

某局点使用DHCP Delay (中继) 终端获取地址异常

DHCP 肖楚 5天前发表

组网及说明

组网 AC插卡 (机框) ——中继SW —— client

问题描述

AC作为普通的dhcp server 无中继, 终端获取地址正常。但是存在中继下, 终端获取不到地址。

过程分析

在AC与机框之间对内联口进行抓包, 同时AC上进行debugging dhcp server event, 发现AC上能正常收到中继转发过来的discover请求, 并回复了offer报文分配地址。

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*Nov 15 13:52:20:814 2024 XZYL.HPL.2F/IP-AC-H3C-6108E-1 DHCP/7/EVENT: Receive a DHCPDISCOVER message from
*Nov 15 13:52:20:814 2024 XZYL.HPL.2F/IP-AC-H3C-6108E-1 DHCP/7/EVENT: Lease 10.111.15.2 does not match the network.
*Nov 15 13:52:20:815 2024 XZYL.HPL.2F/IP-AC-H3C-6108E-1 DHCP/7/EVENT: Lease 10.111.16.2 does not match the network.
*Nov 15 13:52:20:815 2024 XZYL.HPL.2F/IP-AC-H3C-6108E-1 DHCP/7/EVENT: Lease 10.111.15.2 does not match the network.
*Nov 15 13:52:20:815 2024 XZYL.HPL.2F/IP-AC-H3C-6108E-1 DHCP/7/EVENT: Lease 10.111.16.2 does not match the network.
*Nov 15 13:52:21:215 2024 XZYL.HPL.2F/IP-AC-H3C-6108E-1 DHCP/7/EVENT: Send an ICMP echo request to 10.111.17.2.
*Nov 15 13:52:21:215 2024 XZYL.HPL.2F/IP-AC-H3C-6108E-1 STAMGR/6/STAMGR_CLIENT ONLINE: Client 10.111.17.1 went online f
*Nov 15 13:52:21:218 2024 XZYL.HPL.2F/IP-AC-H3C-6108E-1 STAMGR/6/STAMGR_ROAM_SUCCESS: Client 10.111.17.1 roamed from BS:
*Nov 15 13:52:21:219 2024 XZYL.HPL.2F/IP-AC-H3C-6108E-1 STAMGR/6/STAMGR_CLIENT OFFLINE: Client 10.111.17.1 went offline
*Nov 15 13:52:21:222 2024 XZYL.HPL.2F/IP-AC-H3C-6108E-1 STAMGR/6/STAMGR_CLIENT_SNOOPING: Detected client IP change: Client
*Nov 15 13:52:21:337 2024 XZYL.HPL.2F/IP-AC-H3C-6108E-1 DHCP/7/EVENT: Send a DHCP OFFER message on 10.111.17.1.
*Nov 15 13:52:21:337 2024 XZYL.HPL.2F/IP-AC-H3C-6108E-1 DHCP/7/PACKET:
To 10.111.17.1 port 67, interface is selected by routing table
Message type: REPLY (2)
Hardware type: 1, Hardware address length: 6
Hops: 1, Transaction ID: 3121596316
Seconds: 0, Broadcast flag: 1
Client IP address: 0.0.0.0 Your IP address: 10.111.17.2
Server IP address: 0.0.0.0 Relay agent IP address: 10.111.17.1
Client hardware address:
Server host name: not configured
Boot file name: not configured
DHCP message type: DHCP OFFER (2)
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随后也同时在AC与机框之间对内联口抓包, 能正常抓到中继转发过来的dhcp discover请求, 但是未抓到AC回复的offer 报文。同时从报文中能看见完整的capwap交互, 说明抓包操作正常。

