabled Jan 1 02:00:35.987: Tnl/Cl 17044/2
L2TP: Session state change from idle to wait-for-tunnel Jan 1 02:00:35.987: As2 Tnl/Cl 17044/2
L2TP: Create session Jan 1 02:00:35.987: Tnl 17044 L2TP: SM State established Jan 1
02:00:35.987: As2 Tnl/Cl 17044/2 L2TP: O ICRQ to l2tp-gw 9017/0 Jan 1 02:00:35.987: As2 Tnl/Cl
17044/2 L2TP: Session state change from wait-for-tunnel to wait-reply Jan 1 02:00:35.987: As2
VPDN: paul is forwarded Jan 1 02:00:35.995: As2 Tnl/Cl 17044/2 L2TP: O ICCN to l2tp-gw 9017/2
**Jan 1 02:00:35.995: As2 Tnl/Cl 17044/2 L2TP: Session state change from wait-reply to established
!--- The Tunnel and Session are now established. !--- A second call is received by the LAC. Jan
1 02:03:21.775: Se0:1 LCP: State is Open** Jan 1 02:03:21.775: Se0:1 PPP: Phase is AUTHENTICATING,
by this end [0 sess, 0 load] Jan 1 02:03:21.775: Se0:1 CHAP: Using alternate hostname 5300-1 Jan
1 02:03:21.775: Se0:1 CHAP: O CHALLENGE id 1 len 27 from "5300-1" Jan 1 02:03:21.799: Se0:1
CHAP: I RESPONSE id 1 len 27 from "2500-1" Jan 1 02:03:21.799: Se0:1 PPP: Phase is FORWARDING [0
sess, 0 load] **Jan 1 02:03:21.799: Se0:1 VPDN: Got DNIS string 614629 Jan 1 02:03:21.799: Se0:1
VPDN: Looking for tunnel -- dnis:614629 --** Jan 1 02:03:21.799: Serial0:1 AAA/AUTHOR/VPDN
(2106866192): Port='Serial0:1' list='default' service=NET Jan 1 02:03:21.799: AAA/AUTHOR/VPDN:
Serial0:1 (2106866192) user='dnis:614629' Jan 1 02:03:21.799: Serial0:1 AAA/AUTHOR/VPDN
(2106866192): send AV service=ppp Jan 1 02:03:21.799: Serial0:1 AAA/AUTHOR/VPDN (2106866192):
send AV protocol=vpdn Jan 1 02:03:21.799: Serial0:1 AAA/AUTHOR/VPDN (2106866192): found list
"default" Jan 1 02:03:21.799: Serial0:1 AAA/AUTHOR/VPDN (2106866192): Method=NSA_LAB (radius)
Jan 1 02:03:21.803: RADIUS: Initial Transmit Serial0:1 id 60 10.51.6.3:1645, Access-Request, len
112 Jan 1 02:03:21.803: Attribute 4 6 0A330644 Jan 1 02:03:21.803: Attribute 5 6 00000001 Jan 1
02:03:21.803: Attribute 26 17 00000009020B5365 Jan 1 02:03:21.803: Attribute 61 6 00000002 Jan 1
02:03:21.803: Attribute 1 13 646E6973 Jan 1 02:03:21.803: Attribute 30 8 36313436 Jan 1
02:03:21.803: Attribute 31 12 32303835 Jan 1 02:03:21.803: Attribute 2 18 1A511187 Jan 1
02:03:21.803: Attribute 6 6 00000005 Jan 1 02:03:21.803: RADIUS: Received from id 60
10.51.6.3:1645, Access-Accept, len 167 Jan 1 02:03:21.803: Attribute 6 6 00000005 Jan 1
02:03:21.803: Attribute 26 29 0000000901177670 Jan 1 02:03:21.803: Attribute 26 26
0000000901147670 Jan 1 02:03:21.803: Attribute 26 47 0000000901297670 Jan 1 02:03:21.803:
Attribute 26 39 0000000901217670 Jan 1 02:03:21.807: RADIUS: cisco AVPair "vpdn:tunnel-
type=l2tp" Jan 1 02:03:21.807: RADIUS: cisco AVPair "vpdn:tunnel-id=hgw" Jan 1 02:03:21.807:
RADIUS: cisco AVPair "vpdn:ip-addresses=10.51.6.82/10.51.6.59" Jan 1 02:03:21.807: RADIUS: cisco

