

在 Cisco 2600 上配置 PPPoE 客户端以连接到非 Cisco DSL CPE

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本文解释如何支持通过以太网接口被连接的Cisco IOS路由器的一个以太网点对点协议(PPPoE)客户端到DSL调制解调器或DSL客户端前置设备(CPE)另一个供应商。

ISP经常提供他们的用户有一个以太网接口连接到用户以太网段的DSL调制解调器和另一个接口为DSL线路连通性。在这种情况下，如果CPE为任何IP连通性或增强的功能不是可配置的在DSL，DSL调制解调器只作为网桥。这对一个PPPoE客户端PC只限制您的连接。增加Cisco IOS路由器被连接到DSL调制解调器的以太网，您能运行在Cisco路由器的PPPoE客户端IOS功能。这能连接在以太网段的多台PC被连接到Cisco IOS路由器。使用使用Cisco IOS路由器，您能提高您的DSL连接和所有IOS功能，例如安全、网络地址转换(NAT)和动态主机配置协议(DHCP)到内部主机。

PPPoE功能允许您起动在一个简单的桥接以太网连接的客户端的一次PPP会话。会话在ATM链路被传输通过被封装的以太网桥接帧。您能终止会话在市话运营商中心局或ISP Point of Presence。

[Prerequisites](#)

[Requirements](#)

There are no specific requirements for this document.

[Components Used](#)

本档中的信息基于以下软件和硬件版本：

- Cisco 827-4V CPE IOS软件版本12.1(1)XB
- 运行Cisco IOS Software Release 12.2(2)T1镜像的Cisco 2611路由器
- 运行Cisco IOS Software Release 12.1(5)DC1镜像的Cisco 6400通用接入集中器(UAC)

