**Introduction to Open Container Ecosystem**

INTRODUCTION TO OPEN CONTAINER ECOSYSTEM**Introduction & Learning Objectives**

# Chapter Overview

### INTRODUCTION TO OPEN CONTAINER ECOSYSTEMIntroduction to Open Container Ecosystem

# Why Container-Based Software Delivery?

# Bare Metals, VMs and Containers

### INTRODUCTION TO OPEN CONTAINER ECOSYSTEMKnowledge Check

Congratulations on completing Chapter 2 - Introduction to Open Container Ecosystem. Take this quiz to check your understanding of the concepts you've learned about so far.

CONTAINERS FOR DEVELOPERS AND QUALITY ASSURANCE (LFD254) Chapter 2:- INTRODUCTION TO OPEN CONTAINER ECOSYSTEM Knowledge Check Question 2.1 Docker is a \_\_\_\_\_\_\_\_\_ technology. Fill in the blank. A. Virtualization B. Bare metal C. Container D. None of the above

ChatGPT

C. Container



Question 2.2 Which of the following technologies make running process in isolation (contained) possible? A. Dedicated hardware B. Linux namespaces C. Container libraries D. None of the above

ChatGPT

B. Linux namespaces

Linux namespaces are one of the technologies that make running processes in isolation (contained) possible. Namespaces in Linux provide an isolation mechanism that allows different processes to have separate and independent views of system resources such as process IDs, network interfaces, mount points, and more. This isolation forms the basis for containerization, where each container operates within its own namespace, creating a contained environment for the running processes.



Question 2.3 Docker images can be stored and distributed with \_\_\_\_\_\_\_\_\_. Fill in the blank. A. GitHub B. Bit Bucket C. Docker Hub D. Docker Market

ChatGPT

C. Docker Hub

Docker images can be stored and distributed with Docker Hub. Docker Hub is a cloud-based registry service provided by Docker, Inc., where users can store, share, and manage Docker container images. It serves as a centralized repository for Docker images, making it easy for developers to share their images with others and for users to discover and download images created by the community.

Users can push their Docker images to Docker Hub, making them publicly available or restricting access to specific teams or collaborators. Docker Hub is widely used in the Docker ecosystem as a primary platform for sharing and distributing container images, and it plays a crucial role in promoting the adoption and usability of Docker containers.



Question 2.4 Which of the following cannot be controlled by cgroups? A. CPU B. Memory C. Disk I/O D. Inodes

ChatGPT

D. Inodes

Control Groups (cgroups) are a Linux kernel feature that allows the allocation and management of system resources to groups of processes. Cgroups provide control over various resources, including CPU, memory, disk I/O, and network bandwidth, among others.

However, cgroups do not directly control inodes. Inodes are data structures in a Unix-like file system that store metadata about files, such as permissions, ownership, and timestamps. Cgroups focus on resource management and control for processes rather than controlling inodes directly.



Question 2.5 Docker virtualizes memory, processor, etc., through namespace for each container. True or False? A. True B. False

ChatGPT

B. False

The statement is False.

Docker does not virtualize memory, processor, or other system resources through namespaces. Instead, Docker uses a combination of Linux namespaces and control groups (cgroups) to provide isolation and resource management for containers.

Namespaces allow Docker to create an isolated environment for each container, providing separate views of various system resources such as process IDs, network interfaces, mount points, and more. This isolation ensures that processes running inside a container cannot interfere with processes in other containers or the host system.

On the other hand, cgroups enable Docker to control and allocate system resources to containers, such as CPU, memory, disk I/O, and network bandwidth. Cgroups allow Docker to limit and prioritize resource usage for containers, ensuring fair sharing and preventing resource exhaustion.

Together, Linux namespaces and cgroups enable Docker to achieve containerization, which provides a lightweight, isolated, and resource-controlled environment for running applications and services. The combination of namespaces and cgroups is a powerful foundation for the containerization technology used by Docker and other container platforms.



Question 2.6 You can only use Docker if you want to run a container. True or False? A. True B. False

ChatGPT

B. False

The statement is False.

While Docker is a popular and widely used containerization platform, it is not the only option for running containers. There are other container runtimes and containerization platforms available, each with its own strengths and features. Some of the alternatives to Docker include:

1. containerd: containerd is an industry-standard container runtime developed by the Docker project and donated to the Cloud Native Computing Foundation (CNCF). It is the underlying container runtime used by Docker itself.
2. rkt (Rocket): rkt is an open-source container runtime developed by CoreOS (now part of Red Hat). It provides an alternative to Docker, with a focus on security and composability.
3. Podman: Podman is a containerization tool that is compatible with Docker but has some added features and capabilities, such as rootless containers and easier integration with systemd.
4. CRI-O: CRI-O is a lightweight container runtime developed to be used with Kubernetes. It implements the Kubernetes Container Runtime Interface (CRI) and is designed to run containers in a Kubernetes environment.

These are just a few examples of alternative container runtimes and platforms. The container ecosystem is diverse, and developers and system administrators can choose the container runtime that best fits their requirements and use case. Docker remains a popular choice, but it is not the only option available for running containers.

QUIZ RESULTS

YOU GOT 6 OUT OF 6 CORRECT: 100%

6 6 6 0

* TOTAL (6)
* ANSWERED
* CORRECT
* INCORRECT

Retake Quiz Review All Question Results

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