LINUX NETWORKING MODULE 7 AND 8 ASSESSMENT SOLUTION

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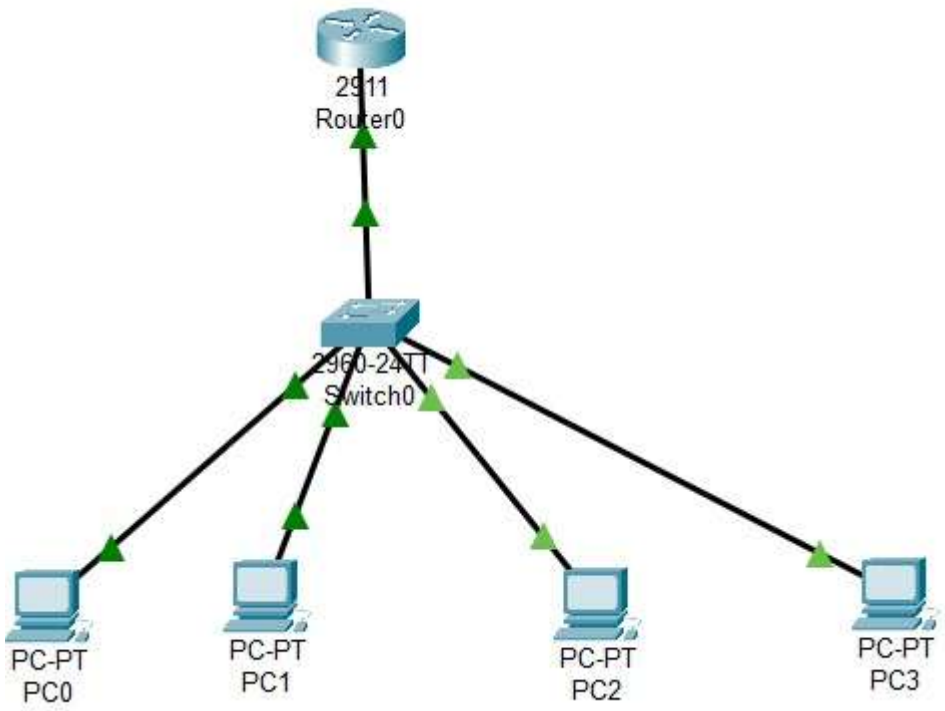
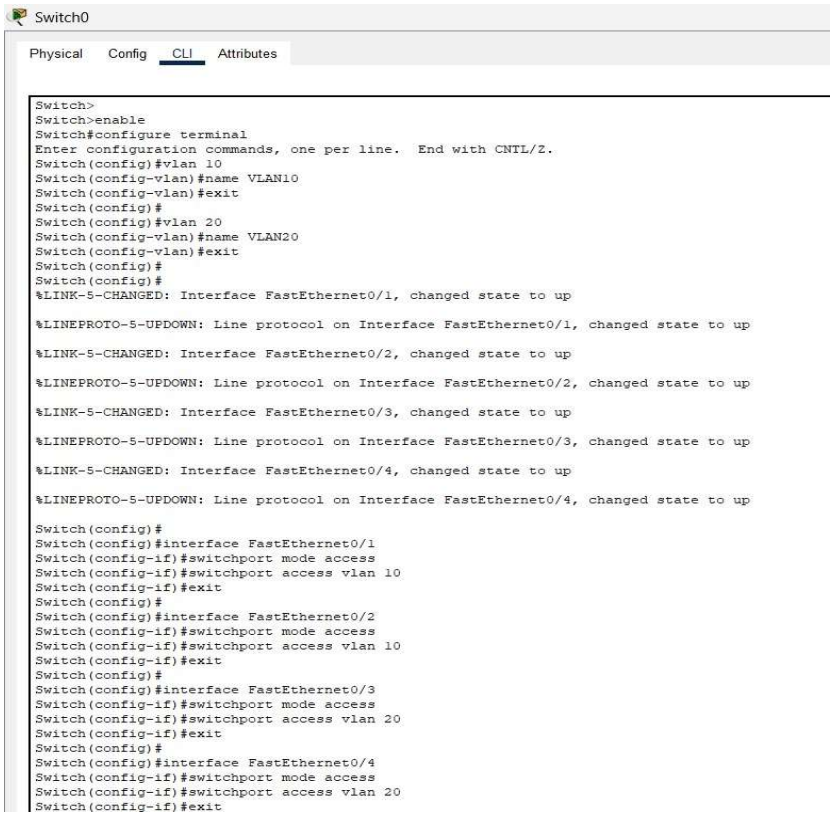
8.You configured VLANs 10 and 20 on your switch and assigned ports to each VLAN However, devices in VLAN 10 cannot communicate with devices in VLAN. Troubleshoot the issue

Topology:



Steps for trouble shooting:

Assigning VLAN Correctly:



