Docker Swarm Application Essentials

Duration: *1 Day(s)*

Course Overview

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.

Review this course online at https://www.alta3.com/courses/CN110

Objectives

- Design container orchestration strategies.
- Implement Swarm workload deployments.
- Understand Swarm networking and storage.
- Monitor and troubleshoot Swarm environments.

Who Should Attend

- IT professionals
- Technical specialists
- System administrators
- DevOps engineers

Prerequisites

- 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
- CN100 course or equivalent experience

Course Outline

Setting up and configuring a Swarm

1. Operational priorities of container orchestration
2. Containerized application architecture
3. Swarm scheduling workflow & task model
4. Automatic failure mitigation
5. Swarm installation & advanced customization

Deploying workloads on Swarm

6. Defining workloads as services
7. Scaling workloads
8. Container scheduling control

9. Rolling application updates and rollback
10. Application healthchecks
11. Application troubleshooting
12. Deploying applications as Stacks

Networking Swarm workloads

13. Swarm service discovery and routing implementation
14. Routing strategies for stateful and stateless workloads
15. Swarm ingress traffic

Provisioning dynamic configuration

16. Application configuration design
17. Environment variable management
18. Configuration file management
19. Provisioning sensitive information

Provisioning persistent storage

20. Storage backend architecture patterns
21. NFS backed Swarms

Monitoring Swarm

22. What to monitor in production-grade Swarms
23. Potential Swarm failure modes & mitigations
24. Swarm workload monitoring