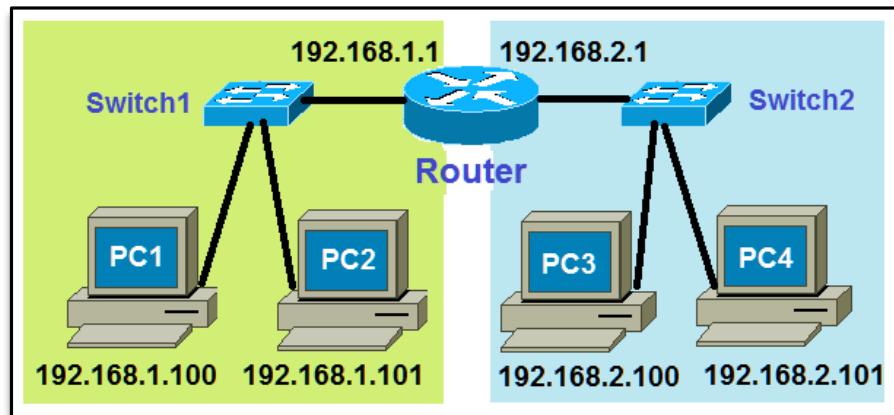


Packet Tracer Mini-Lab 03: **Supplement** Configuring Switches with Router in Packet Tracer

CAVEAT: THE LABS IN CC2-180 MAY NOT WORK ENTIRELY AS PLANNED. WE WILL BE UTILIZING BOTH A SERVER 2012 R2 HOST PC AND VIRTUAL MACHINES (VMs) ON THE HOST PC, IN WHICH CASE THERE MAY BE UNFORESEEN ISSUES. AS SUCH WE WILL LIKELY GET SOME UNEXPECTED 'REAL WORLD' TROUBLESHOOTING PRACTICE AND MAY EVEN HAVE TO "WING IT"

Mini-Lab 03 Objective

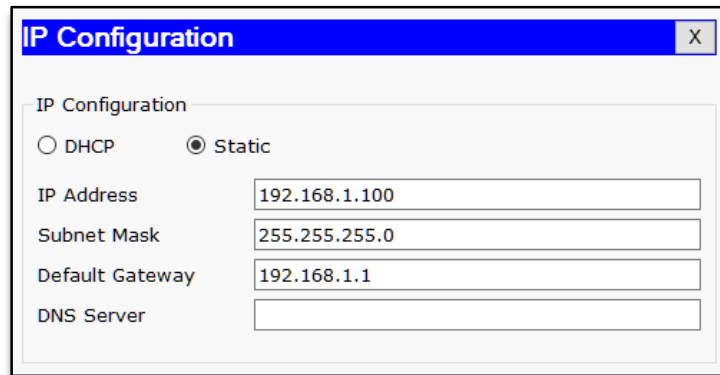
The lab provides further practice in a simulated environment using **Cisco's Packet Tracer** application.



1. Create two small **networks** using **4 PC** hosts, **2 switches**, and **1 Router** connected with **6 copper straight-through** cables.
2. Click on **PC1** and select the **Desktop** tab.



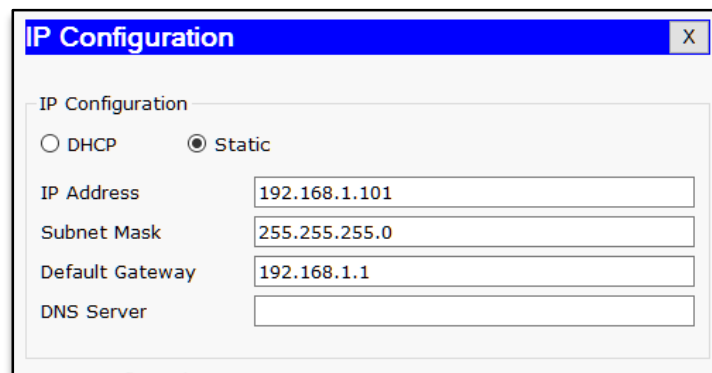
3. Select **IP Configuration**, and enter the following **address information**:



The screenshot shows the 'IP Configuration' dialog box with the 'Static' radio button selected. The fields are filled with the following values:

