



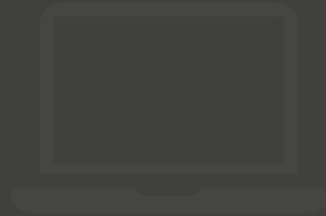
ORWELL

Monitorization Platform for a 5G Testbed

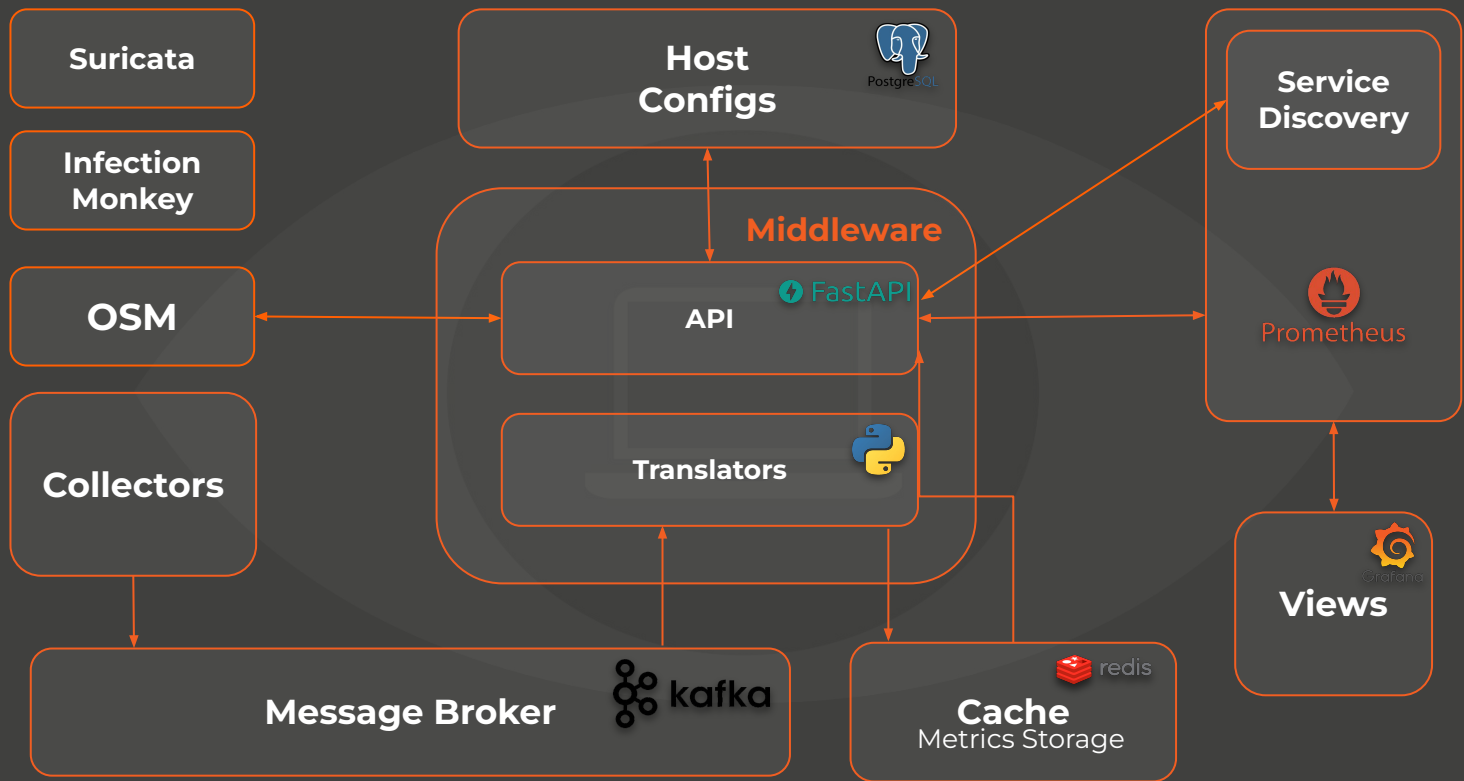
Final Presentation

Project Recap

- _ 5G Testbed
- _ Non-intrusive
- _ Monitorization
 - _ VNFs
 - _ Network Performance
 - _ 5G Core
- _ Security and Alarmistics



