

Equilibrio de carga y Conmutación por falla L2TP con el Multilink PPP

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[Introducción](#)

Este documento describe las funciones de usar el Equilibrio de carga y la Conmutación por falla con el protocolo multilink point-to-point (PPP) en el protocolo Layer 2 Tunneling Protocol (L2TP).

[prerrequisitos](#)

[Requisitos](#)

Quienes lean este documento deben tener conocimiento de los siguientes temas:

- Virtual Private Dialup Network (VPDN)
- L2TP
- PPP
- MULTILINK PPP

[Componentes Utilizados](#)

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

La información que contiene este documento se creó a partir de los dispositivos en un ambiente de laboratorio específico. Todos los dispositivos que se utilizan en este documento se pusieron en funcionamiento con una configuración verificada (predeterminada). Si la red está funcionando, asegúrese de haber comprendido el impacto que puede tener cualquier comando.

Convenciones

Para obtener más información sobre las convenciones del documento, consulte las [Convenciones de Consejos Técnicos de Cisco](#).

Antecedente

El Multilink PPP permite partir, la recombinación y la secuencia de los datagramas al ejecutarse a través de los links PPP simultáneos múltiples. En el extremo del transmitir, el Multilink PPP prevé la fragmentación de un solo paquete en los paquetes múltiples que se transmitirán a través de los links PPP múltiples. En el extremo de la recepción, el Multilink PPP proporciona el paquete vuelve a montar de los links PPP múltiples nuevamente dentro de su paquete original. Para negociar el Multilink, ambos pares deben estar de acuerdo que son Multilink-capaces, es decir, capaz de combinar los links del múltiple físico en un solo link lógico (referido a menudo como un "conjunto"). La opción del (LCP) del Link Control Protocol usada para indicar que el par es Multilink habilitado es la MAX-Recibir-Reconstruir-unidad (MRRU).

La tabla debajo de la salida de los debugs del software de Cisco IOS® de las demostraciones a partir de dos dispositivos Multilink-habilitados durante las etapas finales de la negociación LCP. Como usted puede ver, ambos envían el CONFACKS que contiene la opción MRRU que indica que el Multilink será utilizado durante esta sesión PPP. El discriminador de punto final también se incluye, aunque no sea necesario hacer tan.

Nota: El discriminador de punto final se puede utilizar en el nombramiento del agrupamiento de links múltiples, aunque el comportamiento predeterminado del Cisco IOS Software sea utilizar el nombre de usuario autenticado solamente.

Si usted encuentra la situación donde el L2TP Access Concentrator (LAC) ha utilizado el Equilibrio de carga y ha hecho un túnel los canales B del par del Multilink a las puntos finales del túnel múltiple, usted ve los casos por-LNS de la interfaz del master del agrupamiento de links múltiples. El par comienza a los paquetes de fragmento y envía éstos simultáneamente sobre los links de miembro. Cada LNS recibe los fragmentos e intenta recombinar, la secuencia falla y los fragmentos perdidos están señalados. Como consecuencia, ningunos datos pueden ser pasados. En estas circunstancias, hay un requisito de notificar otros LNS implicados en el Equilibrio de carga sobre el estatus de los usuarios de links múltiples que están conectados. Para hacer esto, el LNS necesita ser colocado en un multilink de multichasis PPP (MMP) "grupo de pila". La capacidad MMP se basa en los protocolos del protocolo stack group bidding (SGBP) y del Level 2 Forwarding (L2F) de ofrecer y la oferta para la propiedad de las llamadas de links múltiples antes de la llamada que es validada. Requieren al **comando vpdn multihop** permitir los paquetes generados del host remoto para atravesar más de un túnel.

Cuando el LNS recibe una llamada de links múltiples antes de completar la autenticación, el nombre de usuario del telecontrol (que es el nombramiento predeterminado del Cisco IOS Software para el nombre de paquete multilink) se pasa encendido al SGBP. El SGBP proporciona un mecanismo para preguntar para la propiedad existente de una llamada dentro del grupo de pila. Si el miembro del grupo Stack que valida la llamada no es el propietario existente, el SGBP

utiliza un proceso de licitación para resolver la propiedad con los otros miembros del stack. El hacer una oferta está para un usuario determinado, no la conexión individual. Por abandono, el miembro del grupo Stack que recibe la primera llamada gana el proceso de licitación y controla siempre la propiedad de todas las llamadas posteriores de ese usuario. Esto está sin importar el LNS terminal (por la configuración, es posible cambiar el comportamiento proceso de licitación SGBP del proceso, para influenciar quién ganará el proceso de licitación y poseerá la llamada). Cuando todas las llamadas del usuario son disconnected, se abandona la propiedad principal. Una nueva llamada del mismo usuario comienza el proceso de licitación otra vez con la resolución de un nuevo master.

Equilibrio de carga con la secuencia de la conexión PPP de links múltiples

1. Un usuario remoto '2500-1' de SoHo pone una llamada de links múltiples, solo canal, en el LAC. Se establece un link PPP.
2. Se negocia el LCP (los MRRU se incluyen en el CONFACKS) y información del túnel se descarga del RADIUS con los puntos finales del túnel que se utilizarán en el Equilibrio de carga. Se selecciona el punto final del túnel '10.51.6.59' mientras que se remite el primer direccionamiento inactivo y la conexión. Se establecen el túnel y la sesión.
3. El LNS crea la interfaz de acceso virtual 2 para terminar el túnel L2TP. ·Solamente los comandos que comienzan con el `ppp`, el `keepalive`, el `MTU`, el `registro` y el `valor por defecto` se copian de la virtual-plantilla. El virtual-template 1 tiene `multilink ppp` configurado. La información de la configuración LCP entregada en el ICCN es forzada sobre el stack de la interfaz de acceso virtual PPP (ésta incluye el MRRU negociado LAC).
4. El LNS utiliza la respuesta AVP-33 de la autenticación de representación, entregada en el ICCN, para comenzar proceso de licitación SGBP el proceso para cualquier agrupamiento de links múltiples existente con el nombre '2500-1'. Una oferta abierta de la interrogación del dominio se envía para el conjunto '2500-1' con la oferta predeterminada del germen de 50. ·El miembro SGBP '10.51.6.61' contesta con una oferta del dominio de 0 (se disminuye el dominio) pues no hay un conjunto existente para '2500-1'. '10.51.6.59' (local) es principal ahora para '2500-1'. Un cierre de la interrogación del dominio se envía, con el valor de la demanda de la oferta del dominio de 10000 una vez que la determinación de la propiedad es completa.
5. La autenticación y autorización AAA/PPP entonces ocurre. Se envía un pedido de acceso RADIUS.
6. La interfaz de acceso virtual 1 se crea para el master del agrupamiento de links múltiples y se reproduce del virtual-template 1.
7. La negociación IPCP PPP completa y está ABIERTA declarado, un host que la ruta está instalada. El usuario remoto ahora está conectado, y el flujo de tráfico puede comenzar.
8. Debido a los requerimientos de ancho de banda, el usuario remoto '2500-1' de SoHo pone una segunda llamada de links múltiples al LAC.
9. El RADIUS se pregunta otra vez para la información del túnel. Según la lógica del Equilibrio de carga, se selecciona el punto final del túnel inactivo siguiente '10.51.6.61'. Se establecen el túnel y la sesión.
10. El LNS crea la interfaz de acceso virtual 1 para terminar el túnel L2TP. ·El virtual-template 1 se utiliza para reproducirse (hace el "multilink ppp" configurar), la información de la configuración LCP entregada en el ICCN es forzado sobre el stack de la interfaz de acceso virtual PPP (éste incluye el MRRU negociado LAC).
11. Proceso de licitación SGBP es empezado para cualquier agrupamiento de links múltiples

- existente con el nombre '2500-1' enviando una oferta de la interrogación del dominio para el conjunto '2500-1' con la oferta predeterminada del germen de 50.
12. As'10.51.6.59 es ya principal para '2500-1' que la oferta de la calidad de miembro tiene un valor de la demanda de 10000. '10.51.6.61' ahora adelante la conexión PPP a '10.51.6.59'. Un túnel L2F se abre de '10.51.6.61' a '10.51.6.59' (el Tunneling Protocol predeterminado para el multilink de multichasis PPP es L2F). El túnel se autentica usando el nombre de usuario del grupo SGBP "MULTIHOP". Se abren el túnel y la sesión L2F.
 13. La sesión PPP es L2F remitida a '10.51.6.59'. La interfaz de acceso virtual 3 se crea para terminar el túnel L2F y se reproduce del virtual-template 1.
 14. El LAC negoció el estado LCP se juega de nuevo sobre el stack del acceso virtual PPP, e incluye la opción acordada MRRU.
 15. La autenticación y autorización AAA/PPP entonces ocurre. Se envía un pedido de acceso RADIUS.
 16. Se completa la autenticación y la interfaz de acceso virtual 3 se agrega al master del agrupamiento de links múltiples.

