

Date: 23/07/2025

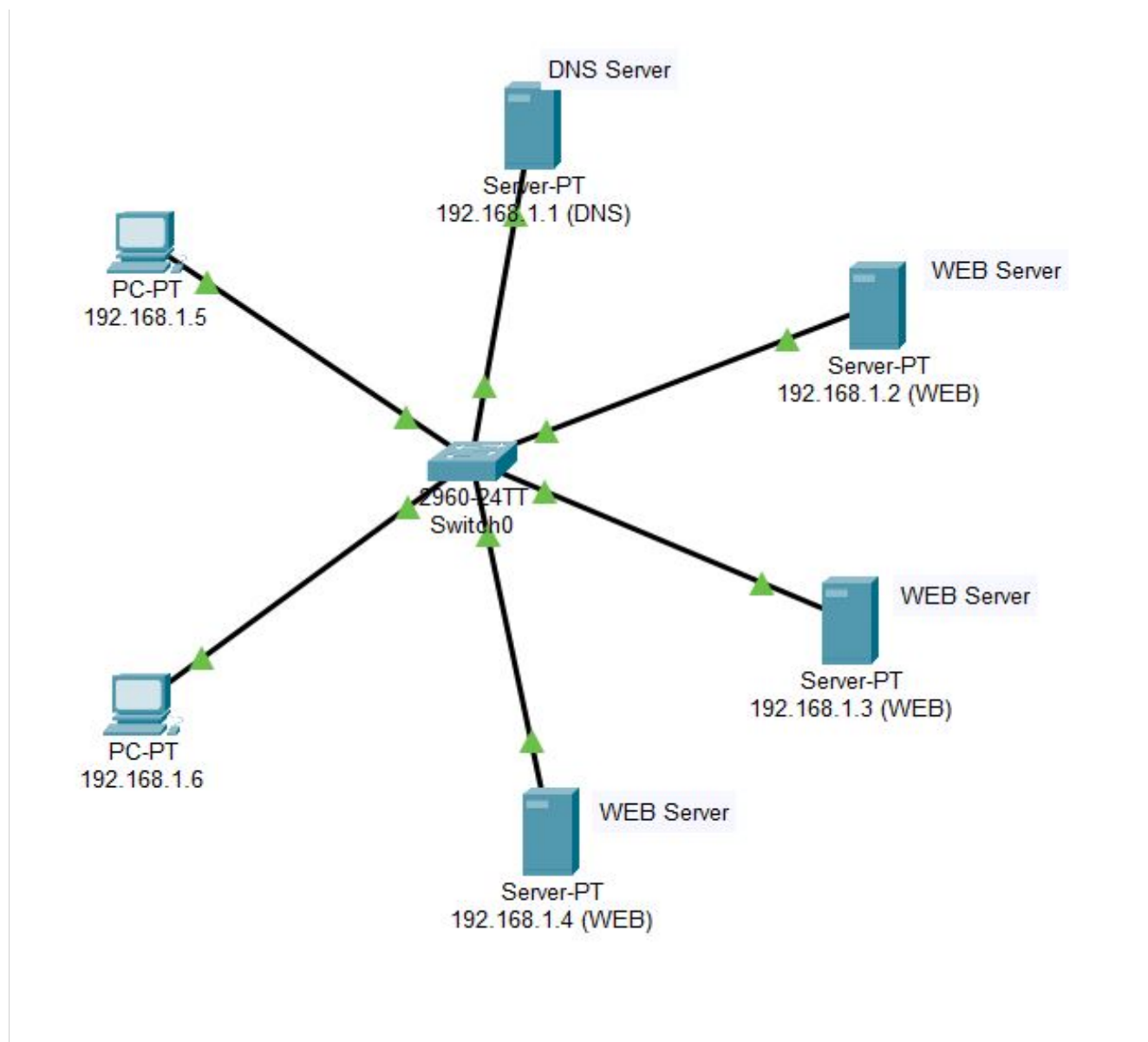
### Lab Practical #07:

Study the application layer protocol DNS, DHCP, FTP.