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Conventions

有关文档规则的详细信息，请参阅 [Cisco 技术提示规则](#)。

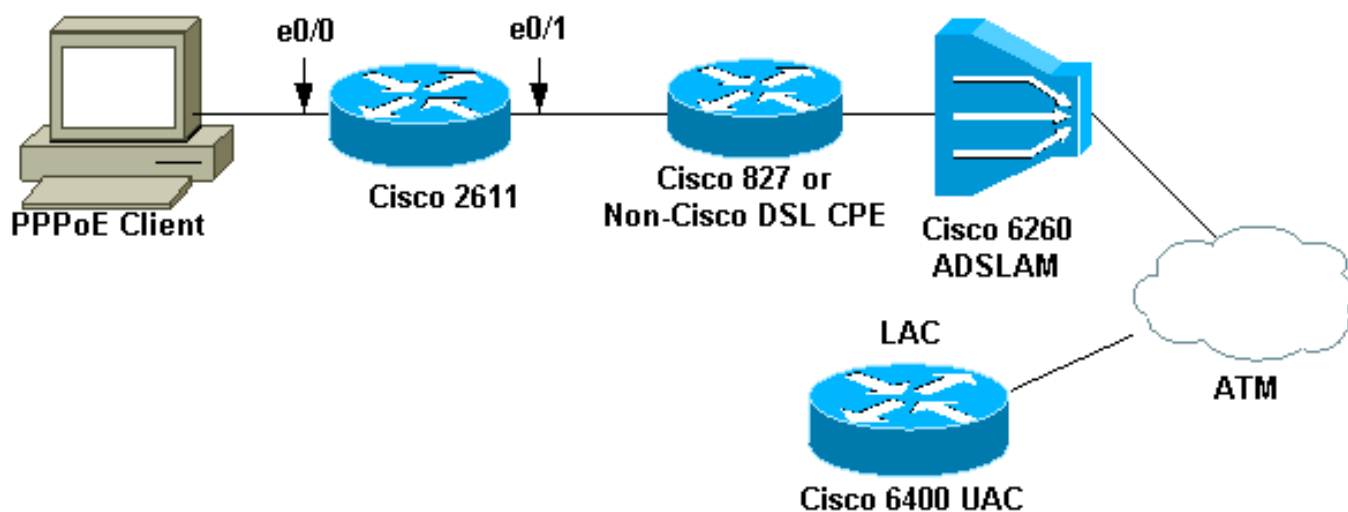
Configure

在此部分，向您介绍用于的信息为了配置在本文描述的功能。

Note: 要查找有关本文档中所使用的命令的详细信息，请使用[命令查找工具](#)（[仅限注册用户](#)）。

Network Diagram

本文档使用此图所示的网络设置。



Note: 在本文中，PPPoE客户端连接从Cisco路由器首次。这是在此配置的Cisco 2611路由器。Cisco 827路由器在图表中表示非Cisco的DSL CPE。

配置

本文档使用以下配置。

- [2611 路由器](#)
- [Cisco DSL 827路由器](#)
- [Cisco 6400 Router](#)

2611 路由器

```
!  
hostname pooh  
ip host rund 172.17.247.195  
!  
ip subnet-zero  
no ip domain-lookup  
!  
vpdn enable  
no vpdn logging  
!  
vpdn-group 1  
request-dialin  
protocol pppoe  
!  
!  
!  
!  
interface Ethernet0/0  
ip address 10.200.56.22 255.255.255.0  
ip nat inside  
no ip mroute-cache  
!  
!  
!  
!  
interface Ethernet0/1  
no ip address  
pppoe enable  
pppoe-client dial-pool-number 1  
!  
interface Dialer1  
ip address negotiated  
ip nat outside  
ip mtu 1492  
encapsulation ppp  
no ip mroute-cache  
dialer pool 1  
dialer-group 1  
ppp authentication pap  
ppp pap sent-username cisco password cisco1  
!  
ip classless  
no ip http server  
!  
dialer-list 1 protocol ip permit  
ip nat inside source list 1 interface Dialer1 overload  
ip route 0.0.0.0 0.0.0.0 dialer1  
access-list 1 permit 10.200.56.0 0.0.0.255  
!  
line con 0  
exec-timeout 0 0  
transport input none  
line vty 0 4  
login  
password ww  
!  
end
```

Cisco DSL 827路由器

```
Building configuration...  
Current configuration : 821 bytes  
!
```

```
version 12.2
no service pad
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname Chansey
!
!
ip subnet-zero
no ip domain-lookup
!
!
!
interface Ethernet0
  no ip address
  bridge-group 1
!
interface ATM0
  no ip address
  no atm ilmi-keepalive
  bundle-enable
  bridge-group 1
  dsl operating-mode auto
!
interface ATM0.1 point-to-point
  pvc 53/53
  !--- vpi/vci given by the ISP
  !
!
ip classless
ip http server
!
bridge 1 protocol ieee
!
line con 0
  exec-timeout 0 0
  stopbits 1
line vty 0 4
  exec-timeout 0 0
  password ww
  login local
!
scheduler max-task-time 5000
end
```

Cisco 6400 Router

```
Current configuration : 3231 bytes
!
version 12.1
no service single-slot-reload-enable
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname alyssa_nrpl
!
logging rate-limit console 10 except errors
aaa new-model
aaa authentication ppp default local
enable password ww
!
```

```
username cisco password cisco1
redundancy
main-cpu
auto-sync standard
no secondary console enable
ip subnet-zero
ip cef
vpdn enable
no vpdn logging
!
vpdn-group cisco
accept-dialin
protocol pppoe
virtual-template 2
!
!
!
!
!
!
!
interface Loopback5
ip address 212.93.195.100 255.255.255.0
!
!
interface ATM0/0/0
no ip address
no ip mroute-cache
load-interval 30
atm pvc 16 0 16 ilmi
no atm ilmi-keepalive
pvc 10/100
!
hold-queue 1000 in
!
interface ATM0/0/0.60 multipoint
pvc 6/60
encapsulation aal5snap
protocol pppoe
!
!
interface Ethernet0/0/1
no ip address
!
interface Ethernet0/0/0
ip address 10.200.56.8 255.255.255.0
!
interface FastEthernet0/0/0
no ip address
full-duplex
!
!
interface Virtual-Template2
ip unnumbered Loopback5
ip mtu 1492
no ip route-cache cef
peer default ip address pool nrp1
ppp authentication pap
!
ip local pool nrp1 212.93.198.1
ip classless
!
!
line con 0
```

```
exec-timeout 0 0
password ww
transport input none
line aux 0
line vty 0 4
exec-timeout 0 0
password ww
!
!
end
```

