Data Economy Platform

Martin J. Brucker

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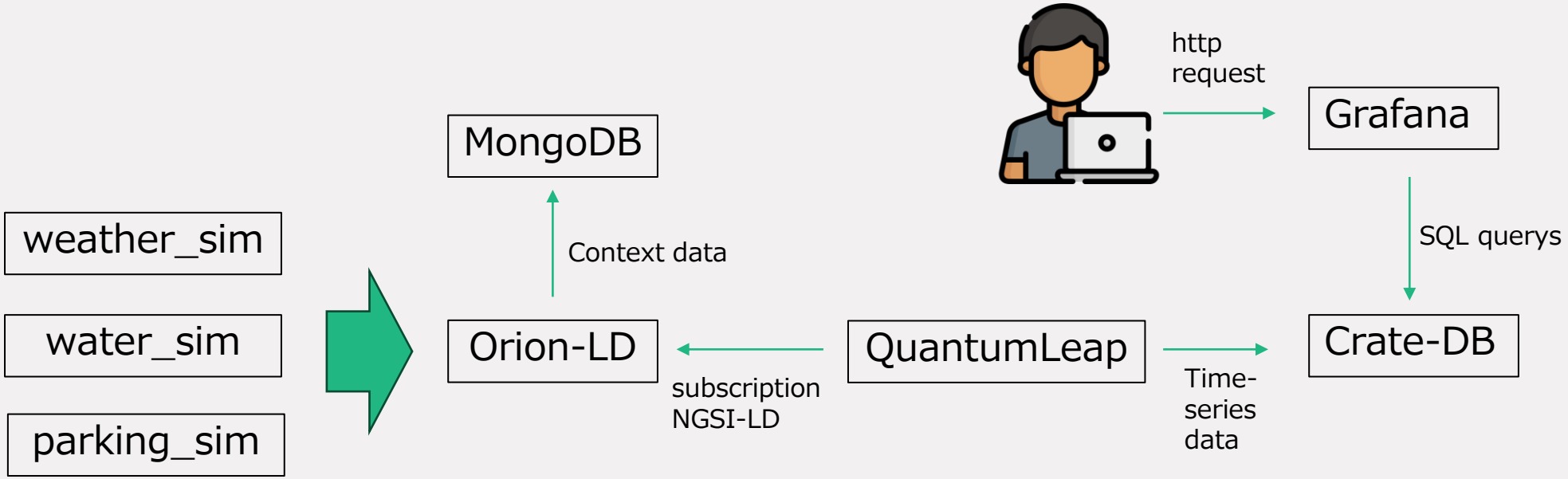
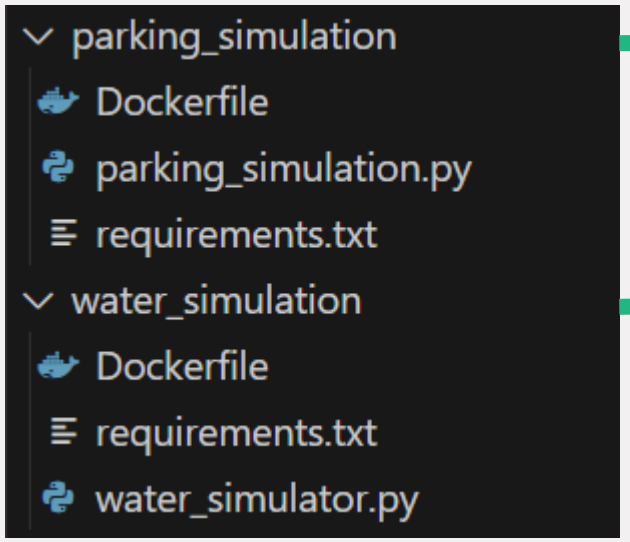
Agenda

