

# DCNC ASSIGNMENT 3

NOAH BAKR | S4095646

SEBASTIAN NAGENDRAN | S3949420

KYLE BONJOUR | S4003110



# TASK 1

NOAH BAKR

## 1.1 NETWORK SETUP AND CONFIGURATION

- Switches are used to extend number of Ethernet ports
- PCs communicate with each other and central server using TCP/FTP

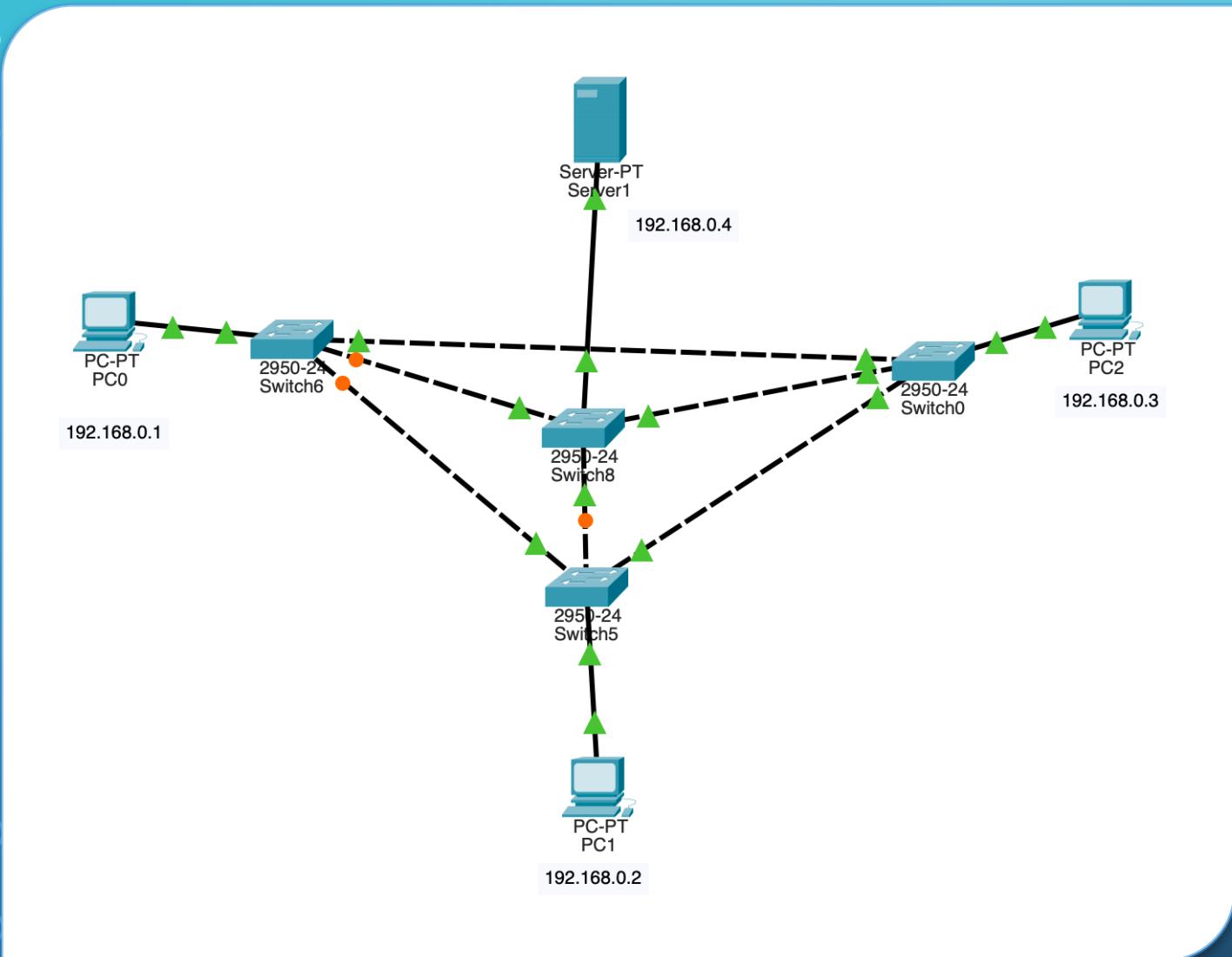


Figure 1.1, Layout of P2P Network with Central File Server

# OPERATION (REDUNDANCY)

- Amber dots represent redundant ports
- All ports open will create packet loops
- One switch must have priority over another, therefore unavailable to workaround

```
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#spanning-tree vlan 1 priority 28672
Switch(config)#end
Switch#
%SYS-5-CONFIG_I: Configured from console by console
```

Figure 1.2, CLI commands for each switch

# VERIFY CONFIGURATION

- PC and SERVER are pinged
- Time to live is 128

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.0.3

Pinging 192.168.0.3 with 32 bytes of data:

Reply from 192.168.0.3: bytes=32 time=35ms TTL=128
Reply from 192.168.0.3: bytes=32 time=1ms TTL=128
Reply from 192.168.0.3: bytes=32 time<1ms TTL=128
Reply from 192.168.0.3: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.0.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 35ms, Average = 9ms

C:\>
```

```
Pinging 192.168.0.4 with 32 bytes of data:

Reply from 192.168.0.4: bytes=32 time=2ms TTL=128
Reply from 192.168.0.4: bytes=32 time<1ms TTL=128
Reply from 192.168.0.4: bytes=32 time=2ms TTL=128
Reply from 192.168.0.4: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.0.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 2ms, Average = 1ms