AVPair "vpdn:l2tp-tunnel-password=hello" Jan 1 02:03:21.807: AAA/AUTHOR (2106866192): Post authorization status = PASS_ADD Jan 1 02:03:21.807: AAA/AUTHOR/VPDN: Processing AV service=ppp Jan 1 02:03:21.807: AAA/AUTHOR/VPDN: Processing AV protocol=vpdn Jan 1 02:03:21.807: AAA/AUTHOR/VPDN: Processing AV tunnel-type=l2tp Jan 1 02:03:21.807: AAA/AUTHOR/VPDN: Processing AV tunnel-id=hgw Jan 1 02:03:21.807: AAA/AUTHOR/VPDN: Processing AV ip-addresses=10.51.6.82/10.51.6.59 Jan 1 02:03:21.807: AAA/AUTHOR/VPDN: Processing AV l2tp-tunnel-password=hello Jan 1 02:03:21.807: Se0:1 VPDN/RPMS/: Got tunnel info for dnis:614629 Jan 1 02:03:21.807: Se0:1 VPDN/RPMS/: LAC hgw Jan 1 02:03:21.807: Se0:1 VPDN/RPMS/: l2tp-busy-disconnect yes Jan 1 02:03:21.807: Se0:1 VPDN/RPMS/: l2tp-tunnel-password xxxxxx Jan 1 02:03:21.807: Se0:1 VPDN/RPMS/: 2 IP addresses **Jan 1 02:03:21.807: Se0:1 VPDN/RPMS/: IP 10.51.6.82 Priority 1 Jan 1 02:03:21.807: Se0:1 VPDN/RPMS/: IP 10.51.6.59 Priority 2 Jan 1 02:03:21.807: Se0:1 VPDN/: curlvl 1 Address 0: 10.51.6.82, priority 1 Jan 1 02:03:21.811: Se0:1 VPDN/: Select open address 10.51.6.82, priority 1 Jan 1 02:03:21.811: Se0:1 VPDN: Forward to address 10.51.6.82 !---** *The tunnel information is downloaded, LNS - 10.51.6.82 is !--- selected again as the tunnel endpoint as this is in Priority level 1.* Jan 1 02:03:21.811: Se0:1 VPDN: Forwarding... Jan 1 02:03:21.811: Tnl/Cl 17044/3 L2TP: Session state change from idle to wait-for-tunnel Jan 1 02:03:21.811: Se0:1 Tnl/Cl 17044/3 L2TP: Create session Jan 1 02:03:21.811: Tnl 17044 L2TP: SM State established Jan 1 02:03:21.811: Se0:1 Tnl/Cl 17044/3 L2TP: O ICRQ to l2tp-gw 9017/0 Jan 1 02:03:21.811: Se0:1 Tnl/Cl 17044/3 L2TP: Session state change from wait-for-tunnel to wait-reply Jan 1 02:03:21.811: Se0:1 VPDN: 2500-1 is forwarded Jan 1 02:03:21.819: Se0:1 Tnl/Cl 17044/3 L2TP: O ICCN to l2tp-gw 9017/3 Jan 1 02:03:21.819: Se0:1 Tnl/Cl 17044/3 L2TP: Session state change from wait-reply to established

[Equilibrio de carga y Conmutación por falla LNS usando los pares del atributo específico del proveedor/del valor de Cisco](#)

[Perfil de RADIUS](#)

Perfil del usuario de RADIUS y del túnel en el servidor Merit RADIUS 3.6B:

```
2500-1 Password = "cisco"
Service-Type = Framed,
Framed-Protocol = PPP,
Framed-IP-Address = 255.255.255.255
dnis:614629 Password = "cisco"
Service-Type = Outbound,
Cisco:Avpair = "vpdn:tunnel-type=l2tp",
Cisco:Avpair = "vpdn:tunnel-id=hgw",
Cisco:Avpair = "vpdn:ip-addresses=
10.51.6.80,10.51.6.59/10.51.6.2,10.51.6.3/10.51.6.82,10.51.6.5",
Cisco:Avpair = "vpdn:l2tp-tunnel-password=hello"
```

[LAC y configuración LNS](#)

Lo mismo que anteriores.

