

知 H3C无线控制器IPv6(DHCPV6)无线网络接入配置举例(V7)

wlan接入 IPv6 王媛媛 2018-08-05 发表

组网及说明

1 组网及说明

本文档介绍IPv6无线网络接入典型配置举例。

本文档适用于使用Comware V7软件版本的无线控制器和接入点产品，不严格与具体硬件版本对应，如果使用过程中与产品实际情况有差异，请参考相关产品手册，或以设备实际情况为准。

本文档中的配置均是在实验室环境下进行的配置和验证，配置前设备的所有参数均采用出厂时的缺省配置。如果您已经对设备进行了配置，为了保证配置效果，请确认现有配置和以下举例中的配置不冲突。

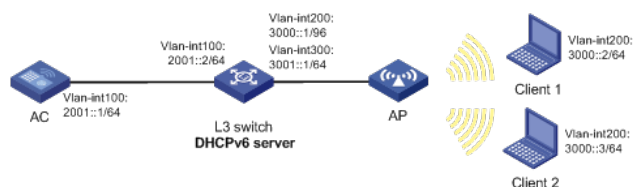
本文档假设您已了解IPv6基础与WLAN接入等相关特性。

1.1 组网需求

如图1所示，集中式转发架构下，无线客户端Client 1、Client 2通过L3 switch与AC相连，L3 switch做DHCPv6 server为AP。Client 1和Client 2分配IPv6地址。需要实现无线客户端Client 1和Client 2通过AP连接到AC上，具体要求如下：

- 无线客户端Client 1和Client 2通过VLAN 200接入网络。
- AC属于VLAN 100，AP属于VLAN 300，AC和AP之间跨三层网络建立连接。

图1 IPv6无线网络组网



1.2 配置思路

· 在L3 switch上配置DHCPv6 server服务，使AP、无线客户端Client 1和Client 2都能通过DHCPv6 server自动获取IPv6地址。

· 在AC上配置到达对端网段的静态路由。

· 在AC上配置无线服务，确保无线客户端可以通过配置的无线服务接入网络。

1.3 配置注意事项

· 配置AP的序列号时请确保该序列号与AP唯一对应，AP的序列号可以通过AP设备背面的标签获取。

· 配置L3 switch和AP相连的接口禁止VLAN 1报文通过，以防止VLAN 1内报文过多。

配置步骤

2 配置步骤

2.1 配置AC

(1)配置AC的接口

创建VLAN 100及其对应的VLAN接口，并为该接口配置IPv6地址。AP将通过该VLAN与AC建立CAP WAP隧道。

```
<AC> system-view
[AC] vlan 100
[AC-vlan100] quit
[AC] interface vlan-interface 100
[AC-Vlan-interface100] ipv6 address 2001::1/64
[AC-Vlan-interface100] quit
```

创建VLAN 200，AC需要使用该VLAN转发无线客户端数据报文。

```
[AC] vlan 200
[AC-vlan200] quit
# 配置AC与L3 switch相连的接口GigabitEthernet1/0/1的属性为Trunk，禁止VLAN 1报文通过，允许VLAN 100和VLAN 200通过。
[AC] interface gigabitethernet 1/0/1
[AC-GigabitEthernet1/0/1] port link-type trunk
[AC-GigabitEthernet1/0/1] undo port trunk permit vlan 1
[AC-GigabitEthernet1/0/1] port trunk permit vlan 100 200
[AC-GigabitEthernet1/0/1] quit
```

(2) 配置三层路由

配置AC到3000::0网段的静态路由，指定下一跳的IP地址为2001::2。

```
[AC] ipv6 route-static 3000::0 64 2001::2
```

(3) 配置无线服务模板

```
# 创建服务模板1，并进入无线服务模板视图。
[AC] wlan service-template 1
# 配置SSID为service。
[AC-wlan-st-service] ssid service
# 使能服务模板。
[AC-wlan-st-service] service-template enable
# 开启通过DHCPv6方式和ND方式学习客户端IPv6地址功能。
[AC-wlan-st-service] client ipv6-snooping dhcpv6-learning enable
[AC-wlan-st-service] client ipv6-snooping nd-learning enable
[AC-wlan-st-service] quit
(4)配置AP
# 创建AP，配置AP名称为officeap，型号名称选择WA4320i-ACN，并配置序列号210235A1GQC1580
04457。
[AC] wlan ap officeap model WA4320i-ACN
[AC-wlan-ap-officeap] serial-id 210235A1GQC158004457
# 进入AP的Radio1视图，并将无线服务模板1绑定到Radio 1上，并指定客户端上线的VLAN为VLAN 20
0。
[AC-wlan-ap-officeap] radio 1
[AC-wlan-ap-officeap-radio-1] service-template service vlan 200
# 开启Radio 1的射频功能。
[AC-wlan-ap-officeap-radio-1] radio enable
[AC-wlan-ap-officeap-radio-1] return

2.2 配置L3 switch
(1)配置L3 switch的接口
# 创建VLAN 300和VLAN 100，并配置IP地址，用于转发AC和AP间的CAPWAP隧道内的流量。
<L3 switch> system-view
[L3 switch] vlan 100
[L3 switch-vlan100] quit
[L3 switch] interface vlan-interface 100
[L3 switch-Vlan-interface100] ipv6 address 2001::2/64
[L3 switch-Vlan-interface100] quit
[L3 switch] vlan 300
[L3 switch-vlan300] quit
[L3 switch] interface vlan-interface 300
[L3 switch-Vlan-interface300] ipv6 address 3001::1/64
[L3 switch-Vlan-interface300] quit
# 创建VLAN 200，并为该接口配置IP地址。Client使用该VLAN接入无线网络。
[L3 switch] vlan 200
[L3 switch-vlan200] quit
[L3 switch] interface vlan-interface 200
[L3 switch-Vlan-interface200] ipv6 address 3000::1/64
[L3 switch-Vlan-interface200] quit
# 配置L3 switch与AC相连的GigabitEthernet1/0/1接口的属性为Trunk，禁止VLAN 1报文通过允许VLA
N 100和VLAN 200通过。
[L3 Switch] interface gigabitethernet 1/0/1
[L3 Switch-GigabitEthernet1/0/1] port link-type trunk
[L3 switch-GigabitEthernet1/0/2] undo port trunk permit vlan 1
[L3 Switch-GigabitEthernet1/0/1] port trunk permit vlan 100 200
[L3 Switch-GigabitEthernet1/0/1] quit
# 配置L3 switch和AP相连的接口GigabitEthernet1/0/2为Trunk类型，禁止VLAN 1报文通过，允许VLA
N 300和VLAN 200通过，当前Trunk口的PVID为300。
[L3 switch] interface gigabitEthernet 1/0/2
[L3 switch-GigabitEthernet1/0/2] port link-type trunk
[L3 switch-GigabitEthernet1/0/2] undo port trunk permit vlan 1
[L3 switch-GigabitEthernet1/0/2] port trunk permit vlan 200 300
[L3 switch-GigabitEthernet1/0/2] port trunk pvid vlan 300
[L3 switch-GigabitEthernet1/0/2] quit
(2) 配置DHCPv6服务
# 配置接口Vlan-interface200和Vlan-interface300工作在DHCPv6服务器模式。
[L3 switch] interface vlan-interface 200
[L3 switch-Vlan-interface200] ipv6 dhcp select server
[L3 switch-Vlan-interface200] interface vlan-interface 300
[L3 switch-Vlan-interface300] ipv6 dhcp select server
# 取消设备发布RA消息的抑制功能。配置被管理地址的配置标志位为1，即主机通过DHCPv6服务器获
```

