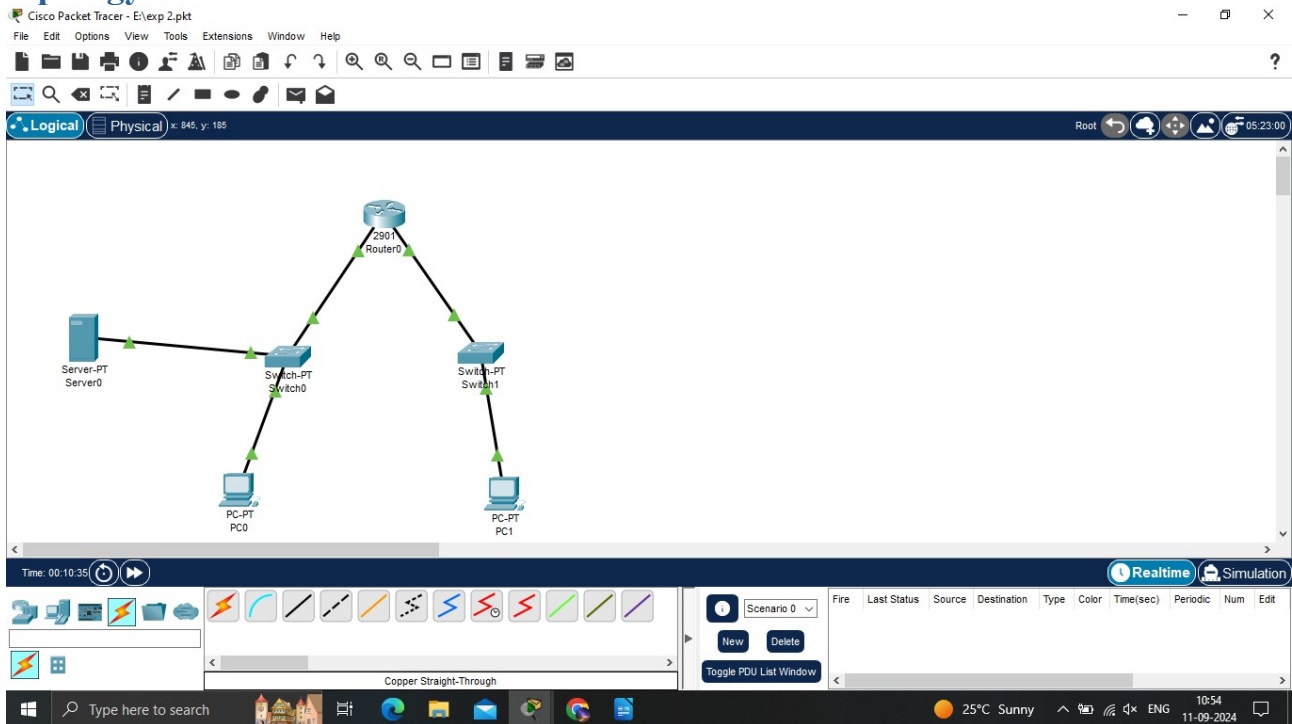


Exp: 2: Execute the following networking commands like ipconfig, tracer, telnet, netsh, ping, nslookup and netstat in the command prompt with simple topology.



Step 2: Create a Simple Network Topology

1. Add Devices:

- **Routers and Switches:** Drag and drop a router and a switch from the device list onto the workspace.
- **PCs:** Drag and drop two PCs onto the workspace.

2. Connect Devices:

- Use the **Connection** tool to connect the devices:
 - Connect one PC to the switch using a copper straight-through cable.
 - Connect the switch to the router using another copper straight-through cable.
 - Connect the second PC to the switch using a copper straight-through cable.

Step 3: Configure Devices

1. Configure the Router:

- Click on the router.
- Go to the **Config** tab.
- Assign IP addresses to the router interfaces.

