Implementation and Comparison of Low Power Wireless Protocols in a Mesh Topology

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Abstract

The Internet of Things is one of the upcoming networking that helps bridge the gap between the real world and the virtual world by enabling monitoring and control of certain elements.

The critical point for the future is the design with low power wireless technologies based on mesh topologies because it is very attractive due to their reliability and scalability of failures. In this report, we provide an overview of the most popular short-range wireless communication standards, such as BLE, Zigbee, and Thread technologies, comparing their key features and behaviors in terms of various metrics, network topology, security, quality of service, and power consumption.

This study presented in this work will be useful to the application in selecting the best technology for a concrete use of the low power wireless protocol.

Keywords: IoT · BLE · Zigbee · Thread.