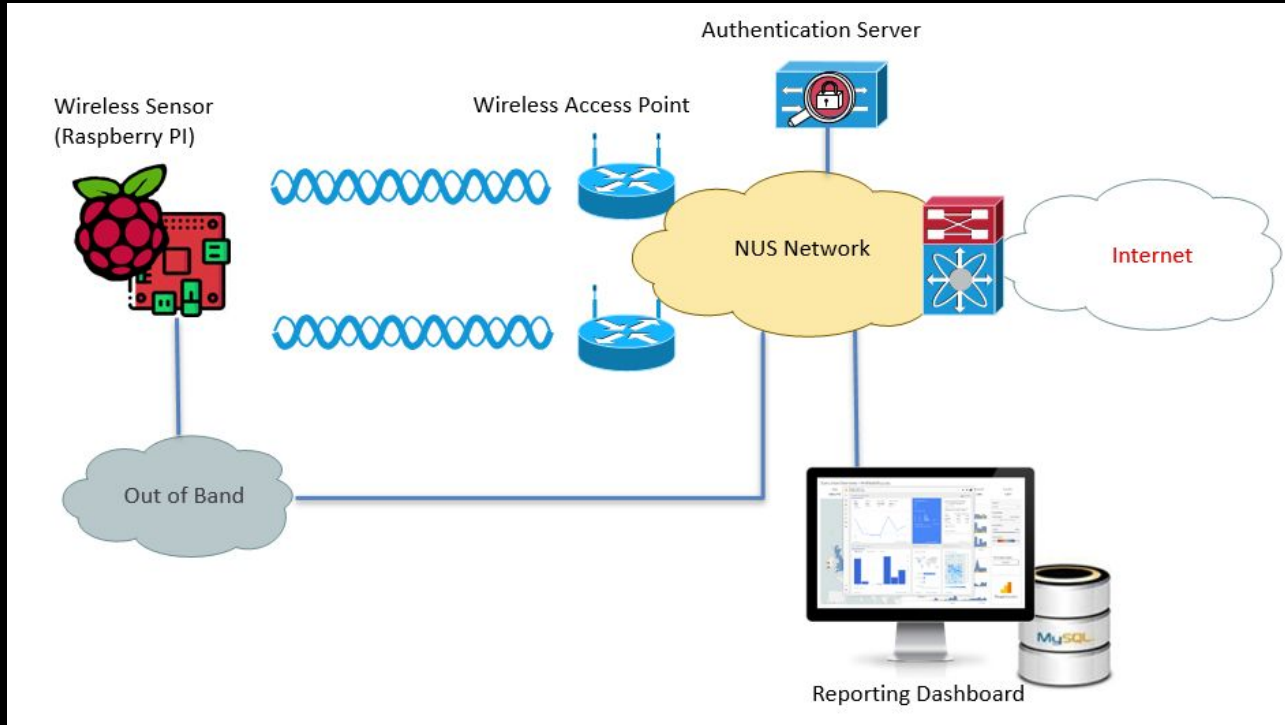# Automated 24/7 Wireless Monitoring

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Agenda

- Network Setup

- Technology Overview

- Challenges Faced

- Lessons Learnt

- Accomplishments

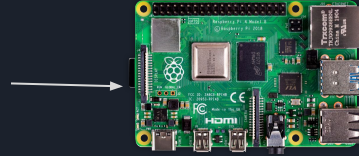- Demo

- Further Improvements

Network Setup

Technology Overview

Script made in python to run automated wireless tests round the clock.

Raspberry pi installed with linux-based Raspbian OS to run the back-end python script.

Collected data would be pushed into a remote MySQL database.

Target remote Access Point to be tested.

Data would then be streamed into a user-friendly online dashboard developed using react.js and node.js as the front-end and back-end respectively.

Challenges Faced

- Getting used to network management in a linux environment

- Initial difficulty when integrating back-end with the front-end

- Deciding which network library to use out of the countless different libraries available online

Lessons Learnt

- Better understanding of wireless networking and linux OS

- Learned to develop in the latest web frameworks and automated scripting in python

- End-to-end integration(wireless testing, out of band management, database, web framework)

Accomplishments

- Developed a working prototype of a remote wireless sensor

- Integrated sensor data collection from raspberry pi to the remote database

- Developed a front-end dashboard by pulling data from the remote database

Demo

Running a live server on laptop with Pi deployed in a remote location
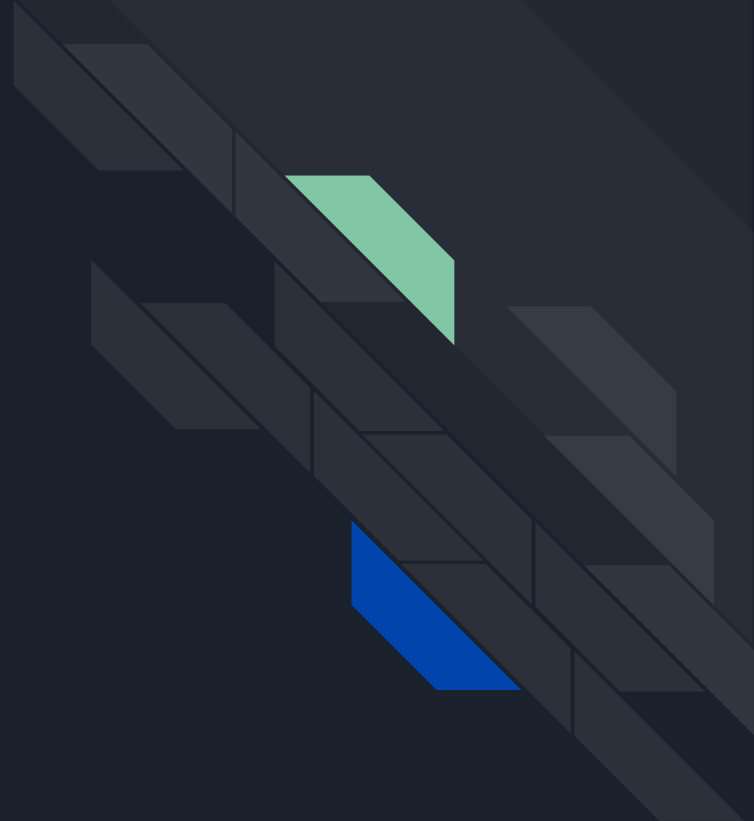
Further Improvements

- Remote management and configuration of the sensor

- Configurable network testing parameters

- Security on the sensor

- Python code migration

- Alert mechanism

- Enrich the wireless test cases on remote sensor

- Improving on the dashboard interface

Thank you