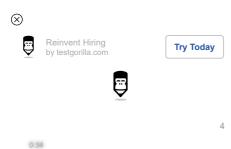
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Top 50 Docker Interview Questions and Answers

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Sagar Bhatia (https://hackr.io/blog/author/sagarbhatia) Last Updated 18 Feb, 2022

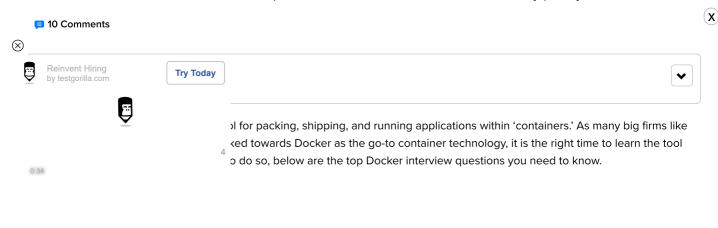
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Top Docker Interview Questions

Here we have listed a comprehend lists of top Docker interview questions:

Question: Explain Docker Container?

Answer: A container is the basic unit of software that holds the code and all its dependencies, in order to make the application run smoothly, quickly and reliably from one computing ecosystem to another. A Docker container may be created using a Docker image. It is an executable package of the software, which holds everything that is required to run an application, which are system tools, libraries, code, runtime, and settings.

Question: Explain the components of Docker Architecture.

Answer: The components in Docker architecture are given below:

ink with the • Host: This c Registry, the

 (\mathbf{x})

- Client: The
- Registry: This Docker Component is used to store the Docker Images. Docker Hub and Docker Cloud are public registries, which can be utilized by anyone.

Question: Explain the Docker Registry in detail.

Answer: The place where all Docker Images are stored is known as the Docker Registry. The Docker Hub is a public registry which is the default storage for these images. Another public registry is Docker Cloud. The Docker Hub is the most significant public storehouse of the image containers, consistently maintained by a large number of developers, along with many individual contributors.



0:34









er Container lifestyle.

4 liner is:

- · Creation of the container
- Running the container
- Pausing the container
- Unpausing the container
- Starting the container
- Stopping the container
- · Restarting the container
- · Killing the container
- Destroying the container

Question: Name some important Docker commands

Answer: Belov

- build: to bui
- create: for creation of a new container
- kill: to kill a container
- dockerd: for launching Docker daemon
- commit: for creating a new image from the container changes

Question: What are Namespaces in Docker.

Answer: Docker Namespaces is a technology providing isolated workspaces knows as a container. Once a container is started, a set of namespaces is created for the said container. These namespaces provide a layer of seclusion for these containers as each container functions in a distinct namespace, with its access limited to the mentioned namespace.

Question: What is Docker Swarm?

Answer: Docker Swarm is a native tool used for clustering and scheduling Docker containers. Using Docker Swarm, developers and IT supervisors can easily establish and manage a bunch of nodes in Docker or a solitary Virtual System (VS).

Question: How to identify the status of a Docker Container?

Answer: To identify the status of a Docker container, one should run the command





"docker ps-a."

This command will furnish the list of all available Docker containers with the respective status on the host. From the list, one can easily make out the intended container to check its status.

Question: What are the Docker Image and Docker Run Command?

Answer: A Docker Image is a group of files and an amalgamation of parameters that allow the creation of instances that run in distinct containers as isolated processes. An image is basically built using the instructions for a complete and executable version of an application, which relies on the host OS kernel. The Docker run command can be used to create the instance called container which can be run using the Docker image. When the Docker user runs an image, it becomes one or multiple instances of that container.

Question: State the functionalities and applications of Docker.

Answer: Below is some functionalities and applications of implementing Docker:

- · It makes the configuration simpler and provides ease of configuration at the infrastructure level
- · By helping the developer concentrate exclusively on business logic, it reduces development time and increases productivity
- It amplifies the debugging capabilities which provide useful functionalities
- It allows the isolation of the application
- It reduces the use of multiple servers in the form of containerization
- · It facilitates rapid deployment at the OS level

Question: W

Answer: Dock

- Images: A read-only template with instructions for creating a Docker container
- Containers: A runnable instance of an image
- Services: It allows the scaling of containers across a variety of Docker Daemons, which all work together as a swarm.

Other Docker Objects include Networks and Volumes.

Question: Which is more suitable for Docker Container, Stateless or Stateful application?