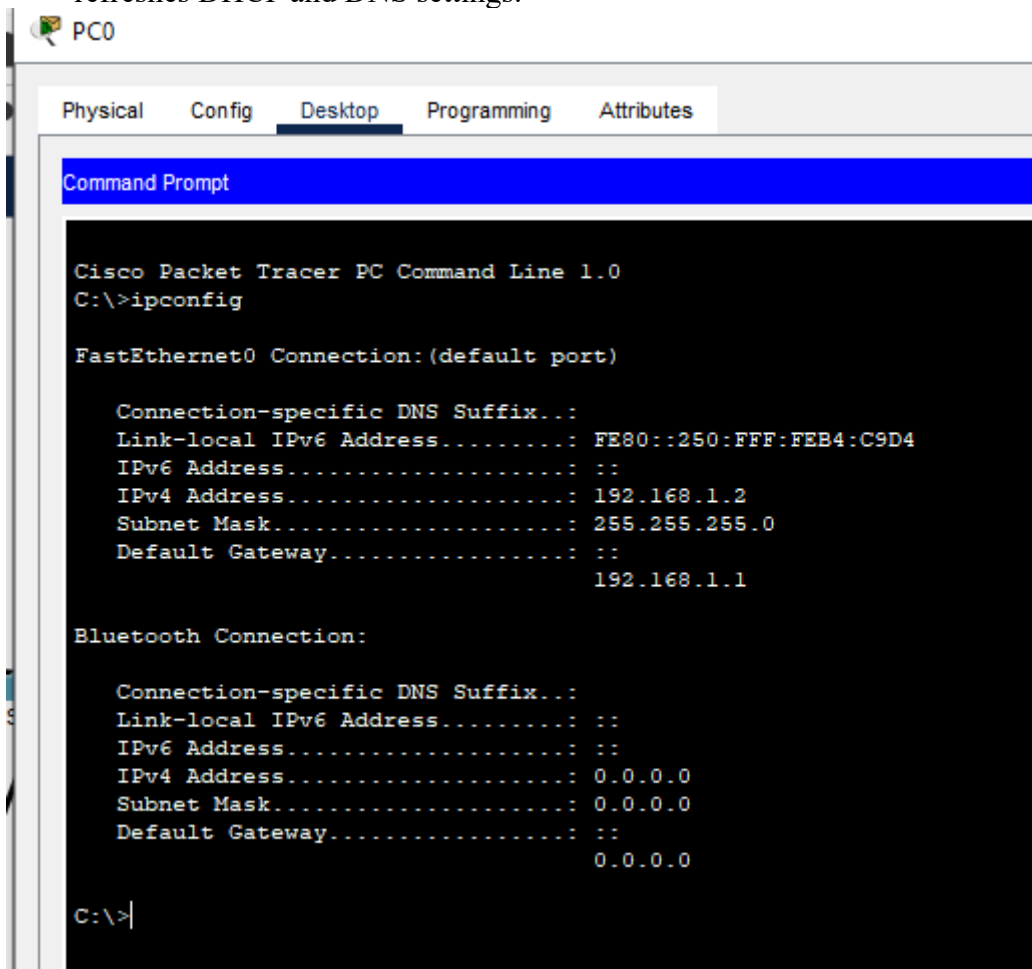
- Interface G0/0: IP address 192.168.1.1, Subnet Mask 255.255.255.0
- Interface G0/1: IP address 192.168.2.1, Subnet Mask 255.255.255.0

2. Configure the PCs:

- Click on each PC.
- Go to the **Desktop** tab and then **IP Configuration**.
- Assign IP addresses to each PC.
 - PC0: IP address 192.168.1.2, Subnet Mask 255.255.255.0, Default Gateway 192.168.1.1
 - PC1: IP address 192.168.2.2, Subnet Mask 255.255.255.0, Default Gateway 192.168.2.1

1. ipconfig:

This command displays all current TCP/IP network configuration values and refreshes DHCP and DNS settings.



```

PC0
Physical Config Desktop Programming Attributes
Command Prompt

Cisco Packet Tracer PC Command Line 1.0
C:\>ipconfig

FastEthernet0 Connection:(default port)

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address . . . . .: FE80::250:FFF:FEB4:C9D4
    IPv6 Address . . . . .: ::
    IPv4 Address . . . . .: 192.168.1.2
    Subnet Mask . . . . .: 255.255.255.0
    Default Gateway . . . . .: ::
                                   192.168.1.1

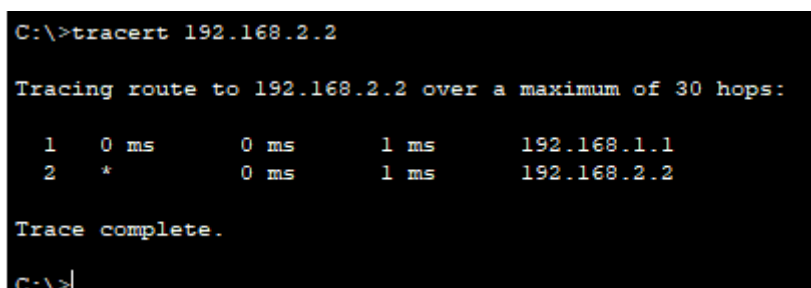
Bluetooth Connection:

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address . . . . .: ::
    IPv6 Address . . . . .: ::
    IPv4 Address . . . . .: 0.0.0.0
    Subnet Mask . . . . .: 0.0.0.0
    Default Gateway . . . . .: ::
                                   0.0.0.0

C:\>
  
