# Hands-On-Practice

Scenario:

1) 2 routers
2) 2 switches per router
3) 2 PCs per switch with both of them belongs to different VLAN
4) 2 DATA VLAN & 1 Management VLAN per scenario
5) 2 links between switches for redundancy.

Concepts to be covered in the topology

1) inter vlan routing should work (use router on a stick method)
2) All PC's should receive ip addr only through DHCP
3) Etherchannel should be successful
4) Minimum 1 portsecurity with all needed concepts in 2 router scenario.
5) PC to switch reachability should be successful
6) Routers should have been connected to each other.
7) Remote PC's should be reachable through static routing.

## Configuration:

Router 1:

```
hostname R1
ip dhcp pool vlan10
network 192.168.10.0 255.255.255.0
default-router 192.168.10.1

ip dhcp pool vlan20
network 192.168.20.0 255.255.255.0
default-router 192.168.20.1
```

int g0/0 [interface connected to Switch 1]
ip addr 192.168.1.1 255.255.255.0

int g0/0.10
desc " inter-vlan for subint g0/0.10"
encapsulation dot1Q 10
ip addr 192.168.10.1 255.255.255.0

int g0/0.20
desc "
encapsulation dot1Q 20
ip addr 192.168.20.1 255.255.255.0

int g0/2 [connected to other router]
ip address 192.168.100.1 255.255.255.0
no shutdown

ip route 0.0.0.0 0.0.0.0 192.168.100.2
(used default static route)

⇒ Similar configuration for Router 2, just change the vlan numbers and subinterface numbers to 30 and 40 and also assign ip addresses accordingly.

Switch 1:
int fa0/1
Switchport access vlan 10
Switchport mode access
Switchport port-security
Switchport port-security maximum 10

If restrict given, then also give mac-address sticky

int fa0/2
switchport access vlan 20
switchport mode access
switchport port-security
switchport port-security mac-addlo " "

int fa 0/3 [from switch to router] S2 won't have this
switchport mode trunk

after channel

int range fa 0/4-5
switchport mode trunk
channel-group 1 mode desirable

int port-channel 1
switchport mode trunk.

before the above commands create vlans using.

config#
vlan 10
name "datavlan1"
vlan 20
name "datavlan20"
vlan 30
name "management vlan"

⇒ Similar configuration for Switch 2 except it wont have direct connection with router so much port configuration for that specific port not required

⇒ For S3 and S4 similar as S1 & S2 but with vlan 30 & vlan 40

⇒ in port security violation restrict or violation protect can be configured.

Date: / /

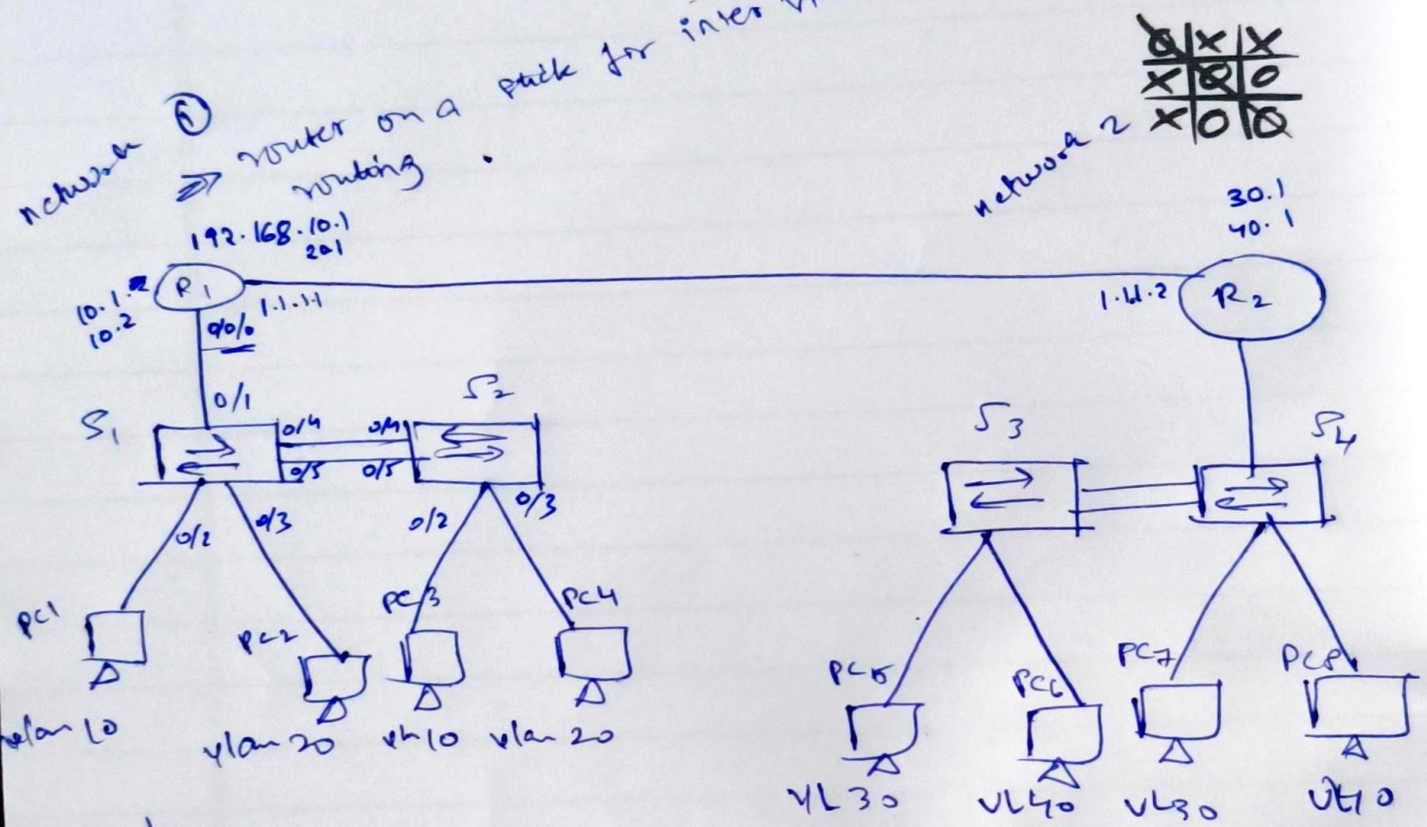
Wireless settings using AP

⇒ connect the AP to switch and access it through web browser. enter the ip address in the browser, it will ask for username & password.

⇒ go to express setup and give ip.

→ go to express security and create SSID and create password using WEP. and apply.

network 1 ⇒ router on a stick for inter vlan routing.




example:

for PC1 the remote network will be PC5, so static routing should be configured on routers to communicate between networks

Static routing

in R1

ip route 192.168.30.0 255.255.255.0 1.1.1.2

ip route 192.168.40.0 255.255.255.0 1.1.1.2

Go to that interface:

Switchport trunk encapsulation dot1q

Switchport mode trunk.