

6. DevOps Implementation

Version Control Practices

Git Workflow

GitHub Integration

Continuous Integration/Continuous Deployment

GitHub Actions Configuration

Build Server Setup

Testing Pipeline

Containerization

Docker Implementation

Container Registry

Cloud Deployment

Google Cloud Setup

Netlify Frontend Deployment

Monitoring and Maintenance A key principle in DevOps is the ability to act based on metrics. To do this we use Micrometer metrics, a common monitoring facade which is vendor neutral, alike SLF4J is for logging. We use the Prometheus format as Quarkus provides a convenient library for combining these, `quarkus-micrometer-registry-prometheus`. To display and view these metrics we use Dashbuilder which allows easy visualization of the metric data via a YML format. Quarkus also has minimal config library for this, named `quarkus-dashbuilder`.

We have also looked into setting up a centralized logging system, but due to time constraints were unable to implement it in time for the writing of this report.

Another clear improvement is monitoring if our frontend server is up or overloaded.