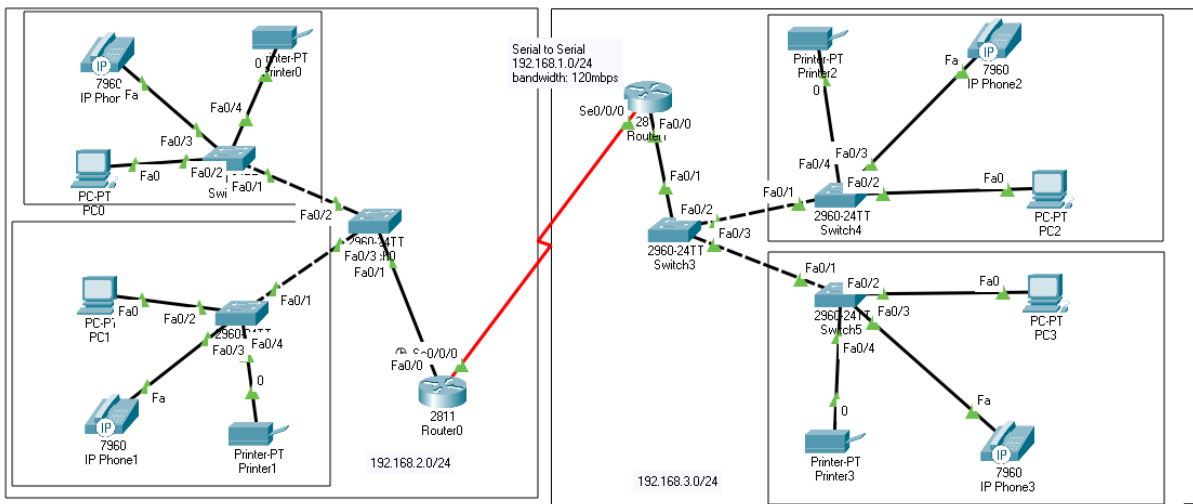


ITN Assignment: Simplified Solution Sample



Configuration

Switch1

```
Switch>en
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#int range fa0/2-24
Switch(config-if-range)#switchport voice vlan 1
```

Switch2

```
Switch>ena
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#int range fa0/2-24
Switch(config-if-range)#switchport voice vlan 1
Switch(config-if-range)#
```

Router0

```
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int fa0/0
Router(config-if)#ip address 192.168.2.1 255.255.255.0
Router(config-if)#no shutdown

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
Router(config-if)#exit
Router(config)#
Router#

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)#exit
Router(config)#ip dhcp excluded-address 192.168.2.1
Router(config)#
```

Configure PC0 and PC1 with DHCP

The image shows two screenshots of a network configuration interface. The top screenshot is for PC0, and the bottom is for PC1. Both windows have tabs for Physical, Config, Desktop, Programming, and Attributes. The 'Desktop' tab is selected, and an 'IP Configuration' dialog box is open. In both cases, the 'Interface' is 'FastEthernet0' and 'DHCP' is selected. For PC0, the IPv4 Address is 192.168.2.2, Subnet Mask is 255.255.255.0, Default Gateway is 192.168.2.1, and DNS Server is 0.0.0.0. For PC1, the IPv4 Address is 192.168.2.5, Subnet Mask is 255.255.255.0, Default Gateway is 192.168.2.1, and DNS Server is 0.0.0.0.

PC0 Configuration:

- Interface: FastEthernet0
- IP Configuration: ☒ DHCP, ☐ Static
- IPv4 Address: 192.168.2.2
- Subnet Mask: 255.255.255.0
- Default Gateway: 192.168.2.1
- DNS Server: 0.0.0.0

PC1 Configuration:

