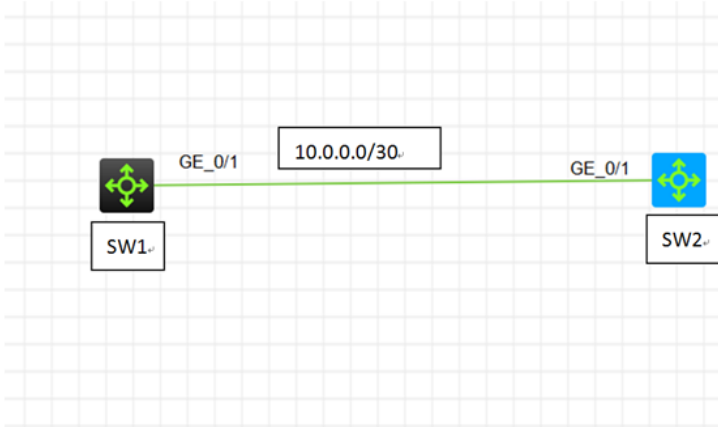


知 某局点OSPF邻居无法建立的解决办法10-Interface down

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组网及说明

本案例为OSPF Interface down的故障复现，网络拓扑图如下：



问题描述

通过dis ospf statistics error查看，具体反馈如下：

```
<SW1>dis ospf statistics error
OSPF Process 1 with Router ID 1.1.1.1
OSPF Packet Error Statistics
0      : Router ID confusion      0      : Bad packet
0      : Bad version              0      : Bad checksum
0      : Bad area ID             0      : Drop on unnumbered link
0      : Bad virtual link        0      : Bad authentication type
0      : Bad authentication key  0      : Packet too small
0      : Neighbor state low      0      : Transmit error
1      : Interface down          0      : Unknown neighbor
0      : HELLO: Netmask mismatch 0      : HELLO: Hello-time mismatch
0      : HELLO: Dead-time mismatch 0      : HELLO: Ebit option mismatch
0      : DD: MTU option mismatch  0      : DD: Unknown LSA type
0      : DD: Ebit option mismatch 0      : ACK: Bad ack
0      : ACK: Unknown LSA type   0      : REQ: Empty request
0      : REQ: Bad request        0      : UPD: LSA checksum bad
0      : UPD: Unknown LSA type   0      : UPD: Less recent LSA
<SW1>
```

```
<SW2>dis ospf statistics error
OSPF Process 1 with Router ID 2.2.2.2
OSPF Packet Error Statistics
0      : Router ID confusion      0      : Bad packet
0      : Bad version              0      : Bad checksum
0      : Bad area ID             0      : Drop on unnumbered link
0      : Bad virtual link        0      : Bad authentication type
0      : Bad authentication key  0      : Packet too small
0      : Neighbor state low      0      : Transmit error
0      : Interface down          0      : Unknown neighbor
0      : HELLO: Netmask mismatch 0      : HELLO: Hello-time mismatch
0      : HELLO: Dead-time mismatch 0      : HELLO: Ebit option mismatch
0      : DD: MTU option mismatch  0      : DD: Unknown LSA type
0      : DD: Ebit option mismatch 0      : ACK: Bad ack
0      : ACK: Unknown LSA type   0      : REQ: Empty request
0      : REQ: Bad request        0      : UPD: LSA checksum bad
0      : UPD: Unknown LSA type   0      : UPD: Less recent LSA
<SW2>
```

过程分析

根据反馈，在SW1看到有1个Interface down的错误，基本可以判断为接口DOWN而引起的OSPF邻居无法建立。

查看SW1配置及接口状态：

```
ospf 1 router-id 1.1.1.1
area 0.0.0.1
network 1.1.1.1 0.0.0.0
network 10.0.0.1 0.0.0.0
nssa
#
```

```

interface LoopBack0
 ip address 1.1.1.1 255.255.255.255
#
interface GigabitEthernet1/0/1
 port link-mode route
 combo enable fiber
 ip address 10.0.0.1 255.255.255.252
 ospf network-type p2p
#

