

I used Cisco Packet Tracer to set up a basic network simulation involving four PCs and two servers. The goal was to configure a working network in which the PCs could communicate with the servers—specifically, a DNS server and a web server—through a central router. I started by connecting the four PCs on one side and the two servers on the other side, with the router placed in the center. I used two router interfaces, one for each side, to connect the PCs and servers respectively.

PC3

Physical Config Desktop Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 192.168.1.4

Subnet Mask 255.255.255.0

Default Gateway 192.168.1.10

DNS Server 192.168.2.1

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address /

Link Local Address FE80::260:47FF:FEAB:3B64

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

Username

Password

Typ

PC2

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 192.168.1.3

Subnet Mask 255.255.255.0

Default Gateway 192.168.1.10

DNS Server 192.168.2.1

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address /

Link Local Address FE80::2E0:F9FF:FEC0:70C7

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

Username

Password

☐ Top

Web Server

Physical
Config
Services
Desktop
Programming
Attributes

GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0

Global Settings

Display Name
Web Server

Gateway/DNS IPv4

☐ DHCP
☒ Static

Default Gateway
192.168.2.10

DNS Server
192.168.2.1

Gateway/DNS IPv6

☐ Automatic
☒ Static

Default Gateway

DNS Server

Top

DNS Server

Physical

Config

Services

Desktop

Programming

Attributes

IP Configuration

X

IP Configuration

☐ DHCP

☒ Static

IPv4 Address

192.168.2.1

Subnet Mask

255.255.255.0

Default Gateway

192.168.2.10

DNS Server

0.0.0.0

IPv6 Configuration

☐ Automatic

☒ Static

IPv6 Address

/

Link Local Address

FE80::201:43FF:FE20:3AD5

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication

MD5

Username

Password

Physical
Config
Desktop
Programming
Attributes

IP Configuration

Interface

FastEthernet0

IP Configuration

☐ DHCP
☒ Static

IPv4 Address

192.168.1.2

Subnet Mask

255.255.255.0

Default Gateway

192.168.1.10

DNS Server

192.168.2.1

IPv6 Configuration

☐ Automatic
☒ Static

IPv6 Address

 /

Link Local Address

FE80::20C:85FF:FEE6:A2B8

Default Gateway

DNS Server

802.1X

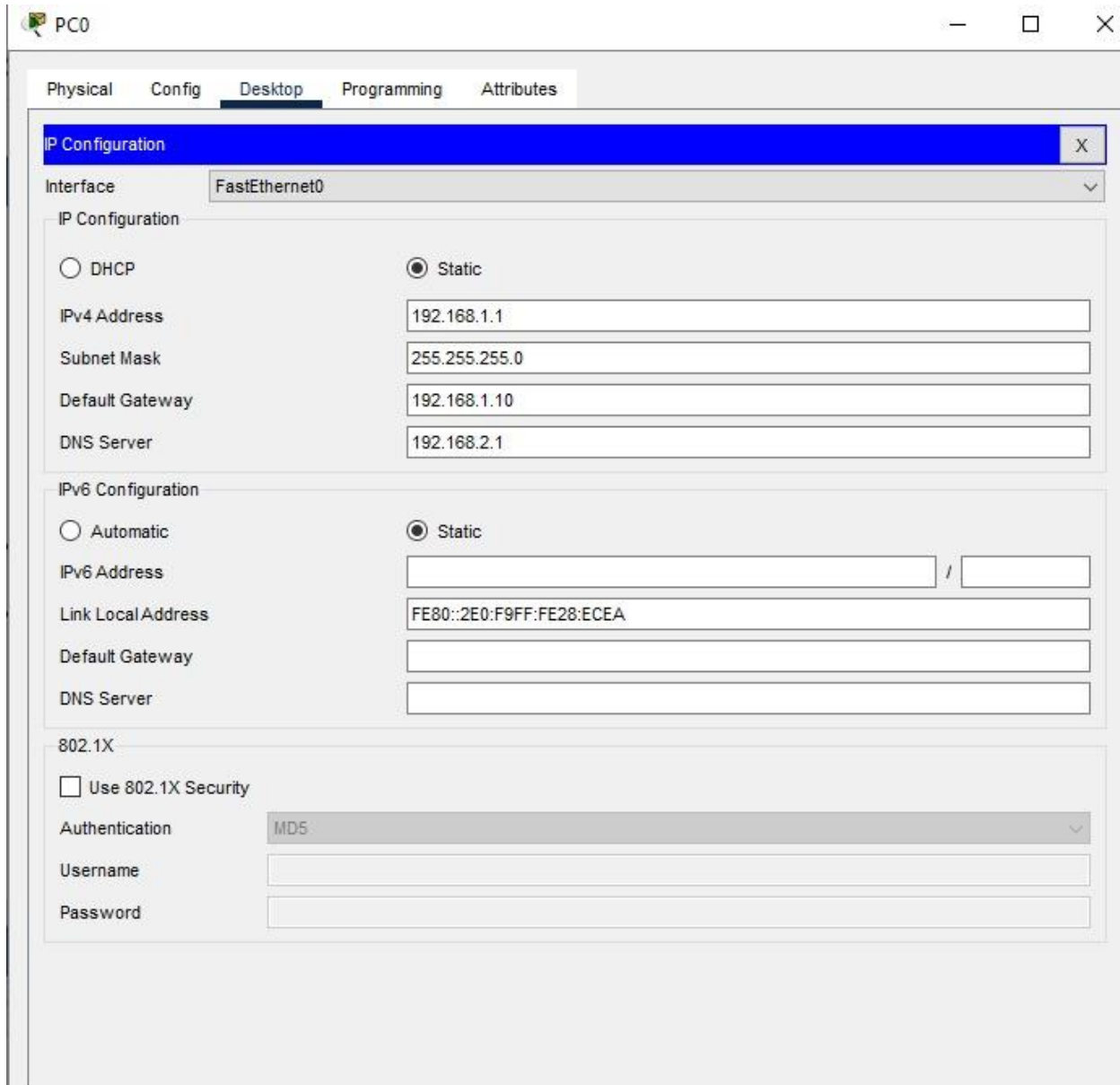
☐ Use 802.1X Security

Authentication

MD5

Username

Password



The screenshot shows a configuration window for PC0 with tabs for Physical, Config, Desktop, Programming, and Attributes. The Desktop tab is active, displaying the IP Configuration for the FastEthernet0 interface. The configuration is set to Static, with the following values:

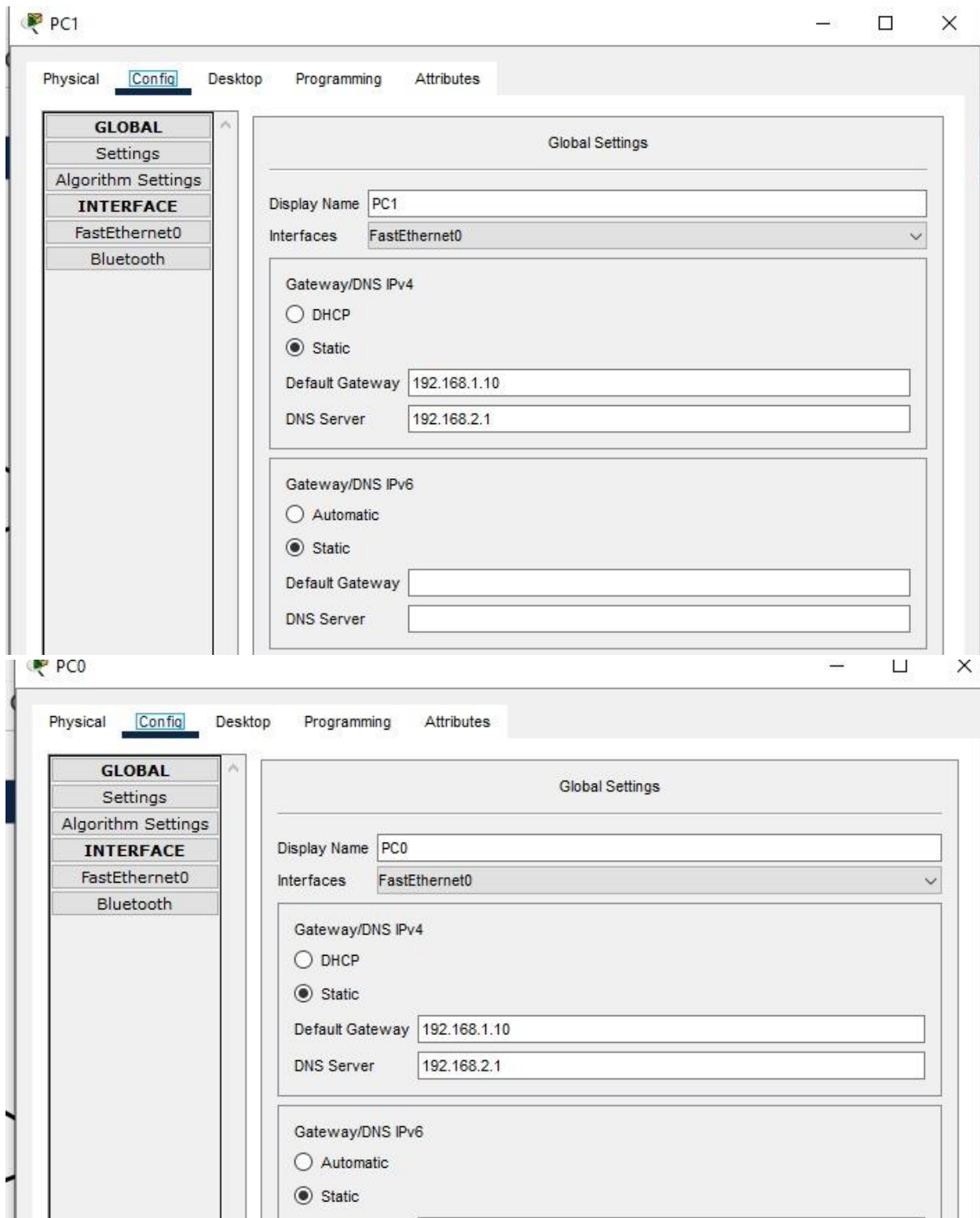
Field	Value
IPv4 Address	192.168.1.1
Subnet Mask	255.255.255.0
Default Gateway	192.168.1.10
DNS Server	192.168.2.1