C:\>
```

Figure 1.3, PC with address 192.168.0.3 is pinged

Figure 1.4, FTP Server with address 192.168.0.4 is pinged

# VERIFY CONFIGURATION

- Ping uses ICMP (Internet Control Message Protocol)
- Time to live is 128

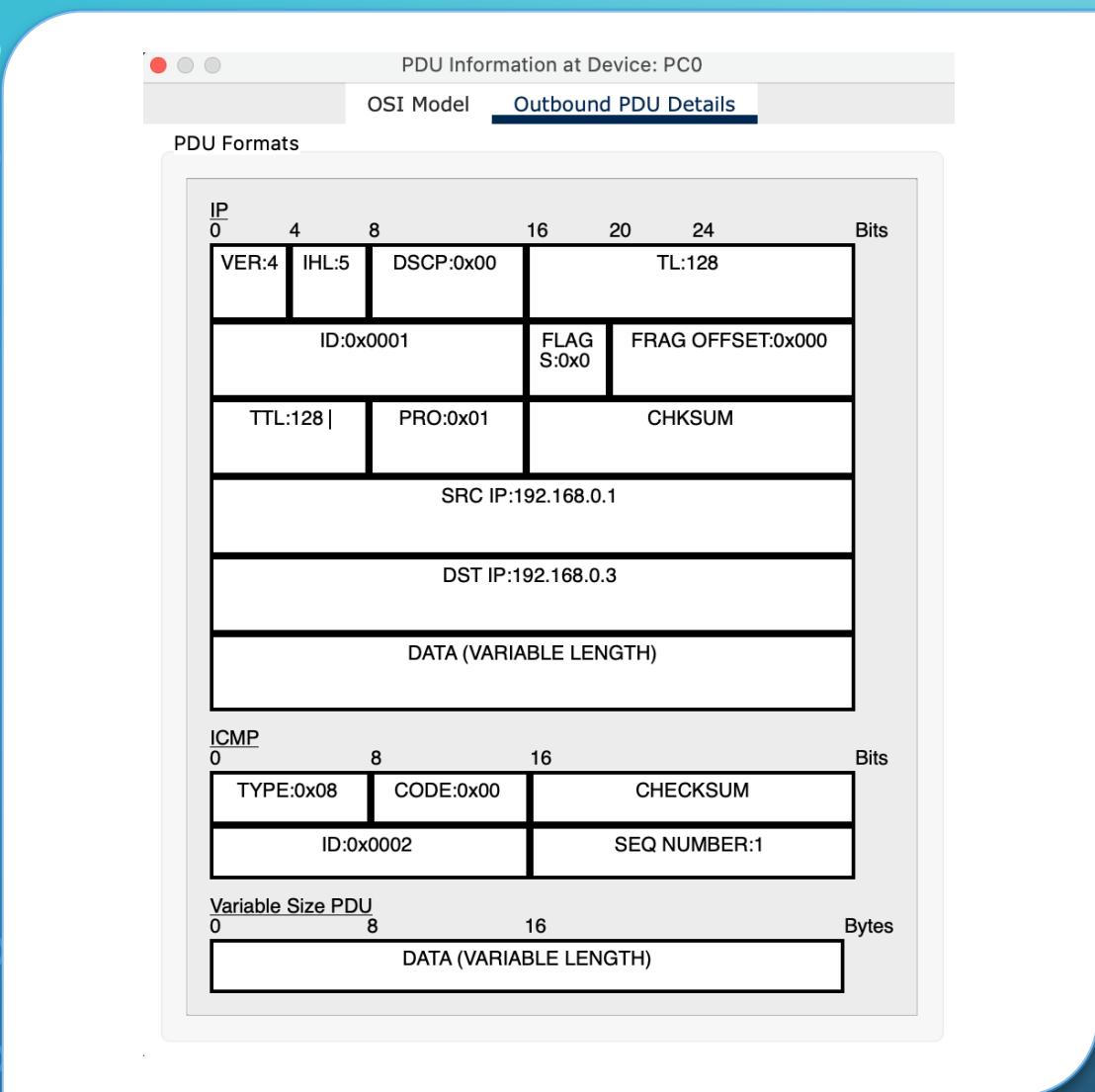


Figure 1.5, IP Ping request TTL

# CREATING THE FILE

- PC0 creates the file ‘GrabMe.txt’