[Debugs tomados del LAC](#)

Jan 1 00:43:11.539: %LINK-3-UPDOWN: Interface Serial0:0, changed state to up

```
Jan 1 00:43:11.755: Se0:0 LCP: State is Open Jan 1 00:43:11.755: Se0:0 PPP: Phase is
AUTHENTICATING, by this end Jan 1 00:43:11.755: Se0:0 CHAP: Using alternate hostname 5300-1 Jan
1 00:43:11.755: Se0:0 CHAP: O CHALLENGE id 18 len 27 from "5300-1" Jan 1 00:43:11.775: Se0:0
CHAP: I RESPONSE id 18 len 27 from "2500-1" Jan 1 00:43:11.775: Se0:0 PPP: Phase is FORWARDING
Jan 1 00:43:11.775: Se0:0 VPDN: Got DNIS string 614629 Jan 1 00:43:11.775: Se0:0 VPDN: Looking
for tunnel -- dnis:614629 -- Jan 1 00:43:11.775: Serial0:0 AAA/AUTHOR/VPDN (2215378044):
Port='Serial0:0' list='default' service=NET Jan 1 00:43:11.775: AAA/AUTHOR/VPDN: Serial0:0
(2215378044) user='dnis:614629' Jan 1 00:43:11.775: Serial0:0 AAA/AUTHOR/VPDN (2215378044): send
AV service=ppp Jan 1 00:43:11.775: Serial0:0 AAA/AUTHOR/VPDN (2215378044): send AV protocol=vpdn
Jan 1 00:43:11.775: Serial0:0 AAA/AUTHOR/VPDN (2215378044): found list "default" Jan 1
```

