

6LoWPAN接入(IPv4)Internet中数据包调度的研究与实现

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摘要：

无线传感器网络与互联网结构的差异性使得两者在数据交互中面临诸多问题。针对6LoWPAN接入(IPv4)Internet中数据包调度问题，在实现两者通信的基础上，优化其调度算法，提出多空间共存的调度模型。分析异构网络通信过程中存在的数据包类型，按照流向和处理方式归类，对于同类数据包，采用设计的算法堵塞其进入对立空间，减少通信过程中数据的冲突碰撞。设计异构网络的适配网关对该调度模型进行验证，经调度处理后的数据包不会引起系统ICMP消息回应。实验结果表明，该多空间共存的调度模型能实现数据包的有效调度，同时网关的整体性能得到一定的改善。

关键词：无线传感器网络；网关；互联网；数据包调度

Research and Implementation of Packet Scheduling in 6LoWPAN Access (IPv4)Internet

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Abstract:

The diversity of structure between Wireless sensor network and Internet lead to numerous issues in data interaction. Specific to data packet scheduling problem, we optimize scheduling algorithm and propose a scheduling model of multi-space coexistence on the basis of the realization of communication between 6LoWPAN and (IPv4) Internet. The data packet types in the process of heterogeneous network communication are analyzed and classified by the flow direction and processing mode. The same type of data packets will be blocked to access the opposite space by adopting the algorithm designed by our group, thus the probability of data collision will be dramatically reduced. The scheduling model is verified by a special designed gateway of heterogeneous network. The data packets processed by the scheduling algorithm do not cause the response message of ICMP. Experimental results show that the scheduling model of multi-space coexistence can effectively schedule data packets and improve the gateway performance to some extent.

Keywords: wireless sensor networks; gateway; internet; packet scheduling

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