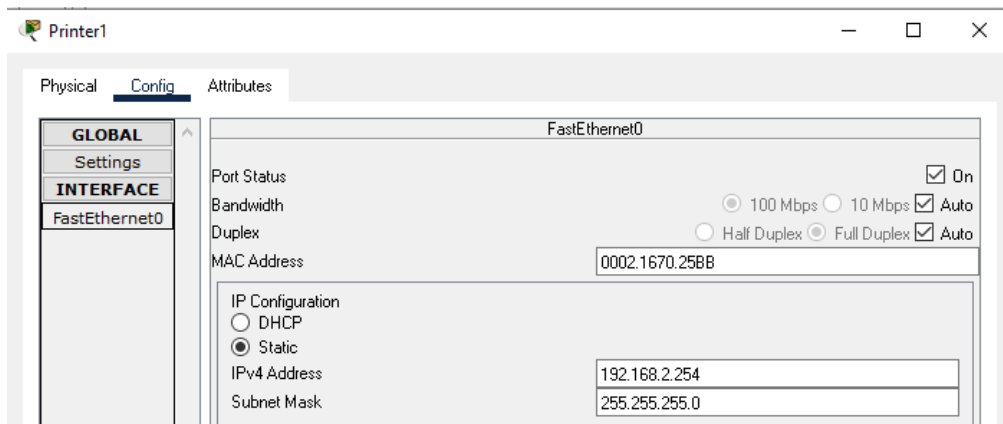
- Interface: FastEthernet0
- IP Configuration: ☒ DHCP, ☐ Static
- IPv4 Address: 192.168.2.5
- Subnet Mask: 255.255.255.0
- Default Gateway: 192.168.2.1
- DNS Server: 0.0.0.0

Configure Printer0 with 192.168.2.253/24 and Printer1 with 192.168.2.254 and gateway as 192.168.2.1 for both printers in global setting

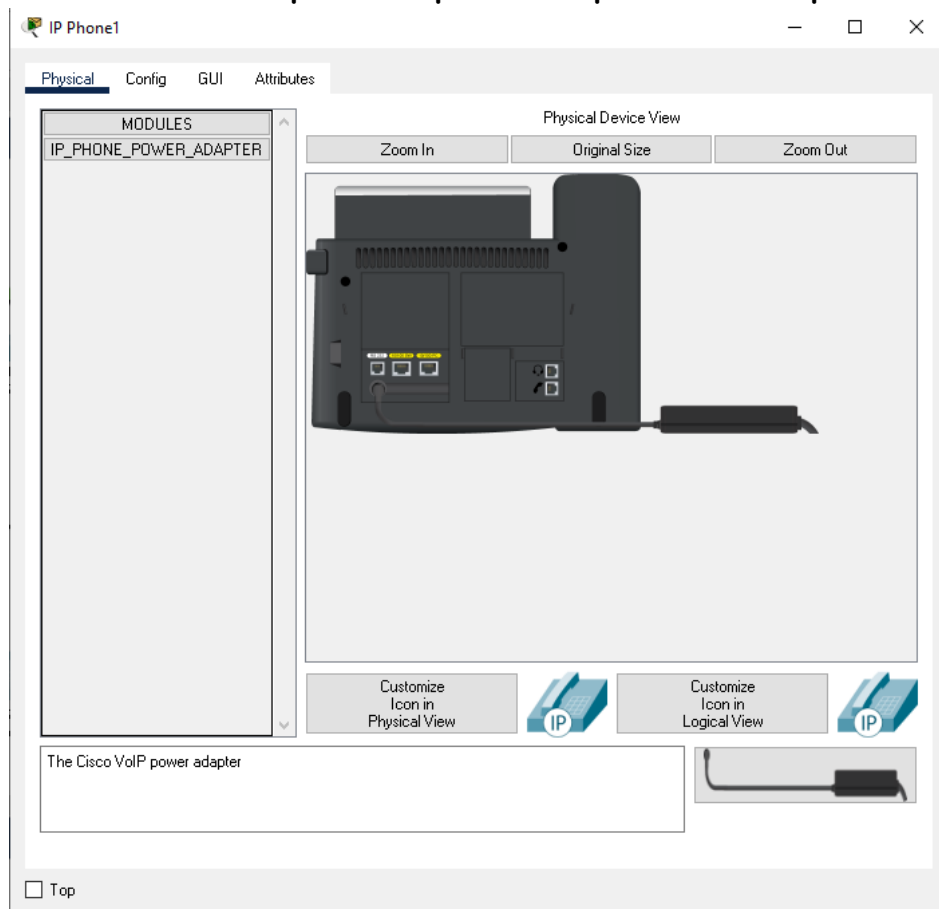
The image shows a screenshot of the 'Printer0' configuration window. The 'Config' tab is selected. On the left, there is a tree view with 'GLOBAL' and 'INTERFACE' sections. Under 'INTERFACE', 'FastEthernet0' is selected. The main area shows settings for 'FastEthernet0'. 'Port Status' is 'On'. 'Bandwidth' is set to '100 Mbps' and 'Auto'. 'Duplex' is set to 'Full Duplex' and 'Auto'. 'MAC Address' is '0001.437B.C925'. The 'IP Configuration' section shows 'Static' selected, with 'IPv4 Address' set to '192.168.2.253' and 'Subnet Mask' set to '255.255.255.0'.