### Practical Assignment #07:

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

#### 1. DNS





**Date: 23/07/2025**

192.168.1.1 (DNS)

Physical Config **Services** Desktop Programming Attributes

**SERVICES**

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

**HTTP**

HTTP ☒ On ☐ Off

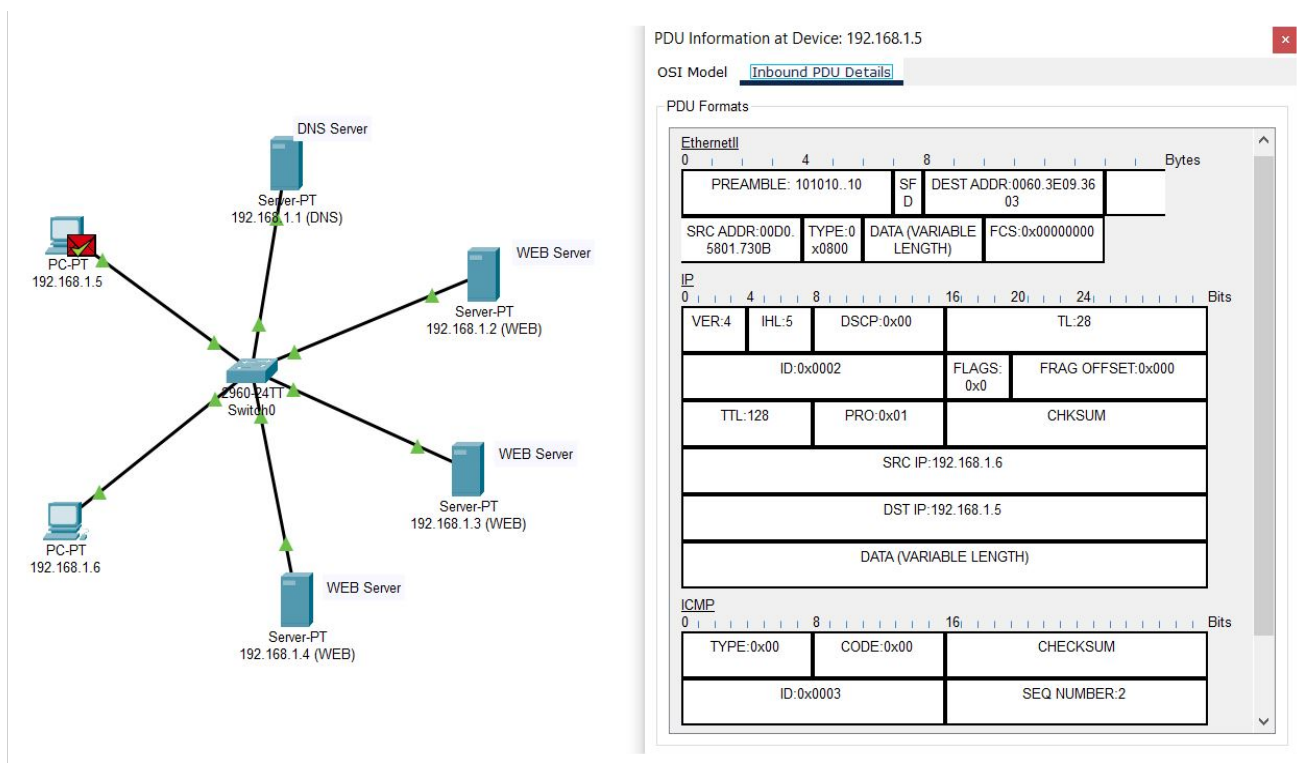
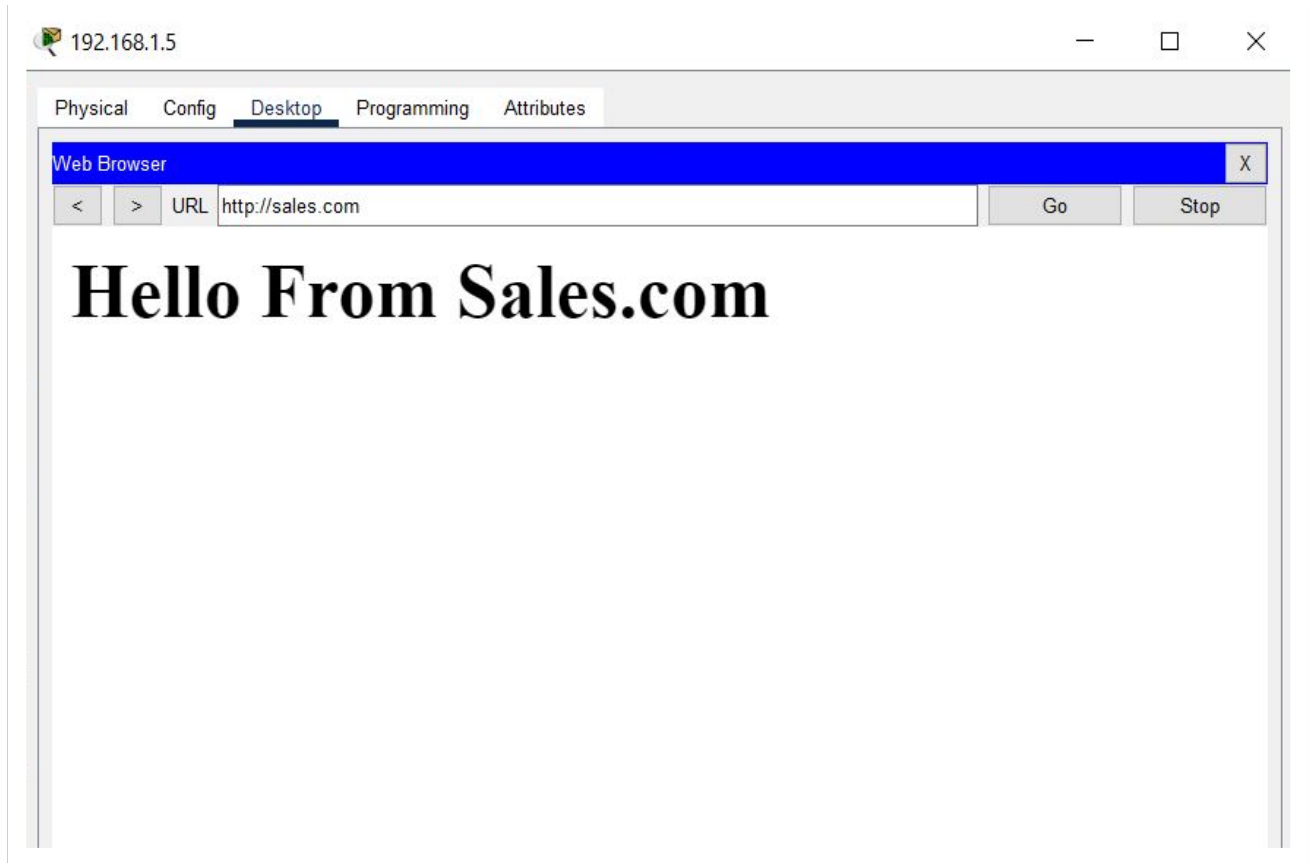
HTTPS ☒ On ☐ Off

