MAWLANA BHASHANI SCIENCE AND TECHNOLOY UNIVERSITY

Santosh,Tangail – 1902

Course Title: Computer Networks Lab

Submitted by,

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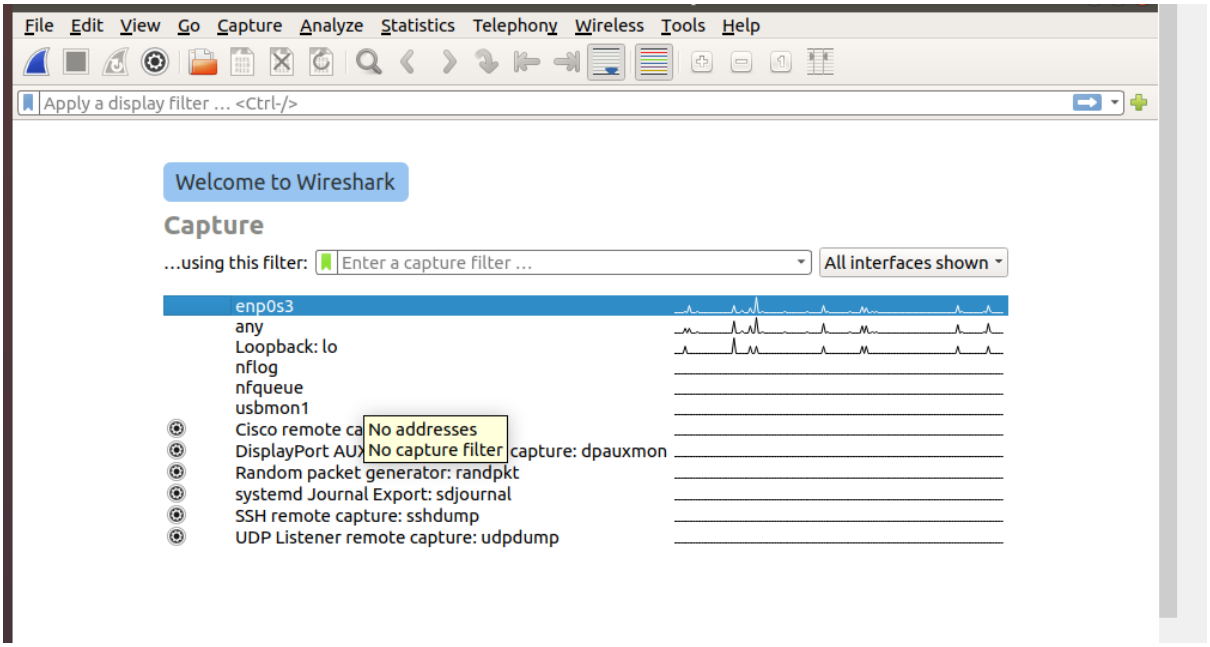
Wireshark : Wireshark is a free and open-source packet analyzer. It is used for network troubleshooting, analysis, software and communications protocol development, and education. Originally named Ethereal, the project was renamed Wireshark in May 2006 due to trademark issues.