```

2. tracert:

This command traces the path taken to a destination by sending ICMP Echo Request messages.



```

C:\>tracert 192.168.2.2

Tracing route to 192.168.2.2 over a maximum of 30 hops:

  1  0 ms      0 ms      1 ms      192.168.1.1
  2  *          0 ms      1 ms      192.168.2.2

Trace complete.

C:\>
  
```

Configure the Router

1. Assign IP Address:

- Click on the router.
 - Go to the **Config** tab.
 - Select the interface connected to the switch (e.g., G0/0).
- Assign IP address: 192.168.1.1, Subnet Mask: 255.255.255.0

```
Router(config-if)#line vty 04
Router(config-line)#password cisco
Router(config-line)#login
Router(config-line)#exit
Router(config)#end
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#write memory
Building configuration...
[OK]
Router#
```

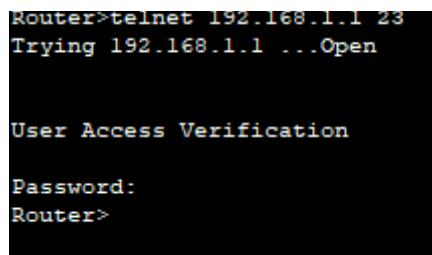
3. Telnet from PC to Router

1. Open Command Prompt:

- On the PC0, go to the **Desktop** tab and open the **Command Prompt**.

2. Execute Telnet Command:

telnet <destination IP> <port>



```
Router>telnet 192.168.1.1 23
Trying 192.168.1.1 ...Open

User Access Verification

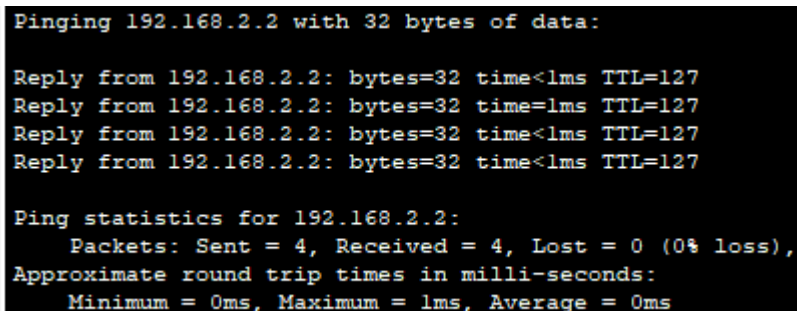
Password:
Router>
```

3. Router configuration and Brief Ip Interface

This command is a scripting utility that allows you to display or modify the network configuration of a computer.

```
Router#show ip interface brief
Interface                IP-Address      OK? Method Status      Protocol
GigabitEthernet0/0       192.168.1.1     YES manual up          up
GigabitEthernet0/1       192.168.2.1     YES manual up          up
Vlan1                    unassigned      YES unset   administratively down down
Router#
```

