论文

W-CDMA/UMTS下一种解决TCP有效性和公平性的跨层方案

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摘要
在UMTS系统中，由于MAC层的包调度引入了用户间的竞争，带来了传输层TCP有效性和公平性问题，为了解决这个问题，该文提出了一种主动ACK包转发控制策略(AAFC)，它的基本思想是在基站处嵌入AAFC模块，通过MAC层和传输层之间的消息传递来控制基站处ACK包的转发，以此来保证用户间TCP流的公平性以及链路层无线资源的最充分利用。仿真结果证明了AAFC方案的有效性。

关键词   TCP UMTS 包调度 公平性 有效性

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A Cross-layer Scheme to Make Effectiveness and Fairness Tradeoff for TCP in W-CDMA/UMTS

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Abstract
This article presents an Active ACK segments Forwarding Control (AAFC) scheme to make efficiency and fairness tradeoff for TCP over UMTS. One important MAC issue in UMTS is the packet scheduling and a rather detailed simulation model evaluates the performance of TCP over UMTS. It shows that efficiency requirements and fairness requirements are difficult to guarantee at the same time only by proper packet scheduling in MAC-layer. So a cross-layer scheme AAFC is presented, which communicate between MAC-layer and Transport-layer. The basic idea of AAFC is to control the transmission of ACK segments at base station in such a way that the all the users have fair TCP throughput and the maximization of resource utilization in link-layer is guaranteed. Simulation results demonstrate effectiveness of the AAFC scheme.

Key words   TCP UMTS Packet scheduling Fairness Effectiveness

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扩展功能

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