Conestoga College

Course	**INF08965 - Network and Security**
Activity Title	**Internet Traffic Analysis**
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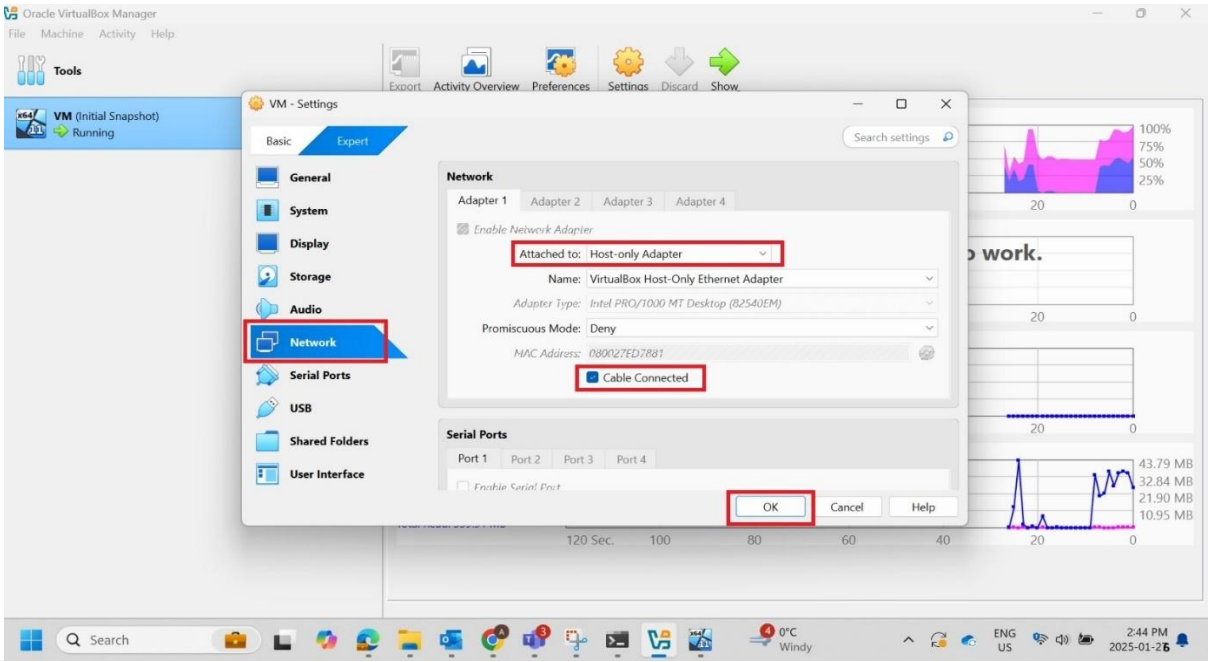
Student Number	**8894858**
Lab performed on (Date):	**27-Jan-2025**

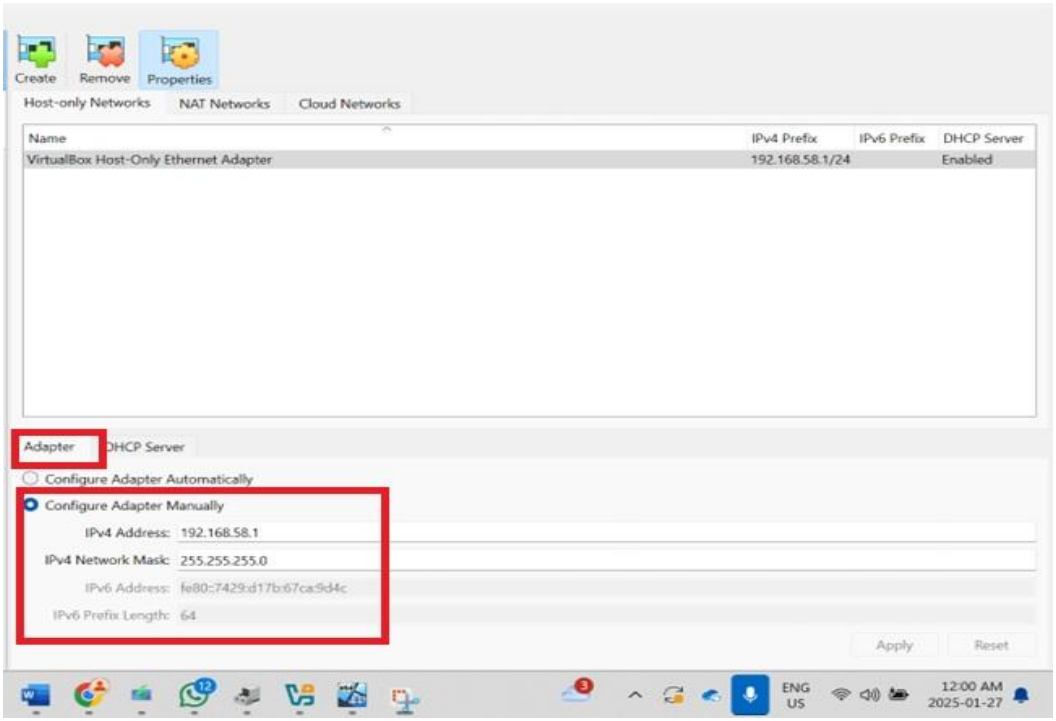
Objectives
• **Analyse network traffic using traffic capture utility like Wireshark.** • **Setup an FTP server in a Virtual Machine** • **For IP addressing in this lab, XY (58) represents the last two digits of your student ID.**

