Kubernetes Native Application Development

Duration: 2 Days   Course Code: CN230

Overview:

In this Cloud Native course, developers will learn how to build containerized applications targeted for enterprise-grade production environments. You'll explore patterns in containerized application architecture, techniques for eliminating friction in the development process, how to test and debug containerized applications, and how to instrument applications with healthchecks, monitoring tools, and common container logging patterns. After mastering these techniques, we'll turn our attention to devops and building container-native continuous integration pipelines powered by Jenkins and Kubernetes.

Target Audience:

Developers, Application Architects and Devops

Prerequisites:

Attendees should meet the following prerequisites:

- Familiarity with the Bash shell
- Filesystem navigation and manipulation
- Command line text editors like vim or nano
- Common tooling like curl, wget and ping
- Familiarity with YAML and JSON notation
- Basic familiarity with common software development patterns and tools like version control, testing, continuous integration and logging.
- CN120 - Kubernetes Application Essentials

Content:

Container Development Environments

- Rapid development with code mounts and automatic reloading
- Attaching debuggers to containerized processes
- Installing Kubernetes development environments

Container Lifecycle

- Optimizing image design to take advantage of the container lifecycle
- Runtime operations to avoid or mitigate
- Implementing logging, resource management and healthchecks for containers
- Handling container exit
- Introduction to developer-driven operational control

Containerizing Applications

- Migrating preexisting applications from VMs to containers
- Refactoring applications for microservices
- Hybrid applications (containerized + uncontainerized)

Container Health ; Monitoring

- Implementing container healthchecks with Kubernetes
- Integrating Prometheus monitoring with Kube applications

Introduction to Containerized Continuous Integration

- Differences between traditional and containerized continuous integration
- Tooling choices for CI chain components
- Recommended CI chain architecture

CI Agent Deployment

- Designing access control patterns for CI agents
- Installing and integrating Jenkins with Kubernetes

Building Images in CI

- Implementing build environments
- Designing reusable image hierarchies

Testing in CI

- Unit and integration testing in containers
- Testing pipeline design
- Integrating security scanning in a testing pipeline

Releasing Containerized Applications

- Signing images with content trust
- Packaging applications with Helm

Additional Information:

Lab Requirements:
Laptop with WiFi connectivity Attendees should have the latest Chrome or Firefox installed, and a free account at strigo.io.

Further Information:

For More information, or to book your course, please call us on Head Office 01189 123456 / Northern Office 0113 242 5931

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