Verify

本部分提供了可用于确认您的配置是否正常运行的信息。

[命令输出解释程序工具](#) ([仅限注册用户](#)) 支持某些 **show** 命令，使用此工具可以查看对 **show** 命令输出的分析。

- **show vpdn session** 全显示VPDN会话信息。此信息包括接口、隧道、用户名、信息包、状态和窗口统计数据。
- **show interface ethernet 0/1** —显示关于以太网接口的信息在路由器。
- **show interfaces dialer 1** —显示关于拨号程序的信息在路由器。
- **show ip local pool nrp1** —显示关于ip local pool的信息。
- **show ip route** —显示关于IP路由的信息在路由器。

这是在Cisco 2611的**show vpdn session all**命令输出。

```
pooh#show vpdn session all
%No active L2TP tunnels
%No active L2F tunnels
%No active PPTP tunnels
PPPoE Session Information Total tunnels 1 sessions 1
session id: 1
!--- Local MAC address. local MAC address: 0030.9424.af21, remote MAC address: 0050.736f.4c37
virtual access interface: Vi1, outgoing interface: Et0/1 599 packets sent, 599 received 9202
bytes sent, 8154 received !--- Verify that the outgoing interface for the PPPoE session !--- is
Ethernet0/1 and the local MAC address that displays is the !--- MAC address of Ethernet0/1. The
remote MAC address that displays !--- is the MAC address of the Aggregator device (6400). !---
You can see it on the 6400 as the local MAC address in the !--- show vpdn session on the 6400.
```

这是在Cisco 2611的**show interface ethernet 0/1**命令输出。

```
pooh#show interface ethernet 0/1
Ethernet0/1 is up, line protocol is up
Hardware is AmdP2, address is 0030.9424.af21 (bia 0030.9424.af21
MTU 1500 bytes, BW 10000 Kbit, DLY 1000 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive set (10 sec)
ARP type: ARPA, ARP Timeout 04:00:00
Last input 00:00:40, output 00:00:01, output hang never
Last clearing of "show interface" counters never
Queueing strategy: fifo
Output queue 0/40, 0 drops; input queue 0/75, 0 drops
5 minute input rate 0 bits/sec, 0 packets/sec
```

```
5 minute output rate 0 bits/sec, 0 packets/sec
739 packets input, 64127 bytes, 0 no buffer
Received 57 broadcasts, 0 runts, 0 giants, 0 throttles
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
0 input packets with dribble condition detected
1153 packets output, 89766 bytes, 0 underruns(1/0/0)
0 output errors, 1 collisions, 1 interface resets
0 babbles, 0 late collision, 2 deferred
0 lost carrier, 0 no carrier
0 output buffer failures, 0 output buffers swapped out
```

这是在Cisco 2611的show interfaces dialer 1命令输出。

```
pooh#show interfaces dialer 1
Dialer1 is up, line protocol is up (spoofing)
Hardware is Unknown
Internet address is 212.93.198.1/32
MTU 1500 bytes, BW 56 Kbit, DLY 20000 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation PPP, loopback not set
DTR is pulsed for 1 seconds on reset
Interface is bound to Vi1
Last input never, output never, output hang never
Last clearing of "show interface" counters 01:38:43
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: weighted fair
Output queue: 0/1000/64/0 (size/max total/threshold/drops)
Conversations 0/0/16 (active/max active/max total)
Reserved Conversations 0/0 (allocated/max allocated)
Available Bandwidth 42 kilobits/sec
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
403 packets input, 6082 bytes
403 packets output, 6978 bytes
Bound to:
Virtual-Access1 is up, line protocol is up
Hardware is Virtual Access interface
MTU 1500 bytes, BW 100000 Kbit, DLY 100000 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation PPP, loopback not set
Keepalive set (10 sec)
Interface is bound to Di1 (Encapsulation PPP)
LCP Open
Listen: CDPCP
Open: IPCP
Last input 00:00:09, output never, output hang never
Last clearing of "show interface" counters 00:35:16
Queueing strategy: fifo
Output queue 0/40, 0 drops; input queue 0/75, 0 drops
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
430 packets input, 6453 bytes, 0 no buffer
Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
430 packets output, 7400 bytes, 0 underruns
0 output errors, 0 collisions, 0 interface resets
0 output buffer failures, 0 output buffers swapped out
0 carrier transitions
```