**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) |

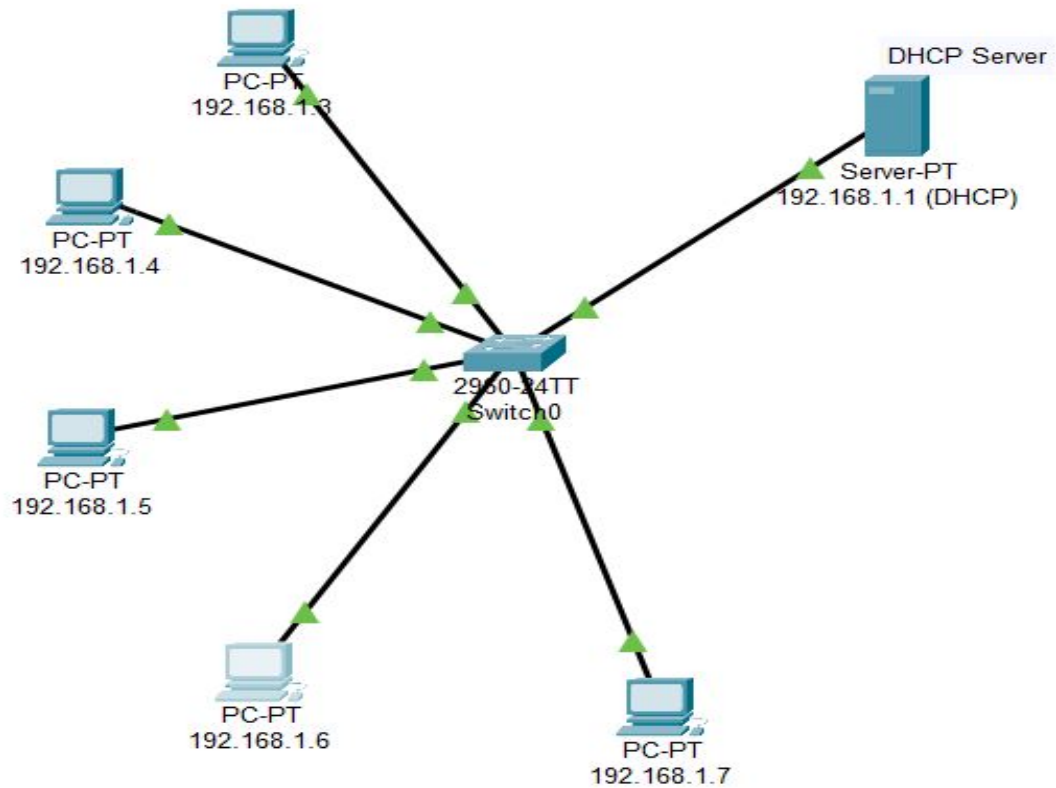
New File Import

Date: 23/07/2025



Date: 23/07/2025

## 2. DHCP



**Date: 23/07/2025**

192.168.1.1 (DHCP)

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 2

Subnet Mask: 255 255 255 0

Maximum Number of Users: 254

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    | 192.168.1.2      | 255.255.255.0 | 254      | 0.0.0.0     | 0.0.0.0     |

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PC0

Physical Config Desktop Programming Attributes

IP Configuration

Interface: FastEthernet0

IP Configuration

☒ DHCP ☐ Static DHCP request successful.

IPv4 Address: 192.168.1.3

Subnet Mask: 255.255.255.0

Default Gateway: 0.0.0.0

DNS Server: 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static

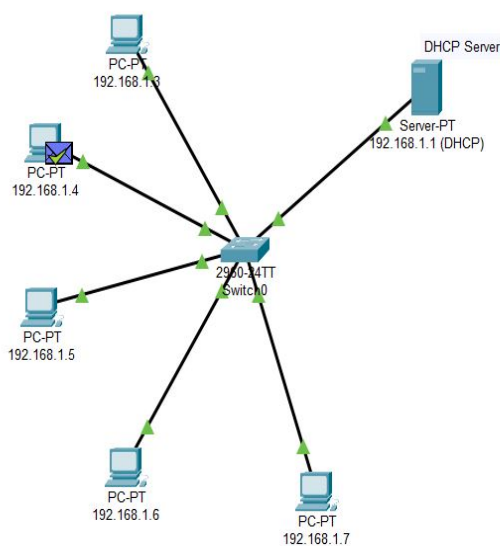
IPv6 Address: /

Link Local Address: FE80::260:47FF:FE81:A4CE

Default Gateway:

DNS Server:

802.1X



PDU Information at Device: 192.168.1.4

OSI Model: [Inbound PDU Details](#)

PDU Formats

EthernetII

| 0                        |  | 4 |  | 8            |  | 16                     |  | 24                        |  | 32              |  | Bytes |  |
|--------------------------|--|---|--|--------------|--|------------------------|--|---------------------------|--|-----------------|--|-------|--|
| PREAMBLE: 101010...10    |  |   |  |              |  | SF D                   |  | DEST ADDR: 00E0.A3DB.E863 |  |                 |  |       |  |
| SRC ADDR: 0002.4AA8.5756 |  |   |  | TYPE: 0x0800 |  | DATA (VARIABLE LENGTH) |  |                           |  | FCS: 0x00000000 |  |       |  |

