

## AWS Questions

### 1) What is EC2?

EC2, a Virtual Machine in the cloud on which you have OS-level control. You can run this cloud server whenever you want and can be used when you need to deploy your own servers in the cloud, similar to your on-premises servers, and when you want to have full control over the choice of hardware and the updates on the machine

### 2) What is CloudWatch?

CloudWatch helps you to monitor AWS environments like EC2, RDS Instances, and CPU utilization. It also triggers alarms depending on various metrics.

### 3) What are the Storage Classes available in Amazon S3?

Storage Classes available with Amazon S3 are:

- Amazon S3 Standard
- Amazon S3 Standard-Infrequent Access
- Amazon S3 Reduced Redundancy Storage
- Amazon Glacier
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### 4) How many Subnets can you have per VPC?

You can have 200 Subnets per VPC

### 5) How can you send a request to Amazon S3?

Amazon S3 is a REST Service, and you can send a request by using the REST API or the AWS SDK wrapper libraries that wrap the underlying Amazon S3 REST API.

### 6) What are the different types of Instances?

Following are the types of instances:

- Compute Optimized
- Memory-Optimized
- Storage Optimized
- Accelerated Computing
- General Purpose

### 7) What are the advantages of AWS IAM?

AWS IAM enables an administrator to provide granular level access to different users and groups. Different users and user groups may need different levels of access to different resources created. With IAM, you can create roles with specific access-levels and assign the roles to the users. It also allows you to provide access to the resources to users and applications without creating the IAM Roles, which is known as Federated Access.

### 8) Explain what S3 is?

S3 stands for Simple Storage Service. You can use the S3 interface to store and retrieve any amount of data, at any time and from anywhere on the web. For S3, the payment model is “pay as you go”.

### 9) How do you upgrade or downgrade a system with near-zero downtime?

You can upgrade or downgrade a system with near-zero downtime using the following steps of migration:

Open EC2 console

Choose Operating System AMI

Launch an instance with the new instance type.

Install all the updates.

Install applications.

Test the instance to see if it's working.

If working, deploy the new instance and replace the older instance.

Once it's deployed, you can upgrade or downgrade the system with near-zero downtime.

### 10) How do you monitor Amazon VPC?

You can monitor VPC by using:

- a) CloudWatch and CloudWatch logs
- b) VPC Flow Logs

### AWS Cloud Essentials Quiz

<https://www.w3schools.com/quiztest/quiztest.php?qtest=AWSCE>

## DevOps Questions

### 1) What are Git and GitHub?

Git is an open-source and free-distributed version control system developed to handle projects of all sizes quickly and efficiently.

GitHub uses Git to provide Internet hosting for version control and software development. It offers the functionality of distributed version control and source code management, which is found in Git, in addition to other unique features.

### 2) What is the difference between Git and GitHub?

Git is a version control system that is used in the management of the source code history. GitHub, on the other hand, is a cloud-based hosting service used to manage Git repositories. GitHub is designed to help in the better management of open-source projects.

- a) What is the git push command?
- b) What is the git pull command?
- c) What is the difference between git fetch and git pull?
- d) Explain git checkout in Git.
- e) What does git rebase do?

### 3) What is the difference between resetting and reverting?

While git reset changes the state of the branch to a previous one by removing all of the states after the desired commit, git revert does it through the creation of new reverting commits and keeping the original one intact.

#### **4) How do you define a 'conflict' in git?**

If we want to merge a commit there is a change in one place and the same change already exists then while merging the Git will not be able to predict which is the change that needs to be taken precedence.

#### **5) What is Groovy in Jenkins?**

Apache Groovy is a dynamic object-oriented programming language used as a scripting language for Java platforms. Groovy is used to orchestrate the Jenkins pipeline and enables different teams to contribute to the work in different languages. Groovy's syntax is very similar to that of Java, making it more seamless with the Java interface. The language has several features like Java compatibility and Development support.

