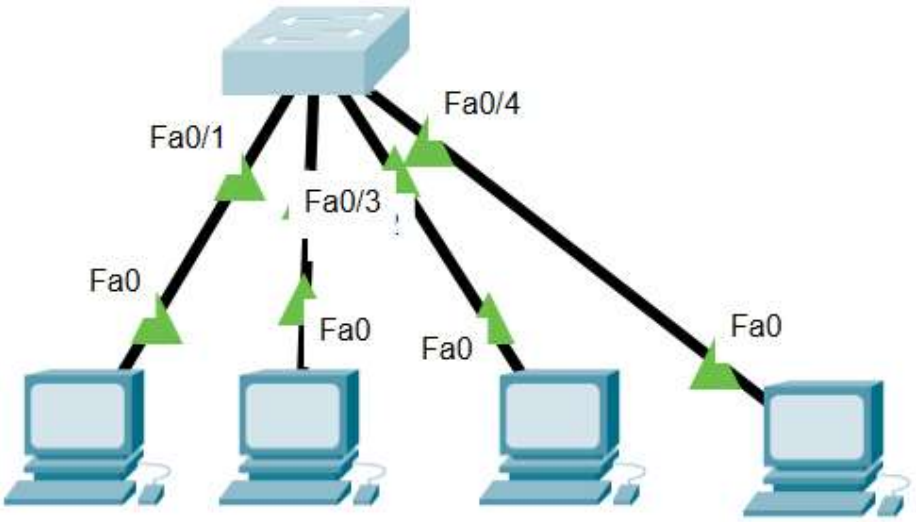
Assigning IP address to a Switch



Show Vlan

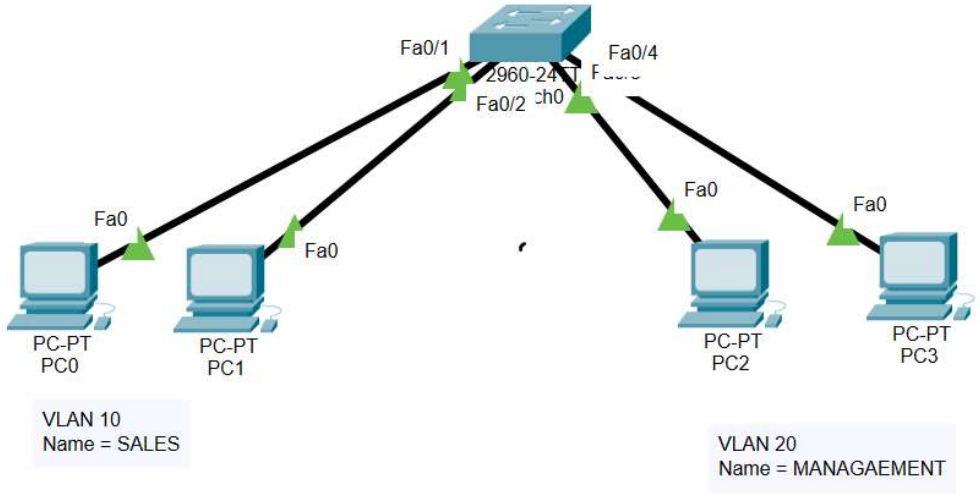
interface vlan 1
no shutdown
ip address 10.0.0.100 255.0.0.0
exit

