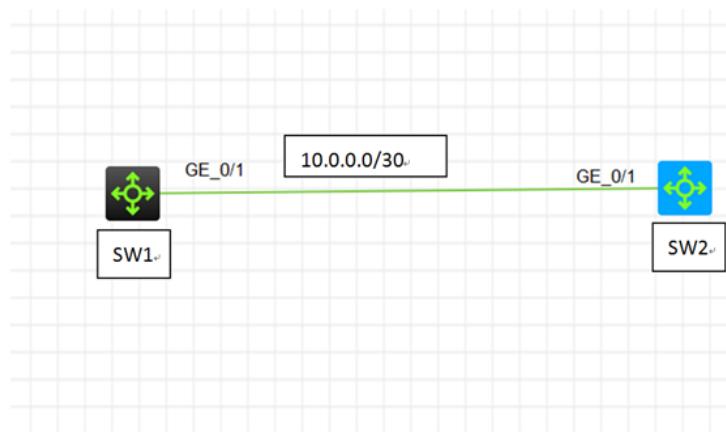


知 某局点OSPF邻居无法建立的解决办法10-Interface down

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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      : UDP: LSA checksum bad
      0 : UDP: Unknown LSA type     0      : UDP: 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      : UDP: LSA checksum bad
      0 : UDP: Unknown LSA type     0      : UDP: 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。