

SW1
sh spanning-tree

SW2
sh spanning-tree

SW3

sh spanning-tree
spanning-tree vlan 1 priority 8192
spanning-tree vlan 1 priority 32768
spanning-tree vlan 1 priority 40960
spanning-tree vlan 1 priority 32768

29518193

40960

32768

10240

sh interface eth0/
sh running

int eth0/
sh spanning-tree
spanning-tree vlan 1 cost 300

100

SW1

vlan 10
name vlan10
exit
vlan 20
name vlan20
exit

SW2

vlan 10
name vlan10
exit
vlan 20
name vlan20
exit

SW3

vlan 10
name vlan10
exit
vlan 20
name vlan20
exit

int eth0/2

sw mo ac

sw acc vlan10

int eth0/3

sw mo ac

sw acc vlan20

do sh vlan br

int eth0/2

sw mo ac

sw acc vlan10

int eth0/3

sw mo ac

sw acc vlan20

do sh vlan br

Trunk

SW1

```
# int range e0/0, e0/1
# sw trunk en dot1q
# sw mode trunk
# do sh interface trunk
```

SW2

```
# int range e0/0, e0/1
# sw trunk en dot1q
# sw mode trunk
# do sh interface trunk
```

SW3

```
# int range e0/0, e0/1
# sw trunk en dot1q
# sw mode trunk
# do sh interface trunk
```

do sh spanning-tree vlan 10

root

do sh spanning-tree vlan 10

20

not root

spanning-tree vlan 20 priority 8192

do sh spanning-tree vlan 20

root

SW e0/0

封包

e0/1

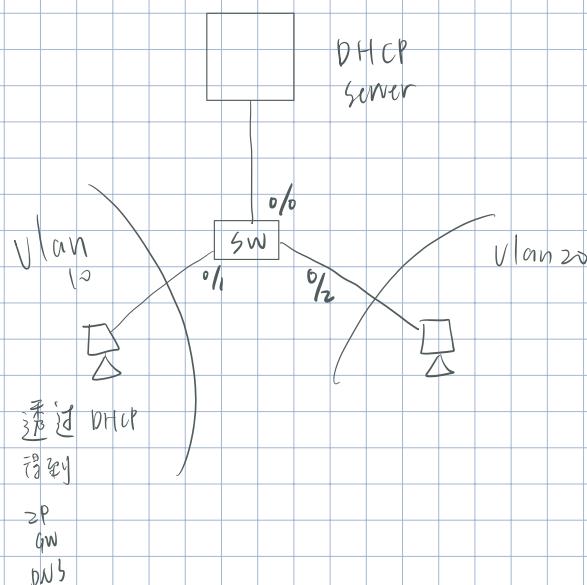
PC1 ping PC3
PC2 ping PC4

SW1

do sh spanning-tree vlan 10

SW2

do sh spanning-tree vlan 20



SW

```
# vlan 10  
# exit  
# vlan 20  
# exit
```

```
# int e0/0  
# SW tr en do  
# SW mo tr
```

```
# int e0/1  
# SW mo ac  
# SW acc vlan10  
# int e0/2  
# SW mo ac  
# SW acc vlan20
```

DHCP

```
# int e0/0  
# no shutdown  
# int e0/0.10  
# en dot1q 10  
# ip addr 192.168.10.254. 255  
# int e0/0.20  
# en dot1q 20  
# ip addr 192.168.20.254. 255
```

```
# ip dhcp pool p0/10  
network 192.168.10.0 255  
default-route 192.168.10.254  
dns-server 8.8.8.8
```

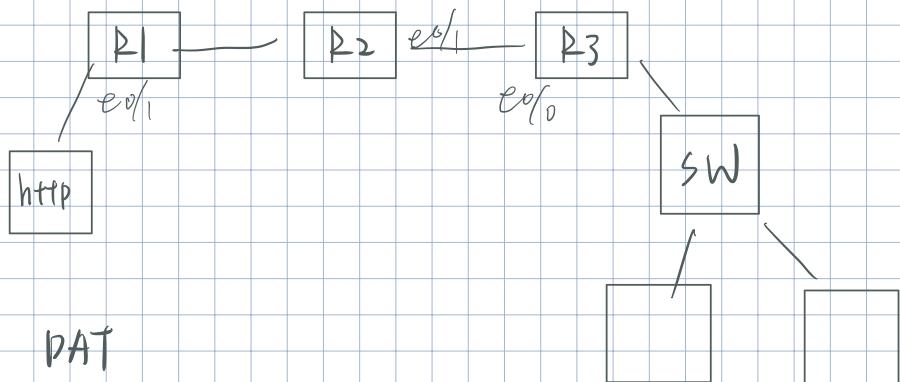
```
# ip dhcp pool p0/20  
network 192.168.20.0 255  
default-route 192.168.20.254  
dns-server 8.8.8.8
```

```
# ip dhcp excluded-address 192.168.10.254  
20254.
```