Field	Value
IP Address	192.168.1.100
Subnet Mask	255.255.255.0
Default Gateway	192.168.1.1
DNS Server	

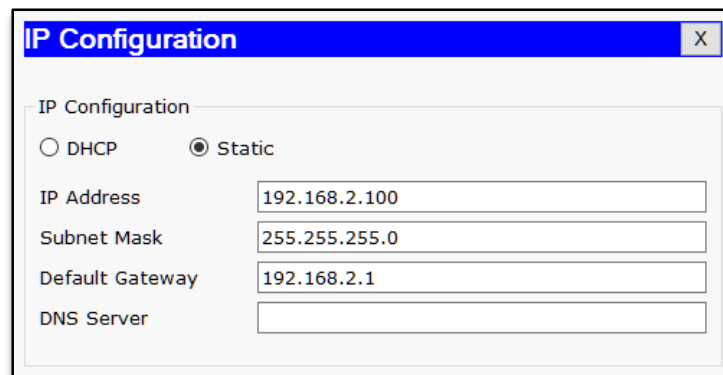
4. Click on **PC2** and select the **Desktop** tab.
5. Select **IP Configuration**, and enter the following **address information**:



The screenshot shows the 'IP Configuration' dialog box with the 'Static' radio button selected. The fields are filled with the following values:

Field	Value
IP Address	192.168.1.101
Subnet Mask	255.255.255.0
Default Gateway	192.168.1.1
DNS Server	

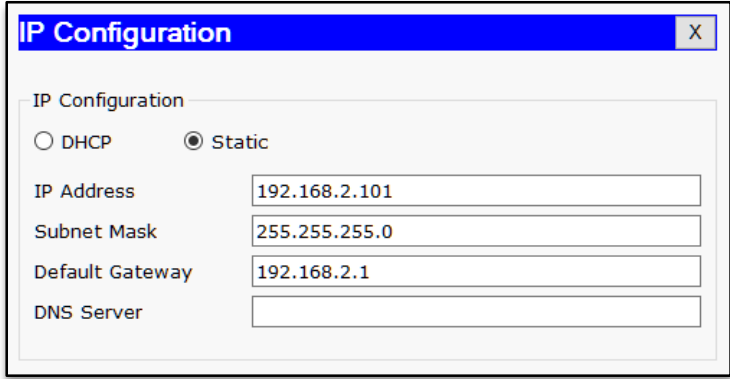
6. Click on **PC3** and select the **Desktop** tab.
7. Select **IP Configuration**, and enter the following **address information**:



The screenshot shows the 'IP Configuration' dialog box with the 'Static' radio button selected. The fields are filled with the following values:

Field	Value
IP Address	192.168.2.100
Subnet Mask	255.255.255.0
Default Gateway	192.168.2.1
DNS Server	

8. Click on **PC4** and select the **Desktop** tab.
9. Select **IP Configuration**, and enter the following **address information**:



10. Roll the mouse cursor over **PC 1** to confirm the **address configuration** on the **popup box**.

```

Port          Link  IP Address  IPv6 Address  MAC Address
FastEthernet0 Up    192.168.1.100/24 <not set>    0060.7064.D252

Gateway: 192.168.1.1
DNS Server: <not set>
Line Number: <not set>

Physical Location: Intercity, Home City, Corporate Office, Main Wiring Closet

```

11. Roll the mouse cursor over **PC 2** to confirm the **address configuration** on the **popup box**.

```

Port          Link  IP Address  IPv6 Address  MAC Address
FastEthernet0 Up    192.168.1.101/24 <not set>    0030.F225.20E2

Gateway: 192.168.1.1
DNS Server: <not set>
Line Number: <not set>

Physical Location: Intercity, Home City, Corporate Office, Main Wiring Closet

```

12. Roll the mouse cursor over **PC 3** to confirm the **address configuration** on the **popup box**.

```

Port          Link  IP Address  IPv6 Address  MAC Address
FastEthernet0 Up    192.168.2.100/24 <not set>    0030.F265.8A82

Gateway: 192.168.2.1
DNS Server: <not set>
Line Number: <not set>

Physical Location: Intercity, Home City, Corporate Office, Main Wiring Closet