00:43:11.775: Serial0:0 AAA/AUTHOR/VPDN (2215378044): Method=NSA_LAB (radius) Jan 1
00:43:11.779: RADIUS: Initial Transmit Serial0:0 id 57 10.51.6.3:1645, Access-Request, len 112
Jan 1 00:43:11.779: Attribute 4 6 0A330644 Jan 1 00:43:11.779: Attribute 5 6 00000000 Jan 1
00:43:11.779: Attribute 26 17 00000009020B5365 Jan 1 00:43:11.779: Attribute 61 6 00000002 Jan 1
00:43:11.779: Attribute 1 13 646E6973 Jan 1 00:43:11.779: Attribute 30 8 36313436 Jan 1
00:43:11.779: Attribute 31 12 32303835 Jan 1 00:43:11.779: Attribute 2 18 BA50FCD1 Jan 1
00:43:11.779: Attribute 6 6 00000005 Jan 1 00:43:11.783: RADIUS: Received from id 57
10.51.6.3:1645, Access-Accept, len 208 Jan 1 00:43:11.783: Attribute 6 6 00000005 Jan 1
00:43:11.783: Attribute 26 29 0000000901177670 Jan 1 00:43:11.783: Attribute 26 26
0000000901147670 Jan 1 00:43:11.783: Attribute 26 88 0000000901527670 Jan 1 00:43:11.783:
Attribute 26 39 0000000901217670 Jan 1 00:43:11.783: RADIUS: cisco AVPair "vpdn:tunnel-
type=l2tp" Jan 1 00:43:11.783: RADIUS: cisco AVPair "vpdn:tunnel-id=hgw" Jan 1 00:43:11.783:
RADIUS: cisco AVPair "vpdn:ip-addresses=
10.51.6.80,10.51.6.59/10.51.6.2,10.51.6.3/10.51.6.82,10.51.6.5" Jan 1 00:43:11.783: RADIUS:
cisco AVPair "vpdn:l2tp-tunnel-password=hello" Jan 1 00:43:11.783: AAA/AUTHOR (2215378044): Post
authorization status = PASS_ADD Jan 1 00:43:11.783: AAA/AUTHOR/VPDN: Processing AV service=ppp
Jan 1 00:43:11.783: AAA/AUTHOR/VPDN: Processing AV protocol=vpdn Jan 1 00:43:11.783:
AAA/AUTHOR/VPDN: Processing AV tunnel-type=l2tp Jan 1 00:43:11.783: AAA/AUTHOR/VPDN: Processing
AV tunnel-id=hgw Jan 1 00:43:11.783: AAA/AUTHOR/VPDN: Processing AV ip-addresses=
10.51.6.80,10.51.6.59/10.51.6.2,10.51.6.3/10.51.6.82,10.51.6.5 Jan 1 00:43:11.783:
AAA/AUTHOR/VPDN: Processing AV l2tp-tunnel-password=hello Jan 1 00:43:11.783: Se0:0 VPDN/RPMS/:
Got tunnel info for dnis:614629 Jan 1 00:43:11.783: Se0:0 VPDN/RPMS/: LAC hgw Jan 1
00:43:11.787: Se0:0 VPDN/RPMS/: l2tp-busy-disconnect yes Jan 1 00:43:11.787: Se0:0 VPDN/RPMS/:
l2tp-tunnel-password xxxxxx Jan 1 00:43:11.787: Se0:0 VPDN/RPMS/: 6 IP addresses Jan 1
00:43:11.787: Se0:0 VPDN/RPMS/: IP 10.51.6.80 Priority 1 Jan 1 00:43:11.787: Se0:0 VPDN/RPMS/:
IP 10.51.6.59 Priority 1 Jan 1 00:43:11.787: Se0:0 VPDN/RPMS/: IP 10.51.6.2 Priority 2 Jan 1
00:43:11.787: Se0:0 VPDN/RPMS/: IP 10.51.6.3 Priority 2 Jan 1 00:43:11.787: Se0:0 VPDN/RPMS/: IP
10.51.6.82 Priority 3 Jan 1 00:43:11.787: Se0:0 VPDN/RPMS/: IP 10.51.6.5 Priority 3 *!--- The
tunnel information is downloaded, using Cisco VSA. Two RADIUS !--- server IP Addresses are used
with a '/' as the delimiter for each !--- of the three priority groups. In this case, 10.51.6.82
in Priority !--- Group 3, is the tunnel endpoint that is valid.* Jan 1 00:43:11.787: Se0:0 VPDN/:
curlvl 1 Address 1: 10.51.6.59, priority 1 Jan 1 00:43:11.787: VPDN: Free busy address
10.51.6.59 Jan 1 00:43:11.787: Se0:0 VPDN/: **Select non-active address 10.51.6.59, priority 1** Jan