Architecture

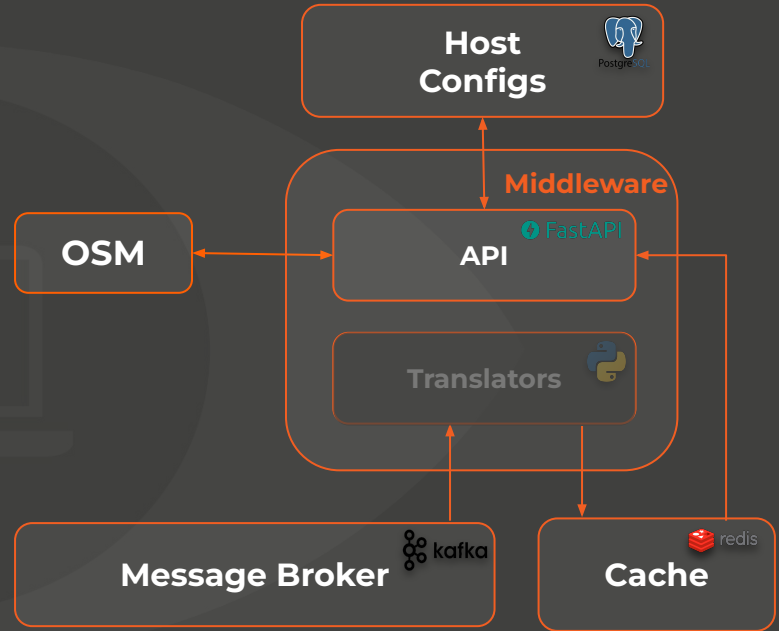


A large, stylized eye graphic is centered on a dark gray background. The eye is composed of a large, light gray outer shape and a smaller, darker gray inner shape representing the pupil. Inside the pupil, there is a faint, light gray outline of a laptop computer. The text "How it works" is written in white, bold, sans-serif font across the middle of the pupil.

