

# DSL:ASR920上的点对点以太网协议(PPPoE)配置指南

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## 简介

本文档介绍在充当客户端的Cisco ASR 920聚合服务路由器上配置以太网点对点协议(PPPoE)的过程。

## 先决条件

### 要求

思科建议您了解端到端第1层连接。

### 使用的组件

本文档中的信息基于Cisco ASR 920硬件。

本文档中的信息是从特定实验环境中的设备创建的。本文档中使用的所有设备都以已清除（默认）的配置开始。

**注意：**如果您的网络处于活动状态，请确保您了解所有命令的潜在影响。

## 配置

**注意：**使用[命令查找工具（仅限注册用户）](#)可获取有关本部分所使用命令的详细信息。

路由器上的配置是从背到背设置（客户端和服务端）。

## 客户端配置

它特定于ASR 920平台。

```
interface GigabitEthernet0/0/1
  no ip address
  no ip redirects
  no ip proxy-arp
  ip tcp adjust-mss 1452
  speed 1000
  no negotiation auto
  cdp enable
  ip virtual-reassembly
  service instance 10 ethernet
  encapsulation untagged etype pppoe-all
  bridge-domain 10
!
interface Dialer1
  ip address negotiated
  encapsulation ppp
  dialer pool 1
  dialer-group 1
  ppp authentication pap chap callin
  ppp chap hostname cisco
  ppp chap password 0 cisco123
  ppp pap sent-username cisco password 0 cisco123
end
!
interface BDI10
  no ip address
  pppoe enable group global
  pppoe-client dial-pool-number 1
!
ip route 0.0.0.0 0.0.0.0 Dialer1
```

## 服务器配置

无论客户端使用的平台如何，所有场景中的情况都保持不变。

```
username cisco password 0 cisco123
!
bba-group pppoe global
  virtual-template 1
!
interface GigabitEthernet0/0
  ip address 192.168.1.1 255.255.255.0
  ip rip advertise 4
  load-interval 30
  duplex auto
  speed auto
  pppoe enable group global
```

```
!  
interface Virtual-Template1  
  mtu 1492  
  ip unnumbered GigabitEthernet0/0  
  peer default ip address pool PPPoE_Pool  
  ppp authentication pap chap  
!  
ip local pool PPPoE_Pool 10.1.1.1 10.1.1.100
```

## 验证

使用本部分可确认配置能否正常运行。

在客户端和服务服务器上启用以下调试：

- debug ppp negotiation
- debug ppp authentication
- 调试ppp错误
- Debug dialer

客户端日志:

```
*Jul 14 20:23:09.486: ppp13 PPP: Phase is ESTABLISHING  
*Jul 14 20:23:09.486: Vi2 PPP: Using dialer call direction  
*Jul 14 20:23:09.486: Vi2 PPP: Treating connection as a callout  
*Jul 14 20:23:09.486: Vi2 PPP: Session handle[6300000D] Session id[13]  
*Jul 14 20:23:09.486: Vi2 LCP: Event[OPEN] State[Initial to Starting]  
*Jul 14 20:23:09.486: Vi2 PPP: No remote authentication for call-out  
*Jul 14 20:23:09.486: Vi2 LCP: O CONFREQ [Starting] id 1 len 10  
*Jul 14 20:23:09.486: Vi2 LCP:   MagicNumber 0xB07C8578 (0x0506B07C8578)  
*Jul 14 20:23:09.486: Vi2 LCP: Event[UP] State[Starting to REQsent]  
*Jul 14 20:23:09.488: Vi2 LCP: I CONFREQ [REQsent] id 1 len 18  
*Jul 14 20:23:09.488: Vi2 LCP:   MRU 1492 (0x010405D4)  
*Jul 14 20:23:09.488: Vi2 LCP:   AuthProto PAP (0x0304C023)  
*Jul 14 20:23:09.488: Vi2 LCP:   MagicNumber 0xED0582E9 (0x0506ED0582E9)  
*Jul 14 20:23:09.488: Vi2 LCP: O CONFNAK [REQsent] id 1 len 8  
*Jul 14 20:23:09.488: Vi2 LCP:   MRU 1500 (0x010405DC)  
*Jul 14 20:23:09.489: Vi2 LCP: Event[Receive ConfReq-] State[REQsent to REQsent]  
*Jul 14 20:23:09.489: Vi2 LCP: I CONFACK [REQsent] id 1 len 10  
*Jul 14 20:23:09.489: Vi2 LCP:   MagicNumber 0xB07C8578 (0x0506B07C8578)  
*Jul 14 20:23:09.489: Vi2 LCP: Event[Receive ConfAck] State[REQsent to ACKrcvd]  
*Jul 14 20:23:09.490: Vi2 LCP: I CONFREQ [ACKrcvd] id 2 len 18  
*Jul 14 20:23:09.490: Vi2 LCP:   MRU 1500 (0x010405DC)  
*Jul 14 20:23:09.490: Vi2 LCP:   AuthProto PAP (0x0304C023)  
*Jul 14 20:23:09.490: Vi2 LCP:   MagicNumber 0xED0582E9 (0x0506ED0582E9)  
*Jul 14 20:23:09.490: Vi2 LCP: O CONFACK [ACKrcvd] id 2 len 18  
*Jul 14 20:23:09.490: Vi2 LCP:   MRU 1500 (0x010405DC)  
*Jul 14 20:23:09.490: Vi2 LCP:   AuthProto PAP (0x0304C023)  
*Jul 14 20:23:09.490: Vi2 LCP:   MagicNumber 0xED0582E9 (0x0506ED0582E9)  
*Jul 14 20:23:09.490: Vi2 LCP: Event[Receive ConfReq+] State[ACKrcvd to Open]  
*Jul 14 20:23:09.499: Vi2 PPP: No authorization without authentication  
*Jul 14 20:23:09.499: Vi2 PPP: Phase is AUTHENTICATING, by the peer  
*Jul 14 20:23:09.499: Vi2 PAP: Using hostname from interface PAP  
*Jul 14 20:23:09.499: Vi2 PAP: Using password from interface PAP  
*Jul 14 20:23:09.499: Vi2 PAP: O AUTH-REQ id 1 len 19 from "cisco"  
*Jul 14 20:23:09.499: Vi2 LCP: State is Open  
*Jul 14 20:23:09.530: Vi2 PAP: I AUTH-ACK id 1 len 5  
*Jul 14 20:23:09.530: Vi2 PPP: Phase is FORWARDING, Attempting Forward  
*Jul 14 20:23:09.530: Vi2 PPP: Queue IPCP code[1] id[1]  
*Jul 14 20:23:09.532: Vi2 PPP: Phase is ESTABLISHING, Finish LCP
```

```

*Jul 14 20:23:09.532: Vi2 PPP: Phase is UP
*Jul 14 20:23:09.532: Vi2 IPCP: Protocol configured, start CP. state[Initial]
*Jul 14 20:23:09.532: Vi2 IPCP: Event[OPEN] State[Initial to Starting]
*Jul 14 20:23:09.532: Vi2 IPCP: O CONFREQ [Starting] id 1 len 10
*Jul 14 20:23:09.532: Vi2 IPCP:   Address 0.0.0.0 (0x030600000000)
*Jul 14 20:23:09.532: Vi2 IPCP: Event[UP] State[Starting to REQsent]
*Jul 14 20:23:09.532: Vi2 PPP: Process pending ncp packets
*Jul 14 20:23:09.532: Vi2 IPCP: Redirect packet to Vi2
*Jul 14 20:23:09.532: Vi2 IPCP: I CONFREQ [REQsent] id 1 len 10
*Jul 14 20:23:09.532: Vi2 IPCP:   Address 192.168.1.1 (0x0306C0A80101)
*Jul 14 20:23:09.533: Vi2 IPCP: O CONFACK [REQsent] id 1 len 10
*Jul 14 20:23:09.533: Vi2 IPCP:   Address 192.168.1.1 (0x0306C0A80101)
*Jul 14 20:23:09.533: Vi2 IPCP: Event[Receive ConfReq+] State[REQsent to ACKsent]
*Jul 14 20:23:09.535: Vi2 IPCP: I CONFNAK [ACKsent] id 1 len 10
*Jul 14 20:23:09.535: Vi2 IPCP:   Address 10.1.1.1 (0x03060A010101)
*Jul 14 20:23:09.535: Vi2 IPCP: O CONFREQ [ACKsent] id 2 len 10
*Jul 14 20:23:09.535: Vi2 IPCP:   Address 10.1.1.1 (0x03060A010101)
*Jul 14 20:23:09.536: Vi2 IPCP: Event[Receive ConfNak/Rej] State[ACKsent to ACKsent]
*Jul 14 20:23:09.537: Vi2 IPCP: I CONFACK [ACKsent] id 2 len 10
*Jul 14 20:23:09.537: Vi2 IPCP:   Address 10.1.1.1 (0x03060A010101)
*Jul 14 20:23:09.537: Vi2 IPCP: Event[Receive ConfAck] State[ACKsent to Open]
*Jul 14 20:23:09.562: Vi2 IPCP: State is Open
*Jul 14 20:23:09.562: Di1 IPCP: Install negotiated IP interface address 10.1.1.1
*Jul 14 20:23:09.565: PPPoE : ipfib_encapstr prepared
*Jul 14 20:23:09.566: Di1 Added to neighbor route AVL tree: topoid 0, address 192.168.1.1
*Jul 14 20:23:09.566: Di1 IPCP: Install route to 192.168.1.1
*Jul 14 20:23:09.567: Vi2 DDR: dialer protocol up
*Jul 14 20:23:09.567: PPPoE : ipfib_encapstr prepared
*Jul 14 20:23:09.567: Di1 DDR: dialer protocol up
*Jul 14 20:23:10.235: %LINEPROTO-5-UPDOWN: Line protocol on Interface Virtual-Access2, changed
state to up