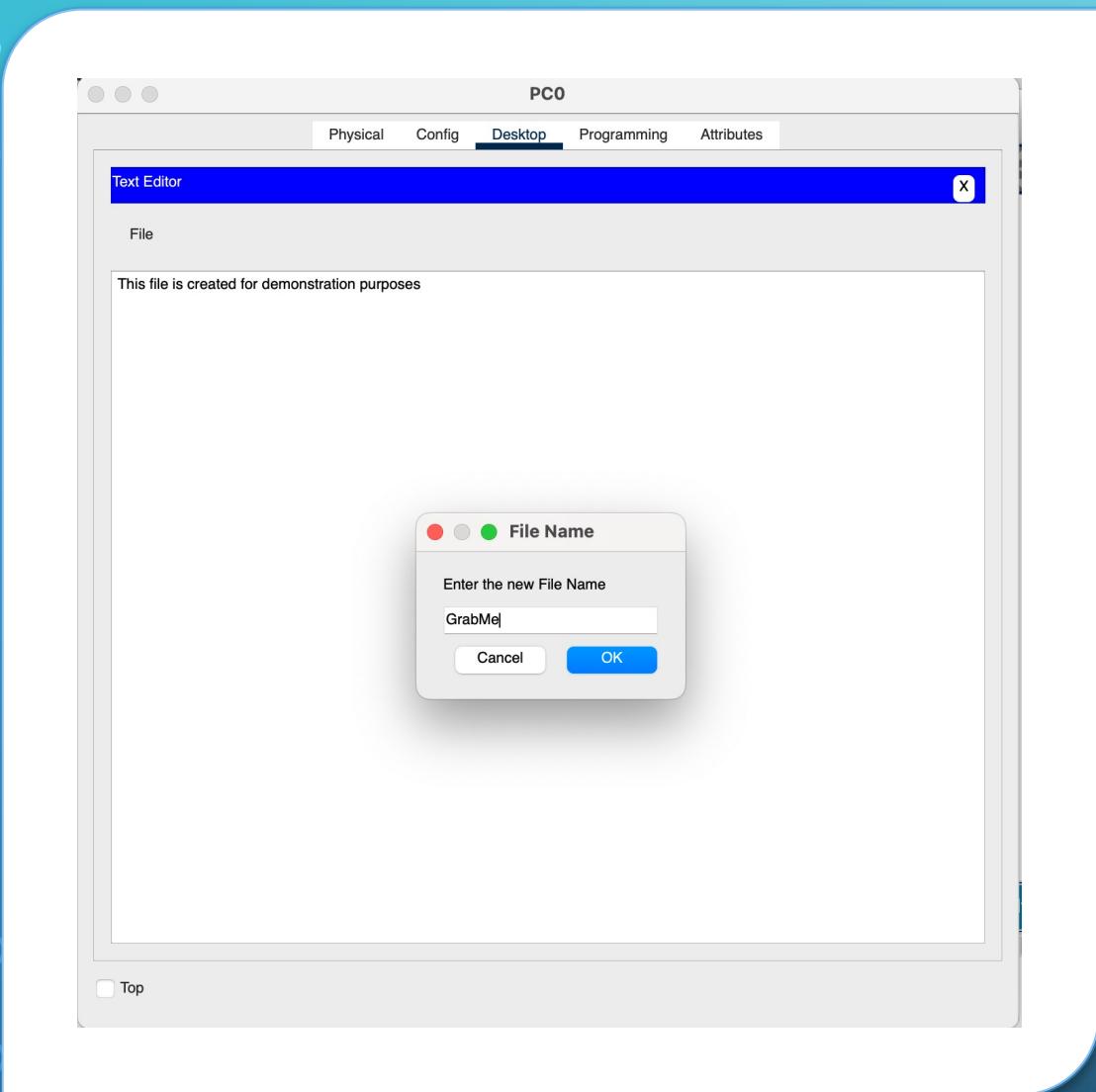


Figure 1.6, PC 1 creates a file called ‘GrabMe.txt’

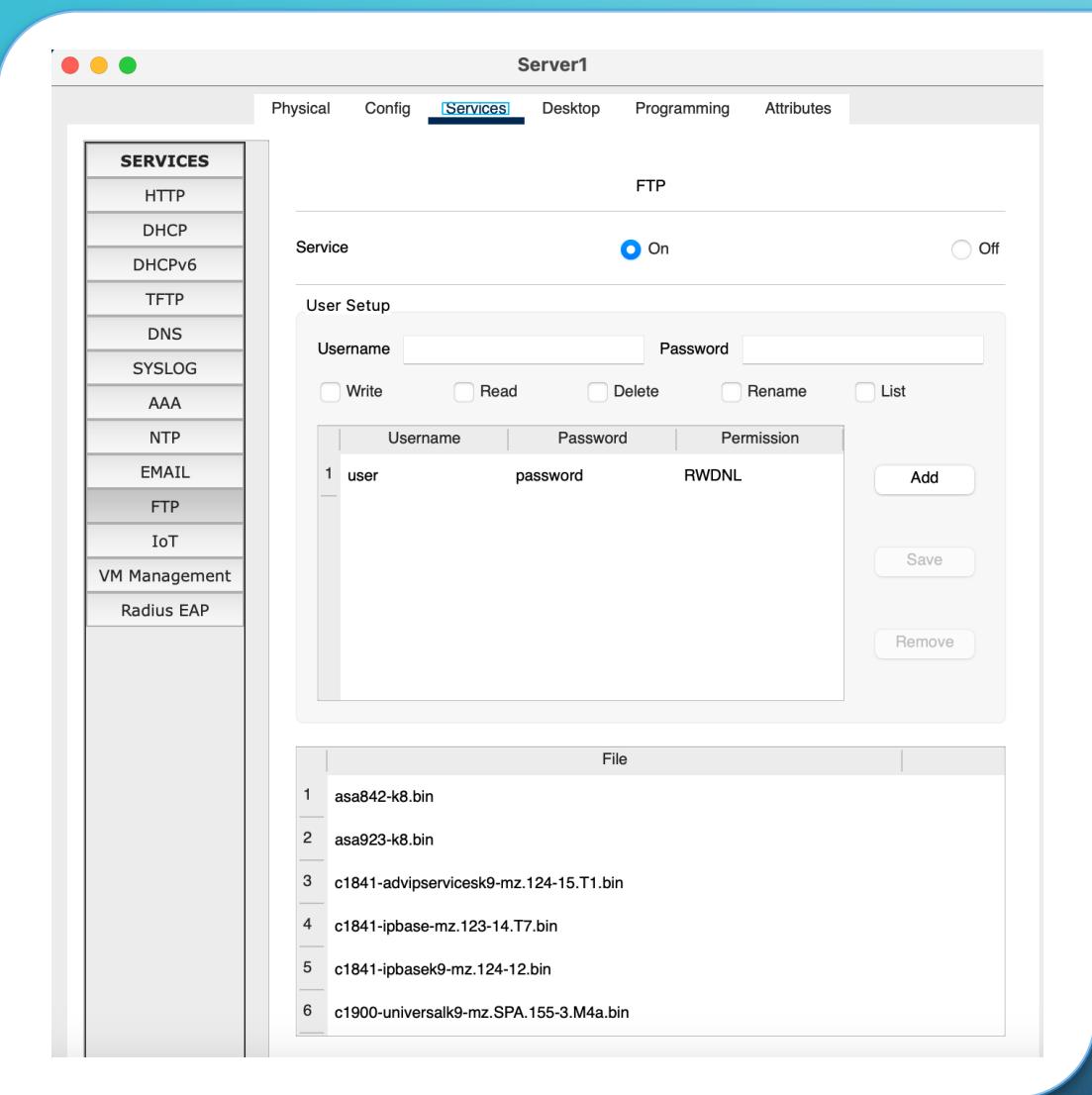


Figure 1.6, FTP Services window of SERVER1 - User profiles

# FTP USER PROFILE

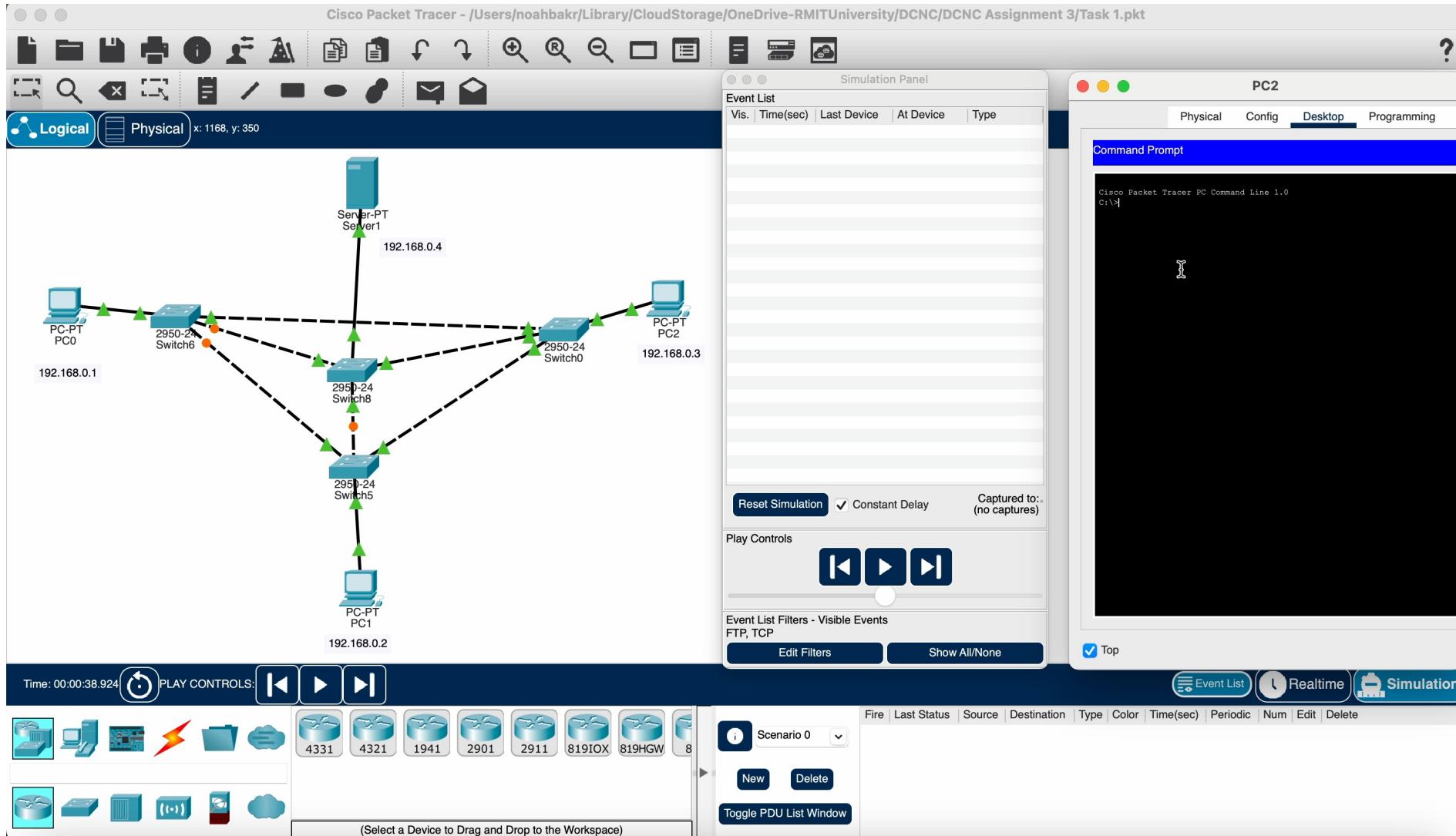
- **FTP service is switched ‘on’**
- **User profile is created and given full read and write permissions**
