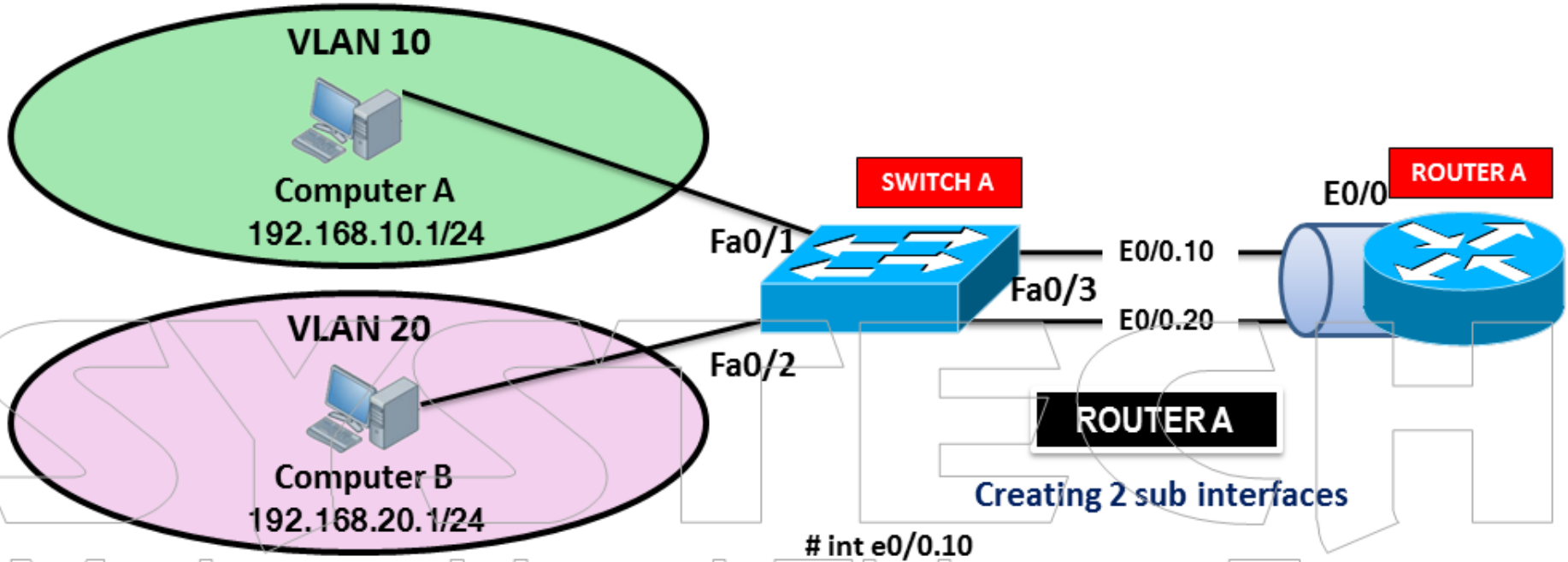
Inter VLAN routing by Router on a stick



Creating 2 sub interfaces

SWITCH A

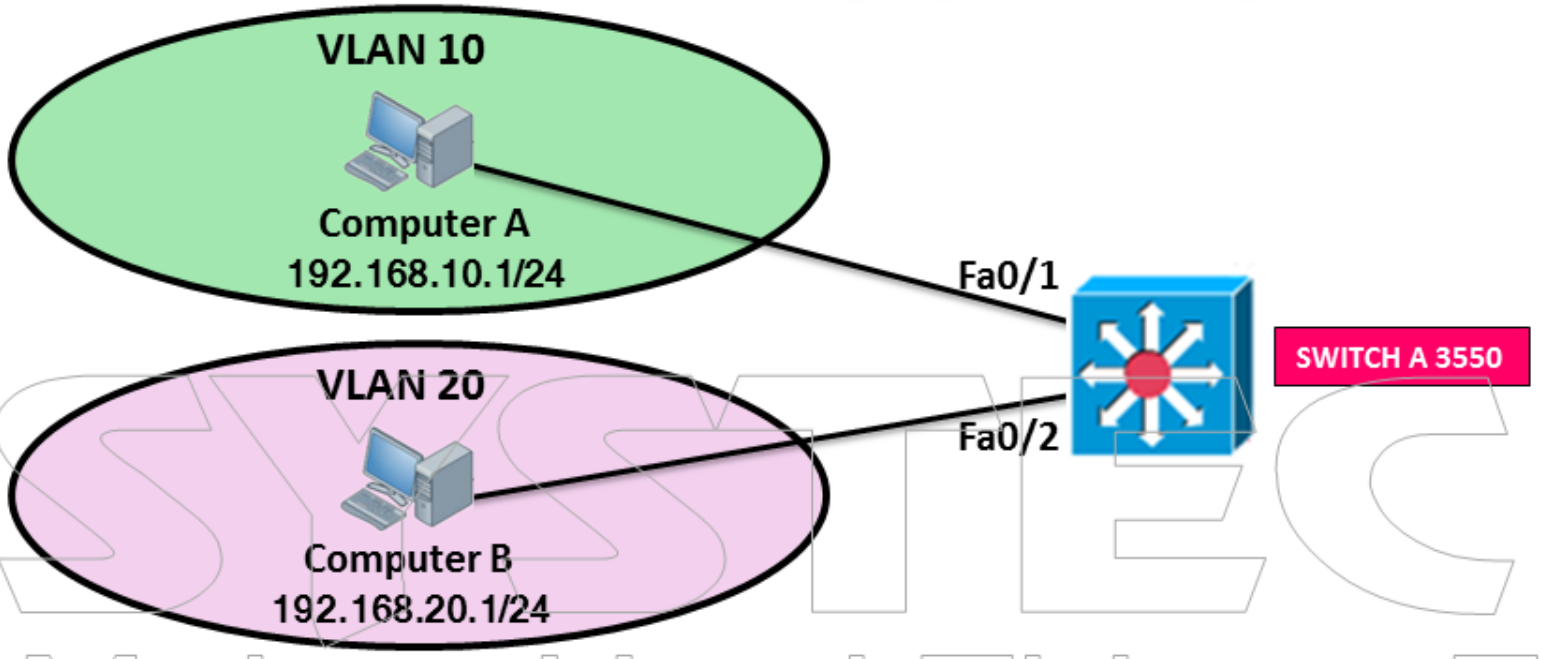
```
# int fa0/3
#switchport trunk encapsulation dot1q
#switchport mode trunk
#switchport trunk allowed vlan 10,20
```

```
# int e0/0.10
#encapsulation dot1q 10
#ip address 192.168.10.254 255.255.255.0
#no sh
#int e0/0.20
#encapsulation dot1q 20
#ip address 192.168.20.254 255.255.255.0
#no sh
#sh ip route
```

