A Comparison of Data Aggregation Techniques in Software-Defined Wireless Sensor Network

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Abstract

The Software Defined Network (SDN) concept has been proposed to be utilized in the traditional Wireless Sensor Network (WSN) applications such as Internet of Things (IoTs), traffic engineering and smart grid, etc. The SDN Concept is an ideal concept whose benefits can be observed in the smooth and much improved performances from management, reconfiguration and the wireless communication between the SDN controller and the SDN switches. However, due to the increase of data traffic, the SDN switches have found it difficult to manage the incoming data flow since their flow tables have limited space to hold flow entries, the flow tables contain rules on how to control the data overflow, which can lead to packet loss and delay. The communication between the control plane and data plane also increases as the data traffic increase, resulting in higher energy consumption. Therefore, in this paper, we will discuss the data aggregation techniques that were employed in order to tackle the aforementioned challenges in the software-defined wireless sensor networks.