Printer0 Configuration:

- Interface: FastEthernet0
- Port Status: ☒ On
- Bandwidth: ☒ 100 Mbps, ☐ 10 Mbps, ☒ Auto
- Duplex: ☐ Half Duplex, ☒ Full Duplex, ☒ Auto
- MAC Address: 0001.437B.C925
- IP Configuration: ☐ DHCP, ☒ Static
- IPv4 Address: 192.168.2.253
- Subnet Mask: 255.255.255.0



Connect the The Cisco VoIP power adapter to IP phone0 and IP phone1



Router0 configuration

```
Router(config)#telephony-service
Router(config-telephony)#max-dn 2
Router(config-telephony)#max-ephone 2
Router(config-telephony)#ip source-address 192.168.2.1 port 2000
Router(config-telephony)#auto assign 1 to 2
Router(config-telephony)#exit
Router(config)#ephone-dn 1
Router(config-ephone-dn)#%LINK-3-UPDOWN: Interface ephone_dsp DN
1.1, changed state to up

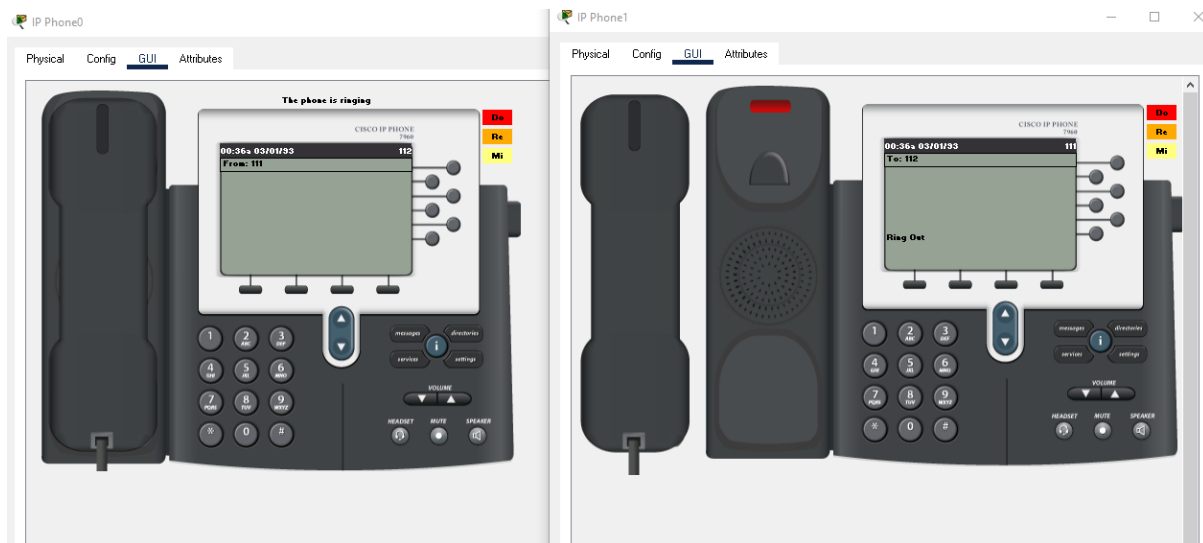
Router(config-ephone-dn)#number 111
Router(config-ephone-dn)#exit
Router(config)#
```

```
%IPPHONE-6-REGISTER: ephone-1 IP:192.168.2.4 Socket:2
DeviceType:Phone has registered.
```

```
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 112
Router(config-ephone-dn)#
%IPPHONE-6-REGISTER: ephone-2 IP:192.168.2.3 Socket:2
DeviceType:Phone has registered.
```

```
Router(config-ephone-dn)#exit
Router(config)#
```



Switch4

```
Switch>ena
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#int range fa0/2-24
Switch(config-if-range)#switchport voice vlan 1
Switch(config-if-range)#
```

Switch5

```
Switch>ena
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#int range fa0/2-24
Switch(config-if-range)#switchport voice vlan 1
Switch(config-if-range)#
```

Router1

```
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int fa0/0
Router(config-if)#ip address 192.168.3.1 255.255.255.0
```

```
Router(config-if)#no shutdown
```