✓Router will be able to route because they are directly connected

✓Assign gateway for Computer A & B and now they are pinging

Inter VLAN routing by Multi layer switch



SWITCH A

ip routing

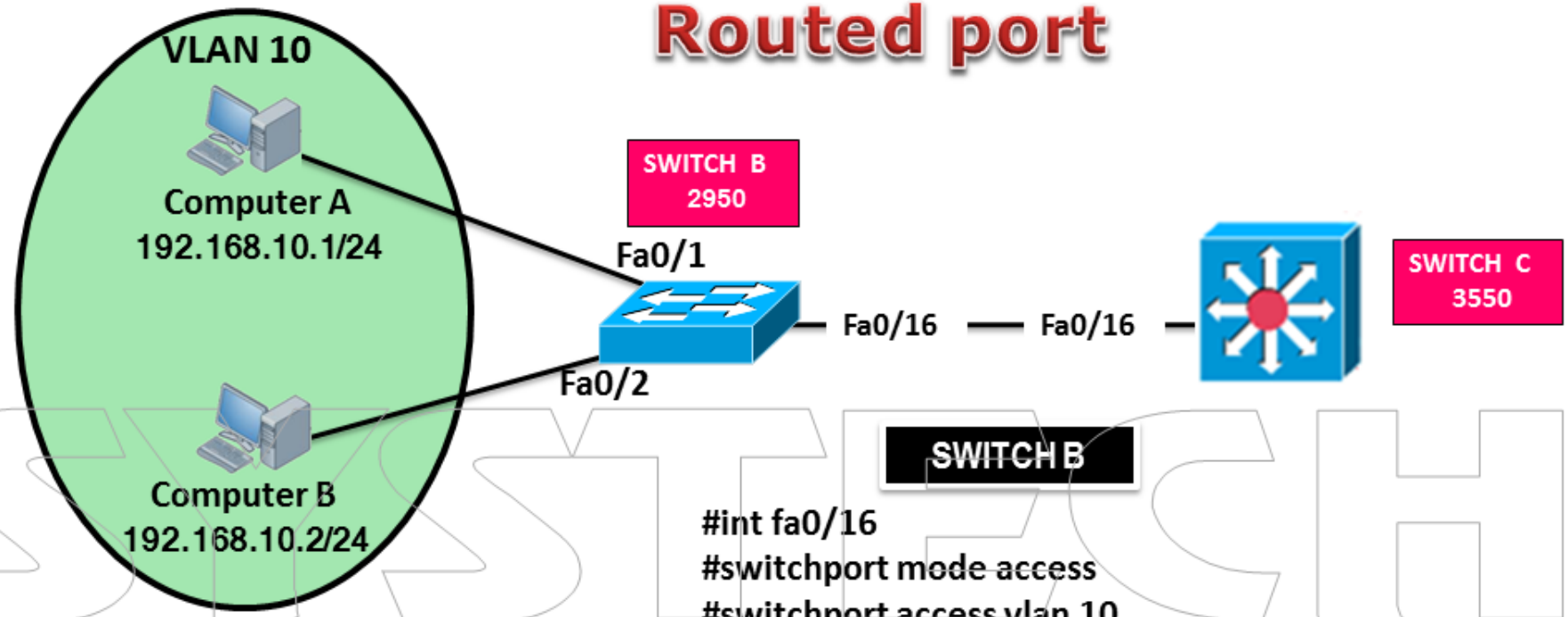
✓Configure SVI (Switch Virtual Interface)

```
#Interface vlan 10
#no sh
#ip address 192.168.10.254 255.255.255.0
#Interface vlan 20
#no sh
#ip address 192.168.20.254 255.255.255.0
```