IP

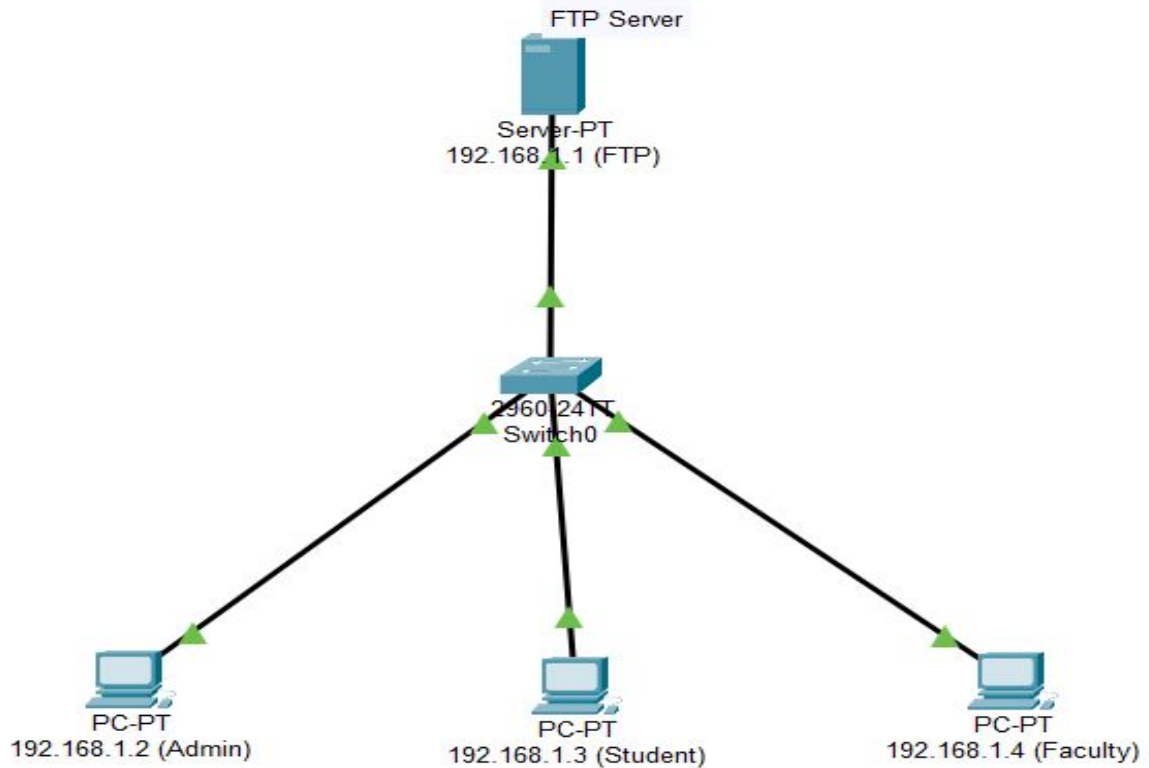
| 0                      |  | 4      |  | 8          |  | 16     |  | 20         |  | 24                 |  | 32 |  | Bits |  |
|------------------------|--|--------|--|------------|--|--------|--|------------|--|--------------------|--|----|--|------|--|
| VER: 4                 |  | IHL: 5 |  | DSCP: 0x00 |  | TL: 28 |  |            |  |                    |  |    |  |      |  |
| ID: 0x0005             |  |        |  |            |  |        |  | FLAGS: 0x0 |  | FRAG OFFSET: 0x000 |  |    |  |      |  |
| TTL: 128               |  |        |  | PRO: 0x01  |  |        |  | CHKSUM     |  |                    |  |    |  |      |  |
| SRC IP: 192.168.1.3    |  |        |  |            |  |        |  |            |  |                    |  |    |  |      |  |
| DST IP: 192.168.1.6    |  |        |  |            |  |        |  |            |  |                    |  |    |  |      |  |
| DATA (VARIABLE LENGTH) |  |        |  |            |  |        |  |            |  |                    |  |    |  |      |  |