这是在Cisco 6400的show vpdn session all命令输出。

```
alyssa_nrpl#show vpdn session all
```

```
%No active L2TP tunnels
%No active L2F tunnels
%No active PPTP tunnels
PPPoE Session Information Total tunnels 1 sessions 1
session id: 1
local MAC address: 0050.736f.4c37, remote MAC address: 0030.9424.af21
virtual access interface: Vi3, outgoing interface: AT0/0/0, vc: 6/60
495 packets sent, 494 received
7369 bytes sent, 7346 received
```

这是在Cisco 6400的show ip local pool nrp1命令输出。

```
alyssa_nrp1#show ip local pool nrp1
Pool          Begin          End            Free   In use
nrp1          212.93.198.1  212.93.198.1  0      1
Available addresses:
None
Inuse addresses:
212.93.198.1      Vi3                nrp1
```

这是在Cisco 6400的show ip route命令输出。

```
alyssa_nrp1#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 0.0.0.0 to network 0.0.0.0
212.93.198.0/32 is subnetted, 1 subnets
C      212.93.198.1 is directly connected, Virtual-Access3
!--- You have to see the installed route for the remote PPPoE session. C 212.93.195.0/24 is
directly connected, Loopback5 10.0.0.0/8 is variably subnetted, 3 subnets, 2 masks C
10.200.56.0/24 is directly connected, Ethernet0/0/0
```

