LINUX NETWORKING MODULE 7 AND 8 ASSESSMENT SOLUTION

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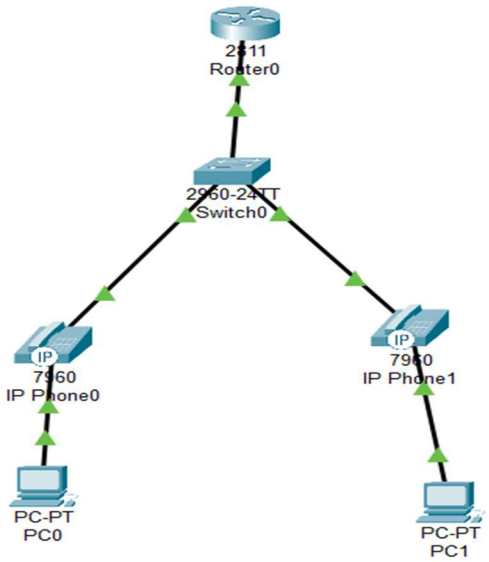
7. You have a Cisco switch and a VoIP phone that needs to be placed in a voice VLAN (VLAN 20). The data for the PC should remain in a separate VLAN (VLAN 10). Configure the switch port to support both voice and data traffic

Topology:



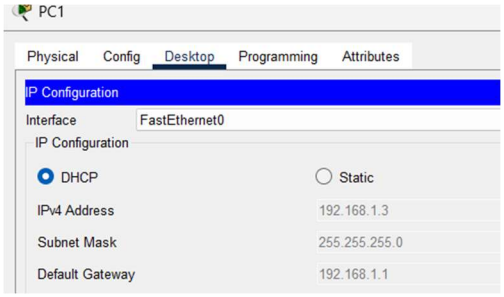
Switch and Router Configurations:

```
Switch>en
Switch#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name data
Switch(config-vlan)#ex
Switch(config)#vlan 20
Switch(config-vlan)#name voice
Switch(config-vlan)#ex
Switch(config)#int f0/1
Switch(config-if)#switchport mode trunk
Switch(config-if)#ex
Switch(config)#int range f0/1\2-3
                         ^
% Invalid input detected at '^' marker.

Switch(config)#int range f0/2-3
Switch(config-if-range)#sw
% Incomplete command.
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport mode access vlan 10
                                             ^
% Invalid input detected at '^' marker.

Switch(config-if-range)#switchport access vlan 10
Switch(config-if-range)#switchport voice vlan 20
Switch(config-if-range)#ex
Switch(config)#do wr
Building configuration...
[OK]
Switch(config)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up

%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
```

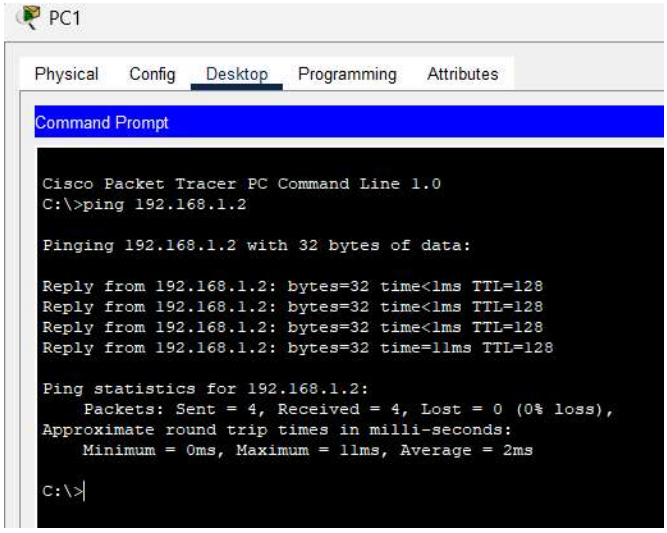
```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#int f0/0.10
Router(config-subif)#encapsulation dot1Q 10
Router(config-subif)#ip address 192.168.1.1 255.255.255.0
Router(config-subif)#ex
Router(config)#int f0/0.20
Router(config-subif)#encapsulation dot1Q 20
Router(config-subif)#ip address 192.168.2.1 255.255.255.0
Router(config-subif)#
Router(config-subif)#ex
Router(config)#ip dhcp pool data
Router(dhcp-config)#network 192.168.1.0 255.255.255.0
Router(dhcp-config)#default-router 192.168.1.1
Router(dhcp-config)#ex
Router(config)#ip dhcp pool voice
Router(dhcp-config)#network 192.168.2.0 255.255.255.0
Router(dhcp-config)#default-router 192.168.2.1
Router(dhcp-config)#option 150 ip 192.168.2.1
Router(dhcp-config)#ex
Router(config)#do wr
Building configuration...
[OK]
Router(config)#telephony-service
Router(config-telephony)#max-ephones 2
Router(config-telephony)#max-dn 2
Router(config-telephony)#ip source-address 192.168.2.1 port 2000
Router(config-telephony)#auto assign 1 to 2
Router(config-telephony)#ex
Router(config)#ephone-dn 1
Router(config-ephone-dn)#%LINK-3-UPDOWN: Interface ephone_dsp DN 1.1, changed state to up

Router(config-ephone-dn)#number 1010
Router(config-ephone-dn)#
Router(config-ephone-dn)#
Router(config-ephone-dn)#ex
Router(config)#ephone-dn 2
Router(config-ephone-dn)#%LINK-3-UPDOWN: Interface ephone_dsp DN 2.1, changed state to up

Router(config-ephone-dn)#number 2020
Router(config-ephone-dn)#
Router(config-ephone-dn)#
Router(config-ephone-dn)#ex
Router(config)#do wr
Building configuration...
[OK]
Router(config)#
```

```
Router(config)#int f0/0
Router(config-if)#no sh

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

%LINK-5-CHANGED: Interface FastEthernet0/0.10, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.10, changed state to up

%LINK-5-CHANGED: Interface FastEthernet0/0.20, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.20, changed state to up

Router(config-if)#
Router(config-if)#
Router(config-if)#
Router(config-if)#do wr
Building configuration...
[OK]
Router(config-if)#
Router(config-if)#
Router(config-if)#
Router(config-if)#
%IPPHONE-6-REGISTER: ephone-1 IP:192.168.2.2 Socket:2 DeviceType:Phone has registered.

%IPPHONE-6-REGISTER: ephone-2 IP:192.168.2.3 Socket:2 DeviceType:Phone has registered.
```