ICMP

| 0          |  | 8          |  | 16            |  | 24 |  | 32 |  | Bits |  |
|------------|--|------------|--|---------------|--|----|--|----|--|------|--|
| TYPE: 0x00 |  | CODE: 0x00 |  | CHECKSUM      |  |    |  |    |  |      |  |
| ID: 0x0003 |  |            |  | SEQ NUMBER: 2 |  |    |  |    |  |      |  |

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### 3. FTP



**Date: 23/07/2025**

192.168.1.1 (FTP)

PhysicalConfigServicesDesktopProgrammingAttributes

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 | admin    | adm      | RWDNL      | Add    |
| 2 | student  | stu      | RL         |        |
| 3 | faculty  | fac      | RWL        | Save   |
|   |          |          |            | Remove |

File

1

asa842-k8.bin

2

asa923-k8.bin

3

c1841-advipservicesk9-mz.124-15.T1.bin

4

c1841-ipbase-mz.123-14.T7.bin

5

c1841-ipbasek9-mz.124-12.bin

6

c1900-universalk9-mz.SPA.155-3.M4a.bin

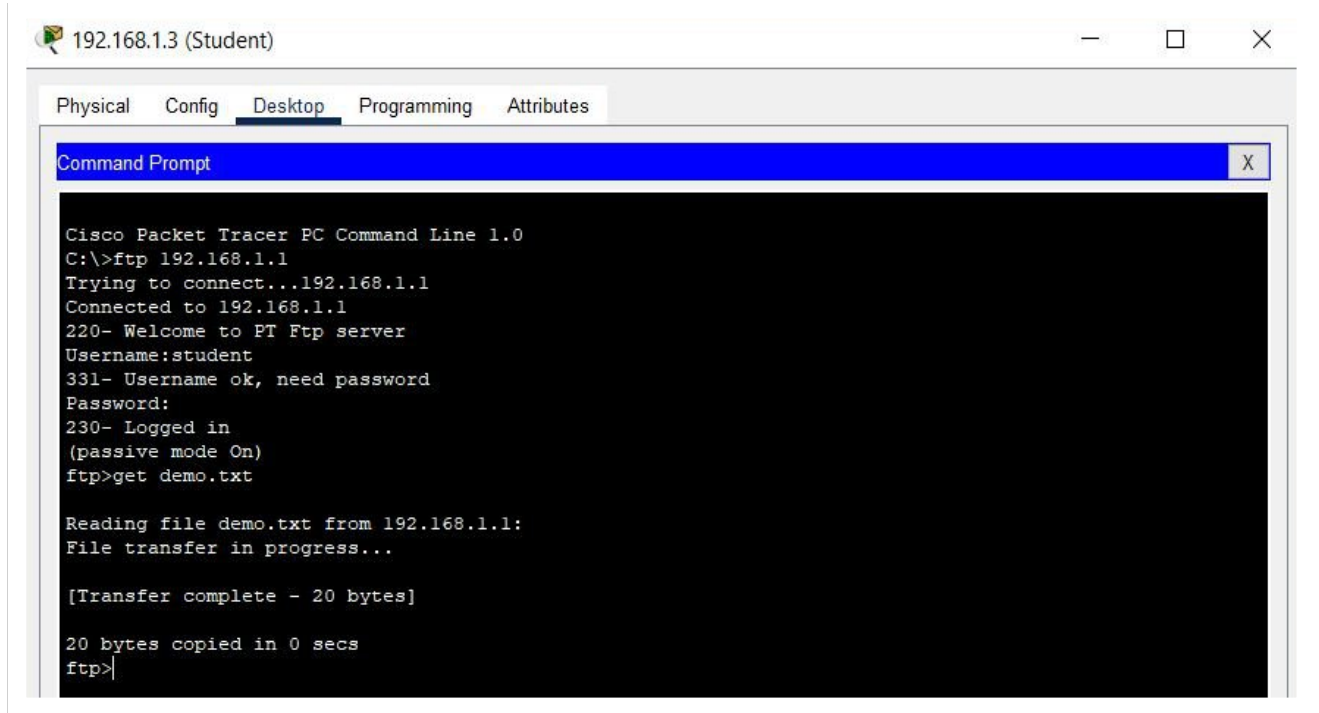
7

c2600-advipservicesk9-mz.124-15.T1.bin

Remove



Date: 23/07/2025



192.168.1.3 (Student)