PC1 ip dhcp

sh ip

PC2



① PAT

R2 set PAT 由網 hose 連到 7k

setting ip
setting 內容路由

R1

```
# ip route 0.0.0.0 e0/0 12.1.1.2
```

R2

```
# ip route 192.168.1.0 255.255.255.0 e0/0 12.1.1.1
ip route 2.0
ip route 192.168.1.0 , . . .
```

```
(ip route 12.3.0 255 e0/1 23.1.1.3)
ip route 0.0.0.0 0.0.0.0 e0/1 23.1.1.3
```

R4

```
# ip route 0.0.0.0 0.0.0.0 e0/0 12.1.1.1
```

R5 R6

ip route 0.0.0.0 0.0.0.0 e0/0 12.3.3

R2 ping

R2 set PAT

access-list 1 permit 192.168.1.0 0.0.0.255

4

12.1.1.0

2

2

ip pool PAT 23.1.1.2 23.1.1.2 netmask 255.255.255.0

int e0/0

ip nat inside

int e0/1

ip nat outside

ip nat inside source list 1 pool PAT overload

ip nat inside source list 2 pool PAT overload

3

test

R2

debug ip nat

R1

ping 1.2.3.4 source 192.168.1.1

R3

④ R2 set SNAT 23.1.1.2:80 ↔ 192.168.3.10:80

R4

int e0/0

ip addr 192.168.3.10 255

no shut

ip route 0.0.0.0 0.0.0.0 e0/0 12.1.1.1

line vty 0 4

password 123

login

transport input telnet

R2 telnet R4

telnet 192.168.3.10

R3

ping 23.1.1.2

telnet 23.1.1.2

R4 *

ping 23.1.1.3

*

R2

access-list 2 permit 192.168.3.0 0.0.0.255

ip nat pool PAT 23.1.1.2 23.1.1.2 netmask 255.255.255.0

ip nat inside source 2 pool PAT overload

ip nat inside source static tcp 192.168.3.10 80 23.1.1.2 80

R2

int e0/0
ip nat inside
int e0/1
ip nat outside

ip nat inside source static tcp 192.168.3.10 80 23.1.1.2 23

R3 # Telnet 23.1.1.2 \Rightarrow R4

② ACL

R2 e0/0 192.168.1.0 不 ping 12.3.5 192.168.1.0 X 12.3.5
192.168.1.0 0 12.3.4

R2 # ip access-list extended deny1
deny icmp 192.168.1.0 0.0.0.255 host 12.3.5

permit ip any any

int e0/0

ip access-group deny1 in

R1 ping 1.2.3.5

R1

ping 1.2.3.5 source 192.168.1.1

X

ping 1.2.3.5 source 192.168.2.1

V

ping 1.2.3.4 source 192.168.1.1

V

③ ACL

R3 e0/1 192.168.2.0 不 ping 12.3.4

192.168.2.0 X 1.2.3.4
192.168.2.0 0 12.3.5

R3 e0/1 192.168.2.0 不 ping 12.3.4

R3 # ip access-list extended deny2
deny icmp 192.168.2.0 0.0.0.255 host 12.3.4

permit ip any any

int e0/1

R2 配置 ACL

名稱

ip access-list standard deny2

ip access-group deny2 out

deny 172.100.0.0 0.0.0.255 host 1.2.3.4
permit any
exit
interface
ip access-group deny2 out

P1 ping 1.2.3.4

ping 1.2.3.5 source 192.168.1.1

X

ping 1.2.3.5 source 192.168.2.1

V

ping 1.2.3.4 source 192.168.1.1

V