✓Now Computer A & B will ping

```
#sh ip int brief vlan 10
#int fa0/1
#sh
#sh ip int brief vlan 10
# int fa0/2
#switchport autostate exclude
```

Routed port



SWITCH B

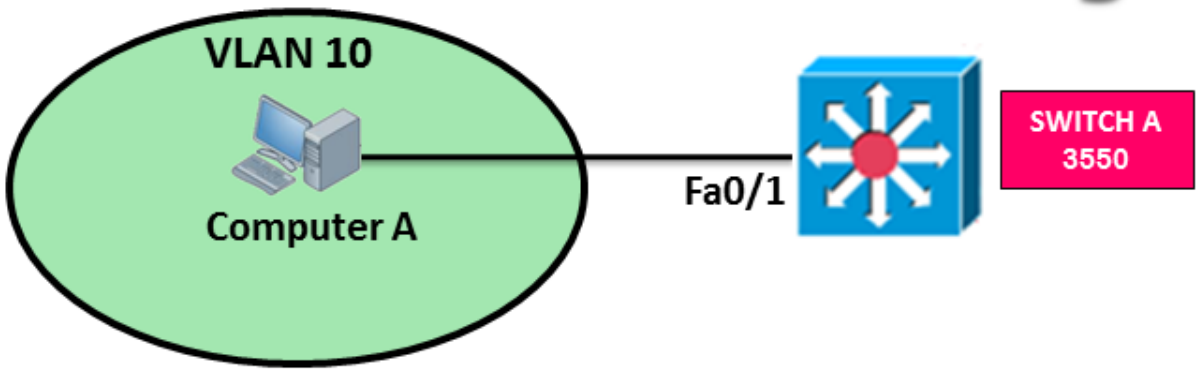
```
#int fa0/16
#switchport mode access
#switchport access vlan 10
```

SWITCH C

```
#int fa0/16
#no switchport
#ip address 192.168.10.254 255.255.255.0
# sh interface status
```

✓It's no longer a switchport so it's not associated with any VLAN
✓Its a routed port but it doesn't support sub-interfaces like router does

DHCP Configuration



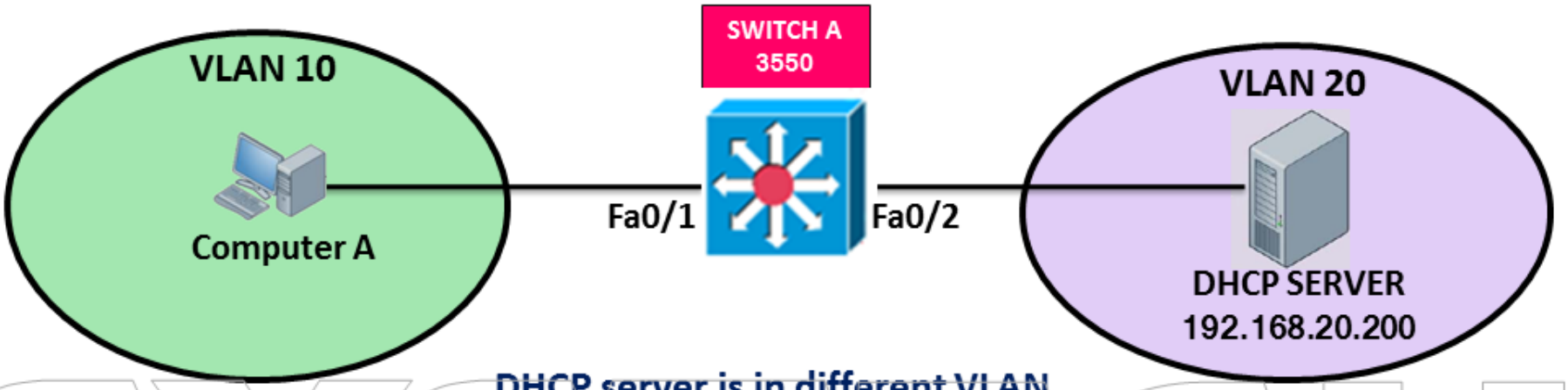
✓If we use multilayer switch as gateway we might have to configure it as DHCP server as well

SWITCH A

```
#int vlan 10
#ip address 192.168.10.254 255.255.255.0
#int fa0/1
#switchport access vlan 10
```

```
#ip dhcp pool systechvlan10
#network 192.168.10.0 255.255.255.0
#default-router 192.168.10.254
#exit
#ip dhcp excluded-address 192.168.10.254

#debug ip dhcp server packet
#show ip dhcp binding
```



DHCP server is in different VLAN

SWITCH A

```
#int vlan 10
#ip address 192.168.10.254 255.255.255.0
#ip helper 192.168.20.200
#interface vlan 20
#ip address 192.168.20.254 255.255.255.0
#int fa0/1
#switchport access vlan 10
#int fa0/2
#switchport access vlan 20
```