Unit 2 - NetFlow Exercice

Exercise 1

1. Install nfdump and softflowd

   > sudo apt install nfdump softflowd

2. Set up NetFlow collector using '`nfcapd`'. The collector should listen to NetFlow data at `127.0.0.1:9995`

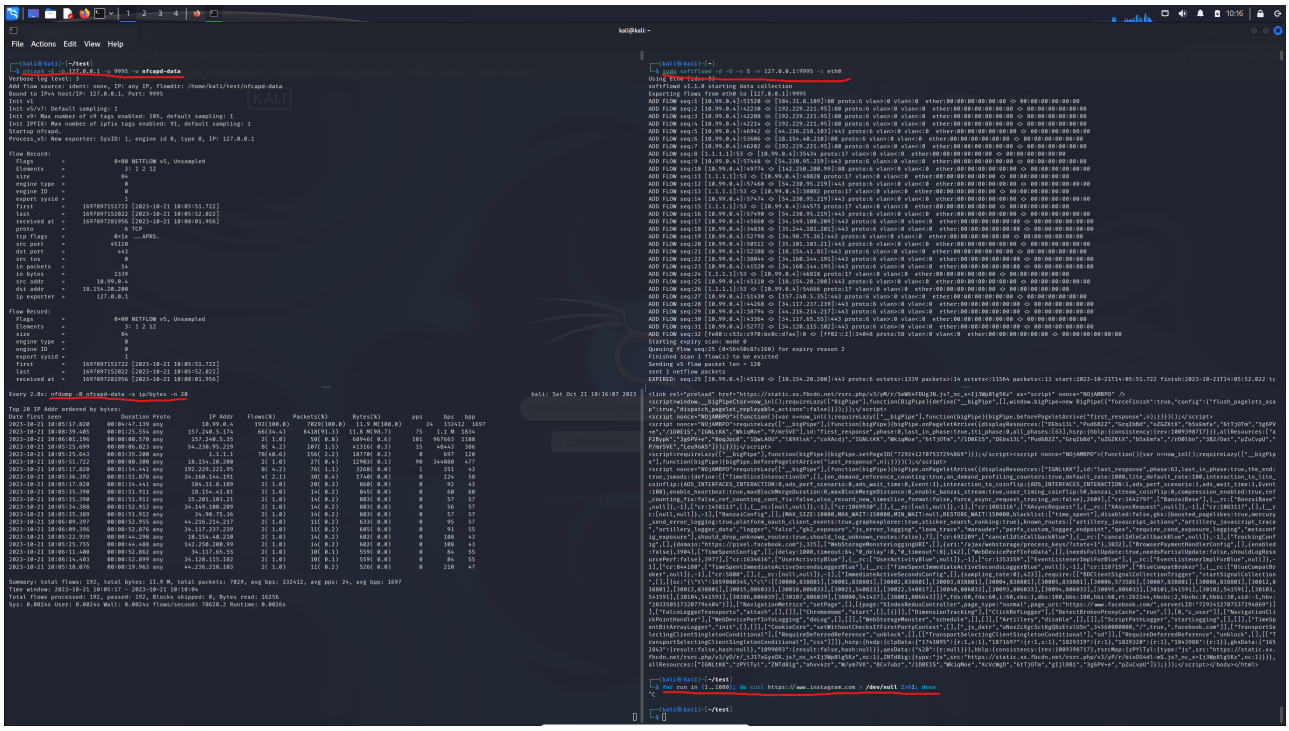
   > `nfcapd` is installed with `nfdump` installation so it's already on our system. With `man nfcapd` we can notice that the option `-p` let's you select the port number, the option `-b` specifies the listening address and the option `-w` sets the output directory to store the flows:
   > '`nfcapd -p 9995 -l 127.0.0.1 -w nfcapd-data`' is the desired command, where 'nfcapd-data' is a folder in the cwd

3. Set up NetFlow exporter using '`softflowd`'

   > `sudo softflowd -d -D -v 5 -n 127.0.0.1:9995 -i eth0`
   > Flags:
   > `-n`: host:port
   > `-i`: interface
   > `-D`: debug mode (this implies `-d`)
   > `-d`: do not fork and deamonise (redundant cause of `-D`)
   > `-v`: NetFlow version for exporting the data

4. Use '`nfdump`' to inspect the flows collected and show top 20 IPaddr by bytes.

   > `nfdump -R nfcapd-data -s ip/bytes -n 20`
   > Flags:
   > `-R`: filelist
   > `-s`: statistic options
   > `-n`: number to be printed



5. Configure nfcapd/softflowd to use a sampling rate of 1/10

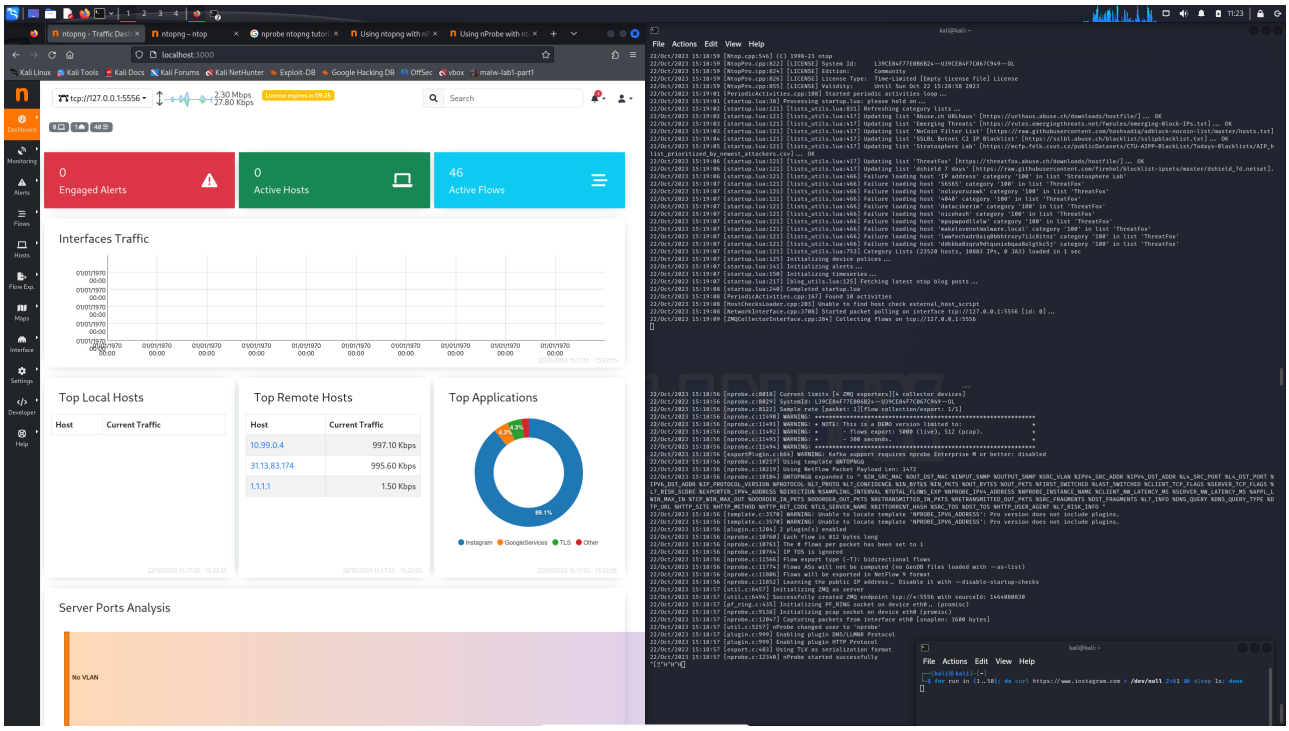
> To use 'nfcapd' at a sampling rate of 1/10 just add `-s 10`:
> `nfcapd -p 9995 -l 127.0.0.1 -w nfcapd-data -s 10`
> To set 'softflowd' at the same sampling rate, add the same flag and samplign rate:
> `sudo softflowd -d -D -v 5 -n 127.0.0.1:9995 -i eth0 -s 10`

6. Install NfSen and use it to display NetFlow data graphically

Exercice 2

1. Repeat exercise 1 but now using nprobe as flow collector (instead of ncapd) and ntopng as (a graphical) flow analyzer (instead of nfdump/nfsen)

> Opted to install it via docker:
> First we start nprobe, as ntopng depends on it. `docker run -it --net=host ntop/nprobe.dev --ntopng "tcp://*:5556" -i eth0 -n none -T "@NTOPNG@"`
> Docker flags:
> `-it`: Run interactively and attached to the TTY
> `--net=host`: Tells docker to use host's network inside the container
> Container flags:
> `--ntopng "tcp://*:5556"`: Opens communication with ntopng at this TCP port
> `-i eth0`: Network interface for nprobe to capture traffic from
> `-n none`: Capture moded, none indicates nprobe to act only as a collector
> `-T "@NTOPNG@"`: Tells nprobe the minimum fields it has to expord in order to ensure interoperability with ntopng
> Then, we can run ntopng.
> `docker run -it --net=host ntop/ntopng.dev -i "tcp://127.0.0.1:5556"`
> Container flags:
> `-i "tcp://127.0.0.1:5556"`: Sets input for ntopng



2. Repeat Exercise 2 but now reading the data directly from the NIC in promiscuous mode

> Now we just need `ntopng` in promiscuous mode `docker run -it --net=host ntop/ntopng.dev -i eth0` It will use `pcap` to read packets from `eth0`