OSPF 组播hello报文多网段导致无法建立邻居

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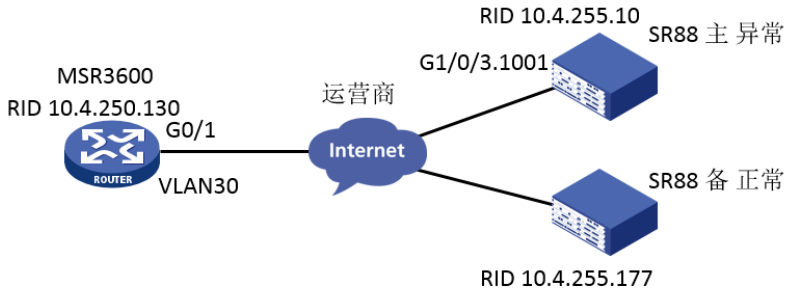
组网及说明

组网如下：



组网介绍：

MSR3600(G0/1)（RID 10.4.250.130）—运营商传输设备—（RID 10.4.255.10）（G1/0/3.1001）SR88（主） ×（故障）

MSR3600（VLAN30）—运营商传输设备—(RID 10.4.255.177)SR88（备）√

问题描述

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现场MSR36与两个88建立ospf邻居，网络类型是P2P，与主88建立的ospf邻居建立不起来，与备88成功建立邻居

过程分析

（1）在MSR36上查看SR88邻居状态如下：

==========display ospf peer==========

OSPF Process 1 with Router ID 10.4.250.130
Neighbor Brief Information

Area: 0.0.0.11
Router ID Address Pri Dead-Time State Interface
10.230.255.10 10.4.250.133 1 40 Init/ - GE0/1
//这里显示故障（主）SR88的接口地址是10.4.250.133
10.4.255.177 10.4.248.129 1 31 Full/ - Vlan30

在SR88上查看MSR36状态如下：
10.4.250.130 10.4.250.130 1 33 ExStart/ - GE7/0/3.2071

//这里显示故障（主）SR88的出接口是GE1/0/3.1001，地址是10.4.250.129，与上面的地址不符。
Interface: 10.4.250.129 (GigabitEthernet1/0/3.1001) --> 10.4.250.130
Cost: 1 State: P-2-P Type: PTP MTU: 1500
Timers: Hello 10, Dead 40, Poll 40, Retransmit 5, Transmit Delay 1
FRR backup: Enabled
Enabled by network configuration
interface GigabitEthernet1/0/3.1001
ip address 10.4.250.129 255.255.255.252
ospf network-type p2p
vlan-type dot1q vid 1001
而这个10.4.250.133是故障88上的一个地址，这个地址与另一个网点的设备能正常建立ospf邻居。
且现场将MSR36的G0/1口人为shutdown，再undo shutdown，后，在MSR上查看邻居peer，发现故障88的接口地址又变为10.4.250.121：
（2）检查两端的ospf配置，没有什么异常，两端ospf的hello、dead时间都是默认值，一致。
（3）MSR36的日志里面提示ospf状态变为down：

Line 14710: %@14677%Mar 19 02:06:30:386 2021 OSPF/6/OSPF_LAST_NBR_DOWN: OSPF 1 Last neighbor down event: Router ID: 10.230.255.10 Local address: 10.4.250.130 Remote address: 10.4.250.133 Reason: Ospf_ifachange.
Line 14710: %@14677%Mar 19 02:06:30:386 2021 OSPF/6/OSPF_LAST_NBR_DOWN: OSPF 1 Last neighbor down event: Router ID: 10.230.255.10 Local address: 10.4.250.130 Remote address: 10.4.250.133 Reason: Ospf_ifachange.
Line 14711: %@14678%Mar 19 02:06:30:389 2021 OSPF/5/OSPF_NBR_CHG: OSPF 1 Neighbor 10.4.250.133(GigabitEthernet0/1) changed from INIT to DOWN.
Line 14711: %@14678%Mar 19 02:06:30:389 2021 OSPF/5/OSPF_NBR_CHG: OSPF 1 Neighbor 10.4.250.133(GigabitEthernet0/1) changed from INIT to DOWN.

SR88的日志里面提示：
Line 27553: %Mar 19 10:07:09:268 2021 QHRC-A-NT-WAN-WRT01 OSPF/6/OSPF_LAST_NBR_DOWN: OSPF 100 Last neighbor down event: Router ID: 10.4.250.130 Local address: 10.4.250.129 Remote address: 10.4.250.130 Reason: DeadInterval timer expired.
Line 27554: %Mar 19 10:07:09:269 2021 QHRC-A-NT-WAN-WRT01 OSPF/5/OSPF_NBR_CHG: OSPF 100 Neighbor 10.4.250.130(GigabitEthernet1/0/3.1001) changed from EXSTART to DOWN.

查看两个设备有路由，且在MSR36上pingSR88，是通的，且不丢包：
Line 3096: %Mar 18 08:16:26:063 2021 SHELL/6/SHELL_CMD: -Line=vty0-IPAddr=10.4.250.129-User=admin; Command is ping -s 1800 -a 10.4.250.130 10.4.250.129
Line 3097: %Mar 18 08:16:27:084 2021 PING/6/PING_STATISTICS: Ping statistics for 10.4.250.129: 5 packets transmitted, 5 packets received, 0.0% packet loss, round-trip min/avg/max/std-dev = 31.964/37.473/48.604/6.475 ms.

（4）在MSR36这一端收集debug ospf event，显示如下：
怀疑是对端88的地址有问题
*Mar 19 02:11:02:305 2021 OSPF/7/DEBUG:
OSPF: Recv packet from unknown non-shamlink/vlink nbr 10.4.250.129.

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*Mar 19 02:11:02:426 2021  OSPF/7/DEBUG:
 OSPF: Recv packet from unknown non-shamlink/vlink nbr 10.4.254.109.
*Mar 19 02:11:02:427 2021  OSPF/7/DEBUG:
 OSPF: Recv packet from unknown non-shamlink/vlink nbr 10.4.254.237.
*Mar 19 02:11:02:428 2021  OSPF/7/DEBUG:
 OSPF: Recv packet from unknown non-shamlink/vlink nbr 10.4.254.129.
```

解决方法

因为是ospf 2配置，不检查网段，只跟其相连的建立邻居，中间交换网是有问题的，MSR那边应该能收到98这边多个网段的ospf hello组播报文，先收到谁就以谁来建邻居了，两端都配置一下 peer-address-check 进行一下网段检查。

network 10.4.254.0 0.0.0.255

peer-address-check： 配置建立邻接关系必须在同一网段的检查功能，即在接收Hello报文时，对端的IP地址与当前接口必须在同一网段。

因此这里通过检查网段信息，可以在两端设备上规避掉这个中间交换网有问题的现象。