# Lab 1 : Basic Switch Configuration

~~conf~~

line console 0
password cisco
login
line vty 0 15
password cisco
login
exit

enable secret class
hostname S1

} basic shit.

---

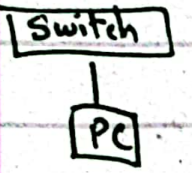
config vlan 99
exit
interface vlan 99
ip address 172. ... 255...
no shutdown

interface range fa 0/1 - 24
switchport access vlan 99
ip default-gateway 172...

speed 100
duplex full

show mac-address-table.

# Lab 3: Switch Port Security + DHCP, FTP, etc:




① ipconfig /all → get mac address

② interface fa0/1

③ switchport mode access
switchport port-security

④ switchport port-security mac-address 0002.17BB.
switchport port-security maximum 1

⑤ switchport port-security violation shutdown

⑥ show port-security address
show port-security interface fa0/1.

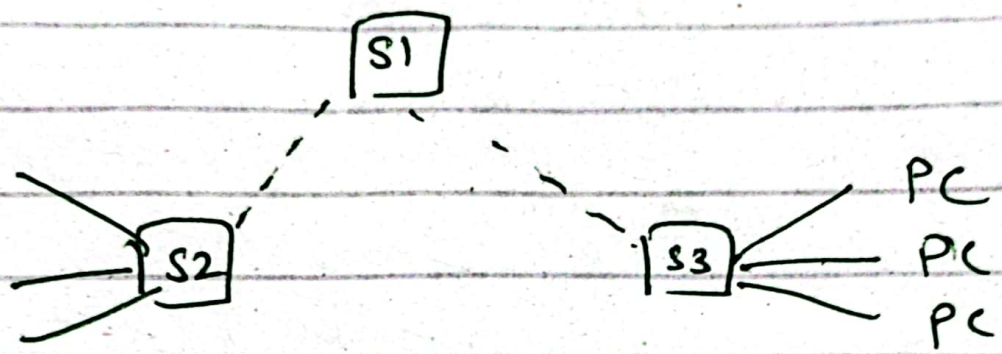
---

## FTP commands:

dir
put readme.txt
get readme.txt
quit

ftp 192.168.1.6
↳ FTP server IP.

# Lab 5 : VLAN configuration




- clear existing config:

```
interface range fa0/1-24
shutdown
```

- renable ports on S2 & S3:

```
interface range fa0/6, fa0/11, fa0/18
switchport mode access
```

- VLAN on S1, S2, S3:

```
vlan 10
name f
vlan 20
name s
vlan 30
name g
vlan 99 name m end
```

~~show vlan brief~~

- assign port ranges to vlan on S2&S3:

```
interface range fa0/6-10
switchport access vlan 30
        :
        :
```

- on all switches assign IP: S1 & S2 & S3

```
interface vlan 99
ip address ____ ____
no shut down
```

- on all switches config trunk:

```
interface range fa0/1-5
switchport mode trunk
switchport trunk native vlan 99
no shutdown
```

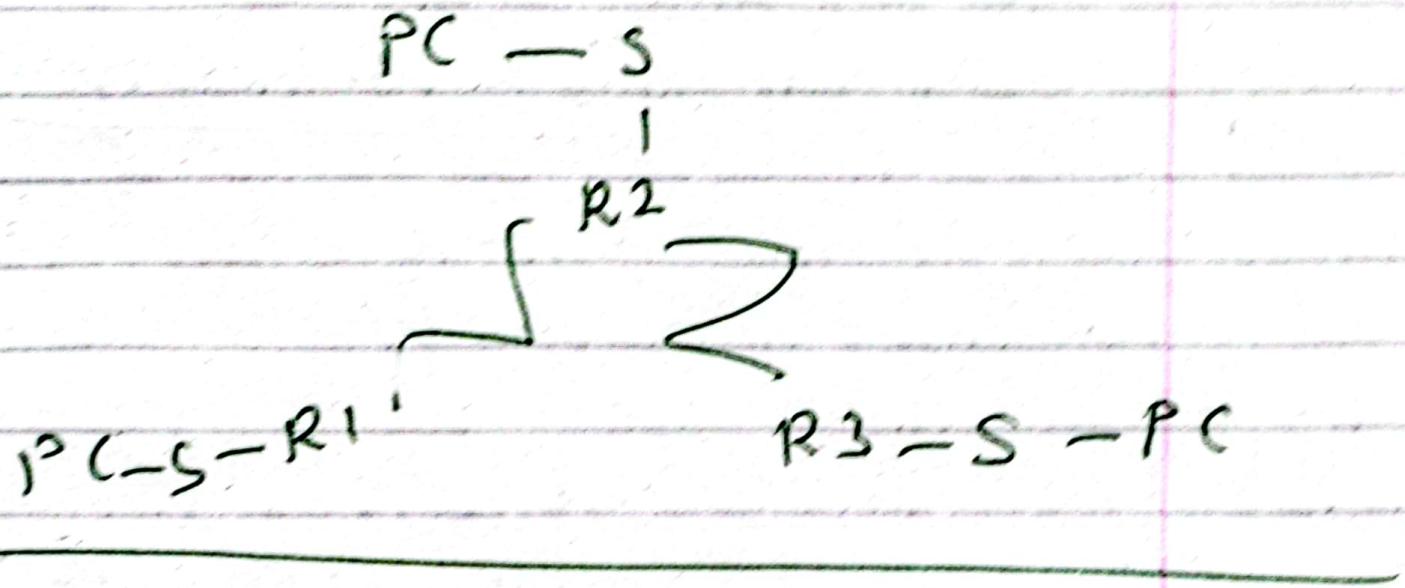
---

- interface fa0/11
  switchport access vlan 20
  end

manually change PC IP.

