

Week 8: Docker Compose (6 Services)

Full Stack RAG with Local LLM

Semester 2/2568

Agenda

1 Docker Compose

2 6 Services

3 Quiz 3 + Lab 7

What is Docker Compose?

Multi-Container Orchestration

- Define multiple services
- One command to start all
- Manage networks/volumes
- Production ready

docker-compose.yml

```
version: '3.8'
services:
  opensearch_container:
    image: opensearchproject/opensearch:2.11.1
    ports:
      - "9200:9200"

  frontend_container:
    build: ./frontend
    ports:
      - "8501:8501"
```

Architecture

Service	Description	Port
opensearch	Vector DB	9200
embedding	Doc Processing	-
search_api	Search Service	8005
backend	Main API	8006
frontend	Streamlit	8501
ollama	Local LLM	11434

Commands

```
# Start all  
docker-compose up -d
```

```
# View logs  
docker-compose logs -f
```

```
# Stop all  
docker-compose down
```

Quiz 3 (5%)

Topics: Embeddings, RAG, LLM, Streamlit

Lab 7: Docker Compose (3.75%)

Tasks:

- ① Clone Advanced-RAG-Docker
- ② Run docker-compose
- ③ Verify 6 services
- ④ Test application

Questions? Good luck on Quiz 3!