

DevOps Docker

Course Outline

- Introduction
 - What is Docker & container
 - Container vs VM
- Installation and versions
 - Docker Engine
 - Docker Desktop
- Global system commands - Disk usage, prune, info, ...
- Docker / Container images
 - Introduction to Docker images
 - Docker Hub & Container Registries
 - Working with images - pull, push, ...
 - Working with image without Docker (using Crane)
 - Examples
- Running containers
 - Run containers using docker run ...
 - Options of docker run command - basic settings, volumes, port forwarding, ...
 - Docker management command - docker ps, docker start / stop, ...
- Building Images
 - Dockerfile
 - Layers of the image
 - Instructions of Dockerfile
 - Dockerignore file
 - Docker build command
 - Docker buildkit - extended Dockerfile syntax
 - Build without Docker (using Kaniko)
 - Examples of Docker images
 - Basic image (Python example)
 - Multistage image (Golang example)
 - Build with file caches (Large Golang project)
- Docker networking
- Docker Compose
 - Introduction to Docker Compose
 - Basic Compose structure
 - Basic usage - volumes, ports, environments, ...
 - Variable substitution
 - Docker Compose for Development in Docker
 - Docker Compose commands
 - Basic commands (docker compose build, docker compose up, ...)
 - docker compose up vs docker compose run

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- Examples
 - Simple 1 container application
 - Multi container application
 - Multi compose file example (larger project)
- Docker alternatives
 - Containerd + nerdctl
 - Rancher Desktop
 - Podman
- Docker tooling
 - Nixery.dev
 - cAdvisor (Prometheus exporter)
 - Portainer (Web UI)