For PCs to communicate directly, they must be in same VLAN and subnetwork.

# Lab 6 : Static Route Configuration




no ip domain-lookup

show ip route

next-hop:

ip route network-address subnet-mask ip-address

↳ dest-nation ↳ next-hop

e.g. ip route 172.16.1.0 255.255.255.0 192.168.1.2

PC — S

destination network ... R2 S0/0/1 interface ip

R2

## exit interface:

ip route 172.16.2.0 255.255.255.0
Serial 0/0/1

# Post - Mid

## Lab 7 : RIP Config

(A) - enable dynamic routing: (1841)

```
router rip
```

- enter all network addresses directly connected:

```
network 192.168.1.0
network 192.168.2.0
end
copy run start

show ip route
     protocols
debug ip rip
undebug all
```

(B) no router rip
passive-interface fa0/0
end
copy run start

# Lab 8 - OSPF

router ospf 1 (1841)

→ for all routers, perform ospf ~~and rip~~ for the networks they are directly interfaced with

network 172.16.1.16 0.0.0.15 area 0

→ To check route-id

show ip ospf
" " " interface
" " " neighbor

→ loopback changes router-id:

interface loopback 0
ip address ____ 255.255.255.255

→ alternative:

route ospf 1
router-id 10.4.4.4
end
clear ip ospf process → reload required

240

128+64+32+16

11110000

① 10000

~~8 bit~~

remove configured id:

router ospf 1
no router-id 10.4.4.4
end
clear ip ospf process

display wst:
show interfaces serial 0/0/0
show ip route

interface serial0/0/0
bandwidth 64 $10^8/64$ kbps = 1562

interface serial0/0/0
ip ospf cost 1562
ip ospf hello-interval 5
ip ospf dead-interval 20

show ip ospf interface s0/0/0.

## Redistribute OSPF default route to simulate ISP

```
interface loopback1
ip address _____ _____
ip route 0.0.0.0 0.0.0.0 loopback1
router ospf 1
default-information originate
```

exit interface

---

```
auto-cost reference-bandwidth 10000
```

# Lab 9 : ACL

2901

2911

access-list 1 permit 10.2.2.1

access-list 2 permit 10.2.2.2

ospf part you already know.

~~config~~

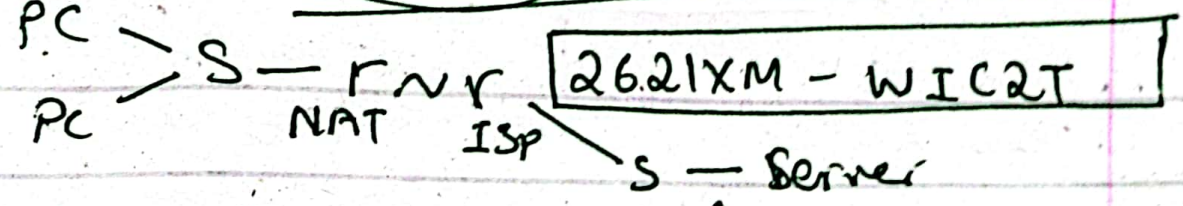
access-list 1 permit 192.168.2.3

access-list 1 deny 192.168.2.2

interface g0/0

ip access-group 1 in

# Lab 10 – NAT Configuration




- No routing protocol so config next-hop:

NAT: ip route 0.0.0.0 0.0.0.0 200.200.100.2

ISP: ip route 200.200.100.128 255.255.255.128 200.200.100.1

(200.200.100.1 — next-hop interface IP.)

NAT: access-list 1 permit 192.168.1.0 0.0.0.255

static: ip nat inside source static 192.168.1.2 200.200.100.252

dynamic: ip nat pool public 200.200.100.129 200.200.100.250 ~~net~~ netmask 255.255.255.128

↓

ip nat inside source list 1 pool public

interface fa0/0
ip nat inside
~~interface fa0/1~~
interface serial0/0
ip nat outside

show ip nat translations <verbose>
show ip nat statistics

clear ip nat translation *
show ip nat translations

# Lab 11 - IPv6

2911 → HWIC 2T

2811 → WIC 2T

```
ipv6 unicast-routing
interface Gig 0/1
 ipv6 address 2001:DB8:...
 ipv6 address ... link-local
                FE80::1

 no shutdown
```