Below the IPv4 Configuration, there is an IPv6 Configuration section, also set to Static. The fields are empty except for the Link Local Address, which is FE80::2E0:F9FF:FE28:ECEA.

Field	Value
IPv6 Address	
Link Local Address	FE80::2E0:F9FF:FE28:ECEA
Default Gateway	
DNS Server	

At the bottom, there is a 802.1X section with a checkbox for Use 802.1X Security (unchecked). The Authentication dropdown is set to MD5, and the Username and Password fields are empty.

After setting up the physical connections, I configured static IP addresses for all the PCs and servers to ensure proper communication. I then accessed the router's configuration interface (possibly through CLI or GUI, such as the CLI or ELU/ULU settings), where I set IP addresses on both router interfaces to act as gateways for each network segment. These gateway addresses were then set as the default gateways in the network settings of the PCs and servers, matching the respective sides of the router they were connected to.



DNS Server

Physical
 Config
 Services
 Desktop
 Programming
 Attributes

GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0

Global Settings

Display Name

Gateway/DNS IPv4
☐ DHCP
☒ Static
Default Gateway
DNS Server

Gateway/DNS IPv6
☐ Automatic
☒ Static
Default Gateway

Web Server

Physical
 Config
 Services
 Desktop
 Programming
 Attributes

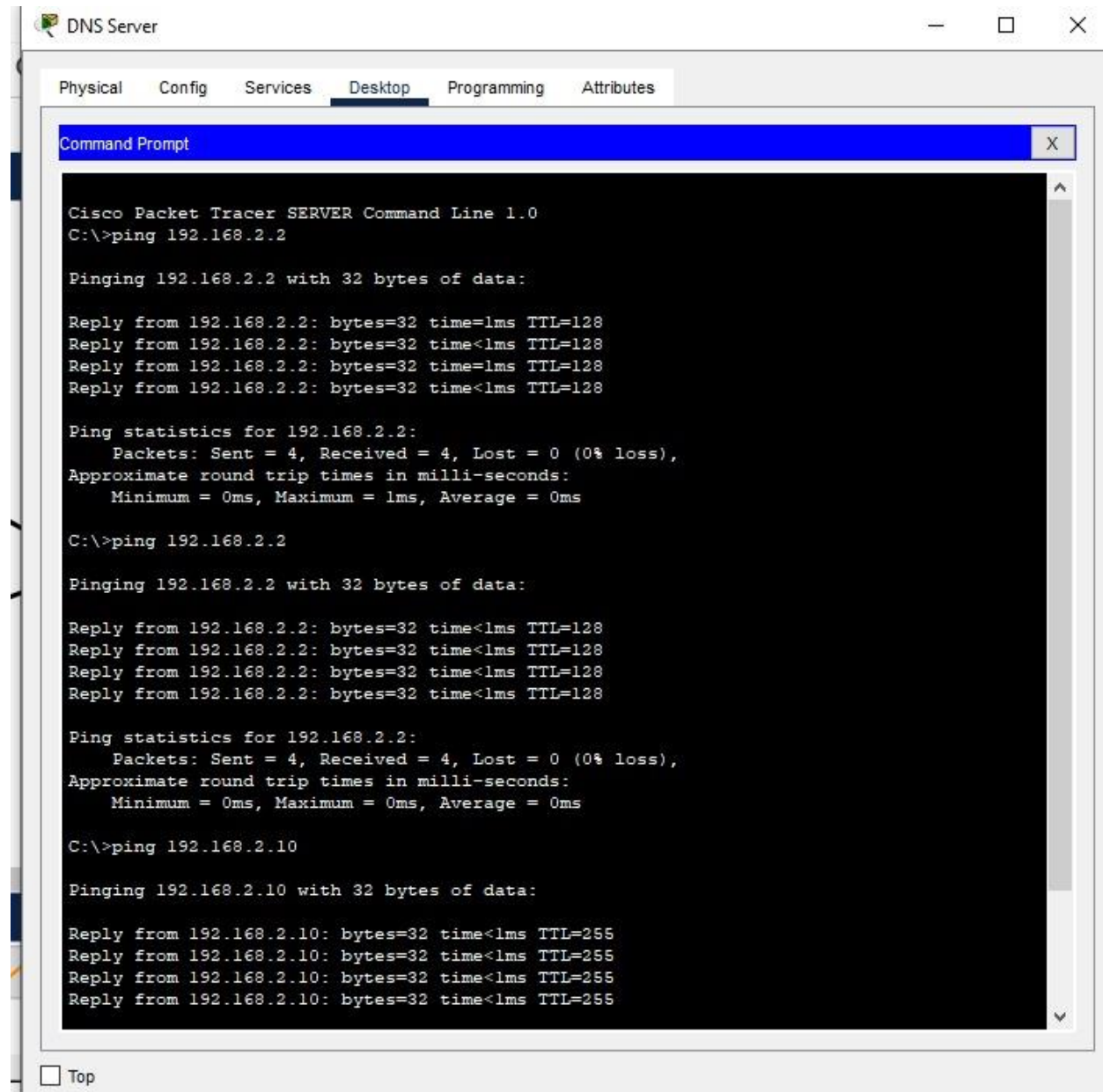
GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0

