



Official Docker: CN110 - Docker Swarm Application Essentials

Duration 1 day(s) (DOCKER-CN110)

Discover what makes an application on Docker Swarm

Official Training



Description

In this course, you'll learn what a containerized application looks like when orchestrated by Docker Swarm. We'll cover scheduling workloads across a cluster, networking stateless and stateful applications, provisioning dynamic configuration and persistent storage, and scaling highly available applications in this course intended to set a strong foundation in orchestration for all technical roles.

Goals

By the end of this course, you will be able to:

- Set up and configure Docker Swarm
- Schedule containers on a Swarm, including resource and host management
- Provision dynamic configuration to Swarm apps
- Take advantage of built-in Swarm networking
- Provision storage to Swarm apps
- Monitor and troubleshoot a Swarm cluster

Public

This course is targeted at students with the following:

- **Motivations:** Develop, operate or manage scalable containerized applications orchestrated by Docker Swarm
- **Roles:** General technical audiences & IT professionals

Prerequisites

- [CN100 - Docker Containerization Essentials](#) course or equivalent experience
- Familiarity with the bash shell
 - Filesystem navigation and manipulation
 - Command line text editors like vim or nano
 - Common tooling like curl, wget and ping
- Familiarity with YAML and JSON notation

Structure

40% Theory, 60% Practice

Program

- Intro to orchestration
 - Operational priorities of container orchestration
 - Containerized application architecture
- Swarm install & config
 - Swarm scheduling workflow & task model
 - Automatic failure mitigation
 - Swarm installation & advanced customization
- Scheduling workloads
 - Defining workloads as services
 - Scaling workloads
 - Container scheduling control
 - Rolling application updates and rollback
 - Application healthchecks
 - Application troubleshooting
 - Deploying applications as Stacks
- Networking containers
 - Swarm service discovery and routing implementation
 - Routing strategies for stateful and stateless workloads
 - Swarm ingress traffic
- Provisioning dynamic configuration
 - Application configuration design
 - Environment variable management
 - Configuration file management
 - Provisioning sensitive information
- Provisioning persistent storage
 - Storage backend architecture patterns
 - NFS backed Swarms
- Monitoring Swarm
 - What to monitor in production-grade Swarms
 - Potential Swarm failure modes & mitigations
 - Swarm workload monitoring