Arrow ECS Finland Oy - Education Services

TRAINING OFFERING

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Kubernetes Fundamentals and Cluster Operations

CODE:	LENGTH:	PRICE:
VMW_KFCO	32 Hours (4 days)	€2,950.00

Description

This four-day course is the first step in learning about Containers and Kubernetes Fundamentals and Cluster Operations. Through a series of lectures and lab exercises, the fundamental concepts of containers and Kubernetes are presented and put to practice by containerizing and deploying a two-tier application into Kubernetes.

Objectives

By the end of the course, you should be able to meet the following objectives:
• Build, test, and publish Docker container images
• Become familiar with YAML files that define Kubernetes objects
• Understand Kubernetes core user-facing concepts, including pods, services, and deployments
• Use kubectl, the Kubernetes CLI, and become familiar with its commands and options
• Understand the architecture of Kubernetes (Control plane and its components, worker nodes, and kubelet)
• Learn how to troubleshoot issues with deployments on Kubernetes
• Apply resource requests, limits, and probes to deployments
• Manage dynamic application configuration using ConfigMaps and Secrets
• Deploy other workloads, including DaemonSets, Jobs, and CronJobs
• Learn about user-facing security using SecurityContext, RBAC, and NetworkPolicies

Audience

Anyone who is preparing to build and run Kubernetes clusters

Prerequisites

• Linux concepts and command line proficiency
• General networking proficiency

Programme

1. Course Introduction:
• Introductions and objectives

2. Containers:
• What and Why containers
• Building images
• Running containers
• Registry and image management

3. Kubernetes Overview:
• Kubernetes project
• Plugin interfaces
• Building Kubernetes
• Kubectl CLI

4. Beyond Kubernetes Basics:
• Kubernetes objects
• YAML
• Pods, replicas, and deployments
• Services
• Deployment management
• Rolling updates
• Controlling deployments
• Pod and container configurations

5. Kubernetes Networking:
• Networking within a pod
• Pod-to-Pod Networking
• Services to Pods
• ClusterIP, NodePort, and LoadBalancer
• Ingress controllers
• Service Discovery via DNS

6. Stateful Applications in Kubernetes:
• Stateless versus Stateful
• Volumes
• Persistent volumes claims
• StorageClasses
• StatefulSets

7. Additional Kubernetes Considerations:
• Dynamic configuration
• ConfigMaps
• Secrets
• Jobs, CronJobs

8. Security:
• Network policy
• Applying a NetworkPolicy
• SecurityContext
• runAsUser/Group
• Service accounts
• Role-based access control

9. Logging and Monitoring:
• Logging for various objects
• Sidecar logging
• Node logging
• Audit logging
• Monitoring architecture
• Monitoring solutions
• Octant
• VMware vRealize® Operations Manager™

10. Cluster Operations:
• Onboarding new applications
• Backups
• Upgrading
• Drain and cordon commands
• Impact of an upgrade to running applications
• Troubleshooting commands
• VMware Tanzu™ portfolio overview

Session Dates

Date	Location	Time Zone	Language	Type	Guaranteed	PRICE
05 Sep 2023	Virtual Classroom (GMT / UTC)	BST	English	Instructor Led Online		€2,950.00

Additional Information

This training is also available as onsite training. Please contact us to find out more.