SHOW MAC-ADDRESS TABLE

SHOW VLAN

CREATING VLANS

vlan 10
name SALES
exit
vlan 20
name MANAGT
exit



SHOW INTERfaces FAStEthernet 0/20 switchport

Which mode the switch port is in. – Dynamic Auto

Adding a port in to a Vlan

interface fastEthernet 0/1
switchport mode access
switchport access vlan 10
exit

interface fastEthernet 0/2
switchport mode access
switchport access vlan 10
exit

interface fastEthernet 0/3
switchport mode access
switchport access vlan 20
exit

interface fastEthernet 0/4
switchport mode access
switchport access vlan 20
exit

interface range fastEthernet 0/1 , fastEthernet 0/3 , fastEthernet 0/5

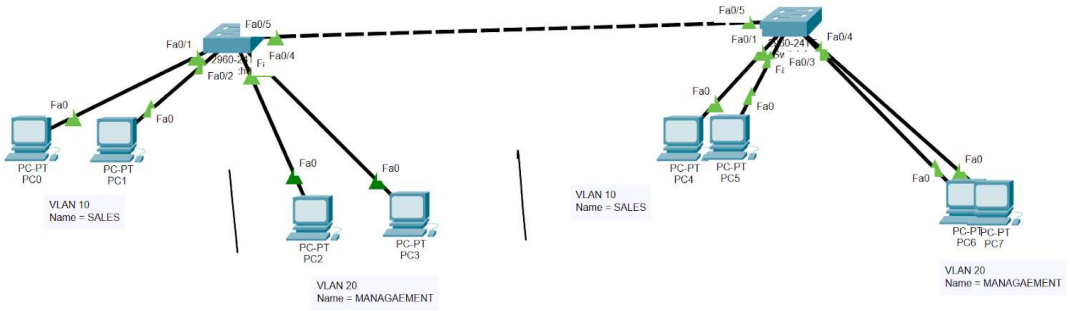
interface range fastEthernet 0/1 – 2

TWO DEVICES BELONGING TO TWO DIFFERENT NETWORKS CAN NEVER EVER COMMUNICATE - UNTIL AND UNLESS -L3 DEVICE

