

## Docker DCA Exam

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Question No:1

What do we call the runtime instance of a Docker image?

- A. package
- B. swarm
- C. layer
- D. container

Answer: D

Explanation: A container is a runtime instance of an image – what the image becomes in memory when actually executed. It runs completely isolated from the host environment by default, only accessing host files and ports if configured to do so.

Reference: <https://docs.docker.com/get-started/#a-brief-explanation-of-containers>

Question No:2

Which Docker build instruction should be used to run the software contained by your image, along with any arguments?

- A. CMD
- B. ENTRYPOINT
- C. RUN
- D. FROM

Answer: A

Explanation: The CMD instruction should be used to run the software contained by your image, along with any arguments. CMD should almost always be used in the form of CMD [“executable”, “param1”, “param2”...]. Thus, if the image is for a service, such as Apache and Rails, you would run something like CMD ["apache2","-DFOREGROUND"]. Indeed, this form of the instruction is recommended for any service-based image.

Reference:

[https://docs.docker.com/engine/userguide/eng-image/dockerfile\\_best-practices/#cmd](https://docs.docker.com/engine/userguide/eng-image/dockerfile_best-practices/#cmd)

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Question No:3

You have just deployed a Docker Swarm onto two machines: a manager and a worker. You would now like to access your app. Which of the machines' IP addresses can you use?

- A. only the manager
- B. only the worker
- C. neither; Docker Swarms use an external load balancer
- D. either

Answer: D

Explanation: You can access your app from the IP address of either myvm1 or myvm2. The network you created is shared between them and load-balancing. Run `docker-machine ls` to get your VMs' IP addresses and visit either of them on a browser, hitting refresh (or just curl them). You'll see five possible container IDs all cycling by randomly, demonstrating the load-balancing.

Reference: <https://docs.docker.com/get-started/part4/#deploy-your-app-on-a-cluster>

Question No:4

When writing a Dockerfile, what does the FROM command signify?

- A. The programming language used
- B. The current container's author
- C. The host operating system
- D. The image upon which this container is based

Answer: D

Explanation: Docker runs instructions in a Dockerfile in order. The first instruction must be `FROM` in order to specify the Base Image from which you are building.

Reference: <https://docs.docker.com/engine/reference/builder/#format>

Question No:5

Which of the following does Docker NOT provide as a native logging integration?

- A. Nagios

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B. Splunk

C. Fluentd

D. AWS CloudWatch

Answer: A

Explanation: The following logging drivers are supported. See each driver's section below for its configurable options, if applicable.

Driver Description

none No logs will be available for the container and docker logs will not return any output.

json-file The logs are formatted as JSON. The default logging driver for Docker.

syslog Writes logging messages to the syslog facility. The syslogdaemon must be running on the host machine.

journald Writes log messages to journald. The journald daemon must be running on the host machine.

gelf Writes log messages to a Graylog Extended Log Format (GELF) endpoint such as Graylog or Logstash.

fluentd Writes log messages to fluentd (forward input). The fluentddaemon must be running on the host machine.

awslogs Writes log messages to Amazon CloudWatch Logs.

splunk Writes log messages to splunk using the HTTP Event Collector.

etwlogs Writes log messages as Event Tracing for Windows (ETW) events. Only available on Windows platforms.

gcplogs Writes log messages to Google Cloud Platform (GCP) Logging.

Reference:

<https://docs.docker.com/engine/admin/logging/overview/#supported-logging-drivers>

Question No:6

What is Docker's reserved, minimal image called?

A. blank

B. base

C. start

D. scratch

Answer: D

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Explanation: You can use Docker's reserved, minimal image, scratch, as a starting point for building containers. Using the scratch "image" signals to the build process that you want the next command in the Dockerfile to be the first filesystem layer in your image.

While scratch appears in Docker's repository on the hub, you can't pull it, run it, or tag any image with the name scratch. Instead, you can refer to it in your Dockerfile. For example, to create a minimal container using scratch:

Reference:

<https://docs.docker.com/engine/userguide/eng-image/baseimages/#creating-a-simple-base-image-using-scratch>

Question No:7

When creating a Docker swarm service with `docker service create`, which of the following options for the runtime environment can you not configure?

- A. the service's exposed ports
- B. the username or UID for the container
- C. environment variables inside the container
- D. the working directory inside the container

Answer: A

Explanation: You can configure the following options for the runtime environment in the container:

environment variables using the `--env` flag

the working directory inside the container using the `--workdir` flag

the username or UID using the `--user` flag

Reference: <https://docs.docker.com/engine/swarm/services/#configure-services>

Question No:8

Which Docker build command should be used to expose any database storage area, configuration storage, or files/folders created by your docker container?

- A. DATA
- B. PERSIST
- C. VOLUME

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### D. WORKDIR

Answer: C

Explanation: The VOLUME instruction should be used to expose any database storage area, configuration storage, or files/folders created by your docker container. You are strongly encouraged to use VOLUME for any mutable and/or user-serviceable parts of your image.

Reference:

[https://docs.docker.com/engine/userguide/eng-image/dockerfile\\_best-practices/#volume](https://docs.docker.com/engine/userguide/eng-image/dockerfile_best-practices/#volume)

### Question No:9

What command would you run if you want to run a scratch Docker container with host port 4000 mapped to the container's exposed port 80?

- A. `docker run -p 4000:80 scratch`
- B. `docker run --expose 4000:80 scratch`
- C. `docker run --expose 80:4000 scratch`
- D. `docker run -p 80:4000 scratch`

Answer: A

Explanation: Run the app, mapping your machine's port 4000 to the container's EXPOSED port 80 using -p:

```
docker run -p 4000:80 friendlyhello
```

Reference: <https://docs.docker.com/get-started/part2/#run-the-app>

### Question No:10

You want the Docker daemon to output debug logs. In which file can you enable a flag to cause this to happen?

- A. `settings.json`
- B. `docker.json`
- C. `debug.json`
- D. `daemon.json`

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Answer: D

Explanation: There are two ways to enable debugging. The recommended approach is to set the debug key to true in the daemon.json file. This method works for every Docker platform.

Edit the daemon.json file, which is usually located in /etc/docker/. You may need to create this file, if it does not yet exist. On macOS or Windows, do not edit the file directly. Instead, go to Preferences / Daemon / Advanced.

If the file is empty, add the following:

```
{ "debug": true }
```

If the file already contains JSON, just add the key "debug": true, being careful to add a comma to the end of the line if it is not the last line before the closing bracket. Also verify that if the log-level key is set, it is set to either info or debug. info is the default, and possible values are debug, info, warn, error, fatal.

Reference: <https://docs.docker.com/engine/admin/#enable-debugging>

Question No:11

Which of the following is NOT a network created by Docker when it is installed?

A. none

B. host

C. bridge

D. base

Answer: D

Explanation: When you install Docker, it creates three networks automatically. You can list these networks using the docker network ls command:

```
NETWORK ID    NAME        DRIVER
```

```
7fca4eb8c647  bridge     bridge
```

```
9f904ee27bf5  none      null
```

```
cf03ee007fb4  host      host
```

These three networks are built into Docker. When you run a container, you can use the --network flag to specify which networks your container should connect to.

Reference: <https://docs.docker.com/engine/userguide/networking/#default-networks>

Question No:12

By default, how often does each node in a Docker swarm renew its security certificate?