Prueba de laboratorio - Equilibrio de carga LNS con el Multilink PPP

Perfil de RADIUS

Este documento utiliza este 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=10.51.6.61,10.51.6.59",
Cisco:Avpair = "vpdn:l2tp-tunnel-password=hello"
```

Configuración LAC

Configuración LAC lo mismo que la configuración previa.

LNS - Configuración para el MULTIHOP de Stackgroup (10.51.6.59 y 10.51.6.61)

```
hostname nsa-7200-2 (10.51.6.61)
username MULTIHOP password 0 cisco
!--- The stack name/password is used to authenticate the SGBP connections between !--- all
member routers. As RADIUS has no concept of SendAuth , the stack name !--- password needs to be
defined locally. sgbp group MULTIHOP !--- The stack group is given a unique username, the name
'MULTIHOP' must be !--- unique within a domain and only one stack group is allowed per router.
sgbp member nsa-7200-3 10.51.6.59 !--- The stack member '10.51.6.59' is defined. vpdn multihop
!--- Enables the LNS to forward Multilink PPP links to Stack Group members that !--- already own
existing bundle Masters for that session. multilink virtual-template 1 !--- The Multilink Bundle
Interface will clone from the Virtual Template 1. interface Virtual-Template1 ip unnumbered
Ethernet3/0 peer default ip address pool default ppp authentication chap vpdn ppp authorization
vpdn ppp chap hostname nsa-7200-2 ppp multilink hostname nsa-7200-3 (10.51.6.59) ! username
```

```
MULTIHOP password 0 cisco ! sgbp group MULTIHOP sgbp member nsa-7200-2 10.51.6.61 vpdn multihop
! multilink virtual-template 1 ! interface Virtual-Template1 ip unnumbered Ethernet3/0 peer
default ip address pool default ppp authentication chap vpdn ppp authorization vpdn ppp chap
hostname nsa-7200-3 ppp multilink
```

Debug tomado del LAC

