

PPPoE over BDI op ASR1k Series routers configureren

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Inleiding

Dit document beschrijft hoe u Point-to-Point Protocol over Ethernet (PPPoE) Server met de Bridge Domain Interface (BDI) en VLAN-bereik kunt configureren.

Voorwaarden

Vereisten

Cisco raadt kennis van de volgende onderwerpen aan:

- End-to-end Layer 1 connectiviteit is fijn
- De grondbeginselen van PPP en PPPoE worden goed begrepen

Gebruikte componenten

De informatie in dit document is gebaseerd op de volgende software- en hardware-versies:

- HOST-1 - CISCO 887G
- HOST-2 - CISCO 887
- SWITCH - WS-C3560-24TS-S switch
- PPPoE-SERVER - ASR1001-X

De informatie in dit document is gebaseerd op de apparaten in een specifieke laboratoriumomgeving. Alle apparaten die in dit document worden beschreven, hadden een opgeschoonde (standaard)configuratie. Als uw netwerk live is, moet u de potentiële impact van elke opdracht begrijpen.

Configureren

Opmerking: Gebruik de [Command Lookup Tool \(alleen voor geregistreerde gebruikers\)](#) voor [meer informatie over de opdrachten die in deze sectie worden gebruikt.](#)

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
```

!

PPPoE-SERVER

!

```
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

```

U kunt ook 'VLAN-range' configureren zoals wordt getoond:

```

!
interface GigabitEthernet0/0/0
 no ip address
 negotiation auto
 service instance 100 ethernet
 encapsulation default
 bridge-domain 1
!
end

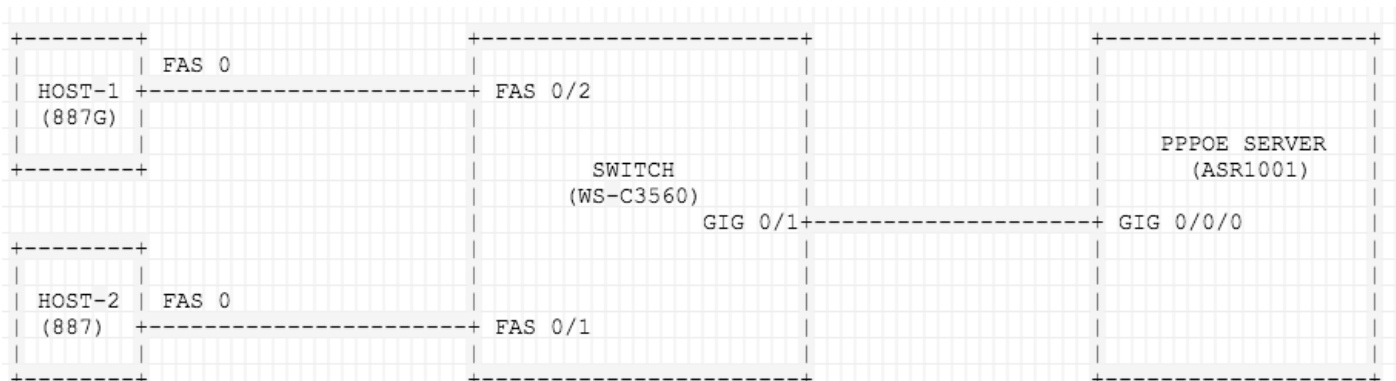
```

```

!
interface BDI1
 no ip address
 vlan-range dot1q 1 4094
 pppoe enable group global
!
end

```

Netwerkdigram



Verifiëren

Gebruik dit gedeelte om te bevestigen dat de configuratie correct werkt.

Over HOST-1

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

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

```
HOST-1#show ip interface brief | exclude un
```

Interface	IP-Address	OK?	Method	Status	Protocol
Dialer1	192.168.1.4	YES	IPCP	up	up

```
HOST-1#show caller ip
```

Line	User	IP Address	Local Number	Remote Number	<->
Vi2	SERVER	192.168.10.1	-	<unknown phone	in

```
HOST-1#ping 192.168.10.1
```

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 192.168.10.1, timeout is 2 seconds:

!!!!!

Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/4 ms

```
HOST-1#show ppp interface virtual-Access 2
```

PPP Serial Context Info

Interface : Vi2
PPP Serial Handle: 0x1F000003
PPP Handle : 0xB2000003
SSS Handle : 0x80000004
AAA ID : 24
Access IE : 0xA7000003
SHDB Handle : 0x0
State : Up
Last State : Binding
Last Event : LocalTerm

PPP Session Info

Interface : Vi2
PPP ID : 0xB2000003
Phase : UP
Stage : Local Termination
Peer Name : SERVER
Peer Address : 192.168.10.1
Control Protocols: LCP[Open] IPCP[Open] CDPCP[Stopped]
Session ID : 3
AAA Unique ID : 24
SSS Manager ID : 0x80000004
SIP ID : 0x1F000003
PPP_IN_USE : 0x11

```

Vi2 LCP: [Open]
Our Negotiated Options
Vi2 LCP:   MagicNumber 0x7735647E (0x05067735647E)
Peer's Negotiated Options
Vi2 LCP:   MRU 1500 (0x010405DC)
Vi2 LCP:   AuthProto CHAP (0x0305C22305)
Vi2 LCP:   MagicNumber 0xA7A011AC (0x0506A7A011AC)

```