- **Username: user**
- **Password: password**



# FTP SERVER CONNECTION AND INITIALIZATION

VIDEOS & SCREENSHOTS





*Figure 1.7, Video of travelling packets regarding initial connection to Server*

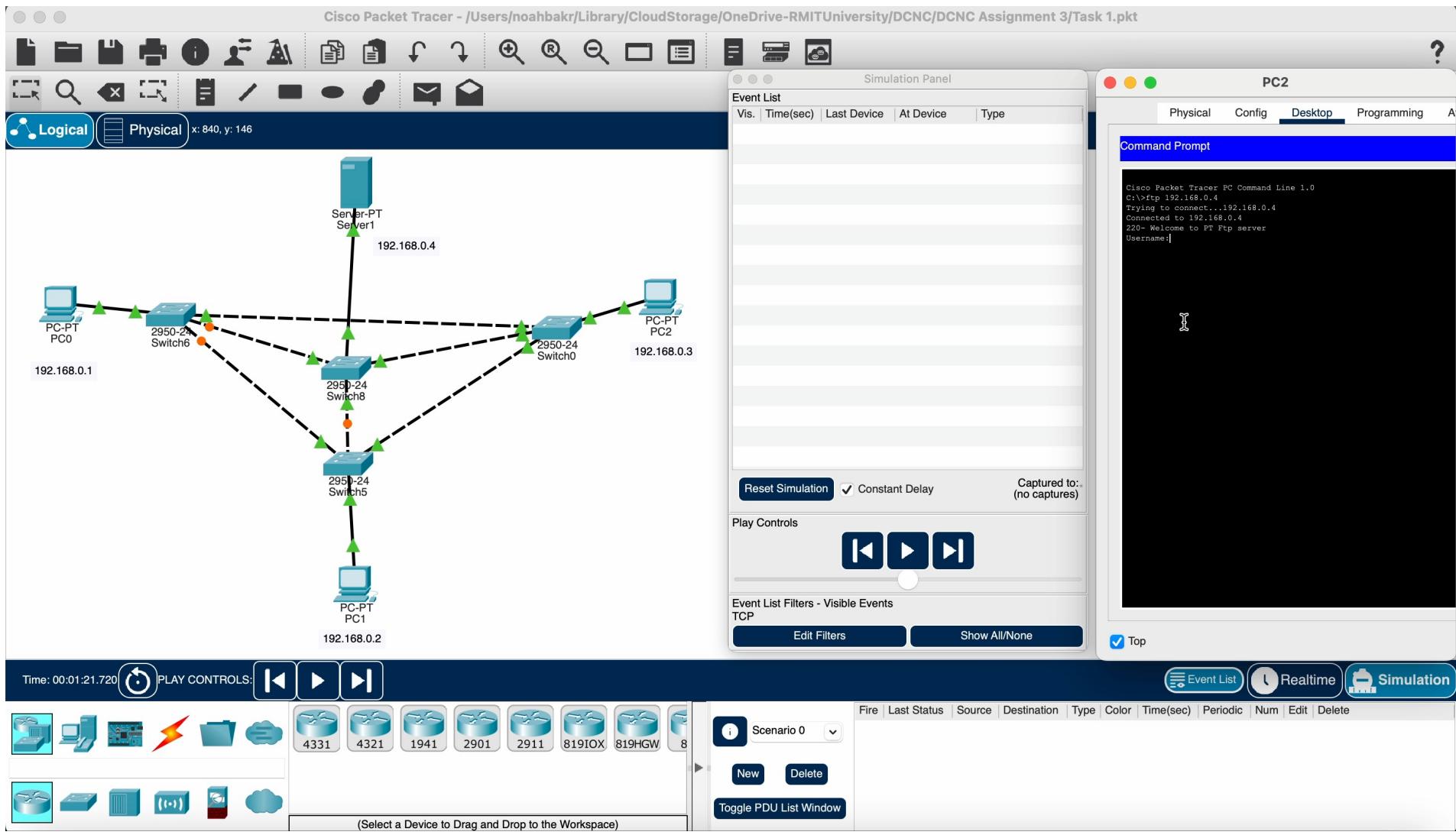


Figure 1.8, Video of travelling packets regarding login to Server

# FTP SERVER CONNECTION AND INITIALIZATION

- PC2 attempts to establish a connection with the FTP server
