🧰 TrafficJamz Local Dev Environment

This project uses docker-compose.override.yml and supporting shell scripts to provision a secure, full-stack development setup with hot reloading, optional TLS, and persistent state across services.

## 🚀 Services Overview

|  |  |  |
| --- | --- | --- |
| Service | Port(s) | Description |
| frontend | 8080 | React/Vite hot reload server |
| api | 5000 | Node.js backend (GraphQL / REST) |
| postgres | 5432 | Relational DB for core data |
| mongodb | 27017 | Document store for unstructured data |
| redis | 6379 | In-memory cache & session store |
| influxdb | 8086 | Time-series DB for location pings |
| zookeeper | 2181 | Kafka coordination service |
| kafka | 9092 / 29092 | Stream broker for internal messaging |
| kafka-ui | 8082 | Kafka management dashboard |
| adminer | 8081 | DB UI for managing Postgres/Mongo |

All services run inside app-network for internal resolution and security. Volumes persist state across restarts.

## 🔐 TLS for Dev (Optional)

To enable HTTPS in local development:

bash

./ssl-bootstrap.sh

Creates self-signed certs in docker/frontend/certs:

* fullchain.pem
* privkey.pem

Used by NGINX in secure mode.

## 🕹️ Dev Mode Launcher

Start your local stack using:

bash

./dev\_build.sh

Select from:

* 1️⃣ HTTP — hot reload at http://localhost:8080
* 2️⃣ HTTPS — NGINX proxy with TLS at https://localhost
* 0️⃣ Cancel — abort without launching

The script:

* Cleans up orphan containers
* Validates cert presence
* Starts only required services

## 🧼 Cleanup

To shut down all containers cleanly:

bash

docker-compose -f docker-compose.override.yml down --remove-orphans