

Fullstack Development

Preflight project - backend

[Github Repo](#)

Backend applications

- Data storage
- Business logic
- Authentication / authorization
- APIs for frontend frameworks (*depending on architecture*)
- Connection to other services

Node JS backend frameworks

- [Github stars](#)
- [State of JS 2024](#)

Packages

- `npm init es6`
- Express JS
 - `pnpm i express cors helmet morgan debug`
- Typescript
 - `pnpm i typescript @tsconfig/node-lts @tsconfig/node-ts tsx tsc-alias`
 - `pnpm i -D @types/cors @types/express @types/debug @types/morgan`
`@types/node cross-env nodemon`
- ORM
 - `pnpm i drizzle-orm postgres dotenv`
 - `pnpm i -D drizzle-kit`






Package explanation

Package	Details
<code>express</code>	Express (<i>duh!</i>)
<code>helmet</code>	Set default HTTP response header
<code>cors</code>	Enable Cross-origin resource sharing (CORS)
<code>morgan</code>	HTTP request logger
<code>debug</code>	Debugging utility
<code>nodemon</code>	Script monitoring during dev


ORM code

- All [files](#) in `./db` folder.
 - No need to copy `migration` folder.
 - You can change schema.
- `.\drizzle.config.ts` ([Link](#))

Files

-  `./.env` (Copy from [here](#))
-  `./nodemon.json` ([Link](#))
-  `./.gitignore` ([Link](#))
-  `./tsconfig.json` ([Link](#))
-  `./.npmrc` (Copy from [here](#))
- Scripts in `package.json` ([Link](#))

Minimal example

-  `./src/index.ts` [\(Link\)](#)
- Sync database (if you have not done so)
 - `npm run db:push`
- Start dev
 - `npm run dev`


Full example

-  `./src/index.ts` [\(Link\)](#)
- Build
 - `npm run build`
- Start production
 - `npm run start`

API Spec

- Insomnia
- Postman

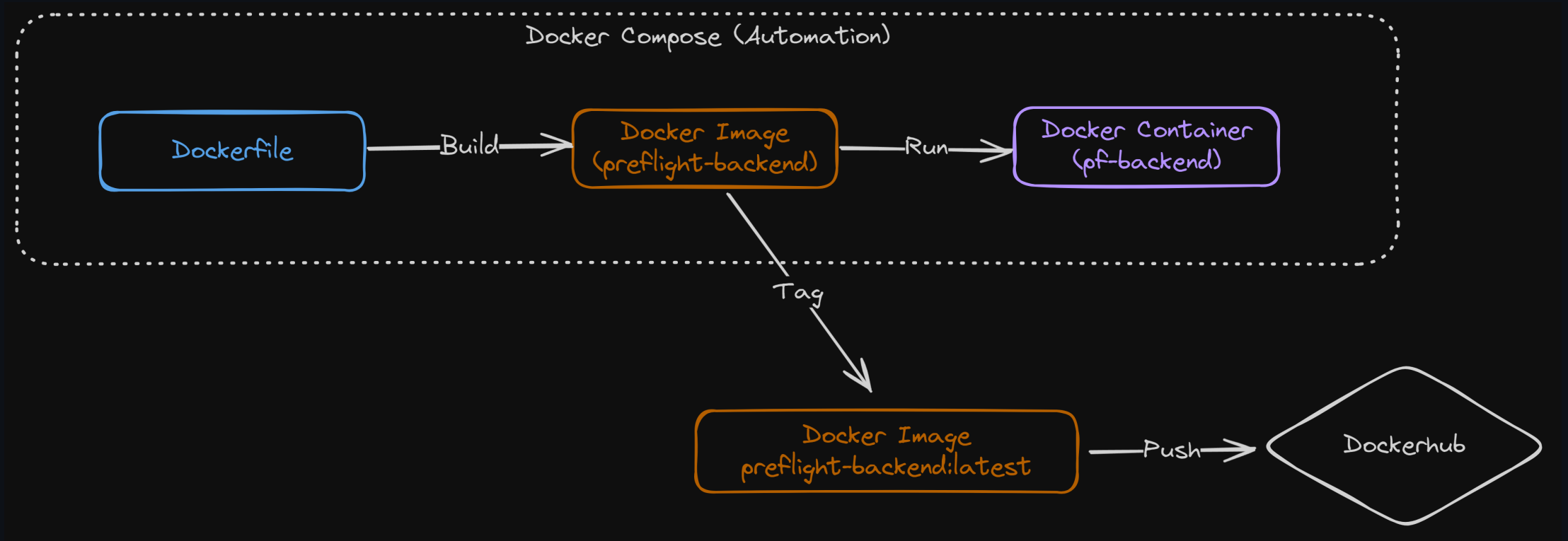
Debugging (optional)

-  `./.vscode/launch.json` ([Link](#))






