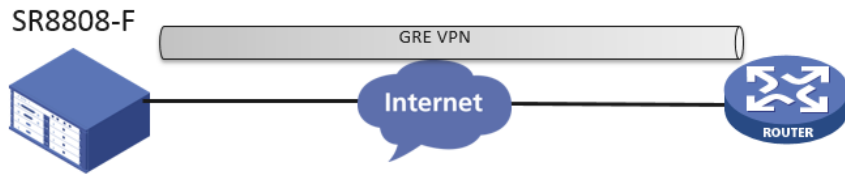


知 SR88建立GRE VPN隧道业务不通

GRE VPN 郭尧 2023-04-26 发表

组网及说明



组网如上:

问题描述

SR8808-F和运营商路由器通过公网建立GRE隧道，隧道能够建立但是业务流量不通

过程分析

两边设备GRE配置完成后，发现业务地址无法互通，SR88与对端设备的Tunnel口地址PING测试也不能通，使用两边设备的Tunnel口源和目的地址PING测试，能够正常通信。

1、检查配置和Tunnel口状态。其中本端Tunnel口地址为192.168.7.142，Tunnel口源和目的地址分别为192.168.7.138和192.168.0.1，如下：

```
interface Tunnel0 mode gre
ip binding vpn-instance www
ip address 192.168.7.142 255.255.255.252
source 192.168.7.138
destination 192.168.0.1
interface GigabitEthernet2/0/17
port link-mode route
combo enable copper
ip address 192.168.7.138 255.255.255.252
```

```
mirroring-group 1 mirroring-port both
```

隧道口配置和接口配置未发现异常，SR8808-F设备当隧道源接口或隧道流量的入接口位于SPC类单板、CSPC类单板（CSPC-GE16XP4L-E、CSPC-GE24L-E和CSPC-GP24GE8XP2L-E除外）和CMPE-1104单板上时，对于隧道封装后的报文，设备不能根据目的地址和路由表进行第二次三层转发，需要将封装后的报文发送给业务环回组，由业务环回组将报文回送给转发模块后，再进行三层转发。查看单板型号如下：

```
=====display device verbose=====
```

```
Slot No. Brd Type      Brd Status  Software Version
2      CSPC-GP24XP2LB    Normal     SR8800-CMW710-R7951P01
```

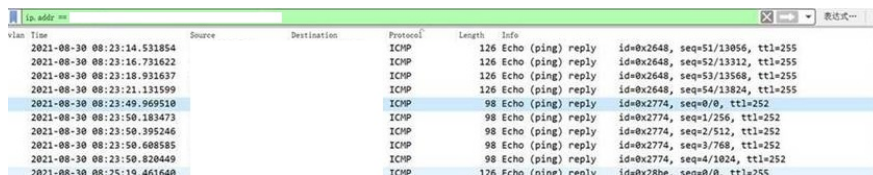
根据单板型号可知需要配置业务环回组，业务环回组配置如下：

```
service-loopback group 1 type tunnel
interface GigabitEthernet2/0/16
port link-mode bridge
port service-loopback group 1
```

于是进一步检查Tunnel口状态，也是正常的，如下：

```
Tunnel0
Current state: UP
Line protocol state: UP
Description:
Bandwidth: 64 kbps
Maximum transmission unit: 1468
Internet address: 192.168.7.142/30 (primary)
Tunnel source 192.168.7.138, destination 192.168.0.1
Tunnel keepalive disabled
Tunnel TTL 255
Tunnel protocol/transport GRE/IP
GRE key disabled
Checksumming of GRE packets disabled
Last clearing of counters: Never
Last 300 seconds input rate: 0 bytes/sec, 0 bits/sec, 0 packets/sec
Last 300 seconds output rate: 0 bytes/sec, 0 bits/sec, 0 packets/sec
Input: 0 packets, 0 bytes, 0 drops
Output: 236 packets, 19448 bytes, 0 drops
```

2、收集接口抓包信息和Debug信息分析报文的交互过程。在GigabitEthernet2/0/17抓包可以看到对端返回的ICMP报文，如下：



No.	Time	Source	Destination	Protocol	Length	Info
2021-08-30 08:23:14.531854				ICMP	126	Echo (ping) reply id=0x2648, seq=51/13056, ttl=255
2021-08-30 08:23:16.731622				ICMP	126	Echo (ping) reply id=0x2648, seq=52/13312, ttl=255
2021-08-30 08:23:18.931637				ICMP	126	Echo (ping) reply id=0x2648, seq=53/13568, ttl=255
2021-08-30 08:23:21.131599				ICMP	126	Echo (ping) reply id=0x2648, seq=54/13824, ttl=255
2021-08-30 08:23:49.969518				ICMP	98	Echo (ping) reply id=0x2774, seq=0/0, ttl=252
2021-08-30 08:23:50.183473				ICMP	98	Echo (ping) reply id=0x2774, seq=1/256, ttl=252
2021-08-30 08:23:50.395246				ICMP	98	Echo (ping) reply id=0x2774, seq=2/512, ttl=252
2021-08-30 08:23:50.608585				ICMP	98	Echo (ping) reply id=0x2774, seq=3/768, ttl=252
2021-08-30 08:23:50.820449				ICMP	98	Echo (ping) reply id=0x2774, seq=4/1024, ttl=252
2021-08-30 08:23:50.841648				ICMP	126	Echo (ping) reply id=0x2648, seq=0/0, ttl=255

本端Tunnel口地址PING对端地址时的DEBUG信息如下：

```
<03_HG_01_S8808-F>ping -vpn-instance Monitor_zhandaoshigong -a 192.168.7.142 192.168.7.141
Ping 192.168.7.141 (192.50.7.141) from 192.168.7.142: 56 data bytes, press CTRL+C to break
*Aug 31 10:32:01:723 2021 03_HG_01_S8808-F GRE/7/packet: -MDC=1;
Tunnel0 packet: Before encapsulation according to adjacency table,
```

192.168.7.142->192.168.7.141 (length = 84)

*Aug 31 10:32:01:2021 03_HG_01_S8808-F GRE/7/packet: -MDC=1;

解决方法

Tunnel0 packet: After encapsulation,

通过进一步分析抓包发现，对端发送的GRE报文头部的checksum为1，芯片不支持，建议对端修改为0。
192.168.7.142->192.168.7.141 (length = 168)
Request time out.
不开启后问题解决。

Generic Routing Encapsulation (IP)

Flags and Version: 0x8000

1... .. = Checksum Bit: Yes

.0... .. = Routing Bit: No