```

13. Roll the mouse cursor over **PC 4** to confirm the **address configuration** on the **popup box**.

```

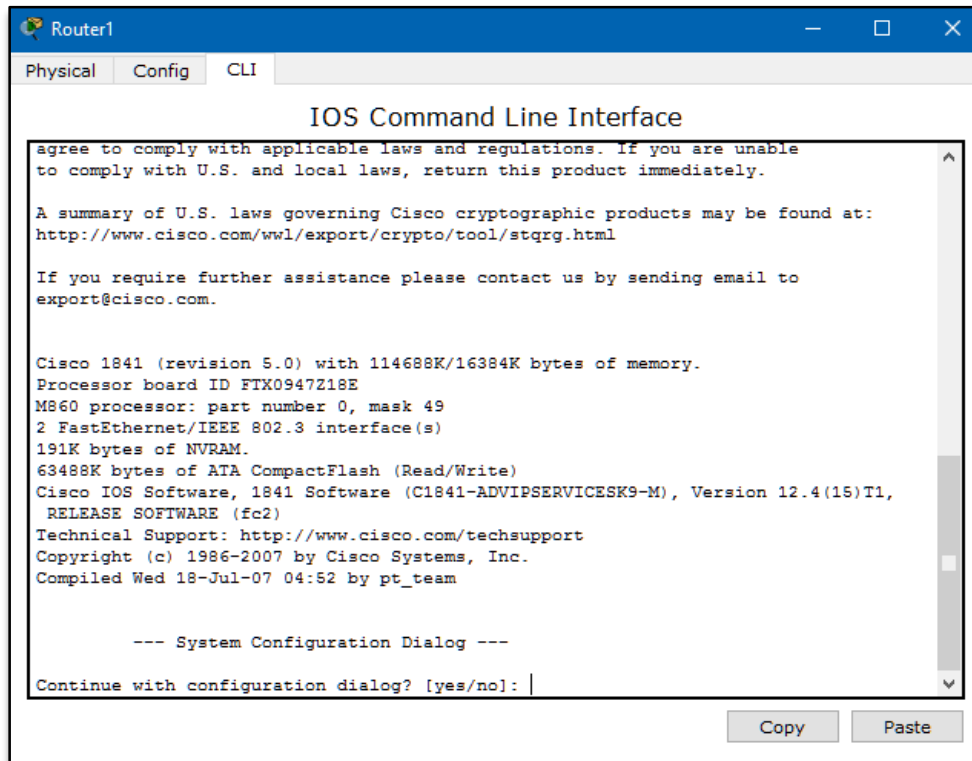
Port          Link  IP Address  IPv6 Address  MAC Address
FastEthernet0 Up    192.168.2.101/24 <not set>    00E0.A3A9.864B

Gateway: 192.168.2.1
DNS Server: <not set>
Line Number: <not set>

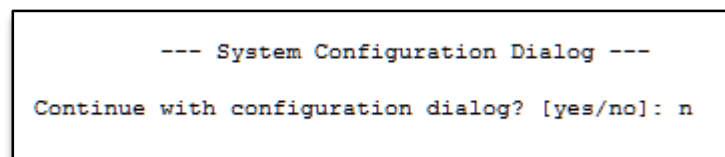
Physical Location: Intercity, Home City, Corporate Office, Wiring Closet

```

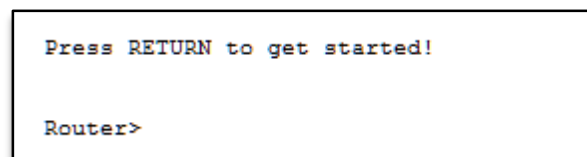
14. Click on **Router 1**, and select the **CLI (IOS Command-Line Interface)** tab.



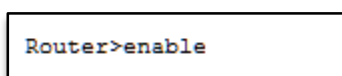
15. At the **Continue with configuration dialog?** type **n** (or **no**), then hit the **Enter** key.



