Network Data Collection for 5G Research

To start data collection please visit https://www.wireshark.org/download.html and follow the steps below to download, install and capture your network traffic depending on your operating system.

Installation

A. Windows

1. Select Windows x64 Installer
2. Open the downloaded file
3. Click Yes on the Prompt
4. Click Next
5. Click Noted
6. Click Next
7. **Select the Install Npcap option**
8. No need for USBCap, leave it unchecked
9. For the Npcap prompt select 'I Agree'
10. **On the next menu, check the Support raw 802.11 traffic box**
11. Click Install
12. Click Next
13. Finish the NPCAP installation
14. Click Next
15. Finish the Wireshark installation

B. Mac

1. Select macOS Intel/ARM based on your Mac's model (Models before Nov 2020 are Intel, more recent models are ARM)
2. Open the downloaded file
3. Drag the Wirshark Icon into the Applications folder as shown in Figure 1.
4. **Double click on Install ChmodBPF and follow installation instructions**
5. **Double click on Add Wireshark to system path.pkg and follow installation instructions**
6. The first time you open Wireshark it will give you a message asking if you wish to open the application downloaded from the Internet. Please select Open.
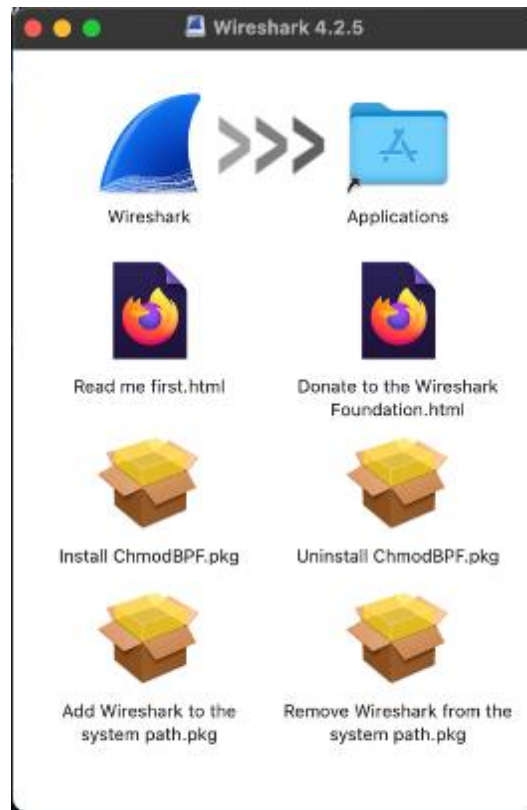
Figure 1 - Wireshark Installation on Mac

Running Wireshark

1. Start the Wireshark application
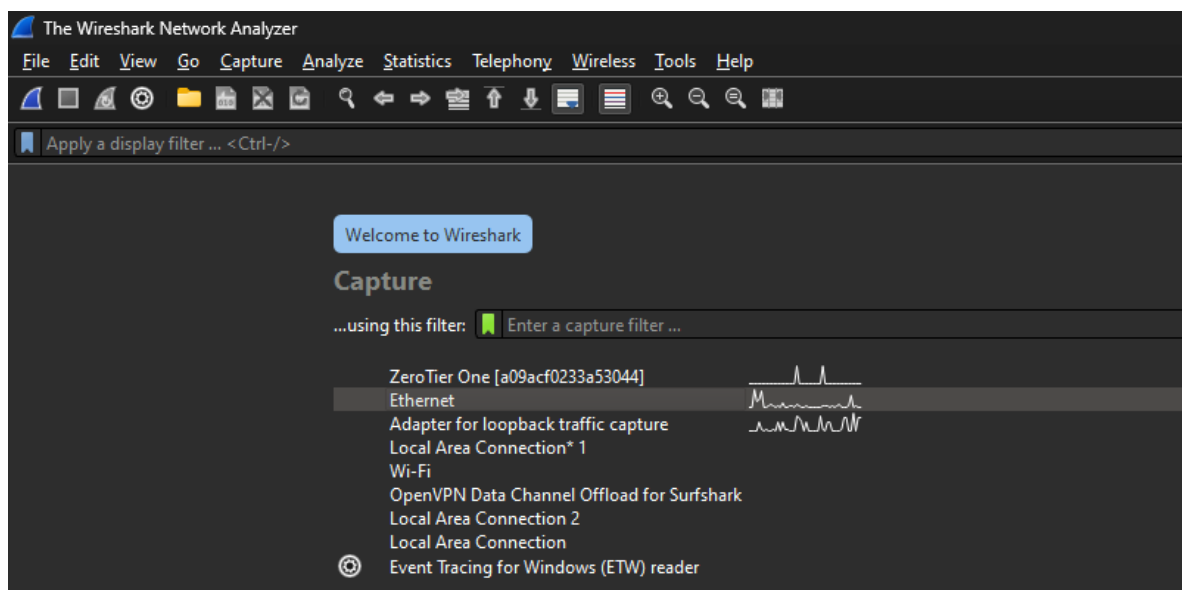2. Select Ethernet or Wi-Fi, depending on your actual connection as shown in Figure 2.