Verify VLAN Configuration:

```
Switch#show vlan brief

VLAN Name                              Status    Ports
---- --------------------------------- --------- -------------------------------
1    default                           active    Fa0/5, Fa0/6, Fa0/7, Fa0/8
                                                 Fa0/9, Fa0/10, Fa0/11, Fa0/12
                                                 Fa0/13, Fa0/14, Fa0/15, Fa0/16
                                                 Fa0/17, Fa0/18, Fa0/19, Fa0/20
                                                 Fa0/21, Fa0/22, Fa0/23, Fa0/24
                                                 Gig0/1, Gig0/2
10   VLAN10                            active    Fa0/1, Fa0/2
20   VLAN20                            active    Fa0/3, Fa0/4
1002 fddi-default                      active
1003 token-ring-default                active
1004 fddinet-default                   active
1005 trnet-default                     active
Switch#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#interface FastEthernet0/5
Switch(config-if)#switchport mode trunk
Switch(config-if)#exit
Switch(config)#^Z
Switch#
%SYS-5-CONFIG_I: Configured from console by console
```

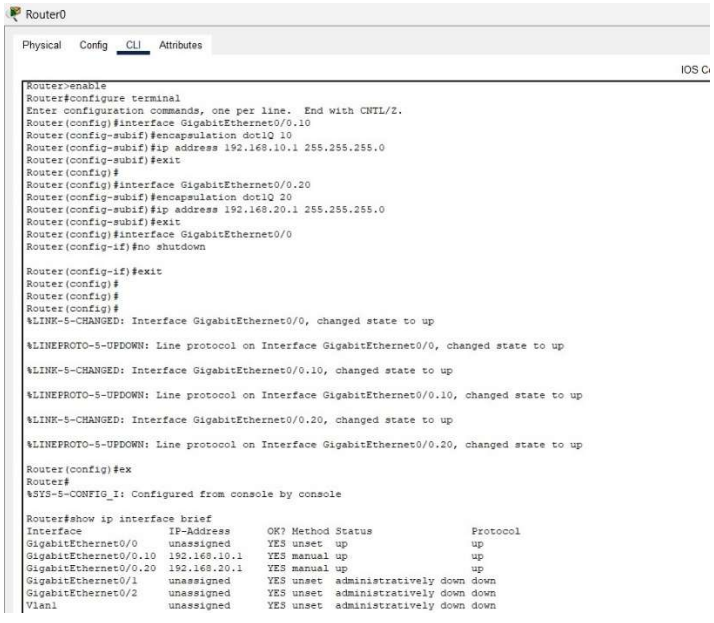
Verify port assignments

```
Switch>en
Switch#show interfaces status
Port      Name               Status       Vlan       Duplex  Speed Type
Fa0/1                        connected    10         auto    auto  10/100BaseTX
Fa0/2                        connected    10         auto    auto  10/100BaseTX
Fa0/3                        connected    20         auto    auto  10/100BaseTX
Fa0/4                        connected    20         auto    auto  10/100BaseTX
Fa0/5                        connected    trunk      auto    auto  10/100BaseTX
Fa0/6                        notconnect   1          auto    auto  10/100BaseTX
Fa0/7                        notconnect   1          auto    auto  10/100BaseTX
Fa0/8                        notconnect   1          auto    auto  10/100BaseTX
```

Checking Trunk interfaces:

```
Switch#show interfaces trunk
Port        Mode         Encapsulation  Status        Native vlan
Fa0/5       on           802.1q         trunking      1

Port        Vlans allowed on trunk
Fa0/5       1-1005

Port        Vlans allowed and active in management domain
Fa0/5       1,10,20

Port        Vlans in spanning tree forwarding state and not pruned
Fa0/5       none
```

Enabling Inter-VLAN Routing:

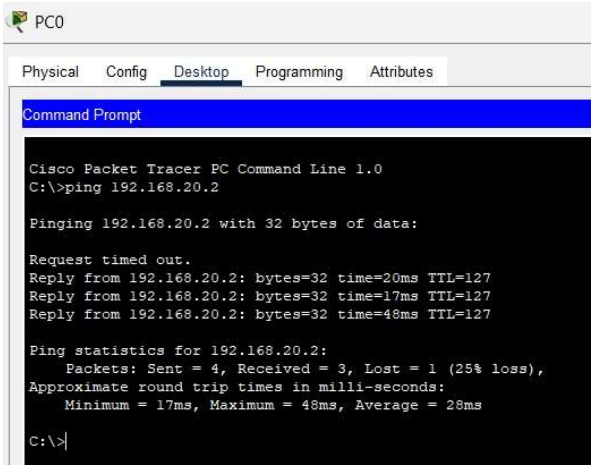


Checking Ip Route:

```
Router#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     192.168.10.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.10.0/24 is directly connected, GigabitEthernet0/0.10
L       192.168.10.1/32 is directly connected, GigabitEthernet0/0.10
     192.168.20.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.20.0/24 is directly connected, GigabitEthernet0/0.20
L       192.168.20.1/32 is directly connected, GigabitEthernet0/0.20

Router#
```

Ping Test:

Pinging PC of VLAN 2 from VLAN 1 and Vice versa:



- If inter-VLAN routing is missing, configuring Router-on-a-Stick or an L3 switch.
- Ensuring correct VLAN assignment and trunking.
- Verifying default gateways and IP configurations.
- Checking ACLs that may be blocking traffic.
- Pinging into Different VLAN
- Checking IP route
- Verifying Port Assignments

These are the steps to troubleshoot the inter VLAN routing issues.