#### **6) What is "Continuous Integration" with reference to Jenkins?**

Continuous Integration is a development practice where the codes can be integrated into a shared repository. The practice uses automated verifications for the early detection of code problems. Continuous Integration triggers the build to find and identify bugs present in the code. It adds consistency to the build process. It's a means to build things faster and prevents broken code.

#### **7) What is a CI/CD pipeline?**

CI/CD Pipeline or Continuous Integration/ Continuous Delivery is considered the DevOps approach's backbone. The pipeline is responsible for building codes, running tests, and deploying new software versions.

#### **8) Name the three different types of pipelines in Jenkins?**

The three different types of Jenkins pipelines are:

- CI/CD pipeline
- Scripted pipeline
- Declarative pipeline

#### **9) Name some of the useful plugins in Jenkins**

Some of the plugins in Jenkins include:

- Maven 2 project
- Amazon EC2
- Copy artifact
- Join
- HTML publisher
- Green Balls

#### **10) Why is Jenkins used with Selenium?**

Using Selenium allows Jenkins's testing whenever there are software changes or changes in the environment. When the Selenium test suite is integrated with Jenkins, the testing part is also automated as part of the build process.

**11) Explain Kubernetes, and how can you integrate Jenkins with Kubernetes?**

Kubernetes is a portable and open-source platform that is used for managing workloads and services that are containerized. With the help of Kubernetes, the group of hosts running the Linux containers can be easily and efficiently managed. To manage a Continuous Delivery (CD) pipeline, the most efficient way is to deploy Jenkins with Kubernetes Engine. Kubernetes enables the creation of multiple container instances to satisfy more fault tolerance. Kubernetes deploy plug may be used with Jenkins for Continuous Deployment.

**12) What are the advantages of using Docker container?**

Here, is a major advantage of using Docker.

Offers an efficient and easy initial setup.

Allows you to describe your application lifecycle in detail.

Simple configuration and interaction with Docker Compose.

Documentation provides every bit of information.

**13) What are the important features of Docker?**

Here are the essential features of Docker:

Easy Modeling

Version control

Placement/Affinity

Application Agility

Developer Productivity

Operational Efficiencies

**14) What is Docker Engine?**

Docker daemon or Docker engine represents the server. The docker daemon and the clients should be run on the same or remote host, which can communicate through command-line client binary and full RESTful API.

**15) What command should you run to see all running container in Docker?**

`docker ps`

**16) Write the command to stop the docker container**

`sudo docker stop container name`

**17) What is the command to run the image as a container?**

`sudo docker run -i -t alpine /bin/bash`

**18) What is the common instruction in Dockerfile?**

The common instruction in Dockerfile are: FROM, LABEL, RUN, and CMD.

**19) What is Docker hub?**

Docker hub is a cloud-based registry that which helps you to link to code repositories. It allows you to build, test, store your image in Docker cloud. You can also deploy the image to your host with the help of Docker hub.

**20) What are K8s?**

K8s is another term for Kubernetes.

**21) What is the difference between deploying applications on hosts and containers?**

Deploying Applications consist of an architecture that has an operating system. The operating system will have a kernel that holds various libraries installed on the operating system needed for an application.

Whereas container host refers to the system that runs the containerized processes. This kind is isolated from the other applications; therefore, the applications must have the necessary libraries. The binaries are separated from the rest of the system and cannot infringe any other application.

**22) What are the features of Kubernetes?**

Kubernetes places control for the user where the server will host the container. It will control how to launch. So, Kubernetes automates various manual processes. Kubernetes manages various clusters at the same time. It provides various additional services like management of containers, security, networking, and storage. Kubernetes self-monitors the health of nodes and containers.

With Kubernetes, users can scale resources not only vertically but also horizontally that too easily and quickly.

**23) What are the main components of Kubernetes architecture?**

There are two primary components of Kubernetes Architecture: the master node and the worker node. Each of these components has individual components in them.

**Basic Kubernetes Question**

What is a node in Kubernetes?

What does the node status contain?

What process runs on Kubernetes Master Node?

What is a pod in Kubernetes?

What is the job of the kube-scheduler?

What is a cluster of containers in Kubernetes?

What is the Kubernetes controller manager?

What is etcd?