

Date: 06/08/24

### Lab Practical #06:

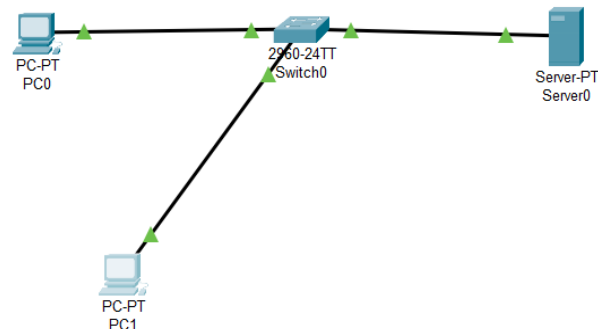
Study the application layer protocol DNS, DHCP, FTP.

### Practical Assignment #06:

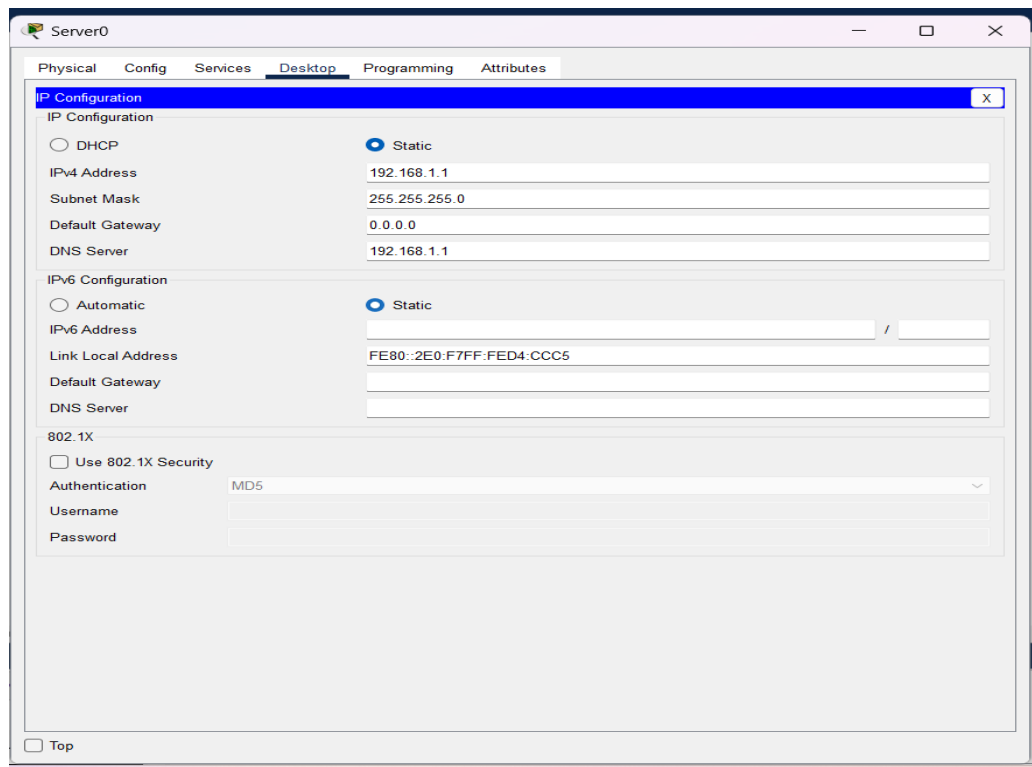
1. Implement the application layer protocol DNS, DHCP, and FTP. Also check connectivity between them using ping command or PDU utility.

#### I. DNS:

The Domain Name System (DNS) is an application layer protocol that translates human-readable domain names into IP addresses that computers use to identify each other on the network.