16. Press **Enter** again to get started.



17. At the **Router>** prompt, type **enable**, then hit the **Enter** key.



18. The **Router>** prompt changes to **privileged exec mode**, showing **Router#**

```
Router>enable
Router#
```

19. Next, type **configure terminal** (or **config t**, for short), then hit the **Enter** key.

```
Router>enable
Router#configure t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#
```

20. The **Router#** prompt changes to **global configuration mode**, showing **Router (config)#**

21. You'll need to configure both the router interfaces to communicate with the two networks, so start by typing **interface fastEthernet 0/0**, then hit the **Enter** key
FYI – when starting a keyword like 'fastEthernet', if you hit the Tab key it will auto-fill the rest of the word for you ('fast' → 'fastEthernet')

```
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface fast
Router(config)#interface fastEthernet 0/0
Router(config-if)#
```

22. The **Router (config)#** prompt changes to **interface configuration mode**, showing **Router (config-if)#**

23. Now you need to give the **fastEthernet 0/0** interface an **IP address**, so type all on the same line **ip address 192.168.1.1 255.255.255.0**, then hit the **Enter** key

```
Router>enable
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface fast
Router(config)#interface fastEthernet 0/0
Router(config-if)#ip address 192.168.1.1 255.255.255.0
```

24. Back at the **Router (config-if)#** prompt, type **no shutdown** (or **no shut** for short) to keep the interface **up** and running.

```
Router>enable
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface fast
Router(config)#interface fastEthernet 0/0
Router(config-if)#ip address 192.168.1.1 255.255.255.0
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 t
o up
```

25. The **fastEthernet 0/0** (or **fa0/0** for short) **interface** has now be set up.

26. Now you need to configure the other interface, so at the prompt type **exit**

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

27. Next, type in the following at each prompt, always followed by hitting the **Enter** key

- **interface fastEthernet 0/1**
- **ip address 192.168.2.1 255.255.255.0**
- **no shutdown**

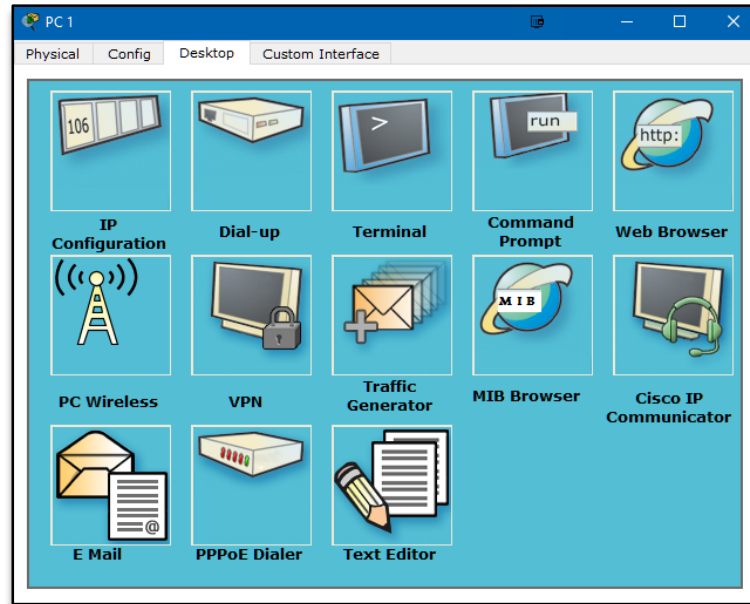
```
Router(config-if)#exit
Router(config)#interface fastEthernet 0/1
Router(config-if)#ip address 192.168.2.1 255.255.255.0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

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

That's it! Both the fast Ethernet interfaces on the router have been set up 😊
But let's test the setup by pinging both the PCs, one from the other.

28. Click on **PC1** and select the **Desktop** tab.



29. Select the **Command Prompt**, and ping **PC 4**, using

```
ping 192.168.2.101
```

```
PC>ping 192.168.2.101

Pinging 192.168.2.101 with 32 bytes of data:

Reply from 192.168.2.101: bytes=32 time=0ms TTL=127
Reply from 192.168.2.101: bytes=32 time=3ms TTL=127
Reply from 192.168.2.101: bytes=32 time=0ms TTL=127
Reply from 192.168.2.101: bytes=32 time=1ms TTL=127

Ping statistics for 192.168.2.101:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 3ms, Average = 1ms

PC>|
```

The first request may time out as the process works through the router

30. Click on **PC3** and select the **Desktop** tab.

31. Select the **Command Prompt**, and ping **PC 1**, using

