

\$!d\$

Infrastructure Stop & Start Operational Procedures

This runbook outlines the exact sequence and commands to start, stop, and verify each microservice in the Local Food AI environment.

1. Sequence Priority Rules

Due to database socket requirements and network bindings, services must be started and stopped in the following order:

```
graph TD
  subgraph Startup Sequence
    direction TB
    A[1. MySQL Database] --> B[2. Ollama & SearXNG AI Services]
    B --> C[3. Streamlit Application & Nginx Proxy]
    C --> D[4. Zabbix Monitoring & Airflow Supervisor]
  end
  end
```

2. Startup Procedures

Step 2.1: Start the Core MySQL Database

Verify that the database service is up and listening on port 3307:

```
docker compose up -d mysql
# Verify database logs
docker compose logs -f mysql
```

Step 2.2: Start AI Engine & SearXNG Search

Deploy the AI components:

```
docker compose up -d ollama searxng
# Check that Ollama responds
curl http://localhost:11434/api/tags
```

Step 2.3: Start Streamlit App and Nginx Gateway

Bring up the frontend web interface and reverse proxy:

```
docker compose up -d app nginx
# Verify Web Interface status
curl -I http://localhost
```

Step 2.4: Start Zabbix Monitoring Suite

Deploy the monitoring server and agents:

```
docker compose up -d zabbix-server zabbix-web zabbix-agent
# Check dashboard availability
curl -I http://localhost:8081
```

3. Shutdown Procedures

To perform system maintenance or schema migration, stop services in reverse order to prevent lockups:

```
# 1. Stop Monitoring Components
docker compose stop zabbix-agent zabbix-web zabbix-server

# 2. Stop Web Frontend and Proxy Gateway
docker compose stop nginx app

# 3. Stop NLP and Search Services
docker compose stop searxng ollama

# 4. Stop Database Container gracefully
docker compose stop mysql
```

4. Status Verification Commands

Use these commands to verify container state and port bindings:

```
# List all running containers in the stack
docker compose ps

# Inspect raw container logs for error spikes
docker compose logs --tail=100

# Verify TCP socket listener binds
netstat -tulpn | grep -E "80|3307|8081|11434"
```