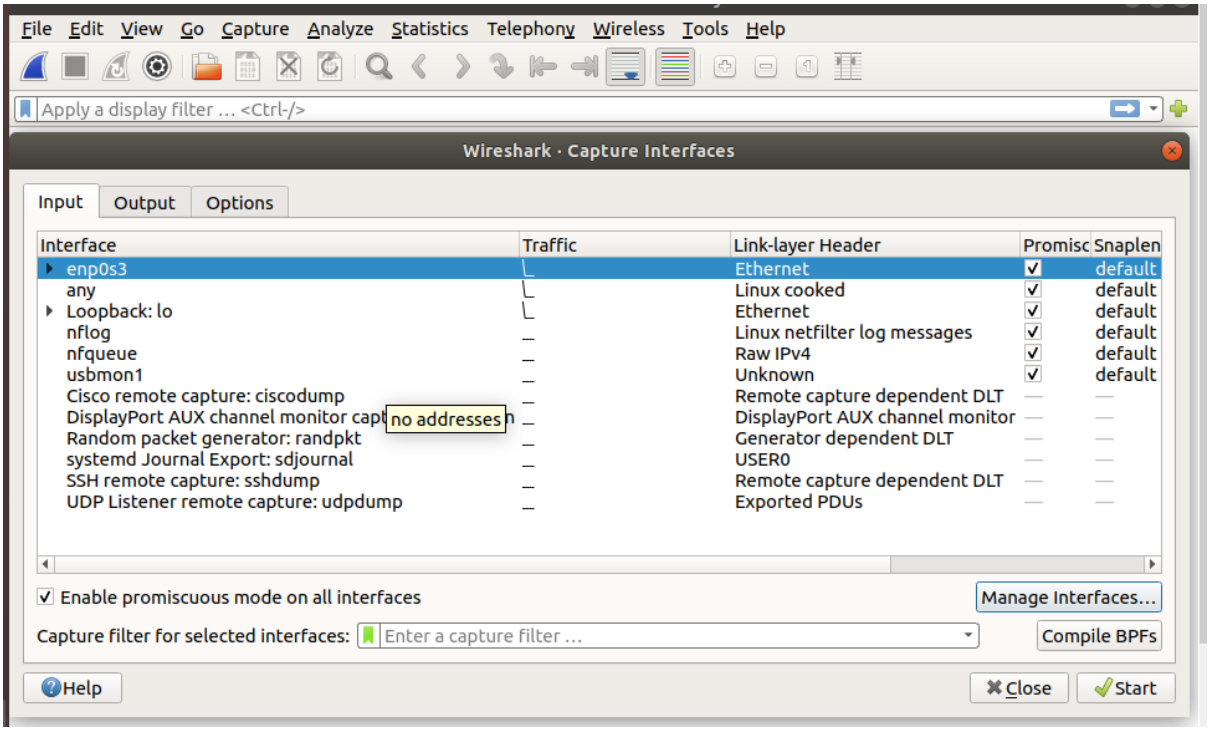
Installation: To install wireshark we have to write the following command

```
nadira@nadira-VirtualBox:~$ sudo apt-get install wireshark
[sudo] password for nadira:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  efibootmgr libfwup1 libwayland-egl1-mesa
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  gir1.2-nma-1.0 libc-ares2 libdouble-conversion1 liblua5.2-0 libmaxminddb0
  libnl-route-3-200 libqgsttools-p1 libqt5core5a libqt5dbus5 libqt5gui5
  libqt5multimedia5 libqt5multimedia5-plugins libqt5multimediawidgets5
  libqt5network5 libqt5opengl5 libqt5printsupport5 libqt5svg5 libqt5widgets5
  libsmi2ldbl libsnappy1v5 libspandsp2 libssh-gcrypt-4 libwireshark-data
  libwireshark13 libwiretap10 libwsutil11 libxcb-xinerama0
  qt5-gtk-platformtheme qttranslations5-l10n wireshark-common wireshark-qt
Suggested packages:
  mmdb-bin qt5-image-formats-plugins qtwayland5 snmp-mibs-downloader
  geoipupdate geoip-database-extra libjs-leaflet libjs-leaflet.markercluster
  wireshark-doc
The following NEW packages will be installed:
  libc-ares2 libdouble-conversion1 liblua5.2-0 libmaxminddb0 libnl-route-3-200
  libqgsttools-p1 libqt5core5a libqt5dbus5 libqt5gui5 libqt5multimedia5
  libqt5multimedia5-plugins libqt5multimediawidgets5 libqt5network5
  libqt5opengl5 libqt5printsupport5 libqt5svg5 libqt5widgets5 libsmi2ldbl
  libsnappy1v5 libspandsp2 libssh-gcrypt-4 libwireshark-data libwireshark13
  libwiretap10 libwsutil11 libxcb-xinerama0 qt5-gtk-platformtheme
  qttranslations5-l10n wireshark wireshark-common wireshark-qt
The following packages will be upgraded:
  gir1.2-nma-1.0
1 upgraded, 31 newly installed, 0 to remove and 301 not upgraded.
3 not fully installed or removed.
```

