

Computer Networks Lab (CS 652)

Assignment – 2

Assigned date: 18-Jan-2022

Submission date: 25-Jan-2022

The aim of this assignment is to make you familiar with a basic TCP/IP packet capturing (sniffing) tool called *tcpdump*.

Read the man pages of *tcpdump* thoroughly to understand the different options/filters and work out the following laboratory experiments. Prepare a report to give a summary of your findings:

- (a) Check the version of the *tcpdump* and the *libpcap* utilities. Also find the number of interfaces available with your computer. Switch the network of *eth0/eth1* (or the ethernet interface name as appeared) to promiscuous mode.
- (b) Write the *tcpdump* command to capture 20 packets by listening to the promiscuous mode interface of your host and save the result as *.pcap file (both with and without *-n* option).
- (c) Read the above file and identify the different fields present in TCP/IP packets captured by *tcpdump*.
- (d) Extract packet arrival time, source IP address, destination IP address and port.
- (e) Extract source MAC address and destination MAC addresses.
- (f) Get the inter-arrival times while capturing packets.
- (g) Use *tcpdump* to capture HTTP/HTTPS request and reply from www.google.com. Also print the packet content in ASCII format.
- (h) For each command, use *tcpdump* to capture the associated packets, and explain the different fields of each request and reply: (i) *ping* (ii) *wget* (iii) *traceroute*.
- (i) Write the *tcpdump* command that captures packets containing TCP packets with a specific IP address as (i) both source and destination, (ii) only source, and (iii) only destination.
- (j) Write the *tcpdump* command that captures packets containing ICMP packets between two hosts with different IP addresses.
- (k) Write the *tcpdump* command to capture packets containing SSH request and reply between two specific IP addresses (hint: use port number 22 for SSH).