Since NetSim is a packet level simulator, at an instant in time, the destination (of a link or application) can only be either (i) receiving packets, or (ii) not receiving packets. Therefore, the throughput at a *point* in time is either θ_{max} (the link speed) or 0. It is therefore not meaningful to define the instantaneous throughput for a link or application at an *instant* in time. Hence, NetSim computes throughput over an averaging window.

Instantaneous Application Throughput is defined as the bits successfully received in the averaging window divided by the averaging window size (in time units). It is measured every averaging window.

$$\theta_{Inst}\ (bits/sec) = \frac{B_{Window}^{RxSuccess}\ (bits)}{W_{size}\ (sec)}$$

Each value of the computed instantaneous throughput represents one point in the throughput plot. The computation and plotting are done every W seconds of virtual simulation time. The default setting for averaging window in NetSim is $50ms$.

With this background let us now turn to the plot data file. The filename is Plot_<APP_NAME>_Throughput.txt, where APP_NAME is the (user configurable) name given to the application, and the file would be written in the %temp%/NetSim/<NetSim-ver> directory.

In that file the 1st column is the receive Timestamp, and the 2nd column is the Bytes received. NetSim computes and plots the instantaneous application throughput from this data. For example, if the averaging window were 25ms, and if the source data entries were per the table below

Time (ms)	Bytes
1	5
20	15
40	5
60	10
74	5

then the Instantaneous Throughputs, θ (in Kbps since we have *milli* seconds in the denominator) would be

- First 25ms (1 to 25) $\theta = \frac{(5+15)\times 8}{25} = \frac{160}{25} = 6.4\ Kbps$
- Next 25ms (26 to 50) $\theta = \frac{5\times 8}{25} = \frac{40}{25} = 1.6\ Kbps$
- Next 25ms (51 to 75) $\theta = \frac{(10+5)\times 8}{25} = \frac{120}{25} = 4.8\ Kbps$