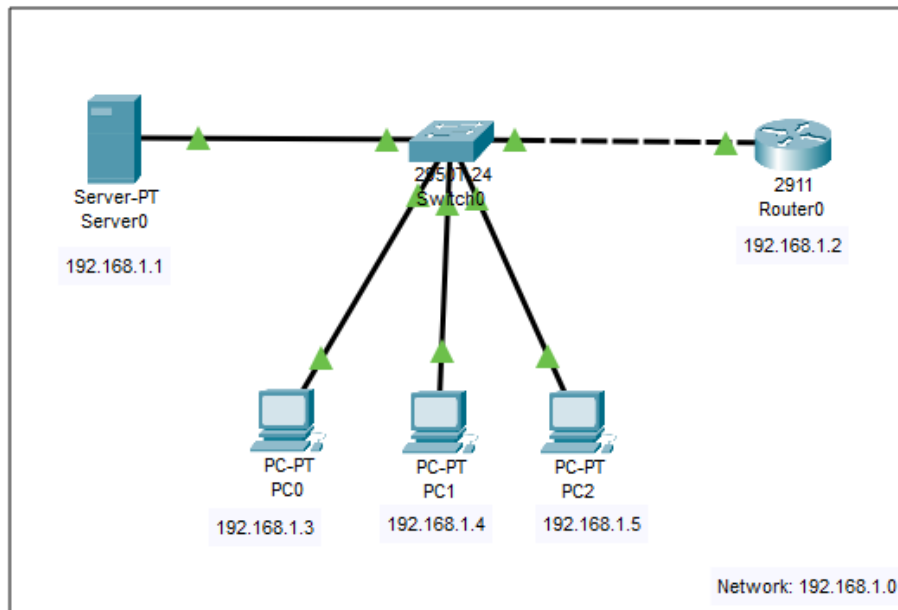


Lab 4

Assigning IP Address to a Network (with Server / DHCP)

1. Make a network similar to this and open the Server settings.



2. Open desktop and go to IP Configuration

The screenshot shows the 'IP Configuration' window in a network simulator. The 'Desktop' tab is selected. Under 'IP Configuration', the 'Static' radio button is selected. The fields for 'IP Address', 'Subnet Mask', 'Default Gateway', and 'DNS Server' are currently empty.

3. In the “IP Address” field, type the following IP address: **192.168.1.1** and click enter, it'll automatically add a relevant subnet mask and in the “Default Gateway” type the IP Address of the router, or enter an IP Address which you'll then give to the Router (**192.168.1.2**).

The screenshot shows the 'IP Configuration' window with the following values entered: 'IP Address' is 192.168.1.1, 'Subnet Mask' is 255.255.255.0, 'Default Gateway' is 192.168.1.2, and 'DNS Server' is 0.0.0.0. The 'Static' radio button remains selected.

4. Now, go to the “Services” tab and open “DHCP”, here Click on the “serverPool” from list below

Physical Config **Services** Desktop Programming Attributes

SERVICES

- HTTP
- DHCP**
- DHCPv6
- TFTP
- DNS
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP
- IoT
- VM Management
- Radius EAP

DHCP

Interface: FastEthernet0 Service: ☐ On ☒ Off

Pool Name: serverPool

Default Gateway: 0.0.0.0

DNS Server: 0.0.0.0

Start IP Address: 192 168 1 0

Subnet Mask: 255 255 255 0

Maximum Number of Users: 255

TFTP Server: 0.0.0.0

WLC Address: 0.0.0.0

Add Save Remove

Pool Name	Default Gateway	DNS Server	Start IP Address	Subnet Mask	Max User	TFTP Server	WLC Address
serverPool	0.0.0.0	0.0.0.0	192.168.1.0	255.255.255.0	255	0.0.0.0	0.0.0.0

5. Now, just change the “Default Gateway” from 0.0.0.0 to the IP Address which is preserved to be set to Router / Router’s IP (192.168.1.2) and Click on “ON” button for “Service” and click on Save and close it.