4. Ping 192.168.2.2



```
Pinging 192.168.2.2 with 32 bytes of data:

Reply from 192.168.2.2: bytes=32 time<1ms TTL=127
Reply from 192.168.2.2: bytes=32 time<1ms TTL=127
Reply from 192.168.2.2: bytes=32 time<1ms TTL=127
Reply from 192.168.2.2: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.2.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

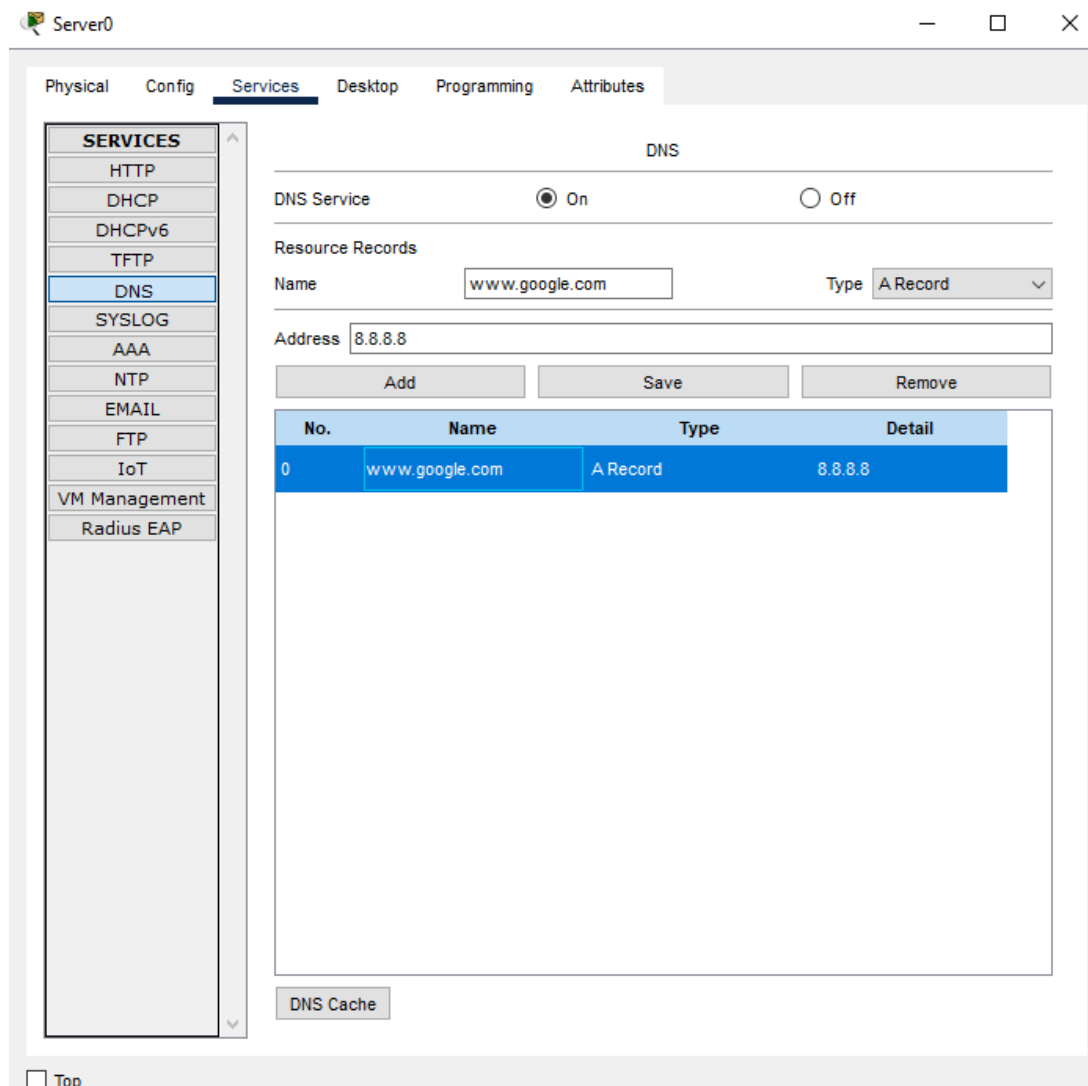
Configure the DNS Server

1. Assign IP Address:

- Click on the server.
- Go to the **Config** tab and select the **FastEthernet0** interface.
- Assign IP address: 192.168.1.3, Subnet Mask: 255.255.255.0, Default Gateway: 192.168.1.1.

Configure DNS Service:

- Select **DNS** and turn the service **On**.
- Add an entry for `www.google.com` with an IP address (e.g., 8.8.8.8).



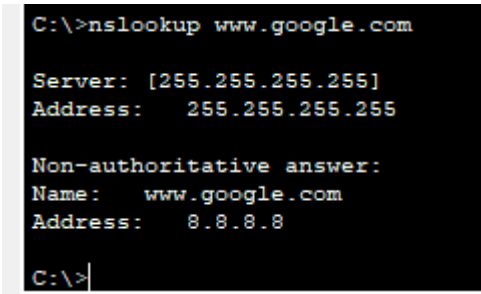
5. Use the nslookup Command

1. Open Command Prompt on PC0:

- Go to the **Desktop** tab on PC0.
- Open the **Command Prompt**.

2. Execute the nslookup Command:

nslookup www.google.com



```
C:\>nslookup www.google.com

Server: [255.255.255.255]
Address: 255.255.255.255

Non-authoritative answer:
Name: www.google.com
Address: 8.8.8.8

C:\>
```

6.Netstat

This command displays network connections for the Transmission Control Protocol (TCP), routing tables, and a number of network interface and network protocol statistics.

The netstat command is used to display network connections, routing tables, interface statistics, masquerade connections, and multicast memberships.