Answer: Stateless applications should be preferred over a Stateful application for Docker Container. We can create one container from our application and take out the app's configurable state parameters. Once it is one, we can run the same container with different production parameters and other environments. Through the Stateless application, we can reuse the same image in distinct scenarios. It is also easier to scale a Stateless application than a Stateful application when it comes to Docker Containers.

Question: Explain the use of Dockerfile.

Answer: Dockerfile contains many instructions passed on Docker to make possible the build process of images, which can automatically read these instructions. It can also be termed as a text document containing all the possible commands that a user may call on the command line to create an image.

Question: Which networks all available by default in Docker?

Answer: The default networks available in Docker are:



⊗ • bridge: Default network which the containers connect to if the network is not specified otherwise



Try Today a network stack lacking a network interface

Gorilla 🗗

/ process for Dockerized Apps stored In A Git Repo.

ges with your production environment, a basic deploy process will have the following:

uild located in the code directory

- · Perform the test of an image
- Push the new image to registry docker
- · Notify the remote application server to get hold of the image from the registry and run it
- Port swapping in HTTP proxy
- Stop the older container

Question: Explain how Docker is different from other container technologies.

Answer: Docker is one of the latest container technologies and has emerged as one of the most popular. Built-in the cloud era, Docker comes with a lot of new features that were missing in older container technologies. One of Docker's finest features is that it can run on any infrastructure, be it your home machine or the Cloud.

Through Docker, more applications can now run on the old servers, and it also allows the process to package and ship programs. Docker also has a Container Hub that acts as a repository for containers, which are easy to download and use. Moreover, these containers can also be shared by your applications. It is also very well documented, which makes it better than other container technologies.



Question: If you were to exit the Docker Container, will you lose your data?

Answer: When a Docker Container is exited, no data loss occurs as all the data is written to the disk by the application for the sole purpose of preservation. This process is consistently repeated until and unless the container is unequivocally deleted. Moreover, the file system for the Docker container persists even after the Docker container is halted.

Question: How is Docker monitored in production?

Answer:;To monitor Docker in production, tools such as Docker stats and Docker events are available. Through these tools, one can get reports on important statistics. Once Docker stats are called with a container ID, it returns the container's CPU and memory usage. It is similar to the top command in Linux (https://hackr.io/blog/basic-linux-commands). On the other hand, Docker Events are commands to see a list of activities in process in Docker Daemon. Some of these events are attached, commit, rename, destroy, die and more. One also has the option to filter the events they are interested in.

Question: Shed some light on the workflow of Docker usage.

Answer: Below is a brief explanation of the workflow of Docker usage:

• Since the Dockerfile is the source code of the image, everything starts with it

0:34

• Once it is created, the Dockerfile is used to build the image of the container. This image is only the compiled version of the



Dockerfile



Try Today

the registry, which is like a repository of images.

containers. A container, while it is running, is very similar to a VM without the hypervisor.



ween the commands 'Docker run' and 'Docker creates.'

n Docker run and Docker create is that if you use the latter, the container is created in a 1 be used to store and output container ID for use later. The best way to do it is to use running it again won't allow overwriting the file.

Question: What is Virtualisation?

Answer: Virtualisation, in its earlier days, was termed as a method of logically dividing mainframes to allow multiple applications to run concurrently. But as time progressed and the industry was able to allow for multiple operating systems to be run simultaneously on a single x86 based system, the meaning of virtualization changed considerably.

The net result? Virtualization allows the user to run two different OS on the same hardware. While the primary OS is the administrator, every guest OS goes through the processes such as bootstrapping, loading kernel, and more. It is also perfect for security, as every guest OS may not be allowed full access to the host OS, leading to the data breach.

There are primarily three types of virtualization:

Paravirtualization



Container-b

Question: What is the amerence between a region, and a repository.

Answer: The Docker Registry is a service for hosting and distributing images, whereas the Docker Hub is the default registry. On the other hand, the Docker Repository is the collection of Docker images that are related. That is, they have the same name but different tags.

Question: Can JSON be used instead of YAML for the compose file in Docker? If yes, how?

Answer: Yes, JSON can be used instead of YAML for the Docker compose file. To use the JSON file with composing, the filename should be specified as the following:

"docker-compose -f docker-compose.json up."

Question: Explain CMD and ENTRYPOINT in a Dockerfile?