Troubleshoot

本部分提供的信息可用于对配置进行故障排除。

故障排除命令

[命令输出解释程序工具](#) ([仅限注册用户](#)) 支持某些 **show** 命令，使用此工具可以查看对 **show** 命令输出的分析。

Note: 在发出 **debug** 命令之前，请参阅[有关 debug 命令的重要信息](#)。

- **show debugging** —显示关于路由器的调试信息。

这是在Cisco 2611的show debugging命令输出。

```
pooh#show debugging
PPP:
PPP protocol negotiation debugging is on
VPN:
PPPoE protocol events debugging is on
PPPoE control packets debugging is on
```



```
01:54:21: Sending PADI: Interface = Ethernet0/1
01:54:21: pppoe_send_padi:
FF FF FF FF FF FF 00 30 94 24 AF 21 88 63 11 09
00 00 00 0C 01 01 00 00 01 03 00 04 82 2E 39 F0
00 00 00 00 00 00 00 00 00 00 00 00 00 00 ...
01:54:21: PPPoE 0: I PADO L:0030.9424.af21 R:0050.736f.4c37 Et0/1
00 30 94 24 AF 21 00 50 73 6F 4C 37 88 63 11 07
00 00 00 2F 01 01 00 00 01 03 00 04 82 2E 39 F0
01 02 00 0B 61 6C 79 73 73 61 5F 6E 72 70 31 ...
01:54:23: PPPOE: we've got our pado and the pado timer went off
01:54:23: OUT PADR from PPPoE tunnel
00 50 73 6F 4C 37 00 30 94 24 AF 21 88 63 11 19
00 00 00 2F 01 01 00 00 01 03 00 04 82 2E 39 F0
01 02 00 0B 61 6C 79 73 73 61 5F 6E 72 70 31 ...
01:54:23: PPPoE 1: I PADS L:0030.9424.af21 R:0050.736f.4c37 Et0/1
00 30 94 24 AF 21 00 50 73 6F 4C 37 88 63 11 65
00 01 00 2F 01 01 00 00 01 03 00 04 82 2E 39 F0
01 02 00 0B 61 6C 79 73 73 61 5F 6E 72 70 31 ...
01:54:23: IN PADS from PPPoE tunnel
01:54:23: Vi1 Debug: Condition 1, interface Di1 triggered, count 1
01:54:23: %DIALER-6-BIND: Interface Vi1 bound to profile Di1
01:54:23: PPPoE: Virtual Access interface obtained.
01:54:23: %LINK-3-UPDOWN: Interface Virtual-Access1, changed state to up
01:54:23: Vi1 PPP: Treating connection as a callout
01:54:23: Vi1 PPP: Phase is ESTABLISHING, Active Open [0 sess, 0 load]
01:54:23: Vi1 PPP: No remote authentication for call-out
01:54:23: Vi1 LCP: O CONFREQ [Closed] id 1 len 10
01:54:23: Vi1 LCP: MagicNumber 0x30FCDE42 (0x050630FCDE42)
01:54:23: Vi1 LCP: I CONFACK [REQsent] id 1 len 10
01:54:23: Vi1 LCP: MagicNumber 0x30FCDE42 (0x050630FCDE42)
01:54:25: Vi1 LCP: I CONFREQ [ACKrcvd] id 2 len 18
01:54:25: Vi1 LCP: MRU 1492 (0x010405D4)
01:54:25: Vi1 LCP: AuthProto PAP (0x0304C023)
