Training: Component Soft

KBS-322 Container and Kubernetes networking deep dive

TRANING TERMS

2026-12-03 | 2 days | Virtual Classroom

TRAINING GOALS:

Containerized applications are accessed over the network, but how are they connected to the network while staying isolated from each other?

Participants of this training will learn about the different types of networking resources that facilitates the connectivity for containers, the Container Network Interface (CNI) as well as CNI plugins. Besides in-depth theoretical coverage students also do hands-on exercises in their own Kubernetes lab system.

Structure: 50% theory 50% hands on lab exercises.

Target audience: System administrators, developers and Devops who want to understand and use Kubernetes network features.

CONSPECT:

- Module 1: Network connectivity for containers
  - Isolating network resources
  - Connecting network namespaces - veth pairs
  - Connecting network namespaces - linux bridge
  - Connecting network namespaces - Open vSwitch
  - Connecting network namespaces - routing
  - Iptables introduction
  - IPVS introduction
  - Connecting network namespaces - macvlan
  - Connecting network namespaces - ipvlan
  - Connecting network namespaces - SR-IOV
  - Lab 1
- Module 2: CNI - Container network interface

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- CNI Specification - Concepts
- CNI - Network configuration format
- CNI - Execution protocol
- CNI - Operations
- CNI - Plugin delegation
- CNI - Conventions
- Lab 2

- Module 3: CNI plugins
  - CNI - Reference Plugins
  - Third Party Plugins - Calico
  - Third Party Plugins - Multus CNI
  - Third Party Plugins - Whereabouts
  - Third Party Plugins - sriov-cni
  - Third Party Plugins - ovs-cni
  - Lab 3
- Module 4: Services deep dive
  - Kubernetes service implementation with iptables
  - Kubernetes service implementation with ipvs
  - Dual stack services

REQUIREMENTS:

Linux container (e.g. Docker) and Kubernetes administration skills, for instance by participating on our Docker and Kubernetes administration courses.

Difficulty level



CERTIFICATE:

The participants will obtain certificates signed by Component Soft (course completion).

TRAINER:

Certified Component Soft Trainer.

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