Physical Config Desktop Programming Attributes

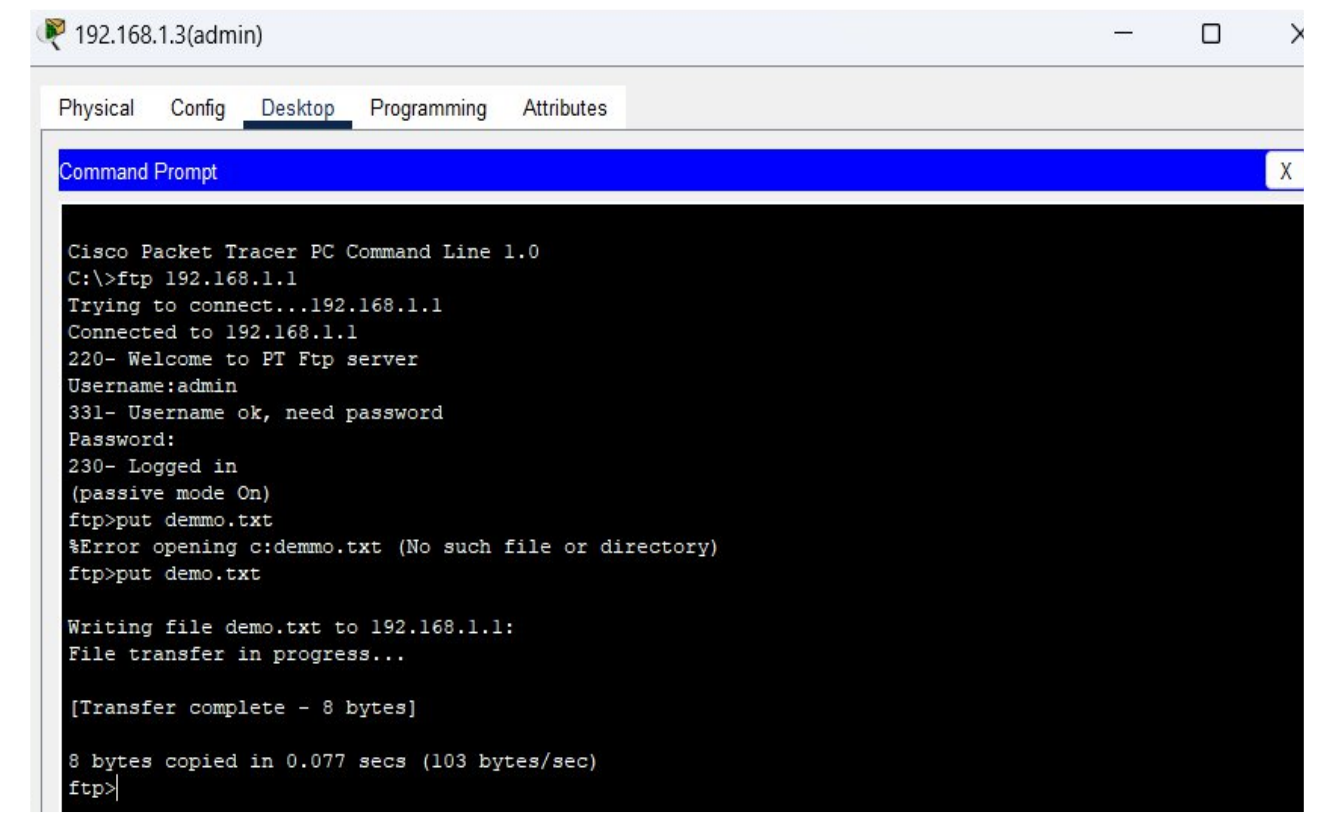
Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ftp 192.168.1.1
Trying to connect...192.168.1.1
Connected to 192.168.1.1
220- Welcome to PT Ftp server
Username:student
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
ftp>get demo.txt

Reading file demo.txt from 192.168.1.1:
File transfer in progress...