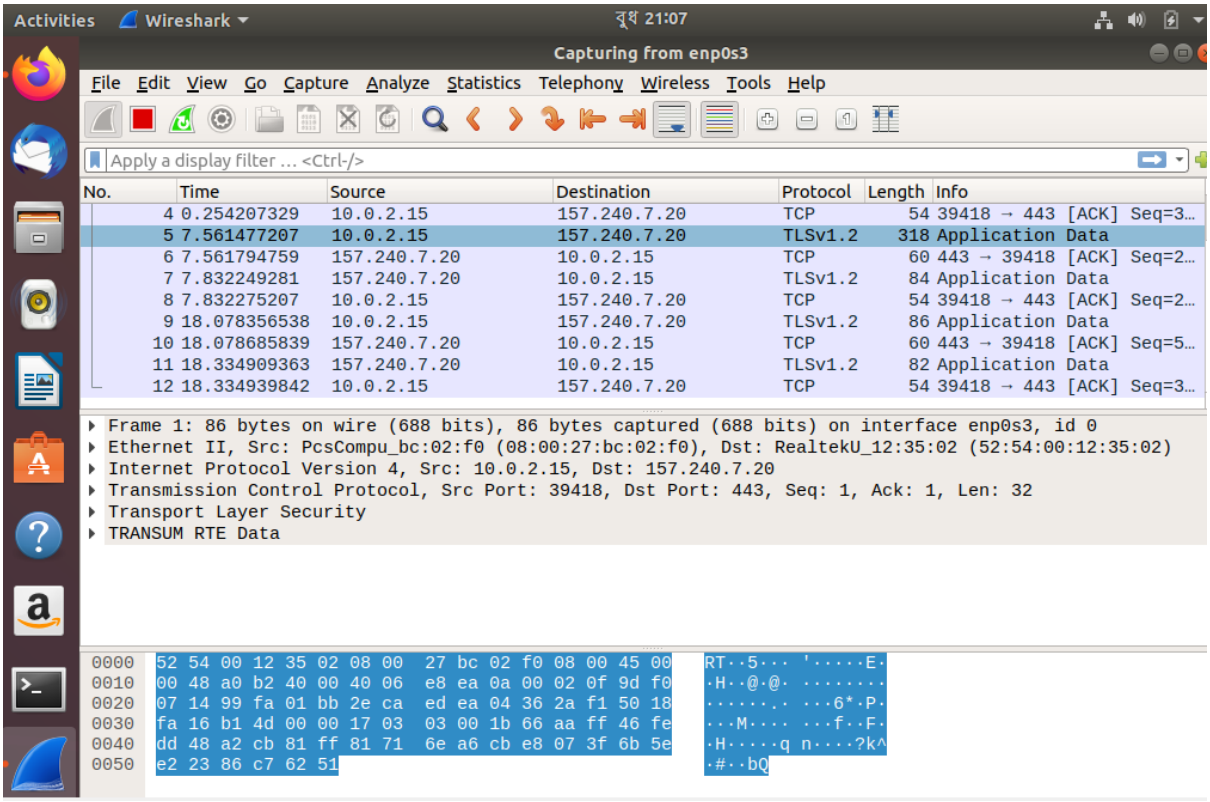
Use of Wireshark:



