Lab 8

[**14.8.1 - Packet Tracer - TCP and UDP Communications**](https://contenthub.netacad.com/itn#14.8.1)

1. Click **Capture/Forward**six times and watch the PDUs from the different hosts as they travel on the network. Note that only one PDU can cross a wire in each direction at any given time.

What is this called?

Answer: conversation multiplexing.

1. A variety of PDUs appears in the event list in the Simulation Panel. What is the meaning of the different colors?

Answer: They represent different protocols.

1. Why did it take so long for the HTTP PDU to appear?

Answer: Because TCP must first establish the connection so that the HTTP traffic can begin.

1. Click the PDU envelope to show the PDU details. Click the **Outbound PDU Details** tab and scroll down to the second to the last section.

Questions:

What is the section labeled?

Answer: TCP

1. Are these communications considered to be reliable?

Answer: Yes, TCP is in use.

1. Record the **SRC PORT**, **DEST PORT**, **SEQUENCE NUM**, and **ACK NUM** values.

Answer: 1027, 80, 0,0

1. Which TCP flags are set in this PDU?

Answer: ACK and PSH

1. How are the port and sequence numbers different than before?

Answer: The source and destination ports are reversed, and the acknowledgement number is 1. The flags have changed to SYN+ACK.

1. What information is now listed in the TCP section? How are the port and sequence numbers different from the previous two PDUs?

Answer: The source and destination ports are reversed, both sequence number is 1, the acknowledgement number is 103 (value my vary), and the flags are PSH and ACK.

1. Are these communications considered to be reliable?

Answer: Yes.

1. Record the **SRC PORT**, **DEST PORT**, **SEQUENCE NUM**, and **ACK NUM** values.

Question:

What is the value in the flag field?

Answer: 1025, 21, 0, 0. SYN

1. Click the PDU envelope and select **Inbound PDU Details**.

Question:

How are the port and sequence numbers different than before?

ANSWER: 21, 1025, 0, 1. SYN+ACK. The source and destination ports are reversed, and the acknowledgement number is 1.

1. Click the **Outbound** **PDU Details** tab.

Question:

How are the port and sequence numbers different from the previous results?

Answer: 1025, 21, 1, 1. The source and destination ports are reversed, and both sequence and acknowledgement numbers are 1.

1. Open the PDU and select **Inbound PDU Details**. Scroll down past the TCP section.

Question:

What is the message from the server?

Answer: “Welcome to PT Ftp server”

1. Look at the OSI Model details for the outbound PDU.

Question:

What is the Layer 4 protocol?

Asnwer: UDP

1. Are these communications considered to be reliable?

Answer: No

1. Open the Outbound PDU Details tab and find the UDP section of the PDU formats. Record the **SRC PORT** and **DEST PORT** values.

Question:

Why are there no sequence and acknowledgement numbers?

Answer: 1025 (value may vary) and 53. Because UDP does not need to establish a reliable connection.

1. Click the PDU envelope and select **Inbound PDU Details**.

Question:

How are the port and sequence numbers different than before?

Answer: 53, 1025. The source and destination ports are reversed.

1. What is the last section of the **PDU** called? What is the IP address for the name **multiserver.pt.ptu**?

Answer: DNS ANSWER, 192.1681.254.

1. Click the **Outbound PDU Details** tab and scroll down to the last section.

Questions:

What transport layer protocol does email traffic use?

Answer: TCP

1. Are these communications considered to be reliable?

Answer: Yes.

1. Record the SRC PORT, DEST PORT, SEQUENCE NUM, and ACK NUM values. What is the flag field value?

Answer: 1025 (value may vary), 25, 0, 0. SYN

1. Click the TCP PDU envelope and select **Inbound PDU Details**.

Question:

How are the port and sequence numbers different than before?

Answer: 25, 1025, 0, 1. SYN+ACK. The source and destination ports are reversed, and the acknowledgement number is 1.

1. Click the **Outbound** **PDU Details** tab.

Question:

How are the port and sequence numbers different from the previous two results?

Answer: 1025, 25, 1, 1. ACK. The source and destination ports are reversed, and both sequence and acknowledgement numbers are 1. ACK

1. How are the port and sequence numbers different from the previous two **PDU**s?

Answer: 1025, 25, 1, 1. PSH+ACK. The source and destination ports are reversed, and both sequence and acknowledgement numbers are 1.

1. What email protocol is associated with TCP port 25? What protocol is associated with TCP port 110?

ANSWER: SMTP. POP3.