Managing Containers with Docker and CRI-O

Course Outline

Overview:
Docker is an extremely powerful tool for running and managing containers. Currently, Docker is the industry-leading container runtime platform and offers a colossal number of features revolving around container management, plus orchestration. In this training, you will learn how to leverage core features contained within Docker such as Image, registry, networking and storage management.

Duration:
2 days

Course Outline

Introduction to Docker
- Installing Docker on CentOS
- Installing Docker on Ubuntu
- Running a Container

Managing images and registry service
- Using the registry service
- Create a repository
- Push an image to registry server
- Build docker image
- Managing access tokens
- Pull an image from registry server
- Tag the image
- Control the container process
- Commit the container to image layer
- Dive to image layer

Managing container storage
- Storage and volumes
- File handling in container
- Bind mount control
- Docker volume
- Backup restore docker volumes
- Docker storage in Depth
- Dockerfiles scripting
- Container restart policy

Managing container bridge networking
- Understanding Docker networking
- Built-in Network Drivers
- Create network virtual bridge network
- Exposing container externally
- User-defined networking
- Network troubleshooting
- Configuring Docker to use external DNS
- Docker compose with YAML file
- Monitor service
- Install private registry server
- Building Efficient Images
- Registry server API
- Run 3 tier container in production environment (WEB, APP, DB)
- Compile and Run java program with container
- Run python program with container

Introduction to cri-o and Buildah
- Introduction to cri-o
- CRI-O COMPONENTS
- Podman commands
- cri-o container images
- introduction to Buildah
- Use case for Buildah
- Introduction to crictl commands

Exam Details:

Docker Certified Associate (DCA) exam

- 13 multiple choice and 42 discrete option multiple choice (DOMC) questions in 90 minutes
- Designed to validate professionals with a minimum of 6 to 12 months of Docker experience
- Remotely proctored on your Windows or Mac computer
- Available globally in English
- USD $195 or Euro €175 purchased online *(Note: Course fee does not include exam fee)*
- Results delivered immediately

Are you ready to take Multi-Cloud & Containers training?
Check your knowledge with this short quiz.

If you scored **less than 80%**, we highly recommend taking **Managing Containers with Docker and CRI-O** course. If you scored **80% or greater**, you should be ready for the **Kubernetes Administration – Part 1** course and other advanced containers courses.

Let's begin!

1) **Which of the below Dockerfile directive would set up the base image that can serve as our starting point for establishing a new image?**

    a) FROM   c) ARG
    b) BASE   d) START

2) **What is the docker command to display detailed information on one or more networks?**

    a) docker inspect network   c) docker network inspect
    b) docker network display   d) docker network status

3) **Which of the following is true about building docker images?**

    a) Every Dockerfile can have only one FROM directive.
    b) Only layers that have changed since the last build (and any following layers) are built.
    c) Every layer of the image is re-built every time docker build is executed.
    d) Every Dockerfile can have only one FROM directive.

4) **What is the docker command to find the current logging driver for a running container?**

    a) docker info   c) docker inspect
    b) docker config   d) docker status

5) **Which of the following is the correct command to tag an image?**

    a) docker build tag SOURCE_IMAGE[:TAG] TARGET_IMAGE[:TAG]
    b) docker tag TARGET_IMAGE[:TAG] SOURCE_IMAGE[:TAG]
    c) docker tag image SOURCE_IMAGE[:TAG] TARGET_IMAGE[:TAG]
    d) docker tag SOURCE_IMAGE[:TAG] TARGET_IMAGE[:TAG]

6) **What behavior is expected when a service is created with the following command: 'docker service create --publish 8080:80 nginx'?**

    a) Only a single node in the cluster will listen on port 80 and forward to port 8080 in the container.
    b) All nodes in the cluster will listen on port 8080 and forward to port 80 in the container.
    c) Only a single node in the cluster will listen on port 8080 and forward to port 80 in the container.
    d) All nodes in the cluster will listen on port 80 and forward to port 8080 in the container.

7) What is the docker command to pull an image or a repository from a registry?

a) docker deploy
b) docker pull
c) docker checkout
d) docker build

8) Which one of the following commands will result in the volume being removed automatically once the container has exited?

a) 'docker run --read-only -v /foo busybox'
b) 'docker run --del -v /foo busybox'
c) 'docker run --remove -v /foo busybox'
d) 'docker run --rm -v /foo busybox'

9) Which of the following is the correct command to store an image to a registry?

a) docker upload [OPTIONS] NAME[:TAG]
b) docker store [OPTIONS] NAME[:TAG]
c) docker push [OPTIONS] NAME[:TAG]
d) docker commit [OPTIONS] NAME[:TAG]

10) Which of the following statements is incorrect?

a) When a container is deleted, the writable layer is persisted.
b) The column 'virtual size' of docker ps-s output shows the amount of data used for the read-only image data used by the container plus the container's writable layer 'size'.
c) Copy-on-write is a Docker strategy of sharing and copying files for maximum efficiency.
d) The column 'size' of docker ps -s output shows the amount of data that is used for the writable layer of each container.

11) Each container shares common writeable container layer. True or false?

a) FALSE
b) TRUE

12) what is a registry means?

a) software execute file
b) container run inside container engine
c) A storage holding docker images
d) a configure file for docker engines

Answer:

1)	a	7)	b
2)	c	8)	d
3)	b	9)	c
4)	c	10)	a
5)	d	11)	a
6)	b	12)	c

Score	Recommended Course
< 80%	Managing Containers with Docker and CRI-O
≥ 80%	Kubernetes Administration – Part 1 & Other containers courses

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Multi-cloud & Containers Training *at* HERE