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Server0

Physical Config Services Desktop Programming Attributes

IP Configuration

☐ DHCP ☒ Static

IPv4 Address: 192.168.1.1

Subnet Mask: 255.255.255.0

Default Gateway: 0.0.0.0

DNS Server: 192.168.1.1

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address: /

Link Local Address: FE80::2E0:F7FF:FED4:CCC5

Default Gateway:

DNS Server:

802.1X

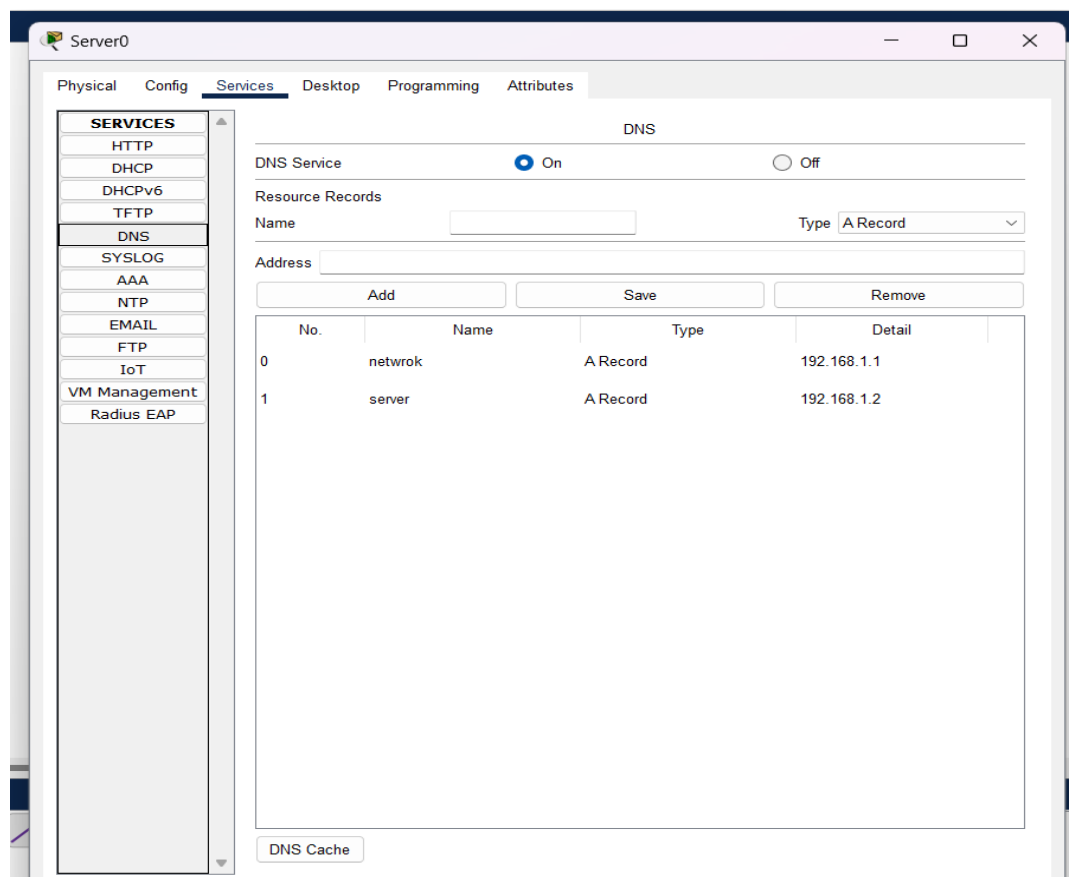
☐ Use 802.1X Security

Authentication: MD5

Username:

Password:

☐ Top



Server0

Physical Config Services Desktop Programming Attributes

**SERVICES**

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

DNS

DNS Service: ☒ On ☐ Off

Resource Records

Name: Type: A Record

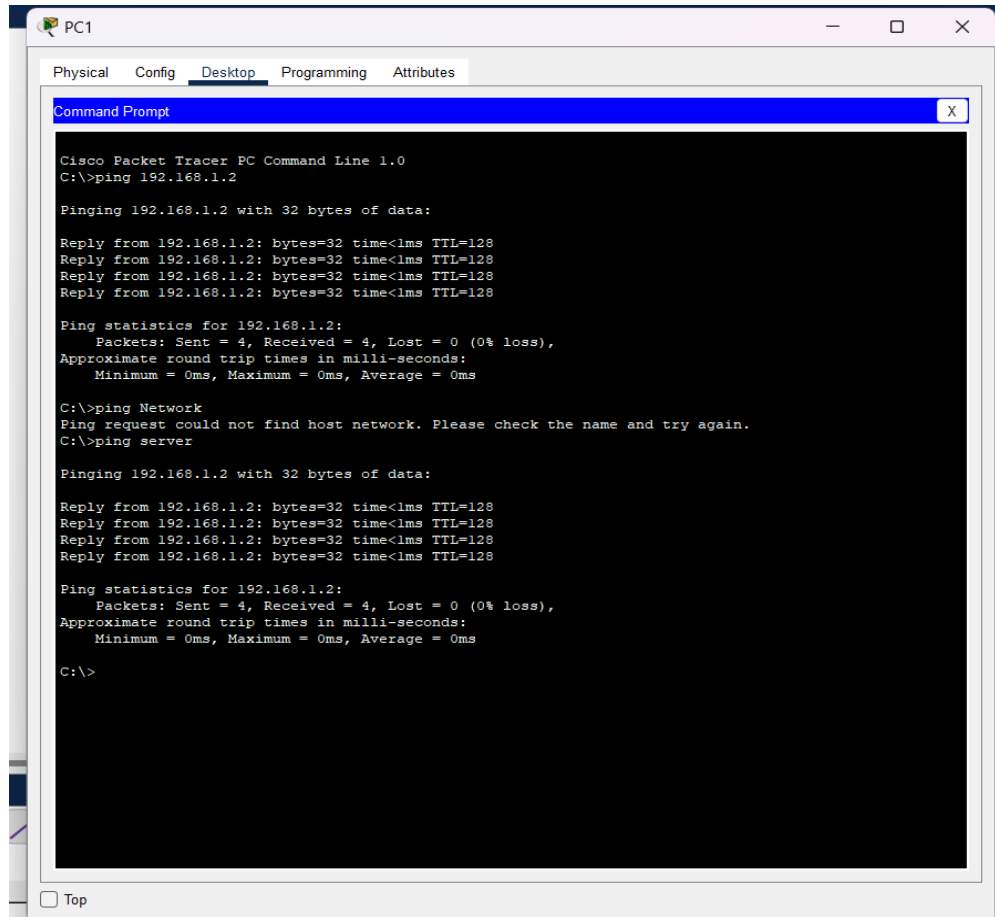
Address:

Add Save Remove

No.	Name	Type	Detail
0	netwrok	A Record	192.168.1.1
1	server	A Record	192.168.1.2

DNS Cache

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```
PC1
Physical Config Desktop Programming Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.2

Pinging 192.168.1.2 with 32 bytes of data:

Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping Network
Ping request could not find host network. Please check the name and try again.
C:\>ping server

Pinging 192.168.1.2 with 32 bytes of data:

Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128

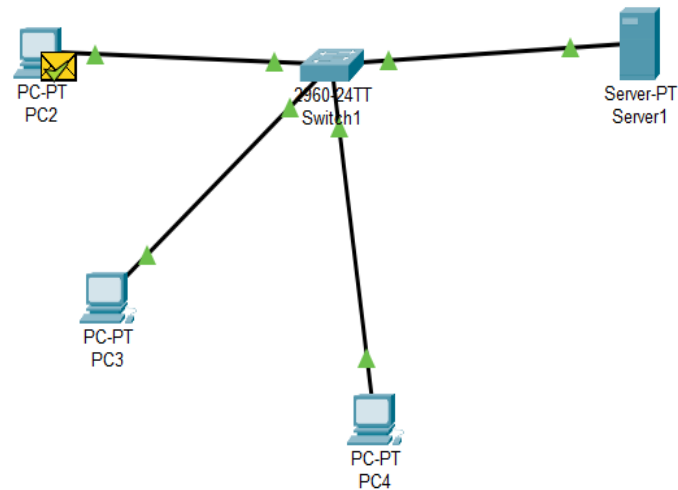
Ping statistics for 192.168.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

## II. DHCP:

The Dynamic Host Configuration Protocol (DHCP) is an application layer protocol used for automating the assignment of IP addresses, subnet masks, default gateways, and other network configuration parameters to devices on a network.