How it works

Middleware

- _ Orwell's Service Discovery
- _ Host Configs
- _ Message Broker
- _ Cache



Middleware

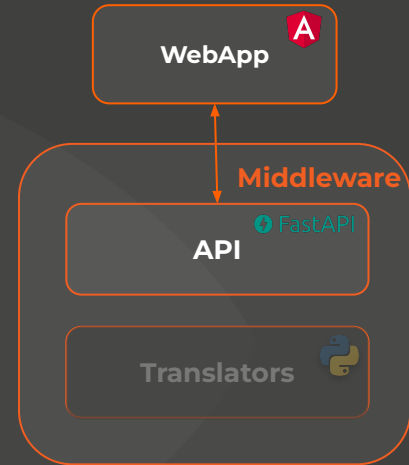
_ API

_ Discovering Services

_ Metric Fetching

_ Management

_ WebApp



Metrics Collectors

- _ OS Images

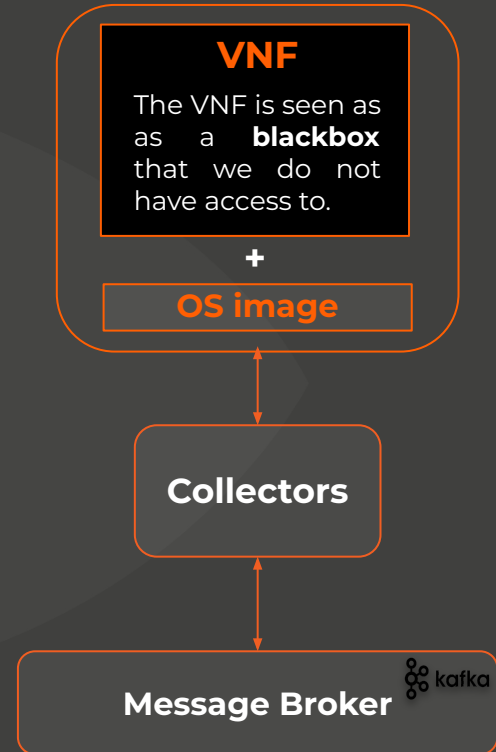
 - _ Prometheus' Node exporter

 - _ Telegraf

- _ Gnocchi

- _ PerfSonar

- _ eSight



Metrics Translators

_ Python Module

_ Translation Process

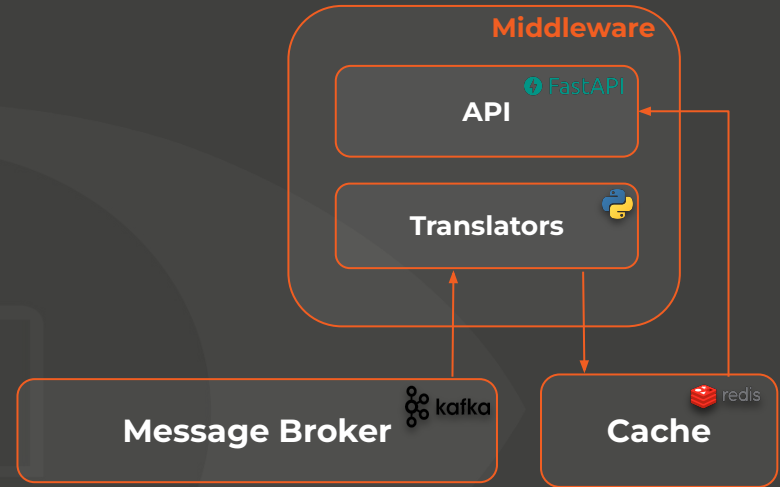
```
from orwell import Metric, Runner
```

```
"""
```

```
The translator function should be able to receive multiple lines  
of the desired service output and return a list of Metric objects  
"""
```

```
def translate (lines: str) -> list[Metric]:  
    metrics = [ line.split(',') for line in lines.split('\n') ]  
    return [ Metric(metric, value, { 'host!': host }) for host,  
            metric, value in metrics ]
```

```
translator = Runner(translate)  
translator.run()
```



