

EE / CprE 492 – sdmay23-19

An Exploration of Turing Pi Based Edge Cloud with Dockers/Kubernetes

Week 7 Report

2022 – May 12, 2023

Client: Tyagi Akhilesh

Faculty Advisor: Tyagi Akhilesh

Team Members:

Bryce Carter - Developer

Chee Hau Fong - Developer

James Gibbs - Developer

Kyoungkeun Lee - Developer

Theodore Thayib - Developer

Weekly Summary

The API server was updated to split the graphql API into distinct services with a API gateway to batch and resolve the final graphql schema. The services created were a user service to resolve user information, a message service to resolve threads and their messages and a subscription service to subscribe to real time updates on incoming new messages for a specific thread. All services expose a compliant graphql API with the final API gateway delegating query objects to the required sub-service.

Past Week Accomplishments

- Front-end and Back-end Environment Setting - James, Chee Hau, Bryce
 - User service created with MongoDB database
 - Message service created using Postgres, storing messages and threads
 - Subscription service created using server sent events to send new messages added to a thread
 - GraphQL API gateway created to mesh the graphql APIs of the user, message and subscription services.
- Communication with ETG for equipment - Kyoungkeun
 - Received Turing Pi case and heat sink
- Installation of desktop docker - Everyone

Pending Issues

- Additional Hardware Arrival - Everyone
- Setting up local containerized development environments - Everyone

Individual Contributions

| Team Member | Contribution | Weekly Hours | Total Hours |
|-----------------|--|--------------|-------------|
| Bryce Carter | Environment setup and Research | 3 | 13 |
| Chee Hau Fong | Github repository and programming | 3 | 15 |
| James Gibbs | Providing software overall plans and programming | 6 | 16 |
| Kyoung keun Lee | Supplier contact and module testing | 3 | 21 |
| Theodore Thayib | Wireless setup and programming | 4 | 10 |

Plans for Coming Week

- Assembling Turing Pi boards and Modules
- Adding dependencies
- Kafka and Kubernetes installation