Step 1: Install and Run FTP Server

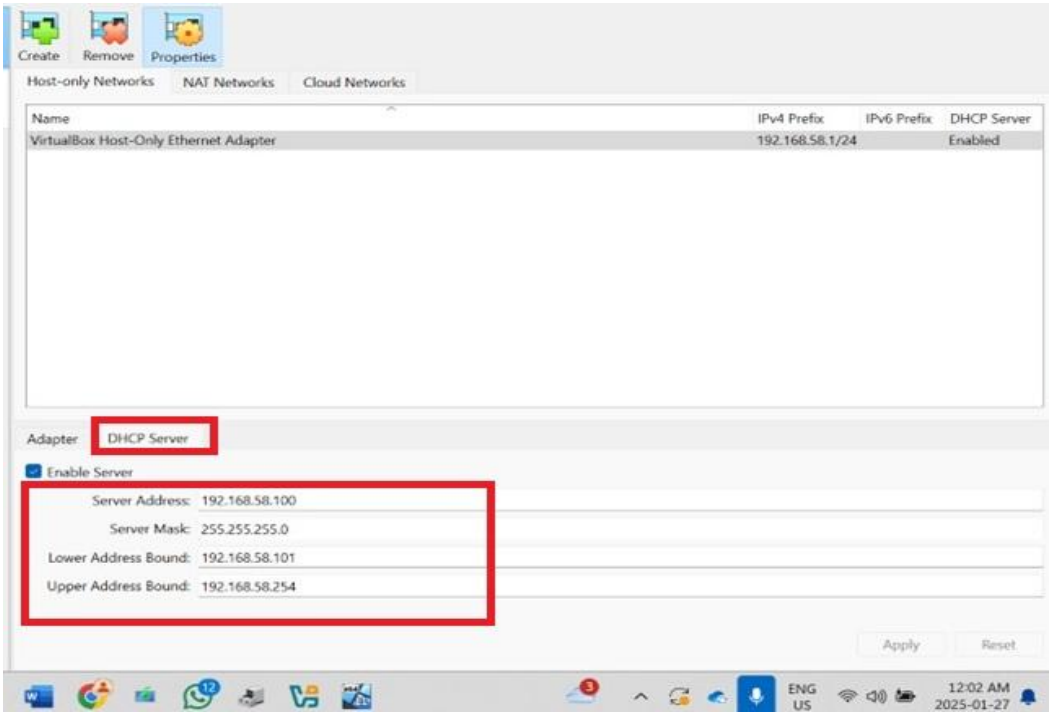
1. **Configure Host-Only Adapter:**
    - Using VirtualBox, created a **Host-Only Ethernet Adapter**.
    - Given the IP address **192.168.58.1** and the network mask **255.255.255.0**.
    - Setup **DHCP** server with IP address **192.168.58.100**
    - Lower/upper bounds: **192.168.58.101 - 192.168.58.254**