Figure 2- Adapter Selection

3. Change the time format from View -> Time Display Format -> Date and Time of Day (1970-01-01 01:02:03.123456) as shown in Figure 3.
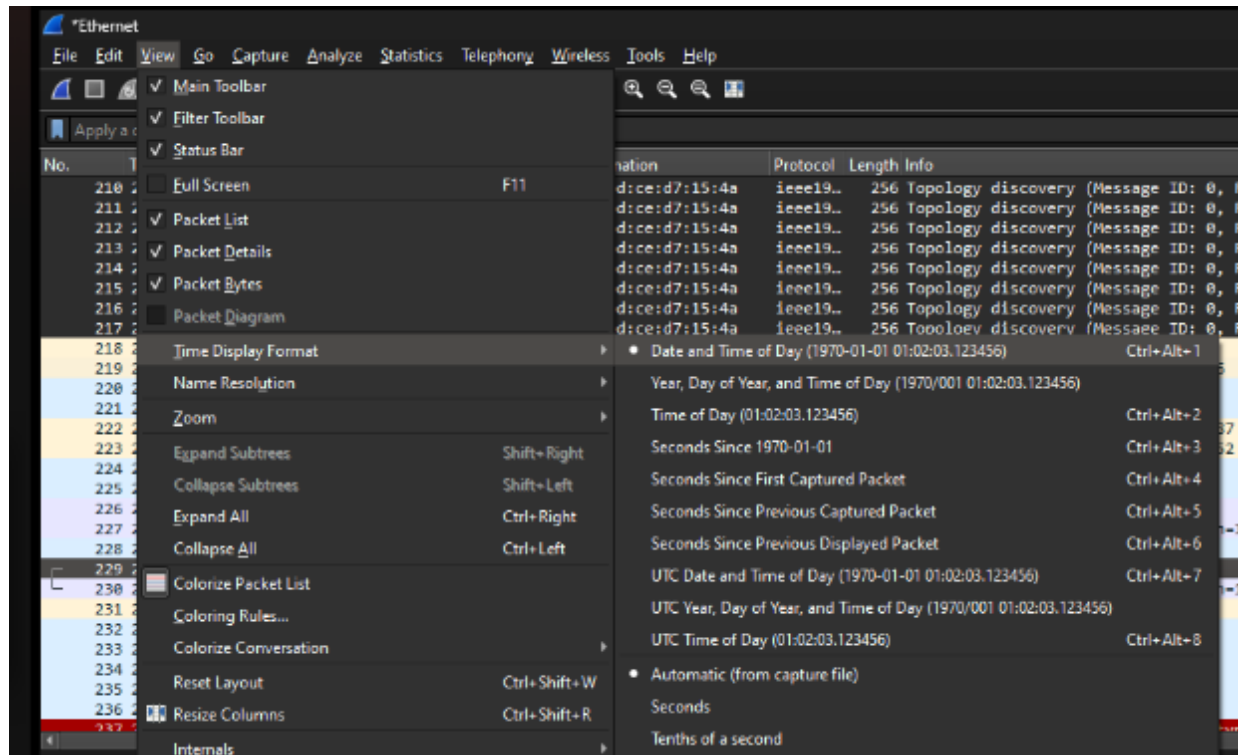

Figure 3 - Time Display Format

Capturing Data

1. Click on the Blue Shark Fin button in the top left corner to start capturing network traffic as seen in Figure 4.
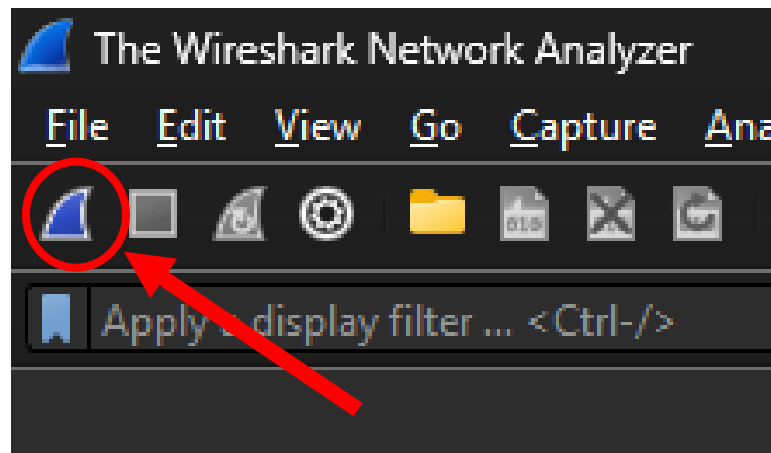

Figure 4 - Start Capture Button

2. Your screen should look similar to Figure 5 as data is being captured.
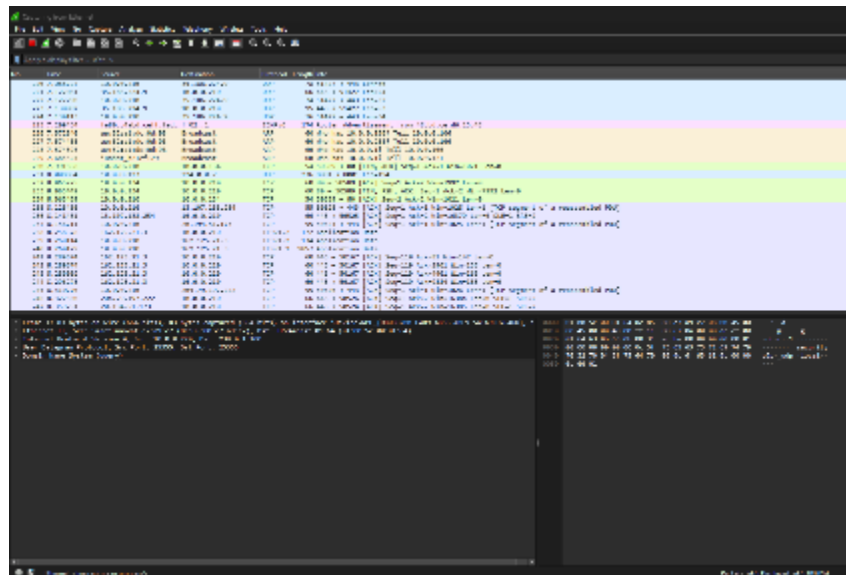

Figure 5 - Captured Packets

3. Please play at least a 3-hour video on one of the following platforms: Netflix, YouTube or Prime Video. For YouTube, please try to select a quality of at least 1080p or higher. If you are too busy during the day, you may play a video overnight and stop it in the morning.

4. When the video is complete, click the stop button (red square next to the fin) as shown in Figure 6.
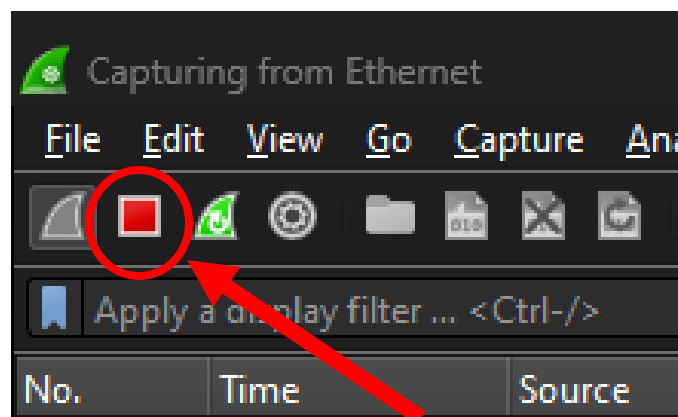

Figure 6 - Stop Capture Button

Saving Data File

Saving the raw PCAP file takes a lot of storage space. A better alternative would be to only save a **CSV file**. To do so please follow these steps:
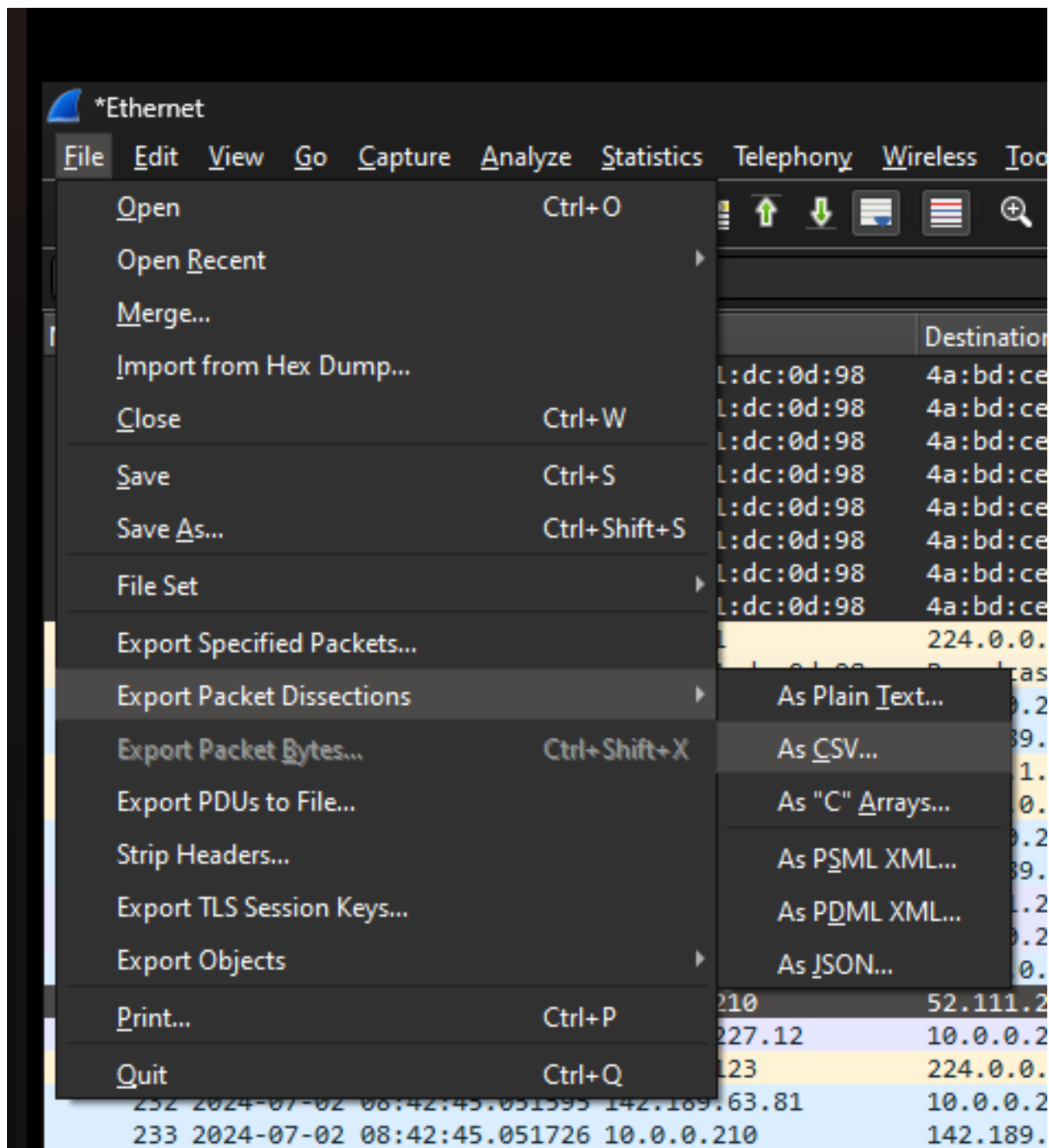
1. Go to File -> Export Packet Dissections -> As CSV... as shown in Figure 7.

Figure 7 - Exporting CSV File