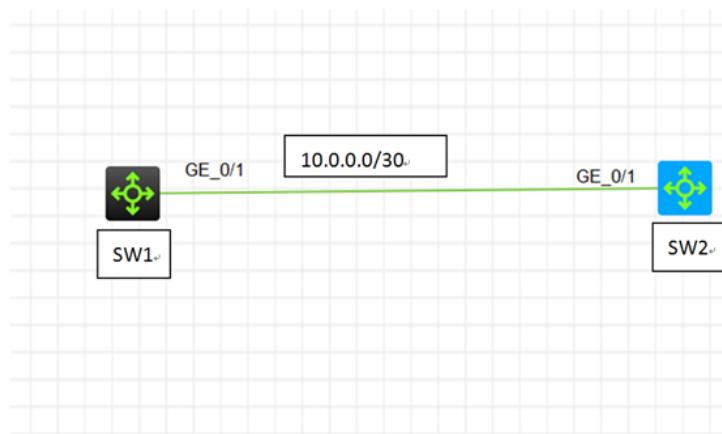


# 某局点OSPF邻居无法建立的解决办法7-Router ID confusion

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## 组网及说明

本案例为OSPF Router ID confusion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

  13 : 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
[SW1]
```

```
[SW2]dis ospf statistics error
      OSPF Process 1 with Router ID 1.1.1.1
      OSPF Packet Error Statistics

  15 : 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，SW1和SW2的Router ID confusion一直在增加，说明SW1与SW2的router-id可能存在冲突的情况，需要查看配置来进一步确认，SW1与SW2的配置如下：

SW1:

```
ospf 1 router-id 1.1.1.1
area 0.0.0
network 1.1.1.1 0.0.0.0
network 10.0.0.1 0.0.0.0
#
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
#
```

```
SW2:
ospf 1 router-id 1.1.1.1
area 0.0.0
network 1.1.1.1 0.0.0.0
network 10.0.0.2 0.0.0.0
#
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 10.0.0.2 255.255.255.252
ospf network-type p2p
#
```

根据SW1与SW2的配置反馈，不仅router-id已经冲突，而且loopback 0的IP地址也冲突了，所以导致了OSPF邻居无法正常建立。

#### 解决方法

因此需要修改其中一端的Loopback地址及router-id，在这里就修改SW2的配置，具体配置过程如下：

```
[SW2]undo ospf 1
Undo OSPF process? [Y/N]:y
[SW2]undo int loopback 0
[SW2]int loopback 0
[SW2-LoopBack0]ip address 2.2.2.2 32
[SW2-LoopBack0]quit
[SW2]ospf 1 router-id 2.2.2.2
[SW2-ospf-1]area 0.0.0.0
[SW2-ospf-1-area-0.0.0.0]network 10.0.0.2 0.0.0.0
[SW2-ospf-1-area-0.0.0.0]network 2.2.2.2 0.0.0.0
[SW2-ospf-1-area-0.0.0.0]quit
[SW2-ospf-1]quit
```

修改完配置后即可正常建立OSPF邻居关系：

```
[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]
```