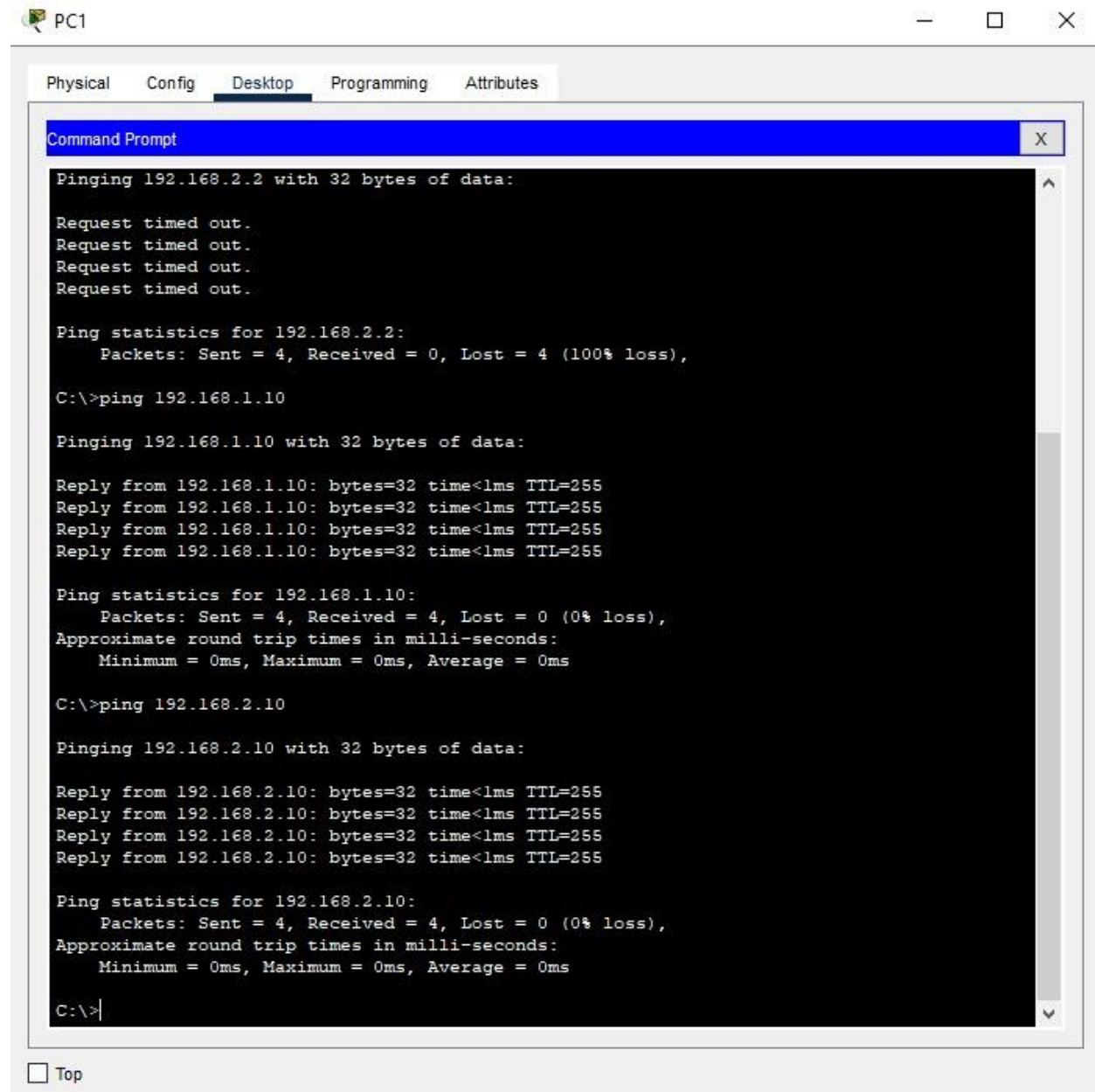
Global Settings

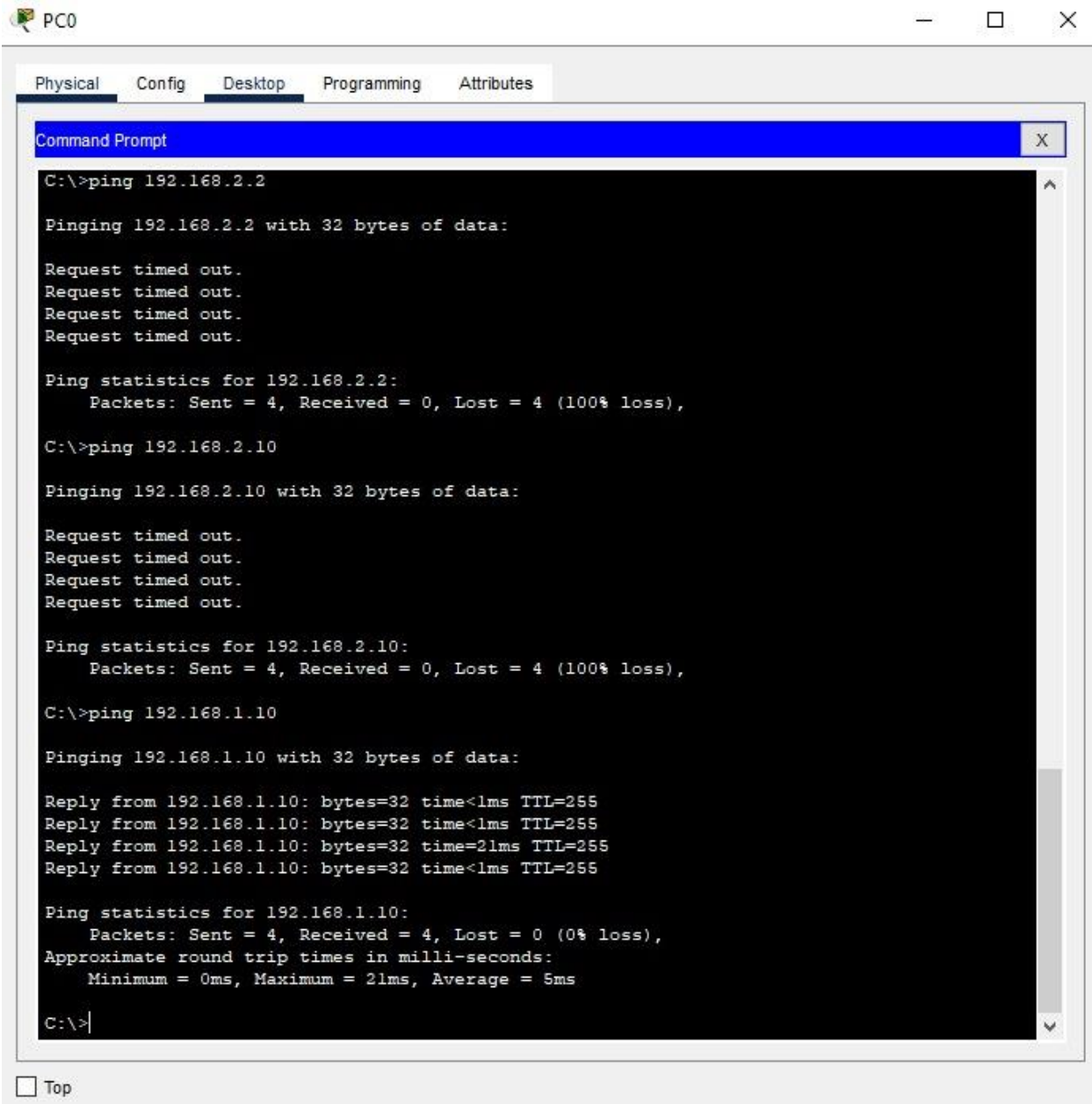
Display Name

Gateway/DNS IPv4
☐ DHCP
☒ Static
Default Gateway
DNS Server

Gateway/DNS IPv6
☐ Automatic
☒ Static
Default Gateway
DNS Server







The screenshot shows a window titled "PC0" with a standard Windows interface. Inside the window, there are tabs for "Physical", "Config", "Desktop", "Programming", and "Attributes". The "Desktop" tab is active, and a "Command Prompt" window is open. The Command Prompt displays the results of three ping commands: ping 