

System And Method for Transmission Control Protocol (TCP) Transmission Rate Control

Researchers at the University of South Florida have developed a protocol that provides smooth transfer rates for streaming applications while implementing the known flow and congestion control mechanism of TCP.

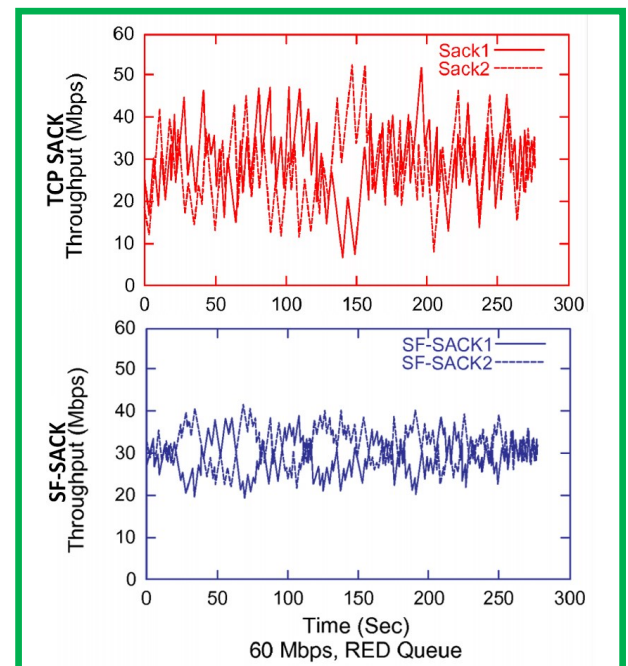
In telecommunication, a communication protocol is a system that allows two or more entities of a communications system to transmit information via a physical quantity. The Universal Datagram Protocol (UDP) and the TCP are transport protocols known in the art for communication over the Internet. UDP has limitations when the number of streaming applications on the network increases. TCP protocol provides a level of reliability that may waste network resources, retransmitting packets that have no value. TCP and UDP share the same congested bottleneck link and is unfair problem. Hence, there is a need for protocol that can improve the efficiency for streaming multimedia.

Researchers at USF have developed a new end-to-end protocol based on TCP SACK, called SF-SACK, that is smooth enough for streaming applications while implementing the known flow and congestion control mechanisms available in TCP. Furthermore, if SF-SACK is used by both streaming and data oriented applications, complete fairness is achieved. SF-SACK is easy to implement, requiring only sender side modifications, as well as being simpler than TFRC. Additionally, the SF-SACK smoothens out the throughput (right) as compared to TCP SACK. The invention has application in the field of networking.

ADVANTAGES:

- Improved throughput
- Improved performance
- Flow and congestion control mechanisms of TCP

Efficient for Streaming Multimedia



A Graph of SF-SACK Versus TCP SACK