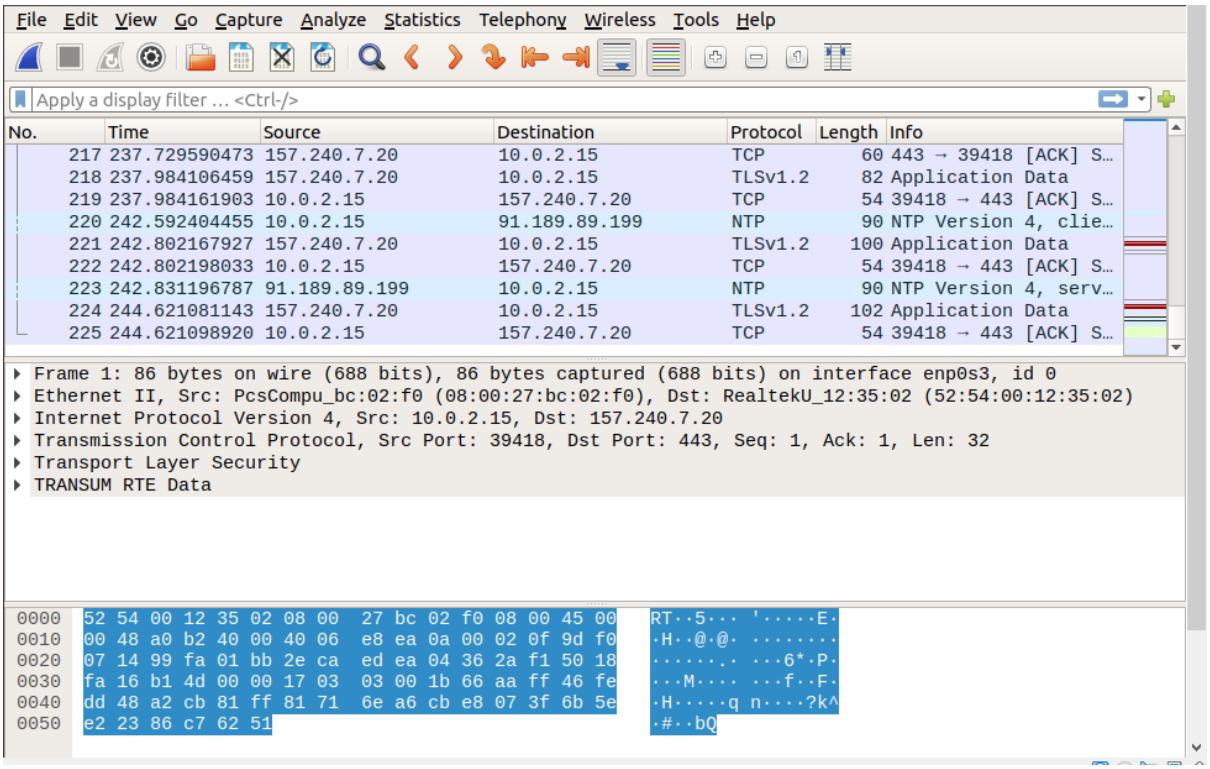
Capture:



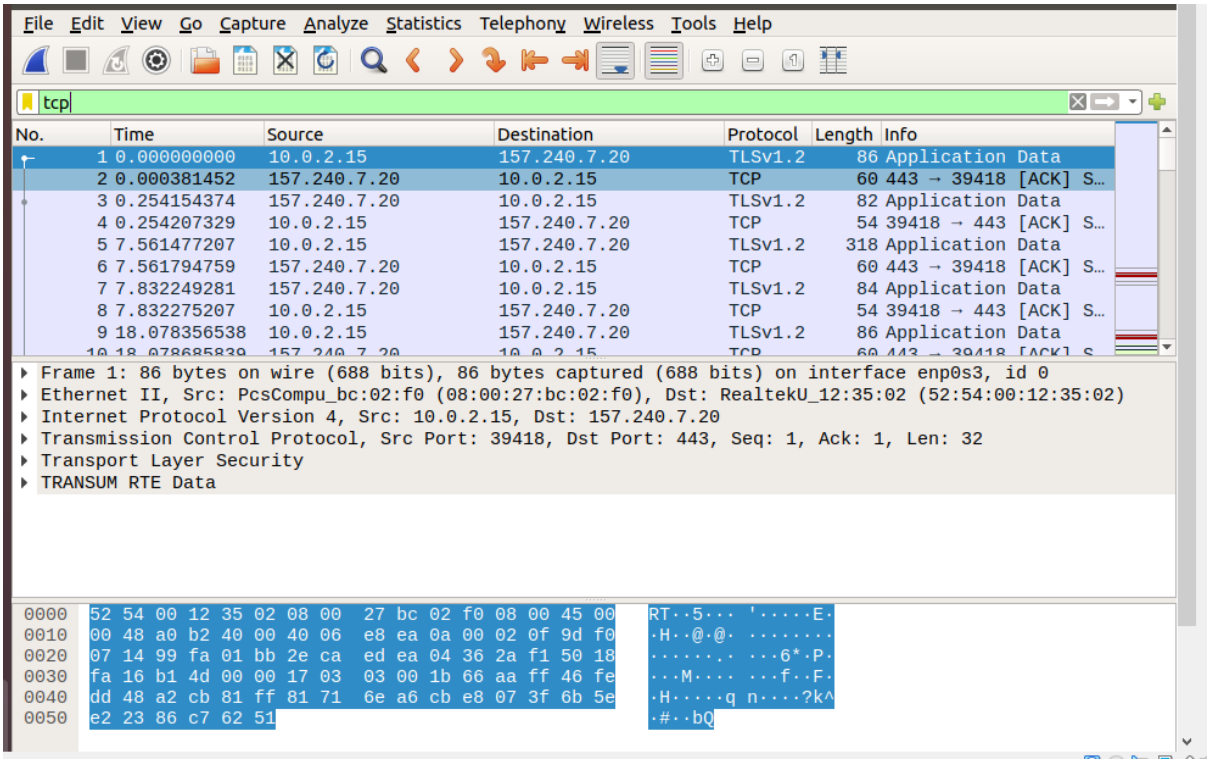
Capturing 1:



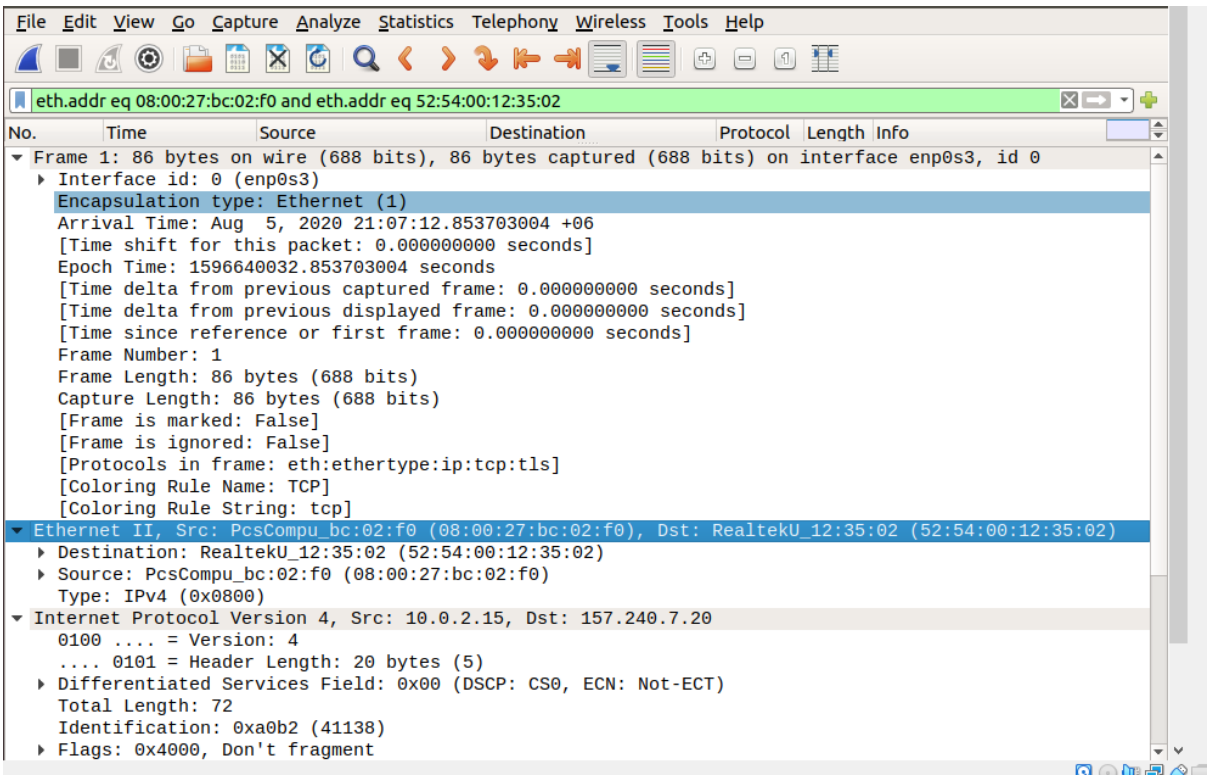
Stop capturing:


