K6.io

OSS

Agenda

→ Introduction of k6

→ Features of k6

→ When to choose k6

→ Project Experience

→ Demo

Introduction to k6

- Developer-centric, free and open-source load testing tool licensed under AGPL 3.0
- Primary used in load testing and performance testing
- Developed in Go and can ingest test written in ES6

Features of k6

- CLI tool with developer-friendly APIs
- Lightweight uses Javascript/Typescript
- Can use HAR files to generate record sessions
- Doesn't run in a Browser and doesn't run in NodeJS
- Provides set of Metrics out of the box and custom metrics as well
- Allows Options to configure the test behavior
- Checks and Thresholds – for goal-oriented, automation-friendly load testing
- Groups and Tags organizes the tests around common logic and perform in-depth filtering
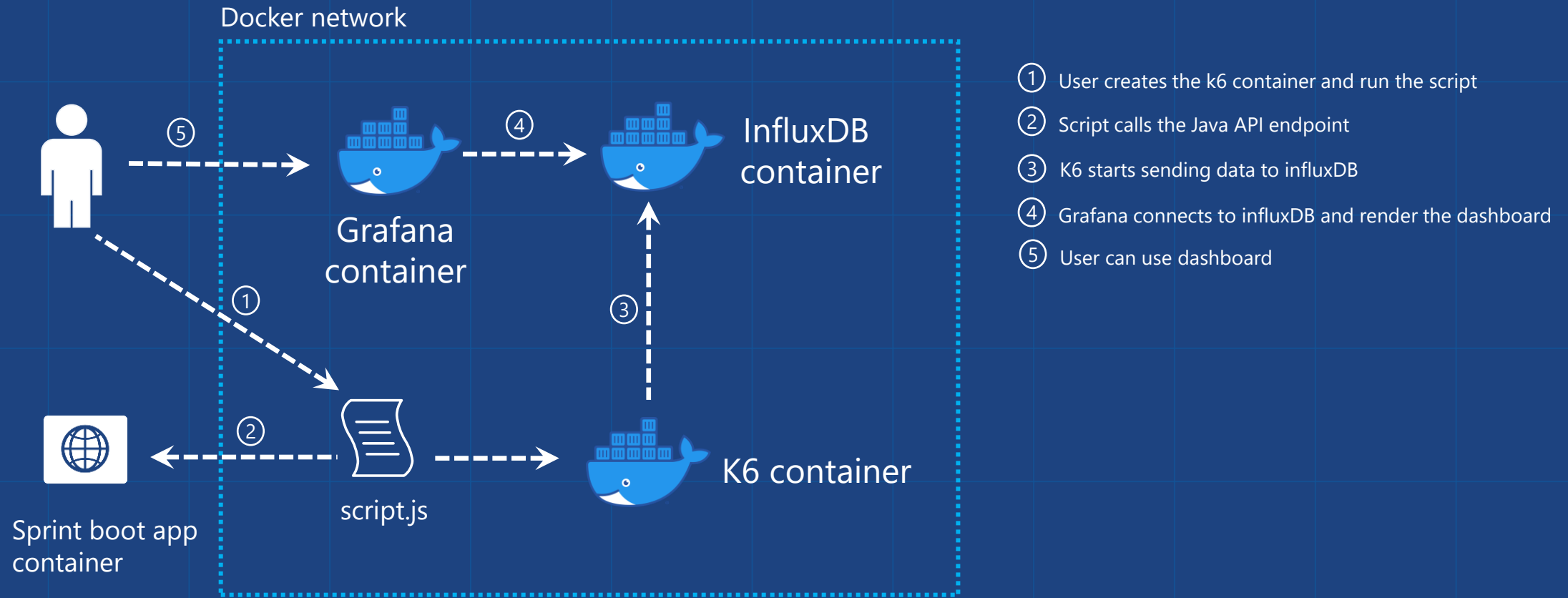
When to choose k6

- Supported protocols like HTTP 1.1/2 and WebSocket
- Faster way to write tests and easier to maintain
- Supports ramp-up phases and flexible load
- Number of concurrent users limited to 1000
- Lightweight and doesn't take up so much memory of your machine
- Completely script oriented and can be integrated with version control system
- Provides integration with Azure DevOps pipelines and Github actions
- Marketplace extension available for VS Code

Project Experience

- Perform performance testing for the application that we migrated to Azure.

- In the starting phase, faced some technical difficulties and received help from internal community.

- Wrote K6 script from scratch and demonstrated to customers how they can use it.

Demo

Docker network

① User creates the k6 container and run the script
② Script calls the Java API endpoint
③ K6 starts sending data to influxDB
④ Grafana connects to influxDB and render the dashboard
⑤ User can use dashboard

Grafana container

InfluxDB container

K6 container

script.js

Sprint boot app container

- *InfluxDB is a time series database designed to handle the massive volumes of time-stamped data produced by sensors, applications and infrastructure.*
- *Grafana is a multi-platform analytics and interactive visualization web application. It provides charts, graphs, and alerts for the web when connected to supported data sources.*