

本文档介绍AP与AC间通过三层网络完成注册的配置举例。

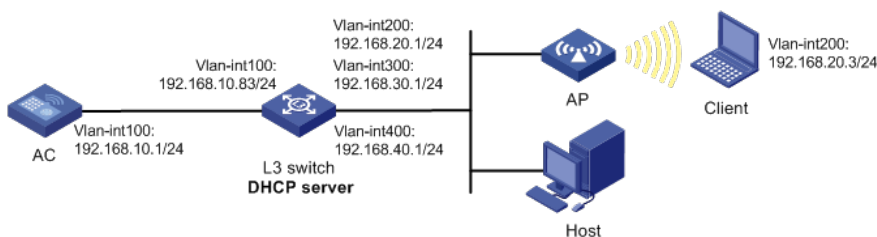
本文档适用于使用Comware V7软件版本的无线控制器和接入点产品，不严格与具体硬件版本对应，如果使用过程中与产品实际情况有差异，请参考相关产品手册，或以设备实际情况为准。

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WLAN接入相关特性。

如图1所示，集中式转发架构下，无线客户端Client、有线客户端Host通过L3 switch与AC相连，L3 switch做DHCP server为AP、Client和Host分配IP地址。要实现无线客户端Client通过AP连接到AC上，并能与有线客户端Host互相访问，具体要求如下：

- 无线客户端Client通过VLAN 200接入网络，有线客户端Host通过VLAN 300接入网络；
- AC属于VLAN 100，AP属于VLAN 400，AC和AP之间跨三层网络建立连接。



1.1 配置思路

- 在L3 switch上开启DHCP server功能，AP、无线客户端Client和有线客户端Host都能通过DHCP server自动获取IP地址。
- 在L3 switch和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Client可以通过配置的无线服务接入网络，并访问Host。

1.2 配置步骤

1.2.1 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IP地址。AP将获取该IP地址与AC建立CAPWAP隧道。

```
system-view
[AC] vlan 100
[AC-vlan100] quit
[AC] interface vlan-interface100
[AC-Vlan-interface100] ip address 192.168.10.1 255.255.255.0
[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和L3 switch相连的接口GigabitEthernet1/0/1为Trunk类型，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192.168.40.0网段的静态路由，指定下一跳的IP地址为192.168.10.83。

```
[AC] ip route-static 192.168.40.0 24 192.168.10.83
```

(3) 配置无线服务

创建无线服务模板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-1] ssid service
```

使能服务模板。

```
[AC-wlan-st-1] service-template enable
```

```
[AC-wlan-st-1] quit
```

(4) 配置AP

创建手工AP，名称为officeap，型号名称为WA4320i-ACN。

```
[AC] wlan ap officeap model WA4320i-ACN
```

设置AP的序列号为210235A1GQB147031200。

```
[AC-wlan-ap-officeap] serial-id 210235A1GQB147031200
```

进入AP的Radio 1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 200。

```
[AC-wlan-ap-officeap] radio 1
```

```
[AC-wlan-ap-officeap-radio-1] service-template 1 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
```

1.2.2 配置L3 switch

(1) 配置L3 switch的接口

创建VLAN 400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。

```
system-view
```

```
[L3 switch] vlan 100
```

```
[L3 switch-vlan100] quit
```

```
[L3 switch] interface vlan-interface 100
```

```
[L3 switch-Vlan-interface100] ip address 192.168.10.83 255.255.255.0
```

```
[L3 switch-Vlan-interface100] quit
```

```
[L3 switch] vlan 400
```

```
[L3 switch-vlan400] quit
```

```
[L3 switch] interface vlan-interface 400
```

```
[L3 switch-Vlan-interface400] ip address 192.168.40.1 255.255.255.0
```

```
[L3 switch-Vlan-interface400] 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] ip address 192.168.20.1 255.255.255.0
```

```
[L3 switch-Vlan-interface200] quit
```

创建VLAN 300，并为该接口配置IP地址。Host使用该VLAN与AC建立连接。

```
[L3 switch] vlan 300
```

```
[L3 switch-vlan300] quit
```

```
[L3 switch] interface vlan-interface 300
```

```
[L3 switch-Vlan-interface300] ip address 192.168.30.1 255.255.255.0
```

```
[L3 switch-Vlan-interface300] quit
```

配置L3 switch和AC相连的接口GigabitEthernet1/0/1为Trunk类型，允许VLAN100和VLAN 200通过。

```
[L3 switch] interface gigabitEthernet 1/0/1
```

```
[L3 switch-GigabitEthernet1/0/1] port link-type trunk
```

```
[L3 switch-GigabitEthernet1/0/1] 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VLAN 400和VLAN 100通过，当前Trunk口的PVID为400。

