

基于连接两段激活模型的IEEE 802.16接纳控制算法

左勇* 潘科 刘学勇 陈杰*

中国科学院微电子研究所 北京 100029

An Algorithm for Call Admission Control Based on Connection Two-phase Activation Model in IEEE 802.16 Networks

Zuo Yong Pan Ke Liu Xue-yong Chen Jie*

Institute of Microelectronics, Chinese Academy of Sciences, Beijing 100029, China

摘要

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摘要 IEEE802.16系统中数据的传输是面向连接的,连接的建立服从两段激活模型。针对系统空闲资源耗尽但还为已接纳而未被激活的业务预留资源这一情况,该文提出了一种适当借用此预留资源去接纳新的立即被激活业务的接纳控制算法,并建立了此算法的3维马尔可夫链模型,进行了理论分析提出了找寻此算法中使用的两个门限的搜索方法。仿真结果表明,该接纳控制算法能显著地降低新业务阻塞率,提高系统的带宽利用率,已接纳业务的激活成功率只有少许下降。

关键词: 无线通信 接纳控制 两段激活模型 IEEE 802.16系统 马尔可夫链

Abstract: The data transfer is defined as connection-oriented and two-phase activation model is employed to set up connection in IEEE 802.16 networks. Considering that free resource is exhausted but some resources is reserved for those admitted service flows, a novel Call Admission Control (CAC) algorithm which is based on borrowing the reserved resources to admit the new active service flows is proposed. The 3-D Markov chain model is presented. The performance of algorithm is analyzed theoretically and an algorithm for searching two thresholds is developed. Simulation results show that the proposed CAC algorithm can reduce the blocked probability of new service flows and improve the ratio of bandwidth utilization, while the successful activation ratio of admitted-without-activated service flows declines slightly.

Keywords: Wireless communication Call Admission Control (CAC) Two-phase activation model IEEE 802.16 networks Markov chain

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通讯作者: 左勇 Email: zuoyong@ime.ac.cn

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