

## 知 某局点S7502E-XS DHCP获取地址慢问题

DHCP/DHCP Relay 林洪宇 2020-02-26 发表

### 组网及说明

无

### 问题描述

某些终端存在DHCP获取地址慢的情况，终端获取地址后，关机或休眠之后再次获取地址时存在获取地址慢的现象。

### 过程分析

收集终端MAC信息和debugging dhcp server all

正常终端的地址分配流程：

\*Dec 8 11:45:09:543 2019 CQ-C1-2F-OA-RIGHT-OA-CORE-16# DHCP/7/PACKET: From 0.0.0.0 port 68, interface Vlan-interface3333

Message type: REQUEST (1)

Hardware type: 1, Hardware address length: 6

Hops: 0, Transaction ID: 2649799737

Seconds: 0, Broadcast flag: 1

Client IP address: 0.0.0.0 Your IP address: 0.0.0.0

Server IP address: 0.0.0.0 Relay agent IP address: 0.0.0.0

Client hardware address: 346b-5b8d-af40

Server host name: not configured

Boot file name: not configured

DHCP message type: DHCPDISCOVER (1)

Message type: REPLY (2)

Hardware type: 1, Hardware address length: 6

Hops: 0, Transaction ID: 2649799737

Seconds: 0, Broadcast flag: 1

Client IP address: 0.0.0.0 Your IP address: 10.107.252.40

Server IP address: 0.0.0.0 Relay agent IP address: 0.0.0.0

Client hardware address: 346b-5b8d-af40

Server host name: not configured

Boot file name: not configured

DHCP message type: DHCPOFFER (2)

\*Dec 8 11:45:10:142 2019 CQ-C1-2F-OA-RIGHT-OA-CORE-16# DHCP/7/PACKET: From 0.0.0.0 port 68, interface Vlan-interface3333

Message type: REQUEST (1)

Hardware type: 1, Hardware address length: 6

Hops: 0, Transaction ID: 2649799737

Seconds: 0, Broadcast flag: 1

Client IP address: 0.0.0.0 Your IP address: 0.0.0.0

Server IP address: 0.0.0.0 Relay agent IP address: 0.0.0.0

Client hardware address: 346b-5b8d-af40

Server host name: not configured

Boot file name: not configured

DHCP message type: DHCPREQUEST (3)

\*Dec 8 11:45:10:142 2019 CQ-C1-2F-OA-RIGHT-OA-CORE-16# DHCP/7/EVENT: Receive a DHCPREQUEST message for 10.107.252.40 from Vlan-interface3333; The server identifier is 10.107.252.1.

\*Dec 8 11:45:10:142 2019 CQ-C1-2F-OA-RIGHT-OA-CORE-16# DHCP/7/EVENT: The client selected the local server.

\*Dec 8 11:45:10:142 2019 CQ-C1-2F-OA-RIGHT-OA-CORE-16# DHCP/7/EVENT: Send a DHCPACK message on Vlan-interface3333.

\*Dec 8 11:45:10:143 2019 CQ-C1-2F-OA-RIGHT-OA-CORE-16# DHCP/7/PACKET: To 255.255.255.255 port 68, interface Vlan-interface3333

Message type: REPLY (2)

Hardware type: 1, Hardware address length: 6

Hops: 0, Transaction ID: 2649799737

Seconds: 0, Broadcast flag: 1

```
Client IP address: 0.0.0.0 Your IP address: 10.107.252.40
Server IP address: 0.0.0.0 Relay agent IP address: 0.0.0.0
Client hardware address: 346b-5b8d-af40
Server host name: not configured
Boot file name: not configured
DHCP message type: DHCPACK (5)
```

终端重新登录时，不在发送DHCPdiscover发现消息，直接发送包含前一次所分配的IP地址的，分配的IP地址的DHCPrequest请求信息。当DHCP服务器收到这一信息后，它会尝试让DHCP客户机继续使用原来的IP地址，并回答一个DHCPack确认信息。

查看获取慢的终端相关输出信息，为终端重新登录时的DHCP请求：

```
*Dec 8 12:03:16:775 2019 CQ-C1-2F-OA-RIGHT-OA-CORE-16# DHCP/7/PACKET: From 0.0.0.0
port 68, interface Vlan-interface18
Message type: REQUEST (1)
Hardware type: 1, Hardware address length: 6
Hops: 0, Transaction ID: 2051255288
Seconds: 0, Broadcast flag: 0
Client IP address: 0.0.0.0 Your IP address: 0.0.0.0
Server IP address: 0.0.0.0 Relay agent IP address: 0.0.0.0
Client hardware address: 8cec-4be3-4130
Server host name: not configured
Boot file name: not configured
DHCP message type: DHCPREQUEST (3)
*Dec 8 12:03:16:776 2019 CQ-C1-2F-OA-RIGHT-OA-CORE-16# DHCP/7/EVENT: Receive a DHCP
PREQUEST message for 10.116.18.170 from Vlan-interface18; The server identifier is (none).
*Dec 8 12:03:16:776 2019 CQ-C1-2F-OA-RIGHT-OA-CORE-16# DHCP/7/EVENT: Client was rebo
oted.
*Dec 8 12:03:16:776 2019 CQ-C1-2F-OA-RIGHT-OA-CORE-16# DHCP/7/EVENT: Failed to find th
e lease for 10.116.18.170.
```

终端不断发送DHCPrequest但始终获取不到地，原因为DHCPrequest信息中需要包含向它所选定的DHCP服务器请求IP地址的内容。之所以要以广播方式回答，是为了通知所有的DHCP服务器，他将选择某台DHCP服务器所提供的IP地址。

DHCP服务器收到报文后不进行DHCPack答复，等待多次超时之后，终端发送DHCPdiscover发现消息后才会重新获取地址。

## 解决方法

配置当DHCP客户端请求的新地址与之前DHCP服务器分配的地址不同或该地址对应的租约不存在时，DHCP服务器回复NAK报文功能

### 1. 功能简介

本功能只在以下环境中生效：

- DHCP客户端不发送DHCP-DISCOVER报文却直接发送DHCP-REQUEST报文请求IP地址，DHCP服务器收到DHCP客户端发送的DHCP-REQUEST报文中的请求地址与之前DHCP服务器分配的地址不同或该地址对应的租约不存在。
- DHCP客户端收到DHCP-OFFER报文后发送DHCP-REQUEST请求报文，DHCP服务器收到DHCP客户端发送的DHCP-REQUEST报文中的请求地址与之前DHCP服务器分配的地址不同或该地址对应的租约不存在。

未开启本功能时，当收到DHCP客户端发送的DHCP-REQUEST报文中的请求地址与之前DHCP服务器分配的地址不同或该地址对应的租约不存在时，DHCP服务器不回复应答报文。当DHCP服务器上保存的地址租约到期后，DHCP服务器才会应答DHCP客户端的请求并分配新的IP地址。

开启本功能时，如果DHCP客户端请求的新地址与之前使用的地址不同或该地址对应的租约不存在时，DHCP服务器直接回复NAK报文拒绝DHCP客户端的地址请求，DHCP客户端收到NAK报文后，重新申请IP地址。

### 2. 配置步骤

(1) 进入系统视图。

```
system-view
```

(2) 当DHCP客户端请求的新地址与之前使用的地址不同或者租约不存在时，DHCP服务器回复NAK报文的功能。

```
dhcp server request-ip-address check
```

缺省情况下，当收到DHCP客户端发送的DHCP-REQUEST报文中的请求地址与之前DHCP服务器分配的地址不同或该地址对应的租约不存在时，DHCP服务器不回复NAK报文。

