

Abstract

Push notification is one of smartphone's feature which inform user about user's activities on smartphone based application. Push notification can used for warning purpose such as human movement detection, it is because push notification possible to combine with sensor based application. MQTT (Message Queue Telemetry Transport) is protocol which has ability for support push notification with sensor based application. MQTT work with publish subscribe methode. The *subscriber* may subscribe on information topic which sent by the publisher without request data for several times. This paper built push notification that triggered by sensor sensing using couple of PIR (Passive Infrared Sensor) sensors. Sensors are connected to Raspberry Pi, and it has internet connection for reach MQTT public broker server at iot.eclipse.org. After the PIR sensors detected human movement, Raspberry Pi which has MQTT platform called Mosquitto will publish message to subscriber. In another side, an android application was built and installed on android smartphone act as subscriber for receive push notificaton which was trigger by PIR sensors. After combined with Raspberry Pi, Sensors were combine with ESP8266 wifi module which connected directly to MQTT public broker server at iot.eclipse.org. The system has several scenarios testing, such as get system's response time by gived a human movement in couple of PIR sensors at the same time, and gived a human movement in couple of PIR sensors at different time, and also in single PIR sensor. That was for give us information about do the sensors sensing at the same time, and does push notification received by android smartphone at the same time. In this paper, response time's deadline is 10 seconds. The system has capability to made response time below than deadline time. Response time's average for system that used ESP 8266 wifi module is 1.44 seconds, meanwhile the system with Raspberry Pi ussage the response time are 1.620 seconds and 1.497 seconds. (*Abstract*)

Keywords—push notification; MQTT; Android; Internet of Things;