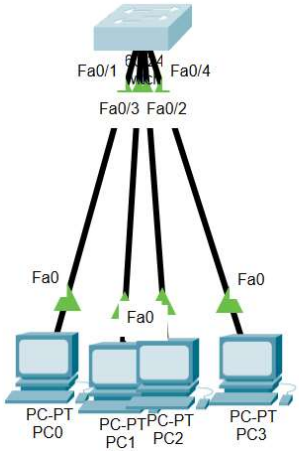
CONFIGURING TRUNK

interface fastEthernet 0/5
switchport mode trunk
exit

Switch#show interfaces trunk

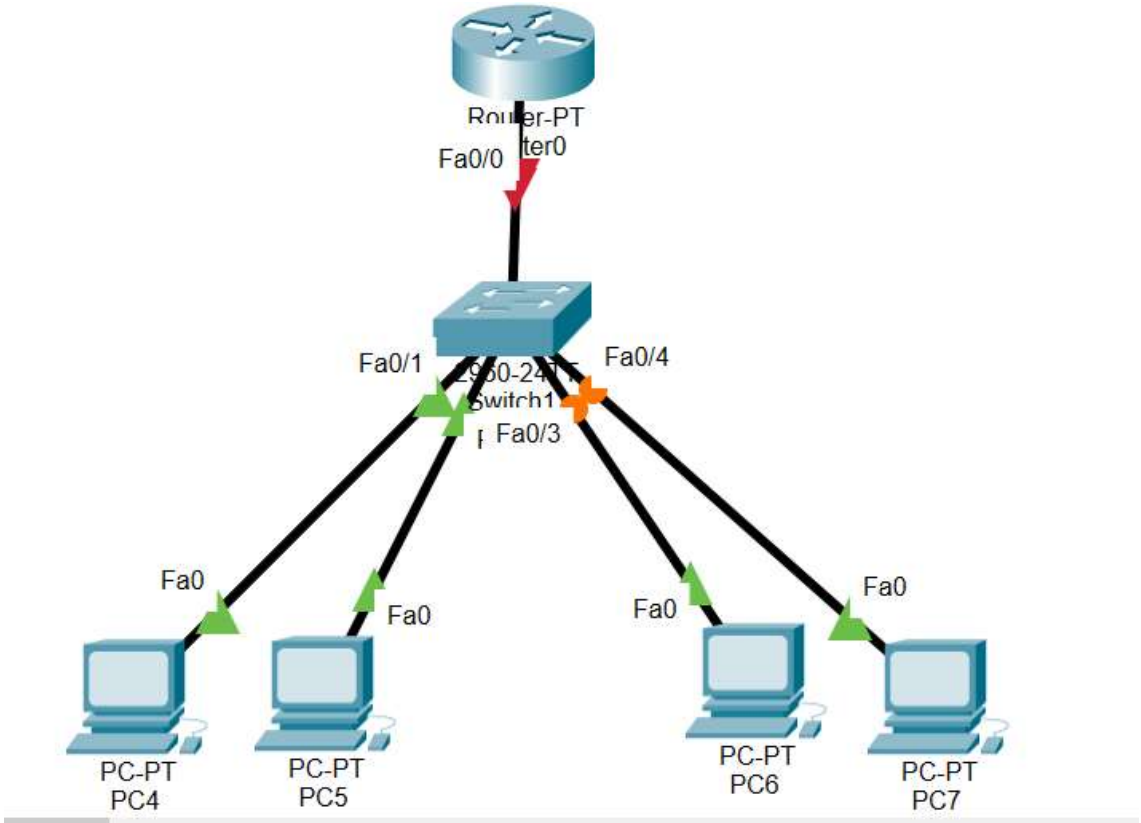


Assigning IP address to a switch



interface vlan 1
no shutdown
ip address 10.0.0.10 255.0.0.0
exi

Inter vlan routing



SWITCH

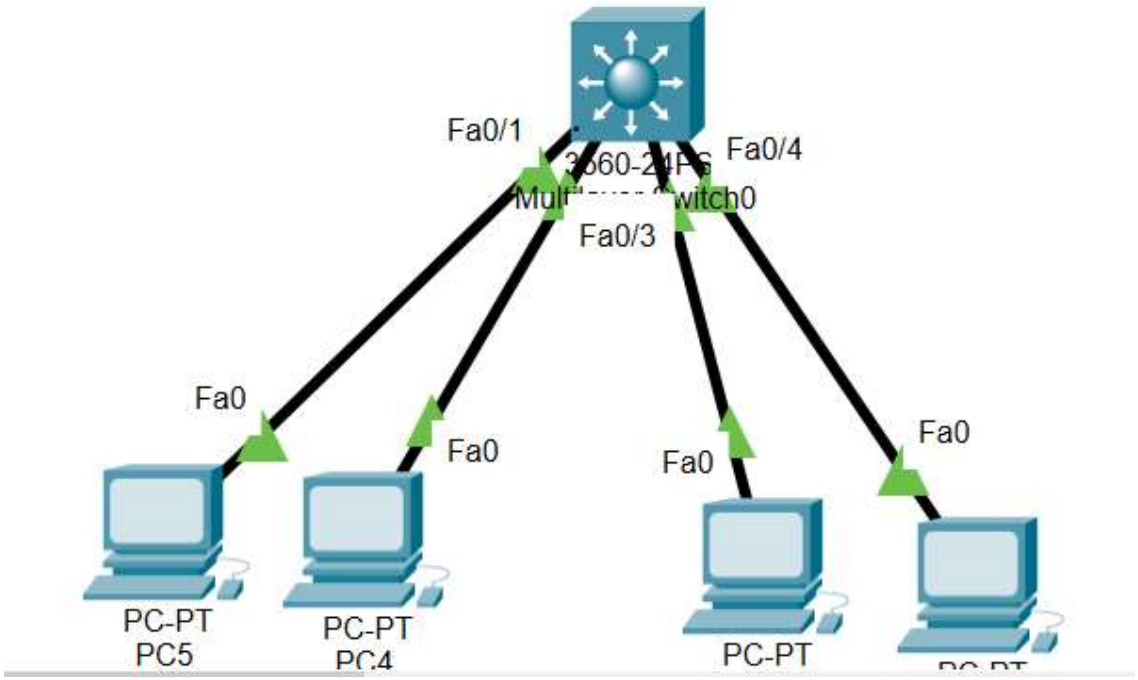
```
interface range fastEthernet 0/1 - 2
switchport mode access
switchport access vlan 10
interface range fastEthernet 0/3 - 4
switchport mode access
switchport access vlan 20
interface fastEthernet 0/5
switchport mode trunk
exit
```

Router

```
encapsulation dot1Q 10
ip address 10.0.0.10 255.0.0.0
exit
interface fastEthernet 0/0.2
encapsulation dot1Q 20
ip address 20.0.0.10 255.0.0.0
exit
```

