



RESEARCH ON DISTRIBUTED DATA STORAGE BASED ON INFORMATION PROCESSING CLOUD

LUO Qing-Yun, ZHU Ling-Zhi^{*}, CHANG Yun-Jie^{*}, ZHAO Jin-Guo, LIAO Wei-Sheng, HE Rui
Department of Computer and Information Science, Hunan Institute of Technology, Hengyang
421002, Hunan, China

Emails: 121471998@qq.com , lingzhi0825@163.com^{*}, changyunjie@aliyun.com^{*}

Submitted: May 3, 2016 Accepted: July 30, 2016 Published: Sep. 1, 2016

Abstract- Sensor network is a data-centric network, which provides data collection, storage and query services. Data storage and query is one of the hot spot in the research of sensor networks. In order to solve the problem of low efficiency of storage and query, high energy consumption in sensor networks, we put forward a scheme that storing distributed data of wireless sensor network based on information processing cloud. Information processing cloud is made up of a group of sensor nodes around the network center, which have the ability to absorb and process data from other nodes of sensor network which do not belong to the information processing cloud. The group of sensor nodes around the network center respond data query requests from anywhere of the network, and sensor nodes can be adjusted dynamically according to real situation, the cloud of nodes and non-cloud of nodes can be dynamically transformed as well. When non-cloud of sensor nodes store data or send query request, they only need to do centripetal movement, centrifugal movement or circumfusing movement. The analysis shows that the proposed scheme can simplify route algorithm of data storage and data query, and it also has less computation cost and storage cost than the existing schemes.

Key words: sensor networks; information processing cloud; data storage; data query.