192.168.2.2, ping 192.168.2.10, and ping 192.168.1.10. The first two pings result in 100% loss, while the third results in 0% loss. The Command Prompt window has a blue title bar and a scroll bar on the right. Below the Command Prompt, there is a "Top" button with a small square icon.

```
C:\>ping 192.168.2.2

Pinging 192.168.2.2 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.2.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 192.168.2.10

Pinging 192.168.2.10 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.2.10:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 192.168.1.10

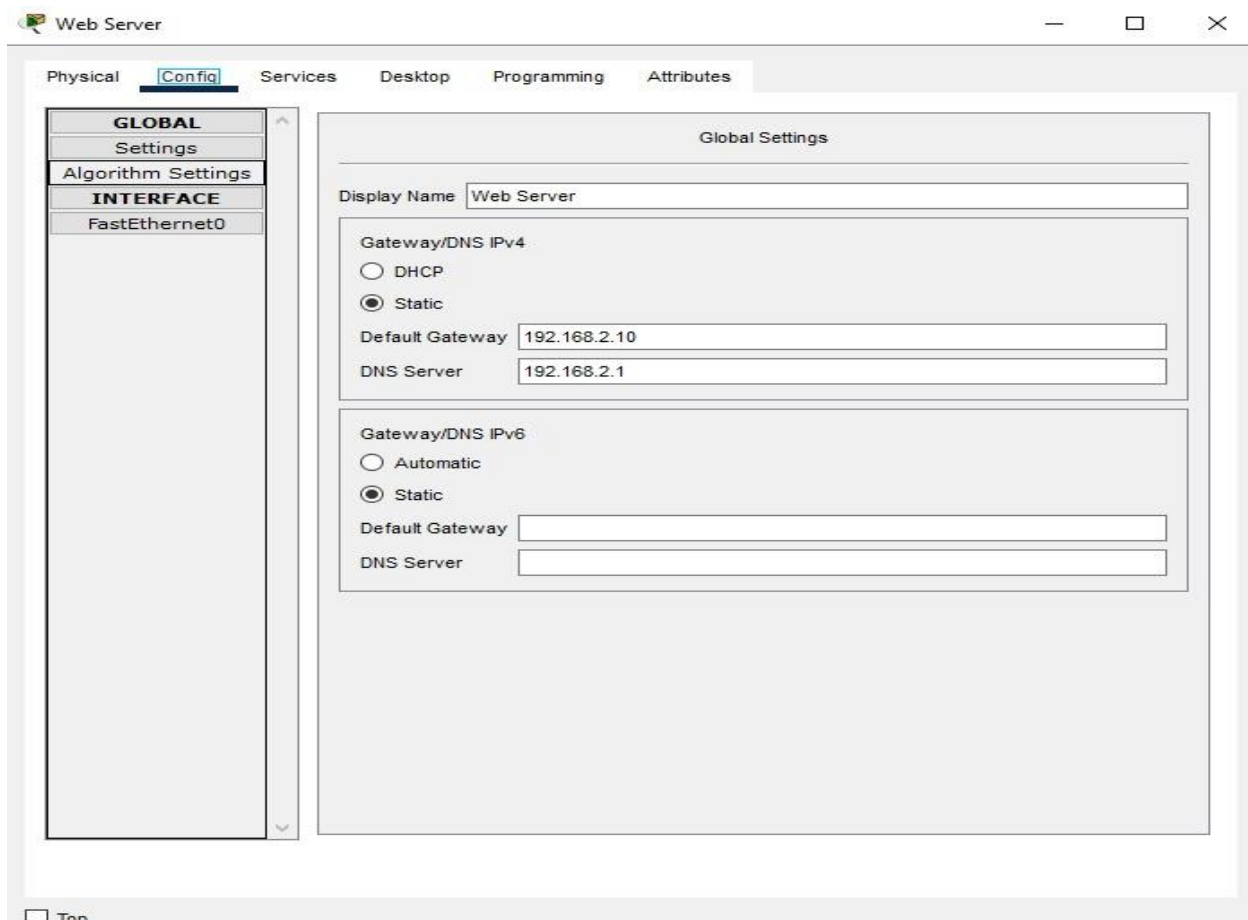
Pinging 192.168.1.10 with 32 bytes of data:

Reply from 192.168.1.10: bytes=32 time<1ms TTL=255
Reply from 192.168.1.10: bytes=32 time<1ms TTL=255
Reply from 192.168.1.10: bytes=32 time=21ms TTL=255
Reply from 192.168.1.10: bytes=32 time<1ms TTL=255

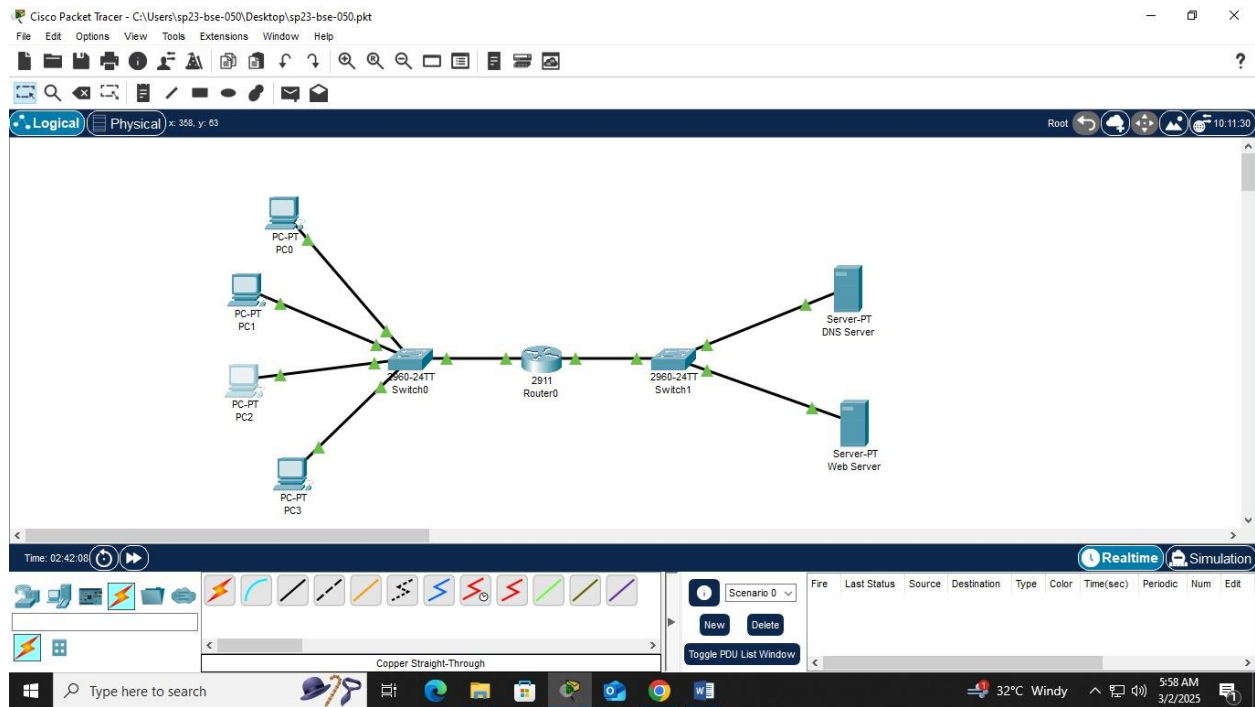
Ping statistics for 192.168.1.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 21ms, Average = 5ms

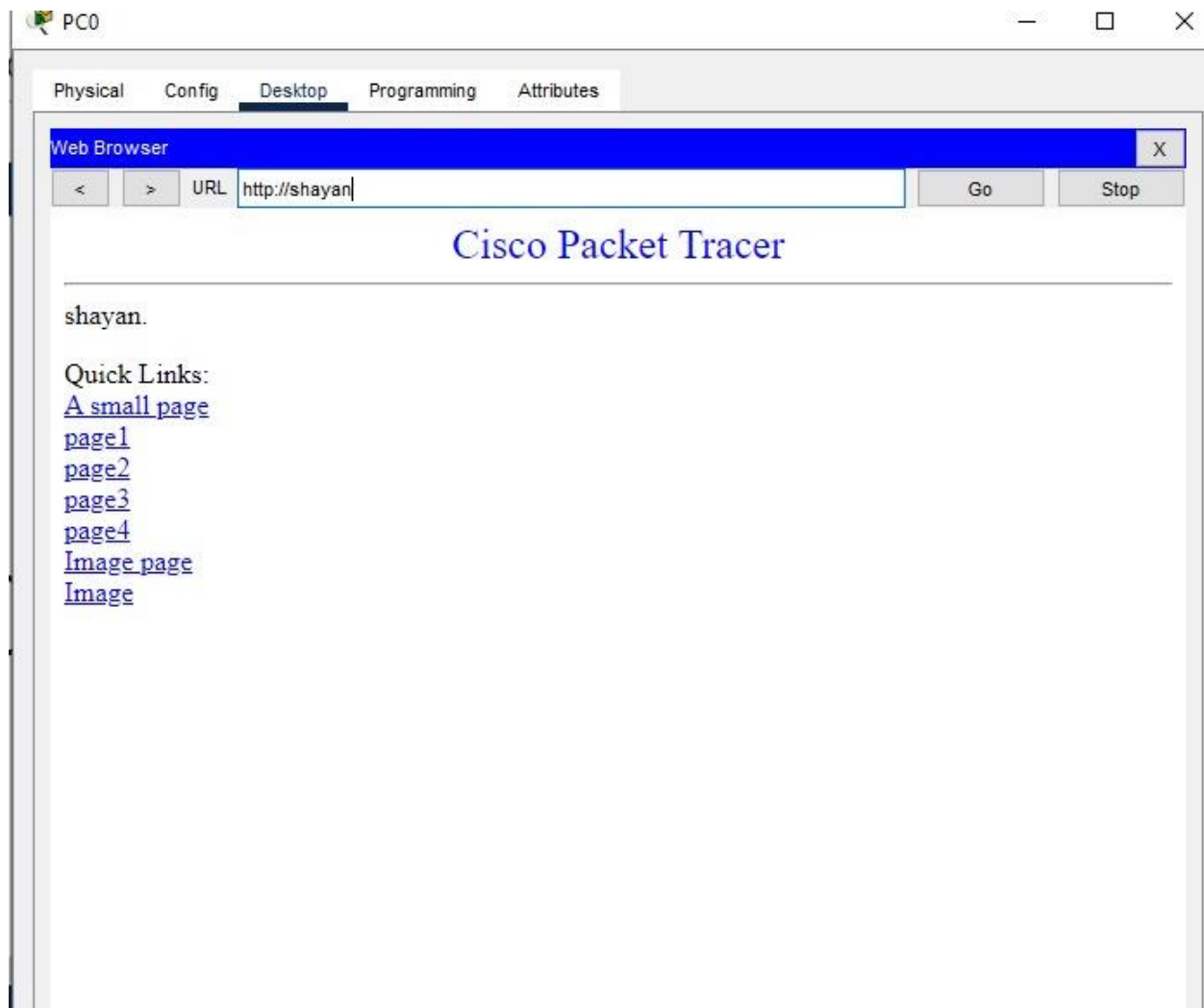
C:\>
```

☐ Top



Once basic connectivity was established, I configured one server as a DNS server and the other as a web server. I added an entry in the DNS server linking a domain name to the IP address of the web server. On the web server, I created and stored simple HTML files. I then tested the network by pinging the web server from each PC to ensure successful communication. Finally, I opened a web browser on each PC and accessed the hosted website using the domain name set in the DNS server, successfully completing the simulation. This setup demonstrated the working of IP addressing, routing, DNS resolution, and web hosting in a local network environment.





Web Server

Physical Config **Services** Desktop Programming Attributes

SERVICES

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

HTTP

☒ On ☐ Off

HTTPS

☒ On ☐ Off

File Manager

	File Name	Edit	Delete
1	copyrights.html	(edit)	(delete)
2	cscoptlogo177x111.jpg		(delete)
3	helloworld.html	(edit)	(delete)
4	image.html	(edit)	(delete)
5	index.html	(edit)	(delete)
6	page1.html	(edit)	(delete)
7	page2.html	(edit)	(delete)
8	page3.html	(edit)	(delete)
9	page4.html	(edit)	(delete)

New File Import