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基于自适应加权平均的TCP友好拥塞控制机制

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Abstract

TCP-friendly congestion control is a key technique to guarantee the large-scale deployment of real-time streaming and multicast service in the Internet. On the basis of TCP emulation at receivers (TEAR) scheme, a new congestion control mechanism, called adaptive TCP-friendly congestion control (ATFCC), is proposed. In this scheme, the parameters of weighted average are dynamically adapted according to the type of packet loss and the duration of current congestion epoch. Simulation results show that ATFCC scheme outperforms TCP-Friendly rate control (TFCC) protocol in terms of rate smoothness and fairness to TCP flows.

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摘要

TCP友好拥塞控制是保证实时媒体流和组播业务在Internet广泛应用的关键技术.基于收端TCP模拟方案TEAR(TCP emulation at receivers),提出了一个根据丢包类型和当前拥塞周期的持续时间动态调整加权平均参数的拥塞控制机制,称为自适应TCP友好拥塞控制方案ATFCC(adaptive TCP-Friendly congestion control).仿真结果表明,ATFCC方案在速率平滑程度和TCP友好性方面的性能优于TCP友好速率控制协议TFRC(TCP-Friendly rate control).

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