- IT-Architecture
- Deployment
- Applications
- Smart Data Models
- Grafana

FIWARE Components



IT-Architecture

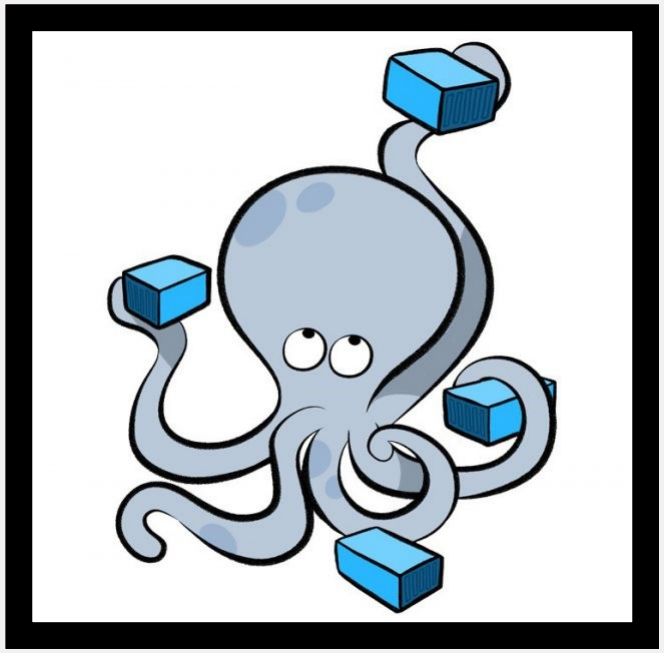


Name	Image	Status	CPU (%)	Port(s)
parking_simulator_container 18b4111a347e	parking_simulator_image	Running	0%	
water_simulator_container 651f494c39c8	water_simulator_image	Running	0%	
task2		Running (6/6)	2.07%	
task2_quantumleap_1 4898a54ed96e	smartsdk/quantumleap:latest	Running	1.36%	8668:8668
task2_grafana_1 7d882387800b	grafana/grafana:latest	Running	0.14%	3000:3000
task2_mongo-db_1 58654b29691b	mongo:4.4	Running	0.4%	27017:27017
task2_mongo-express_1 8b5bae210285	mongo-express:latest	Running	0%	8081:8081
task2_crate-db_1 fa0f9de928b4	crate:latest	Running	0.17%	4200:4200 5432:5432 Show less
task2_context_broker_1 08b57f99bc61	fiware/orion:latest	Running	0%	1026:1026

Deployment

Docker Compose

- Simple Networking
- Service-Oriented
- Easy-to-read YAML
- Integrated Networking
- Portability



Networking in Docker-Compose

Automatic Network Creation

- Docker Compose creates a default network for your services

Service Discovery

- Services can communicate using their service names as hostnames
- Built-in DNS resolver facilitates name-based discovery

Custom Networks

- Define custom networks for more control
- Use „network section to specify custom network config

Applications

Weather Collector

OpenWeather

Parking Simulator

Water Simulator

Smart Data Models

Smart Data Models Initiative

Utilization of standardized data models for specific domains to ensure interoperability and reusability

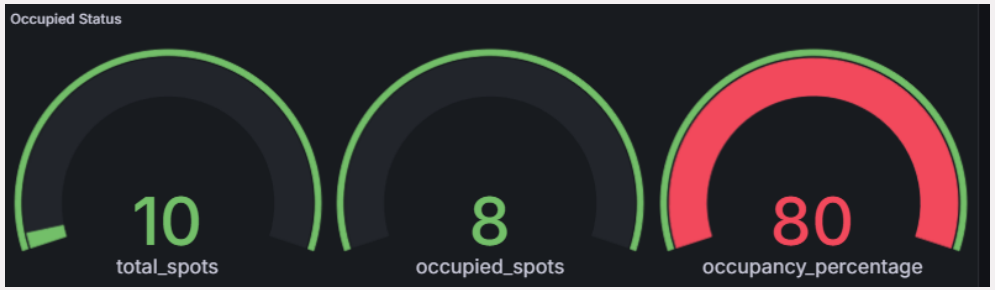
WaterQualityObserved Data Model

Definition and use of the WaterQualityObserved model for capturing and monitoring water quality data

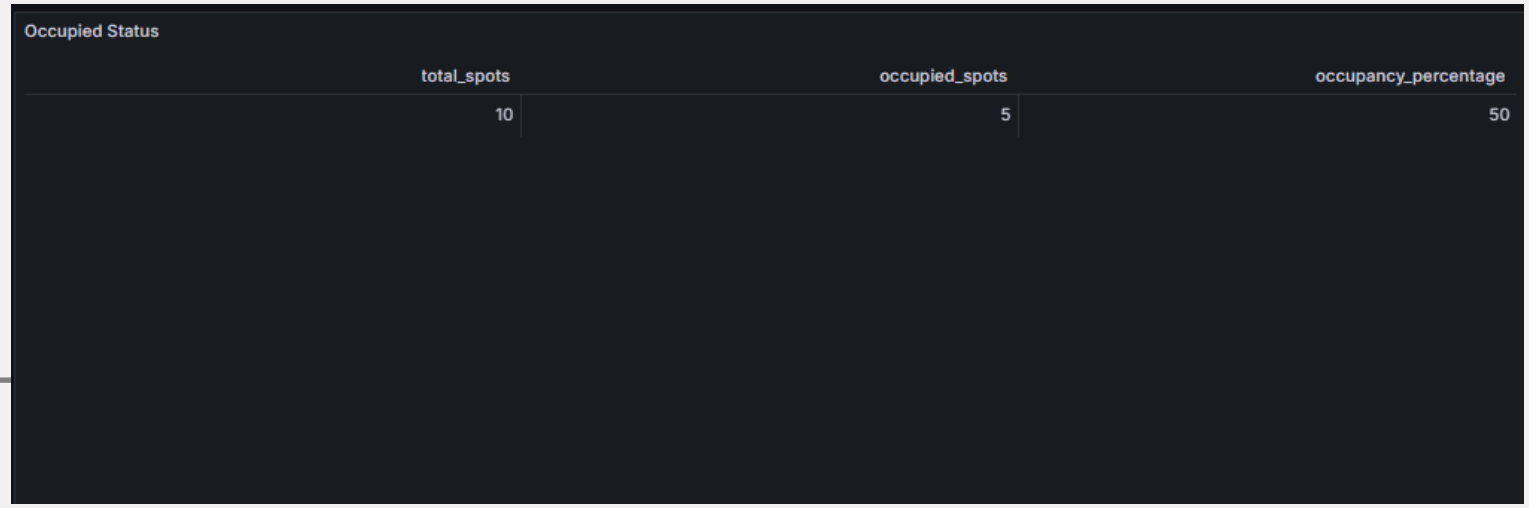
Data Attributes:

pH, Alkalinity, Nitrite (NO2), Aluminum (Al), Arsenic (As), Boron (B), Barium (Ba), Cadmium (Cd)

Grafana Dashboard



Grafana




```sql
SELECT
    COUNT(*) AS total_spots,
    SUM(CASE WHEN latest_status = 'occupied' THEN 1 ELSE 0 END) AS occupied_spots,
    (SUM(CASE WHEN latest_status = 'occupied' THEN 1 ELSE 0 END)::float / COUNT(*)::float) * 100 AS occupancy_percentage
FROM (
    SELECT
        entity_id,
        status AS latest_status
    FROM (
        SELECT
            entity_id,
            status,
            ROW_NUMBER() OVER (PARTITION BY entity_id ORDER BY time_index DESC) AS rn
        FROM "mtparking"."etparkingspot"
    ) AS ranked
    WHERE rn = 1
) AS latest_statuses;
```

Thanks alot!