

Happy Again – Deployment & CI/CD Documentation

1. Overview

The project runs fully in Docker:

- **Backend (Flask)** → Port **8000**
- **Frontend (Angular)** → Port **8080**
- **Apache2** → Reverse proxy for public domain
- **Watchtower** → Automatically updates containers
- **GHCR** → Hosts Docker images
- **GitHub Actions** → Builds & pushes images

Deployment is **automatic**. Developers do NOT log in to the server.

2. Build & Deployment Flow

Step 1 — Developer workflow

1. Make changes
2. Push to feature branch
3. Open Pull Request → **staging**
4. Merge PR

Step 2 — GitHub Actions

For both backend and frontend:

- Build Docker image
- Tag: **staging** + **sha-<commit>**
- Push image to **ghcr.io/ota-fayz/...**

Step 3 — Server (automatic)

- Watchtower checks GHCR every 60s
 - If a new image exists → pulls it and restarts container
 - Deployment completes without manual actions
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3. Server Setup (Summary)

Docker containers running

happyagain-backend
happyagain-frontend
watchtower

docker-compose.yml

Located at:

/var/www/happy-again-backend/docker-compose.yml

Frontend:

- Runs on port **8080**
Backend:
- Runs on port **8000**

Watchtower:

- Auto-updates both containers
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4. Apache Configuration

Apache serves the public domain:

Frontend

https://happyagain.essex.ac.uk/
→ proxied to http://127.0.0.1:8080/

Backend

https://happyagain.essex.ac.uk/api/
→ proxied to http://127.0.0.1:8000/

Cert files:

/essex/certs/fullchain.cer

/essex/certs/cert.key

Primary config file:

/etc/apache2/sites-available/happy-again-so.conf

Apache is only a **reverse proxy**.

No static files are served directly from disk.

5. Important Commands

Check container logs

sudo docker logs happyagain-backend

sudo docker logs happyagain-frontend

sudo docker logs watchtower

Check running containers

sudo docker ps

Restart Apache

sudo systemctl reload apache2

6. How to Verify Deployment

Backend health

<https://happyagain.essex.ac.uk/api/health>

Expected:

```
{ "status": "ok", "version": "vX.X.X" }
```

Frontend

Open:

<https://happyagain.essex.ac.uk/>

Force reload:

Ctrl + Shift + R

7. Secrets Used in GitHub

- **GHCR_USERNAME** → GitHub username
- **GHCR_TOKEN** → Personal Access Token with:
 - `write:packages`
 - `read:packages`
 - `repo`

These are used for GitHub Actions login to GHCR.

8. Manual Deployment (Only if CI/CD fails)

```
sudo docker compose pull
sudo docker compose up -d
```

Do not use manual SSH deployment unless absolutely necessary.