Physical Config **Services** Desktop Programming Attributes

SERVICES

- HTTP
- DHCP**
- DHCPv6
- TFTP
- DNS
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP
- IoT
- VM Management
- Radius EAP

DHCP

Interface: FastEthernet0 Service: ☒ On ☐ Off

Pool Name: serverPool

Default Gateway: 192.168.1.2

DNS Server: 0.0.0.0

Start IP Address: 192 168 1 0

Subnet Mask: 255 255 255 0

Maximum Number of Users: 255

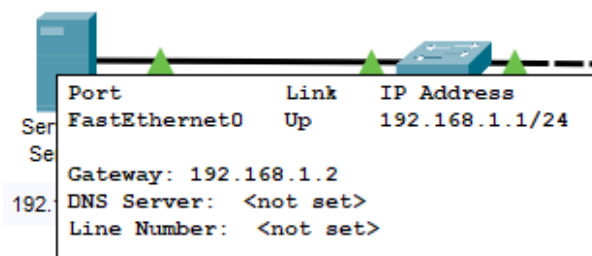
TFTP Server: 0.0.0.0

WLC Address: 0.0.0.0

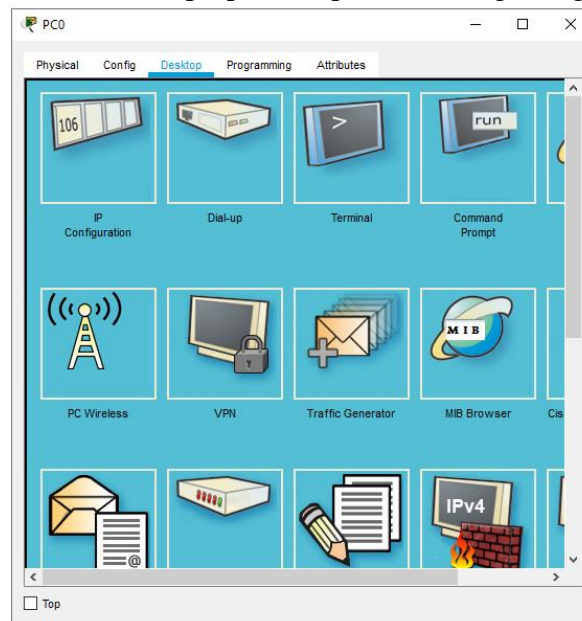
Add Save Remove

Pool Name	Default Gateway	DNS Server	Start IP Address	Subnet Mask	Max User	TFTP Server	WLC Address
serverPool	192.168.1.2	0.0.0.0	192.168.1.0	255.255.255.0	255	0.0.0.0	0.0.0.0

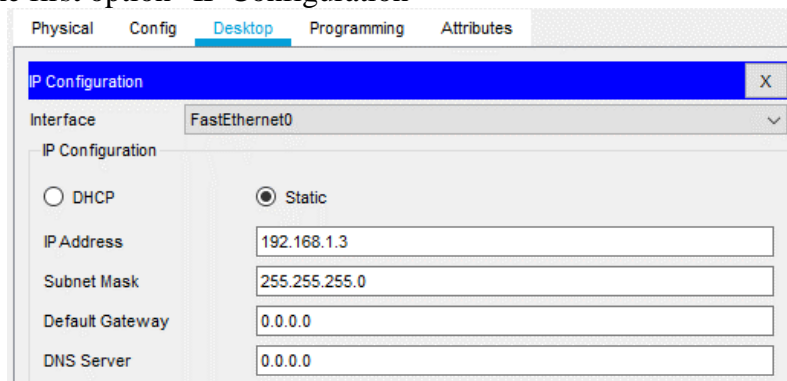
6. Hover over the Server to double-check if the IP and Gateway is assigned or not.



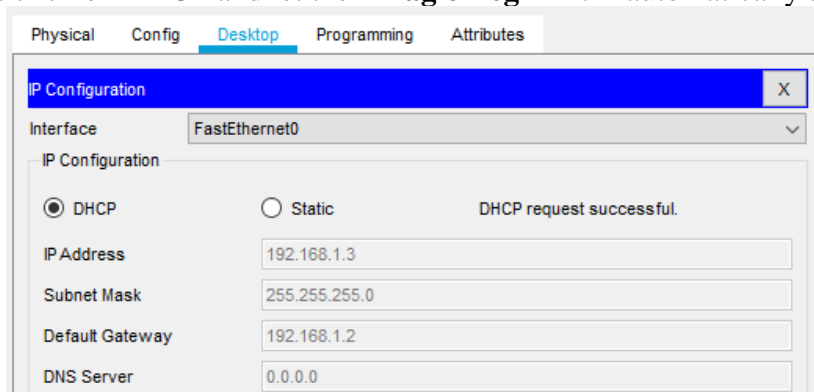
7. Now, Assign the Router's IP (**192.168.1.2**) if you haven't already (follow previous steps of assigning IP to router)
8. Now, click on the end device (PC/Laptop) and open its setting and go to "desktop".



