

问题描述

V7交换机动态LDP方式和V5路由器Martini方式mpls l2vpn对接案例

解决方法

组网:

CE1-----PE1(S5560-HI)-----PE2(SR66-X)-----CE2

PE1配置信息如下:

```
[S5560]display version
H3C Comware Software, Version 7.1.045, Release 1122
Copyright (c) 2004-2017 New H3C Technologies Co., Ltd. All rights reserved.
H3C S5560-30S-EI uptime is 1 week, 0 days, 20 hours, 35 minutes
#
interface LoopBack0
ip address 192.168.20.1 255.255.255.255
#
ospf 1
area 0.0.0.0
 network 10.88.142.0 0.0.0.255
 network 192.168.20.0 0.0.0.255
#
mpls lsr-id 192.168.20.1
#
mpls ldp
#
l2vpn enable
#
pw-class pwc
pw-type ethernet
#
interface Vlan-interface1
description HZ-B7-2-5560
ip address 10.88.142.103 255.255.255.0
mpls enable
mpls ldp enable
#
interface GigabitEthernet1/0/16
port link-mode bridge
port access vlan 10
service-instance 10
 encapsulation s-vid 10
#
xconnect-group vpna
connection ldp
 ac interface GigabitEthernet1/0/16 service-instance 10
 peer 192.168.30.1 pw-id 3 pw-class pwc
#
PE2设备配置信息:
[H3C]display version
H3C Comware Platform Software
Comware Software, Version 5.20.106, Release 3303P36
Copyright (c) 2004-2017 Hangzhou H3C Tech. Co., Ltd. All rights reserved.
H3C SR6604-X uptime is 1 week, 3 days, 23 hours, 39 minutes
#
interface LoopBack0
ip address 192.168.30.1 255.255.255.255
#
mpls lsr-id 192.168.30.1
#
mpls
```

```

#
l2vpn
mpls l2vpn
#
mpls ldp
#
mpls ldp remote-peer 1
remote-ip 192.168.20.1
#
interface GigabitEthernet3/0/0
port link-mode route
ip address 10.88.142.120 255.255.255.0
mpls
mpls ldp
#
interface GigabitEthernet3/0/1
port link-mode route
mpls l2vc 192.168.20.1 3
#
ospf 1
area 0.0.0.0
 network 10.88.142.0 0.0.0.255
 network 192.168.30.0 0.0.0.255

```

测试结果:

PE1:

1)Remote LDP的状态信息:

[S5560]display l2vpn ldp

Total number of LDP PWs: 1, 1 up, 0 down

Peer	PW ID/VPLS ID	In/Out Label	State	Owner
192.168.30.1	3	65662/1025	Up	vpna

2)查看LDP状态

[S5560]display mpls ldp peer

Total number of peers: 1

Peer LDP ID	State	Role	GR	MD5	KA Sent/Rcvd
192.168.30.1:0	Operational	Passive	Off	Off	2006/2006

PW封装模式需要与对端PE保持一致, 本例中使用的是Ethernet。

PW state 是UP表示该PW已正常建立

[S5560]display l2vpn forwarding pw verbose

Xconnect-group Name: vpna

Connection Name: ldp

Link ID: 1

PW Type : **Ethernet** PW State : Up

In Label : 65662 Out Label: 1025

MTU : 1500

PW Attributes : Main

VCCV CC : -

VCCV BFD : -

Tunnel Group ID : 0x1000000160000000

Tunnel NHLFE IDs: 1028

PE2信息:

PW封装模式需要与对端PE保持一致, 本例中使用的是Ethernet。

[H3C]display mpls l2vpn fib pw vpws verbose

Total PW Entry:1

In Interface : GE3/0/1

Service Instance ID : 0

In VC Label : 1025

Out VC Label : 65662

Out Interface : ----

Encapsulation Type : Ethernet

Entry Type : Send

MTU : 1500
Control Word : NO
Packets received : 0
Receives discarded : 0
Packets sent : 0
Sends discarded : 0
Tunnel ID : 0xc0002(Done)
GRCCount:1

[H3C]display mpls ldp remote-peer

LDP Remote Entity Information

Remote Peer Name : 1
Remote Peer IP : 192.168.20.1 LDP ID : 192.168.30.1:0
Transport Address : 192.168.30.1

Configured Keepalive Timer : 45 Sec
Configured Hello Timer : 45 Sec
Negotiated Hello Timer : 45 Sec
Hello Message Sent/Rcvd : 5388/2013 (Message Count)

CE1:

[H3C]display arp 100.1.1.2

Type: S-Static D-Dynamic O-Openflow R-Rule I-Invalid
IP address MAC address VLAN Interface Aging Type
100.1.1.2 70f9-6d6d-0ebd 10 GE1/0/7 12 D

[H3C]ping 100.1.1.2

Ping 100.1.1.2 (100.1.1.2): 56 data bytes, press CTRL_C to break
56 bytes from 100.1.1.2: icmp_seq=0 ttl=255 time=0.488 ms
56 bytes from 100.1.1.2: icmp_seq=1 ttl=255 time=0.210 ms
56 bytes from 100.1.1.2: icmp_seq=2 ttl=255 time=0.179 ms
56 bytes from 100.1.1.2: icmp_seq=3 ttl=255 time=0.166 ms

CE2:

<h3c>display arp 100.1.1.1

Type: S-Static D-Dynamic O-Openflow R-Rule I-Invalid
IP address MAC address VLAN Interface Aging Type
100.1.1.1 741f-4a94-8e20 N/A GE2/0/2 12 D

<h3c>ping 100.1.1.1

Ping 100.1.1.1 (100.1.1.1): 56 data bytes, press CTRL_C to break
56 bytes from 100.1.1.1: icmp_seq=0 ttl=255 time=0.514 ms
56 bytes from 100.1.1.1: icmp_seq=1 ttl=255 time=0.335 ms
56 bytes from 100.1.1.1: icmp_seq=2 ttl=255 time=0.299 ms

总结:

- 1、 两端PE的PW模式需要保持一致
- 2、 V5设备中的vc id与V7设备中的pw id要相同。
- 3、 一个PW只能对应一个AC接口。
- 4、 查看PW状态前, 需要保持AC口的状态是UP, 否则即使配置正确, PW的状态也会是down