```
Jan 1 00:01:01.039: %LINK-3-UPDOWN: Interface Serial0:0,
changed state to up
Jan 1 00:01:01.235: Se0:0 PPP: Treating connection as a callin
Jan 1 00:01:01.235: Se0:0 PPP: Phase is ESTABLISHING, Passive Open
Jan 1 00:01:01.239: Se0:0 CHAP: Using alternate hostname 5300-1
Jan 1 00:01:01.239: Se0:0 LCP: State is Listen Jan 1 00:01:01.239: Se0:0 LCP: I CONFREQ [Listen]
id 22 len 23 Jan 1 00:01:01.239: Se0:0 LCP: MagicNumber 0x31BFC605 (0x050631BFC605) Jan 1
00:01:01.239: Se0:0 LCP: MRRU 1524 (0x110405F4) Jan 1 00:01:01.239: Se0:0 LCP: EndpointDisc 1
Local (0x130901323530302D31) Jan 1 00:01:01.239: Se0:0 LCP: O CONFREQ [Listen] id 27 len 28 Jan
1 00:01:01.239: Se0:0 LCP: AuthProto CHAP (0x0305C22305) Jan 1 00:01:01.239: Se0:0 LCP:
MagicNumber 0x15C13318 (0x050615C13318) Jan 1 00:01:01.239: Se0:0 LCP: MRRU 1524 (0x110405F4)
Jan 1 00:01:01.239: Se0:0 LCP: EndpointDisc 1 Local (0x130901353330302D31) Jan 1 00:01:01.239:
Se0:0 LCP: O CONFACK [Listen] id 22 len 23 Jan 1 00:01:01.239: Se0:0 LCP: MagicNumber 0x31BFC605
(0x050631BFC605) Jan 1 00:01:01.239: Se0:0 LCP: MRRU 1524 (0x110405F4) Jan 1 00:01:01.239: Se0:0
LCP: EndpointDisc 1 Local (0x130901323530302D31) Jan 1 00:01:01.287: Se0:0 LCP: I CONFACK
[ACKsent] id 27 len 28 Jan 1 00:01:01.287: Se0:0 LCP: AuthProto CHAP (0x0305C22305) Jan 1
00:01:01.287: Se0:0 LCP: MagicNumber 0x15C13318 (0x050615C13318) Jan 1 00:01:01.287: Se0:0 LCP:
MRRU 1524 (0x110405F4) Jan 1 00:01:01.287: Se0:0 LCP: EndpointDisc 1 Local
(0x130901353330302D31) Jan 1 00:01:01.287: Se0:0 LCP: State is Open Jan 1 00:01:01.287: Se0:0
PPP: Phase is AUTHENTICATING, by this end Jan 1 00:01:01.287: Se0:0 CHAP: Using alternate
hostname 5300-1 Jan 1 00:01:01.287: Se0:0 CHAP: O CHALLENGE id 17 len 27 from "5300-1" Jan 1
00:01:01.315: Se0:0 CHAP: I RESPONSE id 17 len 27 from "2500-1" Jan 1 00:01:01.315: Se0:0 PPP:
Phase is FORWARDING Jan 1 00:01:01.315: Se0:0 VPDN: Got DNIS string 614629 Jan 1 00:01:01.315:
Se0:0 VPDN: Looking for tunnel -- dnis:614629 -- Jan 1 00:01:01.315: Serial0:0 AAA/AUTHOR/VPDN
(552916761): Port='Serial0:0' list='default' service=NET Jan 1 00:01:01.315: AAA/AUTHOR/VPDN:
Serial0:0 (552916761) user='dnis:614629' Jan 1 00:01:01.315: Serial0:0 AAA/AUTHOR/VPDN
(552916761): send AV service=ppp Jan 1 00:01:01.315: Serial0:0 AAA/AUTHOR/VPDN (552916761): send
AV protocol=vpdn Jan 1 00:01:01.315: Serial0:0 AAA/AUTHOR/VPDN (552916761): found list "default"
Jan 1 00:01:01.315: Serial0:0 AAA/AUTHOR/VPDN (552916761): Method=NSA_LAB (radius) Jan 1
00:01:01.319: RADIUS: Initial Transmit Serial0:0 id 34 10.51.6.3:1645, Access-Request, len 112
Jan 1 00:01:01.319: Attribute 4 6 0A330644 Jan 1 00:01:01.319: Attribute 5 6 00000000 Jan 1
00:01:01.319: Attribute 26 17 00000009020B5365 Jan 1 00:01:01.319: Attribute 61 6 00000002 Jan 1
00:01:01.319: Attribute 1 13 646E6973 Jan 1 00:01:01.319: Attribute 30 8 36313436 Jan 1
00:01:01.319: Attribute 31 12 32303835 Jan 1 00:01:01.319: Attribute 2 18 B8DE6FA3 Jan 1
00:01:01.319: Attribute 6 6 00000005 Jan 1 00:01:01.323: RADIUS: Received from id 34
10.51.6.3:1645, Access-Accept, len 167 Jan 1 00:01:01.323: Attribute 6 6 00000005 Jan 1
00:01:01.323: Attribute 26 29 0000000901177670 Jan 1 00:01:01.323: Attribute 26 26
0000000901147670 Jan 1 00:01:01.323: Attribute 26 47 0000000901297670 Jan 1 00:01:01.327:
Attribute 26 39 0000000901217670 Jan 1 00:01:01.327: RADIUS: saved authorization data for user
620DAD68 at 619E9BC0 Jan 1 00:01:01.327: RADIUS: cisco AVPair "vpdn:tunnel-type=l2tp" Jan 1
00:01:01.327: RADIUS: cisco AVPair "vpdn:tunnel-id=hgw" Jan 1 00:01:01.327: RADIUS: cisco AVPair
"vpdn:ip-addresses= 10.51.6.61,10.51.6.59" Jan 1 00:01:01.327: RADIUS: cisco AVPair "vpdn:l2tp-
tunnel-password=hello" Jan 1 00:01:01.327: AAA/AUTHOR (552916761): Post authorization status =
PASS_ADD Jan 1 00:01:01.327: AAA/AUTHOR/VPDN: Processing AV service=ppp Jan 1 00:01:01.327:
AAA/AUTHOR/VPDN: Processing AV protocol=vpdn Jan 1 00:01:01.327: AAA/AUTHOR/VPDN: Processing AV
tunnel-type=l2tp Jan 1 00:01:01.327: AAA/AUTHOR/VPDN: Processing AV tunnel-id=hgw Jan 1
00:01:01.327: AAA/AUTHOR/VPDN: Processing AV ip-addresses= 10.51.6.61,10.51.6.59 Jan 1
00:01:01.327: AAA/AUTHOR/VPDN: Processing AV l2tp-tunnel-password=hello Jan 1 00:01:01.327:
Se0:0 VPDN/RPMS/: Got tunnel info for dnis:614629 Jan 1 00:01:01.327: Se0:0 VPDN/RPMS/: LAC hgw
Jan 1 00:01:01.327: Se0:0 VPDN/RPMS/: l2tp-busy-disconnect yes Jan 1 00:01:01.327: Se0:0
VPDN/RPMS/: l2tp-tunnel-password xxxxxx Jan 1 00:01:01.327: Se0:0 VPDN/RPMS/: 2 IP addresses Jan
1 00:01:01.327: Se0:0 VPDN/RPMS/: IP 10.51.6.61 Priority 1 Jan 1 00:01:01.327: Se0:0 VPDN/RPMS/:
IP 10.51.6.59 Priority 1 Jan 1 00:01:01.331: Se0:0 VPDN/: curlvl 1 Address 1: 10.51.6.59,
priority 1 Jan 1 00:01:01.331: Se0:0 VPDN/: Select non-active address 10.51.6.59, priority 1 Jan
1 00:01:01.331: Se0:0 VPDN: Find LNS process created Jan 1 00:01:01.331: Tnl 5105 L2TP: SM State
idle Jan 1 00:01:01.331: Tnl 5105 L2TP: O SCCRQ Jan 1 00:01:01.331: Tnl 5105 L2TP: Tunnel state
change from idle to wait-ctl-reply Jan 1 00:01:01.331: Tnl 5105 L2TP: SM State wait-ctl-reply
```

Jan 1 00:01:01.331: Se0:0 VPDN: Forward to address 10.51.6.59 Jan 1 00:01:01.331: Se0:0 VPDN: Pending Jan 1 00:01:01.331: Se0:0 VPDN: Process created Jan 1 00:01:01.335: Tnl 5105 L2TP: I SCCRIP from l2tp-gw Jan 1 00:01:01.335: Tnl 5105 L2TP: Got a challenge from remote peer, l2tp-gw Jan 1 00:01:01.335: Tnl 5105 L2TP: Got a response from remote peer, l2tp-gw Jan 1 00:01:01.335: Tnl 5105 L2TP: Tunnel Authentication success **Jan 1 00:01:01.339: Tnl 5105 L2TP: Tunnel state change from wait-ctl-reply to established** Jan 1 00:01:01.339: Tnl 5105 L2TP: O SCCCN to l2tp-gw tnlid 24230 Jan 1 00:01:01.339: Tnl 5105 L2TP: SM State established Jan 1 00:01:01.339: Se0:0 VPDN: Forwarding... Jan 1 00:01:01.339: Tnl/Cl 5105/18 L2TP: Session FS enabled Jan 1 00:01:01.339: Tnl/Cl 5105/18 L2TP: Session state change from idle to wait-for-tunnel Jan 1 00:01:01.339: Se0:0 Tnl/Cl 5105/18 L2TP: Create session Jan 1 00:01:01.339: Tnl 5105 L2TP: SM State established Jan 1 00:01:01.339: Se0:0 Tnl/Cl 5105/18 L2TP: O ICRQ to l2tp-gw 24230/0 Jan 1 00:01:01.339: Se0:0 Tnl/Cl 5105/18 L2TP: Session state change from wait-for-tunnel to wait-reply Jan 1 00:01:01.339: Se0:0 VPDN: 2500-1 is forwarded Jan 1 00:01:01.343: Se0:0 Tnl/Cl 5105/18 L2TP: O ICCN to l2tp-gw 24230/41 **Jan 1 00:01:01.347: Se0:0 Tnl/Cl 5105/18 L2TP: Session state change from wait-reply to established** Jan 1 00:01:02.343: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0:0, changed state to up *!--- Second Multilink Call is placed by the remote user.* Jan 1 00:01:03.123: %LINK-3-UPDOWN: Interface Serial0:1, changed state to up Jan 1 00:01:03.127: %ISDN-6-CONNECT: Interface Serial0:0 is now connected to 2085730592 2500-1 Jan 1 00:01:03.351: Se0:1 PPP: Treating connection as a callin Jan 1 00:01:03.351: Se0:1 PPP: Phase is ESTABLISHING, Passive Open Jan 1 00:01:03.351: Se0:1 CHAP: Using alternate hostname 5300-1 **Jan 1 00:01:03.351: Se0:1 LCP: State is Listen** Jan 1 00:01:03.351: Se0:1 LCP: I CONFREQ [Listen] id 3 len 23 Jan 1 00:01:03.351: Se0:1 LCP: MagicNumber 0x31BFCE57 (0x050631BFCE57) Jan 1 00:01:03.351: Se0:1 LCP: MRRU 1524 (0x110405F4) Jan 1 00:01:03.351: Se0:1 LCP: EndpointDisc 1 Local (0x130901323530302D31) Jan 1 00:01:03.351: Se0:1 LCP: O CONFREQ [Listen] id 3 len 28 Jan 1 00:01:03.351: Se0:1 LCP: AuthProto CHAP (0x0305C22305) Jan 1 00:01:03.351: Se0:1 LCP: MagicNumber 0x15C13B5D (0x050615C13B5D) **Jan 1 00:01:03.351: Se0:1 LCP: MRRU 1524 (0x110405F4)** **Jan 1 00:01:03.351: Se0:1 LCP: EndpointDisc 1 Local (0x130901353330302D31)** Jan 1 00:01:03.355: Se0:1 LCP: O CONFACK [Listen] id 3 len 23 Jan 1 00:01:03.355: Se0:1 LCP: MagicNumber 0x31BFCE57 (0x050631BFCE57) Jan 1 00:01:03.355: Se0:1 LCP: MRRU 1524 (0x110405F4) Jan 1 00:01:03.355: Se0:1 LCP: EndpointDisc 1 Local (0x130901323530302D31) Jan 1 00:01:03.403: Se0:1 LCP: I CONFACK [ACKsent] id 3 len 28 Jan 1 00:01:03.403: Se0:1 LCP: AuthProto CHAP (0x0305C22305) Jan 1 00:01:03.403: Se0:1 LCP: MagicNumber 0x15C13B5D (0x050615C13B5D) **Jan 1 00:01:03.403: Se0:1 LCP: MRRU 1524 (0x110405F4)** **Jan 1 00:01:03.403: Se0:1 LCP: EndpointDisc 1 Local (0x130901353330302D31)** **Jan 1 00:01:03.403: Se0:1 LCP: State is Open** Jan 1 00:01:03.403: Se0:1 PPP: Phase is AUTHENTICATING, by this end Jan 1 00:01:03.403: Se0:1 CHAP: Using alternate hostname 5300-1 Jan 1 00:01:03.407: Se0:1 CHAP: O CHALLENGE id 3 len 27 from "5300-1" Jan 1 00:01:03.435: Se0:1 CHAP: I RESPONSE id 3 len 27 from "2500-1" Jan 1 00:01:03.435: Se0:1 PPP: Phase is FORWARDING **Jan 1 00:01:03.435: Se0:1 VPDN: Got DNIS string 614629** **Jan 1 00:01:03.435: Se0:1 VPDN: Looking for tunnel -- dnis:614629 --** Jan 1 00:01:03.435: Serial0:1 AAA/AUTHOR/VPDN (4201608973): Port='Serial0:1' list='default' service=NET Jan 1 00:01:03.435: AAA/AUTHOR/VPDN: Serial0:1 (4201608973) user='dnis:614629' Jan 1 00:01:03.435: Serial0:1 AAA/AUTHOR/VPDN (4201608973): send AV service=ppp Jan 1 00:01:03.435: Serial0:1 AAA/AUTHOR/VPDN (4201608973): send AV protocol=vpdn Jan 1 00:01:03.435: Serial0:1 AAA/AUTHOR/VPDN (4201608973): found list "default" Jan 1 00:01:03.435: Serial0:1 AAA/AUTHOR/VPDN (4201608973): Method=NSA_LAB (radius) Jan 1 00:01:03.439: RADIUS: Initial Transmit Serial0:1 id 35 10.51.6.3:1645, Access-Request, len 112 Jan 1 00:01:03.439: Attribute 4 6 0A330644 Jan 1 00:01:03.439: Attribute 5 6 00000001 Jan 1 00:01:03.439: Attribute 26 17 00000009020B5365 Jan 1 00:01:03.439: Attribute 61 6 00000002 Jan 1 00:01:03.439: Attribute 1 13 646E6973 Jan 1 00:01:03.439: Attribute 30 8 36313436 Jan 1 00:01:03.439: Attribute 31 12 32303835 Jan 1 00:01:03.439: Attribute 2 18 0FC856FB Jan 1 00:01:03.439: Attribute 6 6 00000005 Jan 1 00:01:03.443: RADIUS: Received from id 35 10.51.6.3:1645, Access-Accept, len 167 Jan 1 00:01:03.443: Attribute 6 6 00000005 Jan 1 00:01:03.443: Attribute 26 29 0000000901177670 Jan 1 00:01:03.443: Attribute 26 26 0000000901147670 Jan 1 00:01:03.443: Attribute 26 47 0000000901297670 Jan 1 00:01:03.443: Attribute 26 39 0000000901217670 Jan 1 00:01:03.443: RADIUS: saved authorization data for user 62127900 at 61CD10A0 Jan 1 00:01:03.443: RADIUS: cisco AVPair "vpdn:tunnel-type=l2tp" Jan 1 00:01:03.443: RADIUS: cisco AVPair "vpdn:tunnel-id=hgw" **Jan 1 00:01:03.443: RADIUS: cisco AVPair "vpdn:ip-addresses= 10.51.6.61,10.51.6.59"** Jan 1 00:01:03.443: RADIUS: cisco AVPair "vpdn:l2tp-tunnel-password=hello" Jan 1 00:01:03.443: AAA/AUTHOR (4201608973): Post authorization status = PASS_ADD Jan 1 00:01:03.443: AAA/AUTHOR/VPDN: Processing AV service=ppp Jan 1 00:01:03.443: AAA/AUTHOR/VPDN: Processing AV protocol=vpdn Jan 1 00:01:03.443: AAA/AUTHOR/VPDN: Processing AV tunnel-type=l2tp Jan 1 00:01:03.443: AAA/AUTHOR/VPDN: Processing AV tunnel-id=hgw Jan 1 00:01:03.443: AAA/AUTHOR/VPDN: Processing AV ip-addresses= 10.51.6.61,10.51.6.59 Jan 1 00:01:03.443: AAA/AUTHOR/VPDN: Processing AV l2tp-tunnel-password=hello Jan 1 00:01:03.443: Se0:1 VPDN/RPMS/: Got tunnel info for dnis:614629 Jan 1 00:01:03.443: Se0:1 VPDN/RPMS/: LAC hgw

Jan 1 00:01:03.443: Se0:1 VPDN/RPMS/: l2tp-busy-disconnect yes Jan 1 00:01:03.443: Se0:1 VPDN/RPMS/: l2tp-tunnel-password xxxxxx Jan 1 00:01:03.443: Se0:1 VPDN/RPMS/: 2 IP addresses Jan 1 00:01:03.443: Se0:1 VPDN/RPMS/: IP 10.51.6.61 Priority 1 Jan 1 00:01:03.447: Se0:1 VPDN/RPMS/: IP 10.51.6.59 Priority 1 Jan 1 00:01:03.447: Se0:1 VPDN/: curlvl 1 Address 1: 10.51.6.59, priority 1 Jan 1 00:01:03.447: Se0:1 VPDN/: curlvl 1 Address 0: 10.51.6.61, priority 1 Jan 1 00:01:03.447: Se0:1 VPDN/: Select non-active address 10.51.6.61, priority 1 Jan 1 00:01:03.447: Se0:1 VPDN: Find LNS process created Jan 1 00:01:03.447: Tnl 49388 L2TP: SM State idle Jan 1 00:01:03.447: Tnl 49388 L2TP: O SCCRQ Jan 1 00:01:03.447: Tnl 49388 L2TP: Tunnel state change from idle to wait-ctl-reply Jan 1 00:01:03.447: Tnl 49388 L2TP: SM State wait-ctl-reply **Jan 1 00:01:03.447: Se0:1 VPDN: Forward to address 10.51.6.61** Jan 1 00:01:03.447: Se0:1 VPDN: Pending Jan 1 00:01:03.447: Se0:1 VPDN: Process created Jan 1 00:01:03.451: Tnl 49388 L2TP: I SCCRP from l2tp-gw Jan 1 00:01:03.451: Tnl 49388 L2TP: Got a challenge from remote peer, l2tp-gw Jan 1 00:01:03.451: Tnl 49388 L2TP: Got a response from remote peer, l2tp-gw Jan 1 00:01:03.451: Tnl 49388 L2TP: Tunnel Authentication success **Jan 1 00:01:03.451: Tnl 49388 L2TP: Tunnel state change from wait-ctl-reply to established** Jan 1 00:01:03.451: Tnl 49388 L2TP: O SCCCN to l2tp-gw tnlid 43591 Jan 1 00:01:03.455: Tnl 49388 L2TP: SM State established Jan 1 00:01:03.455: Se0:1 VPDN: Forwarding... Jan 1 00:01:03.455: Tnl/Cl 49388/19 L2TP: Session FS enabled Jan 1 00:01:03.455: Tnl/Cl 49388/19 L2TP: Session state change from idle to wait-for-tunnel Jan 1 00:01:03.455: Se0:1 Tnl/Cl 49388/19 L2TP: Create session Jan 1 00:01:03.455: Tnl 49388 L2TP: SM State established Jan 1 00:01:03.455: Se0:1 Tnl/Cl 49388/19 L2TP: O ICRQ to l2tp-gw 43591/0 Jan 1 00:01:03.455: Se0:1 Tnl/Cl 49388/19 L2TP: Session state change from wait-for-tunnel to wait-reply Jan 1 00:01:03.455: Se0:1 VPDN: 2500-1 is forwarded Jan 1 00:01:03.459: Se0:1 Tnl/Cl 49388/19 L2TP: O ICCN to l2tp-gw 43591/19 **Jan 1 00:01:03.463: Se0:1 Tnl/Cl 49388/19 L2TP: Session state change from wait-reply to established** Jan 1 00:01:04.455: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0:1, changed state to up Jan 1 00:01:09.127: %ISDN-6-CONNECT: Interface Serial0:1 is now connected to 2085730592 2500-1

[Hace el debug de tomado del LNS - 10.51.6.59](#)

Jan 1 00:01:01.783: L2TP: I SCCRQ from hgw tnl 5105
Jan 1 00:01:01.783: Tnl 24230 L2TP: Got a challenge in SCCRQ, hgw
Jan 1 00:01:01.783: Tnl 24230 L2TP: New tunnel created for remote hgw, address10.51.6.68
Jan 1 00:01:01.783: Tnl 24230 L2TP: O SCCRP to hgw tnlid 5105
Jan 1 00:01:01.783: Tnl 24230 L2TP: Tunnel state change from idle to wait-ctl-reply
Jan 1 00:01:01.787: Tnl 24230 L2TP: I SCCCN from hgw tnl 5105
Jan 1 00:01:01.787: Tnl 24230 L2TP: Got a Challenge Response in SCCCN from hgw
Jan 1 00:01:01.787: Tnl 24230 L2TP: Tunnel Authentication success
Jan 1 00:01:01.787: Tnl 24230 L2TP: Tunnel state change from wait-ctl-reply to established Jan 1 00:01:01.787: Tnl 24230 L2TP: SM State established Jan 1 00:01:01.791: Tnl 24230 L2TP: I ICRQ from hgw tnl 5105 Jan 1 00:01:01.791: Tnl/Cl 24230/41 L2TP: Session FS enabled Jan 1 00:01:01.791: Tnl/Cl 24230/41 L2TP: Session state change from idle to wait-connect Jan 1 00:01:01.791: Tnl/Cl 24230/41 L2TP: New session created Jan 1 00:01:01.791: Tnl/Cl 24230/41 L2TP: O ICRP to hgw 5105/18 Jan 1 00:01:01.795: Tnl/Cl 24230/41 L2TP: I ICCN from hgw tnl 5105, cl 18 **Jan 1 00:01:01.795: Tnl/Cl 24230/41 L2TP: Session state change from wait-connect to established** Jan 1 00:01:01.795: Vi2 VPDN: Virtual interface created for 2500-1 Jan 1 00:01:01.795: Vi2 PPP: Phase is DOWN, Setup Jan 1 00:01:01.799: Vi2 VTEMPLATE: Has a new cloneblk vtemplate, now it has vtemplate Jan 1 00:01:01.799: Vi2 VTEMPLATE: ***** CLONE VACCESS2 ***** Jan 1 00:01:01.799: Vi2 VTEMPLATE: Clone from Virtual-Templatel interface Virtual-Access2 default ip address ppp authentication chap vpdn ppp authorization vpdn **ppp multilink** pp chap hostname nsa-7200-3 end Jan 1 00:01:01.835: %LINK-3-UPDOWN: Interface Virtual-Access2, changed state to up Jan 1 00:01:01.835: Vi2 PPP: Using set call direction Jan 1 00:01:01.835: Vi2 PPP: Treating connection as a callin Jan 1 00:01:01.835: Vi2 PPP: Phase is ESTABLISHING, Passive Open Jan 1 00:01:01.835: Vi2 CHAP: Using alternate hostname nsa-7200-3 Jan 1 00:01:01.835: Vi2 LCP: State is Listen Jan 1 00:01:01.835: Vi2 LCP: I FORCED CONFREQ len 24 Jan 1 00:01:01.835: Vi2 LCP: AuthProto CHAP (0x0305C22305) Jan 1 00:01:01.835: Vi2 LCP: MagicNumber 0x15C13318 (0x050615C13318) **Jan 1 00:01:01.835: Vi2 LCP: MRRU 1524 (0x110405F4)** Jan 1 00:01:01.835: Vi2 LCP: EndpointDisc 1 Local (0x130901353330302D31) Jan 1 00:01:01.835: Vi2 VPDN: PPP LCP accepted rcv CONFACK Jan 1 00:01:01.835: Vi2 LCP: I FORCED CONFACK len 19 Jan 1 00:01:01.835: Vi2 LCP: MagicNumber 0x31BFC605 (0x050631BFC605) **Jan 1 00:01:01.835: Vi2 LCP: MRRU 1524 (0x110405F4)** Jan 1 00:01:01.835: Vi2 LCP: EndpointDisc 1 Local (0x130901323530302D31) Jan 1 00:01:01.835: Vi2 VPDN: PPP LCP accepted sent CONFACK Jan 1 00:01:01.835: Vi2 PPP: Phase is AUTHENTICATING, by this end Jan 1 00:01:01.835: Vi2 CHAP: Using alternate hostname nsa-7200-3

Jan 1 00:01:01.835: Vi2 CHAP: O CHALLENGE id 3 len 31 from "nsa-7200-3" Jan 1 00:01:01.835: Vi2
CHAP: I RESPONSE id 17 len 27 from "2500-1" Jan 1 00:01:01.835: Vi2 PPP: Phase is FORWARDING Jan
1 00:01:01.835: Vi2 VPDN: Looking for tunnel -- -- Jan 1 00:01:01.839: Vi2 VPDN: Looking for
tunnel -- -- Jan 1 00:01:01.839: %SGBP-7-NEWL: Local query #53 for 2500-1, count 1, ourbid 50
Jan 1 00:01:01.839: Vi2 VPDN: Continue using SGBP for 2500-1 Jan 1 00:01:01.839: Vi2 VPDN:
Pending Jan 1 00:01:01.839: Vi2 VPDN: Process created Jan 1 00:01:02.091: %SGBP-7-DONE: Query
#53 for bundle 2500-1, count 1, master is local Jan 1 00:01:02.091: %SGBP-7-MQB: Bundle: 2500-1
State: Done OurBid: 10000 Jan 1 00:01:02.091: %SGBP-7-PB: 10.51.6.61 State: Rcvd Bid: 000 Retry:
0 Jan 1 00:01:02.091: Vi2 VPDN: Not forwarded Jan 1 00:01:02.091: Vi2 PPP: Phase is
AUTHENTICATING Jan 1 00:01:02.091: Vi2 CHAP: I RESPONSE id 17 len 27 from "2500-1" Jan 1
00:01:02.091: AAA/AUTHEN/START (3376880111): port='Virtual-Access2' list='vpdn' action=LOGI
service=PPP Jan 1 00:01:02.091: AAA/AUTHEN/START (3376880111): found list vpdn Jan 1
00:01:02.091: AAA/AUTHEN/START (3376880111): Method=radius (radius) Jan 1 00:01:02.091: RADIUS:
Initial Transmit Virtual-Access2 id 15 10.51.6.3:1645, Access-Request, len 97 Jan 1
00:01:02.091: Attribute 4 6 0A33063B Jan 1 00:01:02.091: Attribute 5 6 00000002 Jan 1
00:01:02.091: Attribute 61 6 00000005 Jan 1 00:01:02.091: Attribute 1 8 32353030 Jan 1
00:01:02.091: Attribute 30 8 36313436 Jan 1 00:01:02.091: Attribute 31 12 32303835 Jan 1
00:01:02.091: Attribute 3 19 110F710D Jan 1 00:01:02.091: Attribute 6 6 00000002 Jan 1
00:01:02.091: Attribute 7 6 00000001 Jan 1 00:01:02.095: RADIUS: Received from id 15
10.51.6.3:1645, Access-Accept, len 38 Jan 1 00:01:02.095: Attribute 6 6 00000002 Jan 1
00:01:02.095: Attribute 7 6 00000001 Jan 1 00:01:02.095: Attribute 8 6 FFFFFFFF Jan 1
00:01:02.095: AAA/AUTHEN (3376880111): status = PASS Jan 1 00:01:02.095: Vi2 AAA/AUTHOR/LCP:
Authorize LCP Jan 1 00:01:02.095: Vi2 AAA/AUTHOR/LCP (2242497288): Port='Virtual-Access2'
list='vpdn' service=NET Jan 1 00:01:02.099: AAA/AUTHOR/LCP: Vi2 (2242497288) user='2500-1' Jan 1
00:01:02.099: Vi2 AAA/AUTHOR/LCP (2242497288): send AV service=ppp Jan 1 00:01:02.099: Vi2
AAA/AUTHOR/LCP (2242497288): send AV protocol=lcp Jan 1 00:01:02.099: Vi2 AAA/AUTHOR/LCP
(2242497288): found list "vpdn" Jan 1 00:01:02.099: Vi2 AAA/AUTHOR/LCP (2242497288):
Method=radius (radius) Jan 1 00:01:02.099: Vi2 AAA/AUTHOR (2242497288): Post authorization
status = PASS_REPL Jan 1 00:01:02.099: Vi2 AAA/AUTHOR/LCP: Processing AV service=ppp Jan 1
00:01:02.099: Vi2 CHAP: O SUCCESS id 17 len 4 Jan 1 00:01:02.099: Vi2 PPP: Phase is VIRTUALIZED
Jan 1 00:01:02.099: Vi2 AAA/AUTHOR/MLP (2616761311): Port='Virtual-Access2' list='vpdn'
service=NET Jan 1 00:01:02.099: AAA/AUTHOR/MLP: Vi2 (2616761311) user='2500-1' Jan 1
00:01:02.099: Vi2 AAA/AUTHOR/MLP (2616761311): send AV service=ppp Jan 1 00:01:02.099: Vi2
AAA/AUTHOR/MLP (2616761311): send AV protocol=multilink Jan 1 00:01:02.099: Vi2 AAA/AUTHOR/MLP
(2616761311): found list "vpdn" Jan 1 00:01:02.099: Vi2 AAA/AUTHOR/MLP (2616761311):
Method=radius (radius) Jan 1 00:01:02.099: Vi2 AAA/AUTHOR (2616761311): Post authorization
status = PASS_REPL Jan 1 00:01:02.099: Vi1 VTEMPLATE: Set default settings with ip unnumbered
