

WSAN 中任务智能执行的 SDN 控制模型

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摘 要: 软件定义网络 (SDN) 是一种新技术, 为了提高 WSAN 的通信效率以及可扩展性, 讨论了将 SDN 应用于 WSAN 的模型上. 具体模型包括一个具有全新控制平面的三层架构、相应的系统实体以及加强了的协议栈. 实验结果表明, SDN 采用控制和转发相分离的架构, 使复杂的网络管理变得简单和方便.

关键词: 软件定义网络; 无线传感器执行网络; 协同通信; 协议栈

SDN Control Model for Intelligent Task Execution in WSAN

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Abstract: Wireless sensor and actor network (WSAN) has good prospects for application, it is widely used in many fields, such as industry, traffic-transportation and health care. However, its heterogeneity, mobility, energy consumption, topology and other issues will be a challenge to the effective operation of the WSAN. Software Defined Network (SDN) is a new technology that it can configure networks and solve the conflict of rules in the distributed system easily and effectively in a centralized and programmable pattern. In order to improve the communication efficiency and scalability of WSAN, this paper studies the model that applying SDN to the WSAN model. The specific model includes three-layer architecture with a new control plane, the corresponding system entities and strengthened protocol stack. The experimental results show that the architecture of the separation of control and forwarding that SDN has adopted can make the complex network management become simple and convenient.

Key words: software defined networks; wireless sensor and actor networks; cooperative communication; protocol stack

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