

Network performance measurements play a key role in the continuous development and expansion of the Internet. The first part of this work aims to identify the important parameters of data transmissions which are possible to measure. Next we try to find out which algorithms are the most suitable with respect for the accuracy and the time of the measurement and also for the load caused on the network.

As a result of that research we found five important measures describing the actual state or general characteristics of network paths. Capacity is the maximum rate that can be used to transfer the packets from source to destination in the network layer. Available bandwidth is the unused capacity during some time interval. TCP throughput is the amount of data per time unit that is delivered over a single TCP connection. Round trip time is the time required for a packet to get from source to destination and back to source again. Packet loss rate is the ratio of number of packets lost during the transmission and number of all sent packets. This work includes the description of the algorithms used for the measurements of mentioned measures and also the design and the development of an application for these measurements.