ABSTRACT

COMPARISON ANALYSIS OF MQTT AND HTTP COMMUNICATION PROTOCOL INTERNET OF THINGS BASED ON WEBSITE NODE.JS

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The Internet of Things is one of the technologies that is widely used in monitoring systems to get maximum results. Within the IoT infrastructure, there are devices and servers, both of which must be listed. To connect IoT systems via the internet, you must build a client server architecture so that local and server systems can be connected. These two devices must be connected via a communication protocol such as ZigBee, MQTT, HTTP, and so on. The selection of an appropriate and effective communication protocol is one of the most important things. According to the results of the 2018 edition of the IoT developer survey by the Eclipse Foundation, it was found that the communication protocols that are widely used in IoT systems are the MQTT protocol, which uses a publish/subscribe architecture, and the HTTP protocol, which uses a request/response architecture. This study conducted a comparative analysis of the MQTT and HTTP communication protocols on the internet of things system based on the Node.js website on the Google Cloud platform for monitoring systems for red chili plants as a research object. Data retrieval was carried out in the morning and at night using wireshark software. It was found that the MQTT protocol had better throughput and delay values compared to the HTTP protocol, with an average MQTT throughput value of 1730 in the morning and 1899 at night. The average MQTT delay value was 0.93485406 in the morning and 0.855531576 at night. While the HTTP protocol has better packet loss and jitter values compared to the MQTT protocol, with HTTP packet loss values of 0.028% in the morning and 0.018% at night, the average value of HTTP jitter is 0.044957 in the morning and 0.014849 at night.

Keyword: *HTTP, Internet of Things, MQTT, QOS*