01:54:25: Vi1 LCP: MagicNumber 0x5C799D85 (0x05065C799D85)
01:54:25: Vi1 LCP: O CONFNAK [ACKrcvd] id 2 len 8
01:54:25: Vi1 LCP: MRU 1500 (0x010405DC)
01:54:25: Vi1 LCP: TIMEOUT: State ACKrcvd
01:54:25: Vi1 LCP: O CONFREQ [ACKrcvd] id 2 len 10
01:54:25: Vi1 LCP: MagicNumber 0x30FCDE42 (0x050630FCDE42)
01:54:25: Vi1 LCP: I CONFREQ [REQsent] id 3 len 18
01:54:25: Vi1 LCP: MRU 1500 (0x010405DC)
01:54:25: Vi1 LCP: AuthProto PAP (0x0304C023)
01:54:25: Vi1 LCP: MagicNumber 0x5C799D85 (0x05065C799D85)
01:54:25: Vi1 LCP: O CONFACK [REQsent] id 3 len 18
01:54:25: Vi1 LCP: MRU 1500 (0x010405DC)
01:54:25: Vi1 LCP: AuthProto PAP (0x0304C023)
01:54:25: Vi1 LCP: MagicNumber 0x5C799D85 (0x05065C799D85)
01:54:25: Vi1 LCP: I CONFACK [ACKsent] id 2 len 10
01:54:25: Vi1 LCP: MagicNumber 0x30FCDE42 (0x050630FCDE42)
01:54:25: Vi1 LCP: State is Open
01:54:25: Vi1 PPP: Phase is AUTHENTICATING, by the peer [0 sess, 0 load]
01:54:25: Vi1 PAP: O AUTH-REQ id 4 len 18 from "cisco"
01:54:25: Vi1 PAP: I AUTH-ACK id 4 len 5
01:54:25: Vi1 PPP: Phase is UP [0 sess, 0 load]
01:54:25: Vi1 IPCP: O CONFREQ [Closed] id 1 len 10
01:54:25: Vi1 IPCP: Address 0.0.0.0 (0x030600000000)
01:54:25: Vi1 CDPCP: O CONFREQ [Closed] id 1 len 4
01:54:25: Vi1 IPCP: I CONFREQ [REQsent] id 1 len 10
01:54:25: Vi1 IPCP: Address 212.93.195.100 (0x0306D45DC364)
01:54:25: Vi1 IPCP: O CONFACK [REQsent] id 1 len 10
01:54:25: Vi1 IPCP: Address 212.93.195.100 (0x0306D45DC364)
01:54:25: Vi1 IPCP: I CONFNAK [ACKsent] id 1 len 10
01:54:25: Vi1 IPCP: Address 212.93.198.1 (0x0306D45DC601)
01:54:25: Vi1 IPCP: O CONFREQ [ACKsent] id 2 len 10
```

```
01:54:25: Vi1 IPCP:      Address 212.93.198.1 (0x0306D45DC601)
01:54:25: Vi1 LCP: I PROTREJ [Open] id 4 len 10 protocol CDPCP
(0x820701010004)
01:54:25: Vi1 CDPCP: State is Closed
01:54:25: Vi1 IPCP: I CONFACK [ACKsent] id 2 len 10
01:54:25: Vi1 IPCP:      Address 212.93.198.1 (0x0306D45DC601)
01:54:25: Vi1 IPCP: State is Open
01:54:25: Di1 IPCP: Install negotiated IP interface address 212.93.198.1
01:54:25: Di1 IPCP: Install route to 212.93.195.100
01:54:26: %LINEPROTO-5-UPDOWN: Line protocol on Interface Virtual-Access1,
changed state to up
```

