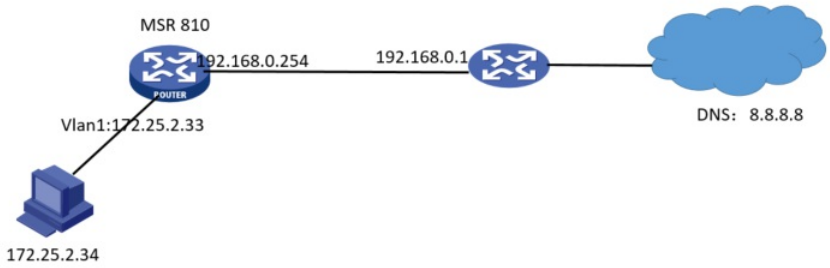
The problem that the equipment at a certain site cannot ping the external network

Static routing Xushuai 2021-12-30 16:15:20 Published

Network Topology

topology:

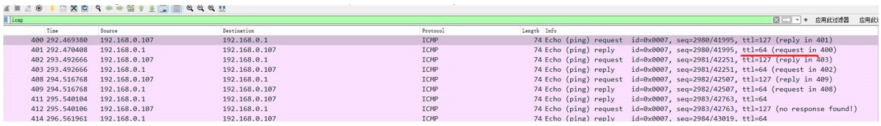


Problem Description

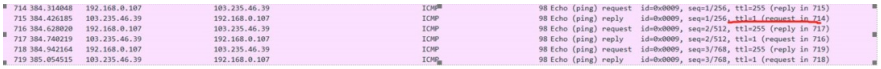
The customer reported that a static route out of the public network was configured on the MSR810, but the PC under the router could not access the public network.

Process Analysis

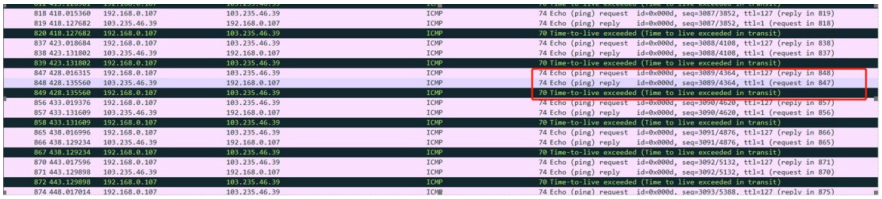
1. First check the configuration of static routing and the routing table on the router.
We see that the next hop of the route out of the Internet is specified as 192.168.0.1:
ip route-static 0.0.0.0 0 GigabitEthernet0/4 192.168.0.1
2.Carry the PC gateway address on the router to ping to test the next hop and the public net work dns address 8.8.8.8, the access is reachable
3.But ping the public network on the PC is unreachable
4. we tested the packet analysis of the router g0/4 interface in three scenarios as follows:
1) Firstly, ping the next hop (192.168.0.1) of our device on the PC, the PC can receive the ic mp reply packet normally
[PC]ping –S 172.25.2.34 192.168.0.1 result OK
Capture packets on router g0/4 and find that ttl=64, so the router can forward the packet to the PC normally



Because the router has done nat configuration, the source address of the packet is 192.168.0 .107 of the public network interface rather 172.25.2.34.
2) Ping the public network address 103.235.46.39 on the router, and a response packet is di splayed on the router. But the returned message shows ttl=1. Since the destination IP of the r eturned message is the router itself, the packet is reachable.
[H3C]ping –S 172.25.2.33 103.235.46.39 Result OK



3.Ping the public network address 103.235.46.39 on the PC, Show no response packets
[PC]ping –S 172.25.2.33 103.235.46.39 Result cannot be available
After capturing packets on the router, it is found that ttl=1, and packets with ttl=1 can only a ccess the own device itself, and cannot be forwarded to other devices.
There is also a packet showing time to live exceed, which means that the ttl has been exhaus ted and the packet can no longer be forwarded.



Conclusion: The ttl=1 of the packets forwarded from other devices (192.168.0.1), which caus ed our device to be unable to forward the packets to the PC. The normal response message ttl cannot be equal to 1, otherwise the packet cannot be forwarded.
Therefore, we speculate that it is related to the device of the next hop (192.168.0.1). The ret ure packet pass through from this device ttl=1, and reture packet destination to the device t tl=64 .This phenomenon may be related to the mechanism of this device. It is recommended to check this the mechanism of the device.

Solution

CheThe H3C router forwards normally, check the third-party device's return packet ttl=1 problem、