Jan 1 00:01:02.115: Vi1 VTEMPLATE: Hardware address 0010.0ba5.f800 Jan 1 00:01:02.115: Vi1 PPP:
Phase is DOWN, Setup Jan 1 00:01:02.119: Vi1 VTEMPLATE: Has a new cloneblk vtemplate, now it has
vtemplate Jan 1 00:01:02.119: Vi1 VTEMPLATE: ***** CLONE VACCESS1 ***** Jan
1 00:01:02.119: Vi1 VTEMPLATE: Clone from Virtual-Templatel interface Virtual-Access1 default ip
address no ip address encaps ppp ip unnumbered Ethernet5/0 peer default ip address pool default
ppp authentication chap vpdn ppp authorization vpdn **ppp multilink** pp chap hostname nsa-7200-3
end Jan 1 00:01:02.179: Vi2 IPCP: Packet buffered while building MLP bundle interface Jan 1
00:01:02.179: %LINK-3-UPDOWN: Interface Virtual-Access1, changed state to up Jan 1 00:01:02.179:
Vi1 PPP: Treating connection as a dedicated line Jan 1 00:01:02.179: Vi1 PPP: Phase is
ESTABLISHING, Active Open Jan 1 00:01:02.179: Vi1 CHAP: Using alternate hostname nsa-7200-3 Jan
1 00:01:02.179: Vi1 AAA/AUTHOR/FSM: (0): LCP succeeds trivially Jan 1 00:01:02.179: Vi1 LCP: O
CONFREQ [Closed] id 1 len 32 Jan 1 00:01:02.179: Vi1 LCP: AuthProto CHAP (0x0305C22305) Jan 1
00:01:02.179: Vi1 LCP: MagicNumber 0x1F5A340B (0x05061F5A340B) Jan 1 00:01:02.179: Vi1 LCP: MRRU
1524 (0x110405F4) Jan 1 00:01:02.179: Vi1 LCP: EndpointDisc 1 Local
(0x130D016E73612D373230302D33) Jan 1 00:01:02.179: AAA/AUTHOR/MLP Vi1: Processing AV service=ppp
Jan 1 00:01:02.179: Vi1 VPDN: Virtual interface iteration Jan 1 00:01:02.179: Vi1 PPP: Phase is
UP Jan 1 00:01:02.179: Vi1 AAA/AUTHOR/FSM: (0): Can we start IPCP? Jan 1 00:01:02.179: Vi1
AAA/AUTHOR/FSM (2530889481): Port='Virtual-Access2' list='vpdn' service=NET Jan 1 00:01:02.179:
AAA/AUTHOR/FSM: Vi1 (2530889481) user='2500-1' Jan 1 00:01:02.179: Vi1 AAA/AUTHOR/FSM
(2530889481): send AV service=ppp Jan 1 00:01:02.179: Vi1 AAA/AUTHOR/FSM (2530889481): send AV
protocol=ip Jan 1 00:01:02.179: Vi1 AAA/AUTHOR/FSM (2530889481): found list "vpdn" Jan 1
00:01:02.179: Vi1 AAA/AUTHOR/FSM (2530889481): Method=radius (radius) Jan 1 00:01:02.179:
RADIUS: allowing negotiated framed address Jan 1 00:01:02.179: Vi1 AAA/AUTHOR(2530889481): Post
authorization status = PASS_REPL Jan 1 00:01:02.179: Vi1 AAA/AUTHOR/FSM: We can start IPCP Jan 1
00:01:02.183: Vi1 IPCP: O CONFREQ [Closed] id 1 len 10 Jan 1 00:01:02.183: Vi1 IPCP: Address
10.51.6.59 (0x03060A33063B) Jan 1 00:01:02.183: Vi1 MLP: Added first link Vi2 to bundle 2500-1
Jan 1 00:01:02.183: Vi2 IPCP: Redirect packet to Vi1 Jan 1 00:01:02.183: Vi1 IPCP: I CONFREQ

[REQsent] id 1 len 10 Jan 1 00:01:02.183: Vi1 IPCP: Address 10.10.53.2 (0x03060A0A3502) Jan 1 00:01:02.183: Vi1 AAA/AUTHOR/IPCP: Start. Her address 10.10.53.2, we want 0.0.0.0 Jan 1 00:01:02.183: Vi1 AAA/AUTHOR/IPCP (2777739044): Port='Virtual-Access2' list='vpdn' service=NET Jan 1 00:01:02.183: AAA/AUTHOR/IPCP: Vi1 (2777739044) user='2500-1' Jan 1 00:01:02.183: Vi1 AAA/AUTHOR/IPCP (2777739044): send AV service=ppp Jan 1 00:01:02.183: Vi1 AAA/AUTHOR/IPCP (2777739044): send AV protocol=ip Jan 1 00:01:02.183: Vi1 AAA/AUTHOR/IPCP (2777739044): send AV addr*10.10.53.2 Jan 1 00:01:02.183: Vi1 AAA/AUTHOR/IPCP (2777739044): found list "vpdn" Jan 1 00:01:02.183: Vi1 AAA/AUTHOR/IPCP (2777739044): Method=radius (radius) Jan 1 00:01:02.183: RADIUS: allowing negotiated framed address 10.10.53.2 Jan 1 00:01:02.183: Vi1 AAA/AUTHOR (2777739044): Post authorization status = PASS_REPL Jan 1 00:01:02.183: Vi1 AAA/AUTHOR/IPCP: Processing AV service=ppp Jan 1 00:01:02.183: Vi1 AAA/AUTHOR/IPCP: Processing AV addr=10.10.53.2 Jan 1 00:01:02.183: Vi1 AAA/AUTHOR/IPCP: Authorization succeeded Jan 1 00:01:02.183: Vi1 AAA/AUTHOR/IPCP: Done. Her address 10.10.53.2, we want 10.10.53.2 Jan 1 00:01:02.183: Vi1 IPCP: O CONFACK [REQsent] id 1 len 10 Jan 1 00:01:02.211: Vi1 IPCP: Address 10.10.53.2 (0x03060A0A3502) Jan 1 00:01:02.211: Vi1 IPCP: I CONFACK [ACKsent] id 1 len 10 Jan 1 00:01:02.211: Vi1 IPCP: Address 10.51.6.59 (0x03060A33063B) Jan 1 00:01:02.211: Vi1 IPCP: State is Open Jan 1 00:01:02.211: Vi1 AAA/AUTHOR/PER-USER: Event IP_UP Jan 1 00:01:02.211: Vi1 AAA/AUTHOR: IP_UP Jan 1 00:01:02.211: Vi1 AAA/PER-USER: processing author params. Jan 1 00:01:02.215: Vi1 IPCP: Install route to 10.10.53.2 Jan 1 00:01:03.099: %LINEPROTO-5-UPDOWN: Line protocol on Interface Virtual-Access2, changed state to up Jan 1 00:01:03.179: %LINEPROTO-5-UPDOWN: Line protocol on Interface Virtual-Access1, changed state to up **Jan 1 00:01:04.163: %SGBP-7-NEWP: Peer query #54 for 2500-1, count 1, peerbid 50, ourbid 10000 Jan 1 00:01:04.363: %SGBP-7-DONE: Query #54 for bundle 2500-1, count 0, master is local Jan 1 00:01:04.367: L2X: L2F_CONF received Jan 1 00:01:04.367: Tnl 46 L2F: Received L2F-CONF from MULTIHOP Jan 1 00:01:04.367: AAA/AUTHEN/START (1546583827): port='' list='default' action=SENDAUTH service=PPP Jan 1 00:01:04.367: AAA/AUTHEN/START (1546583827): found list default Jan 1 00:01:04.367: AAA/AUTHEN/START (1546583827): Method=LOCAL Jan 1 00:01:04.367: AAA/AUTHEN (1546583827): status = PASS Jan 1 00:01:04.367: AAA/AUTHEN/START (3291965384): port='' list='default' action=SENDAUTH service=PPP Jan 1 00:01:04.367: AAA/AUTHEN/START (3291965384): found list default Jan 1 00:01:04.367: AAA/AUTHEN/START (3291965384): Method=LOCAL Jan 1 00:01:04.367: AAA/AUTHEN (3291965384): status = PASS Jan 1 00:01:04.367: Tnl 46 L2F: Opened UDP socket to 10.51.6.61 using source 10.51.6.59 Jan 1 00:01:04.367: Tnl 46 L2F: Tunnel MULTIHOP state change from closed state opening Jan 1 00:01:04.367: Tnl 46 L2F: Sending L2F-CONF to peer Jan 1 00:01:04.375: Tnl 46 L2F: L2F_OPEN received Jan 1 00:01:04.375: Tnl 46 L2F: OPEN from MULTIHOP received for tunnel in state opening Jan 1 00:01:04.375: AAA/AUTHEN/START (3210024667): port='' list='default' action=LOGIN service=PPP Jan 1 00:01:04.375: AAA/AUTHEN/START (3210024667): found list default Jan 1 00:01:04.375: AAA/AUTHEN/START (3210024667): Method=LOCAL Jan 1 00:01:04.375: AAA/AUTHEN (3210024667): status = PASS Jan 1 00:01:04.375: VPDN: Chap authentication succeeded for MULTIHOP Jan 1 00:01:04.375: Tnl 46 L2F: Tunnel MULTIHOP state change from opening state open Jan 1 00:01:04.375: Tnl 46 L2F: Replying to MULTIHOP with L2F-OPEN Jan 1 00:01:04.379: Tnl 46 L2F: L2F_OPEN received Jan 1 00:01:04.379: Tnl 46 L2F: New OPEN received for Session 12 Jan 1 00:01:04.379: 2500-1Tnl/Cl 46/12 L2F: Session state change from closed to opening Jan 1 00:01:04.379: Vi3 VTEMPLATE: Hardware address 0010.0ba5.f800 Jan 1 00:01:04.379: Vi3 VPDN: Virtual interface created for 2500-1 bandwidth 64 Kbps Jan 1 00:01:04.379: Vi3 PPP: Phase is DOWN, Setup Jan 1 00:01:04.379: Vi3 VTEMPLATE: Has a new cloneblk vtemplate, now it has vtemplate Jan 1 00:01:04.379: Vi3 VTEMPLATE: ***** CLONE VACCESS3 ***** Jan 1 00:01:04.379: Vi3 VTEMPLATE: Clone from Virtual-Templatel interface Virtual-Access3 default ip address ppp authentication chap vpdn ppp authorization vpdn ppp multilink pp chap hostname nsa-7200-3 end Jan 1 00:01:04.419: %LINK-3-UPDOWN: Interface Virtual-Access3, changed state to up Jan 1 00:01:04.419: Vi3 PPP: Using set call direction Jan 1 00:01:04.419: Vi3 PPP: Treating connection as a callin Jan 1 00:01:04.419: Vi3 PPP: Phase is ESTABLISHING, Passive Open Jan 1 00:01:04.419: Vi3 CHAP: Using alternate hostname nsa-7200-3 Jan 1 00:01:04.419: Vi3 LCP: State is Listen Jan 1 00:01:04.419: Vi3 LCP: I FORCED CONFREQ len 24 Jan 1 00:01:04.419: Vi3 LCP: AuthProto CHAP (0x0305C22305) Jan 1 00:01:04.419: Vi3 LCP: MagicNumber 0x15C13B5D (0x050615C13B5D) **Jan 1 00:01:04.419: Vi3 LCP: MRRU 1524 (0x110405F4) Jan 1 00:01:04.419: Vi3 LCP: EndpointDisc 1 Local (0x130901353330302D31) Jan 1 00:01:04.419: Vi3 VPDN: PPP LCP accepted rcv CONFACK Jan 1 00:01:04.419: Vi3 LCP: I FORCED CONFACK len 19 Jan 1 00:01:04.419: Vi3 LCP: MagicNumber 0x31BFCE57 (0x050631BFCE57) Jan 1 00:01:04.419: Vi3 LCP: MRRU 1524 (0x110405F4) Jan 1 00:01:04.419: Vi3 LCP: EndpointDisc 1 Local (0x130901323530302D31) Jan 1 00:01:04.419: Vi3 VPDN: PPP LCP accepted sent CONFACK Jan 1 00:01:04.419: Vi3 PPP: Phase is AUTHENTICATING, by this end Jan 1 00:01:04.419: Vi3 CHAP: Using alternate hostname nsa-7200-3 Jan 1 00:01:04.419: Vi3 CHAP: O CHALLENGE id 3 len 31 from "nsa-7200-3" Jan 1 00:01:04.419: Vi3 Tnl/Cl 46/12 L2F: Transfer NAS-Rate L2F/64000/64000 to LCP Jan 1 00:01:04.419: Vi3 CHAP: I RESPONSE id 3 len 27 from "2500-1" Jan 1 00:01:04.419: Vi3 PPP: Phase is FORWARDING Jan 1 00:01:04.423: Vi3 VPDN:****

Looking for tunnel -- -- Jan 1 00:01:04.423: Vi3 VPDN: Looking for tunnel -- -- Jan 1
00:01:04.423: Vi3 VPDN: Multihop illegal for Multichassis Multilink !--- This debug message is
generated as the Cisco IOS software checks to see !--- if the second and first hops are already
an existing Multichassis tunnel. !--- If so, the tunnel is disallowed. Jan 1 00:01:04.423: Vi3
VPDN: Continue PPP authentication for 2500-1 Jan 1 00:01:04.423: Vi3 PPP: Phase is
AUTHENTICATING Jan 1 00:01:04.423: Vi3 Tnl/Cl 46/12 L2F: Created VA for Mid, Replying with OPEN
Jan 1 00:01:04.423: Vi3 Tnl/Cl 46/12 L2F: Session state change from opening to open Jan 1
00:01:04.423: AAA/AUTHEN/START (578160697): port='Virtual-Access3' list='vpdn' action=LOGIN
service=PPP Jan 1 00:01:04.423: AAA/AUTHEN/START (578160697): found list vpdn Jan 1
00:01:04.423: AAA/AUTHEN/START (578160697): Method=radius (radius) Jan 1 00:01:04.423: RADIUS:
Initial Transmit Virtual-Access3 id 16 10.51.6.3:1645, Access-Request, len 97 Jan 1
00:01:04.423: Attribute 4 6 0A33063B Jan 1 00:01:04.423: Attribute 5 6 00000003 Jan 1
00:01:04.423: Attribute 61 6 00000005 Jan 1 00:01:04.423: Attribute 1 8 32353030 Jan 1
00:01:04.423: Attribute 30 8 36313436 Jan 1 00:01:04.423: Attribute 31 12 32303835 Jan 1
00:01:04.423: Attribute 3 19 03A99FFB Jan 1 00:01:04.423: Attribute 6 6 00000002 Jan 1
00:01:04.423: Attribute 7 6 00000001 Jan 1 00:01:04.427: RADIUS: Received from id 16
10.51.6.3:1645, Access-Accept, len 38 Jan 1 00:01:04.427: Attribute 6 6 00000002 Jan 1
00:01:04.427: Attribute 7 6 00000001 Jan 1 00:01:04.427: Attribute 8 6 FFFFFFFF Jan 1
00:01:04.427: AAA/AUTHEN (578160697): status = PASS Jan 1 00:01:04.427: Vi3 AAA/AUTHOR/LCP:
Authorize LCP Jan 1 00:01:04.427: Vi3 AAA/AUTHOR/LCP (2032781798): Port='Virtual-Access3'
list='vpdn' service=NET Jan 1 00:01:04.427: AAA/AUTHOR/LCP: Vi3 (2032781798) user='2500-1' Jan 1
00:01:04.427: Vi3 AAA/AUTHOR/LCP (2032781798): send AV service=ppp Jan 1 00:01:04.427: Vi3
AAA/AUTHOR/LCP (2032781798): send AV protocol=lcp Jan 1 00:01:04.427: Vi3 AAA/AUTHOR/LCP
(2032781798): found list "vpdn" Jan 1 00:01:04.427: Vi3 AAA/AUTHOR/LCP (2032781798):
Method=radius (radius) Jan 1 00:01:04.427: Vi3 AAA/AUTHOR (2032781798): Post authorization
status = PASS_REPL Jan 1 00:01:04.427: Vi3 AAA/AUTHOR/LCP: Processing AV service=ppp Jan 1
00:01:04.427: Vi3 CHAP: O SUCCESS id 3 len 4 Jan 1 00:01:04.427: Vi3 PPP: Phase is VIRTUALIZED
Jan 1 00:01:04.427: Vi1 MLP: Added link Vi3 to bundle 2500-1 Jan 1 00:01:04.491: %SGBP-7-MQB:
Bundle: 2500-1 State: Done OurBid:10000 Jan 1 00:01:04.491: %SGBP-7-PB: 10.51.6.61 State: Closed
Bid: 050 Retry: 1 Jan 1 00:01:05.427: %LINEPROTO-5-UPDOWN: Line protocol on Interface Virtual-
Access3, changed state to up

[Hace el debug de tomado del LNS - 10.51.6.61](#)

Jan 1 00:01:02.399: %SGBP-7-NEW: Peer query #53 for 2500-1,
count 1, peerbid 5 0, ourbid 0
Jan 1 00:01:04.411: L2TP: I SCCRQ from hgw tnl 49388
Jan 1 00:01:04.411: Tnl 43591 L2TP: Got a challenge in SCCRQ, hgw
Jan 1 00:01:04.411: Tnl 43591 L2TP: New tunnel created for remote hgw,
address 10.51.6.68
Jan 1 00:01:04.411: Tnl 43591 L2TP: O SCCRQ to hgw tnlid 49388
Jan 1 00:01:04.411: Tnl 43591 L2TP: Tunnel state change from idle to
wait-ctl-reply
Jan 1 00:01:04.415: Tnl 43591 L2TP: I SCCCN from hgw tnl 49388
Jan 1 00:01:04.415: Tnl 43591 L2TP: Got a Challenge Response in SCCCN from hgw
Jan 1 00:01:04.415: Tnl 43591 L2TP: Tunnel Authentication success
Jan 1 00:01:04.415: Tnl 43591 L2TP: Tunnel state change from wait-ctl-reply
to established
Jan 1 00:01:04.415: Tnl 43591 L2TP: SM State established
Jan 1 00:01:04.419: Tnl 43591 L2TP: I ICRQ from hgw tnl 49388
Jan 1 00:01:04.419: Tnl/Cl 43591/19 L2TP: Session FS enabled
Jan 1 00:01:04.419: Tnl/Cl 43591/19 L2TP: Session state change from idle
to wait-connect
Jan 1 00:01:04.419: Tnl/Cl 43591/19 L2TP: New session created
Jan 1 00:01:04.419: Tnl/Cl 43591/19 L2TP: O ICRP to hgw 49388/19
Jan 1 00:01:04.423: Tnl/Cl 43591/19 L2TP: I ICCN from hgw tnl 49388, cl 19
Jan 1 00:01:04.423: Tnl/Cl 43591/19 L2TP: Session state change from
wait-connect to established
Jan 1 00:01:04.423: Vi1 VTEMPLATE: Hardware address 0090.b121.0c00
Jan 1 00:01:04.423: Vi1 VPDN: Virtual interface created for 2500-1
Jan 1 00:01:04.423: Vi1 PPP: Phase is DOWN, Setup
Jan 1 00:01:04.423: Vi1 VTEMPLATE: Has a new cloneblk vtemplate,
now it has vtemplate
Jan 1 00:01:04.423: Vi1 VTEMPLATE:

***** CLONE VACCESS1 *****

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Jan 1 00:01:04.423: Vi1 VTEMPLATE: Clone from Virtual-Templat1
interface Virtual-Access1
default ip address
ppp authentication chap vpdn
ppp authorization vpdn
ppp multilink
pp chap hostname nsa-7200-2
end
```