```

Vi2 IPCP: [Open]
Our Negotiated Options
Vi2 IPCP:   Address 192.168.1.5 (0x0306C0A80105)
Peer's Negotiated Options
Vi2 IPCP:   Address 192.168.10.1 (0x0306C0A80A01)

```

Over 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

```

HOST-2#show ip interface brief | exclude un
Interface          IP-Address      OK? Method Status      Protocol
Dialer1            192.168.1.6    YES IPCP   up          up

```

```

HOST-2#show caller ip
Line      User      IP Address  Local Number  Remote Number  <->
Vi2      SERVER   192.168.10.1  -             <unknown phone in

```

```

HOST-2#ping 192.168.10.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.10.1, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/4 ms

```

```

HOST-2#show ppp interface virtual-Access 2
PPP Serial Context Info

```

```

-----
Interface      : Vi2
PPP Serial Handle: 0x7B00000A
PPP Handle     : 0xA000000A
SSS Handle     : 0x4C00000B
AAA ID        : 68
Access IE     : 0x1D00000A
SHDB Handle   : 0x0
State        : Up
Last State   : Binding
Last Event   : LocalTerm

```

```

PPP Session Info

```

```

-----
Interface      : Vi2
PPP ID        : 0xA000000A

```

```

Phase           : UP
Stage           : Local Termination
Peer Name       : SERVER
Peer Address    : 192.168.10.1
Control Protocols: LCP[Open] IPCP[Open] CDPCP[Stopped]
Session ID      : 10
AAA Unique ID   : 68
SSS Manager ID  : 0x4C00000B
SIP ID         : 0x7B00000A
PPP_IN_USE     : 0x11

```

```

Vi2 LCP: [Open]
Our Negotiated Options
Vi2 LCP:   MagicNumber 0x421AC8AB (0x0506421AC8AB)
Peer's Negotiated Options
Vi2 LCP:   MRU 1500 (0x010405DC)
Vi2 LCP:   AuthProto CHAP (0x0305C22305)
Vi2 LCP:   MagicNumber 0xA7A0942C (0x0506A7A0942C)

```

```

Vi2 IPCP: [Open]
Our Negotiated Options
Vi2 IPCP:   Address 192.168.1.6 (0x0306C0A80106)
Peer's Negotiated Options
Vi2 IPCP:   Address 192.168.10.1 (0x0306C0A80A01)

```

Op SWITCH

```
SWITCH#show vlan brief
```

VLAN Name	Status	Ports
1 default	active	Fa0/4, Fa0/5, Fa0/6, Fa0/7 Fa0/8, Fa0/9, Fa0/10, Fa0/11 Fa0/12, Fa0/13, Fa0/14, Fa0/15 Fa0/16, Fa0/17, Fa0/18, Fa0/19 Fa0/20, Fa0/21, Fa0/22, Fa0/23 Fa0/24, Gi0/2
11 VLAN0011	active	
12 VLAN0012	active	
13 VLAN0013	active	
100 VLAN0100	active	Fa0/2
200 VLAN0200	active	Fa0/1

```
SWITCH#Show interface trunk
```

Port	Mode	Encapsulation	Status	Native vlan
Gi0/1	on	802.1q	trunking	1
Port	Vlans allowed on trunk			
Gi0/1	100,200			
Port	Vlans allowed and active in management domain			
Gi0/1	100,200			
Port	Vlans in spanning tree forwarding state and not pruned			
Gi0/1	100,200			

Op PPPoE-SERVER

```
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

```
SERVER#show caller ip
```

Line	User	IP Address	Local Number	Remote Number	<->
Vi2.1	dsl	192.168.1.6	-	-	in
Vi2.2	dsl	192.168.1.5	-	-	in

```
SERVER#show ip local pool POOL
```

Pool	Begin	End	Free	In use
POOL	192.168.1.1	192.168.1.100	98	2

```
Available addresses:
```

```
192.168.1.7
192.168.1.8
192.168.1.9
```

```
.....
```

```
.....
```

Als je 'VLAN-range' gebruikt, moet je een wijziging in 'Port' opmerken:

```
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

```
SERVER#show caller ip
```

Line	User	IP Address	Local Number	Remote Number	<->
Vi2.1	dsl	192.168.1.7	-	-	in
Vi2.2	dsl	192.168.1.8	-	-	in

Problemen oplossen

Deze sectie verschaft informatie die u kunt gebruiken om problemen met uw configuratie op te lossen.

Deze deposito's zullen behulpzaam zijn bij het oplossen van problemen PPP/PPPoE.

- debug van PPP-gebeurtenissen

- tegenstrijdigheden van PPP
- debug van PPP-onderhandeling

Gerelateerde informatie

- [PPPoE over BDI op CISCO CSR 1000V](#)
- [Verbeteringsvenster - PPPoE-afsluitingen op BDI en VLAN-bereik op ASR1k](#)
- [Technische ondersteuning en documentatie – Cisco Systems](#)