

# 配置在BDI的PPPoE在ASR1k系列路由器

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## 简介

本文描述如何配置有网桥域接口(BDI)和VLAN范围的以太网点对点协议(PPPoE)服务器。

## [先决条件](#)

### [要求](#)

Cisco 建议您了解以下主题：

- 端到端第1层连接优良是
- PPP和PPPoE基础很好了解

### [使用的组件](#)

本文档中的信息基于以下软件和硬件版本：

- HOST-1 - CISCO887G
- HOST-2 - CISCO887
- 交换机- WS-C3560-24TS-S
- PPPoE服务器- ASR1001-X

本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原始（默认）配置。如果您使用的是真实网络，请确保您已经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。

HOST-1

```
!  
interface FastEthernet0  
  switchport access vlan 100  
  no ip address  
end  
  
!  
  
interface Vlan100  
  no ip address  
  pppoe enable group global  
  pppoe-client dial-pool-number 1  
end  
  
!  
  
interface Dialer1  
  ip address negotiated  
  encapsulation ppp  
  dialer pool 1  
  ppp chap hostname dsl  
  ppp chap password 0 dsl  
end
```

## HOST-2

```
!  
  
interface FastEthernet0  
  switchport access vlan 200  
  no ip address  
end  
  
!  
  
!  
interface Vlan200  
  no ip address  
  pppoe enable group global  
  pppoe-client dial-pool-number 1  
end  
  
!  
  
!  
interface Dialer1  
  ip address negotiated  
  encapsulation ppp  
  dialer pool 1  
  ppp chap hostname dsl  
  ppp chap password 0 dsl  
end
```

## 交换机

```
SWITCH#sh cdp neighbors  
Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge  
                  S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,  
                  D - Remote, C - CVTA, M - Two-port Mac Relay
```

Device ID	Local Intrfce	Holdtme	Capability	Platform	Port ID
SERVER	Gig 0/1	130	R I	ASR1001-X	Gig 0/0/0
HOST-1	Fas 0/2	141	R B S I	887G	Fas 0
HOST-2	Fas 0/1	167	R B S I	887	Fas 0

```

!
interface FastEthernet0/2
  switchport access vlan 100
end

!
interface FastEthernet0/1
  switchport access vlan 200
end

!

!
interface GigabitEthernet0/1
  switchport trunk encapsulation dot1q
  switchport trunk allowed vlan 100,200
  switchport mode trunk
end

```

## PPPoE服务器

```

!

username dsl password 0 dsl

!
bba-group pppoe global
  virtual-template 1
!
interface GigabitEthernet0/0/0
  no ip address
  negotiation auto
  cdp enable
  service instance 100 ethernet
    encapsulation dot1q 100 etype pppoe-all
    rewrite ingress tag pop 1 symmetric
    bridge-domain 100
!
  service instance 200 ethernet
    encapsulation dot1q 200 etype pppoe-all
    rewrite ingress tag pop 1 symmetric
    bridge-domain 200
!

!

interface Virtual-Templat1
  ip unnumbered Loopback0
  peer default ip address pool POOL
  ppp authentication chap
!
interface BDI100
  no ip address
  pppoe enable group global
!
interface BDI200

```

```
no ip address
pppoe enable group global
!
interface Loopback0
 ip address 192.168.10.1 255.255.255.255
end

!
ip local pool POOL 192.168.1.1 192.168.1.100
```

