

# Advanced Docker (SE313)

16 Hours

## Outline

Docker is an open-source project that automates the deployment of applications inside software containers. Docker provides an integrated technology suite that enables development and IT operation teams to build, ship and run distributed applications anywhere. Docker lets you run your software components on any platform that supports Docker containers.

## Target Audience

Developers and IT operations teams who wish to build and deploy distributed applications easily to the cloud using Docker.

## Prerequisites

Basics experience building and running Docker containers Basics Docker CLI knowledge. Docker for (Mac/Windows) will have to be installed during the workshop if working with windows or Mac OS. Prior experience in developing web applications will be helpful but is not required.

## Content

- Installing Docker on Mac/Windows
- Micro service Architecture Overview
  - Twelve – Factor App Concept Overview
  - How Docker facilities Micro service Architecture

- Connecting containers
  - Manually Connecting containers
  - Data volumes
  - Connecting containers using Docker Compose
- Docker Network function deployment and configuration
  - Docker Network introduction
  - Network configuration and mapping
  - DNS and bridge configuration
  - Port Mapping
  - Network advanced features
- Docker performance monitor and trouble shooting
  - Logging
  - Container performance monitor principles and tools
  - Docker runtime and cluster monitoring
  - Performance monitor system deployment principles
- Docker Security
  - Image signing (Docker Notary & Content Trust)
- Container Schedulers/Orchestrators Overview
  - Docker Swarm
  - Kubernetes
  - Mesos
  - Nomad
- Continuous Integration and Deployment process using Docker
  - Jenkins Integrations
  - Self-contained builds with Docker containers
- Using the Docker API
- New features in Docker 1.12 – 1.13
  - Docker health-check
  - Routing Mesh
  - Docker Compose v3