```

```

Client#sh pppoe session
1 client session

```

Uniq ID	PPPoE	RemMAC	Port	VT	VA	State
	SID	LocMAC			VA-st	Type
N/A	1	a0ec.f9d8.9dd0 64f6.9d6e.dd3f	BD10	Di1	Vi2 UP	UP

## 服务器日志：

```

* Jul 15 04:41:18.727: ppp1 PPP: Phase is ESTABLISHING
*Jul 15 04:41:18.727: ppp1 PPP: Using vpn set call direction
*Jul 15 04:41:18.727: ppp1 PPP: Treating connection as a callin
*Jul 15 04:41:18.727: ppp1 PPP: Session handle[BF000001] Session id[1]
*Jul 15 04:41:18.727: ppp1 LCP: Event[OPEN] State[Initial to Starting]
*Jul 15 04:41:18.727: ppp1 PPP LCP: Enter passive mode, state[Stopped]
*Jul 15 04:41:18.735: ppp1 LCP: I CONFREQ [Stopped] id 1 len 10
*Jul 15 04:41:18.735: ppp1 LCP:   MagicNumber 0xB07C8578 (0x0506B07C8578)
*Jul 15 04:41:18.735: ppp1 LCP: O CONFREQ [Stopped] id 1 len 18
*Jul 15 04:41:18.735: ppp1 LCP:   MRU 1492 (0x010405D4)
*Jul 15 04:41:18.735: ppp1 LCP:   AuthProto PAP (0x0304C023)
*Jul 15 04:41:18.735: ppp1 LCP:   MagicNumber 0xED0582E9 (0x0506ED0582E9)
*Jul 15 04:41:18.735: ppp1 LCP: O CONFACK [Stopped] id 1 len 10
*Jul 15 04:41:18.735: ppp1 LCP:   MagicNumber 0xB07C8578 (0x0506B07C8578)
*Jul 15 04:41:18.735: ppp1 LCP: Event[Receive ConfReq+] State[Stopped to ACKsent]
*Jul 15 04:41:18.735: ppp1 LCP: I CONFNAK [ACKsent] id 1 len 8
*Jul 15 04:41:18.735: ppp1 LCP:   MRU 1500 (0x010405DC)
*Jul 15 04:41:18.735: ppp1 LCP: O CONFREQ [ACKsent] id 2 len 18
*Jul 15 04:41:18.735: ppp1 LCP:   MRU 1500 (0x010405DC)