Migration

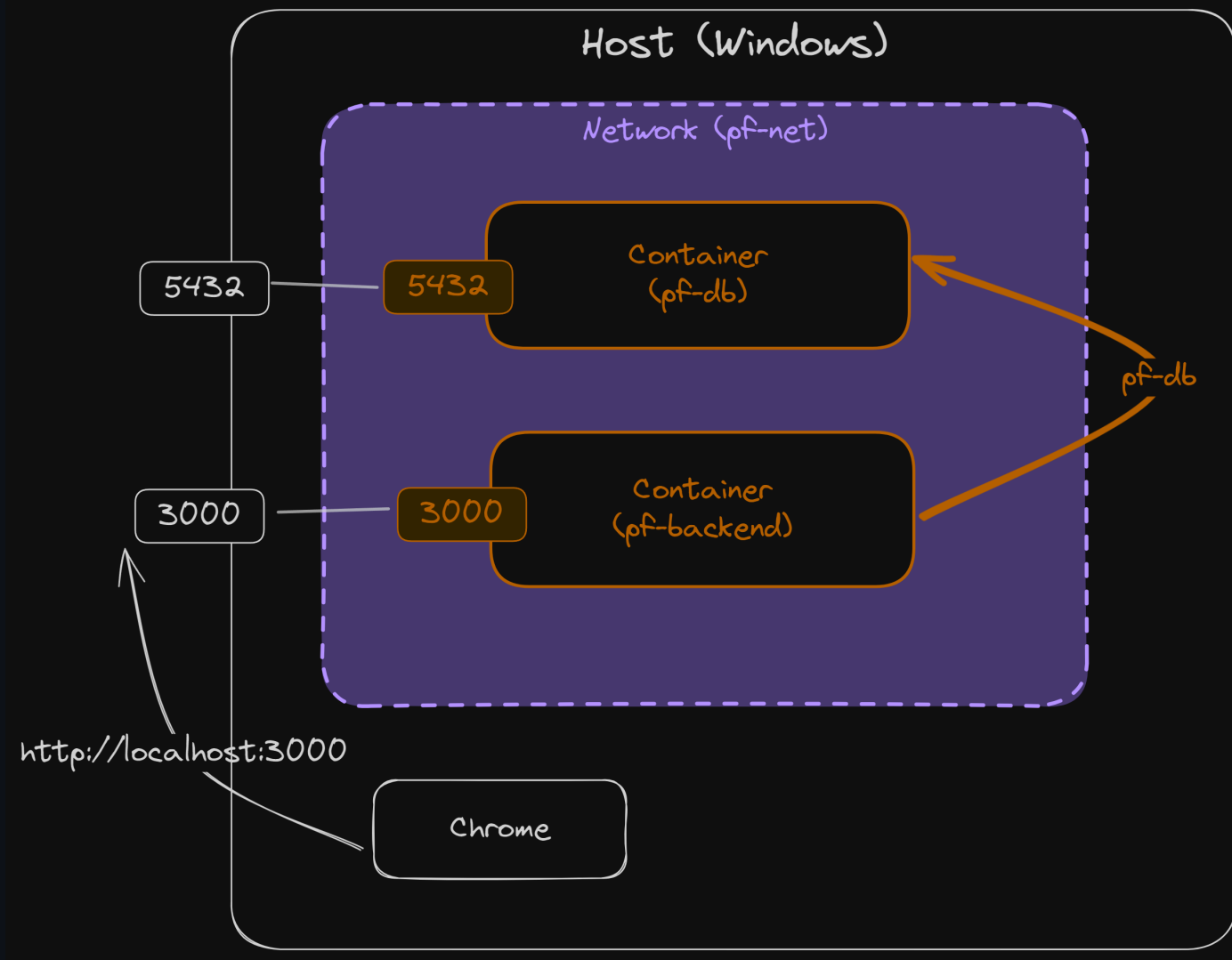
- Run before the containerization step.
- `npm run db:generate`

Containerization



Steps

-  `./Dockerfile` [\(Link\)](#)
-  `./dockerignore` [\(Link\)](#)
-  `./docker-compose.yml` [\(Link\)](#)
-  `./.env.test` from `./.env.test.example` [\(Link\)](#)
-  `docker compose --env-file ./.env.test up -d --force-recreate --build`



Automated database migration


- We want to make sure that database migrations are run automatically every time the container starts.
- We use the `post_start` hook in `docker-compose.yml`

Dockerhub

- Create an account at <https://hub.docker.com>.
- Create repository called `preflight-backend`.
- Login to your account in terminal
 - `docker login -u [DOCKERHUB_ACCOUNT]`

Push to Dockerhub

- Tag image

-  `docker tag preflight-backend [DOCKERHUB_ACCOUNT]/preflight-backend:latest`

- `docker login`

- Push image

-  `docker push [DOCKERHUB_ACCOUNT]/preflight-backend:latest`

Useful docker commands

- Inspect

- `docker ps`
- `docker network ls`
- `docker volume ls`

- Cleaning

- `docker image prune -a`
- `docker builder prune`
- `docker volume prune`
- `docker network prune`