- **Change Adapter IP to .58:**

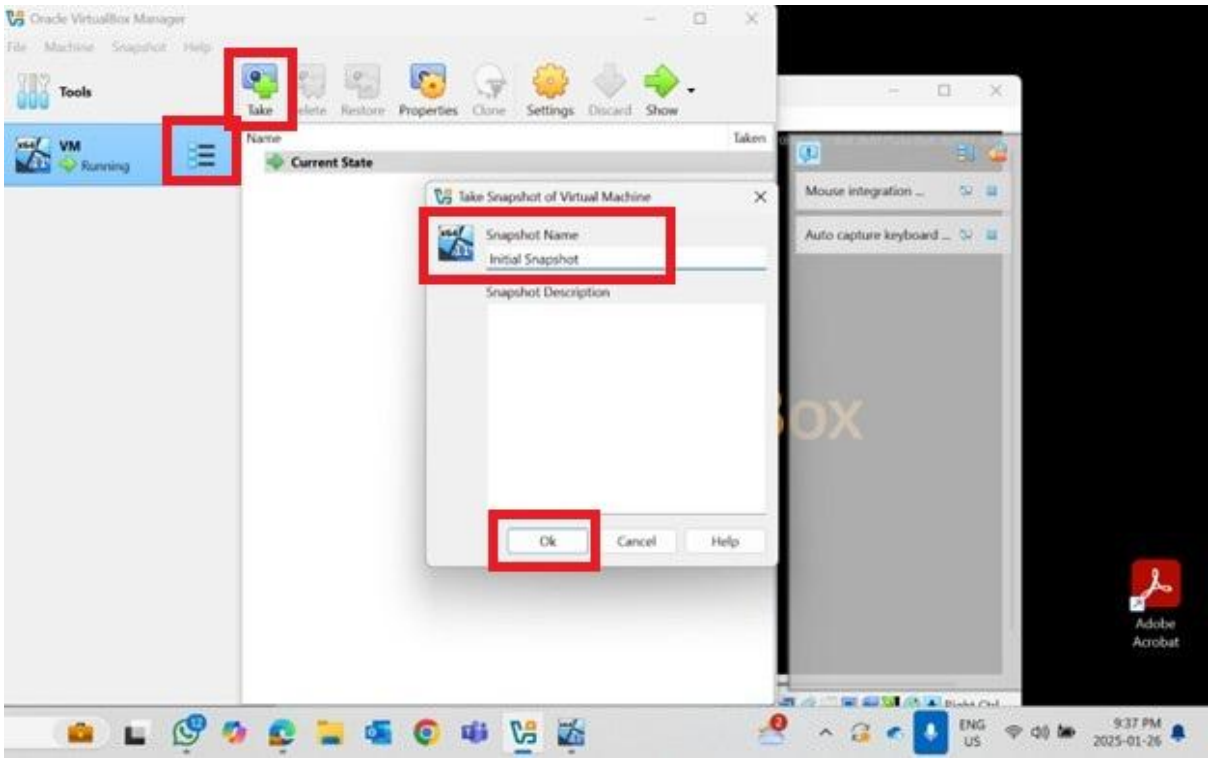


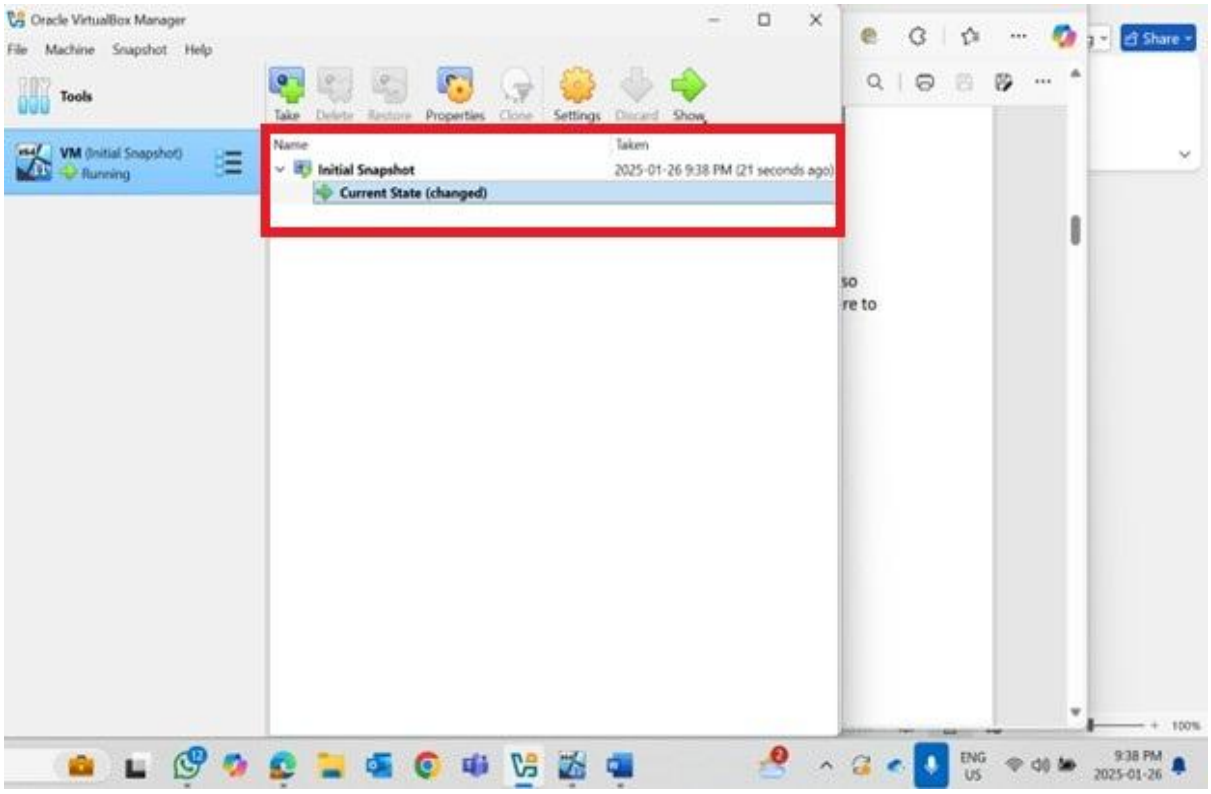
- **Change DHCP Server to .58**



2. **Take a Snapshot:**

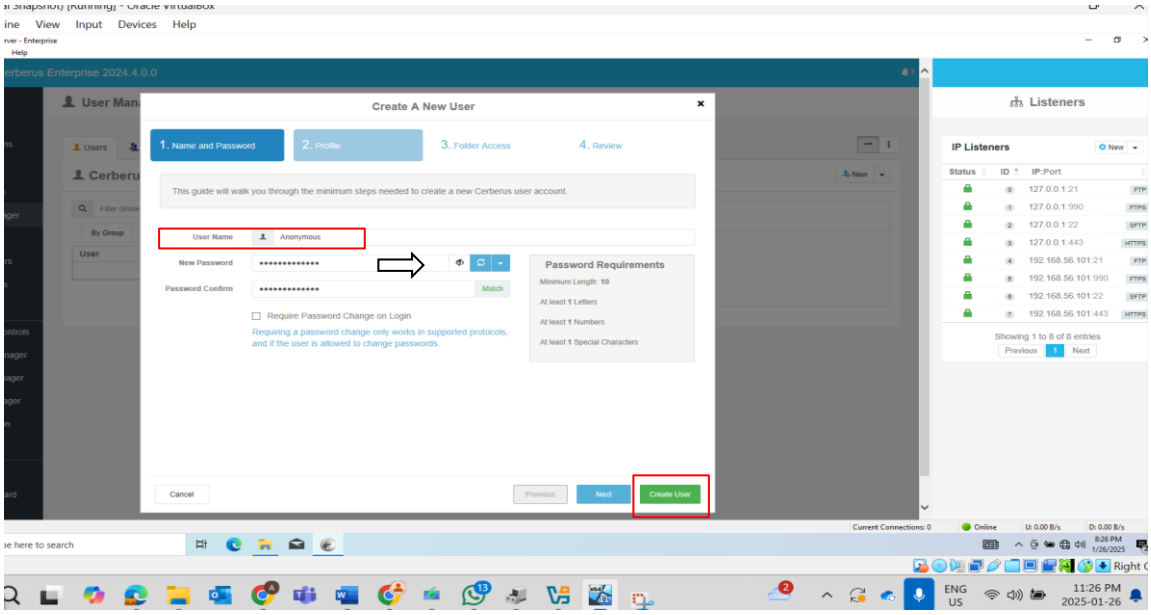
- Created an initial snapshot of the Windows 10 VM for backup.

