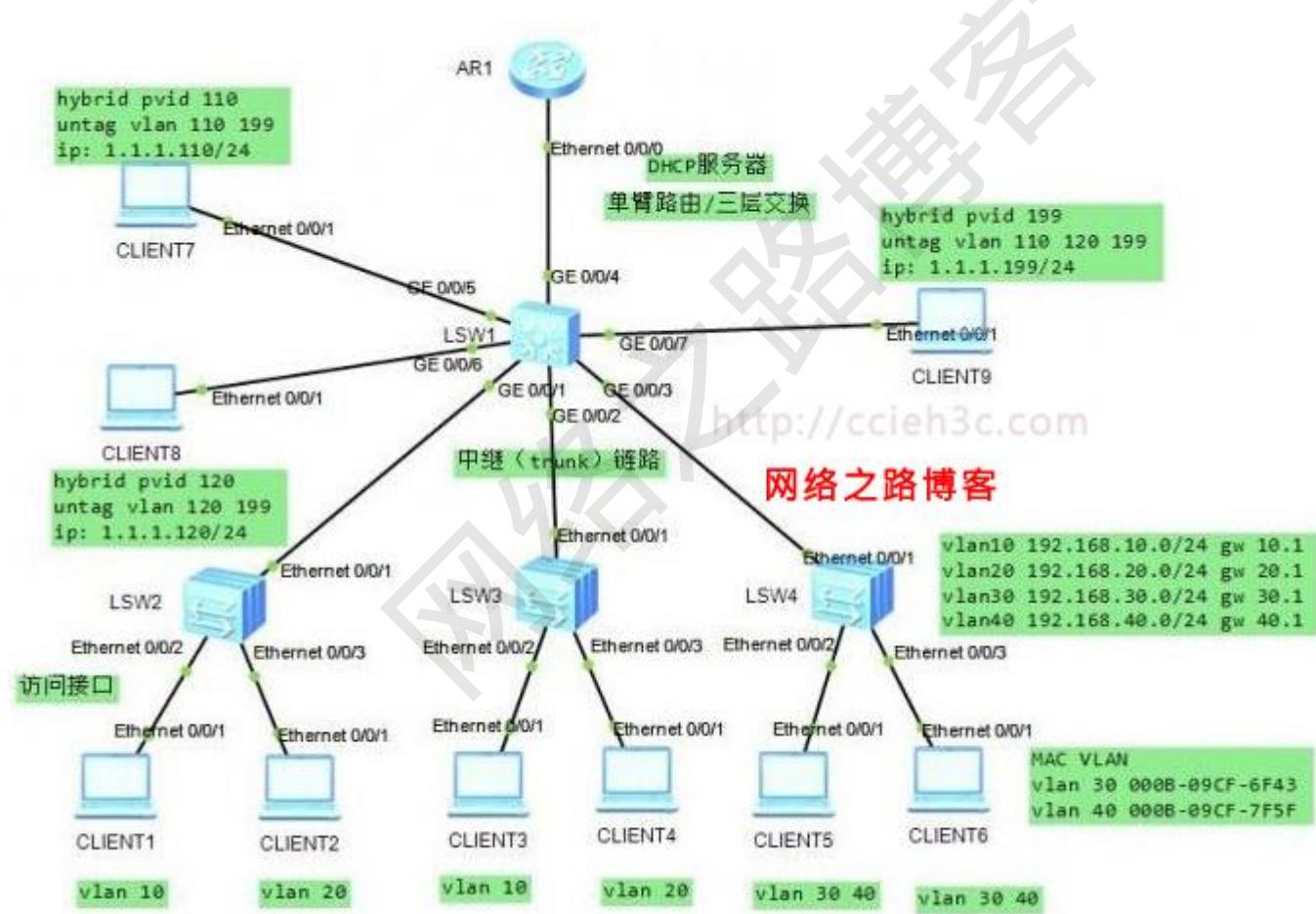


# 华为路由交换由浅入深系列(八)-交换综合实验(包含 Hybrid , MAC VLAN、三层路由及单臂路由 )

华为路由交换由浅入深系列(八)-交换综合实验(包含 Hybrid , MAC VLAN、三层路由及单臂路由 )

