

Sisteme Distribuite

Energy Management System

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1. Descriere

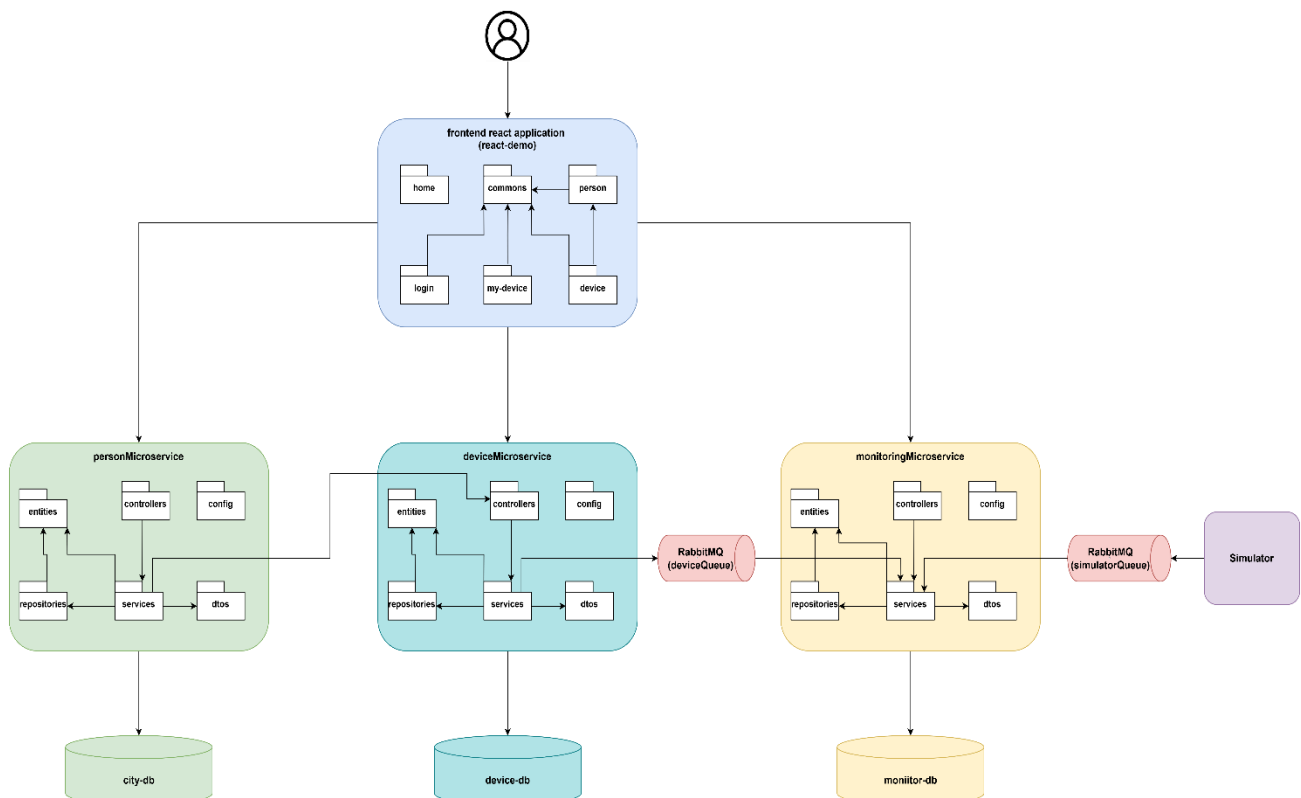
Aplicatia reprezinta un sistem de management al clienților si al device-urilor unei companii de furnizare de energie. Aplicatia suporta doua tipuri de utilizatori cu permisiuni diferite (administrator sau client).

Administratorul are control asupra intregului sistem, putand adauga, sterge, actualiza atat utilizatori cat si device-uri, totodata putand mapa device-uri la utilizatori (clienti).