- TCP Handshake event occurs
- FTP packets then ask and receive the user profile login details, using TCP
- Time to live is 128

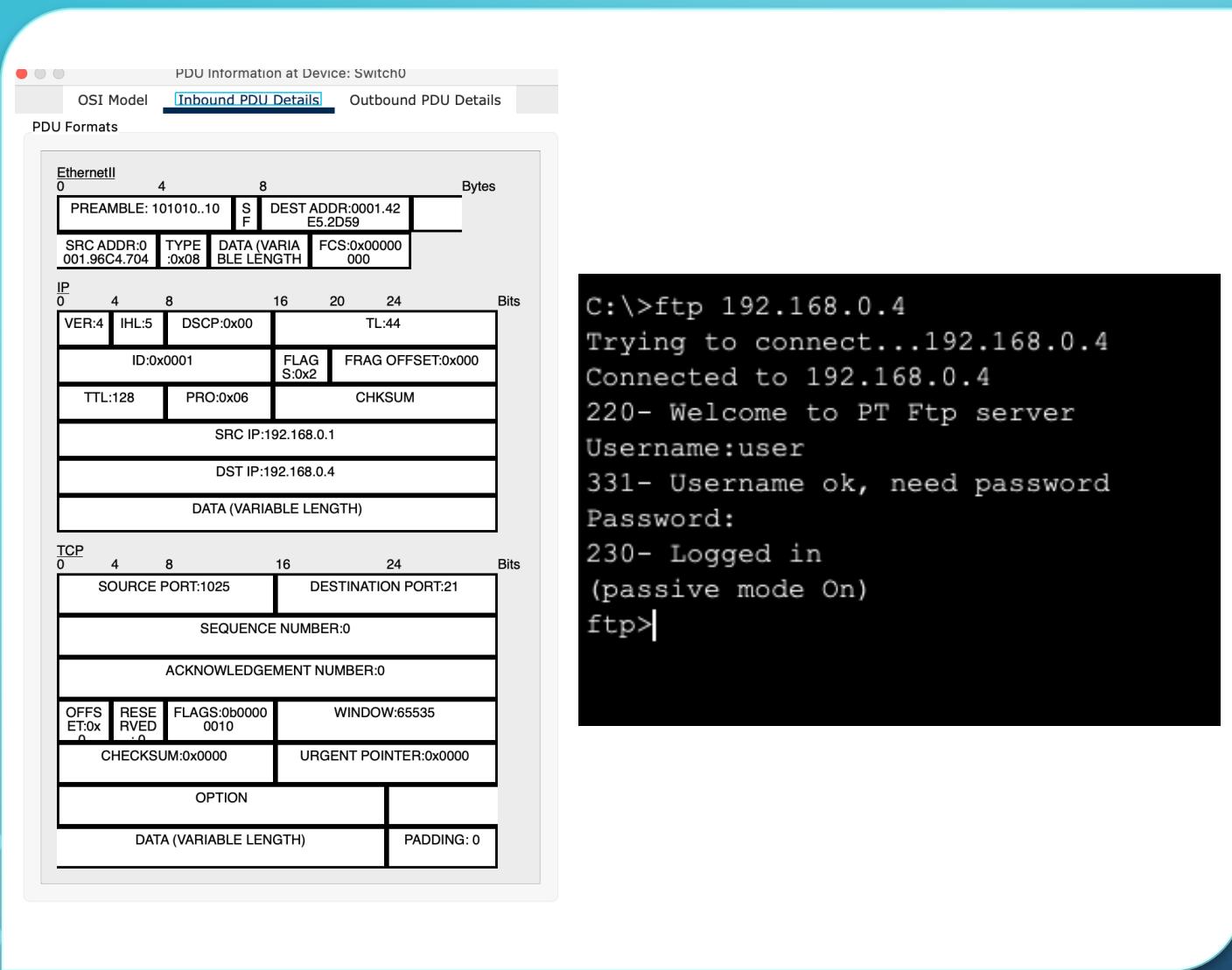


Figure 1.9, PDU packet at Switch0 involved in the ftp credentials acknowledgment

Figure 1.10, PC with address 192.168.0.3 connects to FTP Server