实验拓扑：



对于华为的 Access、Trunk、Hybrid 接口处理数据报文不清楚的朋友可以看该说明  
《交换机三种端口模式 Access、Hybrid 和 Trunk 的理解》, 前面有

## lsw1 实验配置：

```
[lsw1]dis cu

#
sysname lsw1

#
vlan batch 10 20 30 40 110 120 199

#
dhcp enable

# ( 这里是三层交换的配置，可以替换成单臂路由的配置，见最后 )

interface Vlanif10

ip address 192.168.10.1 255.255.255.0

dhcp select interface

dhcp server dns-list 8.8.8.8

#

interface Vlanif20

ip address 192.168.20.1 255.255.255.0

dhcp select interface

dhcp server dns-list 8.8.8.8

#

interface Vlanif30

ip address 192.168.30.1 255.255.255.0

dhcp select interface
```

```
dhcp server dns-list 8.8.8.8  
#  
interface Vlanif40  
ip address 192.168.40.1 255.255.255.0  
dhcp select interface  
dhcp server dns-list 8.8.8.8  
#  
interface GigabitEthernet0/0/1  
port link-type trunk  
port trunk allow-pass vlan 2 to 4094  
#  
interface GigabitEthernet0/0/2  
port link-type trunk  
port trunk allow-pass vlan 2 to 4094  
#  
interface GigabitEthernet0/0/3  
port link-type trunk  
port trunk allow-pass vlan 2 to 4094  
#  
interface GigabitEthernet0/0/4  
port link-type trunk  
port trunk allow-pass vlan 2 to 4094
```

# ( 这里演示的 hybrid 接口的使用场景 , 配置完后接口 57 可以通 , 接口 67 可以通 , 接口 56 不能通信 )

```
interface GigabitEthernet0/0/5
```

```
port hybrid pvid vlan 110
```

```
port hybrid untagged vlan 110 199
```

```
#
```

```
interface GigabitEthernet0/0/6
```

```
port hybrid pvid vlan 120
```

```
port hybrid untagged vlan 120 199
```

```
#
```

```
interface GigabitEthernet0/0/7
```

```
port hybrid pvid vlan 199
```

```
port hybrid untagged vlan 110 120 199
```

```
#
```

## Isw2 实验配置

```
<lsw2>dis cu
```

```
#
```

```
sysname lsw2
```

```
#
```

```
vlan batch 10 20
```

```
#
```

```
interface Ethernet0/0/1
```

```
port link-type trunk
```

```
port trunk allow-pass vlan 10 20
```

```
#
```

```
interface Ethernet0/0/2
```

```
port link-type access
```

```
port default vlan 10
```

```
#
```

```
interface Ethernet0/0/3
```

```
port link-type access
```

```
port default vlan 20
```

```
#
```

### Isw3 实验配置：

```
<Isw3>dis cu
```

```
#
```

```
sysname Isw3
```

```
#
```

```
vlan batch 10 20
```

```
#
```

```
interface Ethernet0/0/1
```

```
port link-type trunk
```

```
port trunk allow-pass vlan 10 20
```

```
#
```

```
interface Ethernet0/0/2
```

```
port link-type access
```

```
port default vlan 10
```

```
#
```

```
interface Ethernet0/0/3
```

```
port link-type access
```

```
port default vlan 20
```

```
#
```