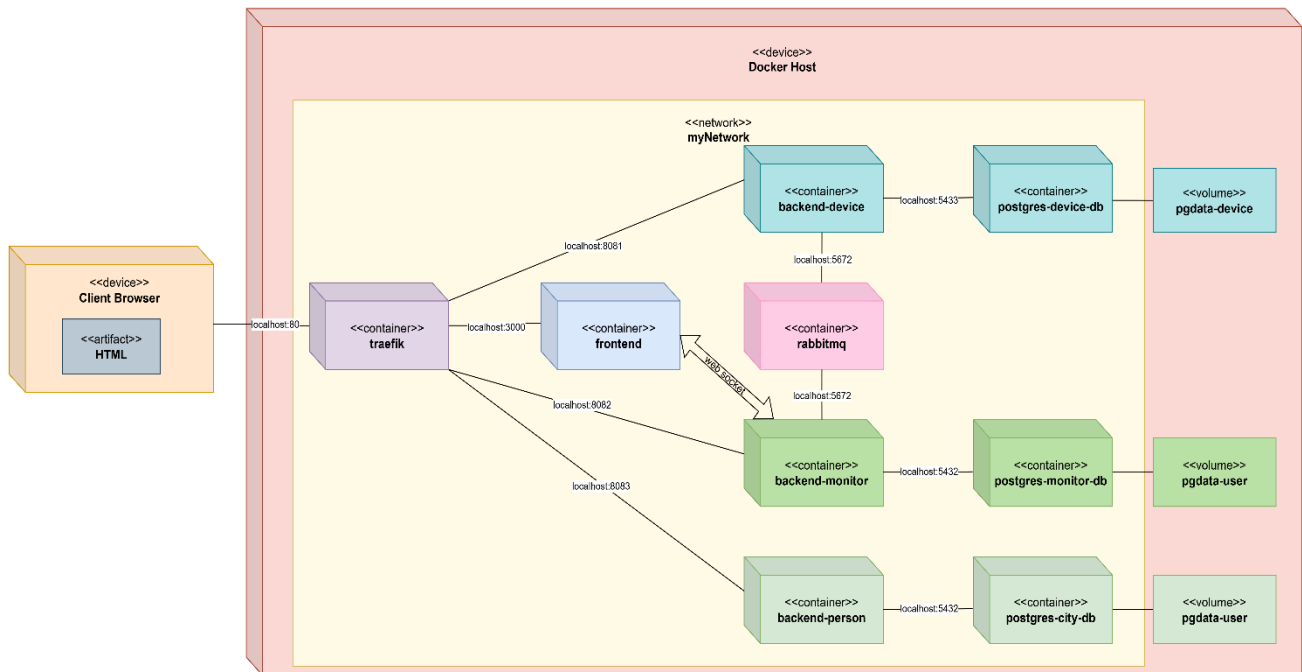
Clientii pot doar sa vizualizeze detaliile aferente device-urilor care le-au fost asignate, pot primi notificari legate de depasirea consumului de energie maxim per ora pentru unul sau mai multe device-uri si poate vizualiza sub forma unui grafic istoricul de consum al propriilor dispozitive.

Din punct de vedere structural, aplicatia este formata din trei microservicii : unul pentru gestionarea utilizatorilor, unul pentru gestionarea device-urilor si unul pentru monitorizarea consumului device-urilor. Microserviciile au asociate baze de date in care se stocheaza datele necesare. Interfata utilizator este reprezentata de o aplicatie react care incorporeaza toate functionalitatile aplicatiei asigurand usurinta utilizarii acesteia. Aplicatiei i se poate adauga si un simulator configurabil care sa imite functionarea unui device prin trimiterea constanta, la un interval prestabilit de 10 min a indexului de consum curent.

2. Arhitectura Conceptuala a Sistemului Distribuit



3. Diagrama UML de Deployment



4. Readme file

#Ds2024_30643_pricop_petru_adelin_assignment_2

This project represents a Energy Management System aimed to help the energy provider to manage the devices and the clients and to offer to clients an overview of the devices and their consumption history that are assigned/mapped to their account.

##FEATURES

Two types of account: administrator and client

Log In page

CRUD on users and devices for administrators

Visualisation of the devices mapped to their account for clients

Visualisation of the energy consumption history as a chart

Notifications when the MHEC is overflowed

##REQUIREMENTS

Docker installed on your system (<https://docs.docker.com/engine/install/>)

PostgreSQL installed on your system (for running locally only) (<https://www.postgresql.org/download/>)

##SETUP

###LOCALLY

clone the repository locally with the command

```
git clone https://gitlab.com/Adelin4702/ds2024\_30643\_pricop\_petru\_adelin\_assignment\_2.git ;
```

create three databases named city-db, device-db and monitor-db in PostgreSQL;

run in your IDE the main method from personMicroservice, deviceMicroservice and monitoringMicroservice ;

start the frontend application by running the command: npm start in terminal;

access <http://localhost:3000> from your favourite browser.

###DEPLOY TO DOCKER

clone the repository locally with the command

```
git clone https://gitlab.com/Adelin4702/ds2024\_30643\_pricop\_petru\_adelin\_assignment\_1.git ;
```

start the Docker Engine;

run the following command in terminal in order to create the containers and to start the application:

```
cd ./<path to repo>
```

```
docker-compose up -d --build
```

access <http://localhost:80> from your favourite browser.

##USAGE

Register new account

In order to create a new account, click on the Log In button and Register new account button and complete and submit the form.

Log in

To access the application, click the log in button and complete your credentials (email and password) and submit the form.

Check My Devices (For clients)

Open the select menu and select My Devices.

Statistics (For clients)

Open the select menu and select Statistics

Select the device and the date you want to check the history for and press the „View Consumption” button

CRUD on users (For administrators)

Open the select menu and select Persons. Depending on the action you want to perform, you can click Add Person(to create a new person), Delete(to delete the person on the corresponding row) or Update(to update the person on the corresponding row).

CRUD on devices (For administrators)

Open the select menu and select Devices. Depending on the action you want to perform, you can click Add Device(to create a new device), Delete(to delete the device on the corresponding row) or Update(to update the device on the corresponding row).