取IPv6地址。配置其他信息配置标志位为1，即主机通过DHCPv6服务器获取除IPv6地址以外的其他信息。

```
[L3 switch-Vlan-interface300] interface vlan-interface 200
[L3 switch-Vlan-interface200] undo ipv6 nd ra halt
[L3 switch-Vlan-interface200] ipv6 nd autoconfig managed-address-flag
[L3 switch-Vlan-interface200] ipv6 nd autoconfig other-flag
[L3 switch-Vlan-interface200] interface vlan-interface 300
[L3 switch-Vlan-interface300] undo ipv6 nd ra halt
[L3 switch-Vlan-interface300] ipv6 nd autoconfig managed-address-flag
[L3 switch-Vlan-interface300] ipv6 nd autoconfig other-flag
[L3 switch-Vlan-interface300] quit
# 配置DHCPv6地址池1，为3000::0/64网段的客户端分配IPv6地址等参数。
[L3 switch] ipv6 dhcp pool 1
[L3 switch-dhcp6-pool-1] network 3000::0/64
[L3 switch-dhcp6-pool-1] quit
# 配置DHCPv6地址池2，为3001::0/64网段的AP分配IPv6地址等参数，并通过自定义选项的方式配置option 52的内容，为AP指定AC的IPv6地址2001::1。
[L3 switch] ipv6 dhcp pool 2
[L3 switch-dhcp6-pool-2] network 3001::0/64
[L3 switch-dhcp6-pool-3] option 52 hex 200100000000000000001000000000001
[L3 switch-dhcp6-pool-2] quit
[L3 switch-dhcp6-pool-2] quit
```

2.3 验证配置

在AC上可以通过**display wlan client ipv6**命令查看无线客户端的信息，从显示信息中可以看出，Client 1与Client 2成功接入IPv6无线网络。

```
[AC] display wlan client
Total number of clients: 2
```

MAC address	AP name	RID	IPv6 address	VLAN
0000-000f-1211	officeap	1	3000::2	200
0000-000f-1212	officeap	1	3000::3	200

2.4 配置文件

· AC:

```
#
vlan 100
#
vlan 200
#
interface Vlan-interface100
ipv6 address 2001::1/64
#
wlan service-template 1
ssid service
client ipv6-snooping dhcpv6-learning enable
client ipv6-snooping nd-learning enable
service-template enable
#
interface GigabitEthernet1/0/1
port link-type trunk
undo port trunk permit vlan 1
port trunk permit vlan 100 200
#
ipv6 route-static 3000::0 64 2001::2
#
wlan ap officeap model WA4320i-ACN
serial-id 210235A1GQC158004457
radio 1
radio enable
service-template 1 vlan 200
radio 2
#
· L3 switch:
#
vlan 100
```

```
#
vlan 200
#
vlan 300
#
ipv6 dhcp pool 1
network 3000::0/64
#
ipv6 dhcp pool 2
network 3001::0/64
option 52 hex 00010000000000000001000000000001
#
interface Vlan-interface100
ipv6 address 2001::2/64
#
interface Vlan-interface200
ipv6 dhcp select server
ipv6 address 3000::1/64
ipv6 nd autoconfig managed-address-flag
ipv6 nd autoconfig other-flag
undo ipv6 nd ra halt
#
interface Vlan-interface300
ipv6 dhcp select server
ipv6 address 3001::1/64
ipv6 nd autoconfig managed-address-flag
ipv6 nd autoconfig other-flag
undo ipv6 nd ra halt
#
interface GigabitEthernet1/0/1
port link-type trunk
undo port trunk permit vlan 1
port trunk permit vlan 100 200
#
interface GigabitEthernet1/0/2
port link-type trunk
undo port trunk permit vlan 1
port trunk permit vlan 200 300
port trunk pvid vlan 300
#
```

配置关键点

无