

IDC Re-engineering - GMS Development Environment



PRESENTED BY

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SAND2019-7103PE



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GMS Development Infrastructure

Project Documentation: Confluence

Developer Environment: Developer VM

Build System: Gitlab-CI

Repository Structure: mono-repo

Software Version Control: Git

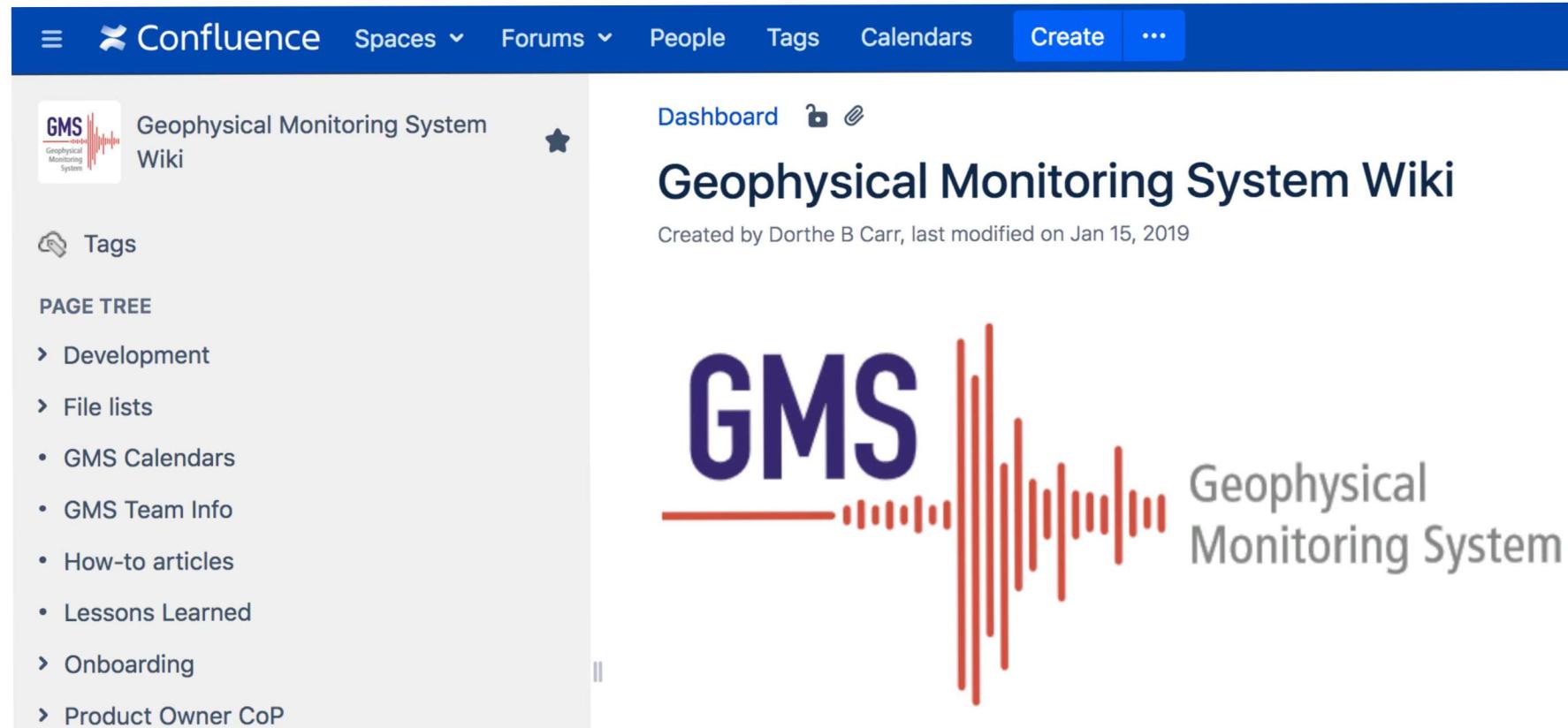
Artifacts Management: Artifactory

Software Analytics: SonarQube, Fortify, BlackDuck

Deployment System: Docker Compose → Docker Swarm

Project Documentation

Confluence Wiki:

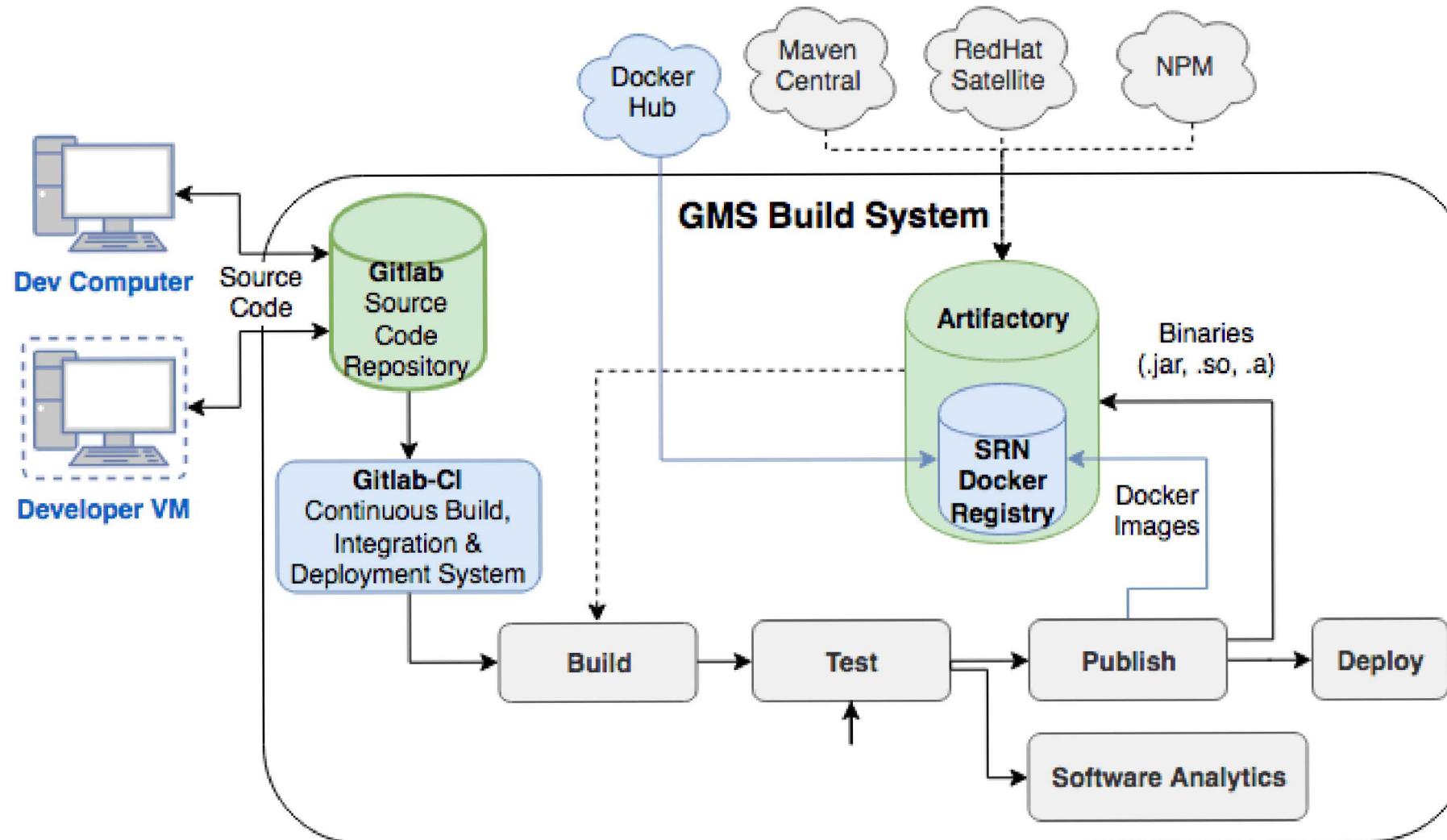


The screenshot shows the Confluence interface for the 'Geophysical Monitoring System Wiki' space. The top navigation bar includes links for Confluence, Spaces, Forums, People, Tags, Calendars, Create, and more. The left sidebar features a 'GMS' logo, the space name 'Geophysical Monitoring System Wiki', a 'Tags' section, and a 'PAGE TREE' with the following items:

- › Development
- › File lists
- GMS Calendars
- GMS Team Info
- How-to articles
- Lessons Learned
- › Onboarding
- › Product Owner CoP

The main content area displays the dashboard for the 'Geophysical Monitoring System Wiki'. It includes a 'Dashboard' button, a video camera icon, a gear icon, the title 'Geophysical Monitoring System Wiki', and a creation note: 'Created by Dorthe B Carr, last modified on Jan 15, 2019'. Below the title is a large 'GMS' logo with a red waveform graphic, followed by the text 'Geophysical Monitoring System'.

4 Build System Overview



Software Technologies Used



Container Software: Docker, Docker Compose, Docker Swarm

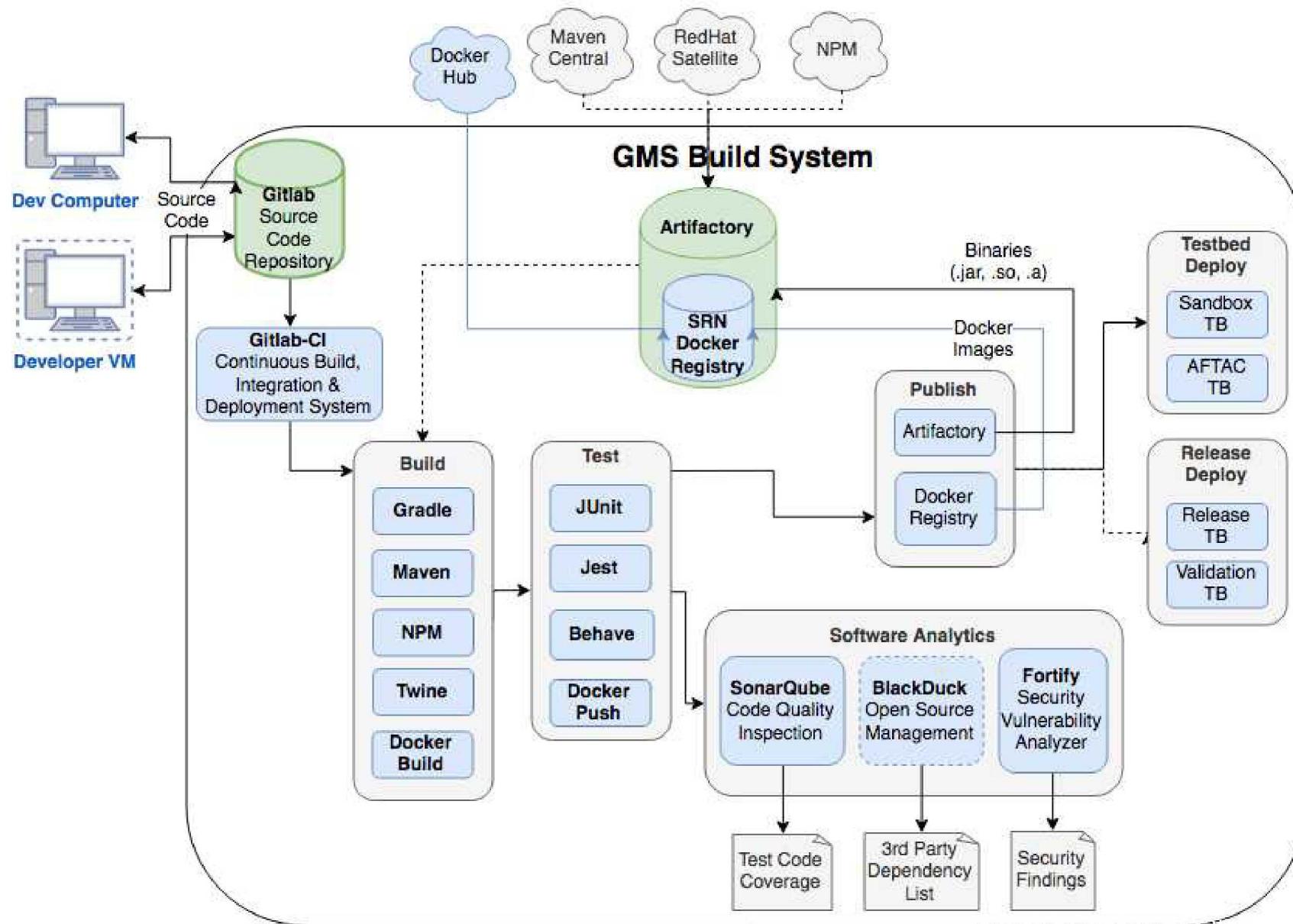
Backend Software: Java 9, Python 3.6, Postgres, Cassandra, Nifi, Nifi Registry

