Distributed Systems

Online Energy Utility Platform

Project 1

Bîndilă Adrian-Ioan
30443

The online energy utility platform consists of a client-server architecture that contains two types of clients:

- Regular Users
- Admins

The Regular Users can use the platform in order to visualize their connected devices, and view a graph of their energy consumption for a specified date.

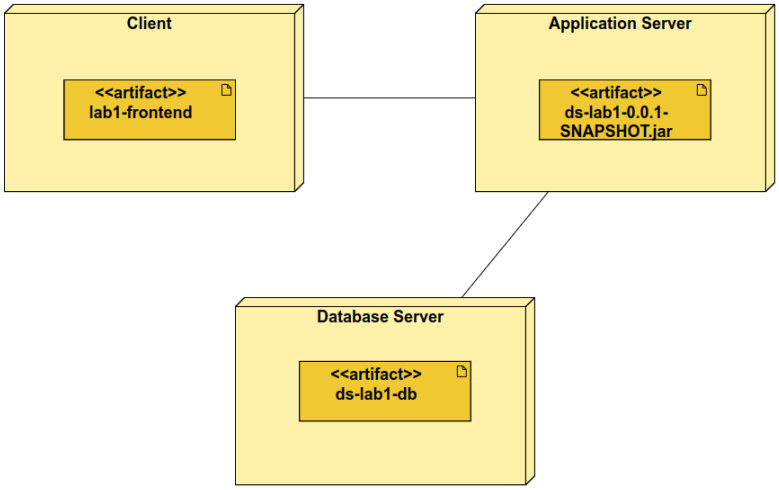
The Admins are able to create, update and remove users and devices, while also being able to link between a user and a device.

The **frontend** consists of a React application that has a login functionality which redirects users based on their role: Admins will be redirected to the Admin page, while Clients will be redirected to the Client page, with their respective functionality.

The **backend** consists of a Java Spring-Boot application using an Apache Tomcat Web Server. It contains endpoints that allow users to connect from the client side.

The **database** was built using MySQL 5.7. It consists of three tables, one with data about client, one about devices and one about energy consumption. A client can have many devices, a device can have multiple energy consumption timestamps.

The application is deployed using docker, specifically docker-compose. A docker-compose file fetches the necessary port mappings, creates the network and volume in order for the client and server to communicate harmoniously within the same network, while also having the database remain persistent and not in a temporary file in the virtual machine.



In order to run the application one needs to open a terminal within the folder that contains the docker-compose file and run the following command:

docker-compose –build

In order to start the containers that were built, use **docker-compose up** and to shut them down **docker-compose down**