```

```

<SW1>dis int gi 1/0/1
GigabitEthernet1/0/1
Current state: DOWN
Line protocol state: DOWN
Description: GigabitEthernet1/0/1 Interface
Bandwidth: 1000000kbps
Maximum Transmit Unit: 1500
Internet Address is 10.0.0.1/30 Primary
IP Packet Frame Type:PKTFMT_ETHNT_2, Hardware Address: 2874-3e46-0106
IPv6 Packet Frame Type:PKTFMT_ETHNT_2, Hardware Address: 2874-3e46-0106
Last link flapping: 0 hours 19 minutes 41 seconds
Last clearing of counters: Never
  Peak value of input: 0 bytes/sec, at 00-00-00 00:00:00
  Peak value of output: 0 bytes/sec, at 00-00-00 00:00:00
  Last 300 seconds input:  0 packets/sec 0 bytes/sec -%
  Last 300 seconds output: 0 packets/sec 0 bytes/sec -%
Input (total):  0 packets, 0 bytes
                0 unicasts, 0 broadcasts, 0 multicasts, 0 pauses
Input (normal): 0 packets, 0 bytes
                0 unicasts, 0 broadcasts, 0 multicasts, 0 pauses

```

在SW1看到接口已down，接口down是无法建立OSPF邻居关系的，需要检查物理链路及对端的配置：

SW2的配置及接口的状态如下：

```

ospf 1 router-id 2.2.2.2
 area 0.0.0.1
   network 2.2.2.2 0.0.0.0
   network 10.0.0.2 0.0.0.0
 nssa
#
interface LoopBack0
 ip address 2.2.2.2 255.255.255.255
#
interface GigabitEthernet1/0/1
 port link-mode route
 combo enable fiber
 shutdown
 ip address 10.0.0.2 255.255.255.252
 ospf network-type p2p
#

```

```

<SW2>dis int gi 1/0/1
GigabitEthernet1/0/1
Current state: Administratively DOWN
Line protocol state: DOWN
Description: GigabitEthernet1/0/1 Interface
Bandwidth: 1000000kbps
Maximum Transmit Unit: 1500
Internet Address is 10.0.0.2/30 Primary
IP Packet Frame Type:PKTFMT_ETHNT_2, Hardware Address: 2874-42cb-0206
IPv6 Packet Frame Type:PKTFMT_ETHNT_2, Hardware Address: 2874-42cb-0206
Last link flapping: 0 hours 21 minutes 38 seconds
Last clearing of counters: Never
  Peak value of input: 0 bytes/sec, at 00-00-00 00:00:00
  Peak value of output: 0 bytes/sec, at 00-00-00 00:00:00
  Last 300 seconds input:  0 packets/sec 0 bytes/sec -%
  Last 300 seconds output: 0 packets/sec 0 bytes/sec -%
Input (total):  0 packets, 0 bytes
                0 unicasts, 0 broadcasts, 0 multicasts, 0 pauses
Input (normal): 0 packets, 0 bytes
                0 unicasts, 0 broadcasts, 0 multicasts, 0 pauses

```

根据反馈的配置可知SW2的接口已被手动shutdown。

解决方法

重新开启SW2的物理接口即可建立OSPF邻居关系：

```

[SW2]int gi 1/0/1
[SW2-GigabitEthernet1/0/1]undo shutdown
[SW2-GigabitEthernet1/0/1]quit

```

```
[SW2]dis ospf peer

      OSPF Process 1 with Router ID 2.2.2.2
      Neighbor Brief Information

Area: 0.0.0.0
Router ID      Address      Pri Dead-Time  State      Interface
1.1.1.1        10.0.0.1     1   39         Full/ -    GE1/0/1
[SW2]
```

```
[SW1]dis ospf peer

      OSPF Process 1 with Router ID 1.1.1.1
      Neighbor Brief Information

Area: 0.0.0.0
Router ID      Address      Pri Dead-Time  State      Interface
2.2.2.2        10.0.0.2     1   35         Full/ -    GE1/0/1
[SW1]
```

温馨提醒：在拥有中间设备比如传输设备时，还需要检查传输设备的配置及物理链路是否正常。