No.	Time	Source	Destination	Protocol	Info
65510	2024-11-15 13:50:11.565605	.17.1	253.3	DHCP	DHCP Discover - Transaction ID 0x8fce043
70549	2024-11-15 13:50:32.565973	.17.1	253.3	DHCP	DHCP Discover - Transaction ID 0x8fce043
72638	2024-11-15 13:50:40.565894	.17.1	253.3	DHCP	DHCP Discover - Transaction ID 0x8fce043
76677	2024-11-15 13:50:56.566230	.17.1	253.3	DHCP	DHCP Discover - Transaction ID 0x8935a910
78092	2024-11-15 13:51:02.570114	.17.1	253.3	DHCP	DHCP Discover - Transaction ID 0x8935a910
81278	2024-11-15 13:51:15.570248	.17.1	253.3	DHCP	DHCP Discover - Transaction ID 0x8935a910
86010	2024-11-15 13:51:35.566426	.17.1	253.3	DHCP	DHCP Discover - Transaction ID 0x8935a910
90436	2024-11-15 13:51:54.566937	.17.1	253.3	DHCP	DHCP Discover - Transaction ID 0x8935a910
93017	2024-11-15 13:52:04.566936	.17.1	253.3	DHCP	DHCP Discover - Transaction ID 0xba0fc79c
94518	2024-11-15 13:52:10.566907	.17.1	253.3	DHCP	DHCP Discover - Transaction ID 0xba0fc79c

Ethernet II, Src: ..., Dst: ...
Internet Protocol Version 4, Src: ..., Dst: ...
User Datagram Protocol, Src Port: 67, Dst Port: 67
Dynamic Host Configuration Protocol (Discover)
Message type: Boot Request (1)
Hardware type: Ethernet (0x01)
Hardware address length: 6
Hops: 1
Transaction ID: 0x1bc0a827
Seconds elapsed: 0
Bootp flags: 0x8000, Broadcast flag (Broadcast)
Client IP address: 0.0.0.0
Your (client) IP address: 0.0.0.0
Next server IP address: 0.0.0.0
Relay agent IP address: .17.1
Client MAC address: ...
Client hardware address padding: 00000000000000000000
Server host name not given
Boot file name not given
Magic cookie: DHCP
Option: (53) DHCP Message Type (Discover)

No.	Time	Source	Destination	Protocol	Info
65502	2024-11-15 13:50:11.539774	10.111.7.134	192.168.253.3	CAPWAP..	CAPWAP-Control - Station Configuration Response
65503	2024-11-15 13:50:11.542040	192.168.253.3	10.111.7.134	CAPWAP..	CAPWAP-Control (Fragment ID: 677, Fragment Offset: 0)
65504	2024-11-15 13:50:11.542186	192.168.253.3	10.111.7.134	CAPWAP..	CAPWAP-Control - Station Configuration Request (Reassembled, Fragment ID: 677)
65505	2024-11-15 13:50:11.562192	10.111.5.6	192.168.253.3	CAPWAP..	CAPWAP-Control - WTP Event Request
65506	2024-11-15 13:50:11.562699	192.168.253.3	10.111.5.6	CAPWAP..	CAPWAP-Control - WTP Event Response
65507	2024-11-15 13:50:11.563226	10.111.5.6	192.168.253.3	CAPWAP..	CAPWAP-Control (Fragment ID: 4430, Fragment Offset: 0)
65508	2024-11-15 13:50:11.564115	10.111.5.6	192.168.253.3	CAPWAP..	CAPWAP-Control - WTP Event Request (Reassembled, Fragment ID: 4430)
65509	2024-11-15 13:50:11.564684	192.168.253.3	10.111.5.6	CAPWAP..	CAPWAP-Control - WTP Event Response
65510	2024-11-15 13:50:11.565605	10.111.17.1	192.168.253.3	DHCP	DHCP Discover - Transaction ID 0x8fce043
65511	2024-11-15 13:50:11.568076	10.111.7.134	192.168.253.3	CAPWAP..	CAPWAP-Control - Station Configuration Response
65513	2024-11-15 13:50:11.568738	192.168.253.3	10.111.7.134	CAPWAP..	CAPWAP-Control - Configuration Update Request
65514	2024-11-15 13:50:11.574281	10.111.7.134	192.168.253.3	CAPWAP..	CAPWAP-Control - Configuration Update Response
65515	2024-11-15 13:50:11.575940	10.111.10.2	192.168.253.3	CAPWAP..	CAPWAP-Control - WTP Event Request

解决方法

检测配置发现AC上配置dhcp snooping, 删除后正常。
该命令会导致终端无法获取地址的原因是因为DHCP Snooping是DHCP的一种安全特性。DHCP S

nooping设备只有位于DHCP客户端与DHCP服务器之间，或DHCP客户端与DHCP中继之间时DHCP Snooping功能配置后才能正常工作；设备位于DHCP服务器与DHCP中继之间时，DHCP Snooping功能配置后不能正常工作。

可参考以下链接：[DHCP技术白皮书-6W100-新华三集团-H3C](#)