1 00:43:11.787: Se0:0 VPDN: Find LNS process created Jan 1 00:43:11.787: Tnl 8262 L2TP: SM State
idle Jan 1 00:43:11.787: Tnl 8262 L2TP: O SCCRQ Jan 1 00:43:11.787: Tnl 8262 L2TP: Tunnel state
change from idle to wait-ctl-reply Jan 1 00:43:11.787: Tnl 8262 L2TP: SM State wait-ctl-reply
Jan 1 00:43:11.787: Se0:0 VPDN: Forward to address 10.51.6.59 Jan 1 00:43:11.791: Se0:0 VPDN:
Pending Jan 1 00:43:11.791: Se0:0 VPDN: Process created Jan 1 00:43:12.787: Tnl 8262 L2TP: O
Resend SCCRQ, flg TLS, ver 2, len 128, tnl 0, cl 0, ns 0, nr 0 Jan 1 00:43:12.787: Tnl 8262
L2TP: Control channel retransmit delay set to 1 seconds Jan 1 00:43:13.787: Tnl 8262 L2TP: O
Resend SCCRQ, flg TLS, ver 2, len 128, tnl 0, cl 0, ns 0, nr 0 Jan 1 00:43:13.787: Tnl 8262
L2TP: Control channel retransmit delay set to 2 seconds Jan 1 00:43:15.787: Tnl 8262 L2TP:
Timeout opening tunnel to 10.51.6.59 Jan 1 00:43:15.787: Tnl 63291 L2TP: Control channel
retransmit delay set to 4 seconds Jan 1 00:43:15.787: Se0:0 VPDN/: **curlvl 1 Address 1:
10.51.6.59, priority 1 busy !--- 10.51.6.59 is selected as the first non-active IP Address in
Priority !--- Group 1. As we cannot establish the Control Connection after the !--- 4 second
SCCRQ timeout, we select the next non-active IP !--- Address in the same Priority Group.** Jan 1
00:43:15.787: Se0:0 VPDN/: curlvl 1 Address 0: 10.51.6.80, priority 1 Jan 1 00:43:15.787: VPDN:
Free busy address 10.51.6.80 Jan 1 00:43:15.787: Se0:0 VPDN/: **Select non-active address
10.51.6.80, priority 1** Jan 1 00:43:15.787: Tnl 63291 L2TP: Tunnel state change from wait-ctl-
reply to idle Jan 1 00:43:15.787: Tnl 63291 L2TP: SM State idle Jan 1 00:43:15.787: Tnl 63291
L2TP: O SCCRQ Jan 1 00:43:15.787: Tnl 63291 L2TP: Tunnel state change from idle to wait-ctl-
reply Jan 1 00:43:15.787: Tnl 63291 L2TP: SM State wait-ctl-reply Jan 1 00:43:16.787: Tnl 63291
L2TP: O Resend SCCRQ, flg TLS, ver 2, len 128, tnl 0, cl 0, ns 0, nr 0 Jan 1 00:43:16.787: Tnl
63291 L2TP: Control channel retransmit delay set to 1 seconds Jan 1 00:43:17.543: %ISDN-6-
CONNECT: Interface Serial0:0 is now connected to 2085730592 Jan 1 00:43:17.787: Tnl 63291 L2TP:
O Resend SCCRQ, flg TLS, ver 2, len 128, tnl 0, cl 0, ns 0, nr 0 Jan 1 00:43:17.787: Tnl 63291
L2TP: Control channel retransmit delay set to 2 seconds Jan 1 00:43:19.787: Tnl 63291 L2TP:
Timeout opening tunnel to 10.51.6.80 Jan 1 00:43:19.787: Tnl 52784 L2TP: Control channel
retransmit delay set to 4 seconds Jan 1 00:43:19.787: Se0:0 VPDN/: **curlvl 1 Address 0:
10.51.6.80, priority 1 busy Jan 1 00:43:19.787: Se0:0 VPDN/: curlvl 1 Address 1: 10.51.6.59,
priority 1 busy Jan 1 00:43:19.787: Se0:0 VPDN/: curlvl 2 Address 2: 10.51.6.2, priority 2 Jan 1
00:43:19.787: VPDN: Free busy address 10.51.6.2 Jan 1 00:43:19.787: Se0:0 VPDN/: **Select non-
active address 10.51.6.2, priority 2** Jan 1 00:43:19.787: Tnl 52784 L2TP: Tunnel state change**

