Cloud Native Development Bootcamp

Duration: 5 Days Course Code: CN252 Delivery Method: Virtual Learning

Overview:

In this cloud native 5-day bootcamp, you will quickly learn the core skills you need to develop high performance, secure containerized applications and orchestrate them on Kubernetes before deep diving into advanced techniques for streamlining the container development process, instrumenting containers for production systems, and building fully containerized continuous integration pipelines. This bundle is meant to accelerate the containerization journey for developers and devops teams, by helping them take full advantage of all the opportunities containerization offers.

Virtual Learning

This interactive training can be taken from any location, your office or home and is delivered by a trainer. This training does not have any delegates in the class with the instructor, since all delegates are virtually connected. Virtual delegates do not travel to this course, Global Knowledge will send you all the information needed before the start of the course and you can test the logins.

Target Audience:

Developers, Application Architects, 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

Content:

This course combines all topics of CN100, CN120, and CN230

Containerization motivations and implementation

- Usecases
- Comparison to virtual machines

Creating, managing and auditing containers

- Container implementation from the Linux kernel
- Container lifecycle details
- Core container creation, auditing and management CLI

Best practices in container image design

- Layered filesystem implementation and performance implications
- Creating images with Dockerfiles
- Optimising image builds with multi-stage builds and image design best practices

Single-host container networking

- Docker native networking model
- Software defined networks for containers
- Docker-native single-host service discovery and routing

Provisioning external storage

- Docker volume creation and management
- Best practices and usecases for container-external storage.

Kubernetes Application Essentials

- Make effective use of pod architecture
- Deploy workloads as Kubernetes controllers
- Provision configuration at runtime to Kubernetes workloads
- Network pods together across a cluster using native services
- Provision highly available storage to Kubernetes workloads
- Package an application as a Helm chart

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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