```
[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 200 400
[L3 switch-GigabitEthernet1/0/2] port trunk pvid vlan 400
[L3 switch-GigabitEthernet1/0/2] quit
# 配置L3 switch和Host相连的接口GigabitEthernet1/0/3为Access类型，允许VLAN 300通过。
[L3 switch] interfac gigabitEthernet 1/0/3
[L3 switch-GigabitEthernet1/0/3] port access vlan 300
[L3 switch-GigabitEthernet1/0/3] quit
    (2) 配置DHCP server
# 开启DHCP server功能。
[L3 switch] dhcp enable
# 配置DHCP地址池1为AP分配地址范围为192.168.40.0/24，网关地址为192.168.40.1。
[L3 switch] dhcp server ip-pool 1
[L3 switch-dhcp-pool-1] network 192.168.40.0 mask 255.255.255.0
[L3 switch-dhcp-pool-1] gateway-list 192.168.40.1
# 配置DHCP Option43的内容为AC的十六进制IP地址。
[L3 switch-dhcp-pool-1] option 43 hex 8007000001c0a80a01
[L3 switch-dhcp-pool-1] quit
# 配置DHCP地址池2为Client分配地址范围为192.168.20.0/24，网关地址为192.168.20.1。
[L3 switch] dhcp server ip-pool 2
[L3 switch-dhcp-pool-2] network 192.168.20.0 mask 255.255.255.0
[L3 switch-dhcp-pool-2] gateway-list 192.168.20.1
[L3 switch-dhcp-pool-2] quit
# 配置DHCP地址池3为Host分配地址范围为192.168.30.0 /24，网关地址为192.168.30.1。
[L3 switch] dhcp server ip-pool 3
[L3 switch-dhcp-pool-3] network 192.168.30.0 mask 255.255.255.0
[L3 switch-dhcp-pool-3] gateway-list 192.168.30.1
[L3 switch-dhcp-pool-3] quit

```

1.3 验证配置

(1) 在AC上查看到AP注册信息

在AC上使用命令**display wlan ap all**查看AP，可以看到AP的状态是R/M，表明AP已经成功注册到AC。

```

display wlan ap all
Total number of APs: 1
Total number of connected APs: 1
Total number of connected manual APs: 1
Total number of connected auto APs: 0
Total number of connected anchor APs: 0
Maximum supported APs: 3072
Remaining APs: 3071
Fit APs activated by license: 512
Remaining fit APs: 511
WTUs activated by license: 2500
Remaining WTUs: 2500

```

AP information

State : I = Idle, J = Join, JA = JoinAck, IL = ImageLoad
C = Config, DC = DataCheck, R = Run, M = Master, B = Backup

AP name	AP ID	State	Model	Serial ID
officeap	1	R/M	WA4320i-ACN	210235A1GQB147031200

(2) 在AC上查看Client信息

在AC上使用命令**display wlan client**查看在线Client，可以看到Client已经连接到AP的radio1

```

.
display wlan client
Total number of clients: 1

```

MAC address	Username	APID/RID	IP address	VLAN ID
90b9-311a-bef6	N/A	1/1	192.168.20.3	200

(3) Host与Client可以相互ping通

Client通过DHCP server获取到IP地址192.168.20.3, 在Host上ping Client的IP地址可以ping通。同理, 在Client上ping Host的IP地址也能ping通, 不再赘述。

```
C:\Users\system32>ping 192.168.20.3 -t
```

Pinging 192.168.20.3 with 32 bytes of data:

```
Reply from 192.168.20.3: bytes=32 time=2470ms TTL=63
```

```
Reply from 192.168.20.3: bytes=32 time=2ms TTL=63
```

```
Reply from 192.168.20.3: bytes=32 time=1427ms TTL=63
```

```
Reply from 192.168.20.3: bytes=32 time=2ms TTL=63
```

```
Reply from 192.168.20.3: bytes=32 time=86ms TTL=63
```

```
Reply from 192.168.20.3: bytes=32 time=142ms TTL=63
```

```
Reply from 192.168.20.3: bytes=32 time=561ms TTL=63
```

```
Reply from 192.168.20.3: bytes=32 time=84ms TTL=63
```

```
Reply from 192.168.20.3: bytes=32 time=465ms TTL=63
```

```
Reply from 192.168.20.3: bytes=32 time=114ms TTL=63
```

```
Reply from 192.168.20.3: bytes=32 time=124ms TTL=63
```

```
Reply from 192.168.20.3: bytes=32 time=446ms TTL=63
```

Ping statistics for 192.168.20.3:

Packets: Sent = 12, Received = 12, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 2ms, Maximum = 2470ms, Average = 495ms

Control-C

^C

```
C:\Users\system32>
```

1.4 配置文件

```
. AC
#
vlan 100
#
vlan 200
#
interface Vlan-interface100
ip address 192.168.10.1 255.255.255.0
#
wlan service-template 1
ssid service
service-template enable
#
interface GigabitEthernet1/0/1
port link-type trunk
port trunk permit vlan 100 200
#
ip route-static 192.168.40.0 24 192.168.10.83
#
wlan ap officeap model WA4320i-ACN
serial-id 210235A1GQB147031200
vlan 1
radio 1
radio enable
service-template 1 vlan 200
radio 2
#
. L3 switch
#
```

```

dhcp enable
#
vlan 100
#
vlan 200
#
vlan 300
#
vlan 400
#
dhcp server ip-pool 1
gateway-list 192.168.40.1
network 192.168.40.0 mask 255.255.255.0
option 43 hex 8007000001c0a80a01
#
dhcp server ip-pool 2
gateway-list 192.168.20.1
network 192.168.20.0 mask 255.255.255.0
#
dhcp server ip-pool 3
gateway-list 192.168.30.1
network 192.168.30.0 mask 255.255.255.0
#
interface Vlan-interface100
ip address 192.168.10.83 255.255.255.0
#
interface Vlan-interface200
ip address 192.168.20.1 255.255.255.0
#
interface Vlan-interface300
ip address 192.168.30.1 255.255.255.0
#
interface Vlan-interface400
ip address 192.168.40.1 255.255.255.0
#
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 200 400
port trunk pvid vlan 400
#
interface GigabitEthernet1/0/3
port access vlan 300
#

```

- 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。