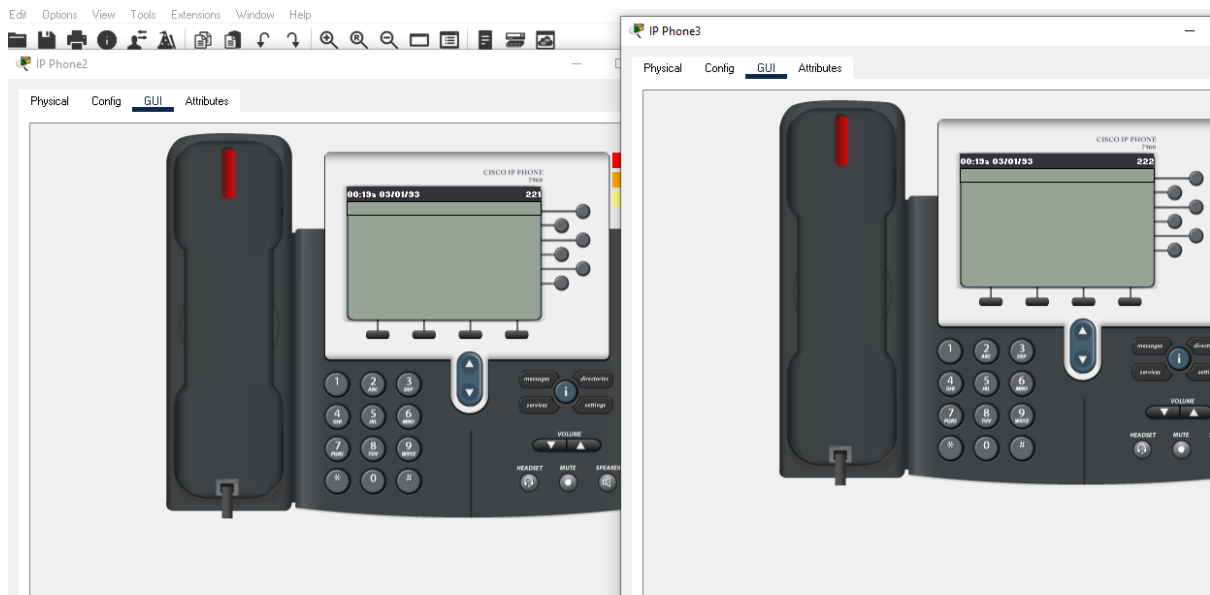
```
Router(config-if)#  
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up  
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0,  
changed state to up  
Router(config-if)#exit  
Router(config)#  
Router#  
Router(config)#ip dhcp pool voice  
Router(dhcp-config)#network 192.168.3.0 255.255.255.0  
Router(dhcp-config)#default-router 192.168.3.1  
Router(dhcp-config)#option 150 ip 192.168.3.1  
Router(dhcp-config)#exit  
Router(config)#ip dhcp excluded-address 192.168.3.1  
Router(config)#
```

Configure Printer2 with 192.168.3.253/24 and Printer3 with 192.168.3.254 and gateway as 192.168.3.1 for both printers in global setting.

Connect the The Cisco VoIP power adapter to IP phone2 and IP phone3

Router1 configuration

```
Router(config)#telephony-service  
Router(config-telephony)#max-dn 2  
Router(config-telephony)#max-ephone 2  
Router(config-telephony)#ip source-address 192.168.3.1 port 2000  
Router(config-telephony)#auto assign 1 to 2  
Router(config-telephony)#exit  
Router(config)#ephone-dn 1  
Router(config-ephone-dn)#number 221  
Router(config-ephone-dn)#exit  
Router(config)#  
Router(config)#ephone-dn 2  
Router(config-ephone-dn)#number 222  
Router(config-ephone-dn)#exit  
Router(config)#
```



Configure Serial Link between two routers

Router0

```
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int s0/0/0
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#clock rate 64000
Router(config-if)#bandwidth 120000
Router(config-if)#no shutdown
```