File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help
Apply a display filter ... <Ctrl-/>
No. Time Source Destination Protocol Length Info
217 237.729590473 157.240.7.20 10.0.2.15 TCP 60 443 → 39418 [ACK] S…
218 237.984106459 157.240.7.20 10.0.2.15 TLSv1.2 82 Application Data
219 237.984161903 10.0.2.15 157.240.7.20 TCP 54 39418 → 443 [ACK] S…
220 242.592404455 10.0.2.15 91.189.89.199 NTP 90 NTP Version 4, clie…
221 242.802167927 157.240.7.20 10.0.2.15 TLSv1.2 100 Application Data
222 242.802198033 10.0.2.15 157.240.7.20 TCP 54 39418 → 443 [ACK] S…
223 242.831196787 91.189.89.199 10.0.2.15 NTP 90 NTP Version 4, serv…
224 244.621081143 157.240.7.20 10.0.2.15 TLSv1.2 102 Application Data
225 244.621098920 10.0.2.15 157.240.7.20 TCP 54 39418 → 443 [ACK] S…
Frame 1: 86 bytes on wire (688 bits), 86 bytes captured (688 bits) on interface enp0s3, id 0
Ethernet II, Src: PcsCompu_bc:02:f0 (08:00:27:bc:02:f0), Dst: RealtekU_12:35:02 (52:54:00:12:35:02)
Internet Protocol Version 4, Src: 10.0.2.15, Dst: 157.240.7.20
Transmission Control Protocol, Src Port: 39418, Dst Port: 443, Seq: 1, Ack: 1, Len: 32
Transport Layer Security
TRANSUM RTE Data
0000 52 54 00 12 35 02 08 00 27 bc 02 f0 08 00 45 00 RT··5··· '·····E·
0010 00 48 a0 b2 40 00 40 06 e8 ea 0a 00 02 0f 9d f0 ·H··@·@· ····
0020 07 14 99 fa 01 bb 2e ca ed ea 04 36 2a f1 50 18 ····· ···6*·P·
0030 fa 16 b1 4d 00 00 17 03 03 00 1b 66 aa ff 46 fe ···M···· ···f··F·
0040 dd 48 a2 cb 81 ff 81 71 6e a6 cb e8 07 3f 6b 5e ·H····q n····?k^
0050 e2 23 86 c7 62 51 ·#··bQ

Filtering:


File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help
tcp
No. Time Source Destination Protocol Length Info
1 0.000000000 10.0.2.15 157.240.7.20 TLSv1.2 86 Application Data
2 0.000381452 157.240.7.20 10.0.2.15 TCP 60 443 → 39418 [ACK] S…
3 0.254154374 157.240.7.20 10.0.2.15 TLSv1.2 82 Application Data
4 0.254207329 10.0.2.15 157.240.7.20 TCP 54 39418 → 443 [ACK] S…
5 7.561477207 10.0.2.15 157.240.7.20 TLSv1.2 318 Application Data
6 7.561794759 157.240.7.20 10.0.2.15 TCP 60 443 → 39418 [ACK] S…
7 7.832249281 157.240.7.20 10.0.2.15 TLSv1.2 84 Application Data
8 7.832275207 10.0.2.15 157.240.7.20 TCP 54 39418 → 443 [ACK] S…
9 18.078356538 10.0.2.15 157.240.7.20 TLSv1.2 86 Application Data
Frame 1: 86 bytes on wire (688 bits), 86 bytes captured (688 bits) on interface enp0s3, id 0
Ethernet II, Src: PcsCompu_bc:02:f0 (08:00:27:bc:02:f0), Dst: RealtekU_12:35:02 (52:54:00:12:35:02)
Internet Protocol Version 4, Src: 10.0.2.15, Dst: 157.240.7.20
Transmission Control Protocol, Src Port: 39418, Dst Port: 443, Seq: 1, Ack: 1, Len: 32
Transport Layer Security
TRANSUM RTE Data
0000 52 54 00 12 35 02 08 00 27 bc 02 f0 08 00 45 00 RT··5··· '·····E·
0010 00 48 a0 b2 40 00 40 06 e8 ea 0a 00 02 0f 9d f0 ·H··@·@· ····
0020 07 14 99 fa 01 bb 2e ca ed ea 04 36 2a f1 50 18 ····· ···6*·P·
0030 fa 16 b1 4d 00 00 17 03 03 00 1b 66 aa ff 46 fe ···M···· ···f··F·
0040 dd 48 a2 cb 81 ff 81 71 6e a6 cb e8 07 3f 6b 5e ·H····q n····?k^
0050 e2 23 86 c7 62 51 ·#··bQ

Packet details pane:



Packet byte pane: