KBS-343 Kubernetes Troubleshooting

Course Length: 3 days

Course Description:

As Kubernetes is becoming the most widely used platform for deploying applications, it is of paramount importance to know how to address problems that may occur in these systems.

This course teaches participants a wide range of IT troubleshooting concepts and technics from the generic methodologies applicable in troubleshooting to the domain specific instructions that will address the various aspects of Kubernetes clusters and applications deployed in them.

Structure: 40% lecture, 60% hands on lab exercises.

Target audience: Professionals who are involved in managing/operating Kubernetes clusters and the applications running in them.

Prerequisites: Working experience with Kubernetes, a general understanding of the Linux kernel, containerization, and networking concepts.

Detailed Course Outline:

Module 1: Troubleshooting methodology and tools

- Fault analysis methodology
- Diagnosis methodology
- Diagnosis tools
    - System
    - Container
    - Kubernetes

Module 2: Kubernetes architecture

- Control plane components, configuration, logging
- Worker components, configurations, logging
- Request processing
- RBAC
- Troubleshooting node issues

Module 3: Handling workload errors

- Troubleshooting pod errors.
- Troubleshooting Deployments
- Troubleshooting StatefulSets

Module 4: Troubleshooting the Networking
- Network architecture
- CNI
- Troubleshooting services
- Troubleshooting network policies

Module 5: Storage issues
- Storage in Kubernetes
- CSI
- Troubleshooting storage issues