Analyzing File Upload with Wireshark

Prerequisites

Install Wireshark from [Wireshark's official website](Wireshark · Go Deep)

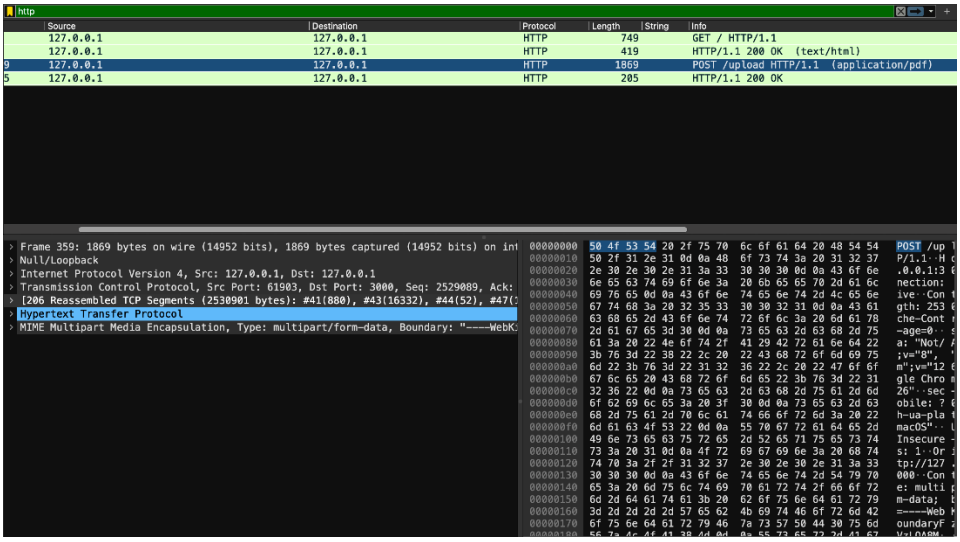
Steps to Capture File Upload

1. Start Wireshark and Capture Traffic

- Open Wireshark.
- Select the network interface that the file upload will occur over.(if you have started the server in your own machine then select the loopback interface)
- Start capturing traffic by clicking the blue shark fin icon.

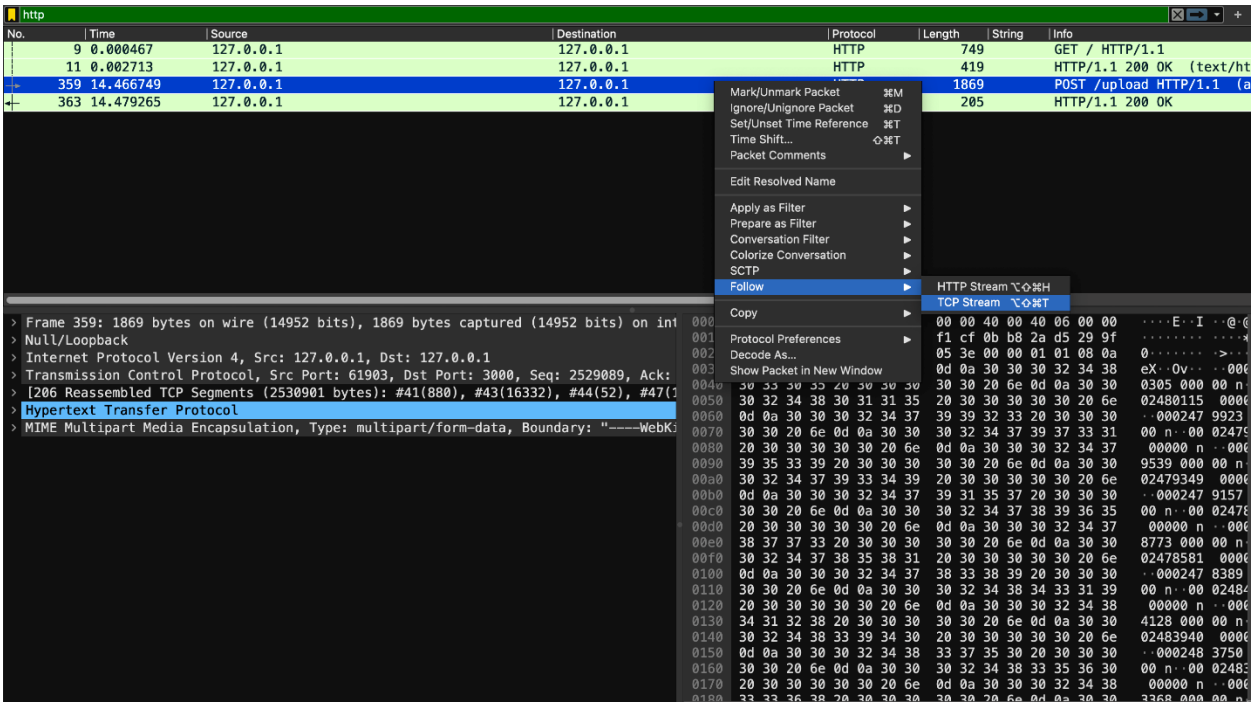
2. Filter HTTP Traffic

- In the filter bar, type `http` to filter HTTP traffic.
- Press Enter to apply the filter.



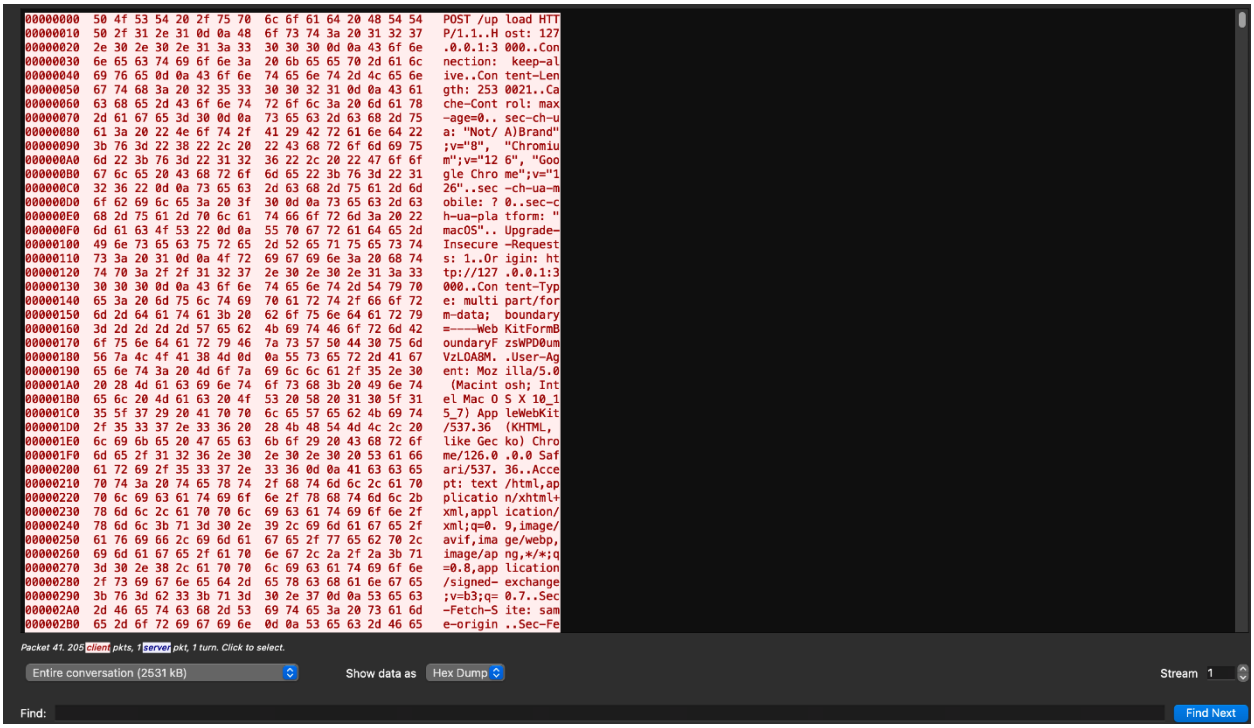
3. Locate the File Upload Request

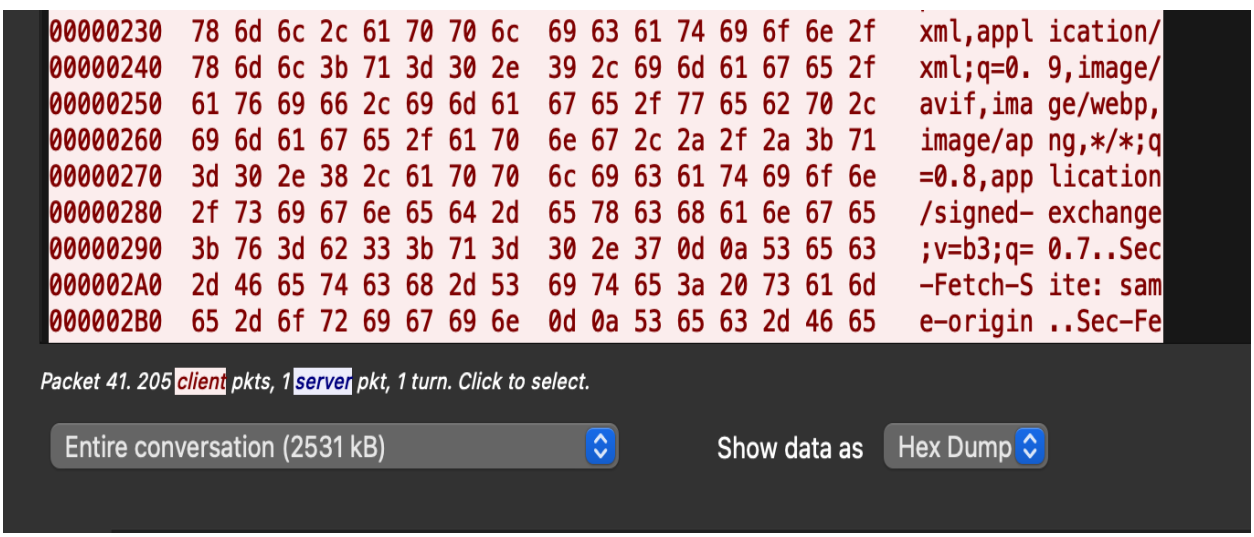
- Identify the HTTP POST request that initiates the file upload.
- The POST request will likely have a large payload if you are uploading a file.



4. Follow the TCP Stream

- Right click on the POST request packet.
- Select "Follow" > "TCP Stream".

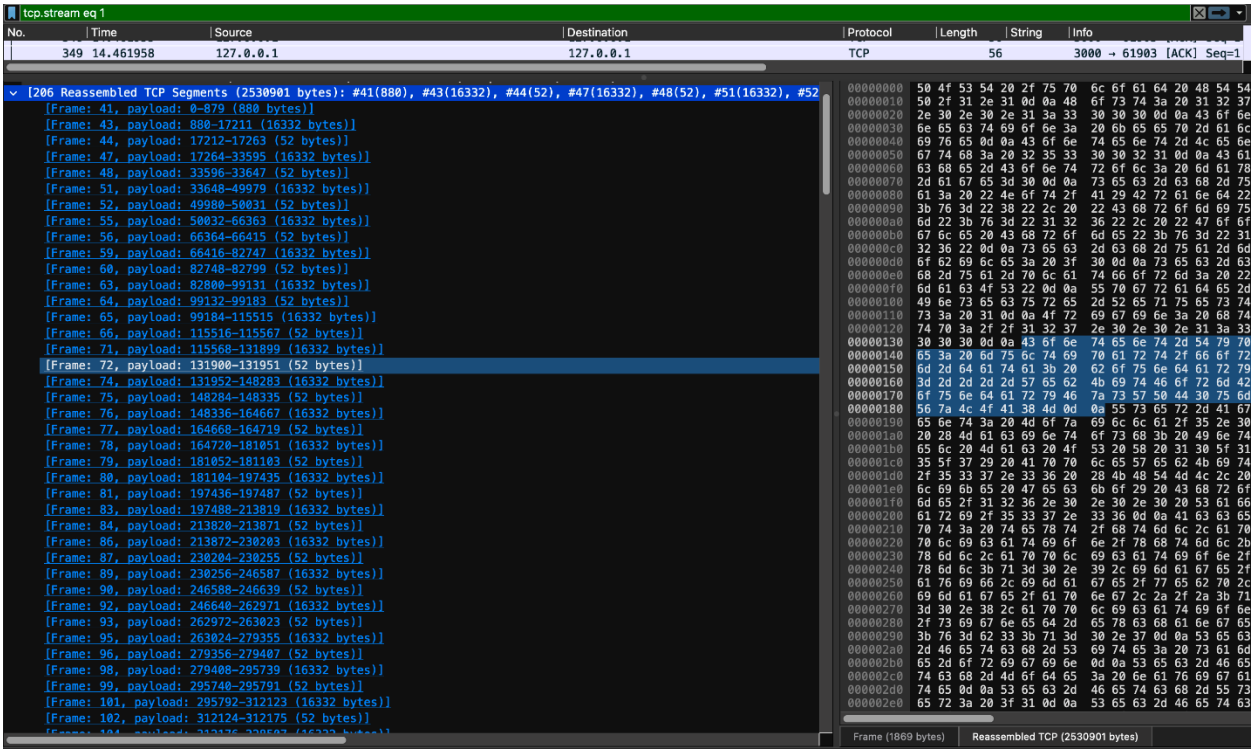




- This will display all the packets exchanged between the client and the server during the file upload.
- Below we can see that there are altogether 205 client packets and 1 server packet.

5. Analyze the TCP Segments

- In the TCP stream view, you can see all the TCP segments exchanged.
- You can view different TCP segments length and starting and ending bytes transferred from the TCP layer in the window pane.
- Observe the sequence numbers and the length of each segment to understand how the file was divided.



- Close the TCP stream view to return to the main Wireshark window.
- Use the filter `tcp.stream eq <stream_number>` (replace `<stream_number>` with the actual stream number found in the TCP stream view) to isolate the specific TCP stream for the file upload.
- Count the number of segments (packets) in this stream.

Summary

By following these steps, you can capture and analyze how a file is uploaded over the network, including how it is divided into TCP segments. This is useful for performance analysis and troubleshooting.