

基于接触概率的机会网络低时延休眠调度算法

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摘 要: 提出了一种基于接触概率的机会网络低时延休眠调度算法—LDSCP(an Low Delay Sleep Scheduling Algorithm base on Contact Probability for Opportunistic Networks).算法通过精准预测机制向前后预测错失相遇的下次唤醒时间, 保证了预测下次相遇的准确度, 而且对重叠后的时间采用相遇概率最大化机制来提高相遇机会, 减小消息投递时延.理论分析验证了LDSCP 算法设计的有效性, 仿真结果表明, LDSCP 算法在消息投递成功率、消息平均时延和消息平均传输跳数等方面的性能均优于 WS 算法和 Epidemic 路由算法.

关键词: 机会网络; 休眠调度; 接触概率; 低时延

An Low Delay Sleep Scheduling Algorithm for Opportunistic

Networks base on Contact Probability

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Abstract: We propose an Low Delay sleep Scheduling algorithm base on Contact Probability for opportunistic networks(LDSCP).Algorithm predicts the next wakeup time through the accurate prediction mechanism. This mechanism predict the next wakeup time before and after the current wakeup time which missed encounter with the expected node, so it can ensure the accuracy of prediction at the next encounter. And when the wakeup time is overlapped with each other, the algorithm uses the probability maximization mechanism to increase the chance of encounter and reduce the message delivery delay. Theoretical analysis verifies the effectiveness of LDSCP. Also, Simulation results show that LDSCP outperforms the WS algorithm and the classical epidemic algorithm in terms of message delivery success ratio, average end-to-end delay, message average transmission hops.

Key words: opportunisti cnetworks; sleep scheduling;contact probability; low delay

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