## lsw4 实验配置：

```
<lsw4>dis cu
```

```
#
```

```
sysname lsw4
```

```
# ( 这里演示的基于 MAC 来划分 VLAN 的方法 )
```

```
vlan batch 30 40
```

```
#
```

```
vlan 30
```

```
mac-vlan mac-address 000b-09cf-6f43 priority 0
```

```
vlan 40
```

```
mac-vlan mac-address 000b-09cf-7f5f priority 0
```

```
#
```

```
interface Ethernet0/0/1
```

```
port link-type trunk
```

```
port trunk allow-pass vlan 30 40
```

```
#
```

```
interface Ethernet0/0/2
```

```
port hybrid untagged vlan 30 40
```

```
mac-vlan enable
```

```
#
```

```
interface Ethernet0/0/3
```

```
port hybrid untagged vlan 30 40
```

```
mac-vlan enable
```

## 实验验证

1 接入层交换机上所有 client 123456 设置成 DHCP 地址方式 , 可以分别得到 vlan 10 20 30 40 vlan 的 ip 并可以相互通信 ( VLAN Trunk VLAN 路由及 DHCP 功能 ) 。

2 分布层交换机上的 client 7 和 client 9 可以通信 ,client 8 和 client 9 可以通信 ,client 7 和 client 8 不能通信( hybrid 接口功能 )

3 对换 client 5 和 client 6 的接口 , PC 的 vlan 和 IP 保持不变 ( MAC VLAN 功能 )

CLIENT5

配置 命令行 组播 UDP发包工具

```
PC>ipconfig

Link local IPv6 address.....: fe80::20b:9ff:fecc:6f43
IPv6 address.....: :: / 128
IPv6 gateway.....: ::
IPv4 address.....: 192.168.30.254
Subnet mask.....: 255.255.255.0
Gateway.....: 192.168.30.1
Physical address.....: 00-0B-09-CF-6F-43
DNS server.....: 8.8.8.8

PC>ping 192.168.10.254

Ping 192.168.10.254: 32 data bytes, Press Ctrl_C to break
From 192.168.10.254: bytes=32 seq=1 ttl=127 time=156 ms
From 192.168.10.254: bytes=32 seq=2 ttl=127 time=62 ms
From 192.168.10.254: bytes=32 seq=3 ttl=127 time=78 ms
From 192.168.10.254: bytes=32 seq=4 ttl=127 time=63 ms
From 192.168.10.254: bytes=32 seq=5 ttl=127 time=94 ms

--- 192.168.10.254 ping statistics ---
5 packet(s) transmitted
5 packet(s) received
0.00% packet loss
round-trip min/avg/max = 62/90/156 ms
```

#### 附加——路由器的单臂路由的配置：

[R1]dis current-configuration

#

sysname R1

#

dhcp enable

#

interface Ethernet0/0/0

undo shutdown

#

```
interface Ethernet0/0/0.10  
control-vid 10 dot1q-termination  
dot1q termination vid 10  
ip address 192.168.10.1 255.255.255.0  
arp broadcast enable  
dhcp select interface  
dhcp server dns-list 8.8.8.8
```

```
interface Ethernet0/0/0.20  
control-vid 20 dot1q-termination  
dot1q termination vid 20  
ip address 192.168.20.1 255.255.255.0  
arp broadcast enable  
dhcp select interface  
dhcp server dns-list 8.8.8.8
```

```
interface Ethernet0/0/0.30  
control-vid 30 dot1q-termination  
dot1q termination vid 30  
ip address 192.168.30.1 255.255.255.0  
arp broadcast enable
```

```
dhcp select interface
```

```
dhcp server dns-list 8.8.8.8
```

```
interface Ethernet0/0/0.40
```

```
control-vid 40 dot1q-termination
```

```
dot1q termination vid 40
```

```
ip address 192.168.40.1 255.255.255.0
```

```
arp broadcast enable
```

```
dhcp select interface
```

```
dhcp server dns-list 8.8.8.8
```

博主也只是业余时间写写技术文档，请大家见谅，大家觉得不错的话，可以推荐给朋友哦，博主会努力推出更好的系列文档的。如果大家有任何疑问或者文中有错误跟疏忽的地方，欢迎大家留言指出，博主看到后会第一时间修改，谢谢大家的支持，更多技术文章尽在网络之路博客，<http://ccieh3c.com>。