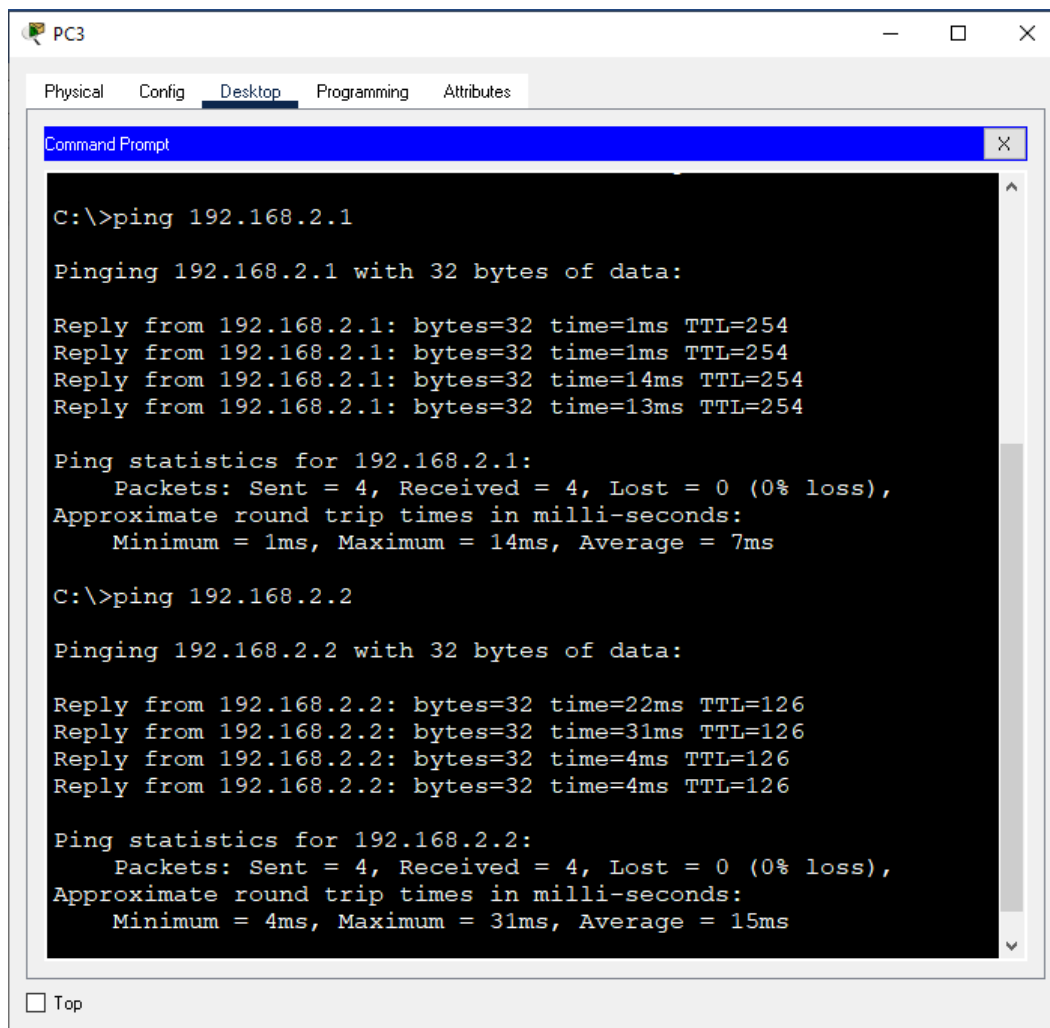
```
%LINK-5-CHANGED: Interface Serial0/0/0, changed state to down
Router(config-if)#router rip
Router(config-router)#network 192.168.1.0
Router(config-router)#network 192.168.2.0
Router(config-router)#network 192.168.3.0
Router(config-router)#exit
Router(config)#
```

Router1

```
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int s0/0/0
Router(config-if)#ip address 192.168.1.2 255.255.255.0
Router(config-if)#no shutdown
```

```
%LINK-5-CHANGED: Interface Serial0/0/0, changed state to down
Router(config-if)#router rip
Router(config-router)#network 192.168.1.0
Router(config-router)#network 192.168.2.0
Router(config-router)#network 192.168.3.0
Router(config-router)#exit
Router(config)#
```

Verify connectivity



For IP Phones

Router 0

```
Router#conf t
```

Enter configuration commands, one per line. End with CNTL/Z.

```
Router(config)#dial-peer voice 1 voip
```

```
Router(config-dial-peer)#session target ipv4:192.168.1.2
```

```
Router(config-dial-peer)#destination 22.
```

```
Router(config-dial-peer)#
```

Router 1

```
Router#conf t
```

Enter configuration commands, one per line. End with CNTL/Z.

```
Router(config)#dial-peer voice 1 voip
```

```
Router(config-dial-peer)#session target ipv4:192.168.1.1
```

```
Router(config-dial-peer)#destination 11.
```

```
Router(config-dial-peer)#
```

Verify Connectivity