Alternativley , 您能配置‘VLAN范围’如显示 :

```
!
username dsl password 0 dsl

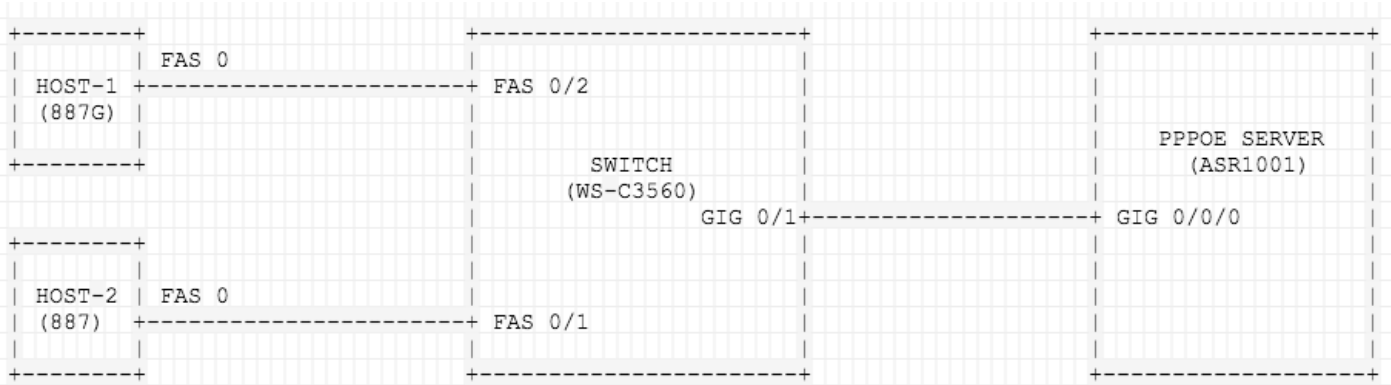
!
bba-group pppoe global
 virtual-template 1
!
interface GigabitEthernet0/0/0
 no ip address
 negotiation auto
 cdp enable
 service instance 100 ethernet
  encapsulation dot1q 100 etype pppoe-all
  rewrite ingress tag pop 1 symmetric
  bridge-domain 100
!
 service instance 200 ethernet
  encapsulation dot1q 200 etype pppoe-all
  rewrite ingress tag pop 1 symmetric
  bridge-domain 200
!
!

interface Virtual-Template1
 ip unnumbered Loopback0
 peer default ip address pool POOL
 ppp authentication chap
!
interface BDI100
 no ip address
 pppoe enable group global
!
interface BDI200
 no ip address
 pppoe enable group global
!
interface Loopback0
 ip address 192.168.10.1 255.255.255.255
end

!
ip local pool POOL 192.168.1.1 192.168.1.100

!
```

**网络图**



## 验证

使用本部分可确认配置能否正常运行。

### 在HOST-1

```
[HOST-1#show pppoe session
1 client session
```

Uniq ID	PPPoE SID	RemMAC LocMAC	Port	VT	VA VA-st	State
N/A	5	00a2.eee6.663f c471.fe93.d112	Vl100	Di1	Vi2 UP	UP

```
!
username dsl password 0 dsl
!
bba-group pppoe global
virtual-template 1
!
interface GigabitEthernet0/0/0
no ip address
negotiation auto
cdp enable
service instance 100 ethernet
encapsulation dot1q 100 etype pppoe-all
rewrite ingress tag pop 1 symmetric
bridge-domain 100
!
service instance 200 ethernet
encapsulation dot1q 200 etype pppoe-all
rewrite ingress tag pop 1 symmetric
bridge-domain 200
!
!
interface Virtual-Templat1
ip unnumbered Loopback0
peer default ip address pool POOL
ppp authentication chap
!
interface BDI100
no ip address
pppoe enable group global
!
```

```

interface BDI200
  no ip address
  pppoe enable group global
!
interface Loopback0
  ip address 192.168.10.1 255.255.255.255
end

!
ip local pool POOL 192.168.1.1 192.168.1.100

```

## 在HOST-2

```

HOST-2#show pppoe session
  1 client session

```

Uniq ID	PPPoE SID	RemMAC LocMAC	Port	VT	VA VA-st	State Type
N/A	6	00a2.eee6.663f e8b7.4886.b8ea	Vl200	Di1	Vi2 UP	UP

```

!
username dsl password 0 dsl

!
bba-group pppoe global
  virtual-template 1
!
interface GigabitEthernet0/0/0
  no ip address
  negotiation auto
  cdp enable
  service instance 100 ethernet
    encapsulation dot1q 100 etype pppoe-all
    rewrite ingress tag pop 1 symmetric
  bridge-domain 100
!
service instance 200 ethernet
  encapsulation dot1q 200 etype pppoe-all
  rewrite ingress tag pop 1 symmetric
  bridge-domain 200
!
!

interface Virtual-Template1
  ip unnumbered Loopback0
  peer default ip address pool POOL
  ppp authentication chap
!
interface BDI100
  no ip address
  pppoe enable group global
!
interface BDI200
  no ip address
  pppoe enable group global
!
interface Loopback0
  ip address 192.168.10.1 255.255.255.255
end