Answer: In a Dockerfile, both CMD and ENTRYPOINT instructions define which command will be executed while running a container. For their cooperation, there are some rules, such as:

- The Dockerfile should specify at least one command from CMD or ENTRYPOINT
- While using the container as an executable, ENTRYPOINT needs to be defined

• When running the container with an alternative argument, CMD will be overridden



⊗ Question: Explain the process to run an application inside a Linux Container using Docker



Try Today run an application inside the Linux Container using Docker



e image from the Docker hub

ase image

⁴ n interactive mode

- Check the containers in the system
- Start or stop Docker container
- Go inside a Docker container
- Remove container or image

Question: What is a Hypervisor?

Answer: A Virtual machine monitor, known as Hypervisor, is software to create and run virtual machines. It allows a single host computer to support more than one guest VMs. This is done by sharing resources like memory, processing, etc., thus reducing the memory, space, and maintenance requirements. There are two types of hypervisor:

- Type I: it is like a lightweight operating system that runs on the host's hardware.
- Type II: runs like software programs on an operating system.

Question: Explain containerization?

Answer: Docker containers contain different software packages like code, system tools, libraries, runtime, and settings required to run an application. The apps reside on top of the Docker engine layer. This is called containerization. It helps applications to run smoothly regardless of the environment.;

Question: Ex

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Answer: Throusen the same operating and the same operation and the s





Question: Explain Docker Images, Docker Hub, Docker File?

Answer: Docker images: These are files that contain multiple layers and are used to execute code inside the Docker container. Images are built from instructions for an executable version of an application. Images speed up docker build by allowing each step to be cached.;



Docker hub: It is a service that finds and shares container images within a team. You can push and pull images, access private repositories of container images, build container images automatically from Github (or Bitbucket), and push them to DockerHub. Docker itself provides the service. Read more (https://docs.docker.com/docker-hub/).

Docker file: It is a text document used to build an image. It contains instructions and commands to build the image. Docker reads the commands and assembles the image automatically.

Question: How to Check for Docker Client and Docker Server version?

Answer: We can check the docker version using the command docker version [options]. If we do not give any options, then Docker gives all the version related information about client and server. For example, to get only the server version, use: \otimes



\$ docker login localhost:8080

Question: Explain various Docker Basic Commands?

Answer: Some Docker commands are:

- docker push: pushes repository or image to a registry
- docker run: runs a command in a new container
- docker pull:



- docker stop
- docker search, searches for an image in a docker hub
- docker commit: commits new image

Question: Explain how Docker Container is different from other containerization methods?

Answer: Docker containers can be easily deployed to any cloud platform. Also, developers can create ready-to-run containerized applications faster and manage and deploy applications easily. Containers can also be shared with applications. These features are not present in other containerization methods.

Question: List out the platform where Docker runs on.

Answer: It runs on Windows (x86-64) and Linux (on x86-64, ARM, and other CPU architectures), s390x, ppc64le.

Question: Is it possible for a container to restart by itself?

Answer: Yes, it is possible. Docker defines certain policies to restart the container. These are Off: container won't be restarted if it stops or fails,





- On-failure: container restarts only when a failure that occurred is not due to the user,
- Unless-stopped: container restarts only when a user executes the command to stop it,
- Always: the container is always restarted irrespective of error or other issues.

The command is:

\$ docker run -dit - restart [unless-stopped|off|on-failure|always] [CONTAINER]

Question: Is it possible for the cloud to overtake the use of Containerization?

Answer: In this type of question, you can give your personal opinion. For example, as per my understanding, although the cloud is a good competitor, it cannot replace containerization. Most companies are using cloud and containerization in tandem to get the best out of both technologies.

Question: What are the various possible states of the Docker Container?

Answer: The different states of the Docker container are:

- Created a container that is created but not active.
- Restarting a container that is in the process of getting restarted.
- Running running container.
- Paused container whose processes are paused.



- Exited a container that ran and completed.
- Dead a container that the daemon tried and failed to stop.

Question: Explain the container orchestration and why we need to use it?

0:34

Answer: Container orchestration helps in managing the containers running in a dynamic and large environment. Container orchestration can control and automate the following tasks:





another when the host is unavailable or lacking resources.

Question: Explain the memory-swap flag?

A memory-swap flag is a modifier flag that allows a container to write excess memory requirements into a disk when it has used all the available RAM. It is set only when the --memory flag is set. Example, if memory = "400m" and memory-swap = "1g", then the container can use 400m of memory and swap of 600m (1g-400m).