```
ping 192.168.1.100
```

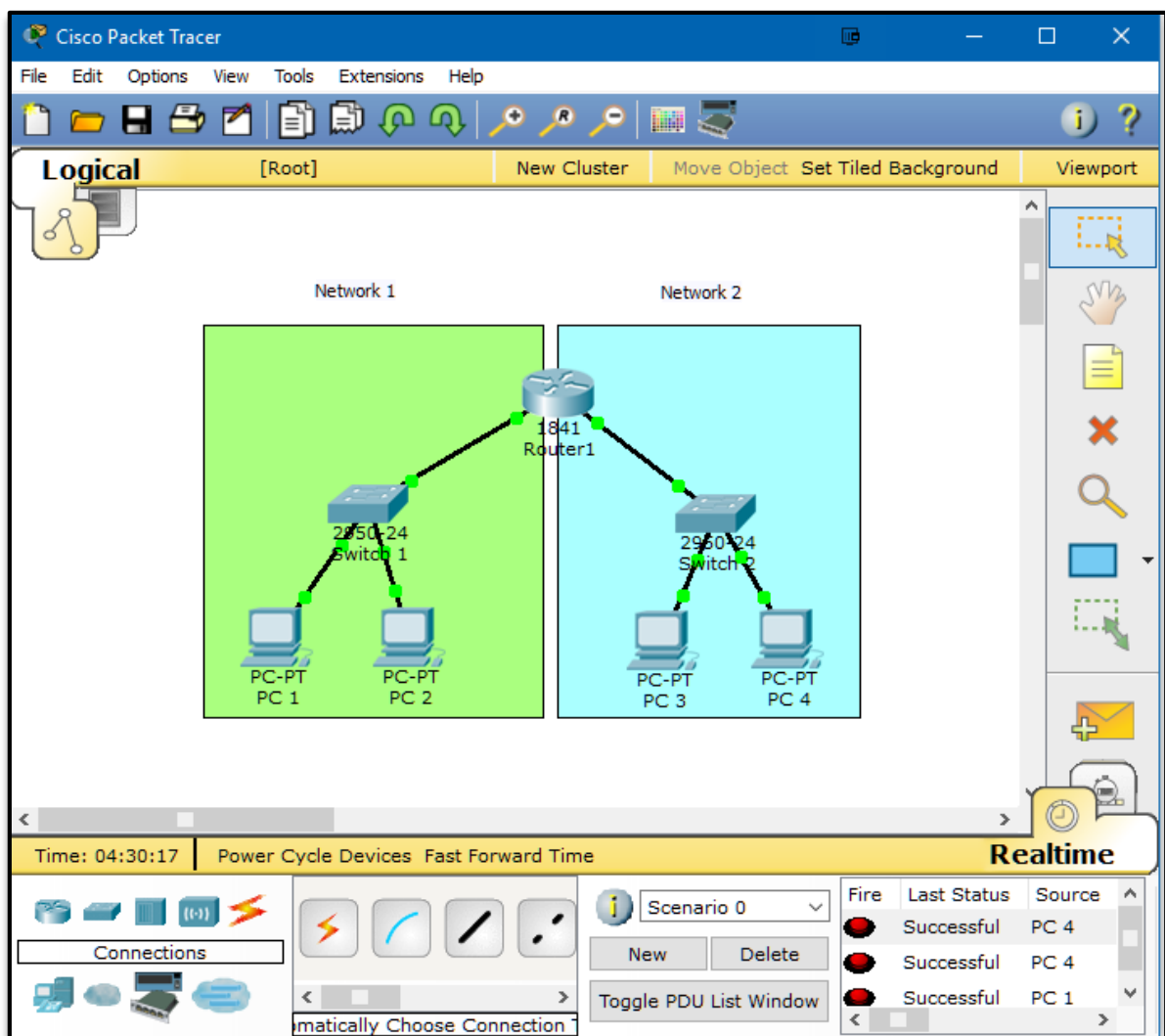
```
PC>ping 192.168.1.100

Pinging 192.168.1.100 with 32 bytes of data:

Reply from 192.168.1.100: bytes=32 time=5ms TTL=128
Reply from 192.168.1.100: bytes=32 time=9ms TTL=128
Reply from 192.168.1.100: bytes=32 time=8ms TTL=128
Reply from 192.168.1.100: bytes=32 time=0ms TTL=128

Ping statistics for 192.168.1.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 9ms, Average = 5ms

PC>
```



END OF MINI-LAB 03