TCP Vegas-AQ:A Congestion Avoidance Algorithm for Improving the Performance of TCP Vegas.

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ABSTRACT

Due to rapid growth of mobile access in Internet,there is an increase probability of including a wireless link in a TCP connection. For the existent of wireless links, the traditional of versios of TCP,including TCP Tahoe and TCP Reno,often reduce the throughput because of the misinterpretation of packet error.Therefore,TCP Reno and TCP Tahoe are not suitable in the present Internet.On the other side,unlike the traditional versions of TCP,TCP Vegas forevasts the possibility of congestion .By analyzing the RTT (Round Trip Time),actual sending rate,and cwnd,TCP Vegas can probe the unused bandwidth of present network effectively. Compared with TCP Reno,TCP Vegas can obtain more throughputs. However,the value of and of TCP Vegas are constants,it means that the ability of probing network bandwidth is limited.Therefore,in this thesis,we propose a congestion avodance algorithm for improving TCP Vegas,names TCP Vegas-AQ.By calculating the queuing dueuing delay and actual sending rate, TCP Vegas-AQ can slow down the sending rate to avoid the congestion and adjust the value of , and cwnd. We use NS2 to simulate the performance of TCP Vegas-AQ in different network topologies.The simulation results show that the TCP Vegas-AQ can improve the throughputs and the fairness among connections.

Keywords : TCP Vegas,TCP Vegas-A,TCP Vegas-AQ,Congestion Control,Fairness

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