Abstract

Internet has evolved into dynamic network where users use wired or wireless connection technologies. The dissimilarity of bandwidths, interruption and error rates in network are increased on Internet. TCP is the common denominator for several services thus by modifying TCP the need of applying solutions locally can be reduced. Now the researchers have focuses in designing an enhanced bandwidth estimation technique which are efficient to utilized bandwidth. This paper proposed modified Slow-start mechanism, called an Enhanced Adaptive Response Rate Adjustment (EARRA) bandwidth estimation technique to improve the startup performance in wireless networks and estimating the available bandwidth (ABW) of an end-to-end network path more accurately and less intrusively. In this paper EARRA technique use Eligible Rate Estimation (ERE) mechanism that adaptively and repeatedly resetting ssthresh during the slow-start phase. By adjusting to network situation throughout the startup section, sender is able to grow the congestion window fast without incurring uncertainty of overloaded buffer. This technique adjust the ssthresh dynamically, readjust the slow start threshold according to the current carrying capacity of the network and determine the sending
end whether is in the slow start phase or congestion avoidance phase based on the new size of ssthresh. This allows the volumes of data packets that sent from the sending end keep changes along with the change of the ability of network capacity. The performance of proposed EARRA technique is evaluated by throughput, packet delivery ratio, latency through simulation set, which evidence better performance in comparison to different tcp variants.

References

3. Zeng Xiaoping, Chen Li et al., "TCP congestion control mechanism for heterogeneous network connection." Journal of Computer Applications and Networks, 2016, pp: 56-64
Index Terms

Computer Science

Wireless

Keywords

Congestion Control, Wireless Network, TCP Variants, Slow Start, EARRA.