[Transfer complete - 20 bytes]

20 bytes copied in 0 secs
ftp>
```



192.168.1.3(admin)

Physical Config Desktop Programming Attributes

Command Prompt

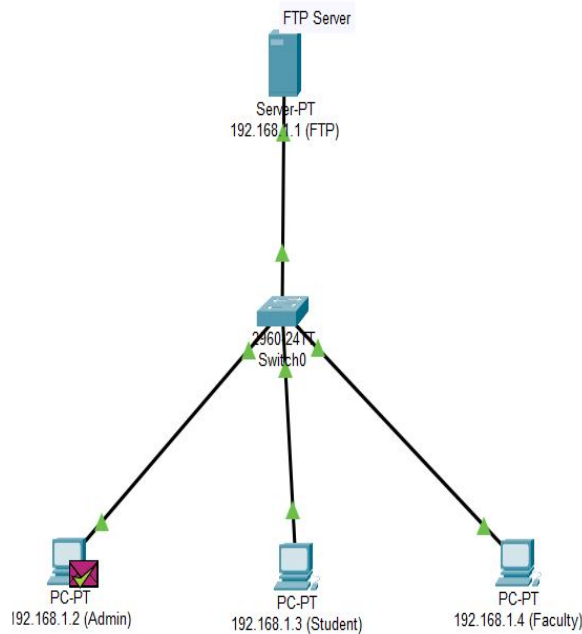
```
Cisco Packet Tracer PC Command Line 1.0
C:\>ftp 192.168.1.1
Trying to connect...192.168.1.1
Connected to 192.168.1.1
220- Welcome to PT Ftp server
Username:admin
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
ftp>put demmo.txt
%Error opening c:demmo.txt (No such file or directory)
ftp>put demo.txt

Writing file demo.txt to 192.168.1.1:
File transfer in progress...

[Transfer complete - 8 bytes]

8 bytes copied in 0.077 secs (103 bytes/sec)
ftp>
```

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PDU Information at Device: 192.168.1.2 (Admin)

OSI Model Inbound PDU Details

PDU Formats

| EthernetII               |  |              |                        |    |                 |                            |  |  |  |
|--------------------------|--|--------------|------------------------|----|-----------------|----------------------------|--|--|--|
| 0                        |  | 4            |                        | 8  |                 | Bytes                      |  |  |  |
| PREAMBLE: 101010...10    |  |              |                        | SF | D               | DEST ADDR: 0001.9706.34 DD |  |  |  |
| SRC ADDR: 0010.11E8.3DD7 |  | TYPE: 0x0800 | DATA (VARIABLE LENGTH) |    | FCS: 0x00000000 |                            |  |  |  |

| IP                     |  |        |           |            |  |            |        |                    |  |    |  |      |
|------------------------|--|--------|-----------|------------|--|------------|--------|--------------------|--|----|--|------|
| 0                      |  | 4      |           | 8          |  | 16         |        | 20                 |  | 24 |  | Bits |
| VER: 4                 |  | IHL: 5 |           | DSCP: 0x00 |  |            | TL: 28 |                    |  |    |  |      |
| ID: 0x0003             |  |        |           |            |  | FLAGS: 0x0 |        | FRAG OFFSET: 0x000 |  |    |  |      |
| TTL: 128               |  |        | PRO: 0x01 |            |  | CHKSUM     |        |                    |  |    |  |      |
| SRC IP: 192.168.1.4    |  |        |           |            |  |            |        |                    |  |    |  |      |
| DST IP: 192.168.1.2    |  |        |           |            |  |            |        |                    |  |    |  |      |
| DATA (VARIABLE LENGTH) |  |        |           |            |  |            |        |                    |  |    |  |      |

| ICMP       |  |   |            |    |  |               |  |  |  |  |
|------------|--|---|------------|----|--|---------------|--|--|--|--|
| 0          |  | 8 |            | 16 |  | Bits          |  |  |  |  |
| TYPE: 0x00 |  |   | CODE: 0x00 |    |  | CHECKSUM      |  |  |  |  |
| ID: 0x0004 |  |   |            |    |  | SEQ NUMBER: 3 |  |  |  |  |