```

```

*Jul 15 04:41:18.735: ppp1 LCP: AuthProto PAP (0x0304C023)
*Jul 15 04:41:18.735: ppp1 LCP: MagicNumber 0xED0582E9 (0x0506ED0582E9)
*Jul 15 04:41:18.735: ppp1 LCP: Event[Receive ConfNak/Rej] State[ACKsent to ACKsent]
*Jul 15 04:41:18.739: ppp1 LCP: I CONFACK [ACKsent] id 2 len 18
*Jul 15 04:41:18.739: ppp1 LCP: MRU 1500 (0x010405DC)
*Jul 15 04:41:18.739: ppp1 LCP: AuthProto PAP (0x0304C023)
*Jul 15 04:41:18.739: ppp1 LCP: MagicNumber 0xED0582E9 (0x0506ED0582E9)
*Jul 15 04:41:18.739: ppp1 LCP: Event[Receive ConfAck] State[ACKsent to Open]
*Jul 15 04:41:18.747: ppp1 PPP: Queue PAP code[1] id[1]
*Jul 15 04:41:18.763: ppp1 PPP: Phase is AUTHENTICATING, by this end
*Jul 15 04:41:18.763: ppp1 PAP: Redirect packet to ppp1
*Jul 15 04:41:18.763: ppp1 PAP: I AUTH-REQ id 1 len 19 from "cisco"
*Jul 15 04:41:18.763: ppp1 PAP: Authenticating peer cisco
*Jul 15 04:41:18.763: ppp1 PPP: Phase is FORWARDING, Attempting Forward
*Jul 15 04:41:18.763: ppp1 LCP: State is Open
*Jul 15 04:41:18.763: ppp1 PPP: Phase is AUTHENTICATING, Unauthenticated User
*Jul 15 04:41:18.763: ppp1 PPP: Sent PAP LOGIN Request
*Jul 15 04:41:18.763: ppp1 PPP: Received LOGIN Response PASS
*Jul 15 04:41:18.763: ppp1 IPCP: Authorizing CP
*Jul 15 04:41:18.763: ppp1 IPCP: CP stalled on event[Authorize CP]
*Jul 15 04:41:18.763: ppp1 IPCP: CP unstall
*Jul 15 04:41:18.763: ppp1 PPP: Phase is FORWARDING, Attempting Forward
*Jul 15 04:41:18.775: Vi1.1 PPP: Phase is AUTHENTICATING, Authenticated User
*Jul 15 04:41:18.775: Vi1.1 PAP: O AUTH-ACK id 1 len 5
*Jul 15 04:41:18.775: Vi1.1 PPP: Phase is UP
*Jul 15 04:41:18.775: Vi1.1 IPCP: Protocol configured, start CP. state[Initial]
*Jul 15 04:41:18.775: Vi1.1 IPCP: Event[OPEN] State[Initial to Starting]
*Jul 15 04:41:18.775: Vi1.1 IPCP: O CONFREQ [Starting] id 1 len 10
*Jul 15 04:41:18.775: Vi1.1 IPCP: Address 192.168.1.1 (0x0306C0A80101)
*Jul 15 04:41:18.779: Vi1.1 IPCP: Event[UP] State[Starting to REQsent]
*Jul 15 04:41:18.779: Vi1.1 IPCP: I CONFREQ [REQsent] id 1 len 10
*Jul 15 04:41:18.779: Vi1.1 IPCP: Address 0.0.0.0 (0x030600000000)
*Jul 15 04:41:18.783: Vi1.1 IPCP AUTHOR: Start. Her address 0.0.0.0, we want 0.0.0.0
*Jul 15 04:41:18.783: Vi1.1 IPCP AUTHOR: Done. Her address 0.0.0.0, we want 0.0.0.0
*Jul 15 04:41:18.783: Vi1.1 IPCP: Pool returned 10.1.1.1
*Jul 15 04:41:18.783: Vi1.1 IPCP: O CONFNAK [REQsent] id 1 len 10
*Jul 15 04:41:18.783: Vi1.1 IPCP: Address 10.1.1.1 (0x03060A010101)
*Jul 15 04:41:18.783: Vi1.1 IPCP: Event[Receive ConfReq-] State[REQsent to REQsent]
*Jul 15 04:41:18.783: Vi1.1 IPCP: I CONFACK [REQsent] id 1 len 10
*Jul 15 04:41:18.783: Vi1.1 IPCP: Address 192.168.1.1 (0x0306C0A80101)
*Jul 15 04:41:18.783: Vi1.1 IPCP: Event[Receive ConfAck] State[REQsent to ACKrcvd]
*Jul 15 04:41:18.783: Vi1.1 IPCP: I CONFREQ [ACKrcvd] id 2 len 10
*Jul 15 04:41:18.783: Vi1.1 IPCP: Address 10.1.1.1 (0x03060A010101)
*Jul 15 04:41:18.783: Vi1.1 IPCP: O CONFACK [ACKrcvd] id 2 len 10
*Jul 15 04:41:18.783: Vi1.1 IPCP: Address 10.1.1.1 (0x03060A010101)
*Jul 15 04:41:18.783: Vi1.1 IPCP: Event[Receive ConfReq+] State[ACKrcvd to Open]
*Jul 15 04:41:18.795: Vi1.1 IPCP: State is Open
*Jul 15 04:41:18.795: Vi1.1 Added to neighbor route AVL tree: topoid 0, address 10.1.1.1
*Jul 15 04:41:18.795: Vi1.1 IPCP: Install route to 10.1.1.1

```

```

Server#show pppoe session
  1 session in LOCALLY_TERMINATED (PTA) State
  1 session total

```

Uniq ID	PPPoE	RemMAC	Port	VT	VA	State
	SID	LocMAC			VA-st	Type
1	1	64f6.9d6e.dd3f	Gi0/0	1	Vi1.1	PTA
		a0ec.f9d8.9dd0			UP	

## 故障排除

本部分提供的信息可用于对配置进行故障排除。

按照标准PPP故障[排除步骤](#)。

**注意：**如果未配置BDI接口，并且PPPoE客户端配置应用在千兆以太网接口上，您将看到PPPoE会话未建立并显示此错误消息。

```
padi timer expired  
Sending PADI: Interface = GigabitEthernet0/0/1
```

## 相关信息

- [配置PPPoE客户端](#)
- [以太网客户端上的PPP](#)
- [技术支持和文档 - Cisco Systems](#)