

Brief Container History and Docker Overview

Containerization vs. Virtualization Docker what is it? Docker Architecture Image concept Docker Hub and Registry Persistence and volumes Containers and Infrastructures Automation of Infrastructure as a Service (IaaS) Infrastructure at CaaS (Container as a Service) CaaS solutions: Docker Compose, Docker Swarm and Kubernetes Architecture of Kubernetes Node, pod and container Docker Toolbox Provision and Configure its Docker Development Environment with the Vagrant Solution Build and launch your Docker box with the Vagrantfile file

Start containers and build images

Docker CLI
Start your first Docker container
Start containers, expose ports, and attach volumes
Build your first Docker image: the Dockerfile file
Main Dockerfile Commands
Copy files to the Docker image
Launch JAR files from a Docker image
Docker and Maven
Docker and Gradle
Push the image into the Docker Hub

Networking and persistence storage with Docker

Docker network type: Bridge, Host, and None
Network orders, docker network
Connect a container to the network
Expose port and port mapping
Practical Workshop: Start the Payara server and expose its ports
Storage persist
Commands for Docker Volume Management

Creating / deleting a volume
Docker volume

Practical workshop: Implementation of docker volumes

Multi-container applications

Introduction to Docker Compose
Scenarios for implementation
Compose Docker File
Main Docker Commands Composed
Presentation and Architecture of Docker Swarm and Kubernetes
Cluster, Pod, Cluster, Node and Kubelet concept
Multi Container Application with Docker Compose
Docker Swarm cluster configuration

Container monitoring

Log display, docker log command Inspect a container, inspect docker order Stats on a container, docker stats command

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