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Docker Certified Associates - DCA

Get Trained by our industry experts on Docker with 100% hand's hands-on labs, enterprise-focused scenarios, and practical examples. TechPledge Docker training courses are updated regularly to ensure that learners are exposed to the latest product releases and current best practices informed by Docker's extensive field experience.

Each course features a variety of assessment instruments from practice quiz questions, lab exercises, to project-based signature assignment for learners to practice and meet the learning objectives of each course.

Course Duration:
- 36 Hr.

Project Duration:
- 8 Hr.

Course Material:
- Lectures (PDF)
- Lab Manual (PDF)
- Recorded Video

Abilities Validated by the Certification

- Assess the advantages of a containerized software development & deployment
- Use Docker engine features necessary for running containerized applications
- Utilize Swarm and Kubernetes orchestrators to deploy, maintain, and scale a distributed application
- Design, manage, and maintain tools to automate operational processes

Detail Syllabus

Introduction to Docker
- What is Docker?
- Alternatives to Docker
- The evolution of containers
- How containers work
- Containers and Microservices Architecture

Docker Architecture

- Docker Architecture
- The Docker Engine
- Docker Images and Containers
- Docker Hub

Setting up your environment

- Installing Docker on Local Machine

- Install Multi-node docker on Cloud
- Configuring Docker
- Running your first container
- Understand the docker

Docker Basics

- Docker Commands
- Creating Containers
- Exposing Container Ports
- Executing Container Commands
- Docker Logging

Docker Components

- Docker Client
- Docker Daemon
- Docker Client Command

Docker Images

- What is an image
- What does an image contain?
- Docker Image Repositories
- Versioning and Tags
- Docker images – cmd

Docker runs

- Overview
- Docker Terminal Access
- Detached mode

Processes

- Process Ids
- Within a container
- PID
- Docker ps

Logging

- Docker logs
- Docker Inspect

Port mapping

- Overview
- Simple port mapping
- Expose the Port

Building Images with Container

- Custom Image
- Docker Commit

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Working with Dockerfile

- Introduction to Docker Automation with Docker File
- Use Instructions and images
- Privilege escalation
- FROM
- RUN
- Docker build
- Build contexts CMD
- EXEC
- ENTRYPOINT
- Create a Docker file with Java Image
- Distribute the custom image using docker registry

Starting and Stopping Containers

- Docker ps
- Docker start
- Docker stop
- Killing Container

Portainer

- Introduction to Portainer
- Activating Portainer
- Managing Docker with Portainer

Getting terminal access

- Stopped Container
- Docker exec

Docker Hub Repositories

- Docker tag
- Docker push
- Docker pull

Port Mapping

- Docker run -P
- EXPOSE

Continuous Integration

- Building Images
- Docker Hub Auto Build
- Connect Docker Hub with Git Dockerfile
- Introduction to use Jenkins for build the images

Docker Networking

- Networking Overview
- Networking Commands
- Networking Containers

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Docker Volume

- Storage Overview
- Volume Commands
- Using Bind Mounts
- Using Volumes for Persistent Storage

Docker Compose

- Installing Docker Compose
- Compose Commands
- Creating a Compose File
- Validation using docker-compose config
- Running a multi container applications
- Starting containers (up)
- Stopping Container (down)
- Listing Processes
- using docker-compose logs
- Service names vs Container Names

Docker Security

- Introduction to Docker Security
- Working with Docker Security
- Docker Content Trust
- Working with Secrets
- Secure the Image with Repository

Docker Swarm – Introduction

- Introduction to Docker Swarm
- Swarm Mode vs non Swarm Mode
- Cluster management
- Decentralized design
- Declarative service model
- Scaling
- Desired state reconciliation
- Multi-host networking
- Service discovery
- Load balancing

Initialize and Manage Docker Swarm

- Running Docker in Swarm Mode
- Managing Swarm Nodes
- Working with Services
- Deploying services
- Inspecting services
- Scaling services
- Removing services

Docker Troubleshooting - Introduction

- Problem Solving Strategies
- Logging & Monitoring Strategies
- Docker Documentation

- UCP Support Dump
- Troubleshooting Resource Problems
- Troubleshooting Networking Problems
- Disaster Recovery
- Engaging Docker Support