from wait-ctl-reply to idle Jan 1 00:43:19.787: Tnl 52784 L2TP: SM State idle Jan 1 00:43:19.787: Tnl 52784 L2TP: O SCCRQ Jan 1 00:43:19.787: Tnl 52784 L2TP: Tunnel state change from idle to wait-ctl-reply Jan 1 00:43:19.787: Tnl 52784 L2TP: SM State wait-ctl-reply Jan 1 00:43:20.787: Tnl 52784 L2TP: O Resend SCCRQ, flg TLS, ver 2, len 128, tnl 0, cl 0, ns 0, nr 0 Jan 1 00:43:20.787: Tnl 52784 L2TP: Control channel retransmit delay set to 1 seconds Jan 1 00:43:21.671: Se0:0 CHAP: I RESPONSE id 18 len 27 from "2500-1" Jan 1 00:43:21.671: Se0:0 VPDN: LCP state already FORWARDING/FORWARDED, silent discard Jan 1 00:43:21.787: Tnl 52784 L2TP: O Resend SCCRQ, flg TLS, ver 2, len 128, tnl 0, cl 0, ns 0, nr 0 Jan 1 00:43:21.787: Tnl 52784 L2TP: Control channel retransmit delay set to 2 seconds Jan 1 00:43:23.787: Tnl 52784 L2TP: Timeout opening tunnel to 10.51.6.2 Jan 1 00:43:23.787: Tnl 42277 L2TP: Control channel retransmit delay set to 4 seconds Jan 1 00:43:23.787: Se0:0 VPDN/: curlvl 2 Address 2: 10.51.6.2, priority 2 busy Jan 1 00:43:23.787: Se0:0 VPDN/: curlvl 2 Address 3: 10.51.6.3, priority 2 Jan 1 00:43:23.787: VPDN: Free busy address 10.51.6.3 **Jan 1 00:43:23.787: Se0:0 VPDN/: Select non-active address 10.51.6.3, priority 2** Jan 1 00:43:23.787: Tnl 42277 L2TP: Tunnel state change from wait-ctl-reply to idle Jan 1 00:43:23.787: Tnl 42277 L2TP: SM State idle Jan 1 00:43:23.787: Tnl 42277 L2TP: O SCCRQ Jan 1 00:43:23.787: Tnl 42277 L2TP: Tunnel state change from idle to wait-ctl-reply Jan 1 00:43:23.787: Tnl 42277 L2TP: SM State wait-ctl-reply Jan 1 00:43:24.787: Tnl 42277 L2TP: O Resend SCCRQ, flg TLS, ver 2, len 128, tnl 0, cl 0, ns 0, nr 0 Jan 1 00:43:24.787: Tnl 42277 L2TP: Control channel retransmit delay set to 1 seconds Jan 1 00:43:25.787: Tnl 42277 L2TP: O Resend SCCRQ, flg TLS, ver 2, len 128, tnl 0, cl 0, ns 0, nr 0 Jan 1 00:43:25.787: Tnl 42277 L2TP: Control channel retransmit delay set to 2 seconds Jan 1 00:43:27.787: Tnl 42277 L2TP: Timeout opening tunnel to 10.51.6.3 Jan 1 00:43:27.787: Tnl 31770 L2TP: Control channel retransmit delay set to 4 seconds Jan 1 00:43:27.787: Se0:0 VPDN/: curlvl 2 Address 3: 10.51.6.3, priority 2 busy Jan 1 00:43:27.787: Se0:0 VPDN/: curlvl 2 Address 2: 10.51.6.2, priority 2 busy Jan 1 00:43:27.787: Se0:0 VPDN/: curlvl 3 Address 4: 10.51.6.82, priority 3 **Jan 1 00:43:27.787: Se0:0 VPDN/: Select non-active address 10.51.6.82, priority 3 !--- Eventually arrive at the IP Address 10.51.6.82 in Priority Group 3. !--- As this is valid, the Control Connection and session are established.** Jan 1 00:43:27.787: Tnl 31770 L2TP: Tunnel state change from wait-ctl-reply to idle Jan 1 00:43:27.787: Tnl 31770 L2TP: SM State idle Jan 1 00:43:27.787: Tnl 31770 L2TP: O SCCRQ Jan 1 00:43:27.787: Tnl 31770 L2TP: Tunnel state change from idle to wait-ctl-reply Jan 1 00:43:27.787: Tnl 31770 L2TP: SM State wait-ctl-reply Jan 1 00:43:27.799: Tnl 31770 L2TP: I SCCRP from l2tp-gw Jan 1 00:43:27.799: Tnl 31770 L2TP: Got a challenge from remote peer, l2tp-gw Jan 1 00:43:27.799: Tnl 31770 L2TP: Got a response from remote peer, l2tp-gw Jan 1 00:43:27.799: Tnl 31770 L2TP: Tunnel Authentication success **Jan 1 00:43:27.799: Tnl 31770 L2TP: Tunnel state change from wait-ctl-reply to established** Jan 1 00:43:27.799: Tnl 31770 L2TP: O SCCCN to l2tp-gw tnlid 3843 Jan 1 00:43:27.799: Tnl 31770 L2TP: SM State established Jan 1 00:43:27.799: Se0:0 VPDN: Forwarding... Jan 1 00:43:27.799: Tnl/Cl 31770/7 L2TP: Session FS enabled Jan 1 00:43:27.799: Tnl/Cl 31770/7 L2TP: Session state change from idle to wait-for-tunnel Jan 1 00:43:27.803: Se0:0 Tnl/Cl 31770/7 L2TP: Create session Jan 1 00:43:27.803: Tnl 31770 L2TP: SM State established Jan 1 00:43:27.803: Se0:0 Tnl/Cl 31770/7 L2TP: O ICRQ to l2tp-gw 3843/0 Jan 1 00:43:27.803: Se0:0 Tnl/Cl 31770/7 L2TP: Session state change from wait-for-tunnel to wait-reply Jan 1 00:43:27.803: Se0:0 VPDN: 2500-1 is forwarded Jan 1 00:43:27.811: Se0:0 Tnl/Cl 31770/7 L2TP: O ICCN to l2tp-gw 3843/9 **Jan 1 00:43:27.811: Se0:0 Tnl/Cl 31770/7 L2TP: Session state change from wait-reply to established** Jan 1 00:43:28.803: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0:0, changed state to up

[Información Relacionada](#)

- [Preferencia de túnel RADIUS para equilibrio de carga y conmutación por falla \(L2TP\)](#)
- [Soporte Técnico y Documentación - Cisco Systems](#)