```
C:\>ftp 192.168.0.4
Trying to connect...192.168.0.4
Connected to 192.168.0.4
220- Welcome to PT Ftp server
Username:user
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
ftp>
```

# FTP SERVER CONNECTION AND INITIALIZATION

- Further evidence of TCP utilization in OSI Model Layers

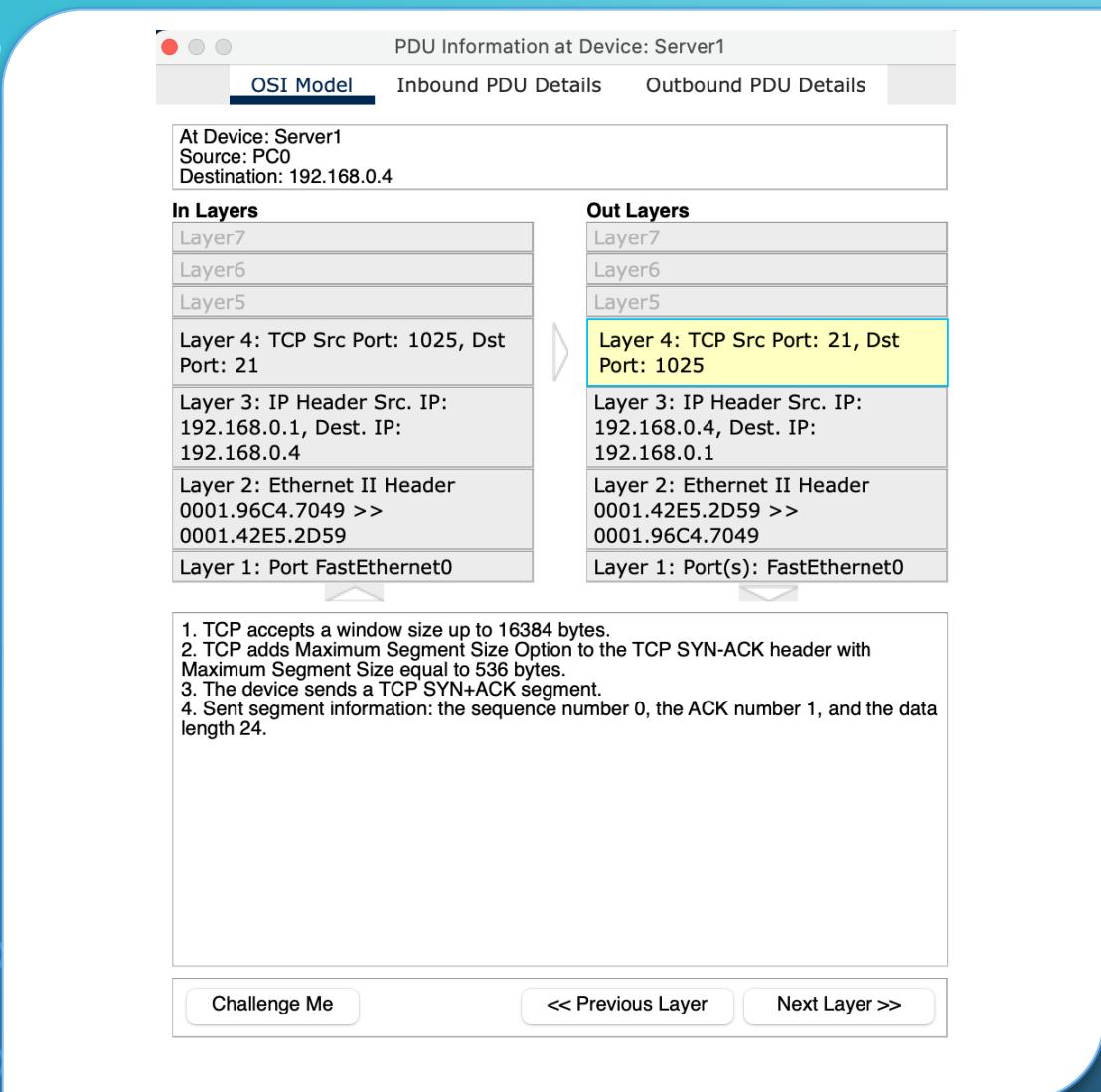


