

New APs Cannot be Registered

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Network Topology

FIG.1

Problem Description

The customer needs to add a batch of APs on site, which are the same type of equipments as the online APs, but the new APs cannot be registered to AC.

Process Analysis

1. The AP of the same model is already online, so it is not a version problem;
2. Check whether the license is sufficient, we find that the license is sufficient.

dis wlan ap all

Total number of APs: 4058

Total number of connected APs: 3880

Total number of connected manual APs: 3873

Total number of connected auto APs: 7

Total number of connected common APs: 231

Total number of connected WTUs: 3487

Total number of inside APs: 0

Maximum supported APs: 4096

Remaining APs: 378

Total AP licenses: 1536

Local AP licenses: 1536

Server AP licenses: 0

Remaining Local AP licenses: 433.25

Sync AP licenses: 0

AP information

State : I = Idle, J = Join, JA = JoinAck, IL = ImageLoad

C = Config, DC = DataCheck, R = Run, M = Master, B = Backup

3. After checking the communication between AC and the new AP IP, we found that AP did not get the address normally.

4. Check the address pool on AC and find that the address pool has been allocated, but there are not that many AP's. Looking at the pool of conflicting addresses, you find a large number of conflicting addresses.

5. Check the arp information of the access switch and find that one MAC corresponds to more than one IP, corresponding to the address in the conflicting address pool.

```
===display arp all=====
```

```
=====
```

```
Type: S-Static D-Dynamic
```

IP Address	MAC Address	VLAN ID	Interface	Aging Type
10.100.44.173	80f6-2e4e-9c60	2110	GE1/0/2	17 D
10.100.44.252	80f6-2e4e-9c60	2110	GE1/0/2	17 D
10.100.45.50	80f6-2e4e-9c60	2110	GE1/0/2	17 D
10.100.45.106	80f6-2e4e-9c60	2110	GE1/0/2	17 D
10.100.36.170	80f6-2e4c-4a00	2110	GE1/0/6	17 D
10.100.44.190	80f6-2e4c-4a00	2110	GE1/0/6	17 D
10.100.44.254	80f6-2e4c-4a00	2110	GE1/0/6	17 D
10.100.45.44	80f6-2e4c-4a00	2110	GE1/0/6	17 D
10.100.44.182	70ba-efca-1f20	2110	GE1/0/8	17 D
10.100.44.198	70ba-efca-1f20	2110	GE1/0/8	17 D
10.100.45.22	70ba-efca-1f20	2110	GE1/0/8	17 D
10.100.45.32	70ba-efca-1f20	2110	GE1/0/8	17 D
10.100.45.52	70ba-efca-1f20	2110	GE1/0/8	17 D
10.100.45.107	70ba-efca-1f20	2110	GE1/0/8	17 D

6. Analyze the principle of DHCP

(1) The client broadcasts a DHCP-DISCOVER message to locate a DHCP server.

(2) Each DHCP server offers configuration parameters such as an IP address to the client in a DHCP-OFFER message. The sending mode of the DHCP-OFFER is determined by the flag field in the DHCP-DISCOVER message. For more information, see "DHCP message format."

(3) If the client receives multiple offers, it accepts the first received offer, and broadcasts it in a DHCP-REQUEST message to formally request the IP address. (IP addresses offered by other DHCP servers can be assigned to other clients.)

(4) All DHCP servers receive the DHCP-REQUEST message. However, only the server selected by the client does one of the following operations:

Returns a DHCP-ACK message to confirm that the IP address has been allocated to the client.

Returns a DHCP-NAK message to deny the IP address allocation.

After receiving the DHCP-ACK message, the client verifies the following details before using the assigned IP address:

assigned IP address:

- The assigned IP address is not in use. To verify this, the client broadcasts a gratuitous ARP packet. The assigned IP address is not in use if no response is received within the specified time.

- The assigned IP address is not on the same subnet as any IP address in use on the client.

Otherwise, the client sends a DHCP-DECLINE message to the server to request an IP address again.

7. There should be a loop below, which causes the terminal to repeatedly apply for the address, leading to the exhaustion of the address pool, and then the newly added AP cannot obtain the address, leading to the failure to go online.

Solution

Clear the conflict address pool, remove the loop and AP will normally get the address.