这是在Cisco 6400的show debugging命令输出。

pooh#show debugging

```
PPP:
PPP protocol negotiation debugging is on
VPN:
PPPoE protocol events debugging is on
PPPoE control packets debugging is on
01:54:21: Sending PADI: Interface = Ethernet0/1
01:54:21: pppoe_send_padi:
FF FF FF FF FF FF 00 30 94 24 AF 21 88 63 11 09
00 00 00 0C 01 01 00 00 01 03 00 04 82 2E 39 F0
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ...
01:54:21: PPPoE 0: I PADO L:0030.9424.af21 R:0050.736f.4c37 Et0/1
00 30 94 24 AF 21 00 50 73 6F 4C 37 88 63 11 07
00 00 00 2F 01 01 00 00 01 03 00 04 82 2E 39 F0
01 02 00 0B 61 6C 79 73 73 61 5F 6E 72 70 31 ...
01:54:23: PPPOE: we've got our pado and the pado timer went off
01:54:23: OUT PADR from PPPoE tunnel
00 50 73 6F 4C 37 00 30 94 24 AF 21 88 63 11 19
00 00 00 2F 01 01 00 00 01 03 00 04 82 2E 39 F0
01 02 00 0B 61 6C 79 73 73 61 5F 6E 72 70 31 ...
01:54:23: PPPoE 1: I PADS L:0030.9424.af21 R:0050.736f.4c37 Et0/1
00 30 94 24 AF 21 00 50 73 6F 4C 37 88 63 11 65
00 01 00 2F 01 01 00 00 01 03 00 04 82 2E 39 F0
01 02 00 0B 61 6C 79 73 73 61 5F 6E 72 70 31 ...
01:54:23: IN PADS from PPPoE tunnel
01:54:23: Vi1 Debug: Condition 1, interface Di1 triggered, count 1
01:54:23: %DIALER-6-BIND: Interface Vi1 bound to profile Di1
01:54:23: PPPoE: Virtual Access interface obtained.
01:54:23: %LINK-3-UPDOWN: Interface Virtual-Access1, changed state to up
01:54:23: Vi1 PPP: Treating connection as a callout
01:54:23: Vi1 PPP: Phase is ESTABLISHING, Active Open [0 sess, 0 load]
01:54:23: Vi1 PPP: No remote authentication for call-out
01:54:23: Vi1 LCP: O CONFREQ [Closed] id 1 len 10
01:54:23: Vi1 LCP:      MagicNumber 0x30FCDE42 (0x050630FCDE42)
01:54:23: Vi1 LCP: I CONFACK [REQsent] id 1 len 10
01:54:23: Vi1 LCP:      MagicNumber 0x30FCDE42 (0x050630FCDE42)
01:54:25: Vi1 LCP: I CONFREQ [ACKrcvd] id 2 len 18
01:54:25: Vi1 LCP:      MRU 1492 (0x010405D4)
01:54:25: Vi1 LCP:      AuthProto PAP (0x0304C023)
01:54:25: Vi1 LCP:      MagicNumber 0x5C799D85 (0x05065C799D85)
01:54:25: Vi1 LCP: O CONFNAK [ACKrcvd] id 2 len 8
01:54:25: Vi1 LCP:      MRU 1500 (0x010405DC)
01:54:25: Vi1 LCP: TIMEOUT: State ACKrcvd
01:54:25: Vi1 LCP: O CONFREQ [ACKrcvd] id 2 len 10
01:54:25: Vi1 LCP:      MagicNumber 0x30FCDE42 (0x050630FCDE42)
01:54:25: Vi1 LCP: I CONFREQ [REQsent] id 3 len 18
01:54:25: Vi1 LCP:      MRU 1500 (0x010405DC)
01:54:25: Vi1 LCP:      AuthProto PAP (0x0304C023)
01:54:25: Vi1 LCP:      MagicNumber 0x5C799D85 (0x05065C799D85)
```

```
01:54:25: Vi1 LCP: O CONFACK [REQsent] id 3 len 18
01:54:25: Vi1 LCP:   MRU 1500 (0x010405DC)
01:54:25: Vi1 LCP:   AuthProto PAP (0x0304C023)
01:54:25: Vi1 LCP:   MagicNumber 0x5C799D85 (0x05065C799D85)
01:54:25: Vi1 LCP: I CONFACK [ACKsent] id 2 len 10
01:54:25: Vi1 LCP:   MagicNumber 0x30FCDE42 (0x050630FCDE42)
01:54:25: Vi1 LCP: State is Open
01:54:25: Vi1 PPP: Phase is AUTHENTICATING, by the peer [0 sess, 0 load]
01:54:25: Vi1 PAP: O AUTH-REQ id 4 len 18 from "cisco"
01:54:25: Vi1 PAP: I AUTH-ACK id 4 len 5
01:54:25: Vi1 PPP: Phase is UP [0 sess, 0 load]
01:54:25: Vi1 IPCP: O CONFREQ [Closed] id 1 len 10
01:54:25: Vi1 IPCP:   Address 0.0.0.0 (0x030600000000)
01:54:25: Vi1 CDPCP: O CONFREQ [Closed] id 1 len 4
01:54:25: Vi1 IPCP: I CONFREQ [REQsent] id 1 len 10
01:54:25: Vi1 IPCP:   Address 212.93.195.100 (0x0306D45DC364)
01:54:25: Vi1 IPCP: O CONFACK [REQsent] id 1 len 10
01:54:25: Vi1 IPCP:   Address 212.93.195.100 (0x0306D45DC364)
01:54:25: Vi1 IPCP: I CONFNAK [ACKsent] id 1 len 10
01:54:25: Vi1 IPCP:   Address 212.93.198.1 (0x0306D45DC601)
01:54:25: Vi1 IPCP: O CONFREQ [ACKsent] id 2 len 10
01:54:25: Vi1 IPCP:   Address 212.93.198.1 (0x0306D45DC601)
01:54:25: Vi1 LCP: I PROTREJ [Open] id 4 len 10 protocol CDPCP
(0x820701010004)
01:54:25: Vi1 CDPCP: State is Closed
01:54:25: Vi1 IPCP: I CONFACK [ACKsent] id 2 len 10
01:54:25: Vi1 IPCP:   Address 212.93.198.1 (0x0306D45DC601)
01:54:25: Vi1 IPCP: State is Open
01:54:25: Di1 IPCP: Install negotiated IP interface address 212.93.198.1
01:54:25: Di1 IPCP: Install route to 212.93.195.100
01:54:26: %LINEPROTO-5-UPDOWN: Line protocol on Interface Virtual-Access1,
changed state to up
```

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