

# IoT Server Room Monitoring System

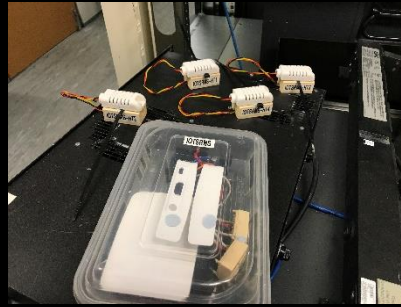
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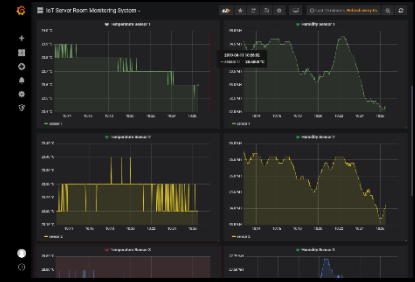
Client: **Jeff Echano**



The deployed system in B203



The IoT Gateway and Sensor hardware



Historical graphing within the system

## INTRODUCTION

The IoT Server Room Monitoring System (IoT SRMS) is a product which was developed for Jeff Echano so he could effectively monitor temperature and humidity conditions within the WelTec B203 Server Room. The system collects this data with 4 AM2302 sensors and uses an IoT Gateway solution to pass this data to a Virtual Machine which is hosted on a WelTec VSphere server. The data is stored within an InfluxDB® database and displayed on a Grafana® dashboard. The system also sends email alerts in the event that readings exceed ASHRAE compliant levels.

## DEVELOPMENT

This project was developed using Scrum methodology as specified within the Project In a Box™ Community Edition application. The development of the IoT SRMS fell between the 1<sup>st</sup> of April and 4<sup>th</sup> of June 2019, with this work being broken down into 4 Sprint periods:

**Sprint 1:** Evaluation of open source database and data visualisation applications to determine which combination would best meet the needs of the client.

**Sprint 2:** Creation of the initial IoT SRMS as a “Proof of Concept”.

**Sprint 3:** Expanding the initial version of the IoT SRMS for additional functionality and preparing the system for deployment.

**Sprint 4:** Deploying the IoT SRMS into the WelTec B203 Server Room and optimising the system's functionality.

Scrum was the chosen methodology for this project because of the high level of client involvement and work to be completed could be changed depending on unforeseen circumstances and variations in the client's requirements.

We decided to use readily available and Open Source software for the IoT SRMS as we felt that pre-existing solutions would include greater functionality and utility for the client than applications that we could realistically develop in the given timeframe.

## CONCLUSION

The IoT SRMS was successfully deployed into B203 during Sprint 4, resulting in both client and advisor satisfaction. The client has been provided with documentation outlining how the system could potentially be scaled in the future and a list of areas which future project students could potentially work on to further expand the functionality of the IoT SRMS.