

Development

Running Docker locally

```
# frontend
docker build -t bht-frontend ./frontend/
# backend
docker build -t bht-backend ./backend/

# run frontend
docker-compose up
```

Infrastructure

Kubernetes

Components

Our single node Kubernetes cluster consists of the following components:

- CNI-plugin: Cilium
- Container-Engine: CRI-O
- Loadbalancing: MetalLB
- Entrypoint: Ingress-NGINX (Frontend- and Backend-Services reachable)
- Argo CD Manage deployments
- HELM

Services

- Frontend Service (Route: "/")
- Backend Service (Route: "/api")
- DB Service (Only reachable internally)

Container

Docker-files:

We have a Docker-file for the frontend and one for the backend.

Database:

- Container: Postgres:17-alpine
- hostname: pgdb
- Ports: 5433:5432

- Volumes: pgdb-volume-claim, pgdb-bht-volume
- Secrets: pgdb-secret
- environment variables: POSTGRES USER, POSTGRES PASSWORD, POSTGRES DB
- Replicas: 1

Backend:

- Container: mcr.microsoft.com/dotnet/sdk:8.0
- Hostname: BHT-backend
- Ports: 8081:8081
- Secrets: pgdb-secret
- depends on the database
- Replicas: 2

Frontend:

- Container: node:22-alpine
- Hostname: BHT-frontend
- Ports: 8080:8080
- depends on the backend
- Replicas: 1