

DECENTRALIZED PROTOCOL SELECTION FOR DYNAMIC ROUTING IN WIRELESS SENSOR NETWORKS

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Abstract

Wireless Sensor Networks are considered as a distributed database. Each sensor node captures and stores the data. Data query systems are used to fetch the data stored in the sensor devices. The data query values are similar to SQL queries. The data query is mainly affected by the routing protocols. TinyDB and Cougar data query systems are designed with common route based data query process. The single route based data query systems are not suitable to execute all query types. The dynamic routing layer based data query system is introduced to handle data query with different route selection mechanism. The route selection is done with reference to the data query and network density factors. A centralized authority manages the route selection operation. In this case all the query values are redirected to the centralized authority. The central authority initiates the route selection and query distribution operations. The centralized dynamic query selection mechanism makes delay and computation overhead for data query processing with high node density environment. The proposed system is designed to handle the data query operations with dynamic routing layer mechanism in a decentralized manner. The sensor nodes select the routing protocol with reference to the data query and network density information. The self-adaptive data query system is also enhanced to handle join query and event query values.

Keywords: Query Processing, Wireless Sensor Networks, Routing Protocol.