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Server 1

Physical Config Services Desktop Programming Attributes

**IP Configuration**

IP Configuration

☐ DHCP ☒ Static

IPv4 Address: 192.168.1.1

Subnet Mask: 255.255.255.0

Default Gateway: 0.0.0.0

DNS Server: 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address: /

Link Local Address: FE80::201:C9FF:FED7:B180

Default Gateway:

DNS Server:

802.1X

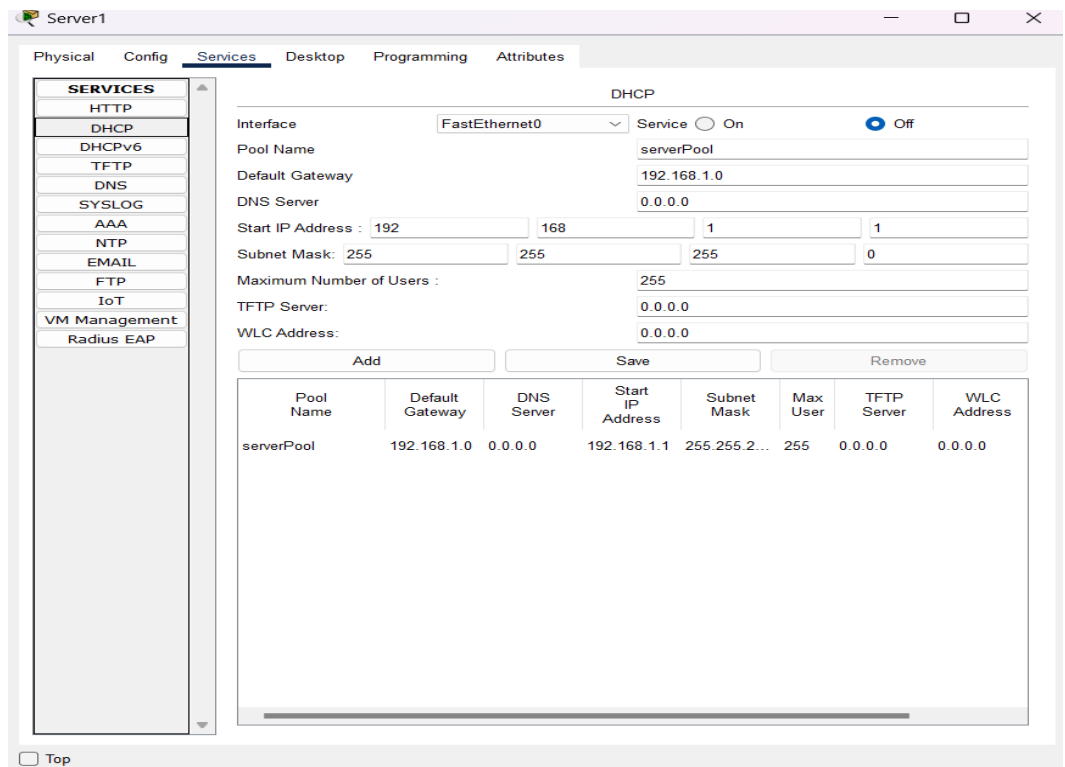
☐ Use 802.1X Security

Authentication: MD5

Username:

Password:

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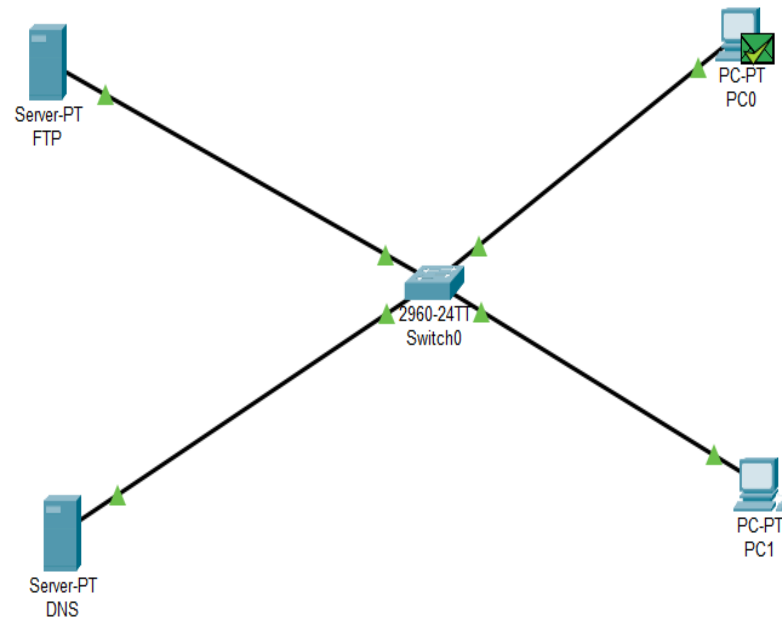


Pool Name	Default Gateway	DNS Server	Start IP Address	Subnet Mask	Max User	TFTP Server	WLC Address
serverPool	192.168.1.0	0.0.0.0	192.168.1.1	255.255.255.0	255	0.0.0.0	0.0.0.0

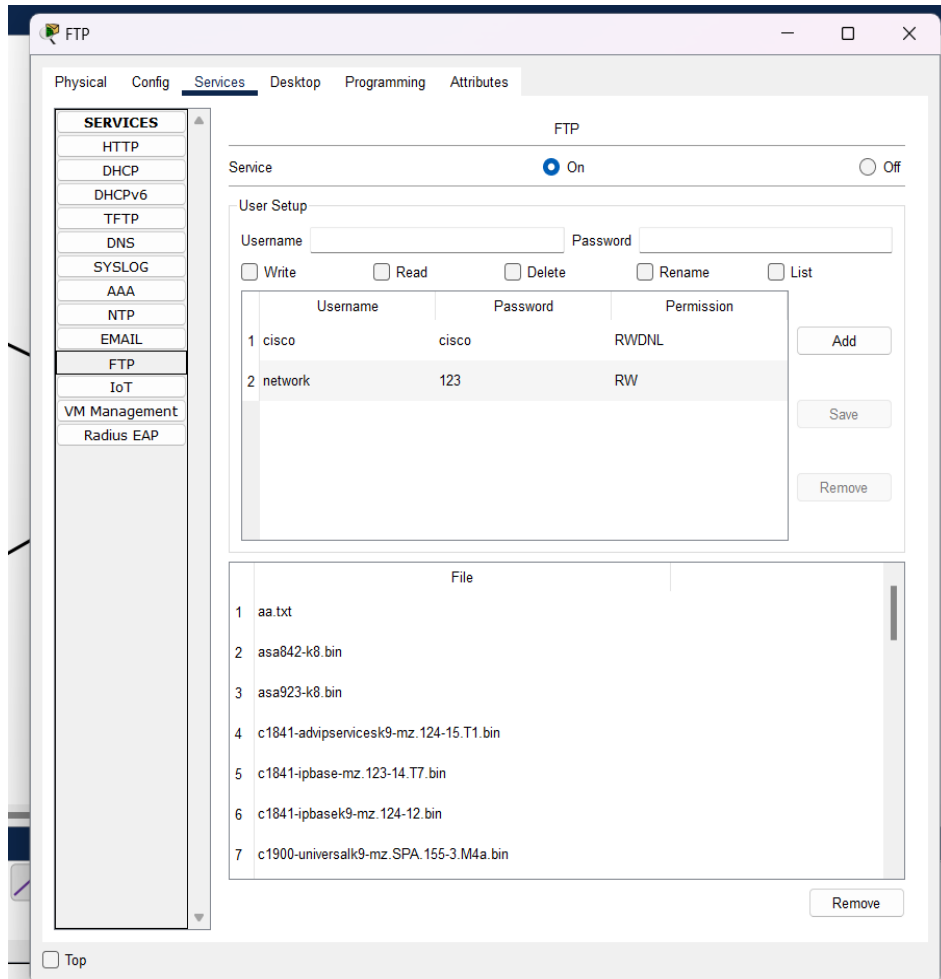
### III. FTP:

The File Transfer Protocol (FTP) is an application layer protocol used for transferring files between a client and a server over a network.