9. From here, open the first option "IP Configuration"



10. Now, in here, just click on DHCP and let the "Magic Begin" It'll automatically assign an IP



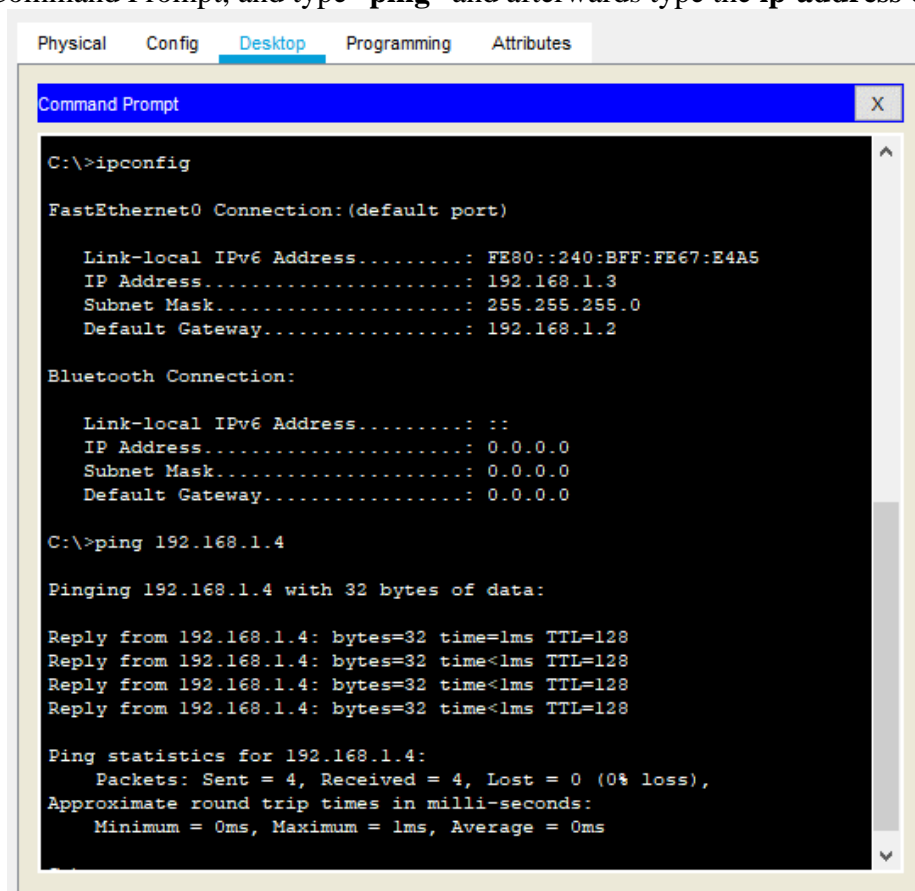
11. Then do the same (Step 8 to 10) for all the End Devices.
12. Afterwards, you can check if the IP is assigned to devices, (either by hover, or command prompt)

```
C:\>ipconfig

FastEthernet0 Connection: (default port)

Link-local IPv6 Address.....: FE80::240:BFF:FE67:E4A5
IP Address.....: 192.168.1.3
Subnet Mask.....: 255.255.255.0
Default Gateway.....: 192.168.1.2
```

13. Now to check if we can transfer message between end-devices or not, just open any end-device and open its Command Prompt, and type “**ping**” and afterwards type the **ip-address** of **target device**.



```
Physical  Config  Desktop  Programming  Attributes

Command Prompt

C:\>ipconfig

FastEthernet0 Connection: (default port)

    Link-local IPv6 Address . . . . . : FE80::240:BFF:FE67:E4A5
    IP Address. . . . . : 192.168.1.3
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.1.2

Bluetooth Connection:

    Link-local IPv6 Address . . . . . : ::
    IP Address. . . . . : 0.0.0.0
    Subnet Mask . . . . . : 0.0.0.0
    Default Gateway . . . . . : 0.0.0.0

C:\>ping 192.168.1.4

Pinging 192.168.1.4 with 32 bytes of data:

Reply from 192.168.1.4: bytes=32 time=1ms TTL=128
Reply from 192.168.1.4: bytes=32 time<1ms TTL=128
Reply from 192.168.1.4: bytes=32 time<1ms TTL=128
Reply from 192.168.1.4: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

14. As there is **0% loss** that means, the connection was successful and message was sent successfully.

Lab 4 - Task

Task 1;

Design the network of "Lab-7" or "Lab-8" (2-3 rows of computers)

Use: Server, Switch, Router, & End-Devices like Laptop/PC

Assign them IP Address (Dynamically/DHCP) of any Network

(or you can use network **192.168.1.0**)