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Jan 1 00:01:04.479: %LINK-3-UPDOWN: Interface Virtual-Access1,
changed state to up
Jan 1 00:01:04.479: Vi1 PPP: Using set call direction
Jan 1 00:01:04.479: Vi1 PPP: Treating connection as a callin
Jan 1 00:01:04.479: Vi1 PPP: Phase is ESTABLISHING, Passive Open
Jan 1 00:01:04.479: Vi1 CHAP: Using alternate hostname nsa-7200-2
Jan 1 00:01:04.479: Vi1 LCP: State is Listen
Jan 1 00:01:04.479: Vi1 VPDN: Bind interface direction=2
Jan 1 00:01:04.479: Vi1 LCP: I FORCED CONFREQ len 24
Jan 1 00:01:04.479: Vi1 LCP: AuthProto CHAP (0x0305C22305)
Jan 1 00:01:04.479: Vi1 LCP: MagicNumber 0x15C13B5D (0x050615C13B5D)
Jan 1 00:01:04.479: Vi1 LCP: MRRU 1524 (0x110405F4)
Jan 1 00:01:04.479: Vi1 LCP: EndpointDisc 1 Local (0x130901353330302D31)
Jan 1 00:01:04.479: Vi1 VPDN: PPP LCP accepted rcv CONFACK
Jan 1 00:01:04.479: Vi1 LCP: I FORCED CONFACK len 19
Jan 1 00:01:04.479: Vi1 LCP: MagicNumber 0x31BFCE57 (0x050631BFCE57)
Jan 1 00:01:04.479: Vi1 LCP: MRRU 1524 (0x110405F4)
Jan 1 00:01:04.479: Vi1 LCP: EndpointDisc 1 Local (0x130901323530302D31)
Jan 1 00:01:04.479: Vi1 VPDN: PPP LCP accepted sent CONFACK
Jan 1 00:01:04.479: Vi1 PPP: Phase is AUTHENTICATING, by this end
Jan 1 00:01:04.483: Vi1 CHAP: O CHALLENGE id 3 len 31 from "nsa-7200-2"
Jan 1 00:01:04.483: Vi1 CHAP: I RESPONSE id 3 len 27 from "2500-1"
Jan 1 00:01:04.483: Vi1 PPP: Phase is FORWARDING
Jan 1 00:01:04.483: Vi1 VPDN: Looking for tunnel -- --
Jan 1 00:01:04.483: Vi1 VPDN: Looking for tunnel -- --
Jan 1 00:01:04.483: %SGBP-7-NEWL: Local query #54 for 2500-1, count 1,
ourbid 50
Jan 1 00:01:04.483: Vi1 VPDN: Continue using SGBP for 2500-1
Jan 1 00:01:04.483: Vi1 VPDN: Pending
Jan 1 00:01:04.483: Vi1 VPDN: Process created
Jan 1 00:01:04.875: %SGBP-7-DONE: Query #54 for bundle 2500-1, count 1,
master is 10.51.6.59
Jan 1 00:01:04.875: %SGBP-7-MQB: Bundle: 2500-1 State: Done OurBid: 050
Jan 1 00:01:04.875: %SGBP-7-PB: 10.51.6.59 State: Closed Bid: 10000 Retry: 0
Jan 1 00:01:04.875: Vi1 VPDN: Forwarding...
Jan 1 00:01:04.875: Vi1 Tnl/Cl 46/12 L2F:
Session_create: Tunnel in closed state
Jan 1 00:01:04.875: Tnl 46 L2F:
UDP socket opened to 10.51.6.59 using source 10.51.6.61
Jan 1 00:01:04.875: Tnl 46 L2F:
Tunnel MULTIHOPE state change from closed stateopening
Jan 1 00:01:04.875: Vi1 Tnl/Cl 46/12 L2F:
Session state change from closed to waiting_for_tunnel
Jan 1 00:01:04.875: Vi1 Tnl/Cl 46/12 L2F:
Session_create: Closed Tunnel being Re-Opened
Jan 1 00:01:04.875: Vi1 VPDN: 2500-1 is forwarded
Jan 1 00:01:04.879: Tnl 46 L2F: L2F_CONF received
Jan 1 00:01:04.879: Tnl 46 L2F: Received L2F-CONF from MULTIHOPE
Jan 1 00:01:04.879: AAA/AUTHEN/START (3039224583):
port='' list='default' action=SENDAUTH service=PPP
Jan 1 00:01:04.883: AAA/AUTHEN/START (3039224583): found list default
Jan 1 00:01:04.883: AAA/AUTHEN/START (3039224583): Method=LOCAL
Jan 1 00:01:04.883: AAA/AUTHEN (3039224583): status = PASS
Jan 1 00:01:04.883: AAA/AUTHEN/START (3797117540):
```

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port='' list='default' action=SENDAUTH service=PPP
Jan 1 00:01:04.883: AAA/AUTHEN/START (3797117540): found list default
Jan 1 00:01:04.883: AAA/AUTHEN/START (3797117540): Method=LOCAL
Jan 1 00:01:04.883: AAA/AUTHEN (3797117540): status = PASS
Jan 1 00:01:04.883: Tnl 46 L2F:
Tunnel MULTIHOPE state change from opening state open
Jan 1 00:01:04.883: Tnl 46 L2F:
Replying with L2F-OPEN, Tunnel in Open-Wait
Jan 1 00:01:04.887: Tnl 46 L2F: L2F_OPEN received
Jan 1 00:01:04.887: Tnl 46 L2F: OPEN from MULTIHOPE
received for tunnel in state open
Jan 1 00:01:04.887: AAA/AUTHEN/START (228147723):
port='' list='default' action=LOGIN service=PPP
Jan 1 00:01:04.887: AAA/AUTHEN/START (228147723): found list default
Jan 1 00:01:04.887: AAA/AUTHEN/START (228147723): Method=LOCAL
Jan 1 00:01:04.887: AAA/AUTHEN (228147723): status = PASS
Jan 1 00:01:04.887: VPDN: Chap authentication succeeded for MULTIHOPE
Jan 1 00:01:04.887: Tnl 46 L2F:
Tunnel MULTIHOPE state change from open state open
Jan 1 00:01:04.887: Vi1 Tnl/Cl 46/12 L2F:
Session state change from waiting_for_tunnel to opening
Jan 1 00:01:04.887: Vi1 Tnl/Cl 46/12 L2F:
Sending OPEN for Open-Waiting Session
Jan 1 00:01:04.935: Vi1 Tnl/Cl 46/12 L2F: L2F_OPEN received
Jan 1 00:01:04.935: Vi1 Tnl/Cl 46/12 L2F:
OPEN received for existing session in state opening
Jan 1 00:01:04.935: Vi1 Tnl/Cl 46/12 L2F:
Session state change from opening to open
Jan 1 00:01:04.935: Vi1 Tnl/Cl 46/12 L2F:
MID synced NAS/HG Clid=46/46 Mid=12
Jan 1 00:01:04.935: Vi1 PPP: Phase is FORWARDED
Jan 1 00:01:05.875: %LINEPROTO-5-UPDOWN: Line protocol on Interface
Virtual-Access1, changed state to up
```

[Información Relacionada](#)

- [Páginas de soporte de la tecnología de marcación](#)
- [Soporte Técnico - Cisco Systems](#)