Question: Where are the docker volumes stored?

Answer: Volumes are created and managed by Docker (not to be accessed by Non-Docker processes) and are stored in a part of Docker host filesystem: /var/lib/docker/volumes/. Volumes are the most efficient way to persist data in Docker.

Question: Explain the various Docker Advanced Commands?

Answer: Some important Docker commands are:

- docker -vers
- docker ps: li
- docker ps -a docker ps -a
- docker exec: Access the container and run commands inside that container. Syntax: docker exec [options]
- docker build: builds an image from Dockerfile. Syntax: docker build [options] pathlURL
- docker rm: Removes the container with the mentioned container id. Syntax: docker rm <container_id>
- docker rmi: Removes the docker image with the mentioned image id. Syntax: docker rmi <image_id>
- docker info: Gets detailed information about Docker installed on the system like the number of containers, images, running, paused, stopped, server version, volume, runtimes, kernel version, total memory etc. Syntax: docker info;
- docker cp: Copies a file from a docker container to a local system. Syntax: docker cp <source_path> <dest_path>





• docker history: displays the history of the docker image with the mentioned image name. Syntax: docker history <img_name>

Question: What are the commands to control Docker with Systemd?

Answer: To start the Docker daemon, many Linux distributions use the system. To start the services, use the command systemct1. If systemct1 is not available, the service command is used.;

\$ sudo systemctl start docker
\$ sudo service docker start

To enable and disable a daemon during boot time, use:

\$ sudo systemctl enable docker
\$ sudo systemctl disable docker

To modify daemon options, use:;

\$ sudo systemctl edit docker

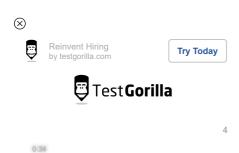
To view logs related to Docker service



Question: What is the process of scaling your Docker containers

Answer: Docker containers can be scaled using Docker-decompose's scale command. The process is as follows:





• Scale the server container and start 'n' instances of the server using:

```
$] docker-compose --file docker-compose-run-srvr.yml scale <service_name>=<n>
```

In the above command, the service name is defined in docker-compose-run-srvr.yml and are scaling it to 'n' times, where n can be any integer value.

· After scaling the Docker container, to check the container details, execute the following command:

\$] docker ps -a

Question: Tell us about the steps for the Docker container life cycle.

Answer: Here are the steps:

- Create container: docker create --name <container-name> <image-name>
- Run docker container: docker run -it -d --name <container-name> <image-name> bash
- Pause container: docker pause <container-id/name>
- Unpause container: docker unpause <container-id/name>
- Start container: docker start <container-id/name>
- Stop container: docker stop <container-id/name>
- Restart cont
- Kill containe
- Destroy con

Question: What is CNM?

Answer: CNM or Container Network Model is a specification that formally defines the steps needed to provide networking for containers while maintaining abstraction used to support multiple network drivers. CNM is built on three components, namely, sandbox, endpoint, and Network.





Question: What are the different kinds of mount types available in Docker?

Answer: The three types are:

- Bind mounts: These can be stored anywhere on the host system
- Volume mount: they are managed by Docker and are stored in a part of the host filesystem.
- tmpfs mount: they are stored in the host system's memory. These mounts can never be written to the host's filesystem.

Question: Explain Docker Trusted Registry?

Answer: It is an image storage solution to store and manage the Docker images securely. Docker Trusted Registry is available on-premises or private cloud. DTR can be used during CI/CD processes for building, delivering, and running applications. DTR is highly available, efficient and has built-in access control.

Question: What is the purpose of Docker_Host?

Answer: Docker_host specifies the URL or Unix socket path used to connect to the Docker API. The default value is: UNIX://var/run/docker.sock

To connect to the remote host, provide the TCP connection string as TCP://192.0.1.20:3230

Question: Is it possible to run multiple copies of a Compose file on the same host? How?

Answer: This is done through the use of docker-compose. With Docker Compose, we can use a YAML file to configure the application's services. After this, with a single command, all the services can be created and started. To use Compose, follow the below steps:

- Define the ϵ
- Define all th
- Run docker-

Question: Explain Docker object labels.

Answer: Docker object label is a key-value pair that is stored as a string. We can apply metadata using labels. Labels can be applied for Docker objects like images, containers, volumes, networks, local daemons, swarm nodes, and services. The key-value pair should be unique for each object. Labels are static for the entire lifetime of the object.

Summary

So this was the list of top Docker interview questions. How many did you know the answer to? Let us know in the comment window below. Also, check out our Best Docker tutorials (https://hackr.io/tutorials/learn-docker?ref=blog-post), submitted and recommended by the community.

Not satisfied after reviewing your skillset and need expert guidance? Try this course from udemy: Docker Crash Course for Busy DevOps and Developers would help you with your Preparation to crack that interview (https://click.linksynergy.com/deeplink? id=jU79Zysihs4&mid=39197&murl=https%3A%2F%2Fwww.udemy.com%2Fcourse%2Fdocker-tutorial-for-devops-run-docker-containers%2F&u1=blog%2Fdocker-interview-questions_amcid-sF7NsAQIIq3YYJI2IJMFi).

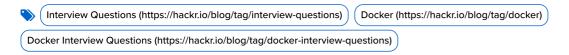
You can expect a few data structures and other programming concepts-based questions in the upcoming Docker interview. Read through the Cracking the Coding Interview: 189 Programming Questions and Solutions (https://geni.us/MmRP).





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questions)



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(https://hackr.io/blog/author/sagarbhatia)

Sagar is an engineering graduate and a technology lover and has been writing across various disciplines for over 5 years now. An avid gamer himself, he wishes to create a venture revolving around the e-sports domain in India. View all posts by the Author (https://hackr.io/blog/author/sagarbhatia)

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SUBMIT
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phanindra

In question difference between containerization and virtualization, the architecture you represented is not correct. The containerization is shown as virtualization and vice versa, please check it. else correct me if I'm wrong.

Reply

Omar Schwartz

What is Docker push?

Reply

Clinton Vaughn

Which is better Docker Swarm vs Kubernetes?





lable than Kubernetes. Containers can be deployed faster both when it comes to large clusters and high update command is enough to deploy new replicas. Docker Swarm is supported for only monitoring with immended to use Docker with Reimann for monitoring, however since Docker Swarm has an open API, it entry of apps. Kubernetes is more of an all-in-one framework for distributed systems.

Patti Thomas

What are the possible ways of using insecure Docker image registries?

Reply

Loretta Moreno

Running an insecure registry isn't recommended but sometimes it's the easiest and most reasonable solution.

Reply

Jordan Mccov

What is the difference between Docker compose and Docker stack?

Reply

Julius Rose

Docker Compose is an official tool that helps you manage your Docker containers by letting you define everything through a docker-compose. yml file. docker stack is a command that's embedded into the Docker CLI. It lets you manage a cluster of Docker containers through Docker Swarm.

Reply

Lee Miles

How is Docker different from a VM?

Reply

Sue Gibbs

Docker is container-based technology and containers are just user space of the operating system. ... In Docker, the containers running share the host OS kernel. A Virtual Machine, on the other hand, is not based on container technology. They are made up of user space plus kernel space of an operating system.

Reply

Leo B

What i

Reply

Amber Dean

A namespace is a declarative region that provides a scope to the identifiers (the names of types, functions, variables, etc) inside it. Namespaces are used to organize code into logical groups and to prevent name collisions that can occur especially when your code base includes multiple libraries.

Reply

Francisco Phillips

What is Docker Swarm?

Reply

Everett Havnes

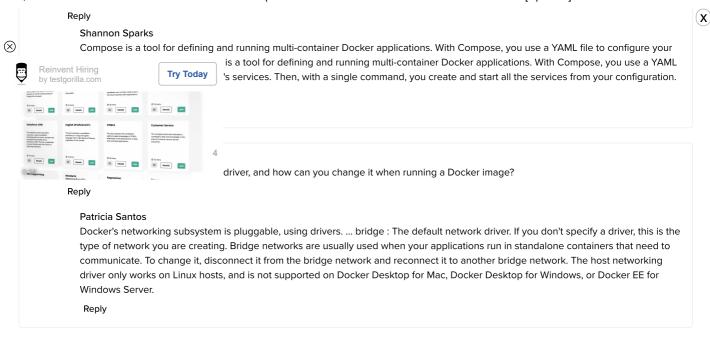
Docker Swarm is a clustering and scheduling tool for Docker containers. With Swarm, IT administrators and developers can establish and manage a cluster of Docker nodes as a single virtual system.

Reply

Brittany Peters

What is Docker Compose? What can it be used for?





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