

عنوان مقاله:

Routing Protocols for IOT Applications based on Distributed Learning

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خلاصه مقاله:

The routing protocol of IPv6 for lossy and low power networks (RPL) was approved in March ۲۰۱۲ by Internet Engineering Task Force as the standard routing protocol for the Internet of Things (IoT). Since that time, it has had various applications in IoT. Despite meeting the IoT network necessities by RPL, there are yet some unanswered issues as it has not been devised primarily for IoT usages. Although gathering a large amount of data from these networks with videos and images typically leads to traffic congestion in the central part of the network. For providing a solution for this issue, the content-centric routing CCR-based RPL is proposed in the present study, where the routing pathways are specified by the content. With routing the relevant data to the middle relaying nodes for process, it is possible to attain a larger data aggregation ratio. Thus, effective traffic is generated in the network. Subsequently, latency is significantly reduced. Moreover, energy use is principally decreased on wireless communication. Therefore, the restricted battery is preserved. More integration was conducted between IETF RPL protocol and CCR, applying in the MATLAB platform. Finally, according to simulated and implemented results, the CCR-based RPL behavior based on the high packet transfer rates is better, and the numbers of dead nodes are reduced, and high energy efficiency and low delay rates are obtained in the transfer.

کلمات کلیدی:

Contextual, Internet of Things, protocol, Learning, routing

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