$^{(\!m\!)}$ The problem that the S7503E-M as an intermediate device fails to pass the Layer 2 mirrored traffic

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On the Layer 2 network, Huawei equipment performs local mirroring, and throws mobile DNS traffic di rectly to our switch through the local mirror. Our switch acts as an intermediate device for pure Layer 2 forwarding. The mobile engineer stated: 1. The mirror source interface of the mobile party is a Layer 3 port. 2. The monitoring port of the mobile party (that is, the port connected to the S75 switch) is a Layer 2 port and is an access port. The vlan is a local vlan of Huawei's own, so the traffic should be u ntagged.

At this time, Layer 2 traffic cannot pass through S75. Check the interface count. There is a lot of traffi c on the inbound interface, but the outbound interface traffic is very small.

<YD-JZ-HJSW-2>dis counters inbound interface gi 0/0/1

Interface Total (pkts) Broadcast (pkts) Multicast (pkts) Err (pkts)

GE0/0/1 1154698 0 9

Overflow: More than 14 digits (7 digits for column "Err").

--: Not supported.

<YD-JZ-HJSW-2>dis counters outbound interface ten 0/0/25

Total (pkts) Broadcast (pkts) Multicast (pkts) Err (pkts) Interface

XGE0/0/25 102107 24 95 0

Overflow: More than 14 digits (7 digits for column "Err").

--: Not supported.

GE0/0/1(in)

```
packet frame type: Ether
scription: To-YD-JZ-DNS01
ndwidth: 1000000 kbps
opback is not set
                                                                                                                                  net II, hardware address: 7485-c4ef-7400
          dia type is twisted pair, port hardware type is 1000_BASE_T
00Mbps-speed mode, full-duplex mode
  loomings-speed mode, full-duplex mode 
link speed type is autonegotiation, link duplex type is autonegotiation 
Flow-control is not enabled 
Maximum frame length: 9216 
Allow jumbo frames to pass 
Broadcast max-natio: 100%
      ulticast max-ratio: 100%
   Unicast max-ratio: 100%
VID: 101
      DI type: Automdix
ort link-type: Access
                      egged VLANs: 101
priority: 0
Untagged VLAMs: 101
Port priority: 0
Last link flapping: 21 hours 12 minutes 2 seconds
Last clearing of counters: 11:11:06 Thu 05/21/2020
Peak input rate: 1850439 bytes/sec, at 2020-05-21 11:12:19
Peak output rate: 16 bytes/sec, at 2020-05-21 11:12:19
Peak output rate: 16 bytes/sec, at 2020-05-21 11:12:19
Last 300 second input: 13455 packets/sec 1850439 bytes/sec 1%
Last 300 second output: 0 packets/sec 1850439 bytes/sec 0%
Input (total): 4162278 packets, 572584330 bytes
4162236 unicasts, 1 broadcasts, 35 multicasts, 0 pauses
Input (normal): 4162272 packets, - bytes
4162236 unicasts, 1 broadcasts, 35 multicasts, 0 pauses
Input: 0 input errors, 0 runts, 0 giants, 0 throttles
0 CRC, 0 frame, - overruns, 0 aborts
- ignored, - parity errors
Output (total): 39 packets, 5201 bytes
0 unicasts, 0 broadcasts, 39 multicasts, 0 pauses
Output (normal): 39 packets, - bytes
0 unicasts, 0 broadcasts, 39 multicasts, 0 pauses
Output: 0 output errors, - underruns, - buffer failures
0 aborts, 0 deferred, 0 collisions, 0 late collisions
0 lost carrier, - no carrier
```

```
Description: To-406_SW To-Core-1&2
Bandwidth: 10000000 kbps
Loopback is not set
Media type is optical fiber, port hardware type is 106_BASE_LR_SFP
1060ps-speed mode, full-duplex mode
Link speed type is autonegotiation, link duplex type is autonegotiation
Flow-control is not enabled
Maximum frame length: 9216
Allow jumbo frames to pass
Broadcast max-ratio: 100%
Multicast max-ratio: 100%
Multicast max-ratio: 100%
Winicast max-ratio: 100%
Winicast max-ratio: 100%
VLNI perse Automodix
Port link-type: Trunk
VLAN Passing: 20, 101-104, 652
VLAN permitted: 20, 101-104, 652
VLAN permitted: 20, 101-104, 652
Trunk port encapsulation: IEEE 802.1q
Port priority: 0
Last link flapping: 20 hours 25 minutes 22 seconds
Last clearing of counters: 11:11:07 Thu 05/21/2020
Peak input rate: 122 bytes/sec, at 2020-05-21 11:13:35
Peak output rate: 122 bytes/sec, at 2020-05-21 11:13:35
Last 300 second input: 1 packets/sec 22 bytes/sec 0%
Input (total): 363 packets, 3683d bytes
269 unicasts, 0 broadcasts, 94 multicasts, 0 pauses
Input (normal): 363 packets, - bytes
269 unicasts, 0 broadcasts, 94 multicasts, 0 pauses
Input: 0 input errors, 0 runts, 0 giants, 0 throttles
0 CRC, 0 frame, - overruns, 0 aborts
- ignored, - parity errors
Output (total): 1113624 packets, 107246698 bytes
1112831 unicasts, 166 broadcasts, 627 multicasts, 0 pauses
Output: 0 output errors, - underruns, - buffer failures
0 aborts, 0 deferred, 0 collisions, 0 late collisions
0 lost carrier, - no carrier
```

Process Analysis

First check the configuration under the device interface is a simple Layer 2 forwarding configuration, tr affic flooded in vlan101.

