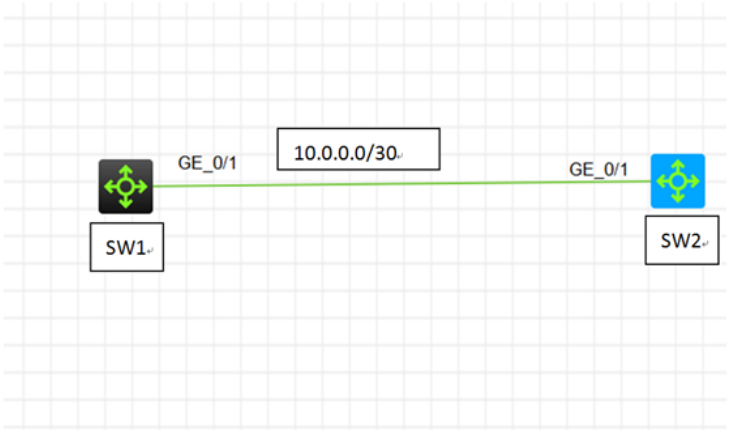
某局点OSPF邻居无法建立的解决办法3-Bad authentication type

OSPF　韦家宁　2020-05-31 发表

组网及说明

本案例为OSPF Bad authentication type的故障复现，网络拓扑图如下：



问题描述

SW1与SW2为S5820交换机，在配置OSPF后无法建立OSPF邻居关系。

过程分析

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           17         : 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 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           20         : 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]
```

根据反馈，发现SW1与SW2在Bad authentication type的错误数量都有增长，可能是SW1与SW2的OSPF认证方式不一致导致的，需要查看具体的配置：

SW1：

```
router id 1.1.1.1
#
ospf 1 router-id 1.1.1.1
 area 0.0.0.0
  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 authentication-mode md5 1 cipher $c$3$fBqRFMv3k2QrKG01+4hhrsIHDzNK0+x/vA==
#
```

SW2：

```
router id 2.2.2.2
#
ospf 1 router-id 2.2.2.2
 area 0.0.0.0
  network 2.2.2.2 0.0.0.0
  network 10.0.0.2 0.0.0.0
#
interface LoopBack0
 ip address 2.2.2.2 255.255.255.255
#
interface GigabitEthernet1/0/1
 port link-mode route
 combo enable fiber
 ip address 10.0.0.2 255.255.255.252
 ospf authentication-mode simple cipher $c$3$49RbBBJ1w6Uu8Ru30INDl/1prkz3XCwBxg==
#
```

根据配置信息的反馈，SW1使用了MD5加密认证，SW2使用了明文加密认证，两端的加密认证方式的不一致会影响到OSPF邻居的建立。

解决方法

需要统一两端的OSPF认证加密，具体配置如下：

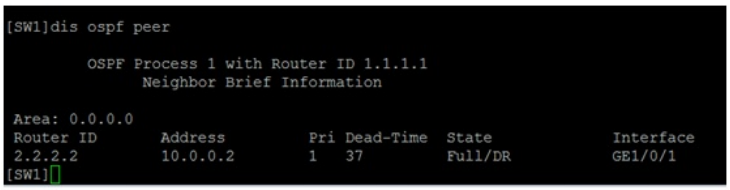
SW1：

```
[SW1]int gi 1/0/1
[SW1-GigabitEthernet1/0/1]undo ospf authentication-mode md5 1
[SW1-GigabitEthernet1/0/1]ospf authentication-mode md5 1 plain 123456
[SW1-GigabitEthernet1/0/1]quit
```

SW2：

```
[SW2]int gi 1/0/1
[SW2-GigabitEthernet1/0/1] undo ospf authentication-mode simple
[SW2-GigabitEthernet1/0/1]ospf authentication-mode md5 1 plain 123456
[SW2-GigabitEthernet1/0/1]quit
```

重新配置后，OSPF的邻居即可正常建立：



```
[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   34         Full/BDR          GE1/0/1
[SW2]
```