Figure 1.11, PDU packet at FTP server

# FTP SERVER FILE GET METHOD

VIDEOS & SCREENSHOTS

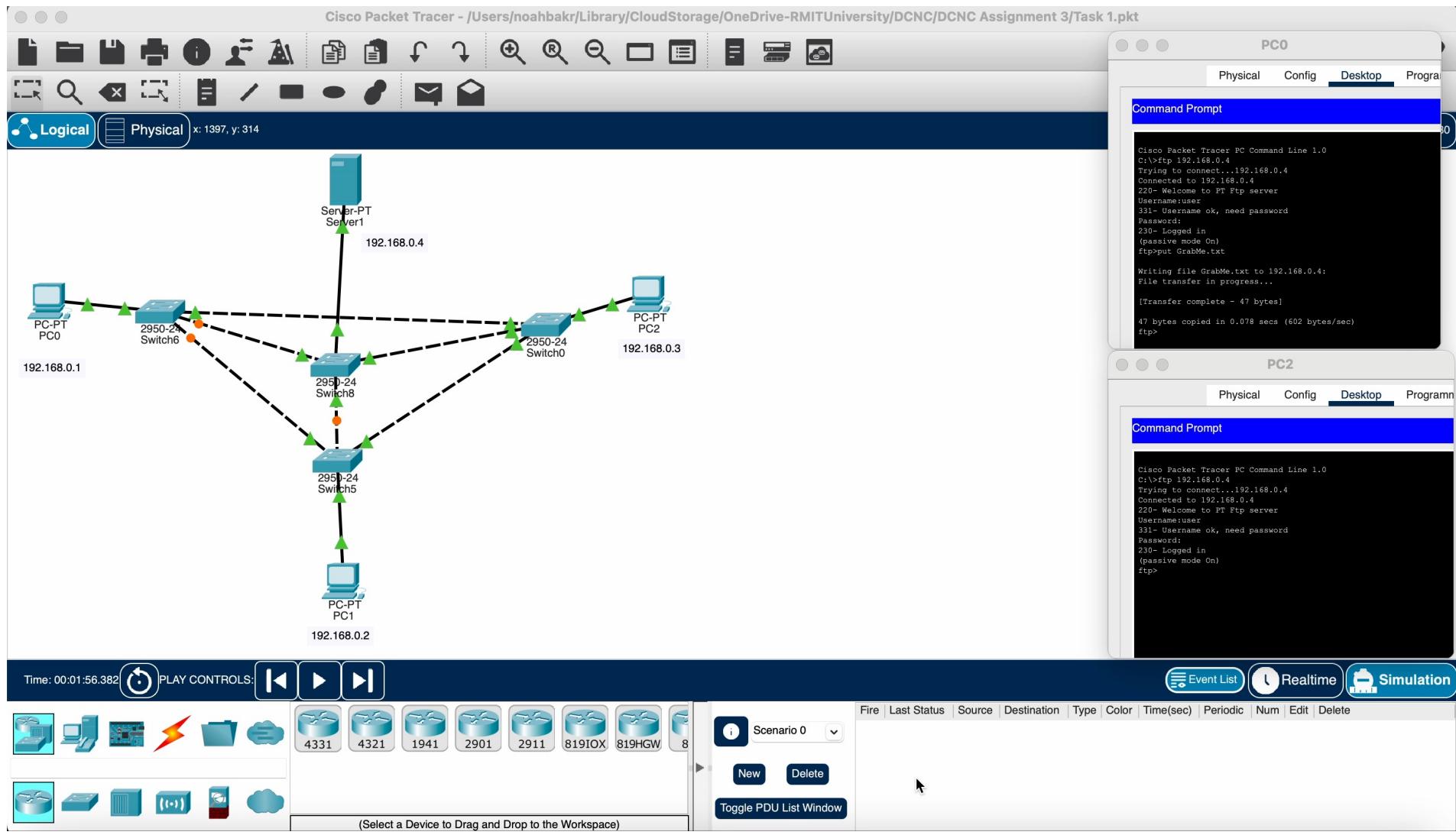


Figure 1.12, Video of travelling packets regarding file acquisition

## FTP SERVER FILE GET METHOD

- PC0 transfers ‘GrabMe.txt’ file to Server
- PC2 connects to the Server and ‘asks’ for the file using a ‘get’ command

