Docker and Container Technologies Essentials

Description

The object of this training is to demonstrate to the participants the problems solved by Docker and Container technologies, to introduce these technologies practically, and to provide them with detailed practical information on the subcomponents that constitute Containers. Thus, the participants will be able to internalize this technology.

Training Benefits

- You will be introduced Container technologies, which are highly accepted by IT world in a short time and are proven to improve efficiency and agility in both development and testing, as well as in production environments.
- You will learn how Container technologies are used in different areas, and what kind of benefits are achieved by implementing these technologies.
- You will understand the components of this technology in detail and deal better with the problems that you may be encountered.
- You will see how you will be able to apply container technologies to your existing workflow. Additionally, you will have the knowledge that you will be able to adapt easily.

Target Audience

Developers, operators, quality/test engineers and software and system architects who wish to have strong fundamentals and best practices on container technologies

Topics:

Motivation

In this section, the problems that cause us to need Container technologies, and the solutions offered by these technologies will be identified, then the advantages and disadvantages of these solutions will be discussed.

Preparation

In order to implement container technologies successfully and naturally, it is essential that the components of this technology should be accurately understood. To ensure this, basic information related to Linux and Container components will be primarily employed.

In this section, the participants will have prior knowledge about the subjects, which will be explained in more detail on the following sections, by performing exercises in pair groups after having brief theoretical information.

Introduction

Container technologies along with Docker, the most popular example of these technologies, will be explained practically in detail. Participants will be able to grasp the dynamics of the relevant technologies by performing the practices demonstrated by the instructor on their computers.

Techniques, Tools and Tricks

Tools in the Docker ecosystem will be introduced to the participants who are getting familiar with Docker. Additionally, the information about best-optimized techniques will be provided, and the most important and tricky parts of these techniques will be presented. At the end of this section, participants will be grasped the introduced

technology with all aspects of it.

End to End Transformation

The participants familiar with Docker of Container Technologies by performing simple examples will dockerize a few typical applications, then upload these applications to the cloud by working with the instructor in groups. The object of this section is to reinforce the theoretical and practical knowledge acquired by the participants.

Problem Solving

First of all, the problems that the participants would face frequently will be introduced. Next, it will be expected from the participants -working in groups again- to solve various problems practically through numerous cases.

Review and Close

In the last part, the topics covered during the training will be reviewed, then the information provided throughout the training will be reinforced, and lastly, the necessary information about the steps that the participants can take on their own will be furnished.

Outline

Day 1:

- Introduction to Docker and Container Technologies

- Installation of Docker on Windows/macOS and Linux, and Basic Settings
- Installation of Docker via Docker Machine, Vagrant
- Docker Commands
- Docker Registry and Private Repositories
- Creating and Configuring Docker Images
- Docker Containers and Runtime Characteristics
- Workshop

Day 2:

- Docker Compose as a simple Orchestration tool
- Containerizing the Applications from Simple to Complex
- The Basic Linux Concepts used in Docker
- Docker Network Basics and Different Areas of its Use
- Docker Storage Basics and Different Areas of its Use
- Container Orchestration with Docker Swarm (Optional)
- Container Solutions Alternative to Docker (Optional)

Prerequisites

There are no prerequisites for this course.