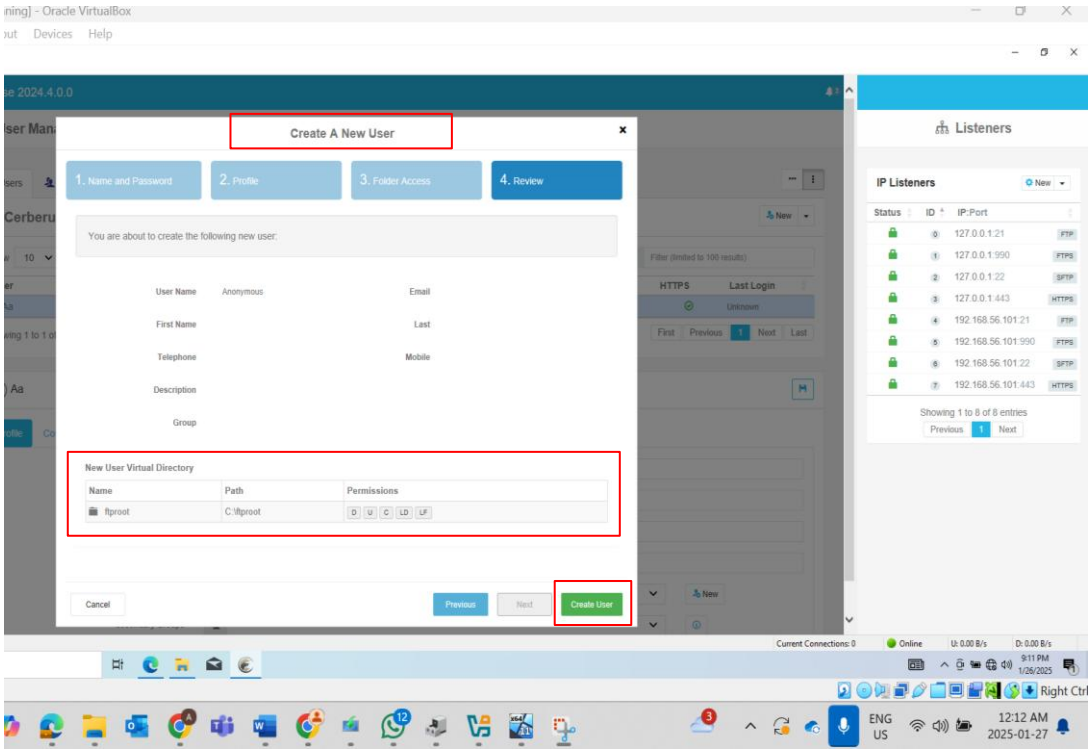




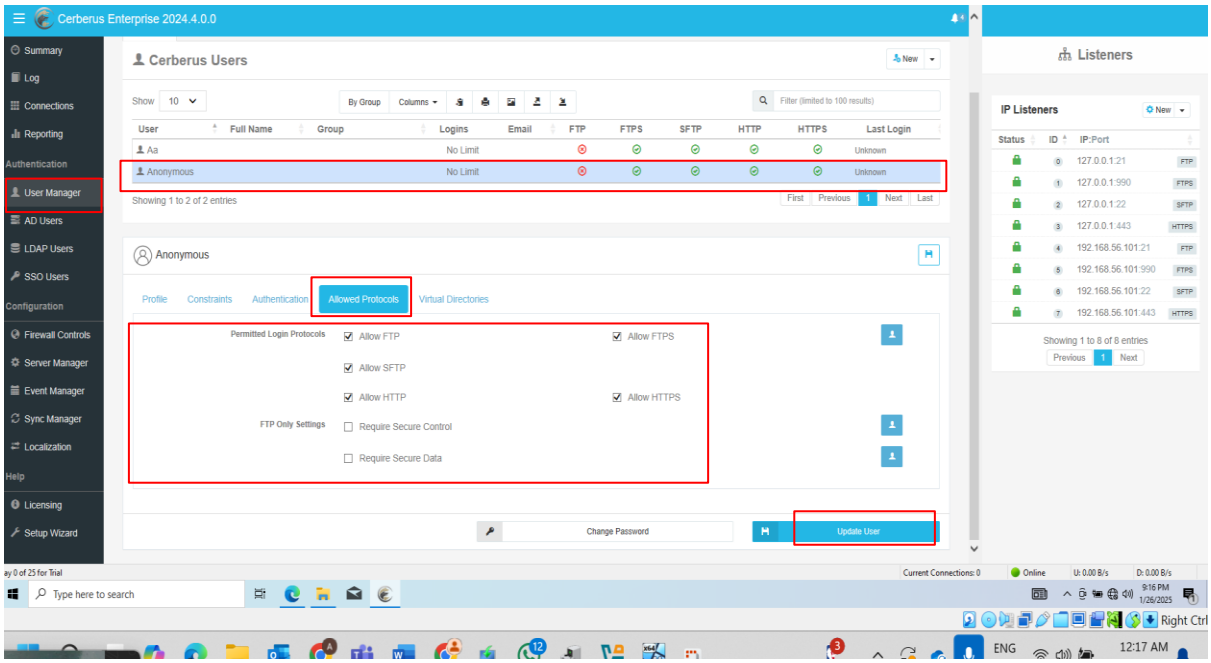
3. **Install Cerberus FTP Server:**
    - Installed Cerberus on the VM with default settings.
    - Allowed unencrypted FTP traffic and disabled SSL/TLS.
    - Set up the Anonymous user with a password.
    - Verified the FTP server IP address.

4. **Create and Test File:**
    - Created a text file named after Cerberus in **C:\ftproot**.

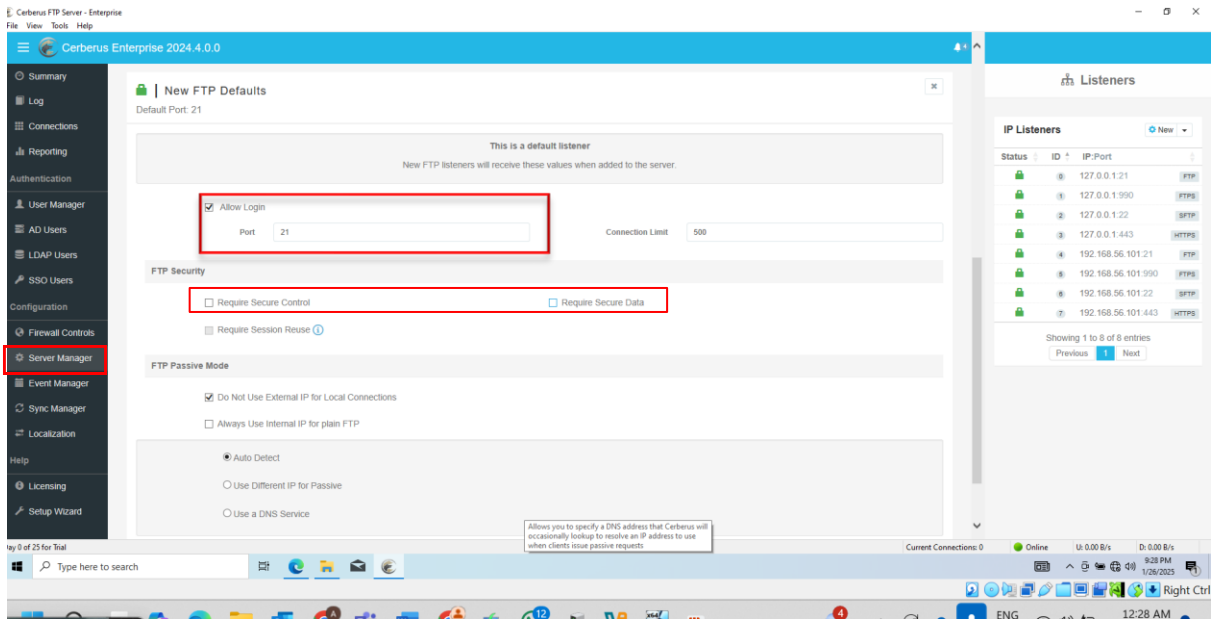




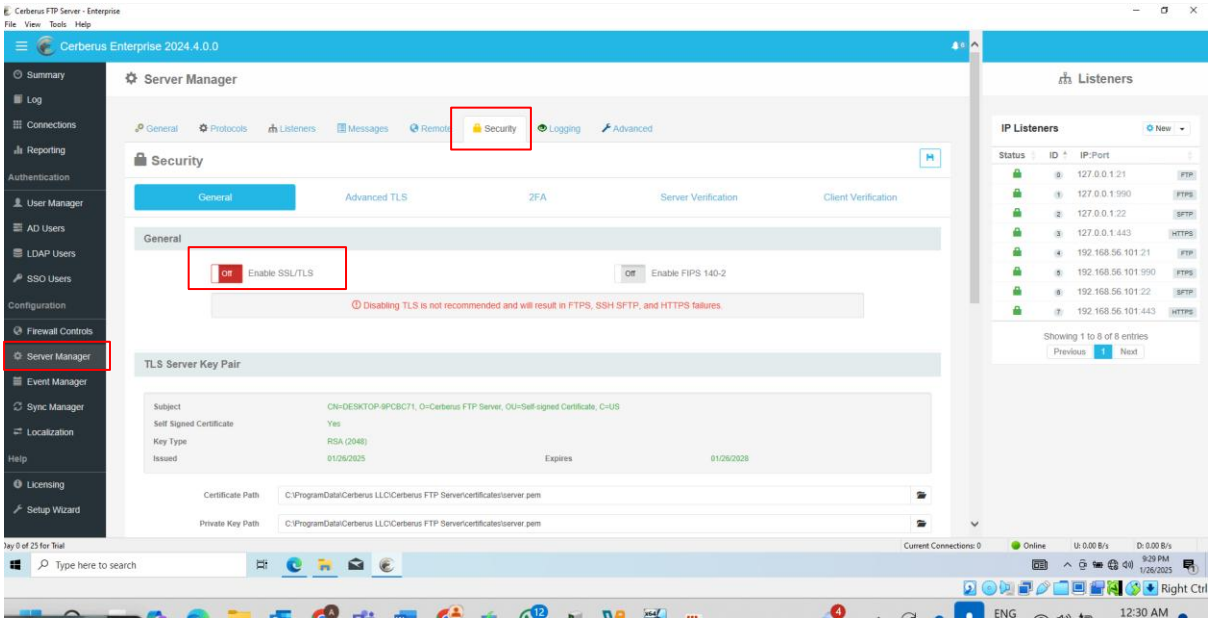
- Checked the box for FTP to not allow unsecured FTP server connections

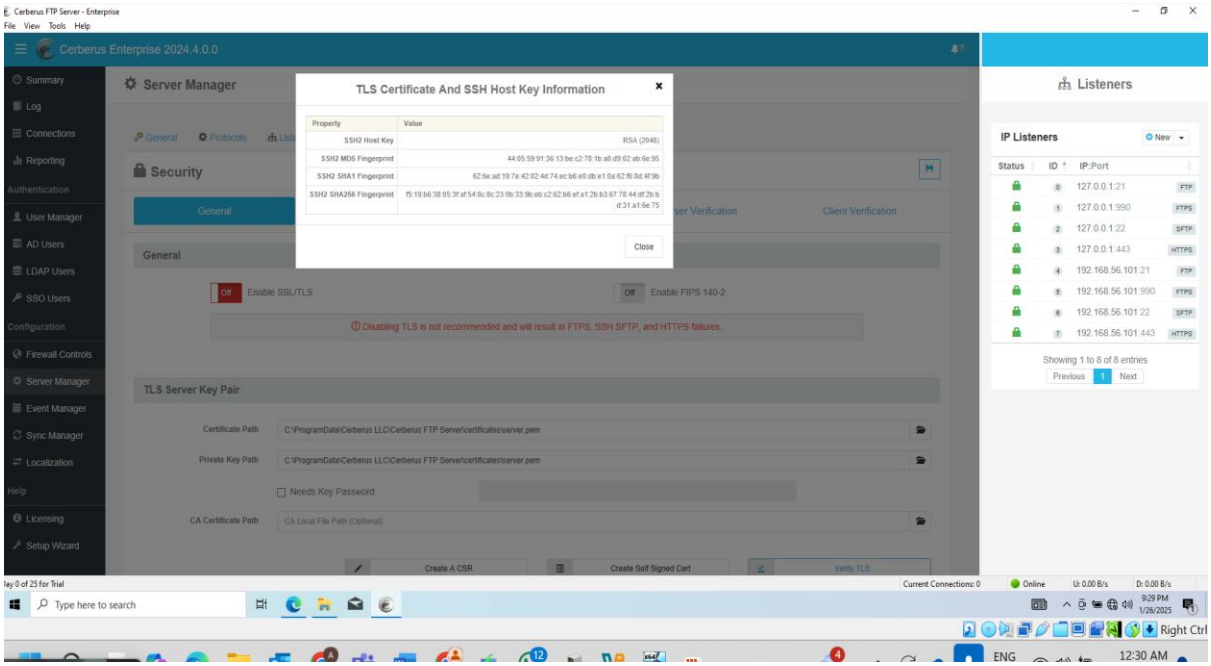


- Disable secure control and data

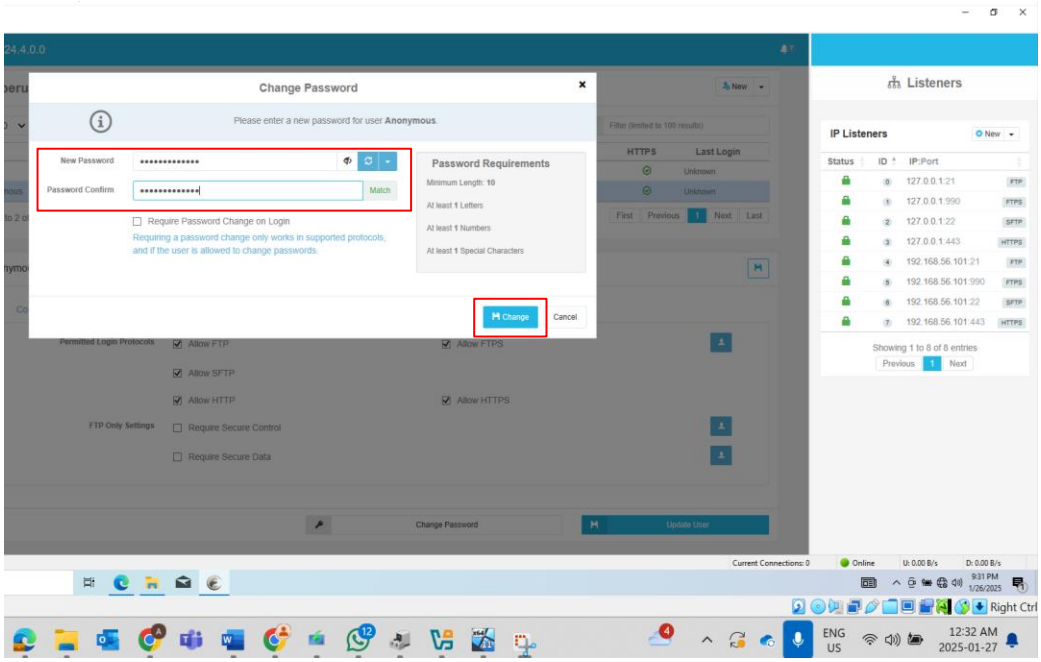


- Disable SSL/TLS

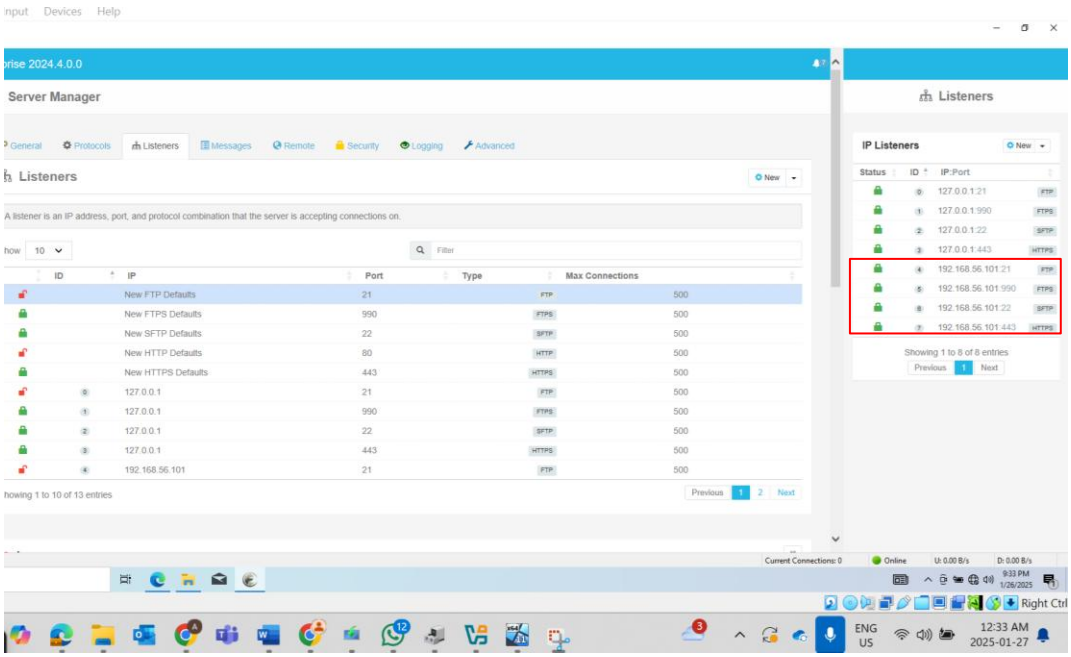




- **Setting password for Anonymous user:**



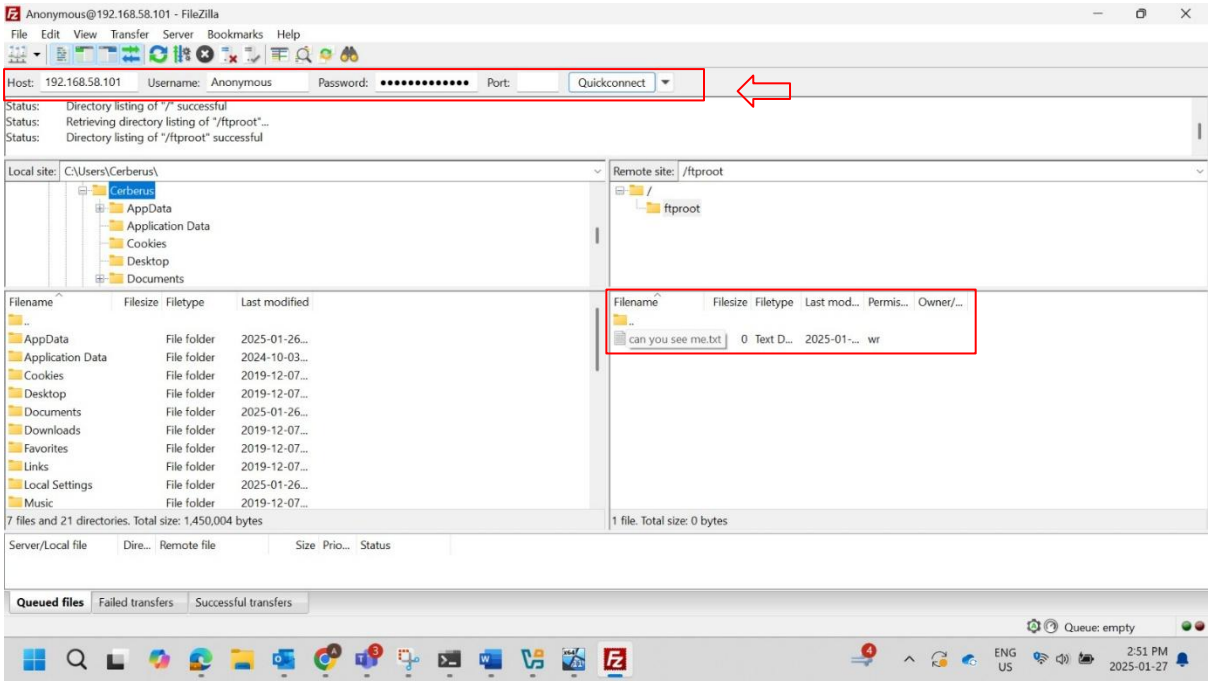
- **IP address for Cerberus FTP Server:**

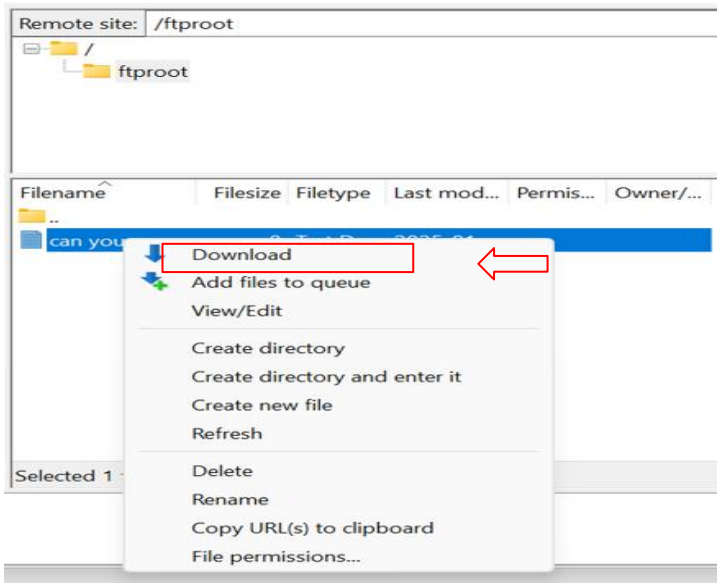


Step 2: Download File and Capture FTP Traffic

1. **Install FileZilla Client:**
    - Installed FileZilla Client on the host machine.
2. **Capture FTP Traffic with Wireshark:**
    - Started Wireshark on the host and captured traffic on the Host-Only Network.
    - Used FileZilla to connect to the FTP server, login, and download the test file.
    - Verified server logs in Cerberus.

- **Downloading file hosted on the FTP Server using FileZilla**:

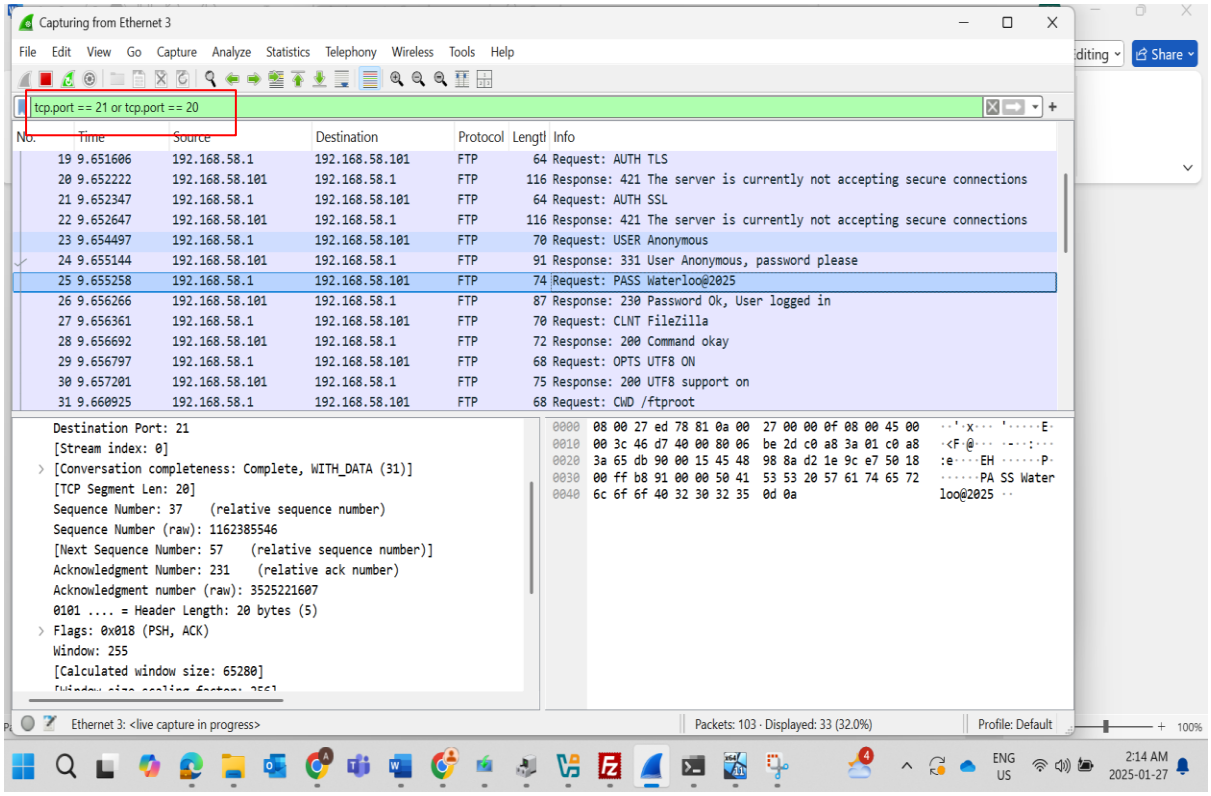




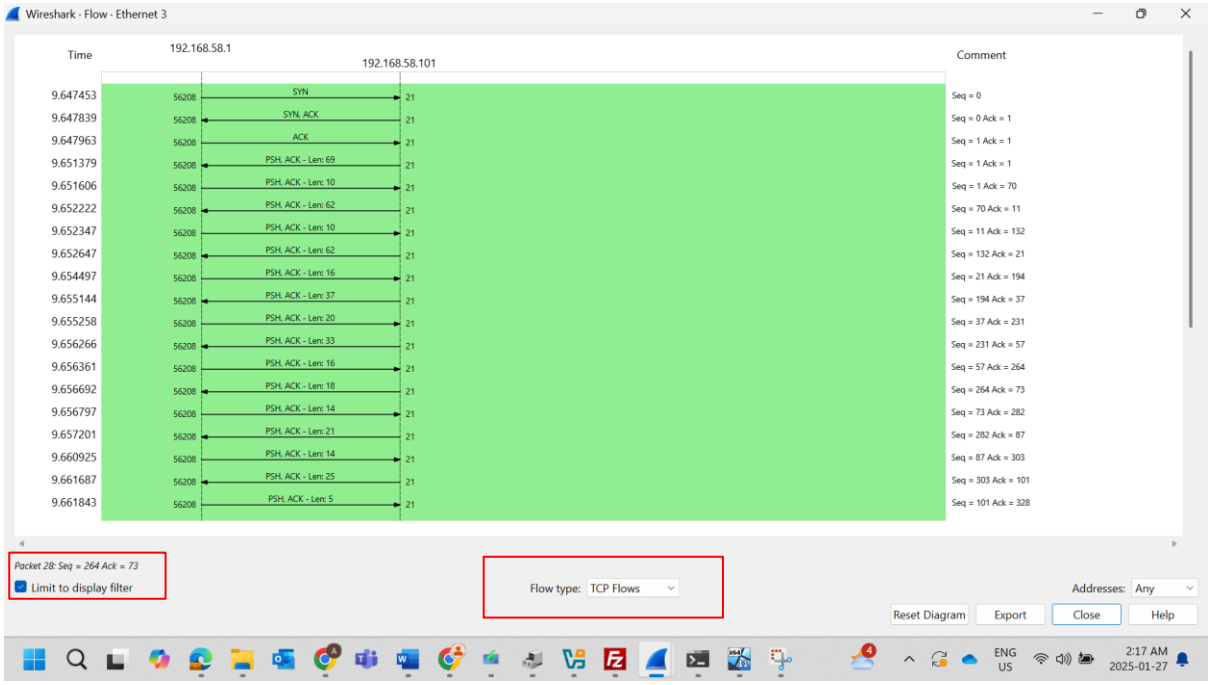
3. **Analyze Wireshark Data:**

- Applied tcp.port == 21 or tcp.port == 20 to display FTP traffic.
- Captured clear-text username and password during login.
- Verified successful 3-way handshakes (SYN, SYN-ACK, ACK).
- Observed file transfer in plain text in captured packets.
- Visualized communication and handshakes between client and server.

Output #1: Apply filter to view only FTP related traffic



Output #2: Flow graph in Wireshark



Output#3: Wireshark Capture of File Transfer in Clear Text