Difference between L3 switch and a router

Attribute	Router	Layer 3 Switch
Scope	WAN for Office, Data Center or Campus environment	LAN for Office, Data Center or Campus environment
Key Functionality	Routes across different networks across WAN are communicated and Routed by a Router	Routes across different subnets or VLANS on a campus LAN
MPLS and VPN Services	Router provides MPLS and VPN services like PPP etc.	Does not support MPLS and VPN services
Edge technologies support	NAT, firewalling, tunneling, IPSec	Not supported.
Size of routing table	Considerably bigger to support multiple Route entries.	Smaller Routing table compared to Router
Forwarding decision	Performed by Software	Forwarding is performed by specialized ASICs
Example of Routers	Cisco 3900 , 4000 Series ISR Routers	Cisco 3650, 3560 and 6500 Series are examples of Layer 3 Switches.
Interface Support	Support Ethernet ports (Fiber and Copper). Also support interfaces like SONT,OC-N, T1/T3 etc.	As general case L3 Switches support Ethernet ports (Copper and Fiber). Does not support SONET, OC-N, T-1/T-3
Throughout	Lower than Layer 3 Switches	High Throughput
Switching Capacity	Lower than Layer 3 Switches	High Switching Capacity
Cost	High cost	Low Cost
Port Density	Low	High



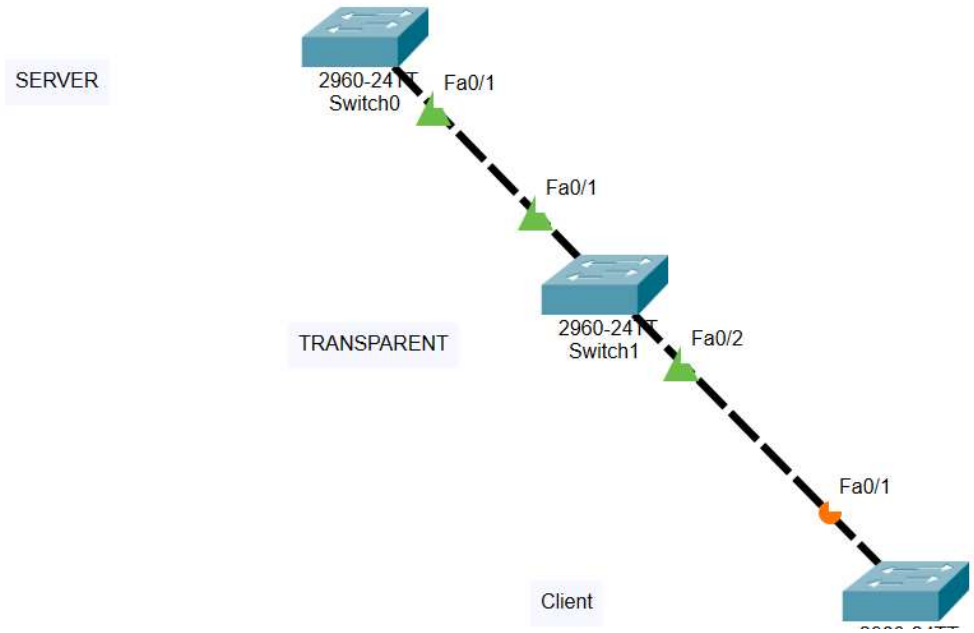
ip routing
exit
interface range fastEthernet 0/1 - 2
switchport mode access
switchport access vlan 10
exit
interface range fastEthernet 0/3 - 4
switchport mode access
switchport access vlan 20

interface vlan 10
ip address 10.0.0.10 255.0.0.0
exit
interface vlan 20
ip address 20.0.0.10 255.0.0.0
exit

	Dynamic Auto	Dynamic Desirable	Trunk	Access
Dynamic Auto	Access	Trunk	Trunk	Access
Dynamic Desirable	Trunk	Trunk	Trunk	Access
Trunk	Trunk	Trunk	Trunk	Limited Connectivity
Access	Access	Access	Limited Connectivity	Access

DTP modes

VTP



SW1

interface fastEthernet 0/1
switchport mode trunk
vtp domain CCIE
vtp mode server
vtp password cisco
vtp version 2

SW2

interface fastEthernet 0/2
switchport mode trunk
vtp domain CCIE
vtp mode transparent
vtp password cisco
vtp version 2

SW3

hostname CLIENT
vtp domain CCIE
vtp mode client
vtp password cisco
vtp version 2

Port security

interface fastEthernet 0/2
switchport mode access
switchport port-security
switchport port-security mac-address sticky
switchport port-security maximum 2
exit