```

```
!  
ip local pool POOL 192.168.1.1 192.168.1.100
```

```
!  
在交换机上
```

```
!  
username dsl password 0 dsl  
  
!  
bba-group pppoe global  
  virtual-template 1  
!  
interface GigabitEthernet0/0/0  
  no ip address  
  negotiation auto  
  cdp enable  
  service instance 100 ethernet  
    encapsulation dot1q 100 etype pppoe-all  
    rewrite ingress tag pop 1 symmetric  
    bridge-domain 100  
  !  
  service instance 200 ethernet  
    encapsulation dot1q 200 etype pppoe-all  
    rewrite ingress tag pop 1 symmetric  
    bridge-domain 200  
  !  
!  
  
interface Virtual-Template1  
  ip unnumbered Loopback0  
  peer default ip address pool POOL  
  ppp authentication chap  
!  
interface BDI100  
  no ip address  
  pppoe enable group global  
!  
interface BDI200  
  no ip address  
  pppoe enable group global  
!  
interface Loopback0  
  ip address 192.168.10.1 255.255.255.255  
end  
  
!  
ip local pool POOL 192.168.1.1 192.168.1.100
```

```
!  
在PPPoE服务器上
```

```
SERVER#show pppoe session
      2 sessions in LOCALLY_TERMINATED (PTA) State
      2 sessions total
```

Uniq ID	PPPoE SID	RemMAC LocMAC	Port	VT	VA VA-st	State Type
5	5	c471.fe93.d112 00a2.eee6.663f	BD100	1	Vi2.2 UP	PTA
6	6	e8b7.4886.b8ea 00a2.eee6.663f	BD200	1	Vi2.1 UP	PTA

!

```
username dsl password 0 dsl
```

!

```
bba-group pppoe global
  virtual-template 1
```

!

```
interface GigabitEthernet0/0/0
  no ip address
  negotiation auto
  cdp enable
  service instance 100 ethernet
  encapsulation dot1q 100 etype pppoe-all
  rewrite ingress tag pop 1 symmetric
  bridge-domain 100
```

!

```
service instance 200 ethernet
  encapsulation dot1q 200 etype pppoe-all
  rewrite ingress tag pop 1 symmetric
  bridge-domain 200
```

!

!

```
interface Virtual-Templat1
  ip unnumbered Loopback0
  peer default ip address pool POOL
  ppp authentication chap
```

!

```
interface BDI100
  no ip address
  pppoe enable group global
```

!

```
interface BDI200
  no ip address
  pppoe enable group global
```

!

```
interface Loopback0
  ip address 192.168.10.1 255.255.255.255
end
```

!

```
ip local pool POOL 192.168.1.1 192.168.1.100
```

!

当您使用‘VLAN范围’时，请注意在‘波尔特上的’变化：



```
SERVER#show pppoe session
      2 sessions in LOCALLY_TERMINATED (PTA) State
      2 sessions total
```

Uniq ID	PPPoE SID	RemMAC LocMAC	Port	VT	VA VA-st	State Type
7	7	c471.fe93.d112 00a2.eee6.663f	BD1 VLAN: 100	1	Vi2.1 UP	PTA
8	8	e8b7.4886.b8ea 00a2.eee6.663f	BD1 VLAN: 200	1	Vi2.2 UP	PTA

```
!
username dsl password 0 dsl
!
bba-group pppoe global
  virtual-template 1
!
interface GigabitEthernet0/0/0
  no ip address
  negotiation auto
  cdp enable
  service instance 100 ethernet
    encapsulation dot1q 100 etype pppoe-all
    rewrite ingress tag pop 1 symmetric
    bridge-domain 100
!
  service instance 200 ethernet
    encapsulation dot1q 200 etype pppoe-all
    rewrite ingress tag pop 1 symmetric
    bridge-domain 200
!
!
interface Virtual-Template1
  ip unnumbered Loopback0
  peer default ip address pool POOL
  ppp authentication chap
!
interface BDI100
  no ip address
  pppoe enable group global
!
interface BDI200
  no ip address
  pppoe enable group global
!
interface Loopback0
  ip address 192.168.10.1 255.255.255.255
end
!
ip local pool POOL 192.168.1.1 192.168.1.100
!
```

## 故障排除

本部分提供了可用于对配置进行故障排除的信息。

这些调试将是有用排除故障PPP/PPPoE。

- debug pppoe事件
- debug pppoe错误
- debug ppp negotiation

## 相关信息

- [在BDI的PPPoE在CISCO CSR 1000V](#)
- [增强Bug - BDI的PPPoE在ASR1k的终端和VLAN范围](#)
- [技术支持和文档 - Cisco Systems](#)