```
Cisco Packet Tracer PC Command Line 1.0
C:>ftp 192.168.0.4
Trying to connect...192.168.0.4
Connected to 192.168.0.4
220- Welcome to PT Ftp server
Username:user
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
ftp>put GrabMe.txt

Writing file GrabMe.txt to 192.168.0.4:
File transfer in progress...

[Transfer complete - 47 bytes]

47 bytes copied in 0.024 secs (1958 bytes/sec)
ftp>get GrabMe.txt

Reading file GrabMe.txt from 192.168.0.4:
File transfer in progress...

[Transfer complete - 47 bytes]

47 bytes copied in 0.016 secs (2937 bytes/sec)
ftp>
```

```
Cisco Packet Tracer PC Command Line 1.0
C:>ftp 192.168.0.4
Trying to connect...192.168.0.4
Connected to 192.168.0.4
220- Welcome to PT Ftp server
Username:user
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
ftp>put GrabMe.txt

Writing file GrabMe.txt to 192.168.0.4:
File transfer in progress...

[Transfer complete - 47 bytes]

47 bytes copied in 0.024 secs (1958 bytes/sec)
ftp>
```

Figure 1.13, PC0 is copying GrabMe.txt to the FTP Server

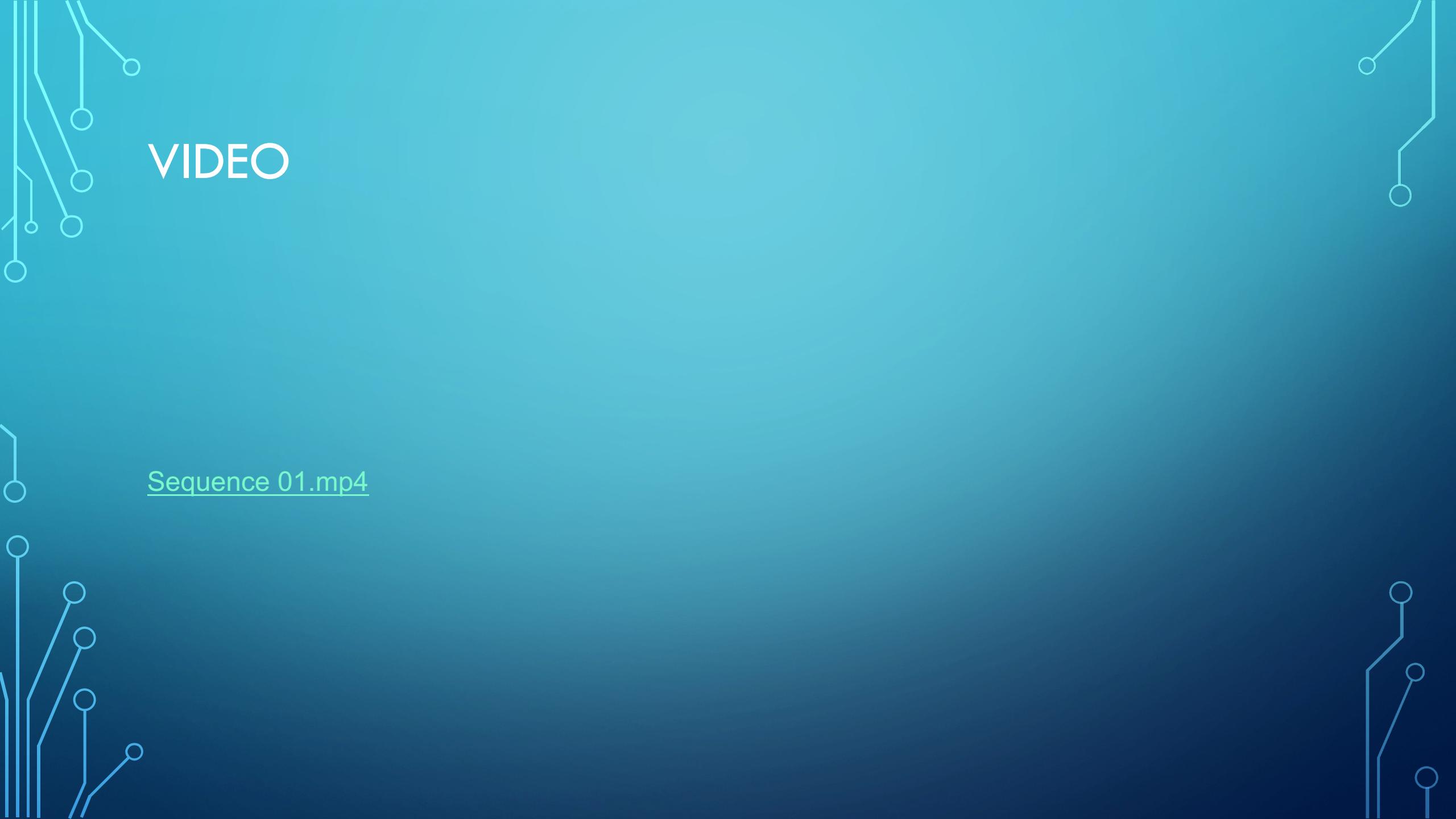
Figure 1.12, PC is calling and receiving GrabMe.txt from the FTP Server

# TASK 2 | OPTION 2

NOAH BAKR

SEBASTIAN NAGENDRAN

KYLE BONJOUR



VIDEO

Sequence 01.mp4