Frontend Software: Node/TypeScript, Nginx, Electron/Browser

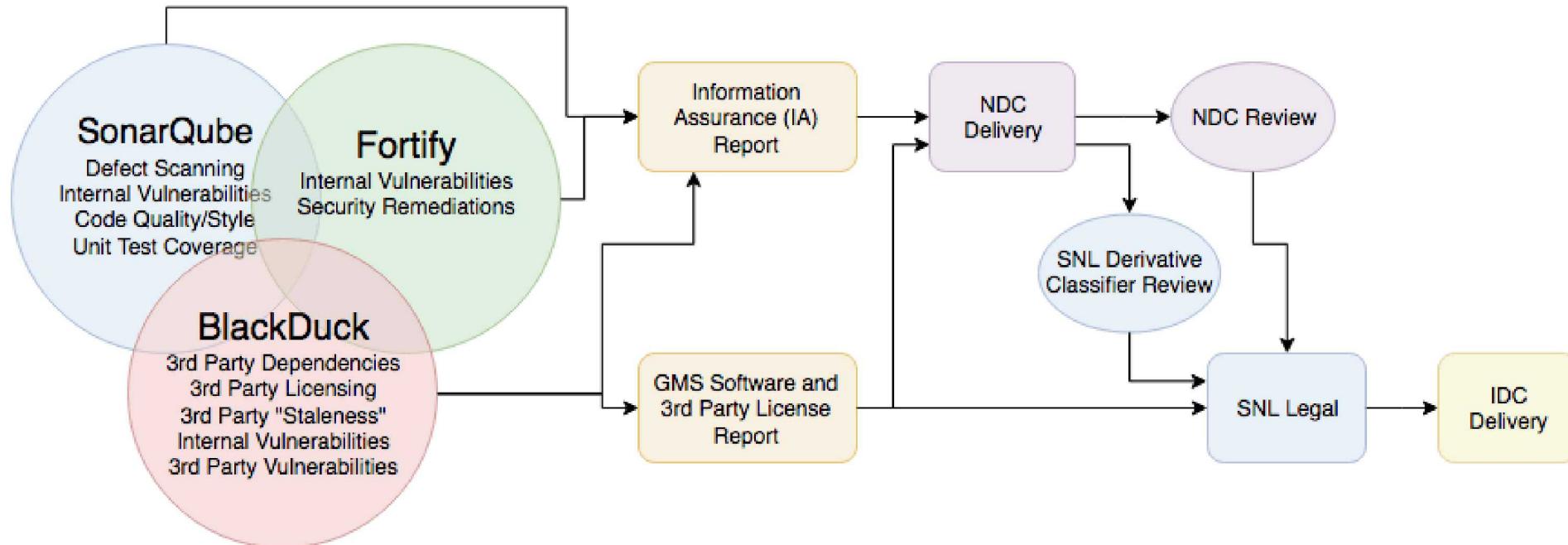
Build Tools: Gradle, Maven, NPM, Pip/Twine

Test Tools: JUnit, Jest, Behave, Cucumber, Gherkin, Wiremock

Build System



Software Analytics



PI7 Docker Swarm Requirements

Physical Hardware:

- Multiple Servers for High Availability/Load Balancing

Type	Server Count
Basic	3
Advanced	5
Optimal	8



END