

Zabbix Telemetry & Monitoring Guide

Project Deliverable

Course B1AI

Class:

Author: François LANGE

Date: 2026/06/19

Table of Contents

- Overview Page 2
- Accessing the Dashboard Page 2
- Key Metrics Monitored Page 2
- Verifying Alerts Page 2

The current version is #ident
 "@(#)\$Format:LocalFoodAI_lanfr144:zabbix_monitoring.md:Francois
 Lange:lanfr144@school.lu:2026/06/11 08:26:59:Francois
 Lange:lanfr144@school.lu:2026/06/11
 08:26:59:1701828b122e0c319e59134ca6511a42ecad9297:: \$"

Zabbix Telemetry & Monitoring Guide

Overview

The Local Food AI project enforces strict DevSecOps observability by streaming live hardware and database telemetry metrics to an external Zabbix server (192.168.130.170:8081).

[!IMPORTANT] Offline Local Fallback: If the network to the external server is down or unavailable, the Zabbix monitoring dashboard is fully functional and accessible locally at `http://localhost:8081` when running the local Docker Compose stack.

Accessing the Dashboard

- Open your browser and navigate to `http://192.168.130.170:8081` (or `http://localhost:8081` if offline/local).
- Log in using your Zabbix credentials (default: `Admin / zabbix`).
- On the left sidebar, click **Monitoring > Dashboards**.
- Select the **Food AI RAG Telemetry (Live)** dashboard.

Key Metrics Monitored

The dashboard automatically queries the SNMP daemons running inside the Docker containers to monitor:

- **Memory Consumption:** Evaluates the massive RAM usage required by the Ollama Llama3.2:3B LLM during clinical evaluations.
- **CPU Spikes:** Identifies processing bottlenecks during the 3GB OpenFoodFacts `MATCH AGAINST` queries.
- **Database Row Count Check:** Displays the real-time record count of `food_db.products_core` to monitor the background CSV ingestion progress.

Verifying Alerts

- Click **Monitoring > Problems**.
- If `snmpd` inside a container crashes or is unreachable, Zabbix will trigger an `Agent Unreachable` High-Severity Alert.
- If the Database Server container crashes, Zabbix will trigger an alert via the Application Python `snmp_notifier.py` wrapper which sends asynchronous trap payloads indicating critical RAG failures.

References

- **OpenFoodFacts Dataset & API Catalog**: Detailed food ingredients database. (<https://world.openfoodfacts.org/>)
- **Ollama Local LLM Inference Engine**: Lightweight instruction-following llama3.2 runtimes. (<https://ollama.com/>)
- **Zabbix Enterprise Telemetry and Monitoring**: System health and performance logging. (<https://www.zabbix.com/>)

Index

- **AI:** Page 2, Page 3, Page 4
- **MySQL:** Page 4
- **Zabbix:** Page 2, Page 3, Page 4
- **Docker:** Page 2, Page 4
- **Streamlit:** Page 4
- **Nginx:** Page 4
- **RAG:** Page 2, Page 4
- **Allergens:** Page 4
- **Vitamins:** Page 4
- **Minerals:** Page 4
- **Clinical:** Page 2, Page 4
- **WSL:** Page 4
- **Ollama:** Page 2, Page 3, Page 4
- **LLM:** Page 2, Page 3, Page 4
- **Database:** Page 2, Page 3, Page 4
- **Security:** Page 4
- **Telemetry:** Page 2, Page 3, Page 4
- **Backup:** Page 4
- **Firewall:** Page 4
- **SMTP:** Page 4