



Case Study

DevOps IT Modernization Agile & Software Engineering

Centurion Consulting Group, LLC (Centurion) was engaged, for an Independent US Civilian Agency, as a Women-Owned Small Business subcontractor to provide IT professional services to transition mainstream legacy systems built via waterfall methodology to Agile and DevOps using the Modern Development Environment (MDE) tools and services. Centurion utilized DevOps practices, Continuous Integration and Continuous Delivery (CI/CD) pipeline, and accompanying tool chain for deploying applications to OpenShift containers in AWS via Agile software development.

Contract Description:

Implement DevOps Architecture using an Automated Build Pipeline and Tool Chain. Implement custom pipeline using Groovy language to standardize the build, test, and deploy process for applications deploying to PaaS cloud environment. Integrate third party utilities using Pipeline plugins including SonarQube for static code analysis, Nexus IQ for vulnerability checks in third party libraries, Checkmarx for static security analysis, and establish quality and approval gates based on these measurements.

Roles and Responsibilities:

User Research and User Story Collaboration: The team (Analyst, Product Owner, Developers, and Test) collaborated by writing Functional stories and technical stories to populate backlog. Stories are prioritized during Grooming and Refinement

Agile Software Development: The Agile development teams use a combination of modern framework and technologies (Angular, Node.js, Java, Python, C#, PostgreSQL, and NoSQL...etc.) to build customer facing applications. Teams are expected to use Test Driven Development and Behavior Driven Development and apply the twelve-factor app methodology for building their products.

DevOps: Modern Development Environment (MDE) supports a custom pipeline using Groovy language to standardize the build, test, and deploy process for applications deploying to PaaS cloud environment. MDE. The MDE pipeline is outfitted with a metrics dashboard that offer developers and product owners insight into how their product is performing in terms of code quality and coverage, technical debt, security and much more.

Outcome:

The Modern Development Environment (MDE) supports hundreds of product development projects with various complexity and scaling needs. Centurion in collaboration with the prime contractor, architected the pipeline such that all product development teams use the same build, test, and deploy pipeline rather than defining their own custom pipeline stages. Along with supporting DevOps processes, the Modern Development Environment established various quality gates that can abort a build, or a deployment based on measurements provided by the third-party utilities and established boundaries in the pipeline utilizing a metrics dashboard that offers Agile development teams' insight into the code quality and the security posture of their product.