#

interface GigabitEthernet0/0/1 port link-mode bridge description To-YD-JZ-DNS01

port access vlan 101

#

interface Ten-GigabitEthernet0/0/25 port link-mode bridge description To-40G_SW To-Core-1&2 port link-type trunk undo port trunk permit vlan 1 port trunk permit vlan 20 101 to 104 652

#

Secondly, use the debug port flow-info slot 0 command to view the incremental traffic changes. You c an see that the packets in the inbound direction of 0/0/1 are much larger than the packets in the outbound direction of 0/0/25, and the packet is not forwarded. Packets may be dropped on the S75 s witch.

inbound

E0/0/1	up	8550314	57694	71	0
E0/0/2	up	6977150	48078	71	0
E0/0/3	up	3640781	23886	71	0
E0/0/4	up	3167084	21009	71	0
E0/0/5	down	8	0	0	0
E0/0/6	up		0	71	0
E0/0/7	up	779766	6923	807520	6923
E0/0/8	down		0	0	0
E0/0/9	up	0	0	179934	123
E0/0/10	down		0	0	0
E0/0/11	down		0		0
E0/0/12	down	0	0		0
E0/0/13	up	0	0	79	0
E0/0/14	up		0	72	0
E0/0/15	down		0	0	0
E0/0/16	down		0		0
E0/0/17	down	9	0		0
E0/0/18	down	0	0	0	0
E0/0/19	down		0	0	0
YD-JZ-HJSI	l-2-prol	be]debug por	rt flow-info slot	0	
ORT MATRIX	C:				
nterface	ink In	put(bytes/s)	Input(packets/s)	Output(bytes/s)	Output(packets/s)
E0/0/1	up	8540214	57683	72	0
E0/0/2	up	6977787	48051	72	0
E0/0/3	up	3635822	23851	72	0
E0/0/4	up	3192491	21003	72	0

outbound

GE0/0/22	down	0	0	0	0
SE0/0/23	down				
GE0/0/24	up	738615	6071	738615	6071
XGE0/0/25	up	187	1	738854	6072
XGE0/0/26	ир	1	0	76	0
XGE0/0/27	up	180320	123	72	0
XGE0/0/28	down		0	0	ð
YD-JZ-HJSW	-2-prot	e]debug por	t flow-info s	lot 0	
PORT MATRIX					
			*		/s) Output(packets/
Interface L	ink in	out(bytes/s)	Input(packets	/s) Output(bytes	/s) Output(packets/
GE0/0/1	up	8495651	57830	73	0
SE0/0/2	up	7043647	48051	73	0
GE0/0/3	UD	3634485	24025	72	0
GE0/0/4	up	3252807	21163	73	0
GE0/0/5	down		0	Ø	0
GE0/0/6	up	4	0	71	0
GE0/0/7	up	713734	6064	738052	6064
SE0/0/8	down	0	0	0	0
GE0/0/9	up	0	0	180429	124
GE0/0/10	down	0	0	0	0
GE0/0/11	down	0	0	Ø	Ø
GE0/0/12	down	0	0	0	0
GE0/0/13	up	0	0	79	0
GE0/0/14	up	6	0	72	0
GE0/0/15	down	0	0	0	0
GE0/0/16	down	0	0	0	0
GE0/0/17	down		0	0	
GE0/0/18	down	0	0	0	0
GE0/0/19	down	0	0	0	0
GE0/0/20	down	0	0		0
GE0/0/21	down	0	0	0	0
GE0/0/22	down	0	0	0	0
GE0/0/23	down				0
GE0/0/24	up	738002	6064	738002	6064
XGE0/0/25	up	196	1	738323	6066
KGEU/U/Z6	ир	1	U	/b	U
XGE0/0/27	up	180369	123	72	0
		0	0	0	0

It is suspected that the reason is that the layer 2 traffic carries the vlan tag. Although the Huawei devi ce indicates that it is thrown to our S75E G0/0/1 interface to the traffic without carrying the vlan-tag, it is received from our device ge1 (G0/0/1) chip. According to the statistics of the received packets, a I arge number of vlan-tag packets were received.

```
UC_PERQ_BYTE(7).ge0: 2,023,941 +2,023,941 131/s
RUC.ge1 : 1,409,965,854 +1,237,338,671 61,335/s
RDBGC3.ge1 : 1,409,976,359 +1,237,347,910 61,335/s
RDBGC8.ge1 : 1,409,976,358 +1,237,347,909 61,335/s
ING_NIV_RX_FRAMES_VLAN_TAGGED.ge1: 1,409,976,358 +1,237,347,909
 61,335/s //Count of TAG packets received on the port
R64.ge1 : 189,608 +164,997 3/s
R127.ge1 : 831,165,610 +731,516,945 35,010/s
R255.ge1 : 456,778,664 +398,236,914 19,650/s
          : 107,757,150 +94,497,804
R511.ge1
                                        6,565/s
R1023.ge1
         : 3,481,027 +3,038,954
                                        96/s
               147,305 +137,589
R1518.ge1
                                        3/s
```

Therefore, Huawei devices use Layer 3 ports as mirror source ports to send mirror packets that also c arry vlan tags.

Solution

The QinQ function is implemented on the S75 switch. When the message enters the S75 switch port, because qinq will be marked with an outer tag, the tagged message will be released by the port. The I abel is peeled off.