The Effects of Different Congestion Control Algorithms over Multipath Fast Ethernet IPv4/IPv6 Environments

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Abstract

The TCP protocol has been used on the Internet for reliable data transfer since the 1970s. Many TCP versions have been released (such as Cubic, Highspeed, Illinois, Reno, Scalable, Vegas, Veno etc.) that actually differ in the algorithms used to detect network congestion.

On the other hand, the development of multipath communication technologies is one of the relevant research areas today. Nothing proves this better than integrating of the MPTCP (Multipath TCP) in some operating systems within a short time following its standardization.

The use of MPTCP proves to be very effective for TCP based multipath data transmission, but its main disadvantage is that it does not support multipath communication over UDP, which could be important for multimedia traffic. MPT-GRE software developed at the Faculty of Informatics of the University of Debrecen supports operation over both transport protocols.

In this paper* we would like to to present some TCP congestion controlling algorithms, examining of their effects on MPT-GRE and MPTCP multipath environments.

Keywords: congestion control, multipath communication, MPTCP, MPT-GRE, transport protocols.

*This work was supported by the construction EFOP-3.6.3-VEKOP-16-2017-00002. The project was supported by the European Union, co-financed by the European Social Fund.