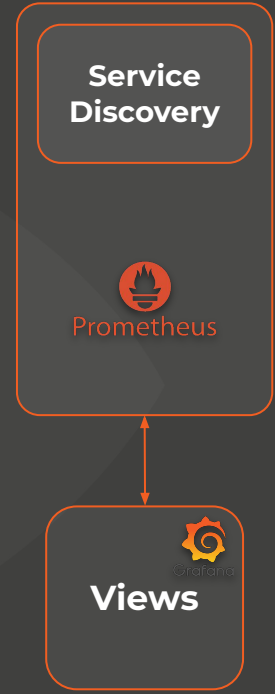
Data Storage and Visualization

_ 5GASP Directives

_ Grafana

_ Prometheus

_ Prometheus' Service Discovery



Security

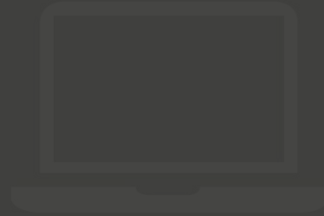
_ Suricata

_ Infection Monkey

_ Selenium API

Suricata

**Infection
Monkey**

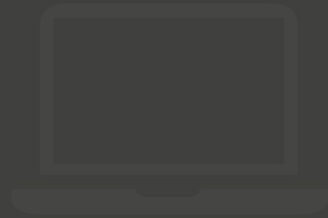


Alarmistic

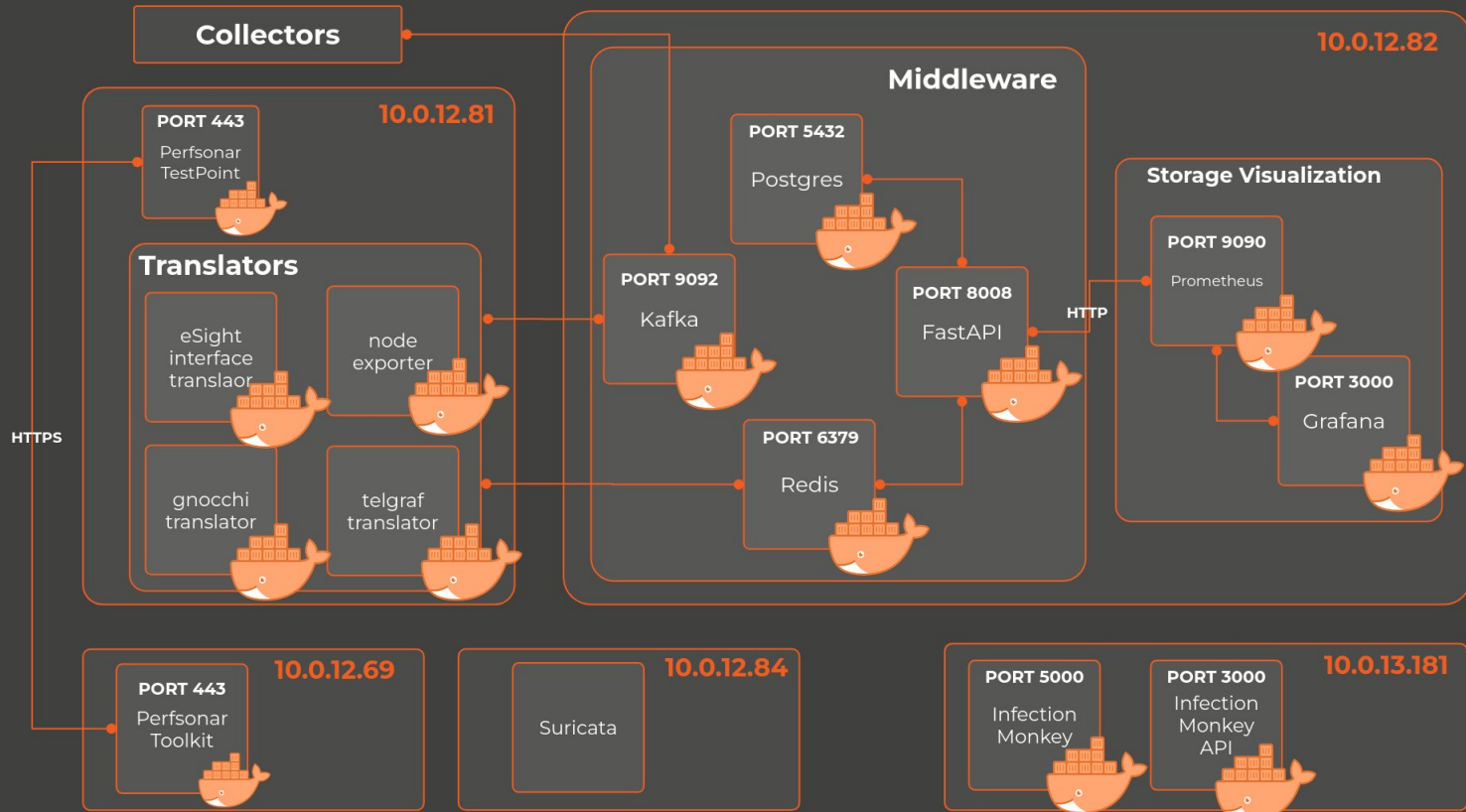
_ Slack:

_ Suricata Logs

_ Grafana Alerts



Deployment



Achievements

- _ Non-intrusive monitoring
- _ Network and 5G Core monitoring
- _ Security and alarmistics mechanisms
- _ Extras:
 - _ Infection Monkey Selenium API
 - _ Dockerized PerfSonar Toolkit
 - _ Grafana Automation
 - _ One Touch Deployment



Thank You

It was a pleasure to watch you