


Checkpoint 3

 Published Edit

The purpose of this checkpoint is to get you familiar with the protocols used in IoT environments. Each group is required to accomplish the following tasks:

1. (5 points) Explore 2~3 IoT protocols (MQTT & CoAP for a group with 3 members, all 3 protocols for a group with 4 members). Please follow the instructions given in the [documents](#) and accomplish the required tasks specified in these documents. Only one submission is required for each protocol. Work closely with your teammates, and exchange what you have learned from exploring these protocols.
2. Read the given research [paper](#) , “An Assessment of Internet of Things Protocols for Resource-Constrained Applications,” and discuss it with your teammates.
3. (2 points) Compare and contrast the features and performance of these protocols. Each team is required to submit a brief report of no more than 2 pages. Please make sure your report is more than a collection of ideas from your sources; it should provide an original interpretation of that material.

Rubrics:

1. Paper interpretation
 1. Understanding the synergy in Quality of Service (QoS)
 2. QoS comparison based on packet size, time, and reliability of the protocol
2. Websockets
 1. Implement the required functionalities;
 2. complete the required performance analysis.
3. MQTT
 1. Successful implementation of username and password
 2. Demonstrate your understanding of the difference between QoS 0, QoS 1, and QoS2.
 3. Demonstrate your understanding of the Last Will and Testament feature, resulting from a loss of connection vs. the result of a proper connection tear down.
4. CoAP
 1. Implementation of Resource Discovery and the “get” method to obtain the current temperature via the Guest client
 2. Implementation of the “observe” functionality using the Technician and User1 clients
 3. Successfully adding resources to the server

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