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FTP

Physical Config **Services** Desktop Programming Attributes

**SERVICES**

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

FTP

Service ☒ On ☐ Off

User Setup

Username  Password

☐ Write ☐ Read ☐ Delete ☐ Rename ☐ List

	Username	Password	Permission	
1	cisco	cisco	RWDNL	Add
2	network	123	RW	Save
				Remove

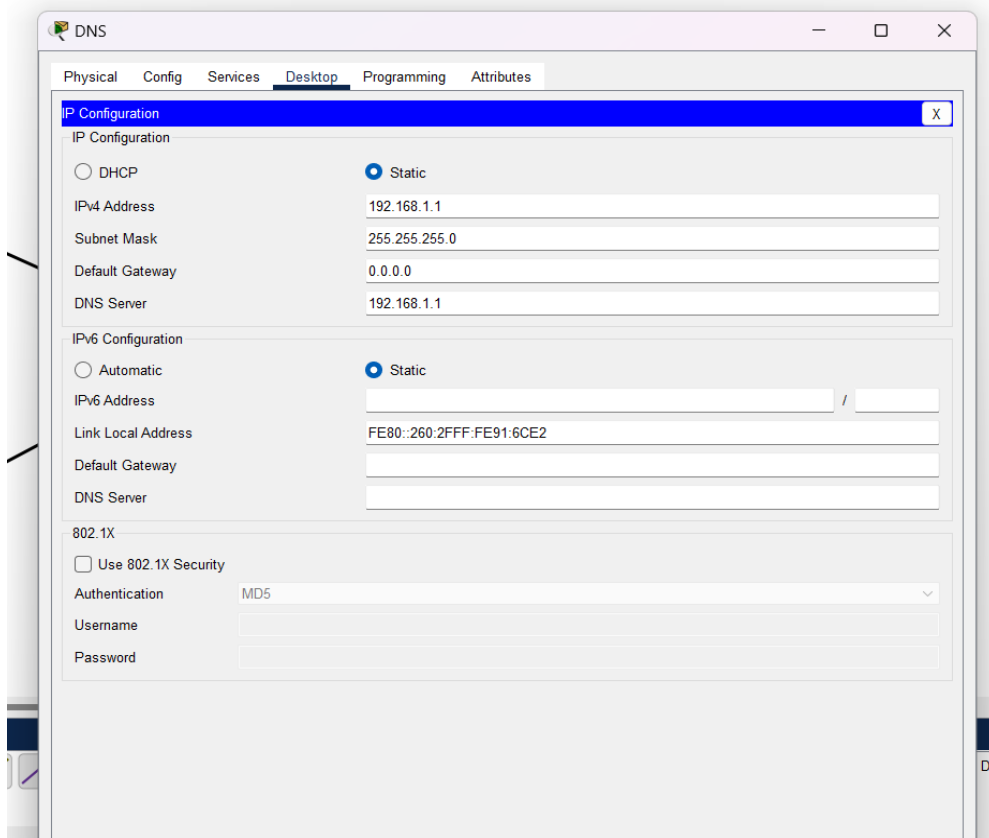
File

1	aa.txt
2	asa842-k8.bin
3	asa923-k8.bin
4	c1841-advipservicesk9-mz.124-15.T1.bin
5	c1841-ipbase-mz.123-14.T7.bin
6	c1841-ipbasek9-mz.124-12.bin
7	c1900-universalk9-mz.SPA.155-3.M4a.bin

Remove

☐ Top

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**DNS**

Physical Config Services **Desktop** Programming Attributes

**IP Configuration** [X]

IP Configuration

☐ DHCP ☒ Static

IPv4 Address: 192.168.1.1

Subnet Mask: 255.255.255.0

Default Gateway: 0.0.0.0

DNS Server: 192.168.1.1

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address: /

Link Local Address: FE80::260:2FFF:FE91:6CE2

Default Gateway:

DNS Server:

802.1X

☐ Use 802.1X Security

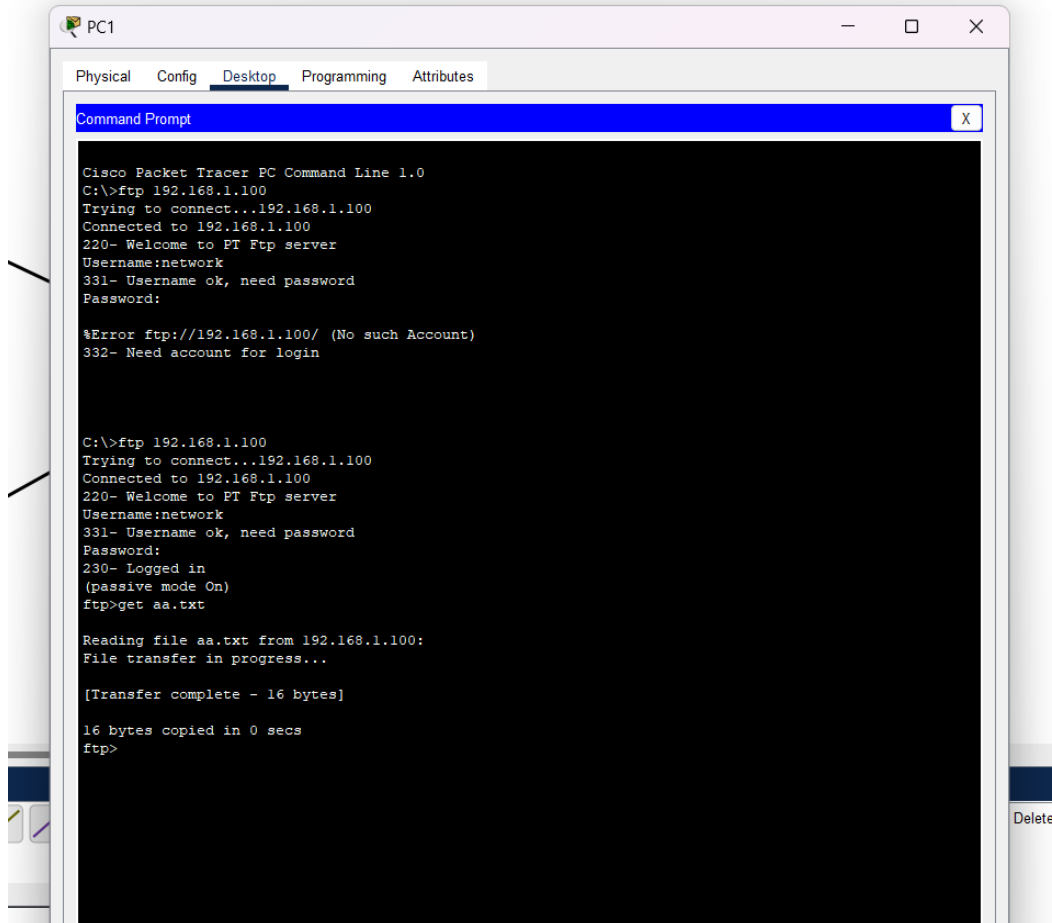
Authentication: MD5

Username:

Password:



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```
PC1
Physical Config Desktop Programming Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ftp 192.168.1.100
Trying to connect...192.168.1.100
Connected to 192.168.1.100
220- Welcome to FT Ftp server
Username:network
331- Username ok, need password
Password:

%Error ftp://192.168.1.100/ (No such Account)
332- Need account for login

C:\>ftp 192.168.1.100
Trying to connect...192.168.1.100
Connected to 192.168.1.100
220- Welcome to FT Ftp server
Username:network
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
ftp>get aa.txt

Reading file aa.txt from 192.168.1.100:
File transfer in progress...

[Transfer complete - 16 bytes]

16 bytes copied in 0 secs
ftp>
```

### Instructions:

1. Protocol-wise configuration setup screenshot.
2. Mention IP address of each pc as label.
3. Ping command or PDU screenshot between two pcs.