

# Configuración PPPoE sobre el BDI en los routers de la serie ASR1k

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## Introducción

Este documento describe cómo configurar el servidor del Point-to-Point Protocol over Ethernet (PPPoE) con la interfaz del dominio de Bridge (BDI) y el VLAN-rango.

## Prerrequisitos

### Requisitos

Cisco recomienda que tenga conocimiento sobre estos temas:

- La Conectividad de punta a punta del Layer 1 está muy bien
- Los fundamentos del PPP y del PPPoE se entienden bien

### Componentes Utilizados

La información que contiene este documento se basa en las siguientes versiones de software y hardware.

- HOST-1 - CISCO887G
- HOST-2 - CISCO887
- SWITCH - WS-C3560-24TS-S
- Servidor PPPoE - ASR1001-X

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.

## Configurar

Nota: Use la [Command Lookup Tool](#) ([clientes registrados solamente](#)) para obtener más información sobre los comandos usados en esta sección.

## 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
```

## SWITCH

```
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
```

## ! Servidor PPPoE

```
!  
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
```

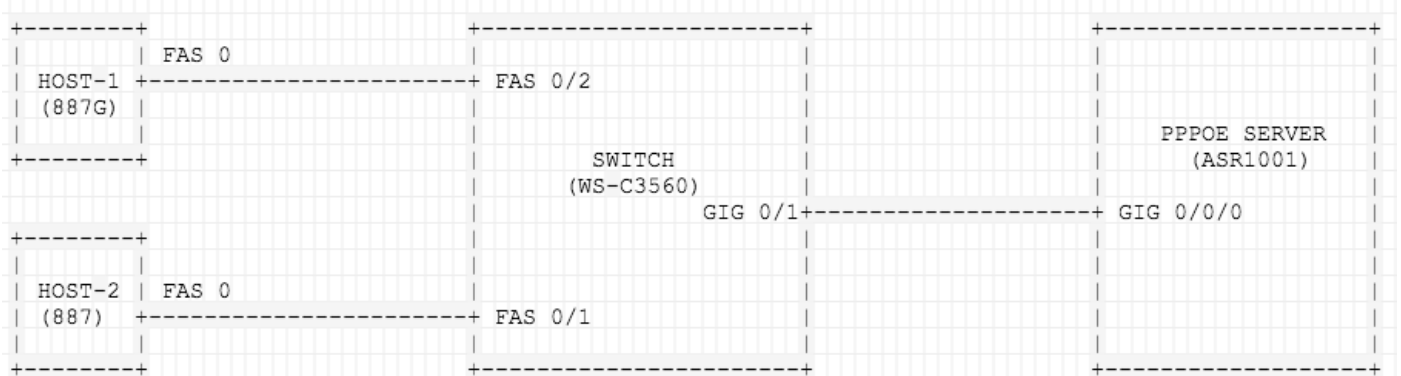
```
!  
ip local pool POOL 192.168.1.1 192.168.1.100
```

Alternativley, usted puede configurar el "VLAN-rango" como se muestra:

```
!  
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
```

!

## Diagrama de la red



## Verificación

Utilice esta sección para confirmar que su configuración funcione correctamente.

### En HOST-1

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

Uniq ID	PPPoE SID	RemMAC LocMAC	Port	VT	VA VA-st	State Type
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-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

```

## En 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
```

## En el SWITCH

```
!  
  
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
```

## En el servidor PPPoE

```
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
```

!

Cuando usted utiliza el "VLAN-rango", cambio del aviso en el "puerto":



```
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

!
```

## Troubleshooting

Esta sección proporciona la información que usted puede utilizar para resolver problemas su configuración.

Estos debugs serán útiles resolver problemas PPP/PPPoE.

- eventos del pppoe del debug
- errores PPPoE del debug
- debug ppp negotiation

## Información Relacionada

- [PPPoE sobre el BDI en CISCO CSR 1000V](#)
- [Bug de la mejora - Terminación PPPoE en el BDI y VLAN-rango en ASR1k](#)
- [Soporte Técnico y Documentación - Cisco Systems](#)