

Capstone Design Project 2

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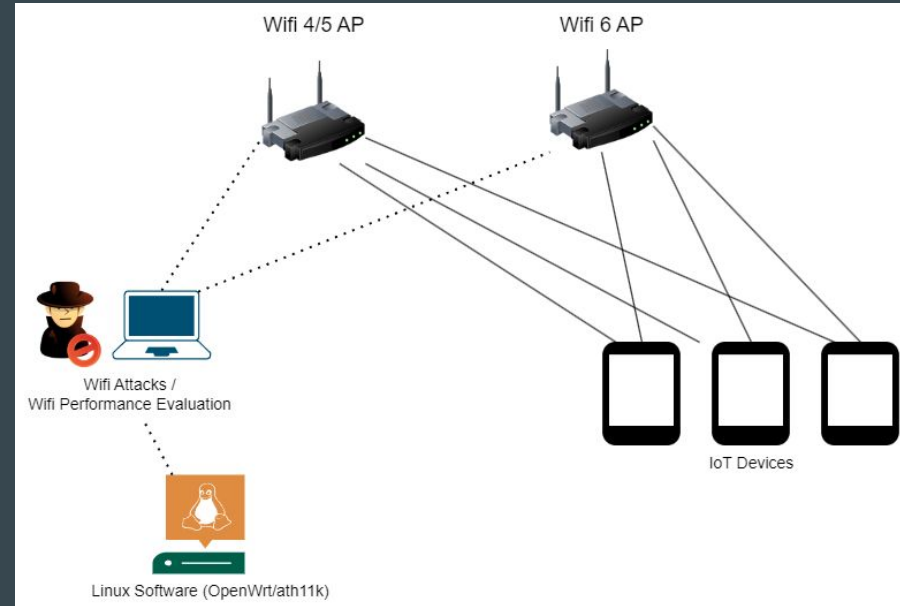
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Overview

- Capstone Project Overview: Optimizing IoT Devices w/ WIFI-6 & Comparing + Contrasting with v4 and v5.
- The goals for Sprint 2:
 - Collaborate with Leahy Center
 - Finish Network Design
 - Finish Research for WIFI and IoT
 - Finish Hardware/Software Research
- This presentation will go to show off what has been accomplished towards these goals, what was unmet, as well as adjustments as this project goes forward.

Network Design

- This network design is a work-in-progress, and may change as I go on with the project.
- This gives a basic idea of the type of network or visual overview of the project.
- There is 2 sets of Access Points for the different versions of 802.11
- They will connect to software with OpenWrt and ath11k into order to tweak the settings of the different Wifis
- Not shown here, but the laptop will also use Kali Software to initiate cyber attacks against all different versions of 802.11.



Software/Hardware Research

- Research has been a mixed bag during this sprint, though some great strides have been made
- Software:
 - OpenWrt (Linux OS) that can be used to “tweak” settings of Wifi 6 routers and access points.
 - Ath11k (Linux Driver) that helps in conjunction with OpenWrt where it is limited in tweaking.
- Hardware:
 - 500 Series of Aruba Access Point. This will be my main “router” that will be Wifi 6 compatible
 - Still need to lock down purchasing the device, but that will change soon.
 - Found on Arubas site (though have to be a business to talk with sales), Ebay/Amazon for ~\$500



Collaboration with the Leahy Center

- Over my sprint I've been working towards getting into collaboration for my project with the Leahy Center
- Was able to talk into possibly working within IoT labs to further research my capstone project as well as get a look into IoT research
- Will update with documentation on research if I get in.

Setbacks

- Some setbacks happened during my sprint.
 - Covid
- Unmet tasks:
 - IoT Research
 - WIFI Research
 - Costs

Github Page

Link to Github page:

<https://github.com/seabar24/Capstone/blob/Home/DesignProject2.md>

Goes a little more in-depth into the project over the sprint. As well as different links to different parts of the project

Thank you!