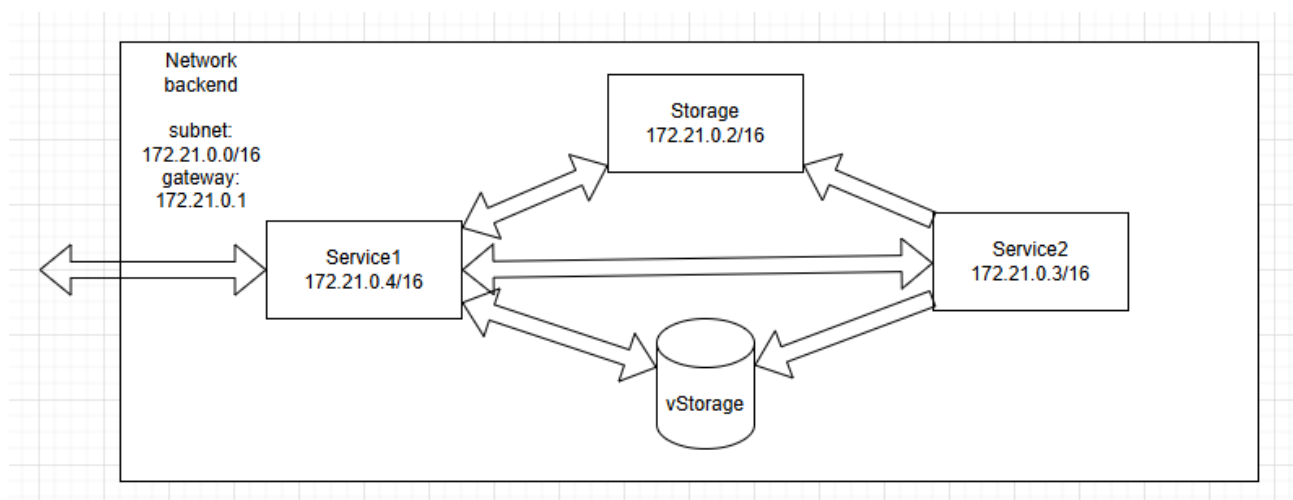# Containers and microservices

Hardware

- HP pc
- Windows 11
- Docker version 28.0.1, build 068a01e
- Docker Compose version v2.33.1-desktop.1

Diagram of services

Analysis of the content of the status records

The disk space measured is the available space of the containers file management space. It is not measuring the available space of the volume. That can be misleading. Uptime only tells the uptime of the certain container. Not the uptime of the whole server.

Analysis and comparison of the persistent storage solutions

Both storages were implemented with a volume. It is not the best solution, but it is easy to implement. With database or file management system it would be possible to index the data and format it in better ways etc.

The microservice solution is easier to use than the vStorage implementation. The user doesn't need to know how to write to a file. Only needs to be able to communicate with the rest API which every programmer should be able to do. With this microservice solution user can't accidentally overwrite data and it works as intended using any programming language.

Instructions to clear persistent storages

To clear the vStorage volume in root directory run:

    rm vstorage

To clear storage microservice data:

Make sure you have stopped and removed the containers with the command:

    docker compose down

To see your local volumes:

    docker volume ls

To delete one:

    docker volume -rm volume_name

In this case command to delete the volume is most likely

    docker volume rm compse140-containers-and-microservices_storage-data

What was difficult

Probably one of the most difficult parts was to program with Java as I haven't done this kind of things with Java. I needed to check how to write to a file, how to send HTTP-requests, use env variables etc.

Main problems

I didn't face many problems. Little bit debugging here and there but nothing serious. One thing I was not 100% sure was that was it okay to implement the storage service using volume, but at least I didn't find it mentioned in the documentation.