Kubernetes CKAD Professional plus Advanced

Duration: 5 Days **Course Code: GKKUBCKADPA** **Delivery Method: Virtual Learning**

Overview:

This Kubernetes Fundamentals Developer training is especially suitable for developers who are (partly) responsible for designing and building software that has to run on Kubernetes. The training offers students a deepening of how to use Kubernetes within a development function and how to build applications for a Cloud-Native world. The training is hands-on and offers knowledge and skills based on exercises and examples that you do yourself in your own Kubernetes cluster.
Does your organization start embracing Kubernetes? Do you want to take the next step in the world of Kubernetes and become the specialist? Then this training is perfect for you.

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:

The training is meant for: Developers or DevOps Engineers who are responsible for developing, building, or rolling out applications that need to run on Kubernetes hosting. The entry-level is from beginning to medium knowledge of Kubernetes. For anyone who aims to obtain certification as a Certified Kubernetes Application Developer (CKAD). This training teaches the theory needed for the CKA Exam.

Objectives:

- Hands-on learning of Kubernetes in the basics and on bare metal. In accordance with the theory as expected by the Cloud Native Foundation for certification. The objectives of this training are:
- After this training, the participant will be able to make a start with Kubernetes in his/her organization.
- After this training, the participant has the basic knowledge to set up and use Kubernetes on both on-premise and managed hosting.
- Learning the Kubernetes basis, as formulated by the CNCF, from a hands-on approach and based on the Kubernetes architecture (to provide understanding and context).
- This training lays the foundation needed for certification and deepening so that follow-up training can build on this.
- On the basis of this training, the participant gets insight into Kubernetes and an overview on the level of application, microservice, and ‘modern application architecture:
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- So that a participant can find his way better and on the basis of insight (at a general level) to build applications on, and automate applications on, Kubernetes hosting. Partly due to the choice of options related to the available technology in the Cloud Native Landscape for the benefit of building, managing, and automating the applications and the application lifecycle;
- Based on working and elaborated expert examples, the participant can start with Kubernetes expert parts in their own organization after the training or build a solution based on obtained examples.

Prerequisites:

Having a number of years of programming experience and being able to read code are qualities that make that someone has more insight into what is happening and keeps a better overview of what is being taught. A lot of work is done with the command-line (shell) and a variety of programming languages and containers pass by in exercises such as: Go, Node.js, Angular, Java, Ubuntu, Debian, CoreOS

Minimum dexterity/basic knowledge of Linux command-line (Bash,

Testing and Certification

This training teaches the basic knowledge required for the Certified Kubernetes Application Developer (CKAD) exam. The exam is somewhat difficult because it tests on practice skills, this basic knowledge is not yet enough to take the exam.

Linux commands), Private Keys and Public Keys are required to follow the pace of this training.

Follow-on-Courses:

The following courses are recommended for further study:

- Kubernetes Developer Advanced (GKKUBCKADA)

Content:

Fundamentals:

The fundamentals follow the content as prescribed for the CKAD exams for certification. The training consists of a part theory in presentation form plus performing some 30 to 40 detailed exercises.

Topics being taught:

- History IT
- Virtualization: what is a Virtual Machine and what is a Container. And what is the difference between the two?
- The Microservices paradigm
- What is Kubernetes, what is Cloud Native? And why is this development important;
- Kubernetes architecture
- Kubernetes principles
- Kubernetes components
- Kubernetes Resources (deployment, replicaset, pods);
- Basic concepts of Kubernetes: control plane, resources in detail, services, draining nodes, setting limits, tolerations, affinity/anti-affinity, horizontal scaling, deployments, release management ; canary releases, startup/liveliness ; readiness checks, rollbacks, configsmaps ; secrets, lifecycle-hooks ; init containers, logging, monito
- Storage
- Kubernetes use principles: Helmet, Ingress Controller
- Kubernetes network security: Role-Based Access Control (RBAC).

Selection of Modules:

The number of topics available in the training as choice modules is more than can be covered during the training. For each training, the trainer decides, in consultation with the group, which topics will be covered in the training. Sometimes this can mean that the group decides on day 5 to work with different components.

- Local development: KIND, Warp, Telepresence, Visual Studio Code, Lens, Octant
- Role-Based Access Control (RBAC) and Single Sign-On (with Keycloak) for Applications
- Observability: Central Logging: ELK Stack
- Observability: Central Monitoring and Application Chain Monitoring via Prometheus and Graphana
- Service Mesh: SMI, LinkerD, Istio, OSM, horizontal scaling based on latency (monitoring information)
- Microservices Automated CI/CD: Gitlab
- Scalable WordPress Architecture (from monolith to micro-service)
- Build your own WordPress CRD/Operator/Controller (application lifecycle automation)

The choice of modules goes into depth on Expert parts, by means of exercises that connect to the daily practice of working with Kubernetes, using working examples.

Additional Information:

This training is a combination of the courses with course codes GKKUBCKAD and GKKUBCKAA and consists of two parts: the first part covers the Kubernetes Certified Application Developers (CKAD) Fundamentals; the second part consists of expert choice modules.
The Kubernetes Developer Fundamentals cover the foundations for developers, as defined by the Cloud Native Computing Foundation (CNCF), from the background of the Kubernetes Architecture. The training places Kubernetes in the context of IT development, Microservices, and Cloud-Native so that you can start using Kubernetes from a point of view of overview, understanding, and insight.
By means of exercises and examples (which you do yourself), you will be taught how to use Kubernetes. The experiences you gain during the training will give you tools to use Kubernetes in practice on a level comparable to daily practice. The theory in this training matches the basic knowledge requirements of the Cloud Native Computing Foundation in preparation for the Certified Kubernetes Application Development (CKAD) exam.

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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