

Week 4 Status Report

SE 491: Team sddec19-24

DevOps Framework for IOT

Client / Faculty Advisor: Lotfi Ben Othmane

Team Members:

Yussef Saleh	<i>Team Leader</i>
Matt Bechtel	<i>Chief Designer / Engineer</i>
Brett Wilhelm	<i>Assistant Programmer / Engineer</i>
Chakib Ahlouche	<i>Assistant Programmer / Engineer</i>

o Weekly Summary

- This week on March 8th we met with our client (professor Lotfi) . During the meeting we discussed everything that should be covered during this week and next week(spring break week) we also shared our milestones with our client and got his approval. The meeting was extremely helpful and the professor discussed further what is expected from us this semester and we updated him with our meeting with Nischay that occurred last week and showed him an idea of our plan on how we will approach the design. Also our pending issue from last week was solved.
- Beyond our meeting with the client we also worked on standing up the existing codebase and making it easier for future deployment. The goal here is to be able to launch and connect every service needed for the environment (Endor, Koma, YggDrasil, Postgres), in one command. This will be done with Docker Compose and Docker network.
- Work was also done in designing the new 'IoT Deployment Service' that will be our extension. We each thought about an approach over the week and shared our thoughts with each other.

o Past Week Accomplishments

- Met with our client and updated him.
- Confirmed our milestones.
- Created a plan on how to tackle the design and updated the client.
- Set a plan for the next two weeks including spring break.
- Worked on deployment of the existing codebase, including modifying the current Docker configuration to be more user friendly.
- Began setup of remote server, gaining credentials from the university and completing initial package installation and setup.

o Pending Issues

- Must work on design for extension component. This has been put off a bit due to our team being busy and focusing on the deployment of the existing codebase instead.

o Individual Contributions

<u>Name</u>	<u>Individual Contributions</u>	<u>Weekly Hours</u>	<u>Total Hours</u>
Yussef	I did the configurations on my local machine and set up the environment to be able to access and edit the data. Checked the deployment scripts. And still had to spend sometime reading about the environment and docker.	5	13
Matt	<p>Received the credentials to our VM hosted by ISU and proceeded to install the necessary packages for our deployment on it. Spent time setting up the existing codebase locally, which required the set up of Github, Heroku, Firebase, Docker, and Gmail accounts.</p> <p>In setting up the codebase locally, I noticed some issues with their Docker configuration, specifically their copying of the sensitive client specific configuration information into the containers. Because of this flaw, the image would not be able to be distributed as it would contain another's credentials. With this, I proceeded to change each service's Dockerfile (specification for the container) to be an image that requires the sensitive 'config' directory be mounted at runtime. This way, the images can be pushed and shared without issue.</p> <p>In addition to making each image able to be configured per client at runtime, I also set them up so that they may run within the same Docker 'network' allowing each service to be addressed by its container name. The next step for me as far as deploying the existing codebase goes is to create a Docker Compose file to setup the entire environment in one command. This will help the other members of the team easily stand up the environment for testing and development locally. It will also assist when we stand it up on the server.</p>	9	21
Brett	Set up docker on my machine, then spent time studying up on the purpose of it. Dedicated time to better understanding the usage of services like Travis and Heroku.	3	11
Chakib	Researched node.js and its features, meeting with advisor to divide assignments, looked into the functionality of docker, and integration of travis in github.	5	12

o Plans for Next Week

- Begin design work on the 'IoT Deployment Service'
- Share knowledge about the existing codebase with everyone
- Get local environments setup for development and design research (as we are performing an extension)
- Schedule design work and set deadlines

o Summary of Advisory Meeting

- In the meeting we confirmed our milestones with the professor. Got more clear idea of what is expected from us by the end of this semester. Discussed the need for modified Docker deployment of the existing codebase, emphasized the need for easy, quick stand up of the environment. We also discussed exactly how DevOps for IoT devices would work, including the stress on security that is needed. Because IoT devices are more closely related to things that endanger human lives (medical machines, cars, etc.), it is important that our extension is extremely secure in addition to being functional.