

عنوان مقاله:

Quality of Service Support in Wireless Sensor Networks Middleware

محل انتشار:

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خلاصه مقاله:

Recent Advances in wireless communications, electronics and radio technology has enabled small but smart sensors to be deployed and established low-cost networks to use for a wide range of applications such as smart environment, combat field reconnaissance, and security surveillance. Applying this type of networks in real world bears several new research issues in fields of network and applications. One of the new research areas in this context is meeting Quality of Service (QoS) requirements in wireless sensor networks. In fact, successful operations in network need different satisfying QoS levels. In this paper, we propose a mechanism to satisfy real-time and fault-tolerant requirements as two critical factors of QoS. This mechanism is presented as a middleware for wireless sensor networks with taking into account special characteristic of network such as energy constraints and data transmission rate. This middleware receive users' QoS requirements about network services, and then guarantees time critical responses in an efficient and scalable way in a cluster-based organization. Also, by replicating multiple service providers in a service-oriented manner, fault tolerance is guaranteed. This mechanism is evaluated in a simulation environment and shows that proposed middleware can meet users' real-time requirements, whereas, cost of supporting above QoS factors is nearly low.

کلمات کلیدی:

Wireless Sensor Networks, Quality of Service, Middleware, Power-Aware

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