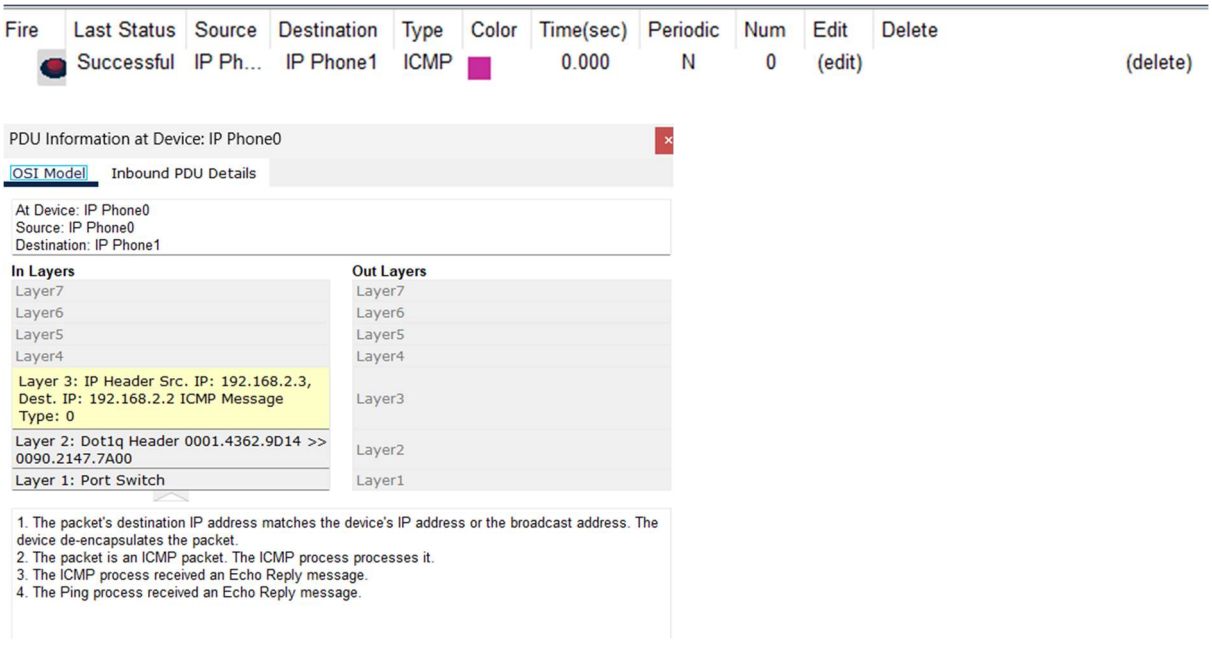
```
Switch>
Switch>en
Switch#show vlan brief

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Fa0/4, 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   data                             active    Fa0/2, Fa0/3
20   voice                            active    Fa0/2, Fa0/3
```



Ping on PC1 to PC0:



Packet Status:



VOIP phone Connection: