### h1) Explain what AWS is?

AWS stands for Amazon Web Service; it is a collection of remote computing services also known as a cloud computing platform.  This new realm of cloud computing is also known as IaaS or Infrastructure as a Service.

### 2) Mention what the key components of AWS are?

The key components of AWS are

* **Route 53:**A DNS web service
* **Simple E-mail Service:**It allows sending e-mail using RESTFUL [API](https://career.guru99.com/top-20-questions-on-api-testing/) call or via regular SMTP
* **Identity and Access Management:**It provides enhanced security and identity management for your AWS account
* **Simple Storage Device or (S3):**It is a storage device and the most widely used AWS service
* **Elastic Compute Cloud (EC2):**It provides on-demand computing resources for hosting applications. It is handy in case of unpredictable workloads
* **Elastic Block Store (EBS):**It offers persistent storage volumes that attach to EC2 to allow you to persist data past the lifespan of a single Amazon EC2 instance
* **CloudWatch:**To monitor AWS resources, It allows administrators to view and collect keys. Also, one can set a notification alarm in case of trouble.

3) 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.

### 4) What is AMI?

AMI stands for Amazon Machine Image.  It’s a template that provides the information (an [operating system](https://career.guru99.com/top-50-operating-system-interview-questions/), an application server, and applications) required to launch an instance, which is a copy of the AMI running as a virtual server in the cloud.  You can launch instances from as many different AMIs as you need.

### 5) Mention what the relationship between an instance and AMI is?

From a single AMI, you can launch multiple types of instances.  An instance type defines the hardware of the host computer used for your instance. Each instance type provides different computer and memory capabilities.  Once you launch an instance, it looks like a traditional host, and we can interact with it as we would with any computer.

6) What does an AMI include?

An AMI includes the following things

* A template for the root volume for the instance
* Launch permissions decide which AWS accounts can avail the AMI to launch instances
* A block device mapping that determines the volumes to attach to the instance when it is launched

### 7) 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.

### 8) Mention what the difference between Amazon S3 and EC2 is?

The difference between EC2 and Amazon S3 is that

|  |  |
| --- | --- |
| **EC2** | **S3** |
| It is a cloud web service used for hosting your application | It is a data storage system where any amount of data can be stored |
| It is like a huge computer machine which can run either Linux or Windows and can handle applications like PHP, Python, Apache, or any databases | It has a REST interface and uses secure HMAC-SHA1 authentication keys |

### 9) How many buckets can you create in AWS by default?

By default, you can create up to 100 buckets in each of your AWS accounts.

### 10) Explain can you vertically scale an Amazon instance? How?

Yes, you can vertically scale on the Amazon instance. For that

* Spin up a new larger instance than the one you are currently running
* Pause that instance and detach the root webs volume from the server and discard
* Then stop your live instance and detach its root volume
* Note the unique device ID and attach that root volume to your new server
* And start it again

11) Explain what T2 instances is?

T2 instances are designed to provide moderate baseline performance and the capability to burst to higher performance as required by the workload.

### 12) In VPC with private and public subnets, database servers should ideally be launched into which subnet?

With private and public subnets in VPC, database servers should ideally launch into private subnets.

### 13) Mention what the security best practices for Amazon EC2 are?

For secure Amazon EC2 best practices, follow the following steps

* Use AWS identity and access management to control access to your AWS resources
* Restrict access by allowing only trusted hosts or networks to access ports on your instance
* Review the rules in your security groups regularly
* Only open up permissions that you require
* Disable password-based login, for example, launched from your AMI

### 14) Explain how the buffer is used in Amazon web services?

The buffer is used to make the system more robust to manage traffic or load by synchronizing different components.  Usually, components receive and process the requests in an unbalanced way. With the help of a buffer, the components will be balanced and will work at the same speed to provide faster services.

### 15) While connecting to your instance what are the possible connection issues one might face?

The possible connection errors one might encounter while connecting instances are

* Connection timed out
* User key not recognized by the server

Host key not found, permission denied 🡪ssh-keygen -R IPADDRESS

* An unprotected private key file
* Server refused our key or No supported authentication method available
* Error using MindTerm on Safari Browser
* Error using Mac OS X RDP Client

### 16) What are key-pairs in AWS?

Key-pairs are secure login information for your virtual machines. To connect to the instances, you can use key-pairs which contain a public-key and private-key.

### 17)  What are the different types of instances?

Following are the types of instances:

* General purpose
* Computer Optimized
* Memory Optimized
* Storage Optimized
* Accelerated Computing

### 18) Is the property of broadcast or multicast supported by Amazon VPC?

No, currently Amazon VPI does not provide support for broadcast or multicast.

### 19) How many Elastic IPs are allowed to be created by AWS?

5 VPC Elastic IP addresses are allowed for each AWS account.

### 20) Explain default storage class in S3

The default storage class is a Standard frequently accessed.

### 21) What are the Roles?

Roles are used to provide permissions to entities which you can trust within your AWS account. Roles are very similar to users. However,  with roles, you do not require to create any username and password to work with the resources.

### 22) What are the edge locations?

Edge location is the area where the contents will be cached. So, when a user is trying to access any content, the content will automatically be searched in the edge location.

### 23) What is VPC?

VPC stands for Virtual Private Cloud. It allows you to customize your networking configuration. It is a network which is logically isolated from another network in the cloud. It allows you to have your IP address range,  internet gateways, subnet, and security groups.

### 24) Explain snowball

Snowball is a data transport option. It used source appliances to a large amount of data into and out of AWS. With the help of snowball, you can transfer a massive amount of data from one place to another. It helps you to reduce networking costs.

### 25) What is a redshift?

Redshift is a big [data warehouse](https://career.guru99.com/top-50-datawarehousing-questions-answers/) product. It is a fast and powerful, fully managed data warehouse service in the cloud.

### 26) What are the advantages of auto-scaling?

Following are the advantages of autoscaling

* Offers fault tolerance
* Better availability
* Better cost management

### 27) What is meant by subnet?

A large section of IP Addresses divided into chunks is known as subnets.

### 28) Can you establish a Peering connection to a VPC in a different region?

Yes, we can establish a peering connection to a VPC in a different region. It is called inter-region VPC peering connection.

### 29) What is SQS?

Simple Queue Service is also known as SQS. It is distributed queuing service which acts as a mediator for two controllers.

### 30) How many subnets can you have per VPC?

You can have 200 subnets per VPC.

### 31) DNS  and Load Balancer service comes under which type of cloud service?

DNS and Load Balancer and DNS services come under IAAS-storage cloud service.

### 32) What is the role of AWS CloudTrail?

CloudTrail is a specially designed tool for logging and tracking API calls. It helps to [audit](https://career.guru99.com/top-10-internal-audit-interview-questions/) all S3 bucket accesses.

### 33) When was EC2 officially launched?

EC2 officially launched in the year 2006.

### 34) What is SimpleDB?

SimpleDB is a data repository of structure record which encourages data doubts and indexing both S3 and EC2are called SimpleDB.

### 35) Explain Amazon ElasticCache

Amazon Elastic cache is a web service which makes it easy to deploy, scale and store data in the cloud.

### 36) What is AWS Lambda?

Lambda is an Amazon compute service which allows you to run code in the  AWS Cloud without managing servers.

### 37) Name the types of AMI provided by AWS

The types of AMI provided by AWS are:

1. Instance store backed
2. EBS backed

### 38) Name the AWS service that exists only to redundantly cache data and images?

AWS Edge locations are services that redundantly cache data and images.

### 39) Explain Geo Restriction in CloudFront

A Geo-restriction feature helps you to prevent users of specific geographic locations from accessing content which you’re distributing through a CloudFront web distribution.

### 40) What is Amazon EMR?

EMR is a survived cluster stage which helps you to interpret the working of data structures before the intimation.  Apache [Hadoop](https://career.guru99.com/top-25-hadoop-admin-interview-questions-and-answers/) and Apache Spark on the Amazon Web Services help you to investigate a large amount of data. You can prepare data for the analytics goals and marketing intellect workloads using Apache [Hive](https://career.guru99.com/top-30-hive-interview-questions/) and using other relevant open-source designs.

### 41) What is the boot time taken for the instance stored backed AMI?

The boot time for an Amazon instance store-backend AMI is less than 5 minutes.

### 42) Do you need an internet gateway to use peering connections?

Yes, the Internet gateway is needed to use VPC (virtual private cloud peering) connections.

### 43) How to connect EBS volume to multiple instances?

We can’t be able to connect EBS volume to multiple instances.  However, you can connect various EBS Volumes to a single instance.

### 44) List different types of cloud services

Various types of cloud services are:

* Software as a Service (SaaS),
* Data as a Service (DaaS)
* Platform as a Service (PaaS)
* Infrastructure as a Service (IaaS).

### 45) State the difference between An Instance  and AMI

AMI is a template consisting of software configuration part. For example Operating systems, applications, application servers if you start an instance, a duplicate of the AMI in a row as an attendant in the cloud.

### 46) What are the different types of Load Balancers in AWS services?

Two types of Load balancers are:

1. Application Load Balancer
2. Classic Load Balancer

### 47) In which situation you will select provisioned IOPS over Standard RDS storage?

You should select provisioned IOPS storage over standard RDS storage if you want to perform batch-related workloads.

### 48) What are the important features of Amazon cloud search?

Important features of the Amazon cloud are:

* Boolean searches
* Prefix Searches
* Range searches
* Entire text search
* AutoComplete advice

### 49) Can vertically scaling is allowed in  Amazon Instance?

Yes, you can vertically estimate one Amazon instance.

### 50) What is the use of lifecycle hooks in Autoscaling?

Lifecycle hooks are used for autoscaling to put an additional wait time to a scale in or scale out event.

### 51) What are the various layers of Cloud Architecture explained in AWS training?

Different layers of cloud architecture are:

* Cloud controller
* Cluster controller
* Storage Controller
* Node Controller

### 52) What are the storage class 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

### 53) Name some of the DB engines which can be used in AWS RDS

1. MS-[SQL](https://www.guru99.com/sql-server-questions.html) DB
2. MariaDB
3. [MYSQL](https://career.guru99.com/top-50-mysql-interview-questions-answers/) DB
4. OracleDB
5. PostgreDB

### **1. What is AWS?**

[AWS (Amazon Web Services)](https://intellipaat.com/blog/what-is-amazon-web-services-aws/) is a platform to provide secure cloud services, database storage, offerings to compute power, content delivery, and other services to help business level and develop.

### **2. Give the comparison between AWS and OpenStack.**

|  |  |  |
| --- | --- | --- |
| **Criteria** | **AWS** | **OpenStack** |
| **License** | Amazon proprietary | Open-source |
| **Operating system** | Provided as per the cloud administrator | AMIs provided by AWS |
| **Performing repeatable operations** | Through templates | Through text files |

### **3. What is the importance of buffer in Amazon Web Services?**

An [Elastic Load Balancer](https://intellipaat.com/blog/what-is-aws-elb-load-balancer/) ensures that the incoming traffic is distributed optimally across various AWS instances. A buffer will synchronize different components and makes the arrangement additionally elastic to a burst of load or traffic. The components are prone to work in an unstable way of receiving and processing requests. The buffer creates an equilibrium linking various apparatus and crafts them to work at an identical rate to supply more rapid services.

### **4. How are Spot Instance, On-demand Instance, and Reserved Instance different from one another?**

Both Spot Instance and On-demand Instance are models for pricing.

|  |  |
| --- | --- |
| **Spot Instance** | **On-demand Instance** |
| With Spot Instance, customers can purchase compute capacity with no upfront commitment at all. | With On-demand Instance, users can launch instances at any time based on the demand. |
| Spot Instances are spare Amazon instances that you can bid for. | On-demand Instances are suitable for the high-availability needs of applications. |
| When the bidding price exceeds the spot price, the instance is automatically launched, and the spot price fluctuates based on supply and demand for instances. | On-demand Instances are launched by users only with the pay-as-you-go model. |
| When the bidding price is less than the spot price, the instance is immediately taken away by Amazon. | On-demand Instances will remain persistent without any automatic termination from Amazon. |
| Spot Instances are charged on an hourly basis. | On-demand Instances are charged on a per-second basis |

### **5. Why do we make subnets?**

Creating subnets means dividing a large network into smaller ones. These subnets can be created for several reasons. For example, creating and using subnets can help reduce congestion by making sure that the traffic destined for a subnet stays in that subnet. This helps in efficiently routing the traffic coming to the network that reduces the network’s load.

### **6. Is there a way to upload a file that is greater than 100 megabytes in Amazon S3?**

Yes, it is possible by using the multipart upload utility from AWS. With the multipart upload utility, larger files can be uploaded in multiple parts that are uploaded independently. You can also decrease upload time by uploading these parts in parallel. After the upload is done, the parts will be merged into a single object or file to create the original file from which the parts were created.

### **7. What is the maximum number of S3 buckets you can create?**

The maximum number of S3 buckets that can be created is 100Top of Form

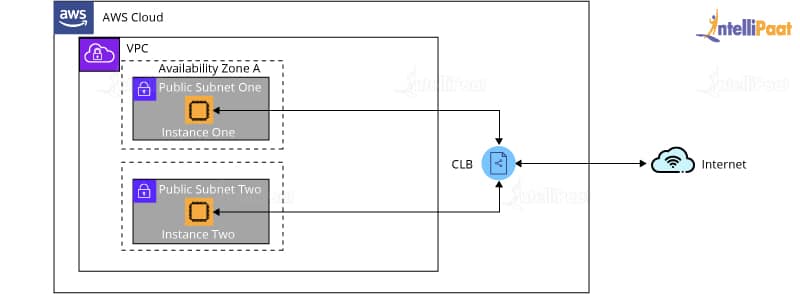
Bottom of Form

### **8. How can you save the data on root volume on an EBS-backed machine?**

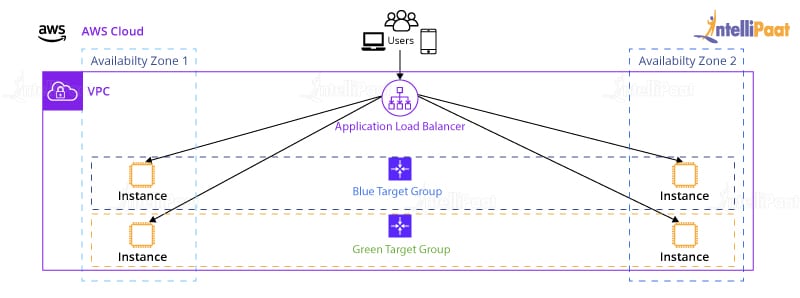
We can save the data by overriding the terminate option

### **9. When should you use the classic load balancer and the application load balancer?**

The classic load balancer is used for simple load balancing of traffic across multiple EC2 instances.



While, the application load balancing is used for more intelligent load balancing, based on the multi-tier architecture or container-based architecture of the application. Application load balancing is mostly used when there is a need to route traffic to multiple services.



### **10. How many total VPCs per account/region and subnets per VPC can you have?**

We can have a total of 5 VPCs for every account/region and 200 subnets for every VPC that you have.

### **11. Your organization has decided to have all their workload on the public cloud. But, due to certain security concerns, your organization decides to distribute some of the workload on private servers. You are asked to suggest a cloud architecture for your organization. What will be your suggestion?**

A hybrid cloud. The hybrid cloud architecture is where an organization can use the public cloud for shared resources and the private cloud for its confidential workloads.

### **12. Which one of the storage solutions offered by AWS would you use if you need extremely low pricing and data archiving?**

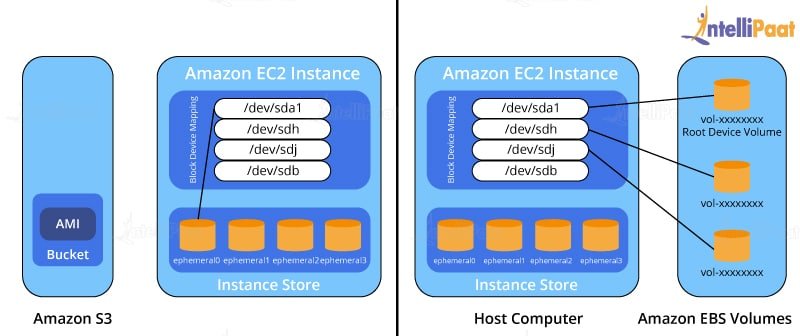
[AWS Glacier](https://intellipaat.com/blog/aws-amazon-glacier-tutorial/) is an extremely low-cost storage service offered by Amazon that is used for data archiving and backup purposes. The longer you store data in Glacier, the lesser it will cost you.

### **13. You have connected four instances to ELB. To automatically terminate your unhealthy instances and replace them with new ones, which functionality would you use?**

Auto-scaling groups

### **14. The data on the root volumes of store-backed and EBS-backed instances get deleted by default when they are terminated. If you want to prevent that from happening, which instance would you use?**

EBS-backed instances. EBS-backed instances use EBS volume as their root volume. EBS volume consists of virtual drives that can be easily backed up and duplicated by snapshots.



The biggest advantage of EBS-backed volumes is that the data can be configured to be stored for later retrieval even if the virtual machine or the instances are shut down.

### **15. How will you configure an Amazon S3 bucket to serve static assets for your public web application?**

By configuring the bucket policy to provide public read access to all objects

### **16. Your organization wants to send and receive compliance emails to its clients using its own email address and domain. What service would you suggest for achieving the same in an easy and cost-effective way?**

[**Amazon Simple Email Service**](https://intellipaat.com/blog/what-is-amazon-ses-sns-in-aws/) (Amazon SES), which is a cloud-based email sending service, can be used for this purpose.

### **17. Can you launch Amazon Elastic Compute Cloud (EC2) instances with predetermined private IP addresses? If yes, then with which Amazon service it is possible?**

Yes. It is possible by using [VPC (Virtual Private Cloud)](https://intellipaat.com/blog/aws-vpc-peering-tutorial/).

### **18. If you launched a standby RDS, will it be launched in the same availability zone as your primary?**

No, standby instances are automatically launched in different availability zones than the primary, making them physically independent infrastructures. This is because the whole purpose of standby instances is to prevent infrastructure failure. So, in case the primary goes down, the standby instance will help recover all of the data.

### **19. What is the name of Amazon's Content Delivery Network ?**

[Amazon CloudFront](https://intellipaat.com/blog/what-is-amazon-cloudfront/)

### **20. Which Amazon solution will you use if you want to accelerate moving petabytes of data in and out of AWS, using storage devices that are designed to be secure for data transfer?**

Amazon Snowball. [AWS Snowball](https://intellipaat.com/blog/what-is-aws-snowball/) is the data transport solution for large amounts of data that need to be moved into and out of AWS using physical storage devices.

### **21. If you are running your DB instance as Multi-AZ deployment, can you use standby DB instances along with your primary DB instance?**

No, the standby DB instance cannot be used along with the primary DB instances since the standby DB instances are supposed to be used only if the primary instance goes down.

### **22. Your organization is developing a new multi-tier web application in AWS. Being a fairly new and small organization, there’s limited staff. But, the organization requires high availability. This new application comprises complex queries and table joins. Which Amazon service will be the best solution for your organization’s requirements?**

[DynamoDB](https://intellipaat.com/blog/amazon-aws-dynamodb-tutorial/) will be the right choice here since it is designed to be highly scalable, more than RDS or any other relational database service.

### **23. You accidently stopped an EC2 instance in a VPC with an associated Elastic IP. If you start the instance again, what will be the result?**

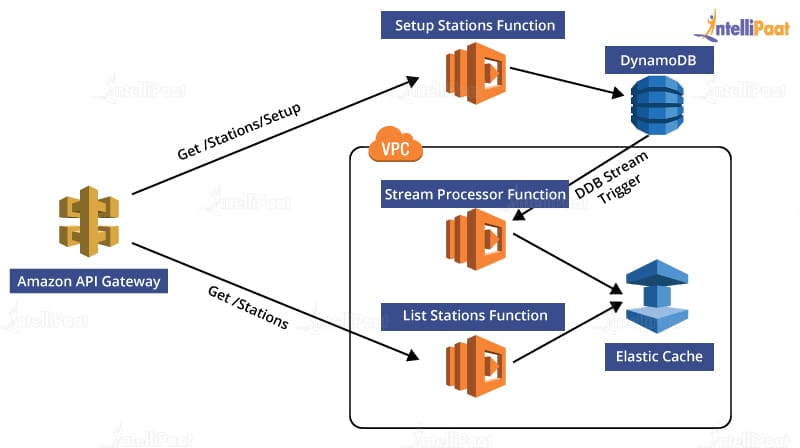
Elastic IP will be only disassociated from the instance if it’s terminated. If it’s stopped and started, there won’t be any change to instance and no data will be lost.

### **24. Your organization has around 50 IAM users. Now, it wants to introduce a new policy that will affect the access permissions of an IAM user. How can it implement this without having to apply the policy at the individual user level?**

It is possible using [AWS IAM](https://intellipaat.com/blog/what-is-aws-iam/) groups, by adding users in the groups as per their roles and by simply applying the policy to the groups.

### **25. Your organization is using DynamoDB for its application. This application collects data from its users every 10 minutes and stores it in DynamoDB. Then every day, after a particular time interval, the data (respective to each user) is extracted from DynamoDB and sent to S3. Then, the application visualizes this data to the users. You are asked to propose a solution to help optimize the backend of the application for latency at lower cost. What would you recommend?**

ElastiCache. Amazon ElastiCache is a caching solution offered by Amazon.



It can be used to store a cached version of the application in a region closer to users so that when requests are made by the users the cached version of the application can respond, and hence latency will be reduced.

### **26. I created a web application with autoscaling. I observed that the traffic on my application is the highest on Wednesdays and Fridays between 9 AM and 7 PM. What would be the best solution for me to handle the scaling?**

Configure a policy in autoscaling to scale as per the predictable traffic patterns.

### **27. How would you handle a situation where the relational database engine crashes often whenever the traffic to your RDS instances increases, given that the replica of RDS instance is not promoted as the master instance?**

A bigger RDS instance type needs to be opted for handling large amounts of traffic, creating manual or automated snapshots to recover data in case the RDS instance goes down.

### **28. You have an application running on your Amazon EC2 instance. You want to reduce the load on your instance as soon as the CPU utilization reaches 100 percent. How will you do that?**

It can be done by creating an autoscaling group to deploy more instances when the CPU utilization exceeds 100 percent and distributing traffic among instances by creating a load balancer and registering the Amazon EC2 instances with it.

### **29. What would I have to do if I want to access Amazon Simple Storage buckets and use the information for access audits?**

[AWS CloudTrail](https://intellipaat.com/blog/aws-cloudtrail/) can be used in this case as it is designed for logging and tracking API calls, and it has also been made available for storage solutions.

**30. I created a key in North Virginia region to encrypt my data in Oregon region. I also added three users to the key and an external AWS account. Then, to encrypt an object in S3, when I tried to use the same key, it was not listed. Where did I go wrong?**

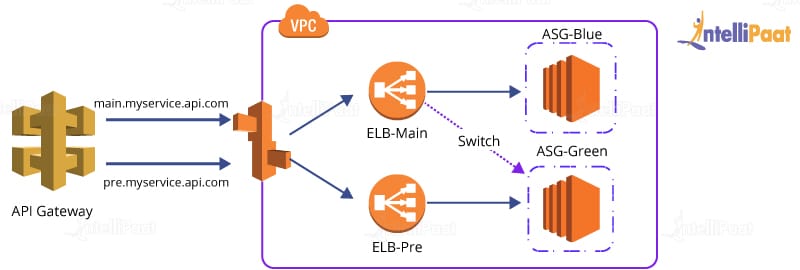
The data and the key should be in the same region. That is, the data that has to be encrypted should be in the same region as the one in which the key was created. In this case, the data is in Oregon region, whereas the key is created in North Virginia region.

**31. Suppose, you hosted an application on AWS that lets the users render images and do some general computing. Which of the below listed services can you use to route the incoming user traffic?**  
Classic Load Balancer

Application Load Balancer

Network Load balancer

**Application Load Balancer:**It supports path-based routing of the traffic and hence helps in enhancing the performance of the application structured as smaller services.



Using application load balancer, the traffic can be routed based on the requests made. In this case scenario, the traffic where requests are made for rendering images can be directed to the servers only deployed for rendering images and the traffic where the requests are made for computing can be directed to the servers deployed only for general computing purposes.**32. Suppose, I created a subnet and launched an EC2 instance in the subnet with default settings. Which of the following options will be ready to use on the EC2 instance as soon as it is launched?**

### Elastic IP

### Private IP

### Public IP

### Internet Gateway

Private IP. Private IP is automatically assigned to the instance as soon as it is launched. While elastic IP has to be set manually, Public IP needs an Internet Gateway which again has to be created since it’s a new VPC.

**33. Your organization has four instances for production and another four for testing. You are asked to set up a group of IAM users that can only access the four production instances and not the other four testing instances. How will you achieve this?**

We can achieve this by defining tags on the test and production instances and then adding a condition to the IAM policy that allows access to specific tags.

### **34. Your organization wants to monitor the read and write IOPS for its AWS MySQL RDS instance and then send real-time alerts to its internal operations team. Which service offered by Amazon can help your organization achieve this scenario?**

Amazon CloudWatch would help us achieve this. Since Amazon CloudWatch is a monitoring tool offered by Amazon, it’s the right service to use in the above-mentioned scenario.

### **35. Which of the following services can be used if you want to capture client connection information from your load balancer at a particular time interval?**

### Enabling access logs on your load balancer

### Enabling CloudTrail for your load balancer

### Enabling CloudWatch metrics for your load balancer

Enabling CloudTrail for your load balancer. AWS CloudTrail is an inexpensive log monitoring solution provided by Amazon. It can provide logging information for load balancers or any other AWS resources. The provided information can further be used for analysis.

### **36. You have created a VPC with private and public subnets. In what kind of subnet would you launch the database servers?**

Database servers should be ideally launched in private subnets. Private subnets are ideal for the backend services and databases of all applications since they are not meant to be accessed by the users of the applications, and private subnets are not routable from the Internet.

### **37. Is it possible to switch from an Instance-backed root volume to an EBS-backed root volume at any time?**

No, it is not possible.

### **38. Can you change the instance type of the instances that are running in your application tier and are also using autoscaling? If yes, then how? (Choose one of the following)**

### Yes, by modifying autoscaling launch configuration

### Yes, by modifying autoscaling tags configuration

### Yes, by modifying autoscaling policy configuration

### No, it cannot be changed

Yes, the instance type of such instances can be changed by modifying the autoscaling launch configuration. The tags configuration is used to add metadata to the instances.

### **39. Can you name the additional network interface that can be created and attached to your Amazon EC2 instance launched in your VPC?**

Elastic Network Interface

### **40. Out of the following options, where does the user specify the maximum number of instances with the autoscaling commands?**

### Autoscaling policy configuration

### Autoscaling group

### Autoscaling tags configuration

### Autoscaling launch configuration

Autoscaling launch configuration

### **41. Which service provided by AWS can you use to transfer objects from your data center, when you are using Amazon CloudFront?**

Amazon Direct Connect. It is an [AWS networking service](https://intellipaat.com/blog/tutorial/amazon-web-services-aws-tutorial/networking/) that acts as an alternative to using the Internet to connect customers in on-premise sites with AWS.

**42. You have deployed multiple EC2 instances across multiple availability zones to run your website. You have also deployed a Multi-AZ RDS MySQL Extra Large DB Instance. The site performs a high number of small read and write operations per second. After some time, you observed that there is read contention on RDS MySQL. What would be your approach to resolve the contention and optimize your website?**

We can deploy ElastiCache in-memory cache running in every availability zone. This will help in creating a cached version of the website for faster access in each availability zone. We can also add an [RDS MySQL](https://intellipaat.com/blog/what-is-amazon-rds-in-aws/) read replica in each availability zone that can help in efficient and better performance for read operations. So, there will not be any increased workload on the RDS MySQL instance, hence resolving the contention issue.

### **43. Your company wants you to propose a solution so that the company’s data center can be connected to Amazon cloud network. What would be your proposal?**

The data center can be connected to the Amazon cloud network by establishing a virtual private network (VPN) between the VPC and the data center. A virtual private network lets you establish a secure pathway or tunnel from your premise or device to AWS global network.

**44. Which of the following Amazon Services would you choose if you want complex querying capabilities but not a whole data warehouse?**

### RDS

### Redshift

### ElastiCache

### DynamoDB

Amazon RDS

### **45. You want to modify the security group rules while it is being used by multiple EC2 instances. Will you be able to do that? If yes, will the new rules be implemented on all previously running EC2 instances that were using that security group?**

Yes, the security group that is being used by multiple [EC2](https://intellipaat.com/blog/what-is-amazon-ec2-in-aws/) instances can be modified. The changes will be implemented immediately and be applied to all the previously running EC2 instances without restarting the instances.

### **46. Which one of the following is a structured data store that supports indexing and data queries to both EC2 and S3?**

### DynamoDB

### MySQL

### Aurora

### SimpleDB

SimpleDB

### **47. Which service offered by Amazon will you choose if you want to collect and process e-commerce data for near real-time analysis? (Choose any two)**

### DynamoDB

### Redshift

### Aurora

### SimpleDB

DynamoDB. DynamoDB is a fully managed NoSQL database service that can be fed any type of unstructured data. Hence, DynamoDB is the aptest choice for collecting data from e-commerce websites. For near-real-time analysis, we can use [Amazon Redshift](https://intellipaat.com/blog/what-is-amazon-redshift-in-aws/).

### **48. If in CloudFront the content is not present at an edge location, what will happen when a request is made for that content?**

CloudFront will deliver the content directly from the origin server. It will also store the content in the cache of the edge location where the content was missing.

### **49. Can you change the private IP address of an EC2 instance while it is in running or in a stopped state?**

No, it cannot be changed. When an EC2 instance is launched, a private IP address is assigned to that instance at the boot time. This private IP address is attached to the instance for its entire lifetime and can never be changed.

### **50. Which of the following options will you use if you have to move data over long distances using the Internet, from instances that are spread across countries to your Amazon S3 bucket?**

### Amazon CloudFront

### Amazon Transfer Acceleration

### Amazon Snowball

### Amazon Glacier

Amazon Transfer Acceleration. It throttles the data transfer up to 300 percent using optimized network paths and [Amazon Content Delivery Network](https://intellipaat.com/blog/how-to-use-azure-cdn/). Snowball cannot be used here as this service does not support cross-region data transfer.

### **51. Which of the following services is a data storage system that also has REST API interface and uses secure HMAC-SHA1 authentication keys?**

### Amazon Elastic Block Store

### Amazon Snapshot

### Amazon S3

Amazon S3. It gets various requests from applications, and it has to identify which requests are to be allowed and which are to be denied. Amazon S3 REST API uses a custom HTTP scheme based on a keyed HMAC for authentication of requests.

### **52. What is EC2?**

Launched in 2006, EC2 is a virtual machine that you can use to deploy your own servers in the cloud, giving you OS-level control. It helps you have control over the hardware and updates, similar to the case of on-premise servers. EC2 can run on either of these operating systems- Microsoft and Linux. It can also support applications like Python, PHP, Apache, and more.

### **53. What is Snowball?**

Snowball is an application designed for transferring terabytes of data into and outside of the AWS cloud. It uses secured physical storage to transfer the data. Snowball is considered as a petabyte-scale data transport solution that helps in cost and time-saving.

### **54. What is CloudWatch?**

The Amazon CloudWatch is used for monitoring and managing data and getting actionable insights for AWS, on-premise applications, etc. It helps you to monitor your entire task stack that includes the applications, infrastructure, and services. Apart from this, CloudWatch also assists you in optimizing your resource utilization and cost by providing analytics-driven insights.

### **55. What is Elastic Transcoder?**

In the AWS cloud, the Elastic Transcoder is used for converting media files into versions that can be run/played on devices such as Tablets, PCs, Smartphones, etc. It consists of advanced transcoding features with conversion rates starting from $ 0.0075 per minute.

### **56. What do you understand by VPC?**

VPC is the abbreviated form of Virtual Private Cloud. It allows you to launch AWS resources that can be defined by you and fully customize the network configurations. Through VPC, you can define and take full control of your virtual network environment. For example- you can have a private address range, internet gateways, subnets, etc.

### **57. What does an AMI include?**

AMI stands for Amazon Machine Images. It includes the following:

* Single or multiple Amazon Elastic Block Store (Amazon EBS) snapshots. Basically, templates for the root volume of the instance.
* Launch permissions that let AWS accounts use AMI to launch instances.
* A block device mapping to specify what volumes to be attached to the instance during its launch.

### **58. What are the Storage Classes available in Amazon S3?**

The following storage classes are available in Amazon S3:

* **S3 Standard-**It is by and large the default storage class. In cases where no specification about the storage class is provided while uploading the object, Amazon S3 assigns the S3 Standard storage class by default.
* Reduced Redundancy- It is assigned when non-critical, reproducible data needs to be stored. The Reduced Redundancy Storage class is designed in a way that the above data categories can be stored with less redundancy.

However, it is always advisable to go ahead with the S3 Standard storage class.

### **59. What are the native AWS security logging capabilities?**

The native AWS security logging capabilities include AWS CloudTrail, AWS Config, AWS detailed billing reports, Amazon S3 access logs, Elastic load balancing Access logs, Amazon CloudFront access logs, Amazon VPC Flow logs, etc. To know about native AWS security logging capabilities in detail,

### **60. What are key pairs?**

When connecting to an Amazon EC2 instance, you need to prove your identity. Key pairs are used to execute this. Basically, a  key pair is a set of security credentials that are used during identity proof. It consists of a public key and a private key.

### **61. What are policies and what are the different types of policies?**

Policies define the permissions required to execute an operation irrespective of the method used to perform it. AWS supports six types of policies:

* Identity-based policies
* Resource-based policies
* Permissions boundaries
* Organizations SCPs
* ACLs
* Session policies

**1- Identity-based policies-**They are JSON permissions policy documents that control what actions an identity can perform, under what conditions, and on which resources. These policies are further classified into 2 categories:

* + **Managed Policies**– These policies are standalone identity-based policies that can be attached to different users, groups in your AWS environment.
  + **Inline policies-**These policies are directly attached to a single user, group, or role. In situations where inline policies are used, a strict one-to-one relationship between a policy and an identity is maintained.

**2- Resource-based policies-**These policies are the ones attached to a resource such as an Amazon S3 bucket. They define which actions can be performed on the particular resource and under what circumstances.

**3- IAM permissions boundaries-**They actually refer to the maximum level of permissions that identity-based policies can grant to the specific entity.

**4- Service Control Policies (SCPs)-**SCPs are the maximum level of permissions for an organization or organizational unit.

**5- Access Control lists-**They define and control which principals in another AWS account can access the particular resource.

**6- Session policies-**They are advanced policies that are passed as a parameter when a temporary session is programmatically created for a role or federated user.

### **62. What kind of IP address can you use for your customer gateway (CGW) address?**

We can use the Internet routable IP address, which is a public IP address of your NAT device.

### **63. Which of the following is not an option in security groups?**

### List of users

### Ports

### IP addresses

### List of protocols

### List of users

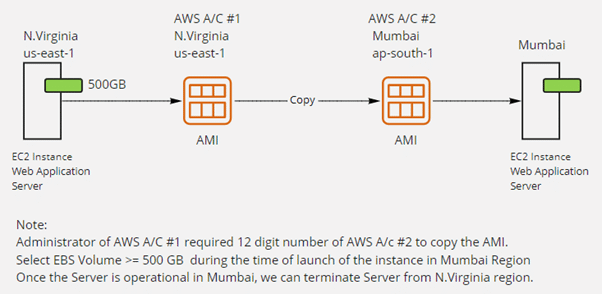
List of Users

Hope these top AWS Interview questions and answers for freshers and the experienced, helps you in preparing for top AWS jobs in the Cloud market.

### **64. A Company has a running Web Application Server in the N. Virginia region and the server has a large size EBS volume of approximately 500 GB, and to see the demand of business, the company needs to migrate the server from the current region to another AWS account’s Mumbai location. Which is the best way to migrate the server from the current location to the Mumbai region? And what information AWS administrator does require about AWS A/C?**

Create an [AMI](https://intellipaat.com/blog/what-is-amazon-machine-image/) of the server running in the North Virginia region. Once the AMI is created, The administrator would need the 12 digit account number of the #2 AWS account. This is required for copying the AMI which we have created.

Once the AMI is successfully copied into the Mumbai region, you can launch the instance using copied AMI in the Mumbai region. Once the instance is running and if it’s completely operational, the server in the North Virginia region could be terminated. This is the best way to migrate a server to a different account without any hassle.



### **65. Unable to ping Instance We launched a Windows 2019 IIS server in the Ohio region and deployed a dynamic website in this server, in addition, the webserver also connected with a backend MS-SQL server to store and access data related to the application. Our users were able to access the website over the Internet. The next day our client informed us that they were able to access the website, but weren’t able to ping the server from the Internet. To ensure ICMP rule in Security Group, we checked, and the Security Group had allowed rule from 0.0.0.0/0. Would you try to help troubleshoot the issue?**

If the client is able to access the website from his/her end, it means the connection is perfect and no issue with connectivity and the Security Group configuration also seems correct.

We can check the internal firewall of the Windows 2019 IIS server. If it is blocking ICMP traffic, we should enable it.

### **66. A start-up company has a web application based in the us-east-1 Region with multiple Amazon EC2 instances running behind an Application Load Balancer across multiple Availability Zones. As the company's user base grows in the us-west-1 region, the company needs a solution with low latency and improved high availability. What should a solutions architect do to achieve it.?**

You need to notice here, currently, the web application is in us-ease-1, and the user base grows in the us-east-1 region. The very first step, provision multiple EC2 instances (web application servers) and configure an Application Load Balancer in us-west-1. Now, create Global Accelerator in AWS Global Accelerator which uses an endpoint group that includes the load balancer endpoints in both Regions.

### **67. A company currently operates a web application backed by an Amazon RDS MySQL database. It has automated backups that are run daily and are not encrypted. A security audit requires future backups to be encrypted and unencrypted backups to be destroyed. The company will make at least one encrypted backup before destroying the old backups. What should be done to enable encryption for future backups?**

* Create a snapshot of the database.
* Copy it to an encrypted snapshot.
* Restore the database from the encrypted snapshot.

### **68. A company is going to launch one branch in the UK and need to continue with its existing main branch in the USA. The company has almost 15 GB of data which is stored in an S3 Bucket in the Ohio region and data is stored with the default storage class. The Company also wants to provide its updated & stored data in the London S3 bucket using one zone accessibility storage class to save storage costs. In addition, the company also wants that the data must be updated automatically in S3’s London bucket; if any data is modified or written in the S3 bucket in Ohio.**

Configure Cross Region Replication Rule in Ohio region bucket and select destination bucket in the London region to replicate the data and store it in destination using one zone IA storage class to save cost.

### **69. You are an AWS Architect in your company, and you are asked to create a new VPC in the N.Virginia Region with two Public and two Private subnets using the following CIDR blocks:**

**VPC CIDR = 10.10.10.0/24**

**Public Subnet**

**Subnet01 : 10.10.10.0/26**  
**Subnet02 : 10.10.10.64/26**

**Private Subnet**

**Subnet03: 10.10.10.128/26**  
**Subnet04: 10.10.10.192/26**

**Using the above CIDRs you created a new VPC, and you launched EC2 instances in all subnets as per the need.**

**Now, you are facing an issue in private instances that you are unable to update operating systems from the internet. So, what architectural changes and configurations will you suggest to resolve the issue?**

NAT G/W to be installed in one public subnet and will configure the route-table associated with private subnets to add NAT G/W entry to provide internet access to private instances.

**70. The data on the root volumes of store-backed and EBS-backed instances get deleted by default when they are terminated. If you want to prevent that from happening, which instance would you use? And ensure if the EC2 instance is restarted, the data or configuration in the EC2 instance should not be lost.**

EBS-backed instances or instances with EBS Volume. EBS-backed instances use EBS volume as their root volume. These volumes contain Operating Systems, Applications, and Data. We can create Snapshots from these volumes or AMI from Snapshots.

The main advantage of EBS-backed volume is that the data can be configured to be stored for later retrieval even if the virtual machine or the instances are shut down.

### **71. You have an application running on an EC2 instance. You need to reduce the load on your instance as soon as the CPU utilization reaches 80 percent. How will you accomplish the job?**

It can be done by creating an autoscaling group to deploy more instances when the CPU utilization of the EC2 instance exceeds 80 percent and distributing traffic among instances by creating an application load balancer and registering EC2 instances as target instances.

### **72. In AWS, three different storage services are available, such as EFS, S3, and EBS. When should I use Amazon EFS vs. Amazon S3 vs. Amazon Elastic Block Store (EBS)?**

Amazon Web Services (AWS) offers cloud storage services to support a wide range of storage workloads.

Amazon EFS is a file storage service for use with Amazon compute (EC2, containers, serverless) and on-premises servers. Amazon EFS provides a file system interface, file system access semantics (such as strong consistency and file locking), and concurrently accessible storage for up to thousands of Amazon EC2 instances.

[Amazon EBS](https://intellipaat.com/blog/what-is-aws-ebs-in-amazon/) is a block-level storage service for use with Amazon EC2. Amazon EBS can deliver performance for workloads that require the lowest latency access to data from a single EC2 instance.

Amazon S3 is an object storage service. Amazon S3 makes data available through an Internet API that can be accessed anywhere

### **73. A company's web application is using multiple Linux Amazon EC2 instances and storing data on Amazon EBS volumes. The company is looking for a solution to increase the resiliency of the application in case of a failure and to provide storage that complies with atomicity, consistency, isolation, and durability (ACID). What should a solutions architect do to meet these requirements?**

Create an Application Load Balancer with [AWS Auto Scaling](https://intellipaat.com/blog/what-is-auto-scaling-in-aws/) groups across multiple Availability Zones. Store data on Amazon EFS and mount a target on each instance.

**74. An application running on AWS uses an Amazon Aurora Multi-AZ deployment for its database. When evaluating performance metrics, a solutions architect discovered that the database reads are causing high I/O and adding latency to the write requests against the database. What should the solutions architect do to separate the read requests from the write requests?**

Create a read replica and modify the application to use the appropriate endpoint.

### **75. A client reports that they wanted to see an audit log of any changes made to AWS resources in their account. What can the client do to achieve this?**

Enable AWS CloudTrail logs to be delivered to an Amazon S3 bucket

### **76. Usually, you have noticed that one EBS volume can be connected with one EC2 instance, our company wants to run a business-critical application on multiple instances in a single region and need to store all instances output in single storage within the VPC. Instead of using EFS, our company is recommending the use of multi-attach volume with instances. As an architect, you need to suggest them what instance type and EBS volumes they should use.**

The instance type should be EC2 Nitro-based instances and Provisioned IOPs io1 multi-attach EBS volumes.

### **77. A company is using a VPC peering connection option to connect its multiple VPCs in a single region to allow for cross VPC communication. A recent increase in account creations and VPCs has made it difficult to maintain the VPC peering strategy, and the company expects to grow to hundreds of VPCs. There are also new requests to create site-to-site VPNs with some of the VPCs. A solutions architect has been tasked with creating a centrally networking setup for multiple accounts and VPNs. Which networking solution would you recommend to resolve it?**

Configure a transit gateway with AWS Transit Gateway and connect all VPCs and VPNs.

### **78. An organization has multiple facilities in various continents such as North America, Europe, and the Asia Pacific. The organization is designing a new distributed application to manage and optimize its global supply chain and its manufacturing process. It needs to design the process in such a way that the booked order in one continent should be able to support data failover with a short Recovery Time Objective (RTO). The uptime of the application should not impact manufacturing, what kind of solution would you recommend as a solution architect?**

Use Amazon DynamoDB global tables feature for the database

### 1. What is Cloud Computing?

Cloud computing provides access to IT resources such as computing power, applications, and storage to users as per their demands. Here, users do not need to maintain their physical resources on their premises. In cloud computing, you can pay only for the resources you have used, so there are no investment costs. This service provides greater flexibility and scaling on resources according to your changing workloads.

### 2. What are the featured services of AWS?

The Key Components of AWS are:

* **Elastic compute cloud( EC2):** It acts as an on-demand computing resource for hosting applications. EC2 is very helpful in times of uncertain workloads.
* **Route 53:** It’s a DNS web service.
* **Simple Storage Device S3:** It is a widely used storage device service in AWS Identity and Access Management.
* **Elastic Block Store:** It allows you to store constant volumes of data which is integrated with EC2 and enables you to data persist.
* **Cloud watch:** It allows you to watch the critical areas of the AWS with which you can even set a reminder for troubleshooting.
* **Simple Email Service:** It allows you to send emails with the help of regular SMTP or by using a restful API call.

### 3. What are the top product categories of AWS?

The top product categories of AWS are:

1. Compute
2. Storage
3. Database
4. Networking and Content Delivery
5. Analytics
6. Machine Learning
7. Security
8. Identity
9. Compliance

### 4. What is a Data lake?

It is a centralized data repository to store all your structured and unstructured data at any volume. The core aspect of Data lake is that you can apply various analytical tools to data, derive analytics, and uncover useful insights without structuring the data. Also, Data lake stores data coming from various sources such as business applications, mobile applications, and IoT devices.

### 5. What is Serverless Computing?

AWS offers a serverless computing facility to run codes and manage data and applications without managing servers. Serverless computing eliminates infrastructure management tasks like capacity provisioning, patching, etc. It reduces the operating costs significantly. As this technology scales in response to the demands for resources automatically, it ensures quick service to users.

### 6. What is Amazon EC2?

Amazon EC2 is known as Amazon Elastic Cloud Computing Platform. It provides a robust computing platform to handle any workload with the latest processors, storage, Operating Systems, and networking capabilities. It simplifies the computing process for developers. And this service reduces time by allowing quick scaling as per the requirements.

### 7. What is Amazon EC2 Auto Scaling?

This AWS service automatically adds or removes EC2 instances as per the changing demands in workloads. Also, this service detects the unhealthy EC2 instances in the cloud infrastructure and replaces them with new instances, consequently. In this service, scaling is achieved in dynamic scaling and Predictive scaling. They can be used separately as well as together to manage the workloads.

### 8. What is fleet management in Amazon EC2 Auto Scaling?

Amazon EC2 auto-scaling service continuously monitors the health of Amazon EC2 instances and other applications. When EC2 auto-scaling identifies unhealthy instances, it automatically replaces the unhealthy EC2 instances with new EC2 instances. Also, this service ensures the seamless running of applications and balances EC2 instances across the zones in the cloud.

### 9. What is Amazon S3?

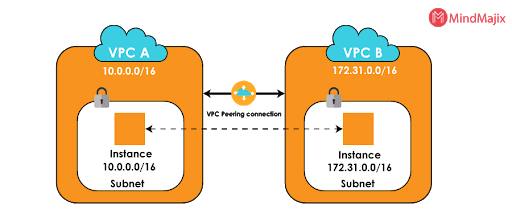
Amazon S3 is known as Amazon Simple Storage Service, which allows storing any volume of data and retrieving data at any time. It reduces costs significantly, eliminating the requirement for investments. Amazon S3 offers effective scalability, data availability, data protection, and performance. Using this service, you can uncover insights from the stored data by analyzing it with various analytical tools such as Big Data analytics, Machine Learning, and Artificial Intelligence.

### 10. What is Amazon CloudFront?

Amazon CloudFront is known as the Content Delivery Network (CDN) service. This service provides high security and performance and is a developer-friendly tool. Amazon CloudFront uses a global network with 310+ Points of Presence (PoPs) across the globe, which helps to reduce latency effectively. And this service uses automated mapping and intelligent routing mechanisms to reduce latency. Amazon CloudFront secures data by applying traffic encryption and controlling access to data.

### 11. What is Amazon VPC?

[Amazon VPC](https://docs.aws.amazon.com/vpc/latest/userguide/what-is-amazon-vpc.html) is known as Amazon Virtual Private Cloud (VPC), allowing you to control your virtual private cloud. Using this service, you can design your VPC right from resource placement and connectivity to security. And you can add Amazon EC2 instances and Amazon Relational Database Service (RDS) instances according to your needs. Also, you can define the communication between other VPCs, regions, and availability zones in the cloud.

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### 12. **What is Amazon SQS?**

Amazon Simple Queuing Service (SQS) is a fully managed message queuing service. Using this service, you can send, receive and store any quantity of messages between the applications. This service helps to reduce complexity and eliminate administrative overhead. In addition to that, it provides high protection to messages through the encryption method and delivers them to destinations without losing any message.

### 13. What are the two types of queues in SQS?

There are two types of queues known

**Standard Queues:** It is a default queue type. It provides an unlimited number of transactions per second and at least one message delivery option.

**FIFO Queues:** FIFO queues are designed to ensure that the order of messages is received and sent is strictly preserved as in the exact order that they sent.

### 14. What is Amazon DynamoDB?

Amazon [DynamoDB](https://en.wikipedia.org/wiki/Amazon_DynamoDB) is a fully managed, serverless, key-value No SQL database service. This service has many essential features such as built-in security, in-memory caching, continuous back-ups, data export tools, and automated multi-region replication. Mainly, you can run high-performance applications at any scale using this service. For instance, it extensively supports internet-scale applications that require high concurrency and connections for many users with millions of requests per second.

15. What is Amazon S3 Glacier?

It is a storage class built for data archiving, which helps retrieve data with high flexibility and performance. So, data can be accessed faster in milliseconds, and S3 Glacier offers a low-cost service. There are three S3 glacier storage classes – Glacier instant retrieval storage, S3 Glacier flexible retrieval, and S3 Glacier deep archive.

### 16. What is Amazon Redshift?

Amazon Redshift helps analyze data stored in data warehouses, databases, and data lakes using Machine Learning (ML) and AWS-designed hardware. It uses SQL to analyze structured and semi-structured data to yield the best performance from the analysis. This service automatically creates, trains, and deploys Machine Learning models to create predictive insights.

### 17.  What are Elastic Load Balancing (ELB) and its types?

Elastic Load Balancing ([ELB](https://mindmajix.com/what-is-aws-elb)) automatically directs incoming application traffic to various destinations and virtual appliances. In fact, the destinations and virtual appliances may be in one or more availability zones. In this service, you can secure your applications using tools such as integrated certificate management, SSL/TLS decryption methods, and user authentication.

There are three types of load balancers such as Application Load Balancer, Gateway Load Balancer, and Network Load Balancer.

### 18. What are sticky sessions in ELB?

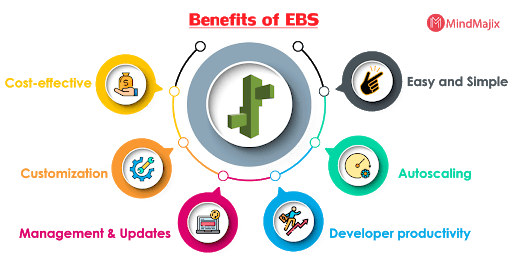
A sticky session is also known as session affinity. During sticky sessions, load balancers connect a user's session with a specific target. So, all the user's requests during that session will be directed to the same target. It will provide a continuous experience to users. Here, the cookie AWSELB is used to define the sticky session duration to the instance.

### 19. What is AWS Elastic Beanstalk?

This AWS service helps deploy and manage applications in the cloud quickly and easily. Here, developers need to upload the codes; after that, Elastic Beanstalk will manage other requirements automatically. Simply put, Elastic Beanstalk manages right from capacity provisioning, auto-scaling, load balancing up to application health monitoring.

### 20. What are the benefits of AWS Elastic Beanstalk?

1. In a way, it is faster and simpler to deploy applications
2. The auto-scaling facility of Elastic Beanstalk supports to scale applications up and down based on the demands.
3. This AWS service manages application platforms by updating with the latest patches and updates.
4. When they use this service, developers could achieve enough freedom to choose the type of EC2 instance, processors, etc.

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Following are the few benefits of the Elastic Beanstalk:

1. **Easy and simple:** Elastic Beanstalk enables you to manage and deploy the application easily and quickly.
2. **Autoscaling:** Beanstalk scales up or down automatically when your application traffic increases or decreases.
3. **Developer productivity:** Developers can easily deploy the application without any knowledge, but they need to maintain the application securely and be user-friendly.
4. **Cost-effective:** No charge for Beanstalk. Charges are applied for the AWS service resources which you are using for your application.
5. **Customization:** Elastic Beanstalk allows users to select the configurations of AWS services that users want to use for application development.
6. **Management and updates:** It updates the application automatically when it changes the platform. Platform updates and infrastructure management are taken care of by AWS professionals.

### 21. What is Amazon CloudWatch?

Amazon CloudWatch is a monitoring service that would help IT professionals, extensively by providing actionable insights. The tool provides complete visibility on AWS resources and applications running on AWS and on-premises. In addition, it tracks the status of applications, which would help to apply suitable response actions and optimize the performance of applications.

### 22.  What is AWS Snowball?

AWS Snowball is an edge computing and storage service. There are two features available in this service: Snowball edge storage optimized devices and Snowball edge computes optimized devices. The snowball storage devices offer block storage and Amazon S3 object storage. Snowball edge computing devices provide 52 vCPUs and an optional GPU, and it is suitable for handling advanced Machine Learning and full-motion video analysis.

**Classic Load Balancer:** Classic load balancer is designed to make routing decisions either at the application layer or transport layer. It requires a fixed relationship between the container instance port and the load balancer port.

### 23. What is AWS CloudTrail?

This AWS service monitors user activities on AWS infrastructure and records their activities. And this service identifies suspicious activities on AWS resources through CloudTrail insights and Amazon EventBridge features. So, you can get reasonable control over your resources and response activities. In addition to that, it analyses the log files with Amazon Athena.

### 24. What is Amazon ElastiCache?

It is an in-memory caching service. It acts as a data store that can be used as a database, cache, message broker, and queue. This caching service accelerates the performance of applications and databases. For instance, you can access data in microseconds using this caching service. Not only that, it helps to reduce the load on the backend database.

### 25.  What is AWS Lambda?

It is a serverless and event-driven computing service. It allows running codes virtually for applications without any provisioning or managing servers. Most AWS services and SaaS applications can trigger AWS Lambda. This service can execute any code volume due to its scaling properties. Also, decoupled services can be communicated through the event-driven functions of AWS Lambda.

### 26.  What is Amazon Lightsail?

Amazon Lightsail is a service that helps to build and manage websites and applications faster and with ease. It provides easy-to-use virtual private server instances, storage, and databases cost-effectively. Not just that, you can create and delete development sandboxes using this service, which will help to test new ideas without taking any risk.

### 27. What is Amazon ECS?

It is known as Amazon Elastic Container Registry (ECR). It provides high-performance hosting so that you can store your application images securely in ECR. Amazon ECS compresses and encrypts images and controls access to images. The images can be simply stored in containers; also, they can be accessed from the containers without the support of any management tools.

### 28. What is Amazon EFS?

Amazon EFS is a simple and serverless Elastic File System. It allows adding or removing files on the file system without provisioning and management. This service creates file systems using EC2 launch instance wizard, EFS Console, CLI, and API. You can reduce costs significantly since accessed files will be moved automatically over a period.

### 29. What is the AWS Snow Family?

AWS Snow family allows transferring data in and out of the cloud using physical devices very simply. It doesn’t require the need for networks. AWS Snow Family helps transfer a large volume of data such as cloud migration, data center relocation, disaster recovery, and remote data collection projects. With the help of this service, many AWS services can be used to analyze, archive, and file data.

### 30. What is AWS Elastic Disaster Recovery?

This AWS service reduces application downtime on a greater scale by quickly recovering applications both on-premises and on the cloud if there is an application failure. It needs minimal computing power and storage and achieves point-in-time recovery. It helps recover applications within a few minutes in the same state when they failed. Mainly, it reduces recovery costs considerably, unlike the typical recovery methods.

### 31. What is Amazon Aurora, and mention its features?

Amazon Aurora is the MySQL and PostgreSQL relational database. It performs similar-like traditional databases and has simplicity and cost-effectiveness of open source databases. Amazon Aurora is fully managed by Amazon RDS and automates the processes, such as hardware provisioning, database setup, back-ups, and patching. Also, it has a self-healing storage system that can scale up to 128 TB per database instance.

### 32. What is Amazon RDS?

Amazon RDS is known as Relational Database Service that allows easy setup, operation, and scaling of relational databases in the cloud. And it automates administrative tasks such as provisioning, database setup, and back-ups. Amazon RDS offers six familiar database engines, such as Amazon Aurora, PostgreSQL, MySQL, MariaDB, Oracle Database, and SQL server.

### 33. What is Amazon Neptune?

It is a purpose-built graph database that helps execute queries with easy navigation on datasets. Here, you can use graph query languages to execute queries, which will perform effectively on connected datasets. Moreover, Amazon Neptune’s graph database engine can store billions of relationships and query the graph with milliseconds latency. This service is mainly used in fraud detection, knowledge graphs, and network security.

### 34. What is Amazon Route 53?

It is the highly scalable Cloud Domain Name System (DNS) web service. It connects users to AWS infrastructures such as Amazon EC2 instances, Elastic load balancing, and Amazon S3 buckets. It connects users outside of AWS infrastructure as well. Using this service, you can configure DNS health checks and monitor applications continuously for their ability to recover from failures. Amazon Route 53 can work alongside Amazon IAM, thereby controlling the access to DNS data.

### 35. What is AWS Shield?

AWS Shield is the service that protects against DDoS (Distributed Denial of Service) attacks on AWS applications. There are two types of AWS Shields: AWS Shield Standard and AWS Shield Advanced. AWS Shield Standard supports to protect applications from common and frequently occurring DDoS attacks. At the same time, AWS Shield advanced offers higher level protection for the applications running on Amazon EC2, ELB, Amazon CloudFront, AWS Global Accelerator, and Route 53.

### 36. What is Amazon Network Firewall?

This AWS service helps to protect VPCs (Virtual Private Cloud) against attacks. In this service, scaling is carried out automatically as per the traffic flow in the network. You can define your firewall rules using Network Firewall's flexible rules engine; therefore, you can get reasonable control over the network traffic. Network Firewall can work alongside AWS firewall manager to build and apply security policies on all VPCs and accounts.

### 37. What is Amazon EBS?

It is known as Amazon Elastic Block Store, and it is a high-performance block storage service. And it is designed to support Amazon EC2 instances. Amazon EBS could scale quicker with respect to the workload demands of high-level applications such as SAP, Oracle, and Microsoft products. Using this service, you can resize the clusters by attaching and detaching storage volumes; therefore, it can be analyzed by big data analytics engines such as Hadoop and Spark.

### 38. What is Amazon Sagemaker?

It is a managed AWS service, which builds, trains, and deploys Machine Learning models. It consists of the needed infrastructure, tools, and workflow to support any use case. You could manage a large volume of structured as well as unstructured data using this service; as a result, you can build ML models quickly.

39.  What is Amazon EMR?

Amazon EMR is nothing but it is a cloud Big Data platform. This AWS service helps run large-scale distributed data processing tasks, Machine Learning applications, and interactive SQL queries. Also, you can run and scale big data workloads using open-source frameworks such as Apache Spark, Hive, and Presto. Amazon EMR uncovers hidden patterns, correlations, and market trends through large-scale data processing.

### 40. What is Amazon Kinesis?

This AWS service collects, processes, and analyses real-time streaming data and generates useful insights. Here, the real-time data will be video, audio, application logs, IoT telemetry data, and website clickstreams. And you can take the right actions at the right time based on these insights. Especially, data is processed and analyzed once received rather than waiting for the arrival of the whole data.

### 41. What are the Snow family members?

* AWS Snowcone
* AWS Snowball
* AWS Snowmobile

### 42.  What are the attacks that AWS Shield can prevent?

AWS Shield protects websites from the following DDoS attacks

* UDP floods
* TCP SYN floods
* HTTP GET and POST floods

### 43. What do you mean by AMI?

AMI is nothing but Amazon Machine Images. It provides the necessary information to launch an instance. Please note that a single AMI can launch multiple instances with the same configuration, whereas different AMIs are required to launch instances with different configurations.

### 44. What are the security practices followed in Amazon EC2?

* Accounts are managed by two-factor authentication based on Amazon IAM
* User requests must be signed with access key ID along with secret access key
* Data security is ensured by setting up API and user activity logging with AWS CloudTrail.
* Customers are supposed to use transport-layer security 1.0 or later
* They have to use cipher suites with Perfect Forward Secrecy (PFS)

### 45. What is Amazon EC2 root device volume?

The root device volume contains the image that will be used to boot an EC2 instance. It happens while Amazon AMI launches a new EC2 instance. And this root device volume is backed by either EBS or instance store. Generally, the root device data on Amazon EBS is independent of the lifetime of an EC2 instance.

### 46. Define regions and availability zones in Amazon EC2?

Availability zones are the locations that are isolated distinctively. Therefore, failure in a particular zone wouldn’t affect the EC2 instances in other zones. As far as regions are considered, they may have one or more availability zones. This setup helps to reduce latency and costs as well.

### 47. What are the various types of Amazon EC2 instances and their essential features?

1. **General Purpose Instances**: They are used to compute various workloads and help to balance computing, memory, and networking resources.

2. **Compute Optimised Instances**: They are suitable for compute-bound applications. They support computing batch processing workloads, high-performance web servers, machine learning inference, and many more.

3. **Memory Optimised**: They process the workloads that handle large datasets in memory with quick delivery.

4. **Accelerated Computing**: It helps execute floating-point number calculations, data pattern matching, and graphics processing. It uses hardware accelerators to perform these functions.

5. **Storage Optimised**: They handle the workloads that demand sequential read and write access to large data sets on local storage.

### 48. What are Throughput Optimised HDD and Cold HDD volume types?

Throughput optimized HDDs are magnetic type storage that defines performance based on throughput. It is suitable for frequently accessed, large and sequential workloads.

Cold HDD volumes are also magnetic-type storages where performance is calculated based on throughput. These storages are inexpensive and best suitable for infrequent sequential and large cold workloads.

### 49. What are the benefits of EC2 Autoscaling?

* It detects unhealthy EC2 instances in the cloud infrastructure and replaces them with new instances.
* It ensures whether applications have the right amount of computing power and provisions capacity based on predictive scaling.
* It provisions instances only when demanded, thereby optimizing cost and performance.

### 50. Explain the advantages of auto-scaling?

With the help of automation capabilities, Amazon EC2 auto-scaling predicts the demands of EC2 instances in advance. Here, the Machine Learning (ML) algorithms identify the variations in the demand patterns in regular intervals. It helps to add or remove EC2 instances in the cloud infrastructure proactively, which in turn increases the productivity of applications and reduces cost significantly.

### 51. What are the uses of load balancers in Amazon Lightsail?

* Load balancers automatically route the web traffic to instances so that traffic variations will be managed effectively. As a result, seamless use of applications is ensured in this service.
* Using round-robin algorithms, it directs the web traffic only to healthy instances.
* Amazon Lightsail supports both HTTP and HTTPS connections
* It also makes integrated certificate management to provide free SSL/TLS certificates.

### 52. What do you mean by the Amazon Lightsail instance plan?

As per this plan, account holders will be provided with a Virtual Private Server, RAMs, CPUs, SSD-based storage, along with data transfer allowance. It also provides five static IP addresses and three domain zones of DNS management per account. This plan helps save costs significantly since customers need to pay on-demand.

### 53. What are DNS records in Amazon Lightsail?

Generally, DNS is a globally distributed service that supports connecting computers using IP addresses. DNS records in Amazon LightSail convert the human-readable domain names into public IP addresses of LightSail instances. When you type domain names in browsers, Amazon Lightsail translates the domain names into IP addresses of the instances you want to access.

### 54. What is AWS Copilot CLI?

AWS Copilot CLI is known as ‘Copilot Command-Line Interface’, which helps users deploy and manage containerized applications. Here, each step in the deployment lifecycle is automated; the steps include pushing to a registry, creating a task definition, and clustering. Therefore, it saves time for planning the necessary infrastructure to run applications

### 55. What are the differences between Amazon Beanstalk and Amazon ECS?

Amazon Beanstalk deploys and scales web applications and services efficiently. Also, it carries out tasks such as provisioning of various features, deployment, and health monitoring of applications by reducing the burden of developers. Whereas Amazon ECS is a container management service that helps quickly deploy, manage, and scale containerized applications. And it also helps to achieve fine-grained control over the applications.

### 56. **What do you mean by the AWS Lambda function?**

AWS Lambda function is nothing but a code that we run on the AWS Lambda. Here, the code is uploaded as a lambda function. This Lambda will have configuration information such as name, description, entry point, and resource requirements. Basically, Lambda functions are stateless, and they include libraries also.

### 57. Mention the differences between AWS Lambda and Amazon ECS?

* AWS Lambda is a serverless and event-driven computing service that helps run codes without provisioning or managing servers. At the same time, Amazon manages servers, unlike Amazon Lambda.
* AWS Lambda can support selective languages; on the other hand, ECS can support any language to run codes on containers.
* AWS Lambda will be helpful to run easy and quick functions, whereas ECS can be used to run any size of codes and complexity
* In AWS Lambda scaling can be carried out automatically; on the other hand, ECS container service requires managing servers and infrastructure according to the demands.

### 58. How does AWS Lambda achieve integrated security control?

AWS Lambda integrates with AWS IAM so that other AWS services can access Lambda functions securely. By default, AWS Lambda runs codes in Amazon VPC. So, AWS Lambda functions can be accessed only within VPC, securely. Also, you can configure a secured AWS Lambda resource access, by which you can leverage custom security groups and network access control lists.

### 59. What platform branches support the graviton instances on AWS Elastic Beanstalk?

* Docker running on 64-bit Amazon Linux 2
* Node.js 14 running on 64-bit Amazon Linux 2
* Node.js 12 running on 64-bit Amazon Linux 2
* Python 3.8 running on 64-bit Amazon Linux 2
* Python 3.7 running on 64-bit Amazon Linux 2

### 60. **What is the use of the ELB gateway load balancer endpoint?**

ELB gateway load balancer endpoints make private connectivity between the virtual appliances in the Virtual Private Cloud (VPC) and the application servers in the service consumer VPC.

### 61. What are the different storage classes of Amazon S3?

1. S3 Intelligent -Tiering
2. S3 Standard
3. S3 Standard-infrequent access (S3 Standard – A)
4. S3 One Zone-infrequent access (S3 One Zone –IA)
5. S3 Glacier instant retrieval
6. S3 Glacier flexible retrieval
7. S3 Glacier deep archive
8. S3 Outposts

### 62. What is EFS Intelligent -Tiering?

With the support of EFS lifecycle management, Amazon Elastic File System (EFS) monitors the access patterns in workloads. According to lifecycle policy, the inaccessed files are identified from performance-optimized storage classes and then moved to infrequent access cost-optimized storage classes saving costs significantly. If suppose, the access patterns change, and the inaccessed files are reaccessed, then EFS lifecycle management moves back the files to the performance-optimized storage classes again.

### 63. **What do you mean by Amazon EBS snapshots?**

Amazon Elastic Block Store (EBS) snapshots are the point-in-time copy of data, which can be used for enabling disaster recovery, data migration, and backup compliance. This data protection system protects block storage such as EBS volumes, boot volumes, and on-premises block data.

### 64.  Mention the difference between Backup and Disaster Recovery

Back up is the process of copying data locally or in a remote location. The data can be accessed whenever it is needed. For instance, if a file is damaged or lost, it can be accessed from backups.

Disaster recovery helps regain applications, data, and other resources if there is an outage. It is the process of moving to the redundant servers and storage systems until the source applications and data are recovered. Simply put, it helps to continue business processes as quickly as possible, even if there is a failover in the IT resources.

### 65. What is the function of DynamoDB Accelerator?

The fully managed in-memory cache improves data accessing performance up to 10 times higher than usual. Also, it allows to access data within microseconds and manages millions of requests per second; and it helps to lower the operational costs.

### 66. How does Amazon ElastiCache function?

It is the fully managed and in-memory cache that supports real-time use cases. It functions as a fast in-memory data store and acts as a database, cache, message broker, and queue. Moreover, this service will support real-time transactions, Business Intelligence tools, session stores, and gaming leaderboards.

### 67. What is the connection between Amazon Neptune and RDS permissions?

Amazon Neptune is a high-performance graph database engine. Amazon Neptune connects with technologies shared with Amazon RDS while managing instance lifecycle management, encryption-at-rest with Amazon KMS keys, and security group management.

### 68.  How does Amazon CloudFront speed up content delivery?

Speed in content delivery is achieved with the support of a global network infrastructure that consists of 300+ Points of Presence (PoPs). This global network optimizes content delivery through edge termination and WebSockets. Above all, content delivery is performed within milliseconds with built-in data compression, edge compute capabilities, and field-level encryption.

### 69.  What do you mean by the latency-based routing feature of Amazon Route 53?

This feature supports improving your application’s performance globally. Amazon Route 53 uses edge locations across the world, by which it routes end users to Amazon regions efficiently. In addition, you can run applications on various Amazon regions and Amazon route 53, so you can achieve effective routing with low latency.

### 70.  How does AWS Network Firewall protect a VPC?

AWS Network firewall’s stateful firewall prevents your Virtual Private Cloud (VPC) from unauthorized access via tracking connections and protocol identification. The intrusion prevention program of this service carries out active flow inspection to identify and block vulnerability through single-based detection. This service uses web filtering that will prevent known bad URLs.

### 71.  Mention the difference between Stateful and Stateless Firewalls?

With Stateful Firewalls, you can apply effective policy enforcement using complete network traffic details since it tracks all the aspects of a traffic flow. Stateful firewalls allow integrating encryption, packet states, TCP stages, and many more.  
On the other hand, stateless firewalls focus only on the individual data packets with pre-set rules, so it helps filter traffic. Stateless firewalls cannot identify the threats in the traffic apart from the content in the header of packets.

### 72. Compare: RTO and RPO in AWS?

RPO is the Recovery Point Objective of AWS Elastic Disaster Recovery, usually measured in the sub-second range. RPO indicates how much data loss or time you can afford after a disaster in the service.

On the other hand, RTO is the Recovery Time Objective of AWS Elastic Disaster Recovery, usually measured in minutes. RTO is the recovery time taken by resources to return to their regular operations after a disaster in the service.

### 73.  What do you mean by Provisioned IOPS, and how is it used?

Provisioned IOPS represents the EBS volume type to deliver high performance for I/O intensive workloads. For example, database applications may leverage provisioned IOPS as they demand consistent and fast response times. Here, the volume size and volume performance will be specified for EBS volumes to provide consistent performance throughout the lifetime of the volume.

### 74.  Distinguish between storage in EBS and storage in an instance store?

An Instance store is temporary storage. The data stored in an instance store may be lost due to instance stops, terminations, and hardware failures.  
On the other hand, data in EBS storage would be kept for longer periods, and data may not be lost due to instance stops and terminations. You can back up this data with EBS Snapshots, attach it with another instance, and make full-volume encryption.

### 75.  Distinguish between Spot Instance, On-demand Instance, and Reserved Instance?

Spot instances are unused EC2 instances that customers can use at discount rates.

We need to pay for the compute capacity without long-term commitments when you use on-demand instances.

On the other hand, you can set attributes such as instance type, platform, tenancy, region, and availability zone using reserved instances. Reserved instances provide discounts significantly and offer capacity reservations when the instances in the specific availability zones are used.

### 76.  What is the role of EFA in Amazon EC2 interfacing?

Elastic Fabric Advisor (EFA) devices provide a new OS bypass hardware interface that can be interfaced with Amazon EC2 instances in order to boost High-Performance Computing (HPC). EFA also supports Machine Learning (ML) applications. And it provides consistent latency and higher throughput. Especially, it improves inter-instance communication, which is essential in HPC and ML applications.

### 77.  What do you mean by ‘changing’ in Amazon EC2?

In order to simplify the limit management experience of customers, Amazon EC2 provides the option to change the instance limits from the current ‘instance count-based limits’ to the new ‘vCPU Based limits’. So, the usage is measured in terms of the number of vCPUs when launching a combination of instance types based on demands.

### 78.  What functions in Amazon Autoscaling automate fleet management of Amazon EC2?

* Monitors the health of the running EC2 instances in the cloud infrastructure
* Replaces malfunctioning EC2 instances with new instances
* Balances the capacity across various availability zones

### 79.  What do you mean by Snapshots in Amazon Lightsail?

Snapshots are the point-in-time backups of EC2 instances, block storage disks, and databases. They can be created at any time, either manually or automatically. Snapshots will restore your resources at any time, right from when they are created. And these resources will function as the original resource where the snapshots are taken.

### 80.  What is the role of tags in Amazon Lightsail?

Tags will be helpful when there are many resources of the same type. You can group and filter the resources in the Lightsail console or API based on the tags assigned to them.  
Tags help to track and allocate costs for various resources and users. Billing can be split based on ‘projects’ as well as ‘users’ with the help of ‘cost allocation tags’  
With the help of tags, you can manage your AWS resources by providing access control to users. So, users can manage data on the resources only within their limits.

### 81.  What are lifecycle hooks in Amazon EC2 Auto Scaling?

Lifecycle hooks help to take proactive actions before instances get terminated. For example, launch hooks allow configuring an instance before it is connected with load balancers by the Amazon Auto Scaling service. This is achieved by connecting Amazon Lambda with launch hooks. Similarly, terminate hooks collect important data from an instance before it gets terminated.

### 82.  What do you mean by launch configuration in Amazon EC2 Auto Scaling?

It is the template that Amazon EC2 Auto Scaling uses to launch EC2 instances. When you make a launch configuration, you need to specify information such as Amazon Machine Image (AMI), the instance type, security groups, a key pair, and block device mapping. Whenever an EC2 instance is launched, you must specify the launch configuration in detail.

### 83.  What are the uses of Amazon’s Lightsail’s container services?

It allows running containerized applications in the cloud  
Various applications right from web apps to multi-tiered microservices can be run on container services  
Container services will be run without bothering the underlying infrastructure since they will be taken care of by Amazon Lightsail.

### 84.  How does Amazon ECS support Dynamic Port Mapping?

If a dynamic port is specified during ECS task definition, then the container will be given by an unused port. It will occur when the container is scheduled on the EC2 instance. Then, the ECS scheduler will allocate tasks to Application Load Balancer’s target groups through this port automatically.

### 85.  Why does the AWS Lambda function suppose to be stateless?

When incoming events create a need for scaling, AWS lambda functions have to make many copies of functions to cope with the scaling. At that time, AWS functions have to be stateless; only then AWS lambda functions can create copies of functions. Also, it allows accessing stateful data from Amazon S3 and Amazon dynamoDB.

### 86.  What do you mean by AWS Lambda Runtime Interface Emulator (RIE)?

AWS Lambda RIE is a lightweight web server. It helps to convert HTTP requests to JSON events. Lambda RIE emulates runtime API and acts as the proxy for the Lambda runtime API. Also, Lambda RIE is open-sourced on runtime GitHub. And it helps to test the lambda functions using Curl and DOCKER CLI tools.

### 87.  What are S3 Object Lambda and its uses?

S3 Object Lambda allows modifying or processing data before it is returned to applications. The lambda functions can process data by filtering, masking, redacting, compressing, and many more. This is achieved with the support of S3 GET requests. You don’t need to create copies of codes in this feature, and you can run the codes on the infrastructure that is fully managed by AWS S3 and AWS Lambda.

### 88.  What do you mean by Amazon EFS Provisioned Throughput?

This feature of Amazon EFS allows the file system’s throughput to be independent of the amount of data storage. Therefore, file system throughput is matched with the requirements of applications. This feature is mainly applied to applications that require high throughput to storage (MB/second per TB) ratio.

### 89.  How does EBS manage the storage contention issues?

Amazon EBS is a multi-tenant block storage service. The rate-limiting mechanism helps to resolve storage contention issues. It is achieved by fixing defined performance levels for all types of volumes in terms of IOPS and throughput. Here, metrics are used to track the performance of EBS instances and infrastructure to volumes. Alarms will indicate any deviation from the defined performance levels of instances and volumes from the expected ones. It will help allocate suitable EBS instances and infrastructure to the volumes.

### 90.  How do Amazon Kinesis data streams function?

Amazon Kinesis captures data from AWS services, microservices, Logs, and mobile apps and sensors, which can be of any quantity. Then, it easily streams the data to AWS Lambda, Amazon kinesis data analytics, and data firehose. And  Amazon kinesis builds data streaming applications using the mentioned AWS services, open-source framework, and custom applications.

### 91.  How does data transfer occur in AWS Snowcone and AWS storage devices?

Data is collected and processed at the source level after receiving it from sensors and other devices with the AWS Snowcone service. Then, the data is moved into AWS storage devices such as S3 buckets, either online or offline. And you can transfer data continuously to the AWS sources through Data sync options. Moreover, data is processed using Amazon EC2 instances, and then it is moved to AWS storage devices in the AWS Snowcone service.

### 92.  How are AWS Elastic Disaster Recovery and Cloud Endure Disaster Recovery related?

Generally, AWS Elastic Disaster Recovery is built on Cloud Endure Disaster Recovery; therefore, both services have similar capabilities. They help you to:

* Ease the setup, operation, and recovery processes for many applications
* Perform non-disruptive disaster recovery testing and drills
* Recover RPOs in seconds and TROs in minutes
* Recover from a previous point-in-time

### 93.  How does Amazon VPC work with Amazon RDS?

The Amazon EC2 instances, EC2-VPC and EC2- Classic, can host Amazon DB instances. Amazon VPC can launch Amazon DB instances into a virtual private cloud. It also helps to control the virtual networking environment. On the other hand, Amazon RDS manages backups, software patching, and automatic failure detection and recovery. You can save costs significantly when running your DB instances in an Amazon VPC.

### 94.  How does Amazon Redshift perform workload isolation and changeability?

The data in the ETL cluster is shared with isolated BI and analytics clusters in order to provide read workload isolation. It also allows making optional charges so that costs can be saved. Here, the analytic clusters can be arranged as per the price requirements. Also, it helps to onboard the new workloads very simply.

### 95.  How is caching efficiency increased in Amazon ElastiCache?

The in-memory caching provision of Amazon ElastiCache helps to reduce latency and throughput. Especially, high workload applications such as social networking, gaming, and media sharing use in-memory caching to improve data access efficiency. Moreover, critical data pieces can be stored in-memory, which will reduce latency significantly.

### 96.  Compare Amazon VPC Traffic Mirroring and Amazon VPC Flow Logs?

With Amazon VPC traffic mirroring, you can get actionable insights about network traffic, which will help you analyze the traffic content, payloads, the root cause for issues, and control data misuse.             
On the other hand, Amazon VPC flow logs provide information about traffic acceptance and rejections, source and destination IP addresses, packet, and byte counts, and ports details. It helps to troubleshoot security and connectivity issues to optimize network performance.

### 97.  Why is Amazon CloudFront considered DevOps friendly?

CloudFront offers fast change propagation and invalidations, for instance, within two minutes.  
It provides a full-featured API by which CloudFront distributions can be created, configured, and maintained  
You can customize the CloudFront behaviors such as caching, communication, headers and metadata forwarded, compression modes, and many more.  
CloudFront can detect device types and forward this information to applications; as a result, content variants and other responses can be easily adapted by the applications.

### 98.  What is the advantage of the Amazon Route 53 Resolver DNS Firewall over other AWS firewalls?

By providing visibility and control for the entire VPC, Route 53 Resolver DNS firewall ensures the security of applications and networks on AWS. This DNS firewall can be used along with AWS Network Firewall, Amazon VPC security groups, AWS web application firewall rules, and AWS Marketplace appliances to ensure the security of networks and applications.

### 99.  Mention the difference between Amazon Athena, Amazon Redshift, and Amazon EMR?

Amazon Athena is a query service. It allows running ad-hoc queries for the data in Amazon S3 without the support of servers.  
Amazon Redshift is a data warehouse. It provides the fastest query performance for enterprise reporting and BI workloads.  
Amazon EMR is the data processing framework. It helps run distributed processing frameworks like Hadoop, Spark, and Presto.

### 100. What are instance stopping and instance termination?

When you stop an instance, all the operations of the instance are stopped at the moment it is stopped. However, its EBS volume will be connected with the instance so that it can be restarted at any time.  
On the other hand, you can no longer use that instance when you terminate an instance. After that, you cannot start or connect that instance as its EBS volume is also removed while terminating the instance.

### 1. Does Amazon support region base services on all services?

No, it is not providing region-specific usage on all its services. But most of the services are region-based.

### 2. What is EBS in AWS?

Elastic block storage (EBS) is a storage system that is used to store persistent data. EBS is designed to provide block-level storage volumes and to use EC2 instances for both transactions and throughput-intensive workloads at any scale.

### 3. How many regions are available in AWS?

As of September 2021, the AWS Serverless Application repository is available in the AWS GovCloud (US-East) region. With this service, the availability of services is increased to a total of 18 AWS regions across North America, South America, the EU, and the Asia Pacific.

### 4. Which AWS region is the cheapest?

The US standard is the cheapest region; it is also the most established AWS region.

### 5. What is the maximum size of an S3 bucket?

The maximum size of an S3 bucket is 5 TB.

 range in size from **a minimum of 0 bytes to a maximum of 5 TB**

### 6. What are the most popular AWS Services?

Following are the [most popular AWS Services](https://mindmajix.com/top-aws-services):

1. Amazon S3
2. AWS Lambda
3. Amazon Glacier
4. Amazon EC2
5. Amazon SNS
6. Amazon CloudFront
7. Amazon EBS
8. Amazon Kinesis
9. Amazon VPC
10. Amazon SQ

### 7. Is AWS RDS free?

Yes, AWS RDS is a free tier. RDS helps the AWS customers to get started with the management database service in the cloud for free.

### 8. What is the difference between EBS and S3?

Difference between EBS and S3

|  |  |
| --- | --- |
| **EBS** | **S3** |
| Highly scalable | Less scalable |
| It is a block storage | It is an object storage |
| EBS is faster than S3 | S3 is slower than EBS |
| Users can access EBS only via the given EC2 instance | Anyone can access S3; it is a public instance. |
| It supports the File system interface | It supports Web interface |

### 9. Is Amazon S3 a global service?

Yes, Amazon S3 is a global service. It provides object storage through the web interface and it uses the Amazon scalable storage infrastructure to run its global e-commerce network.

### 10. What are the benefits of AWS?

AWS provides services to its users at a low cost. Amazon web services are easy to use and the user should not worry about security, servers, and databases. Amazon web services have several benefits which make users rely on them.

### 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.

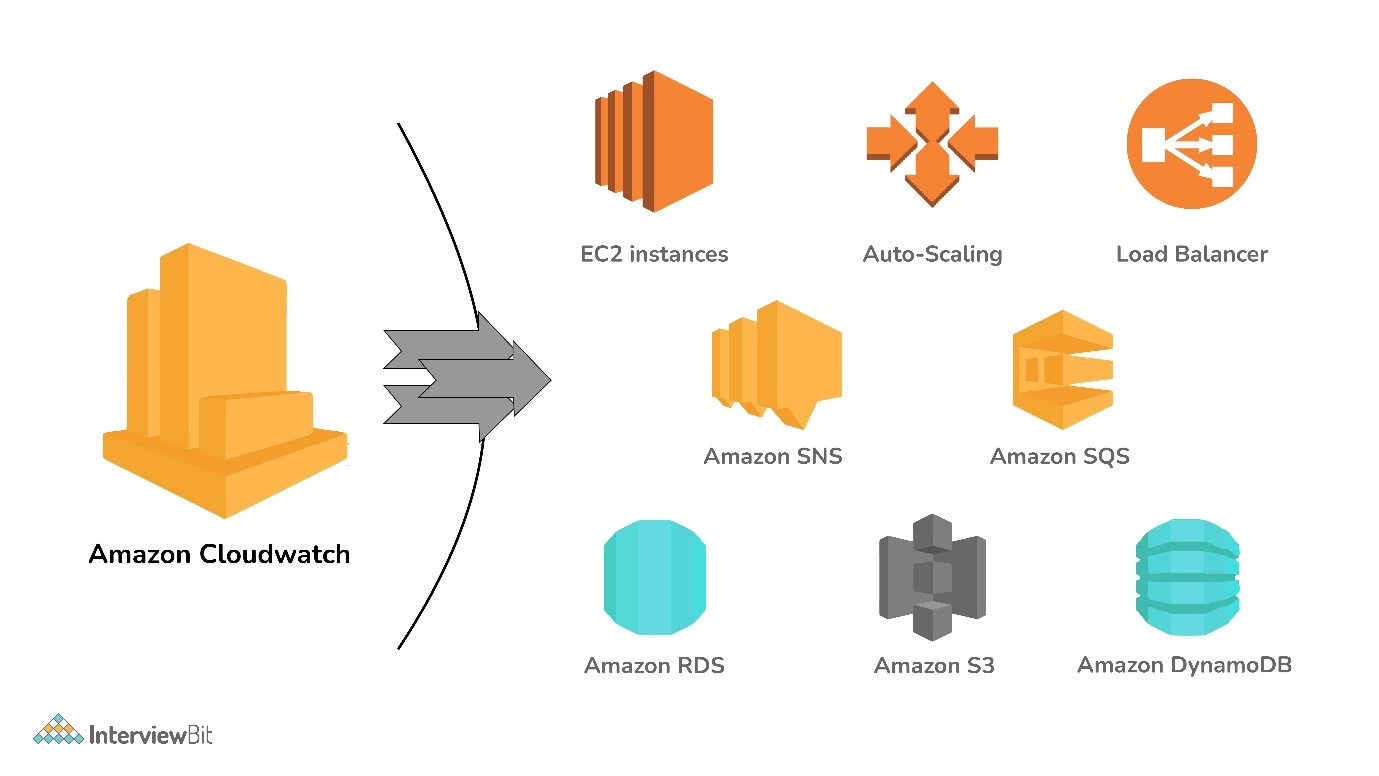
### 2. What is SnowBall?

SnowBall is a small application that enables you to transfer terabytes of data inside and outside of the AWS environment.

AWS Snowball

### 3. 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.

AWS Cloudwatch

### 4. What is Elastic Transcoder?

Elastic Transcoder is an AWS Service Tool that helps you in changing a video’s format and resolution to support various devices like tablets, smartphones, and laptops of different resolutions.

### 5. What do you understand by VPC?

VPC stands for Virtual Private Cloud. It allows you to customize your networking configuration. VPC is a network that is logically isolated from other networks in the cloud. It allows you to have your private IP Address range, internet gateways, subnets, and security groups.

### 6. DNS and Load Balancer Services come under which type of Cloud Service?

DNS and Load Balancer are a part of IaaS-Storage Cloud Service.

### 7. 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

### 8. Explain what T2 instances are?

T2 Instances are designed to provide moderate baseline performance and the capability to burst to higher performance as required by the workload.

### 9. What are Key-Pairs in AWS?

Key-Pairs are secure login information for your Virtual Machines. To connect to the instances, you can use Key-Pairs which contain a Public Key and a Private Key.

### 10. How many Subnets can you have per VPC?

You can have 200 Subnets per VPC.

### 11. List different types of Cloud Services.

Different types of Cloud Services are:

* Software as a Service (SaaS)
* Data as a Service (DaaS)
* Platform as a Service (PaaS)
* Infrastructure as a Service (IaaS)

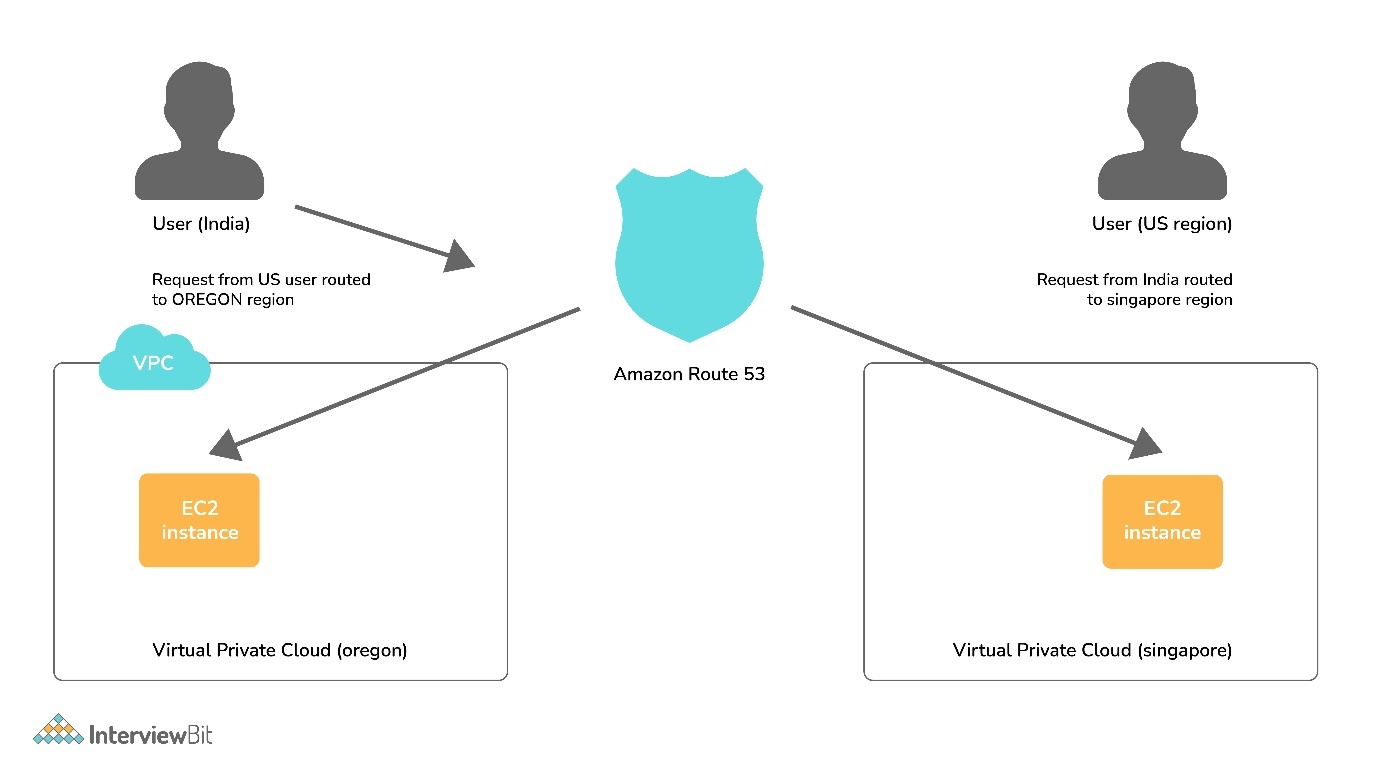
### 12. Explain what S3 is?

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”.

### 13. How does Amazon Route 53 provide high availability and low latency?

Amazon Route 53 uses the following to provide high availability and low latency:

* **Globally Distributed Servers -** Amazon is a global service and consequently has DNS Servers globally. Any customer creating a query from any part of the world gets to reach a DNS Server local to them that provides low latency.
* **Dependency -** Route 53 provides a high level of dependability required by critical applications.
* **Optimal Locations -** Route 53 serves the requests from the nearest data center to the client sending the request. AWS has data-centers across the world. The data can be cached on different data-centers located in different regions of the world depending on the requirements and the configuration chosen. Route 53 enables any server in any data-center which has the required data to respond. This way, it enables the nearest server to serve the client request, thus reducing the time taken to serve.

Amazon Route

As can be seen in the above image, the requests coming from a user in India are served from the Singapore Server, while the requests coming from a user in the US are routed to Oregon region.

### 14. 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.

### 15. What does AMI include?

An AMI includes the following things:

* A template for the root volume for the instance.
* Launch permissions to decide which AWS accounts can avail the AMI to launch instances.
* A block device mapping that determines the volumes to attach to the instance when it is launched.

### 16. What are the different types of Instances?

Following are the types of instances:

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

### 17. What is the relation between the Availability Zone and Region?

An AWS Availability Zone is a physical location where an Amazon data center is located. On the other hand, an AWS Region is a collection or group of Availability Zones or Data Centers.

This setup helps your services to be more available as you can place your VMs in different data centers within an AWS Region. If one of the data centers fails in a Region, the client requests still get served from the other data centers located in the same Region. This arrangement, thus, helps your service to be available even if a Data Center goes down.

### 18. How do you monitor Amazon VPC?

You can monitor Amazon VPC using:

* CloudWatch
* VPC Flow Logs

### 19. What are the different types of EC2 instances based on their costs?

The three types of EC2 instances based on the costs are:

**On-Demand Instance -** These instances are prepared as and when needed. Whenever you feel the need for a new EC2 instance, you can go ahead and create an on-demand instance. It is cheap for the short-time but not when taken for the long term.

**Spot Instance -** These types of instances can be bought through the bidding model. These are comparatively cheaper than On-Demand Instances.

**Reserved Instance -** On AWS, you can create instances that you can reserve for a year or so. These types of instances are especially useful when you know in advance that you will be needing an instance for the long term. In such cases, you can create a reserved instance and save heavily on costs.

### 20. What do you understand by stopping and terminating an EC2 Instance?

Stopping an EC2 instance means to shut it down as you would normally do on your Personal Computer. This will not delete any volumes attached to the instance and the instance can be started again when needed.

On the other hand, terminating an instance is equivalent to deleting an instance. All the volumes attached to the instance get deleted and it is not possible to restart the instance if needed at a later point in time.

### 21. What are the consistency models for modern DBs offered by AWS?

**Eventual Consistency -** It means that the data will be consistent eventually, but may not be immediate. This will serve the client requests faster, but chances are that some of the initial read requests may read the stale data. This type of consistency is preferred in systems where data need not be real-time. For example, if you don’t see the recent tweets on Twitter or recent posts on Facebook for a couple of seconds, it is acceptable.

**Strong Consistency -** It provides an immediate consistency where the data will be consistent across all the DB Servers immediately. Accordingly. This model may take some time to make the data consistent and subsequently start serving the requests again. However, in this model, it is guaranteed that all the responses will always have consistent data.

### 22. What is Geo-Targeting in CloudFront?

Geo-Targeting enables the creation of customized content based on the geographic location of the user. This allows you to serve the content which is more relevant to a user. For example, using Geo-Targeting, you can show the news related to local body elections to a user sitting in India, which you may not want to show to a user sitting in the US. Similarly, the news related to Baseball Tournament can be more relevant to a user sitting in the US, and not so relevant for a user sitting in India.

### 23. 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.

### 24. What do you understand by a Security Group?

When you create an instance in AWS, you may or may not want that instance to be accessible from the public network. Moreover, you may want that instance to be accessible from some networks and not from others.

Security Groups are a type of rule-based Virtual Firewall using which you can control access to your instances. You can create rules defining the Port Numbers, Networks, or protocols from which you want to allow access or deny access.

### 25. What are Spot Instances and On-Demand Instances?

When AWS creates EC2 instances, there are some blocks of computing capacity and processing power left unused. AWS releases these blocks as Spot Instances. Spot Instances run whenever capacity is available. These are a good option if you are flexible about when your applications can run and if your applications can be interrupted.

On the other hand, On-Demand Instances can be created as and when needed. The prices of such instances are static. Such instances will always be available unless you explicitly terminate them.

### 26. Explain Connection Draining.

Connection Draining is a feature provided by AWS which enables your servers which are either going to be updated or removed, to serve the current requests.

If Connection Draining is enabled, the Load Balancer will allow an outgoing instance to complete the current requests for a specific period but will not send any new request to it. Without Connection Draining, an outgoing instance will immediately go off and the requests pending on that instance will error out.

### 27. What is a Stateful and a Stateless Firewall?

A Stateful Firewall is the one that maintains the state of the rules defined. It requires you to define only inbound rules. Based on the inbound rules defined, it automatically allows the outbound traffic to flow.

On the other hand, a Stateless Firewall requires you to explicitly define rules for inbound as well as outbound traffic.

For example, if you allow inbound traffic from Port 80, a Stateful Firewall will allow outbound traffic to Port 80, but a Stateless Firewall will not do so.

### 28. What is a Power User Access in AWS?

An Administrator User will be similar to the owner of the AWS Resources. He can create, delete, modify or view the resources and also grant permissions to other users for the AWS Resources.

A Power User Access provides Administrator Access without the capability to manage the users and permissions. In other words, a user with Power User Access can create, delete, modify or see the resources, but he cannot grant permissions to other users.

### 29. What is an Instance Store Volume and an EBS Volume?

An Instance Store Volume is temporary storage that is used to store the temporary data required by an instance to function. The data is available as long as the instance is running. As soon as the instance is turned off, the Instance Store Volume gets removed and the data gets deleted.

On the other hand, an EBS Volume represents a persistent storage disk. The data stored in an EBS Volume will be available even after the instance is turned off.

### 30. What are Recovery Time Objective and Recovery Point Objective in AWS?

**Recovery Time Objective -** It is the maximum acceptable delay between the interruption of service and restoration of service. This translates to an acceptable time window when the service can be unavailable.

**Recover Point Objective -** It is the maximum acceptable amount of time since the last data restore point. It translates to the acceptable amount of data loss which lies between the last recovery point and the interruption of service.

### 31. Is there a way to upload a file that is greater than 100 Megabytes in Amazon S3?

Yes, it is possible by using the Multipart Upload Utility from AWS. With the Multipart Upload Utility, larger files can be uploaded in multiple parts that are uploaded independently. You can also decrease upload time by uploading these parts in parallel. After the upload is done, the parts are merged into a single object or file to create the original file from which the parts were created.

### 32. Can you change the Private IP Address of an EC2 instance while it is running or in a stopped state?

No, a Private IP Address of an EC2 instance cannot be changed. When an EC2 instance is launched, a private IP Address is assigned to that instance at the boot time. This private IP Address is attached to the instance for its entire lifetime and can never be changed.

### 33. What is the use of lifecycle hooks is Autoscaling?

Lifecycle hooks are used for Auto-scaling to put an additional wait time to a scale-in or a scale-out event.

### 34. What are the policies that you can set for your user’s passwords?

Following are the policies that can be set for user’s passwords:

* You can set a minimum length of the password.
* You can ask the users to add at least one number or special character to the password.
* Assigning the requirements of particular character types, including uppercase letters, lowercase letters, numbers, and non-alphanumeric characters.
* You can enforce automatic password expiration, prevent the reuse of old passwords, and request for a password reset upon their next AWS sign-in.
* You can have the AWS users contact an account administrator when the user has allowed the password to expire.

**1. What is AWS?**

Amazon Web Services (AWS) is a Comprehensive Cloud platform that offers more than 165 services such as database storage, content delivery, security infrastructure, etc., from data centers worldwide. The robust infrastructure and agility at low costs are important reasons for its adoption from startups to large scale enterprises.

**2. What is Cloud Computing?**

Cloud computing provides various features of a computer in a comprehensive platform via the internet. Cloud computing offers computing power, database, software, storage, applications, security, etc. at reduced costs and improves performance. With Cloud computing, huge investments in hardware and software are reduced drastically and pay only for the services utilized.

**3. What is a Container?**

Containers help to package software’s code and configuration into an object. Containers utilize the OS installed on the server and ensures stable, consistent and speedy deployment independent of the environment.

AWS Cloud provides the resources to run containers and also offers orchestration services for building and operating applications that are packed in containers.

This is predominantly useful in DevOps based processes supported by AWS.

**4. What is a Data lake?**

Data Lake is a repository to store structured and unstructured data of any scale. They are mainly utilized in Big Data and Data Science since we can store data in its original form without any need to structure the Data and it is possible to perform various analysis to arrive at better solutions.

[Big Data Training in Chennai](https://www.fita.in/big-data-hadoop-training-in-chennai/) at FITA Academy helps aspirants to excel in their careers with the knowledge acquired from experienced professional tutors.

**5. What is the difference between Data Warehouse and Data Lake?**

|  |  |
| --- | --- |
| **Data Warehouse** | **Data Lake** |
| Data is relational from transactional systems and operational databases. | Data is both non-relational and relational from various sources such as IoT devices, mobile apps, websites, and social media. |
| Provides fastest query results at high cost of storage. | Provides faster query results at low storage cost. |
| Used by Business analysts. | Used by Data scientists, Data developers, and Business analysts. |
| Helps in Batch reporting, BI and visualizations | Helps to perform various analytics such as [**Machine Learning**](https://www.fita.in/machine-learning-training/), Predictive analytics, data discovery and profiling |

**6. What are the main components of AWS?**

The key components of AWS are:

* Simple Email service
* Route 53
* Simple Storage Device S3
* Elastic compute cloud( EC2)
* Elastic Block Store
* Cloud watch

**7. What is S3?**

S3 implies the Simple Storage Service. S3 refers to a storage service capable of storing volumes of data from anywhere around the globe. For utilising S3 one can pay only for the usage in the Pay-as-you-go model of payment. AWS Course helps students to clearly understand key components of AWS such as S3.

**8. What is the importance of buffer in AWS?**

A buffer helps to integrate and synchronize various components in AWS and helps to maintain equilibrium by linking multiple apparatus to deliver quick services at a uniform rate.

**9. Explain the various storage classes available in S3?**

The various storage classes available in S3 are listed below.

* Standard frequency accessed
* RRS – reduced redundancy storage
* Standard infrequency accessed
* One-zone infrequency accessed
* Glacier.

AWS Training provides comprehensive knowledge on AWS and its components to make a career in AWS based jobs.

**10. What is Snowball?**

Snowball is a transporting option available in AWS to transport the data in and out of AWS. Snowball helps to transfer immense data at low networking cost.

**11. What are key-pairs?**

Key Pairs are used to connect to the virtual machines. The secure login credentials used to connect to virtual machines are known as Key pairs.

**12. What are the types of volumes in EBS?**

Various types of Volumes in EBS are listed below.

* General-purpose
* Magnetic
* Provisioned IOPS
* Cold HDD
* Throughput optimized

**13. What is the total number of buckets that can be created in AWS by default ?**

One Hundred(100) buckets can be created in each AWS account by default. We can also increase the number of buckets by submitting a request form to Amazon.

**14. List some important features of a classic load balancer in EC2.**

Distributes traffic among various EC2 instances evenly and ensures high scalability for the incoming traffic.

Load balancer decides on routing the traffic by accessing the health of the systems.

Load Balancer can route traffic from a user to the same Virtual Machine for any number of instances for a hasslefree experience.

**15. Can we use Amazon Transfer acceleration and Snowball to transfer data across countries?**

Amazon Transfer Acceleration can accelerate Data Transfer by 300% with the help of amazon content delivery network and optimised networks. Whereas Snowball is not compatible to support Cross Region data transfer.

**16. List various connection issues faced while connecting to an EC2 instance.**

* Server refusing Key
* Connection timeout
* unprotected Private Key
* Host Key missing
* User Key unrecognised

**17. What is an AMI?**

Amazon Machine Image contains various software configurations, block device mapping for allocating volumes to the virtual machine and launch permissions.

**18. What is an EIP?**

An elastic IP address is useful for dynamic cloud computing where we can stop and restart the instances multiple times.

**19. What is Cloudwatch?**

Cloudwatch is helpful to monitor various features of the AWS such as networks, storage, applications, the health of the systems, etc.

**20. What are the types in cloudwatch?**

Basic- Free service

Detailed – Charged service

**21. List the cloudwatch metrics that are available for EC2 instances**.

Various Cloudwatch metrics available for EC2 instances are mentioned below.

* CPU utilisation
* CPU credit usage
* CPU credit balance
* networkIn
* networkOut
* Diskreads
* Diskwrites

**22. What are the different storage classes in S3?**

Different types of storage classes in S3 are listed below.

* Glacier
* One-zone infrequently accessed.
* Standard infrequently accessed
* Standard frequently accessed
* RRS – reduced redundancy storage

**22. List various parameters involved in S3 pricing**.

The parameters determining the S3 pricing are listed below.

* Data transfer
* Storage utilised
* Transfer acceleration
* Storage management
* Number of requests

**24. Methods to encrypt data in S3**.

Various methods used to encrypt data in S3 are listed below.

* C (Client-Side)
* S3 (AES 256 encryption)
* KMS (Key Management Service)

**25. What is the prerequisite for Cross-region replication in S3?**

The source and destination buckets should be in different regions and versioning must be enabled at both the source and destination.

**26. Explain Policies.**

Policies refer to permissions attached to the created users to access AWS account.

**27. List the Types of Policies**

* Inline policies
* Managed policies

**28. What is CloudFront?**

Cloudfront refers to an AWS service that can effectively distribute the content of businesses and app developers with low latency at high-speed.

**29. What are the Roles?**

Roles are users with different accounts who help to permit trustable entities to an AWS account. There is no necessity to create login credentials for Roles to work on the resources.

**30. What are the Edge locations?**

Edge Location refers to the location where the contents are cached and can be useful when users access the content. If the searched content is unavailable in edge locations, the content will be created from an origin location and a copy of it will be saved in the edge locations.

**31. What is archive storage capacity in Glacier?**

Individual archives can be stored up to a maximum of 40 TB in Glacier.

**32. What is VPC?**

Virtual Private Cloud(VPC) helps the users to customise and configure networks easily. VPC permits users to have their internet gateways, Subnets, Nat Gateways and IP address range; isolated from other networks in the cloud.

**33. What is a VPC peering connection?**

VPC peering connection allows users to connect two or more Virtual Private Clouds and the instances in the connected VPC function coherently.

**34. How the security of VPC can be controlled?**

Security groups and Network Access Control List (NACL) can be utilised to regulate the security of a Virtual Private Cloud.

**35. What are NAT gateways?**

Network Address Translation gateways help the instances to be connected to the internet. NAT Gateways serve as a one-way traffic regulator since they prevent any initiation of a connection from the Internet to the instances.

**36. What are the different types of storage gateway?**

Various types of Storage Gateways are listed below.

* Tape gateway
* Volume gateway
* File gateway

**37. What is a redshift?**

Redshift is a data warehouse product of Amazon that provides fast and powerful services; completely manageable petabyte-scale warehouse.

**38. What are the database types in RDS?**

The Database types in RDS are listed below:

* MYSQL server
* [**Oracle**](https://www.fita.in/oracle-course/)
* SQL server
* Postgresql
* Aurora
* MariaDB

**39. What are the various Routing Policies in route53?**

List of various Routing Policies in route53.

* Simple routing
* Multivalue answer
* Geolocation routing
* Latency routing
* Weighted routing
* Failover routing

**40. What is SNS?**

Simple Notification Service(SNS) is a web service under AWS that notifies the user of any activity in the cloud that requires attention through mail or messages as desired by the user.

**41. What is multi-AZ RDS?**

Multi-AZ RDS is helpful to make a replica of the production database to be available in other availability zones. They come handy in case of disaster recovery and primary database shutdown, to have a complete set of database as a backup.

**42. What are the types of backups in the RDS database?**

Types of backups in the RDS database.

* Automated
* Manual (also known as snapshots)

**43. Explain the usage of Classic Load Balancer and Application Load Balancer.**

Classic Load Balancer is designed for simple load balancing of traffic whereas Application Load Balancer helps in intelligent load balancing of traffic across various EC2 instances.

Application Load Balancer is utilised to route traffic to multiple instances.

**44. Is there a way to upload a file greater than 100 MB in Amazon S3?**

Larger files can be uploaded using the Multipart Upload Utility in AWS, where the large files are uploaded in parts independently and parallel to decrease the upload time. The parts will be merged and converted into a single file once the upload is completed.

**45. What are some of the key best practices for security in Amazon EC2?**

Some of the best security practices in Amazon EC2 are listed below:

* Securing the AWS account and the access key.
* Creating separate Identity and Access Management(IAM) credentials to each user who has access to AWS resources.
* Disable unimportant services and applications in EC2 instances.
* Grant permissions to perform specified tasks and deny access for irrelevant resources.
* Review security infrastructure regularly.

**46. Differentiate between vertical and horizontal scaling in AWS.**

Vertical Scaling refers to the process of increasing the power and performance of an existing machine by adding up resources to the infrastructure.

Horizontal Scaling refers to the scenario where the power and performance are augmented by adding new machines to the infrastructure.

Vertical Scaling is restricted to handle a limited number of users and Horizontal Scaling comes to the rescue when the users are increasing in large numbers with clustering, load balancing and distributed file system.

**47. How will you access the data on EBS in AWS?**

Elastic Block Storage provides highly functional block-level storage that can be connected to any EC2 instance and accessed easily.

**48. How can you speed up data transfer in Snowball?**

The data transfer can be increased in the following way:

* Performing multiple copy operations from different terminals, on the same Snowball device.
* Reducing encryption by Transferring large files or batches of small files.
* Prioritising activities on the source and snowball machine can improve the speed of data transfer.

**49. List the network performance parameters while launching instances in a cluster placement group?**

If Instances are launched in a cluster placement group, one can expect the performance parameters to be as mentioned below.

* 20 Gbps in full-duplex (Multi-flow).
* 10 Gbps in a single flow.
* Outside the group, network traffic will be restricted to 5 Gbps

**50. What is the difference between Scalability and Elasticity**?

Scalability refers to the ability of a system to increase the hardware requirements or processing nodes to tackle increasing demand.

The elasticity of a system refers to the capability of the system to add resources for improving the performance when required and returning to the original configuration when resources are not required.

This feature helps a lot in cloud computing since the resources are bought in the pay-as-you-go pricing.

**51. How to reduce the load on the Amazon EC2 instance?**

Attaching a load balancer to an autoscaling group will distribute the load effectively among various instances.

**52. Explain the purpose of Connection Draining**

Connection Draining will reroute the traffic from non-updated and health check failed instances.

**53. What is the purpose of lifecycle hooks in AutoScaling?**

Lifecycle hooks help to add wait time before launch or termination of an instance for extraction of log files or installation of necessary software respectively.

**54. What is Lambda?**

Lambda helps to run server-less applications and to deploy various functions that are triggered by events. Lambda cannot be used for developing applications that are accessible publicly.

**55. How does Elastic Beanstalk update?**

Elastic Beanstalk creates a replica of an instance and routes the traffic to the duplicate instance before updating an instance. In case the update fails, it will roll back to the original instance providing a hassle-free user experience.

**56. What is the use of tags?**

Tags are helpful to identify and group various AWS resources.

**57. List the advantages of Cloud Computing.**

* Elasticity
* Scalability
* Speed and Agility
* pay-as-you-use model
* Worldwide launch in unnoticeable time

**58. What is the Availability Zone?**

Availability Zone is also known as Data Centre that is designed as an independent failure zone with high-speed connectivity and low latency.

**59. What is Region?**

The Region is similar to a geographical location where there are independent collections of AWS resources connected in higher bandwidth.

**60. Explain Auto scaling and its components.**

Auto Scaling is an important feature that permits to increase or decrease the instances based on CPU or Memory utilisation. the components in Auto Scaling are Launch configuration and Auto-scaling groups.

**61. Explain Security Groups**.

Security Groups are enhanced security features that hold the traffic of the instances and serve as a firewall. One can frame rules to security groups to permit traffic among various instances for better monitoring of the security infrastructure.

**62..Explain Amazon EBS-Optimized instances**

Amazon EBS-Optimized Instances utilises an optimized stack configuration and has additional capacity for Amazon EBS that can be selected by paying hourly charges based on usage.

**63. Which Automation Gears helps in Spinup Services?**

API tools such as API Fortress, Scripting languages like Perl and hybrid cloud management tools like Scarl are few such automation gears helpful for Spin Up Services.

**64. Explain Amazon EMR.**

Amazon Elastic Map Reduce is an administrative feature that can completely monitor Hadoop system on the Amazon EC2 instance.

**65. List the virtualization types in AWS.**

* Hardware-Assisted Virtualisation
* Para Virtualization

**66. Explain Stateful and Stateless firewall.**

Any security group that regulates traffic among instances and various AWS resources is a Stateful firewall.

A Stateless firewall is an Access Control List on a network at the subnet level and can allow or deny traffic based on rules.

**67. What do you know about Amazon Kinesis Firehose?**

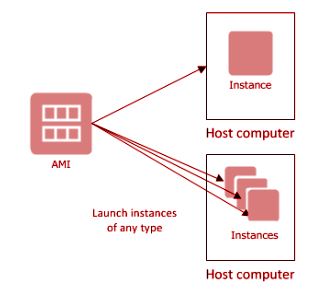
It is a Data Firehouse that can help in stacking information in Information Stores or devices without the need for a continuous organization.

**68. What is Amazon DynamoDB?**

DynamoDB is a product of Amazon that provides fast and reliable Database services with increased performance and scalability for storage of humongous data at low costs.

**69. What is the association between AMI and Instance?**

AMI refers to Amazon Machine Image that acts as a template containing software configurations such as OS, server and applications. AMI can be used to launch an instance that replicates the AMI functioning as a virtual server and can be used to launch multiple instances also.



**70. What is the purpose of the cradle in AWS?**

Cradle serves the purpose of monitoring the synchronisation of a stack with different parts to maintain a robust framework. Cradle acts as a cushion to make the segments work efficiently enabling administration easier.

**71. What are the DB engines which can be used in AWS RDS?**

Various DB engines used in AWS RDS are listed below.

* MariaDB
* MS SQL DB
* MYSQL DB
* Oracle DB
* Postgre DB

**72. Explain the difference between the Service Role and SAML Federated Role.**

Service Role is used to specify a task in AWS services on the basis of various policies attached to it.

Federated Roles are useful for providing access to AWS based on the designed Role.

**73. How a Root AWS user differs from an IAM User.**

Root AWS User is granted complete access to AWS services without any policy attached whereas an IAM User can access based on the policies attached to it.

**74. What is the benefit of creating a group in IAM**

Group Creation in IAM aids in managing the users with similar kind of policies attached and by changing the policies access to AWS can be easily managed for all the users in the Group.

**75. Explain the benefits of the Security Token Service( STS).**

STS helps to secure the AWS environment since the credentials are temporary and there is no necessity to revoke or rotate them. Click the following link to Know the Basic [**Java Interview questions**](https://www.fita.in/java-interview-questions-freshers/) that are asked to freshers in an Interview.

**76. What is the distinction between Amazon S3 and EC2?**

S3 refers to Simple Storage Service where bulk volumes of data can be stored and retrieved easily along with a REST interface and secure validation keys (HMAC\_SHA1).

EC2 refers to Elastic Compute Cloud is utilised for developing applications and run servers and various languages & tools such as [**Python**](https://www.fita.in/python-training/), Ruby, Apache, Linux, [**PHP**](https://www.fita.in/php-training/), HTML, etc.

**77. Explain Amazon CloudSearch.**

Amazon CloudSearch helps to incorporate various seek and fetch abilities on numerous applications. They support AWS ENgineers by reducing the time taken to perform changes or updates on various applications.

**78. Explain the AWS Certificate Manager.**

AWS Certificate Manager is an administrative feature for various activities using Secure Socket Layers to arrange interchanges and setting up of the character of various sites over the internet.

**79. What is an Auto Scaling group?**

Auto Scaling group contains various Amazon EC2 instances administered by Auto Scaling Services with each group containing various configuration options to decide launch or termination of instances

**80. What is SES?**

Simple Email Service(SES) is a service provided by Amazon to send bulk Email to customers instantly reducing the cost of the service.

**81. What is SQS?**

Simple Queue Service (SQS) by Amazon provides quick and reliable message queuing service in which messages are queued temporarily until the user wish to send them to consumers. Basic Amazon Web Services Interview Questions for both freshers and experienced.

**82. Explain SNS.**

Simple Notification Service is an Amazon web service to coordinate the delivery of messages or emails to the recipients.

**83. What are the routing policies available in Amazon Route53?**

Various Routing Policies in Route53 are listed below.

* Simple
* Failover
* Weighted
* Geolocation
* Latency Based

**84. What is Lightsail?**

Amazon’s Lightsail helps to launch and control any virtual Private Server with AWS by providing various facilities like storage, data transfer, static IP, etc.

**85. Differentiate Basic and Detailed monitoring.**

Basic Monitoring interacts with Amazon Cloud watch at an interval of 5 minutes on a set of predetermined metrics at no cost.

Detailed Monitoring interacts with Amazon Cloud watch round the clock and permits aggregation of data as a charged service.

**86. What is IaaS?**

IaaS refers to the cloud service that helps in running various services in the cloud platform on a pay-as-you-go basis.

**87. Explain Amazon ElastiCache.**

Amazon ElastiCache denotes the web service that helps in the management of memory caching environment.

Benefits of ElastiCache are listed below.

* Scalable Caching Environment
* High Performance
* Cost-effectiveness

**88. What Is Lambda edge?**

Lambda Edge can perform various functions that run as a response to CloudFront events for executing various functions in AWS locations without a managing server.

**89. What is PaaS?**

PaaS helps to run various cloud platforms predominantly to develop, test and monitor the functioning of the software.

**90. List various layers of Cloud Architecture in AWS.**

Various layers of AWS Cloud architecture is listed below.

* Node Controller
* Cloud controller
* Cluster controller
* Storage Controller

**91. List some important features of Amazon cloud search.**

A few important features of Amazon Cloud search are listed below.

* Range searches
* Prefix Searches
* Entire text search
* Boolean searches
* AutoComplete advice

**92. How the instance type of the instances that are running in an application tier along with Auto Scaling can be changed?**

auto scaling launch configuration

**93. Where does the user specify the maximum number of instances using the auto scaling commands?**

Auto Scaling launch configuration

**94. Which among the below mentioned is a structured data store that can support indexing and data queries for EC2 and S3?**

1. DynamoDB
2. Aurora
3. SimpleDB
4. MySQL

**95. The maximum permissible VPCs per account/region and subnets per VPC in AWS**.

5, 200

**96. Which among the following should be chosen for complex querying capabilities without whole data warehouse?**

1. RDS
2. ElastiCache
3. Redshift
4. DynamoDB

**97. Which among the following should be chosen for collecting and processing e-commerce data with real-time analysis?**

1. DynamoDB
2. Aurora
3. Redshift
4. SimpleDB

**98**. **Which among the following is used to transfer data among instances spread across countries to your Amazon S3 bucket?**

1. Amazon CloudFront
2. Amazon Transfer Acceleration
3. Amazon Snowball
4. Amazon Glacier

**99**. **Which among the below services is a data storage system that uses secure HMAC-SHA1 authentication keys?**

1. Amazon Elastic Block Store
2. Amazon S3
3. Amazon Snapshot

**100. Which Value should be set in the instance’s tenancy attribute for running single-tenant hardware?**

1. One
2. Dedicated
3. Reserved
4. Isolated

**101. When costs are incurred in an Elastic IP address?**

1. EIP is allocated.
2. EIP is allocated and associated with a running instance.
3. EIP is allocated and associated with a stopped instance.

### **Q1. What is AWS?**

Amazon Web Services or AWS is a set of cloud computing services and tools from Amazon. It offers over 200 comprehensive data center services globally. AWS is a cross-functional platform that offers a wide variety of services ranging from data warehousing to content delivery.

### Q2. What is Amazon S3?

**Ans.** Amazon S3 (Simple Storage Service) is object storage with a simple web service interface to store and retrieve any amount of data from anywhere on the web.

### Q3. What is AWS SNS?

**Ans.** Amazon Simple Notification Service (Amazon SNS) is a push notification service used in sending individual messages to a big group of mobile or email subscriber systems including Amazon SQS queues, AWS Lambda functions, and HTTPS endpoints. It is both application-to-application (A2A) and application-to-person (A2P) communication.

### Q4. What is CloudFront?

**Ans.** Amazon CloudFront has become one of the most popular delivery networks (content delivery network, CDN) in the world, thanks to its ability to accelerate the transmission of static and dynamic web content, like .html, .css, and .js files. CloudFront works efficiently with services like AWS Shield and helps in curbing DDoS attacks. It utilizes Amazon S3, Elastic Load Balancing, or Amazon EC2 as sources for your applications and uses Lambda @ Edge to run custom code closer to and personalize customer users.

### Q5. What are the main differences between ‘horizontal’ and ‘vertical’ scales?

|  |  |
| --- | --- |
| **Horizontal Scale** | **Vertical Scale** |
| Provides new resources along with new hardware devices to support the infrastructure | You would need to increase power resources by upgrading the current machine |
| Used in distributed systems | Used in virtualization |
| Resilient to system failure | Single point of failure |
| Utilizes network calls | Interprocess communication |
| Increases the capacity of existing hardware or software by adding additional resources | Connects multiple system entities, both hardware, and software such that they work as a single logical unit |
| Difficult to implement | Easy to implement |

#### 

### Q6. Explain the advantages of AWS’s Disaster Recovery (DR) solution.

Following are the advantages of AWS’s Disaster Recovery (DR) solution:

* AWS offers a cost-effective backup, storage, and DR solution, helping the companies to reduce their capital expenses
* Fast setup time and greater productivity gains
* AWS helps companies to scale up even during seasonal fluctuations
* It seamlessly replicates on-premises data to the cloud
* Ensures fast retrieval of files

### Q7. What are the different types of load balancers in EC2?

**Ans:**There are three types of load balancers in EC2 –

* **Application Load Balancer** – These balancers are designed to make routing decisions at the application layer.
* **Network Load Balancer**: Network load balancer handles millions of requests per second and helps in making routing decisions at the transport layer.
* **Classic Load Balancer**: Classic Load Balancer is mainly used for applications built within the EC2-Classic network. It offers basic load balancing at varying Amazon EC2 instances.

### Q8. What is DynamoDB?

Ans. DynamoDB is a NoSQL database. It is very flexible and performs quite reliably – and can be integrated with AWS! It offers fast and predictable performance with seamless scalability. With the help of DynamoDB, you do not need to worry about hardware provisioning, setup, and configuration, replication, software patching, or cluster scaling.

### Q9. What is AWS CloudFormation?

Ans. AWS CloudFormation is an Amazon service, dedicated to solving the need to standardize and replicate the architectures to facilitate their execution and optimize resources and costs in the delivery of applications, or compliance with the requirements of the organization. CloudFormation allows creating a proprietary library of instance templates or architectures capable of being delivered at any time and in an organized manner, through programming.

### Q10. What are the advantages of using AWS CloudFormation?

**Ans.** It is one of the most popular AWS interview questions. There are many advantages of AWS CloudFormation including the following.

1. Reduces infrastructure deployment time
2. Increases confidence in deployments
3. Replicates complex environments, for example, have complex environments for development, pre-production, and production, that are the same, or almost the same, simply by scaling up resources
4. Reuses the definitions between different products
5. Reduces environment repair time

### Q11. What is Elastic Beanstalk?

**Ans.** Elastic Beanstalk is an orchestration service by AWS, used in various AWS applications such as EC2, S3, Simple Notification Service, CloudWatch, autoscaling, and Elastic Load Balancers. It is the fastest and simplest way to deploy your application on AWS using either AWS Management Console, a Git repository, or an integrated development environment (IDE).

### Q12. What is Geo Restriction in CloudFront?

**Ans.**Geo restriction, also known as geoblocking, is used to prevent users in specific geographic locations from accessing content that you’re distributing through a CloudFront web distribution.

### Q13. What is a T2 instance?

**Ans.**T2 instances are designed to provide moderate baseline performance and the capability to burst to higher performance as required by workload.

### Q14. What is AWS Lambda?

**Ans.** AWS Lambda is a compute service that lets you run code in the AWS Cloud without provisioning or managing servers.

### Q15. What is a Serverless application in AWS?

**Ans.**The AWS Serverless Application Model (AWS SAM) extends AWS CloudFormation to provide a simplified way of defining the Amazon API Gateway APIs, AWS Lambda functions, and Amazon DynamoDB tables needed by your serverless application.

### Q16. What is the use of Amazon ElastiCache?

**Ans.**Amazon ElastiCache is a web service that makes it easy to deploy, operate, and scale an in-memory data store or cache in the cloud.

### Q17. Explain how the buffer is used in Amazon web services.

**Ans.**The buffer is used to make the system more robust to manage traffic or load by synchronizing different components.

### Q18. Differentiate between stopping and terminating an instance.

**Ans.**When an instance is stopped, the instance performs a normal shutdown and then transitions to a stopped state.

When an instance is terminated, the instance performs a normal shutdown, then the attached Amazon EBS volumes are deleted unless the volume’s deleteOnTermination attribute is set to false

Q19. Is it possible to change the private IP addresses of an EC2 while it is running/stopped in a VPC?

**Ans.**The primary private IP address cannot be changed. Secondary private addresses can be unassigned, assigned, or moved between interfaces or instances at any point.

### Q20. Give one instance where you would prefer Provisioned IOPS over Standard RDS storage?

**Ans.** Provisioned IOPS can be preferred over Standard RDS storage when we have batch-oriented workloads.

### Q21. What are the different types of cloud services?

**Ans.** Different types of cloud services are:

* Software as a Service (SaaS)
* Data as a Service (DaaS)
* Platform as a Service (PaaS)
* Infrastructure as a Service (IaaS)

### Q22. What is the boot time for an instance store-backed instance?

**Ans.**The boot time for an Amazon Instance Store -Backed AMI is less than 5 minutes.

### Q23. Will you use encryption for S3?

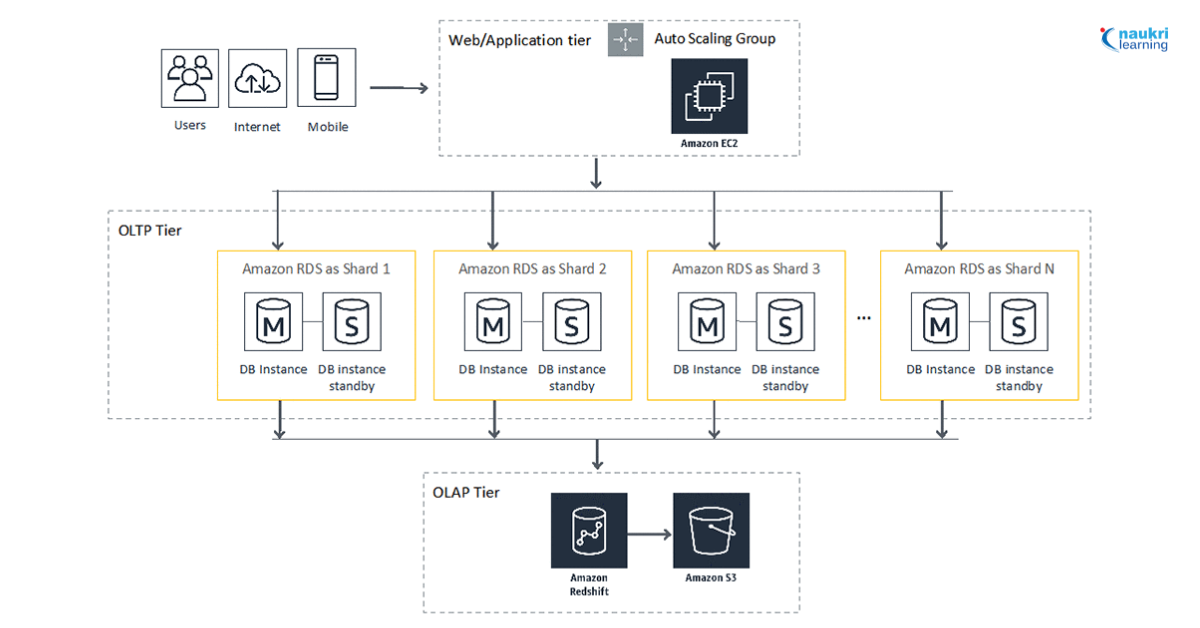
**Ans.** Yes, I will, as it is a proprietary technology. It’s always a good idea to consider encryption for sensitive data on S3.

### **Q24. What is Identity Access Management and how is it used?**

**Ans.**It is a web service, which is used to securely control access to AWS services. Identity Access Management allows you to manage users, security credentials, and resource permissions.

### Q25. What is Sharding?

**Ans.** Sharding or horizontal partitioning is a scale-out technique for relational databases. This technique is used to put that data into smaller subsets and distribute them across physically separated database servers, where every server is called a database shard. These database shards have the same hardware, database engine, and data structure so that a similar level of performance is generated.



### Q26. How do you send requests to Amazon S3?

**Ans.**We can achieve this by using the REST API or the AWS SDK wrapper libraries. These elements wrap the underlying Amazon S3 REST API.

### Q27. What is DynamoDB?

**Ans.**DynamoDB is a fully managed proprietary NoSQL database service, supporting key-value and document data structures. It can be used when a fast and flexible NoSQL database with a flexible data model and reliable performance is required.

### Q28. What is Redshift?

**Ans.** Redshift is a petabyte-size data warehouse service by Amazon. It is easy, cost-effective, and scalable, and can be fully configured to analyze your entire data with the existing business intelligence tools.

### Q29. Which data centers are deployed for cloud P@ssw0rd7computing?

**Ans.**There are two data centers in cloud computing, one is Containerized Data centers, and another is Low-Density Data Centers.

### Q30. Which AWS services will you use to collect and process e-commerce data for near real-time analysis?

**Ans.** Following are the AWS services that will be used to collect and process e-commerce data for near real-time analysis:

* Amazon DynamoDB
* Amazon ElastiCache
* Amazon Elastic MapReduce
* Amazon Redshift

### Q31. What is SQS?

**Ans.** Simple Queue Service (SQS) is a distributed message queuing service that acts as a mediator for two controllers. It is a pay-per-use web service.

### Q32. What are the popular DevOps tools?

**Ans.**The popular DevOps tools are:

* Chef, Puppet, Ansible, and SaltStack – Deployment and Configuration Management Tools
* Docker – Containerization Tool
* Git – Version Control System Tool
* Jenkins – Continuous Integration Tool
* Nagios – Continuous Monitoring Tool
* Selenium – Continuous Testing Tool

### Q33. What is Hybrid cloud architecture?

**Ans.**It is a type of architecture where the workload is divided into two halves among which one is on public load and the other is on the local storage. It is a mix of on-premises, private cloud and third-party, and public cloud services between two platforms.

### Q34. What Is Configuration Management?

**Ans.**Configuration management is used to manage the configuration of systems and the services that they provide entirely through code. This is a repetitive and consistent process that is achieved through –

* Intuitive command-line interface
* A lightweight and easily readable domain-specific language (DSL)
* Comprehensive REST-based API

### Q35. What are the features of Amazon cloud search?

**Ans.**Amazon cloud search features:

* AutoComplete advice
* Boolean Searches
* Entire text search
* Faceting term boosting
* Highlighting
* Prefix Searches
* Range searches

### Q36.  How do you access the data on EBS in AWS?

**Ans.**Data cannot be accessible on EBS directly by a graphical interface in AWS. This process includes assigning the EBS volume to an EC2 instance. Here, when the volume is connected to any of the instances either it can be Windows or Unix, you can write or read on it. First, you can take a screenshot from the volumes with data and build unique volumes with the help of screenshots. Here, each EBS volume can be attached to only a single instance.

### Q37. What is the difference between Amazon RDS, Redshift, and Dynamo DB?

**Ans.**Differentiate between Amazon RDS, Redshift, and Dynamo DB:

|  |  |  |  |
| --- | --- | --- | --- |
| **Features** | **Amazon RDS** | **Redshift** | **Dynamo DB** |
| **Primary Usage Feature** | Conventional Databases | Datawarehouse | Database for dynamically modified data |
| **Database Engine** | MySQL, Oracle DB, SQL Server, Amazon Aurora, Postgre SQL | Redshift | NoSQL |
| **Computing Resources** | Instances with 64 vCPU and 244 GB RAM | Nodes with vCPU and 244 GB RAM | Not specified, SaaS-Software as a Service. |
| **Multi A-Z Replication** | Additional Service | Manual | In-built |
| **Maintenance Window** | 30 minutes every week. | 30 minutes every week. | No impact |

### Q38. If you hold half of the workload on the public cloud whereas the different half is on local storage, in such case what type of architecture can be used?

**Ans.** In such cases, the hybrid cloud architecture can be used.

### Q39. Mention the possible connection issues you encounter when connecting to an EC2 instance?

**Ans.**Following are the possible connection issues you encounter when connecting to an EC2 instance:

* Server refused key
* Connection timed out
* Host key not found, permission denied.
* Unprotected private key file
* No supported authentication method is available

### Q40. What are lifecycle hooks in AWS autoscaling?

**Ans.**Lifecycle hooks can be added to the autoscaling group. It enables you to perform custom actions by pausing instances where the autoscaling group terminates and launches them. Every auto-scaling group consists of multiple lifecycle hooks.

### Q41. What is a Hypervisor?

**Ans.**A Hypervisor is a type of software used to create and run virtual machines. It integrates physical hardware resources into a platform which are distributed virtually to each user. Hypervisor includes Oracle Virtual Box, Oracle VM for x86, VMware Fusion, VMware Workstation, and Solaris Zones.

### Q42. Explain the use of Route Table.

**Ans.** Route Table is used to control the network traffic where each subnetwork of VPC is associated with a routing table. Route table consists of huge information, whereas connecting multiple subnetworks to a routing table is also feasible.

### Q43. What is the use of Connection Draining?

**Ans.** Connection Draining is a process used to support load balancer.  It keeps tracking all of the instances if any instance fails connection draining drag all the traffic from that specific failed instance and re-route the traffic to the active instances.

### Q44. Explain the role of AWS CloudTrail?

**Ans.**AWS CloudTrail is a service designed for monitoring and auditing actions of API calls. With AWS CloudTrail, the user can monitor and retain account activity connected with actions covering the AWS infrastructure.

### Q45. Explain the use of Amazon Transfer Acceleration Service?

**Ans.** Amazon Transfer Acceleration Service is used to boost your data transfer with the help of advanced network paths. It also transfers files fast and secures between your client and an S3 bucket.

### Q46. How to update AMI tools at the Boot-Time on Linux?

**Ans.** To update AMI tools at the Boot-Time on Linux, you will have to do the following:

* # Update to Amazon EC2 AMI tools
* echo ” + Updating EC2 AMI tools”
* yum update -y aws-amitools-ec2
* echo ” + Updated EC2 AMI tools”

### Q47. How does Encryption is done in S3?

**Ans.**Encryption is done in S3 by using:

* In Transit: SSL/TLS
* At Rest
* Server-Side in Encryption
* S3 Managed Keys – SSE-S3
* AWS Key Management Service, Managed of Keys – SSE-KMS
* 6. Server-Side Encryption with Customer Provided Keys – SSE-C
* Client-Side Encryptions

### Q48. Explain Amazon Route 53?

**Ans.**Amazon Route 53 is defined as a scalable and highly available Domain Name System (DNS). It is created for the benefit of developers and companies to route end users to internet applications by translating names which is the most reliable and cost-effective process.

### Q49. What are the pricing models for EC2 instances?

**Ans.** Following are the different pricing models for EC2 instances:

* Dedicated
* Reserved
* On-demand
* Scheduled
* Spot

## Q50. What are the parameters for S3 pricing?

**Ans.** Following are the parameters for S3 pricing:

* Transfer acceleration
* Number of requests you make
* Storage management
* Data transfer
* Storage used

### Q51. What are the best security practices for Amazon EC2?

**Ans.**Below are the steps to follow for secure Amazon EC2 best practices:

* Using AWS identity and access management to manage access to the AWS resource.
* Exclude access by initializing trusted hosts or networks to access ports on our instance.
* Evaluate the rules in your security groups.
* Stop passport login, for instance, opened from your AMI

### Q52. How do you add a current instance to a new Autoscaling group?

**Ans.**Follow the steps to know how you can add an existing instance to a new auto-scaling group:

* Launch EC2 console
* Under instances select your instance
* Choose the action, and instance setting and attach it to the auto-scaling group
* Select a new auto-scaling group
* Comply with this group to the instance
* If needed edit the instance
* In the end, you can add the instance to a new auto-scaling group successfully.

### Q53. Name the different types of instances.

**Ans.**Following are the different types of instances:

* Memory-optimized
* Accelerated computing
* Computer-optimized
* General-purpose
* Storage optimize

### Q54. Mention the different layers of cloud architecture.

**Ans.** Following are the different types of layers in cloud architecture:

* Node controller
* Cloud controller
* Cluster controller
* Storage controller

### Q55. What are the edge locations?

**Ans.** An edge location is defined as the place where the content is used to be cached. If a user finds to access some content, then the given content will be searched in the edge location. If it is not available, then the content will be accessible from the origin location, and a copy will be stored.

### Q56. What are NAT gateways?

**Ans.** NAT(Network Address Translation) is used to enable instances in a private subnet that helps to connect to the internet but avoids the internet from starting a connection with those instances.

### Q57. Name the database types in RDS?

**Ans.** Following are the types of databases in RDS:

* MYSQL server
* Postgresql
* SQL server
* Aurora
* Oracle
* MariaDB

### Q58. What are EBS Volumes?

**Ans.** Elastic Block Store(EBS) is a block-level storage device, wherein each block acts as a separate hard drive. These volumes are used with EC2 instances, and each EBS volume can be attached to only one EC2 instance.

### Q59. Name the types of backups in the RDS database.

**Ans.** Following are two types of backups in the RDS database:

* Automated backups
* Manual backups

### Q60. Mention the benefits of auto-scaling.

**Ans.** Following are some of the benefits of auto-scaling:

* Better availability
* Enhanced fault tolerance
* Better cost management

### Q61. How can Amazon SQS be used?

**Ans.** Amazon SQS (Simple Queue Service) is a message passing mechanism used to make a connection between different connectors that are connected with each other. It is also used as an interlink between multiple components of Amazon.

### Q62. Name some examples of the DB engine that is used in AWS RDS.

**Ans.** Below are the few examples of DB engine that is used in AWS RDS:

* MS-SQL DB
* MYSQL DB
* Maria DB
* Oracle DB
* Postgre DB

### Q63. Is it possible to minimize an EBS volume?

**Ans.** No, it is not possible to minimize volume, we can only increase it.

### Q64. Is there any possible way to restore the deleted S3 bucket?

**Ans.** We can only restore it when versioning is enabled.

### Q65. Name the types of AMI provided by AWS?

**Ans.** Following are two types of AMI provided by AWS:

* Instance Store backed
* EBS Backed

### Q66. What is auto-scaling?

**Ans.**Auto-scaling is a feature of AWS which allows you to configure and automatically provision and spin-up new instances without the need for your intervention.

### Q67. What is SimpleDB?

**Ans.**SimpleDB is a structured data store that supports indexing and data queries to both EC2 and S3.

### Q68. What is an AMI?

**Ans.**AMI (Amazon Machine Image) is a snapshot of the root filesystem.

### Q69. What is the type of architecture, where half of the workload is on the public load while at the same time half of it is on the local storage?

**Ans.**Hybrid cloud architecture.

### Q70. Can I vertically scale an Amazon instance? How do you do it?

**Ans.**Yes. Spinup a new larger instance than the one you are running, then pause that instance to detach the root EBS volume from this server and discard. After that, stop the live instance and detach its root volume. Note the unique device ID and attach that root volume to the new server, and start again. This way you will have scaled vertically.

### Q71. How can you send a request to Amazon S3?

**Ans.** You can send requests by using the REST API or the AWS SDK wrapper libraries that wrap the underlying Amazon S3 REST API.

### Q72. How many buckets can be created in AWS by default?

**Ans.**By default, 100 buckets can be created in AWS by default.

### Q73. Should encryption be used for S3?

**Ans.**Encryption should be considered for sensitive data as S3 is a proprietary technology.

### Q74. What are the various AMI design options?

**Ans.**Fully Baked AMI, JeOS (just enough operating system) AMI, and Hybrid AMI.

### Q75. **What is SnowBall?**

**Ans.**Snowball is a petabyte-scale data transport application that enables you to transfer terabytes of data inside and outside of the AWS environment.

Q76. **Which query functionality is supported by DynamoDB?**

**Ans.**DynamoDB supports GET/PUT operations. It uses a user-defined primary key and offers flexible querying using global and local secondary indexes.

### **Q77. What are the different storage classes in Amazon S3?**

**Ans.** Amazon S3 has the following four different classes of storage with different levels of availability, durability and performance requirements.  
1. Amazon S3 Standard  
2. Amazon S3 Standard Infrequent Access(IA)  
3. Amazon S3 One Zone-Infrequent Access  
4. Amazon Glacier

### **Q78. Define Amazon S3 Glacier?**

**Ans.** Amazon S3 Glacier is a web service that is meant for online file storage including data archiving and backup. It is meant for long-term data storage which is infrequently accessed with the acceptable latency times of 3-5 hours. Its underlying technology is unknown.

### **Q79. Define Amazon Elastic File System?**

**Ans.** Amazon Elastic File System is a cloud storage service offered by AWS with the objective to provide elastic, scalable, and encrypted file storage. It can grow or shrink based on the addition and removal of Amazon EFS.

### **Q80. Define logging in CloudFront?**

**Ans.** CloudFront allows users the ability to either enable or disable logging. These logs contain information including date, time, edge location and protocols that are used. If logging is enabled, these logs are stored on Amazon S3 buckets which can be analyzed. Logs can also be analyzed using third-party tools such as Cloudlytics, Qloudstat, AWStats as well as S3Stat.

### **Q81. What is CloudWatch?**

**Ans**. Amazon CloudWatch is a metrics repository. It allows you to monitor the complete stack, including applications, infrastructure, and services. You can also use alarms, logs, and events data to take the automated actions and reduce mean time to resolution (MTTR).

### **Q82. What are Key-Pairs in AWS?**

**Ans**. A key pair consists of a public key and a private key and is the secure login information for your virtual machines. Amazon EC2 stores the public key and you can have the private key.

### **Q83. How many Subnets can you have per VPC?**

**Ans**. There are 200 Subnets per VPC.

#### **1. What do you mean by AWS?**

AWS provides Cloud Computing solutions and APIs to firms and individuals around the globe. Besides cloud services, AWS also offers other facilities for organizations/individuals like computation power, database services, content delivery, etc. Organizations have to pay for the AWS services used on a metered basis.

An organization can build a distributed computing environment with the help of AWS tools and services. Launched in 2002 (web services) and 2006 (Cloud Computing), AWS is widely used in India by many organizations, businesses, and individuals. Some government organizations in India also use it.

There are many Cloud Computing platforms in the market. But AWS’s flexibility and cost-effective cloud computing solutions set it apart from the other platforms. Currently, there are more than 200 services and products offered by AWS in various fields like IoT (Internet of Things), mobile development, data analytics, networking, etc.

Many of their services are not directly accessible to the end-users as AWS offers developer APIs for it. The web services provided by AWS are also widely used over HTTP for business purposes.

#### **2. What is Amazon Elastic Compute Cloud (EC2), and also explain its features?**

EC2 is part of the AWS services and enables users to rent virtual computers and run their programs. One can deploy applications on a large scale with the help of EC2. EC2 helps users to boot an AMI (Amazon Machine Language) to access a virtual machine. Amazon’s configuration of a virtual machine via AMI is called an ‘instance’. You can launch, create, and stop many server instances with the help of EC2 for your business/organization. You will have to pay per second for the number of active servers while using EC2 for your business/firm.

Besides offering various virtual operating systems, EC2 also provides persistent storage and elastic IP addresses. Amazon CloudWatch is another service widely used by EC2 customers as it helps them monitor resource utilization. You can monitor the usage of CPU, network, etc., of RDS database replicas using Amazon CloudWatch. The auto-scaling feature of EC2 helps in adapting according to the traffic. For example, if someone uses EC2 for their e-commerce site, it will automatically scale up if the traffic on the site increases.

#### **3. Discuss the pricing models for the Amazon EC2 instance**

This is one of the important AWS interview questions for experienced posts. Read on to know more AWS interview questions and answers for experienced/senior posts.

There are four types of pricing models for Amazon EC2 instances that are as follows:

* **On-demand instance –** On-demand pricing or pay-as-you-go model allows you to pay only for the resources used till now. Depending on the instances, you will have to pay by second/hour for the resources. The on-demand pricing model is good if the work hours are short and unpredictable as they do not require any upfront payment.
* **Reserved instance –**It is the best model to use if you have a prerequisite for your upcoming requirements. Firms calculate their future EC2 requirements and pay upfront to get a discount of up to 75%. Reserved instances will save computing capacity for you, and you can use them wherever required.
* **Spot Instance –** If some extra amount of computing capacity is required immediately, one can opt for spot instances at up to a 90% discount. The unused computing capacity is sold at a heavily discounted rate via the spot instance pricing model.
* **Dedicated hosts –** A customer can reserve a physical EC2 server by opting for the dedicated hosts pricing model.

#### **4. What is Amazon S3? Elaborate.**

S3 (Simple Storage Service) provides scalable object storage space to firms and IT professionals. It is one of the earliest services introduced by AWS. The easy-to-use web services interface of S3 allows users to store and retrieve data from remote locations. S3 contains buckets to store files/data.

Users create a bucket in the S3 and name it as if it is a universal namespace. An HTTP 200 code is received on successful uploading of a file to the assigned S3 bucket. A unique name is given to each bucket to generate the DNS address (unique).

You can also download the data from a bucket in S3 and permit other users to download it. The authentication mechanism of S3 helps in securing the data from any possible breaches.

#### **5. Your organization has decided to transfer its business processes**

To the public cloud. However, they want some of their information/data to be accessed only by the management team. The rest of the resources will be shared among the employees of the firm. You must suggest a suitable cloud architecture for your firm and the reason of choice.

This question is one of the critical AWS interview questions. Scenario-based AWS interview questions highlight the candidate’s experimental knowledge and industry approach.

I will suggest hybrid cloud architecture for my organization. Hybrid cloud architecture has the perfect blend of private and public clouds. One can use the public cloud in the hybrid architecture for the shared resources in my firm. The confidential resources can only be shared with the management team using a private cloud.

We can enjoy the services of both private and public clouds by installing a hybrid cloud architecture in our firm. Depending on the data security requirements, a hybrid cloud allows data to be accessed at different levels in an organization/firm. It will help our firm in cutting costs in the long run.

#### **6. Explain various types of cloud service models in brief.**

There are three types of cloud services models that are:

* **IaaS –** Infrastructure as a Service (IaaS) allows users to access virtual computing resources with the help of the internet. A service provider hosts servers, storage, hardware, etc., on behalf of the users via IaaS. IaaS platforms offer high scalability and can adapt according to the workload. IaaS providers also manage tasks of their users like system maintenance, backup, resilience, etc.
* **PaaS –**Platform as a Service (PaaS) helps service providers to deliver software and hardware tools to their users. It is especially used for the application development process, and one can receive applications from the service provider via the internet using PaaS. Users do not have to own in-house software/hardware for application development/testing as they can do it with the help of PaaS.
* **SaaS –**Software as a Service (SaaS) is a widely sold model by service providers for software distribution. On-demand computing software can be delivered using SaaS to the users/customers. The SaaS model is preferred as it is easy to administer and manage patches.

#### **7. Describe RTO & RPO from AWS perspective?**

RTO (Recovery Time Objective) refers to the maximum waiting time for AWS services/operations resumption during an outage/disaster. Due to unexpected failure, firms have to wait for the recovery process, and the maximum waiting time for an organization is defined as the RTO. When an organization starts using AWS, they have to set its RTO, which can also be called a metric. It defines the time firms can wait during disaster recovery of applications and business processes on AWS. Organizations calculate their RTO as part of their BIA (Business Impact Analysis).

Like RTO, RPO (Recovery Point Objective) is also a business metric calculated by a business as part of its BIA. RPO defines the amount of data a firm can afford to lose during an outage or disaster. It is measured in a particular time frame within the recovery period. RPO also defines the frequency of data backup in a firm/organization. For example, if a firm uses AWS services and its RPO is 3 hours, then it implies that all its data/disk volumes will be backed up every three hours.

#### **8. Explain the auto-scaling feature of EC2 along with its benefits.**

The auto-scaling feature in AWS EC2 automatically scales up the computing capacity according to the need. It helps in maintaining a steady performance of business processes. Auto Scaling can help scale multiple AWS resources within a few minutes. Besides EC2, one can also choose to automatically scale other AWS resources and tools as and when needed. The benefits of the EC2 auto-scaling feature are as follows:

* The auto-scaling feature of AWS EC2 is easy to set up. The utilization levels of various resources can be found under the same interface. You do not have to move to different consoles to check the utilization level of multiple resources.
* The auto-scaling feature is innovative and automates the scaling processes. It also monitors the response of various resources to changes and scales them automatically. Besides adding computing capacity, the auto-scaling feature also removes/lessens the computing capacity if needed.
* The auto-scaling feature optimizes the application’s performance even if the workload is unpredictable. The optimum performance level of an application is maintained with the help of auto-scaling.

#### **9. What are S3 storage classes, and explain various types of S3 storage classes?**

S3 storage classes are used for data integrity and assisting concurrent data loss. Whatever object you store in S3 will be associated with a respective storage class. It also maintains the object lifecycle, which helps in automatic migration and thus saves cost. The four types of S3 storage classes are as follows:

* **S3 Standard –** The data is duplicated and stored across multiple devices in various facilities via the S3 Standard storage class. A loss of a maximum of 2 facilities simultaneously can be coped up via the S3 standard. Its low latency and high throughput provide increased durability and availability.
* **S3 Standard IA –** ‘S3 Standard Infrequently Accessed’ is used for conditions when data is not accessed regularly, but it should be fast when there is a need to access data. Like S3 Standard, it can also sustain the loss of data at a maximum of 2 facilities concurrently.
* **S3 One Zone Infrequent Access –**Many of its features are similar to that of S3 Standard IA. The primary difference between S3, one zone infrequent access, and the rest of the storage class is that its availability is low, i.e., 99.5%. The availability of S3 standard and standard IA is 99.99%.
* **S3 Glacier –** S3 glacier provides the cheapest storage class as compared to other storage classes. One can only use the data stored in the S3 glacier for the archive.

#### **10. Suppose your firm is hosting an application on AWS**

That helps users render images and perform general computation tasks. Your firm’s management team has suggested using an application load balancer for routing the incoming traffic on the hosted application. Explain how an application load balancer is a good choice for routing incoming traffic.

This question is an example of scenario-based AWS interview questions. Besides having theoretical knowledge, a candidate should also know about the industry uses and working of various AWS services.

The user’s requests regarding image rendering can only be directed to the image rendering servers, while the general computing users can be directed to the computing servers. This will help balance the load on various servers and access them when needed.

#### **11. What is a policy in AWS? Explain various types of AWS policies in brief.**

A policy is an object in AWS that is associated with a respective resource and defines whether the user request is to be granted or not. The six different types of policies in AWS are as follows:

* **Identity-based policies –** These policies are concerned with an identity user, multiple users, or any particular role. Identity-based policies store permissions in the JSON format. They are also further divided into managed and inline policies.
* **Resource-based policies –**The policies that are concerned with resources in AWS are called resource-based policies. An example of a resource in AWS is the S3 bucket.
* **Permissions boundaries –** Permissions boundaries define the maximum number of permissions that can be granted to an object/entity by identity-based policies.
* **SCP –**SCP (Service Control Policies) are also stored in JSON format and define the maximum number of permissions concerning a firm/organization.
* **ACL –** ACL (Access Control Lists) defines the principles in some other AWS account that can access the resources. It is also the only AWS policy that is not stored in JSON format.
* **Session policies –** Session policies limit the number of permissions granted by a user’s identity-based policies.

#### **12. Explain in detail about AWS VPC.**

Amazon VPC (Virtual Private Cloud) lets a user launch AWS resources into a virtual network defined by the user only. Since the user defines the virtual network, various aspects of the virtual network can be controlled by the user, like subnet creation, IP address, etc.

Firms can install a virtual network within their organization and use all the AWS benefits for that network. Users can also create a routing table for their virtual network using VPC. A routing table is a set of rules that defines the direction of the incoming traffic.

The communication between your virtual network and the internet can also be established using the internet gateway offered by AWS VPC. One can access the VPC offered by Amazon via various interfaces that are AWS management console, AWS CLI (Command Line Interface), AWS SDKs, and Query API. Users can pay for additional VPC components if required like NAT gateway, traffic mirroring, private link, etc.

#### **13. You have recently assigned various EC2 instances for your business website across different availability zones.**

Since your website performs a large number of reading/writing operations per minute, you have also used a Multi-AZ RDS DB instance (extra-large). It was going smoothly as per your plans until you discovered read contention on RDS MySQL. How are you going to solve this issue to enhance the performance of your website?

This question is one of the prominent technical AWS interview questions asked. Besides knowing about the cloud deployment services of AWS, candidates should also focus on the database services offered by Amazon.

I will install/deploy ElastiCache in the various availability zones of EC2 instances. Deploying ElastiCache in the memory cache of different availability zones will create a cached version of my website in various zones. RDS MySQL read replica will then be added to each availability zone for faster performance of the website. Since the ‘RDS MySQL read replica’ is added to each availability zone, it will not further load on the RDS MySQL instance, thus solving the read contention issue. Users can also access my website quickly in various availability zones as a cached version is created in each zone.

#### **14. Your firm wants to connect the data center of its organization to the Amazon cloud environment**

For faster accessibility and performance. What course of action will you suggest for the stated scenario?

AWS data engineer interview questions can be asked if a candidate is applying for data scientist/engineer. The data center of my firm can be connected to the Amazon cloud environment with the help of VPC (Virtual Private Cloud). I suggest my firm establish a virtual private network and connect VPC and the data center. My firm can then launch AWS resources in the virtual private network using VPC. A virtual private network will establish a secure connection between the firm’s data center and the AWS global network. Adding cloud services to our organization will help us do more work in less time while successfully slashing costs in the long run.

I would also suggest creating multiple backups of the company data before moving it successfully to the cloud. AWS offers affordable backup plans, and one can also automate backups after a fixed interval.

#### **15. Explain various types of elastic load balancers in AWS.**

Elastic load balancing in AWS supports three different types of load balancers. The load balancers are used to route the incoming traffic in AWS. The three types of load balancers in AWS are as follows:

* **Application load balancer –** The application load balancer is concerned with the routing decisions made at the application layer. It does path-based routing at the HTTP/HTTPS (layer 7). It also helps in routing requests to various container instances. Using the application load balancer, you can route a request to more than one port in the container instances.
* **Network load balancer –** The network load balancer is concerned with routing decisions made at the transport layer (SSL/TCP). It uses a flow hash routing algorithm to determine the target on the port from the group of targets. Once the target is selected, a TCP connection is established with the chosen target based on the known listener configuration.
* **Classic load balancer –** A classic load balancer can decide on either the application or transport layer. One can map a load balancer port to only one container instance (fixed mapping) via the classic load balancer.

#### **16. What do you know about NAT gateways in AWS?**

NAT (Network Address Translation) is an AWS service that helps in connecting an EC2 instance to the internet. The EC2 instance used via NAT should be in a private subnet. The internet and NAT can also help connect an EC2 instance to other AWS services.

Since we are using the EC2 instance in a private subnet, connecting to the internet via any other means would make it public. NAT helps in retaining the private subnet while establishing a connection between the EC2 instance and the internet. Users can create NAT gateways or NAT instances for establishing a connection between EC2 instances and internet/AWS services.

NAT instances are single EC2 instances, while NAT gateways can be used across various availability zones. If you are creating a NAT instance, it will support a fixed amount of traffic decided by the instance’s size.

#### **17. Explain various AWS RDS database types in brief.**

Various types of AWS RDS database types are as follows:

* **Amazon Aurora –** Aurora database is strictly developed in AWS RDS, which means it cannot run on any local device with an AWS infrastructure. This relational database is preferred for its enhanced availability and speed.
* **PostgreSQL –** PostgreSQL is a relational database that is developed especially for start-ups and AWS developers. This easy-to-use and open-source database help users in scaling deployments in the cloud environment. Not only the PostgreSQL deployments are fast, but they are also cost-effective (economical).
* **MySQL –** It is also an open-source database used for its high scalability during deployments in the cloud.
* **MariaDB –** MariaDB is an open-source database used to deploy scalable servers in the cloud environment. You can deploy MariaDB servers in the cloud environment within a few minutes. The scalable MariaDB server deployment is also cost-effective. MariaDB is also preferred for its management of administrative jobs like scaling, replication, software patching, etc.
* **Oracle –** Oracle is a relational database in AWS RDS that can also scale the respective deployments in the cloud. Just like MariaDB, it also performs the management of various administrative tasks.
* **SQL Server –**Is another relational database that can also manage administrative tasks like scaling, backup, replication, etc. Users can deploy multiple versions of SQL servers in the cloud within minutes. The SQL server deployment is also cost-effective in AWS.

#### **18. What do you know about Amazon Redshift?**

Redshift is a data warehouse service offered by Amazon that is deployed in the cloud. It is fast and highly scalable as compared to other data warehouses in the cloud. On average, Redshift provides around ten times more performance & speed than different data warehouses in the cloud. It uses new-age technologies like machine learning, columnar storage, etc., that justify its high stability and performance. You can scale up to petabytes and terabytes using AWS Redshift.

Redshift uses OLAP as its analytics processing system and comprises two nodes for storing data/information. Its advanced compression and parallel processing offer high speed during AWS operations in the cloud. One can easily add new nodes in the warehouse using AWS Redshift. Developers can answer a query faster and can also solve complex problems using Redshift.

#### **19. What do you know about AMI?**

AMI (Amazon Machine Image) is used to create a virtual machine within the EC2 environment. The services that are delivered via EC2 are deployed with the help of AMI only. The main part of AMI is its read-only filesystem image that also comprises an operating system. AMI also consists of launch permission that decides which AWS account is permitted to launch instances using AMI. The volumes are attached to an instance, while the launching process is decided by block device mapping in AMI. The AMI consists of three different types of images.

A Public image is an AMI that any user/client can use, while users can also opt for a ‘Paid’ AMI. You can also use a ‘Shared’ AMI that provides more flexibility to the developer. Users can access A shared AMI, which is allowed as per the developer’s orders.

#### **20. Explain horizontal and vertical scaling in AWS?**

This question is among the AWS basic interview questions asked to a candidate. It is also one of the important AWS interview questions for freshers. Read on to know the answer to this AWS interview question.

When RDS/EC2 servers alter the instance size for scaling purposes, it is called vertical scaling. A larger instance size is picked for scaling up in vertical scaling, while a smaller instance size is picked for scaling down. The size of the instance is altered on-demand via vertical scaling in AWS.

Unlike vertical scaling, an instance’s size is altered per the requirements of horizontal scaling. A system’s number of nodes/instances is changed without altering their size via horizontal scaling. The horizontal auto-scaling is based on the number of connections between an instance and the integrated ELB (Elastic Load Balancer).

#### **21. What are the main differences between AWS and OpenStack?**

Both AWS and OpenStack are indulged in providing cloud computing services to their users. AWS is owned and distributed by Amazon, whereas OpenStack is an open-source cloud computing platform. AWS offers various cloud computing services and IaaS, PaaS, etc., whereas OpenStack is an IaaS cloud computing platform. You can use OpenStack for free as it is open source, but you have to pay for AWS services as you use it.

Another significant difference between AWS and OpenStack is in terms of performing repeatable operations. While AWS performs repeatable functions via templates, OpenStack does it via text files. OpenStack is good for understanding and learning cloud computing, but AWS is better and equipped for businesses. AWS also offers business development tools that OpenStack does not offer.

#### **22. What do you know about AWS CloudTrail?**

People using an AWS account can audit it using the AWS CloudTrail. It also helps in ensuring compliance and governance of the AWS account. As soon as an AWS account is activated, CloudTrail also starts working and records every AWS activity as an event. One can visit the CloudTrail console anytime and can view recent events/actions. All the efforts by a user or a role are recorded in the CloudTrail. The actions taken by various AWS services are also recorded in CloudTrail.

With CloudTrail, you will have enhanced visibility of your AWS account and the associated actions. In an AWS infrastructure in any organization, you can quickly get to know any particular activity and gain control over the AWS infrastructure.

#### **23. What do you know about AWS Lambda?**

AWS Lambda is a computing platform provided as a part of the AWS services that do not need servers to perform activities. Any code compiled on AWS Lambda will run in response to events, and it identifies the resources required for code compilation automatically. AWS Lambda supports various coding languages like Node.js, Python, Java, Ruby, etc. With AWS Lambda, you will pay only for the time your code is being executed. You will not be charged any amount when you are not using any computer time.

Besides running your code in response to events, you can also run your code in response to HTTP requests via AWS Lambda. AWS Lambda will automatically manage various resources like memory, network, CPU, etc., while you run a code on it.

#### **24. Your firm has been using AWS services for a year now.**

You are a senior developer in your company and have been asked to analyze your firm’s amount for AWS services. How will you analyze the cost spent on AWS services to ensure that you are not paying more than you use?

Cost management can be an important topic of discussion in AWS interview questions. Also, this question is an example of AWS scenario-based interview questions.

I will refer to the ‘Top Services Table,’ which is visible in the cost management console of AWS. It will let me know about the top five services being used by our firm and how much money we are spending on those services. I will also take the aid of cost explorer services offered by AWS that will let me analyze the last 13 months’ usage and associated costs.

One can use the cost allocation tags to identify the AWS resource that has cost more than other services in any particular month.

#### **25. You have to upload a file of around 120 megabytes in Amazon S3. How will you approach the uploading of this file?**

A file that has a size of more than 100 megabytes can be uploaded in Amazon S3 using the multipart upload utility offered by AWS. Multipart upload utility will allow me to upload the 120 megabytes file into multiple parts. All the parts of the large file will be uploaded individually using the multipart upload utility. Once all the original files are uploaded, one can merge to get the original file with 120 megabytes.

Using a multipart upload utility will help me in decreasing the upload time significantly. AWS S3 commands can be used for multipart uploading and downloading. AWS S3 commands are also capable of automatically performing multipart uploading/downloading after evaluating the file size.

#### **26. Your firm has an application that runs on AWS**

The management decides that they want to inculcate email functionality in their application. How will you approach this scenario as part of your firm’s management team

I recommend using the Amazon SES (Simple Email Service) to integrate email functionality with our AWS-based application. SES can help us set up various types of mail forwarding services like mass mailing, transactional mailing, marketing mailing, etc. SES is a cost-effective solution for integrating email functionality within multiple applications. The scalable SES service is highly secure and can help my firm send emails globally.

#### **27. Explain an AWS service that one can use to protect the AWS infrastructure from DDoS attacks.**

For safeguarding the applications running on AWS from any kind of DDoS (Distributed Denial of Service) attacks, we can use AWS Shield. AWS Shield can automatically identify a DDoS attack and will reduce application downtime and latency. A firm doesn’t have to contact Amazon tech support as all the protective measures can be automated via AWS Shield. All AWS users are subjected to automatic protection against DDoS attacks via AWS Shield Standard. However, for protection against large/organized DDoS attacks, one can use the AWS Shield Advanced services.

AWS Shield Advanced protects AWS-based applications against various sophisticated DDoS attacks on the network and transport layer. It also provides real-time visibility and monitoring at the time of any DDoS attack on the AWS applications.

#### **28. What do you know about Amazon CloudWatch? Explain its benefits in brief.**

Amazon CloudWatch helps monitor the AWS services and resources being used in real-time. CloudWatch uses various metrics that help understand the AWS resources and services being used. Via CloudWatch can also view the metrics related to customized AWS applications as the CloudWatch dashboard is also customizable. By default, CloudWatch displays various metrics associated with AWS services being used. One can customize and choose a set of metrics to be shown by CloudWatch.

One can access CloudWatch services via various means like CloudWatch console, AWS CLI, CloudWatch API, and AWS SDKs. Besides resource utilization, we can also monitor the operational health of AWS services via CloudWatch.

#### **29. Explain the various types of virtualization in AWS in brief.**

There are three types of virtualization in AWS that are as follows:

* **HVM –** HVM (Hardware Virtual Machine) helps fully virtualize hardware where all the virtual hardware machines act as individual units. Once AWS AMI virtualization is done, the virtual machines execute the master boot record to boot themselves. The root block device of the created AWS machine image contains the master boot record executed by virtual machines.
* **PV –**PV (Paravirtualization) is virtualization to a lighter degree as compared to HVM. The guest OS in PV will require some modifications before performing anything. These modifications help users export a scalable and modified hardware version to the virtual machines.
* **PV on HVM –**Paravirtualization on HVM can also be done for increased functionality. Operating systems can get access to storage and network I/O through the host via PV on HVM.

#### **30. For encrypting the AWS data in the US region, a key was created from the company headquarters in Asia. Various users and a substitute AWS account were also added to the key. However, the key was not listed while encrypting an object in S3 in the US. What is the problem which the officials in the US aren’t able to list the key?**

This question is an example of AWS interview questions for freshers. Scenario-based AWS interview questions define the industry-oriented approach of the candidates.

The AWS data that needs to be encrypted should be in the same region where one creates the key. In the given scenario, the data is encrypted in the USA region. But the key was created in the Asia region. It doesn’t matter if you link an external AWS account in another region while the data encryption is to be done in another region.

#### **31. What do you know about the cross-region replication service offered by AWS?**

Cross-region replication is used when one needs to copy data from one bucket to another. The main benefit of cross-region replication is that it allows you to replicate data from one bucket to another while both buckets are in different regions. One can do Asynchronous copying of data across buckets in the same AWS management console via cross-region replication.

The bucket from which the data/object is being copied is called the Source Bucket, while the other is called the Destination Bucket. Versioning should be enabled in both the source and destination buckets for availing of cross-region replication. Once you have uploaded a set of data in the destination bucket, you cannot upload/replicate the same data from the source bucket.

#### **32. Explain what you know about CloudFront CDN.**

CloudFront CDN (Computer Delivery Network) is a group of distributed servers used to deliver web content like webpages, etc. The delivery done by CloudFront CDN is based on the geographic region of the user, webpage origin, and the server being used for content delivery. The origin of all the files that are to be distributed by the CDN needs to be defined. An origin for CDN can be an S3 bucket, an AWS instance, or an elastic load balancer.

Two types of distribution are done by CloudFront CDN, web distribution and RTMP. Web distribution is used for websites, whereas RTMP is used for media streaming. There are around 50 edge locations distributed in various parts of the world. Edge locations are sites where the web content is cached during delivery.

#### **33. What do you know about AWS Web Application Firewall (WSF)?**

AWS WAF is a firewall service that protects web applications from being exploited. They protect web applications against bots that may reduce the applications’ performance or unnecessarily consume resources. Users can control the incoming traffic on their web applications with the help of AWS WAF. Besides bot traffic, we can also prevent various common attacks on the web application via AWS WAF.

Users can create their traffic rule via AWS WAF to restrict any particular traffic pattern affecting the web applications’ performance. AWS WAF offers an API used to define the set of rules for governing the incoming traffic and automate the creation of security rules for web applications.

#### **34. What is the Simple Notification Service offered by AWS?**

Simple Notification Service (SNS) offered by AWS is a means of sending messages from one application to another. It is a cost-effective solution that helps users publish messages from any particular application and forward them to other applications. SNS can also send push notifications to various mobile devices like Apple, Google, Windows phones, etc. One can also send an email/SMS to an HTTP endpoint using AWS SNS.

The best feature of SNS is that multiple types of endpoints can be grouped. SNS also supports various types of endpoints under one topic. For example, one can group Apple and Android recipients using SNS and send messages to all subscribers. SNS stores the messages already published in various availability zones to prevent any type of data loss.

#### **35. Your firm has offices in various parts of the world and is involved in multi-regional deployment on AWS.**

For data persistence, your firm uses MYSQL 5.6. Your firm has recently announced that it needs to regularly collect batch process data from each region and generate regional reports. The reports will then be forwarded to various branch offices. What course of action will you suggest to perform this task in the shortest possible time?

I will suggest creating an RDS instance as a master for managing the firm’s database. For collecting/reading reports from various locations, we can create a read replica of the RDS instance in various regional headquarters. Installing a read replica at multiple locations will help us in reading reports in less time.

#### **36. Your firm’s application is responsible for retrieving data from your subscriber’s/user’s mobile devices every 10 minutes.**

The retrieved data is stored in DynamoDB. The information is extracted into S3 for each user. Once the data is extracted, the application helps in data visualization on the user end. As a senior architect in your firm, you are asked to optimize the backend architecture so that the firm can slash costs. What are your recommendations?

I would recommend using Amazon Elasticache to cache the data stored in DynamoDB. Using Elasticache will reduce the provisioned read throughput without affecting the performance of the system. Using Elasticache will also help our firm slash the cost as it is cheaper than any other provisioned IO.

#### **37. What do you know about Amazon EMR?**

Amazon EMR (Elastic MapReduce) is a web service that is widely used for data processing. Amazon EMR consists of a group of EC2 instances that are known as clusters. Cluster is the central component of Amazon EMR with a group of EC2 instances. A single EC2 instance in a cluster is called a node, and each node has a specific role attached to it. Node type defines the particular role connected to any node in a cluster.

Amazon EMR also consists of a master node responsible for defining the roles of other nodes in a cluster. The master node is also responsible for monitoring various nodes’ performance and overall health.

#### **38. What do you know about the S3 transfer acceleration service offered by Amazon?**

S3 transfer acceleration is used to make uploads to S3 quickly. S3 transfer acceleration does not upload directly to an S3 bucket as it uploads the file to the nearest edge location. A distinct URL is used by S3 transfer acceleration to upload the file to the nearest edge location and then transfer it to the required S3 bucket.

The CloudFront edge network is utilized by S3 transfer acceleration to make uploads quickly and optimizes the transfer process. The edge location to which the file is uploaded will automatically transfer the file to the S3 bucket in less time. The data between clients and S3 buckets can be securely transferred using Amazon’s S3 transfer acceleration service.

#### **39. Describe the core services of Amazon Kinesis in brief.**

Kinesis is a data streaming platform offered by Amazon. There are three core services of Amazon kinesis that are as follows:

* **Kinesis Streams –**While data streaming, the produced data is stored in shards containing the storage sections of Kinesis Streams. The consumers can then access the stored data in shards and turn it into useful data. Once the customers/consumers are done with the data stored in shards, it is moved to other AWS storage like DynamoDB, S3, etc.
* **Kinesis Firehose –**Kinesis Firehose is used to deliver streaming data to various AWS destinations like S3, Redshift, Elasticsearch, etc.
* **Kinesis Analytics –**One can analyze the streaming data, and rich insights can be collected using Kinesis Analytics. You can run SQL queries on the data stored within Kinesis Firehose via Kinesis Analytics.

#### **40. Explain some of the advantages of using AWS RDS.**

AWS interview questions are likely to be framed around AWS RDS as it is one of the world’s most widely used database services.

The benefits of using AWS RDS are as follows:

* While using AWS RDS, you can individually control/tweak various database services like CPU, storage, etc..
* AWS RDS helps enable automatic backup and update your database servers to the latest configuration.
* AWS RDS also creates a backup instance that can be used at the time of failover and prevents data loss.
* You can distribute the read traffic by creating RDS read replicas from the source database.

#### **41. State the differences between AWS CloudFormation and AWS Elastic Beanstalk.**

AWS CloudFormation is responsible for provisioning all the resources that are available within a cloud environment. It is also used to describe all the infrastructural resources in a cloud environment. Contrary to AWS CloudFormation, AWS Elastic Beanstalk provides a suitable environment to deploy and operate applications within the cloud.

The infrastructural need of applications running in the cloud is fulfilled by AWS CloudFormation, whereas AWS Elastic Beanstalk manages the lifecycle of applications deployed in the cloud. You can fulfill various infrastructural needs of various types of applications deployed in the cloud via AWS CloudFormation like enterprise applications, legacy applications, etc. AWS Elastic Beanstalk is not concerned with the types of applications as it is combined with the developer tolls to govern the lifecycle of deployed applications.

#### **42. Explain the working of AWS config with AWS CloudTrail.**

AWS CloudTrail is widely used for recording the user API activity associated with a particular AWS account. One can monitor various API activities using AWS CloudTrail, like response element, caller identity, call duration, etc. When you use AWS Config with CloudTrail, you know the configuration details associated with the AWS resources used. If something is wrong with your AWS resources, both AWS config and CloudTrail can help you identify them.

AWS config is more concerned with the changes that have been made to the AWS resources, whereas CloudTrail is concerned with the user that has made the changes. You can use both of them simultaneously for enhanced governance, compliance, and security policies.

#### **43. What to do so I never lose my connectivity even if my AWS Direct Connect fails?**

One needs to configure a backup AWS Direct Connect for situations where the original one fails. Configuring a backup will help you shift connectivity to the second one if the original one fails. You can do BFD (Bidirectional Forwarding Detection) to detect failure conditions faster and generate backup accordingly.

One can also configure backup on an IPsec VPN connection so that the traffic can be automatically backed up. While using an IPsec VPN connection backup, all the traffic will be directed to the internet in case of a failure. If you haven’t ensured any of these backup methods, you will lose your connectivity whenever a failure occurs.

#### **44. Suppose a request for any particular content is made in CloudFront, but the content is not present in the nearest edge location. What will happen in this scenario?**

CloudFront always caches data to the nearest edge location before delivering the data to various users. If one requests a particular content via CloudFront and the content is not stored in the nearest edge location, it will be delivered from the original server. The user’s request will not go in vain as the content will be delivered. However, we may increase the latency as the content is being delivered from the original server and not from the nearest edge location.

In this case, a cached version of the data will also be stored in the nearest edge location. So we can reduce the latency if a request for the same data is made again. Only for the first time will it be delivered from the original server.

It is another example of ‘AWS interview questions that are scenario-based. It is also a type of AWS cloud architect interview question.

Yes, one should launch the EC2 instances in a VPC. VPC is the best way of connecting the EC2 instances to our firm’s data center. Once each instance is connected to the VPC, we can easily assign a predetermined IP address to each EC2 instance. It will help access the public cloud resources like they are stored in a private network.

#### **45. What do you understand by volume & snapshot in AWS**

In AWS, volume is block-level storage that we can assign to an EC2 instance. We can compare this to a hard disk from where the user can read or write the data. You pay for the data used by volumes as it is a way of measuring the storage section.

A snapshot is formed when we have a volume as it is a single point in time view of a volume. A snapshot is formed when the data stored in a volume is copied to another location at a single point in time.

#### **46. If a failure during event processing via AWS Lambda occurs, how will it be handled?**

If event processing via AWS Lambda is done in synchronous mode, then an exception will be displayed on the application used to call the function during failure. However, if an event is being processed in asynchronous mode, then a function will be called a minimum of three times in case of failure.

#### **47. What do you know about Amazon WorkSpaces?**

Amazon WorkSpaces provides virtual and cloud-based desktops to work on, also known as workspaces. You do not need to deploy physical hardware and software by using Amazon WorkSpaces. You can install Microsoft Windows or Linux virtual desktops with the aid of Amazon WorkSpaces. Users can access virtual desktops via various devices or web browsers.

WorkSpaces allows users to choose from a wide range of available software/hardware configurations. It also provides a persistent desktop feature so that you can start working from where you had left off. Amazon also provides a WAM (WorkSpaces Application Manager) for deploying and managing applications on virtual desktops.

#### **48. What do you know about AWS IAM?**

The key to cracking an AWS interview is to know about Amazon’s wide range of services. This question is a type of basic AWS interview question asked.

AWS IAM (Identity and Access Management) allows users to access AWS resources/services securely. One can create groups of users using AWS IAM and can assign them a customized set of permissions. Access to AWS resources can be allowed to any particular group/user via AWS IAM. One can access the IAM features under the ‘AWS Management Console’ section of your AWS account.

**49. Mention the differences between security groups and a network access control list.**

Security groups are used to control access to instances, while the network access control list is concerned with controlling access at the subnet level. Network access control lists can add rules for both ‘allow’ and ‘deny,’ whereas security groups can add only rules for ‘allow.’

**50. What is AWS S3?**

AWS’s cloud-based object storage service with unparalleled scalability, data availability, security, and performance is known as Amazon S3. On Amazon Web Services, the service can be used for online backup and archiving of data and applications (AWS).

#### 51. Is Amazon S3 a global service?

Yes, Amazon S3 is a worldwide service. It offers object storage via a web interface and runs its global e-commerce network on Amazon’s scalable storage infrastructure.

#### 52. How does AWS S3 work?

Amazon S3 (Amazon Simple Storage Service) is a service for storing objects. Amazon S3 enables users to store and retrieve any amount of data at any time from anywhere on the internet.

#### 53. What do you understand by ‘Bucket’ in AWS S3?

A bucket in AWS Simple Storage Service (S3) is a public object storage service such as file folders, which store objects containing data and descriptive metadata.

#### 54. Why would you connect an instance to an S3 bucket?

You do not wish to connect an instance to an S3 bucket, as Block storage is not the same as object storage, which has serious consequences.

#### 55. What do you understand by Versioning in S3?

S3 buckets support the feature of versioning. The bucket’s versioning is enabled globally. Versioning allows one to track various changes made to a file over time. If versioning is enabled, each uploaded file receives a unique Version ID. Consider a bucket that contains a file, and a user uploads a new modified copy of the same file to the bucket; both files had a unique Version ID and timestamps from when they were uploaded. So, if one needs to go back in time to an earlier state of the file, versioning makes it simple.

#### 56. What is AWS in DevOps?

AWS allows its users to carry out all the essential DevOps practices easily. The tools provided as a part of AWS greatly help to automate manual tasks and assist teams in managing complex environments. They also aid engineers in working effectively with high-velocity DevOps operations.

#### 57.DevOps and Cloud computing: What is the need?

Ideally, in the DevOps practice, the Development and Operations are one single entity. This means that, with Cloud Computing in hand, any form of Agile development will have a straight-up advantage in creating strategies and scaling practices to change business adaptability. If you consider Cloud Computing to be a car, then DevOps would be its wheels.

#### 58. Why use AWS for DevOps?

Using AWS for DevOps has numerous benefits. Following are a few of them:

* As AWS is a ready-to-use service, it does not require any kind of headroom for software and setups to get started.
* Irrespective of whether you want to use it for one single time or scale it upto X number of times, the AWS ensures that the flow of computational resources is endless.
* AWS offers a unique pa-as-you-go policy that will help you keep your pricing and budgets in check and help you to easily mobilize along with getting an equal return on investment.
* With AWS bringing DevOps closer to automation, it will help you build faster and achieve effective results in terms of development, deployment, and testing process,
* AWS services can easily be used via the command-line interface, SDKs, and APIs, making it highly programmable and effective.

### Describe AWS in brief.

Amazon Web Service – AWS is known as a cloud computing platform. It is also a collection of remote computing services. The new infrastructure of cloud computing is also known as IaaS or Infrastructure as a Service.

### What is S3 in AWS?

S3 is a simple storage device used to store and retrieve the bulk amount of data at any time on the web. The Payment model for S3 is “pay as you go.”

### Explain AMI in brief.

Amazon Machine Image – is a template that contains information regarding the application, an operating system, and application server which is required to launch an instance. We can launch an instance of different AMI as per our requirements.

What are the key components of AWS?

* Cloud Watch: used to monitor AWS resources
* Elastic Block Store (EBS): used as persistent storage volumes
* Route 53: a DNS web service
* Identity and Access Management: used as identity management for AWS account
* Simple Storage Device or (S3): used to store and retrieve the bulk amount of data at any time on the web.
* Elastic Compute Cloud (EC2): used to provide on-demand computing resources for hosting applications.

### How can we send a request to Amazon S3?

Amazon S3 is used for REST service, and we can use REST API or the AWS SDK wrapper libraries for sending requests. SDK wrapper also used to wrap the underlying Amazon S3 REST API.

### How many buckets can a user create in AWS by default?

User can create up to 100 buckets by defaults in each of your AWS accounts.

### Explain T2 instance in brief.

We can use T2 instance to provide moderate baseline performance and to burst up to higher performance as per our requirements.

### Which subnet is used to launch a database server in VPC with private and public subnets?

Private subnet should be used to launch the database server in VPC with private and public subnets.

### Explain the use of the buffer in Amazon web services?

The buffer is used for making the system more robust to manage traffic by synchronizing different components. Generally, Requests are received and proceed in an unbalanced way by elements, but after using a buffer, the items will work with the same speed and in a balanced manner to provide faster services.

### Explain key-pairs in AWS?

Key-pairs are the primary login information for virtual machines. Key-pairs contains the public key and a private key. We can use them to connect instances.

### Enlist the different types of instances.

Following are the different types of instances:

* General-purpose
* Computer Optimized
* Memory-Optimized
* Storage Optimized
* Accelerated Computing

### How many Elastic IPs are allowed to create for each AWS account and When EC2 was officially launched?

5 VPC Elastic IP addresses are permitted for each AWS account.EC2 was officially launched in the year 2006.

### What is the default storage class in Simple Storage Device – S3?

A Standard frequently accessed is the default storage class in S3?.

### What are the possible connection issues user might face While connecting to an instance?

The possible connection errors user might encounter while connecting instances are as follows:

* User key not recognized by the server
* Connection timed out
* An unprotected private key file
* Host key not found, permission denied
* Error using MindTerm on Safari Browser
* Server refused our key or No supported authentication method available.
* Error using Mac OS X RDP Client

### Explain the edge locations in brief.

An edge location is an area mainly used for caching all the contents. When the user tries to access content, the edge locations are automatically used for searching contents.

### What is VPC in AWS?

Virtual Private Cloud -VPC is used to customize network configuration. It is an isolated network from other networks in the cloud. It provides facilities like having your IP address range, internet gateways, subnet, and security groups.

### Explain snowball in brief.

Snowball is used as a data transport option in AWS. We can transfer a large amount of data from one place to another. It also helps in reducing network costs.

### What is a redshift in AWS?

Redshift is a big data warehouse product. It is not only fast and powerful but also fully managed data warehouse service in the cloud.

### What are the advantages of auto-scaling?

The advantages of autoscaling are as follows:

* Better availability
* Better cost management
* Offers fault tolerance

### What do you mean by subnet and How many subnets can a user have per VPC?

The subnet is the large section of IP Address divided into chunks. User can have 200 subnets per VPC.

### Enlist the types of AMI provided by AWS.

The following are types of AMI provided by AWS:

* Instance store backed
* EBS backed

### Enlist the DB engines which can be used in AWS RDS.

The following are the DB engines which can be used in AWS RDS.

* MS-SQL DB
* MariaDB
* MYSQL DB
* OracleDB
* PostgreDB

### Explain Amazon EMR in brief.

EMR, as survived cluster stage, helps the user to interpret the working of data structures before the intimation. Apache Spark and Apache Hadoop on the Amazon Web Services helps the user to check a large amount of data. We can prepare data for marketing intellect and the analytics goals workloads using Apache Hive and using other relevant open-source designs.

### Explain the important features of Amazon cloud search in brief?

Essential features of the Amazon cloud are as follows:

* Boolean searches
* Prefix Searches
* Range searches
* Entire text search
* AutoComplete advice

### Enlist the storage class 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

**1. make a case for what’s AWS?**  
**Answer:** AWS attains as Amazon internet Service; this can be a gathering of remote computing settings additionally known as cloud computing policies. This distinctive realm of cloud computing is additionally recognized as IaaS or Infrastructure as a Service.

**2. What square measure the key elements of AWS?**  
**Answer:** the basic components of AWS square measure

**Route 53:** A DNS internet service  
Easy E-mail Service: It permits addressing e-mail utilizing reposeful API request or through traditional SMTP  
Identity and Access Management: It provides heightened protection and identity management for your AWS account  
Simple device or (S3): its warehouse instrumentation and therefore the well-known wide used AWS service  
Elastic calculate Cloud (EC2): It affords on-demand computing sources for hosting functions. it’s extraordinarily valuable in the bother of variable workloads  
Elastic Block Store (EBS): It presents persistent storage lots that connect with EC2 to modify you to endure information on the far side the period of time of a specific EC2  
CloudWatch: to watch AWS sources, It permits managers to examine and acquire a key to boot, one will turn out a notification alert within the state of crisis.

**3. make a case for what’s S3?**  
**Answer**: S3 holds for easy Storage Service. you’ll be able to utilize the S3 interface to avoid wasting and recover the unspecified volume of knowledge, at any time and from everyplace on the online. For S3, the payment sort is “pay as you go”.

**4. What will associate AMI include?**  
**Answer:** associate AMI includes the subsequent components

An example to the supply amount regarding the instance  
Launch authorities confirm that AWS accounts will avail the AMI to drive instances  
A base style mapping that defines the amounts to affix to the instance whereas it’s originated.

**5. however are you able to send an asking to Amazon S3?**  
**Answer:** Amazon S3 could be a REST service, you’ll be able to transmit the charm by applying the remainder API or the AWS SDK wrapper archives that enwrap the underlying Amazon S3 REST API.

**6. what number buckets are you able to produce in AWS by default?**  
**Answer:** In every of your AWS accounts, by default, you’ll be able to turn out up to one hundred buckets.

**7. make a case for are you able to vertically scale associate Amazon instance?**  
**Answer:** certainly, you’ll be able to vertically estimate on Amazon instance. throughout that

Twist-up a recent large instance than the one you’re presently governing  
Delay that instance and separate the supply webs mass of server and dispatch  
Next, quit your existing instance and separate its supply amount  
Note the various machine ID and connect that supply mass to your recent server  
Also, begin it repeatedly Study AWS coaching on-line From time period consultants

**8. make a case for what’s T2 instances?**  
**Answer:** I’m a text block. Click the edit button to alter this text. Ut elit Roman deity, luctus NEC ullamcorper Mattis, pulvinar dapibus leo.

**9. In VPC with non-public and public subnets, information servers ought to ideally be commenced that subnet?**  
**Answer:** Among non-public and public subnets in VPC, information servers ought to ideally originate toward separate subnets.

**10. make a case for however the buffer is employed in Amazon internet services?**  
**Answer**: The buffer is employed to deliver the system additional strong to handle traffic or load by synchronizing completely different elements. Usually, components sustain the associated method of the strain in an unreliable mode, With the help of buffer, the weather is going to be equivalent and can operate at the same speed to accommodate high-speed services.

**11. whereas connecting to your instance what area unit the attainable affiliation problems one may face?**  
**Answer:** The possible affiliation failures one may battle whereas correlating instances area unit

Consolidation regular out  
User key not acknowledged by the server  
Host key not detected, license denied  
The unguarded non-public key file  
Error handling Mind Term on hunting expedition Browser  
Error utilizing Macintosh OS X RDP consumer

**12. justify Elastic Block Storage? What sort of performance are you able to expect? however, does one back it up? however does one improve performance?**  
**Answer:** That indicates it’s a RAID warehouse, to start with, therefore it’s inapplicable and faults tolerant. If disks expire within the RAID you do not miss knowledge. Excellent! it’s a lot of virtualized, thus you’ll provision and designate the warehouse, and connect it to your server with multiple API appeals. No business the storage specialist and asking him or her to control specific requests from the hardware merchant.

Execution of compass points will manifest variability. Such signifies which will run on top of the SLA social control level, suddenly descend under that. The SLA offers you among a medium disk I/O speed you’ll foresee. which will stop any teams notably performance specialists United Nations agency suspect stable and compatible disk turnout on a server. Common physically amused servers perform that direction. Pragmatic AWS cases don’t.

Backup compass point lots by utilizing the snap convenience through API proposal or by a GUI interface same elastic fox.

Progress execution by active Linux software system invasion and marking over four extents.

**13. what’s S3? what’s it used for? ought to secret writing be used?**  
**Answer:** S3 implies for straightforward Storage Service. you’ll believe it similar FTP warehouse, where you’ll transfer records to and from on the far side, just not uprise it like a filesystem. AWS mechanically places your snaps there, at an equivalent time AMIs there.

**14. what’s AN AMI? however, do I build one?**  
**Answer:** AMI holds for Amazon Machine Image. it’s expeditiously a snap of the supply filesystem. therefore Linux will boot from AN absolute position on the compass point warehouse interface.

Create a singular AMI at starting rotating up and instance from a granted AMI. Later uniting combos and elements as required. Comprise cautious of setting delicate knowledge over AN AMI. For instance, your manner credentials ought to be joined to AN instance later spinup. Among a piece of information, mount AN external volume that carries your MySQL knowledge next spinup truly enough.

**15. what’s auto-scaling? however, will it work?**  
**Answer:** AWS allows you to tack together and mechanically store and twist up recent instances externally the mandatory for your invasion due to the characteristic feature of Autoscaling. you are doing this by establishing thresholds and metrics to look at. once these thresholds area unit intersected a recent instance of your selection is turned up, configured, and flowed toward the load balancer provisions. Voila, you have mounted horizontally while not any old operator interruption!

**16. What automation tools am I able to use to spin up servers?**  
**Answer**: Such scripts may well be written in bash, Perl, or another language or your preference. Following chance is to follow a configuration direction and provisioning devices like puppet or glorious its follower Opscode cook. Your strength conjointly appearance towards a tool an equivalent as Scale. Finally, you’ll quit with a guided answer like RightScale.

**17. what’s configuration management? Why would I need to use it with cloud provisioning of resources?**  
**Answer**: Configuration authority has been throughout for a prolonged amount of in-network services and systems management. however, the rising name of it’s been confined. most systems managers tack together computers because the software system was improved before version controller – that’s manually activity modifications on servers. each server will later and usually is disparagingly changed. Troubleshooting tho’ is outspoken as you log in to the case and work on that instantly. Configuration authority delivers huge cybernation instrumentation into the image, managing servers similar twines of a puppet. This drives regularity, glorious works, and reliability as all configs area unit maintained and versioned. It conjointly proposes a definite manner of operational that is that the hugest barrier to its adoption.

Join the cloud, and configuration administration becomes equivalent major essential. that is as a result of pragmatic servers like amazons EC2 instances area unit hugely restricted reliable than physical ones. You sure want a tool to reconstruct them as-is at any consequence. This promotes vigorous practices like cybernation, reliability, and failure restoration into the interior frame.

**18. justify however you’d simulate perimeter security victimization Amazon internet Services model?**  
**Answer**: standard boundary security that antecedently aware of utilizing firewalls then, therefore, isn’t counseled within the Amazon EC2 surroundings. AWS helps security associations. One will build a protection cluster toward a jump box with ssh manner – barely port twenty-two open. From wherever a webserver association and information association area unit shaped. The webserver cluster concedes eighty and 443 from the system, however, port twenty-two \*only\* of the jump box assembly. Additionally, the information association provides port 3306 of the webserver assembly and port twenty-two from the jump box cluster. Attach many devices to the webserver cluster and that they will all hit the information.

**20. what’re the thanks to secure information for carrying within the cloud?**  
**Answer:** One issue has to be assured that nobody ought to seize the information within the cloud. whereas info is migrating from one place to a different and besides there mustn’t be unspecified outflow by the protection key from numerous storerooms within the cloud. Dissociation {of information|of knowledge|of information} of supplementary organizations’ data and next encrypting it by medians of valid techniques is one amongst the alternatives.

Amazon internet Services grants you a protected approach of transferring info within the cloud.

**21. Name the many layers of Cloud Computing?**  
**Answer:** the list of layers of cloud computing is given below

PaaS: – Platform as a Service  
IaaS:– Infrastructure as a Service  
SaaS:– computer code as a Service

**22. What area unit the parts concerned in Amazon internet Services?**  
**Answer:** There area unit principally four parts enclosed that area unit self-addressed here.

Amazon S3: by this, one will recover the elemental information that is conquered in formulating cloud discipline pattern, and volume of exhibited information can also be saved during this phase that’s the results of the key selected.  
Amazon EC2 instance: accommodating to drive an oversized distributed system on the Hadoop cluster. computerized parallelization and work schedule may be performed by this phase.  
Amazon SQS: this component acts as a negotiant among numerous controllers. more worn for artifact needs these area unit achieved by the administrator of Amazon.  
Amazon SimpleDB: accommodates for depositing the transformation state log and therefore the tasks dead by the users.

**23. Distinguish between quantifiability and flexibility?**  
**Answer**: The capability of any theme to accentuate the responsibilities to be had on its existing appliance devices to seize variance within the unit is understood as quantifiability. The power of a theme to enlarge the responsibilities to be had on its grant and extra device resources is known as skillfulness, so permitting the business to assemble command outwardly of setting up the inspiration in the least.AWS has various configuration administration solutions for AWS quantifiability, accessibility, flexibility, and authority.

**24. Name the varied layers of cloud architecture?**  
**Answer:** There area unit principally 5 layers and that they area unit as follows

CC:- Cluster Controller  
SC:- Storage Controller  
CLC:- Cloud Controller  
NC:- Node Controller  
Walrus

**25. outline car Scaling?**  
**Answer**: Auto-scaling is one of the conspicuous characteristics feature of AWS anyplace it authorizes you to systematize and robotically obligation and twist up new models outwardly that necessary for your trap. this may be accomplished by initiating brims and metrics to look at. If these proposals area unit destroyed, the newest model of your preference is going to be organized, committed, and cloned into the load administrator panel.

**26. that automation gears will facilitate with spinup services?**  
**Answer:** For the written scripts we will use spin-up services with the assistance of API tools. These scripts can be coded in bash, Perl, or any other language of your selection. there’s an added difference that’s floral management and stipulating devices before-mentioned as a dummy or advanced descendant. A machine termed as Scalar will likewise be utilized and ultimately we will proceed with a strained expression sort of a RightScale.

**27. Is it doable to scale associate degree Amazon instance vertically? How?**  
**Answer:** affirmative, it’s doable to scale associate degree Amazon instance vertically thanks to an improbable characteristic of cloud virtualization and AWS. Spinup may be an immense case whereas related to the one that you’re operating with. quiet the case and distribute the supply point bulk of this server and eliminate. Subsequent, finish your existing instance, exclude its root volume. Enter down the peculiar device ID and be part of the supply volume to your recent server and start it repeatedly. this can be the thanks to scaling vertically in position.

Find out however AWS will scale vertically by looking at the AWS Tutorial.

**28. however, the processes begin, stop and terminate works?**  
**Answer:**Starting associate degreed stopping of associate degree instance: If an instance goes in remission or died, the instance performs a standard power cut then transfer over to a sealed space. you’ll be able to build the case then for all the points plenty of Amazon persist and associated. If the associate degree instance is in an ending state, suddenly you may not get charged to the extra instance  
Finishing the instance: If the associate degree instance goes stopped it serves to perform a customary blackout, so the point capacities that area unit connected can get excluded save the volume’s delete On Termination feature is fastened to zero. In such instances, the instance can get eliminated and can’t set it up afterward.

**29. make a case for well the operation of Amazon Machine Image (AMI)?**  
**Answer:** associate degree Amazon Machine Image AMI may be a pattern that includes a computer code conformation (for instance, associate degree operative system, a missive of invitation server, and applications). From associate degree AMI, we tend to gift associate degree example, that may be a duplicate of the AMI in turn as a virtual server within the cloud. we will even provide plentiful samples of associate degree AMI.

**30. If I’m spending Amazon Cloud Front, am I able to custom Direct hook up with relinquishing objects from my very own information center?**  
**Answer:** By AWS Direct Connect, you may be fast with the suitable info substitution rates.

**31. If my AWS Direct Connect flops, will I lose my connection?**  
**Answer:** If a gridlock AWS Direct connects has been transposed, in the event of a let-down, it will convert over to the next one. It is voluntary to allow Bidirectional Forwarding Detection (BFD) while systematizing your rules to safeguard quicker identification and failover. Proceeding the opposite hand, if you have built a backup IPsec VPN connecting as an option, all VPC transactions will fail over to the backup VPN association routinely.

**32. What is AWS Certificate Manager?**  
**Answer:** AWS Certificate Manager (ACM) manages the complexity of extending, provisioning, and regulating certificates granted over ACM (ACM Certificates) to your AWS-based websites and forms. You work ACM to petition and maintain the certificate and later practice other AWS services to provision the ACM Certificate for your website or purpose. As designated in the subsequent instance, ACM Certificates are currently ready for a performance with only Elastic Load Balancing and Amazon CloudFront. You cannot handle ACM Certificates outside of AWS.

**33. Explain What is Redshift?**  
**Answer:** The executes it easy and cost-effective to efficiently investigate all your data employing your current marketing intelligence devices which is a completely controlled, high-speed, it is petabyte-scale data repository service known as Redshift.

**34. Mention what are the differences between Amazon S3 and EC2?**  
**Answer**:**S3:** Amazon S3 is simply a storage aid, typically applied to save huge binary records. Amazon too has additional warehouse and database settings, same as RDS to relational databases and DynamoDB concerning NoSQL.

**EC2:** An EC2 instance is similar to a foreign computer working Linux or Windows and on which you can install whatever software you need, including a Network server operating PHP **code** and a database server.

**35. Explain what is C4 instances?**  
**Answer:** C4 instances are absolute for compute-bound purposes that serve from powerful-performance processors.

**36. Explain what is DynamoDB in AWS?**  
**Answer:** Amazon DynamoDB is a completely controlled NoSQL database aid that renders quick and anticipated execution with seamless scalability. You can perform Amazon DynamoDB to formulate a database table that can save and reclaim any quantity of data, and help any level of application transactions. Amazon DynamoDB automatically increases the data and transactions for the table above an adequate number of servers to supervise the inquiry function designated by the customer and the volume of data saved, while keeping constant and quick execution.

**37. Explain what is ElastiCache?**  
**Answer:** A web service that executes it comfortable to set up, maintain, and scale classified in-memory cache settings in the cloud is known as ElastiCache.

**38. What is the AWS Key Management Service?**  
**Answer:** A managed service that makes it easy for you to create and control the encryption keys used to encrypt your data is known as the AWS Key Management Service (AWS KMS).

**39. What is AWS WAF? What are the potential benefits of using WAF?**  
**Answer:** AWS WAF is a web application firewall that lets you monitor the HTTP and HTTPS applications that are promoted to Amazon CloudFront and gives you the regulated path to your content. Based on circumstances that you stipulate, such as the IP addresses that grants originate from or the consequences of query series, CloudFront returns to applications either with the petitioned content or with an HTTP 403 situation code (Forbidden). You can further configure CloudFront to restore a pattern failure page when an application is obstructed.

**Advantages of utilizing WAF:**

* Further security versus web initiatives relating to circumstances that you designate. You can describe situations by managing characteristics of web inquiries such as the IP address that the applications originate from, the rates in headers, chains that rise in the applications, and the presence of hateful SQL code in the call, which is recognized as SQL injection.
* Rules that you can reuse for various network appeals
* Real-time metrics and examined web demands
* Computerized command practicing the AWS WAF API

**40. What is Amazon EMR?**  
**Answer:** Amazon Elastic MapReduce (Amazon EMR) is a survived cluster stage that interprets working big data structures, before-mentioned as Apache Spark and Apache Hadoop, on AWS to treat and investigate enormous volumes of data. By adopting these structures and relevant open-source designs, such as Apache Pig and Apache Hive, you can prepare data for analytics goals and marketing intellect workloads. Additionally, you can use Amazon EMR to convert and migrate vast masses of information into and of other AWS data repositories and databases, such as Amazon DynamoDB and Amazon Simple Storage Service (Amazon S3).

**41. What is the AWS Data Pipeline ? and what are the components of the AWS Data Pipeline?**  
**Answer:**A web service that you can implement to automate the journey and exchange of data is called AWS Data Pipeline. Besides [AWS](https://aws.amazon.com/) you can define data-driven workflows so that companies can be reliant on the favorable execution of initial jobs. ( [oracle apex training online](https://svrtechnologies.com/apex-training/) )

**The succeeding components of AWS Data Pipeline work collectively to get your data:**

* A pipeline key indicates the business appraised of your data administration. For additional data, observe Pipeline Definition File Syntax.
* Pipeline registers and tracks responsibilities. You upload your pipeline accuracy to the pipeline and when excite the pipeline. You can control the pipeline variety for a working pipeline and stimulate the pipeline regularly for it to receive the issue. You can deactivate the pipeline, replace data storage, and before initiate the pipeline newly. If you are terminated with your pipeline, you can cancel it.
* Task Runner studies for services and then performs those duties. For instance, Task Runner could replicate log records to Amazon S3 and push Amazon EMR organizations. Task Runner is uns automatically on devices designed by your pipeline keys. You can create a custom task runner application, or you can make the Task Runner form that is offered by AWS Data Pipeline.

**42. What is Amazon Kinesis Firehose?**  
**Answer:** A fully managed service for delivering real-time streaming data to destinations such as Amazon Simple Storage Service (Amazon S3) and Amazon Redshift is known as Amazon Kinesis Firehose. ( [Hadoop online training](https://svrtechnologies.com/hadoop-training/))

**43. What Are Amazon CloudSearch and its features?**  
**Answer:**A thoroughly managed service in the cloud that creates it simple to set up, maintain, and estimate a search solution for your website or application is called Amazon CloudSearch.

we can use Amazon CloudSearch to catalog and explore both plain text and structured data. Amazon CloudSearch characteristics:

* Entire text search with language-specific text processing
* Range searches
* Prefix searches
* Boolean search
* FacetingTerm boosting
* Highlighting
* Autocomplete Advices

**44. Explain what is Regions and Endpoints in AWS?**  
**Answer:** An endpoint is a URL that is the entry point for a web service. To decrease data latency in your forms, most Amazon Web Services results enable you to choose a sectional endpoint to make your applications.

Some services, before mentioned as Amazon EC2, let you define an endpoint that does not cover a particular area.IAM, does not sustain regions; their endpoints, consequently, do not incorporate a region proposed by Amazon Web Services Tutorials Some services.

**45. What are the different types of cloud services?**  
**Answer:** Infrastructure as a Service (IaaS), Software as a Service (SaaS), Platform as a Service (PaaS), and Data as a Service (DaaS).

**46. What is SimpleDB?**  
**Answer:** A structured records or data repository that encourages indexing and data doubts to both EC2 and S3 is known as SimpleDB.

**47. What is the type of architecture, where half of the workload is on the public load while at the same time half of it is on the local storage?**  
**Answer:** Hybrid cloud architecture.

**48. Should encryption be used for S3?**  
**Answer:** Encryption should be examined for delicate information or data as S3 is a proprietary technology.

**49. What are the various AMI design options?**  
**Answer:**Fully Baked AMI, JeOS (just enough operating system) AMI, and Hybrid AMI.

**50. What is Geo Restriction in CloudFront?**  
**Answer:** Geo restriction, also known as geoblocking, is used to prevent users in specific geographic locations from accessing content that you’re distributing through a CloudFront web distribution.

Post navigation

**Question 1. What Is Amazon Ec2 Service ?**

**Answer :**

Amazon Elastic Compute Cloud (Amazon EC2) is a Amazon web service that provides resizable (scalable) computing capacity in the cloud. You can use Amazon EC2 to launch as many virtual servers you need. In Amazon EC2 you can configure security and networking as well as manage storage.Amazon EC2 service also helps in obtaining and configuring capacity using minimal friction.

* 1. **Question 2. What Are The Features Of The Amazon Ec2 Service ?**

**Answer :**

As the Amazon EC2 service is a cloud service so it has all the cloud features.

**Amazon EC2 provides the following features:**

* + - Virtual computing environment (known as instances)
    - Pre-configured templates for your instances (known as Amazon Machine Images – AMIs)
    - Amazon Machine Images (AMIs) is a complete package that you need for your server (including the operating system and additional software)
    - Amazon EC2 provides various configurations of CPU, memory, storage and networking capacity for your instances (known as instance type)
    - Secure login information for your instances using key pairs (AWS stores the public key and you can store the private key in a secure place)
    - Storage volumes of temporary data is deleted when you stop or terminate your instance (known as instance store volumes)
    - Amazon EC2 provides persistent storage volumes (using Amazon Elastic Block Store – EBS)
    - A firewall that enables you to specify the protocols, ports, and source IP ranges that can reach your instances using security groups
    - Static IP addresses for dynamic cloud computing (known as Elastic IP address)
    - Amazon EC2 provides metadata (known as tags)
    - Amazon EC2 provides virtual networks that are logically isolated from the rest of the AWS cloud, and that you can optionally (Salesforce Certification Training) connect to your own network (known as virtual private clouds – VPCs)
  1. **Question 3. What Are The Security Best Practices For Amazon Ec2 ?**

**Answer :**

**For secure Amazon EC2 best practices, follow the following steps:**

* + - Use AWS identity and access management to control access to your AWS resources
    - Restrict access by allowing only trusted hosts or networks to access ports on your instance
    - Review the rules in your security groups regularly
    - Only open up permissions that your require
    - Disable password-based login, for instance, launched from your AMI Complete Amazon Web Services Tutorials
  1. **Question 4. Explain Storage For Amazon Ec2 Instance ?**

**Answer :**

Amazon EC2 provides many data storage options for your instances. Each option has a unique combination of performance and durability. These storages can be used independently or in combination to suit your requirements.

**There are mainly four types of storages provided by AWS:**

* + - **Amazon EBS:** Its durable, block-level storage volumes can attached in running Amazon EC2 instance. The Amazon EBS volume persists independently from the running life of an Amazon EC2 instance. After an EBS volume is attached to an instance, you can use it like any other physical hard drive. Amazon EBS encryption feature supports encryption feature.
    - **Amazon EC2 Instance Store:** Storage disk that is attached to the host computer is referred to as instance store. The instance storage provides temporary block-level storage for Amazon EC2 instances. The data on an instance store volume persists only (sap training) during the life of the associated Amazon EC2 instance; if you stop or terminate an instance, any data on instance store volumes is lost.
    - **Amazon S3:** Amazon S3 provides access to reliable and inexpensive data storage infrastructure. It is designed to make web-scale computing easier by enabling you to store and retrieve any amount of data, at any time, from within Amazon EC2 or anywhere on the web.
    - **Adding Storage:** Every time you launch an instance from an AMI, a root storage device is created for that instance. The root storage device contains all the information necessary to boot the instance. You can specify storage volumes in addition to the root device volume when you create an AMI or launch an instance using block device mapping.
  1. **Question 5. Explain Stopping, Starting, And Terminating An Amazon Ec2 Instance ?**

**Answer :**

Stopping and Starting an instance: When an instance is stopped, the instance performs a normal shutdown and then transitions to a stopped state. All of its Amazon EBS volumes remain attached, and you can start the instance again at a later time. You are not charged for additional instance hours while the instance is in a stopped state.

Terminating an instance: When an instance is terminated, the instance performs a normal shutdown, then the attached Amazon EBS volumes are deleted unless the volume’s deleteOnTermination attribute is set to false. The instance itself is also deleted, and you can’t start the instance again at a later time.

* 1. **Question 6. What Are The Basic Structures Of The Amazon Ec2 Service ?**

**Answer :**

As the Amazon EC2 service is a cloud facility so it has entirely all the cloud features. Amazon EC2 delivers the subsequent features:

* + - Virtual computing atmosphere (popular as instances)
    - Pre-configured patterns for your illustrations (popular as Amazon Machine Images – AMIs)
    - Amazon Machine Images known as AMIs is a comprehensive set that you require for your server (counting the operating system and extra software)
    - Amazon EC2 delivers numerous arrangements of Storage, CPU, memory, and networking measurements for your occurrences (popular as instance type)
    - Locked login data for your cases by means of key pair (AWS supplies the public vital and you can supply the inaccessible key in a safe place)
    - Storage capacities of provisional data is erased when you stop or dismiss your occurrence (popular as occurrence store volumes)
    - Amazon EC2 delivers tenacious storage volumes (by means of Amazon Elastic Block Store – EBS)
    - A firewall that permits you to stipulate the procedures, docks, and source IP ranges that can spread your occurrences using security groups
    - Stationary IP addresses for lively cloud computing (popular as Elastic IP address)
    - Amazon EC2 delivers metadata (popular as tags)
    - Amazon EC2 offers virtual systems that are reasonably secluded from the rest of the AWS cloud, and that you can optionally attach to your own system (recognized as virtual private clouds – VPCs)
  1. **Question 7. Describe Storage For Amazon Ec2 Occurrence ?**

**Answer :**

Amazon EC2 offers numerous data storage choices for your occurrences. Each choice has an exclusive mixture of presentation and sturdiness. These storages can be used self-sufficiently or in grouping to suit your necessities.

**There are chiefly four types of storages offered by AWS:**

* + - **Amazon EBS:** Its sturdy, block-level storage capacities can involve in running Amazon EC2 occurrence. The Amazon EBS volume continues self-sufficiently from the running lifespan of an Amazon EC2 occurrence. After an EBS volume is involved to an example, you can use it like any other bodily hard drive. Amazon EBS encryption feature provisions encryption feature.
    - **Amazon EC2 Instance Store:** Storage disk that is involved to the host computer is mentioned to as occurrence store. The instance storage offers provisional block-level storing for Amazon EC2 instances. The data on an illustration store volume perseveres only during the life of the related Amazon EC2 instance; if you halt or dismiss an instance, any data on occurrence store volumes is misplaced.
    - **Amazon S3:** Amazon S3 delivers access to dependable and budget data storage organization. It is intended to make web-scale calculating simpler by permitting you to store and save any amount of data, at any period, from within Amazon EC2 or anyplace on the web.
    - **Addition Storage:** Every time your presentation an occurrence from an AMI, a root storage device is twisted for that occurrence. The root storage device comprises all the information essential to boot the occurrence. You can stipulate storage volumes in calculation to the root device volume when you generate an AMI or present an instance using hunk device mapping
  1. **Question 8. Can S3 Be Cast-off With Ec2 Instances, In Case Of “yes” Please Specify How ?**

**Answer :**

Yes, it can be cast-off for instances with root approaches backed by native occurrence storage. By using Amazon S3, developers have access to the similar extremely scalable, dependable, fast, low-priced data storage substructure that Amazon uses to track its own worldwide network of web sites. In order to perform systems in the Amazon EC2 atmosphere, developers use the tools providing to load their Amazon Machine Images (AMIs) into Amazon S3 and to transfer them between Amazon S3 and Amazon EC2. Additional use case might be for websites hosted on EC2 to load their stationary content from S3

* 1. **Question 9. What Are Regions And Availability Zones In Amazon Ec2 ? Explain In Brief ?**

**Answer :**

Amazon EC2 is hosted in multiple locations world-wide. These locations are composed of regions and Availability Zones. Each region is a separate geographic area. Each region has multiple, isolated locations known as Availability Zones.

Each region is completely independent. Each Availability Zone is isolated, but the Availability Zones in a region are connected through low-latency links. The following diagram illustrates the relationship between regions and Availability Zones.

* 1. **Question 10. Explain How To Launch Ec2 Instance In An Availability Zone ?**

**Answer :**

Each region is completely independent and each Availability Zone is isolated. When you view your resources, you’ll only see the resources tied to the region you have specified.

To launch a EC2 instance, you must select an AMI that’s in the same region (if the AMI is in another region then you can copy the AMI to the region you are using). Now select an Availability Zone or let AWS choose for you. After creating the EC2 instance, it will show up in selected Availability Zone.

* 1. **Question 11. What Is Amazon Ec2 Root Device Volume ?**

**Answer :**

When you launch an instance, the Root Device Volume contains the image used to boot the instance.

**You can launch an instance from one of two types of AMIs:**

* + - Instance store-backed AMI
    - EBS based storage
  1. **Question 12. How To Persist Root Device Volume In Amazon Ec2 Instance ?**

**Answer :**

By default, the root device volume for an AMI backed by Amazon EBS is deleted when the instance terminates. To change the default behavior, set the DeleteOnTermination attribute to false using a block device mapping.

* + - To change the root device volume of an instance to persist at launch using the console
    - Open the Amazon EC2 console.
    - From the Amazon EC2 console dashboard, click Launch Instance.
    - On the Choose an Amazon Machine Image (AMI) page, choose the AMI to use and click Select.
    - Follow the wizard to complete the Choose an Instance Type and Configure Instance Details pages.
    - On the Add Storage page, deselect the Delete On Termination check box for the root volume.
    - Complete the remaining wizard pages, and then click Launch.
    - Changing the Root Volume of an Instance to Persist Using the AWS CLI
    - Use the run-instances command to preserve the root volume by including a block device mapping that sets its DeleteOnTermination attribute for to false.
  1. **Question 13. What Is Security Group In Amazon Ec2 ?**

**Answer :**

Security groups act as a firewall for associated instances, controlling both inbound and outbound traffic at the instance level.

* 1. **Question 14. What Are The Features Of Security Group In Amazon Ec2 ?**

**Answer :**

**Following are the features of the Security Group in Amazon EC2:**

* + - We can add rules to a security group that enable us to connect to our instance from our IP address using SSH.
    - We can also add rules that allow inbound and outbound HTTP and HTTPS access from anywhere.
  1. **Question 15. How To Create Security Group In Amazon Ec2 ?**

**Answer :**

We can create Security Group in Amazon EC2 using the Amazon EC2 console. To launch instances in multiple regions, we’ll need to create a Security Group in each region.

**Following are the steps to create Security Group in Amazon EC2:**

* + - Open the Amazon EC2 console.
    - From the left navigation bar, select a region for the security group.
    - Click Security Groups in the navigation pane.
    - Click Create Security Group.
    - Enter a name for the new security group and a description.
    - In the VPC list, select your VPC.
    - On the Inbound tab, click Add Rule for each new rule, and then click Create.
  1. **Question 16. How To Launch An Amazon Ec2 Instance ?**

**Answer :**

We can launch Linux/Windows Amazon EC2 instance using AWS Management Console.

**Following are the steps to create Amazon EC2 instance:**

* + - Open the Amazon EC2 console.
    - From the console dashboard, choose Launch Instance.
    - Choose an Amazon Machine Image (AMI).
    - Choose an Instance Type.
    - Click on Review and Launch to let the wizard complete the other configuration setting.
    - On the Review Instance Launch page, under Security Groups select a Security Group.
    - Click on Launch on the Review Instance Launch.
    - Select an Existing ket pair when it prompte for key pair.
    - Click on View Instance to return on the console to see instance is launching.
  1. **Question 17. How To Connect To Your Amazon Ec2 Instance ?**

**Answer :**

There are several ways to connect to a Linux instance. One of the commonly used method is to connect Linux instance from Windows local machine using PuTTY.

**Following are the steps to connect to a Linux instance:**

* + - Install PuTTY on your local machine.
    - Get your instance ID.
    - Get the public DNS name of the instance.
    - Locate the private key.
    - Enable inbound SSH traffic from your IP address to your instance.
    - Converting Your Private Key Using PuTTYgen.
    - Starting a PuTTY Session.
    - Now you are connected to your EC2 instance.
  1. **Question 18. How To Add A Ebs Volume To Your Amazon Ec2 Instance ?**

**Answer :**

We can attach an EBS volume to one of our instances that is in the same Availability Zone as the Volume.

**Following are the steps to attache an EBS volumn to an instance using console:**

* + - Open the Amazon EC2 console.
    - In the left navigation pane, choose Volumes.
    - Select a volume and choose Attach Volume.
    - Select the instance to which you want to attach the volume.
    - Click on Attach.
    - Now connect to your instance and make the volume available.
  1. **Question 19. How To Clean Up Your Amazon Ec2 Instance And Volume ?**

**Answer :**

After we are finished with the instance we created, we can clean up by terminating the instance.

**Following are the steps to terminate the EC2 instance:**

* + - In the navigation pane, choose Instances. In the list of instances, select the instance.
    - Choose Actions, then Instance State, and then choose Terminate.
    - Choose Yes,Terminate when prompted for confirmation.
  1. **Question 20. What Are The Best Practices For Amazon Ec2 ?**

**Answer :**

To get the maximum benefit from and satisfaction with Amazon EC2.

**There are mainly four best practices:**

* + - Security and Network Best Practices
    - Storage
    - Resource Management
    - Backup and Recovery
  1. **Question 21. What Is Amazon Machine Image And What Is The Relation Between Instance And Ami ?**

**Answer :**

Amazon Web Services provides several ways to access Amazon EC2, like web-based interface, AWS Command Line Interface (CLI) and Amazon Tools for Windows Powershell. First, you need to sign up for an AWS account and you can access Amazon EC2.

Amazon EC2 provides a Query API. These requests are HTTP or HTTPS requests that use the HTTP verbs GET or POST and a Query parameter named Action.

* 1. **Question 22. What Is Amazon Machine Image (ami) ?**

**Answer :**

An Amazon Machine Image (AMI) is a template that contains a software configuration (for example, an operating system, an application server, and applications). From an AMI, we launch an instance, which is a copy of the AMI running as a virtual server in the cloud. We can even launch multiple instances of an AMI.

* 1. **Question 23. What Is The Relation Between Instance And Ami ?**

**Answer :**

We can launch different types of instances from a single AMI. An instance type essentially determines the hardware of the (pivotal training) host computer used for your instance. Each instance type offers different compute and memory capabilities.

After we launch an instance, it looks like a traditional host, and we can interact with it as we would do with any computer. We have complete control of our instances; we can use sudo to run commands that require root privileges.

* 1. **Question 24. How To Migrate An Instance To Another Availability Zone ?**

**Answer :**

You can migrate your EC2 instance from one Availability Zone to another.

**Following are the steps to migrate an Instance to another Availability Zone:**

* + - Create an AMI from the running instance
    - Launch an instance from the AMI that you just created, specify the new Availability Zone
    - You can use the same instance type as the original instance, or select a new instance type
    - If the original instance has an associated Elastic IP address, then associate it with the new instance
    - If the original instance is a Reserved Instance, change the Availability Zone for your reservation
  1. **Question 25. What Is Key Pair ?**

**Answer :**

AWS uses public-key cryptography to secure the login information for your instance. A Linux instance has no password; you use a key pair to log in to your instance securely.

You specify the name of the key pair when you launch your instance, then provide the private key when you log in using SSH.

* 1. **Question 26. How To Create Key Pair ?**

**Answer :**

We can create one using the Amazon EC2 console. To launch instances in multiple regions, we’ll need to create a key pair in each region.

**Following are the steps to create Key Pair:**

* + - Sign in to Amaon Web Service.
    - From the AWS dashboard, choose EC2 to open the Amazon EC2 console.
    - From the navigation bar, select a region for the key pair.
    - In the left navigation pane, under NETWORK & SECURITY, click Key Pairs.
    - Click Create Key Pair.
    - Enter a name for the new key pair in the Key pair name field of the Create Key Pair dialog box, and then click Create.
    - The private key file is automatically downloaded by your browser. The base file name is the name you specified as the name of your key pair, and the file name extension is .pem.
  1. **Question 27. What Is The Use Of Key Pair ?**

**Answer :**

Key pair is used to log in to your instance securely. This is public-key cryptography to secure the login information for your instance.

* 1. **Question 28. How To Create Your Own Amazon Machine Image (ami) ?**

**Answer :**

You can customize a instance that is launched from a public AMI and then save that configuration as a custom AMI for your own use.

Instances that you launch from your AMI use all the customizations that you’ve made.

* 1. **Question 29. How To Determine The Root Device Type Of Your Ami ?**

**Answer :**

We can determine the Root Device type of AMI using following 2 methods.

**Method 1:** Following are the steps to determine the Root Device type of an AMI using the console

* + - Open the Amazon EC2 console
    - In the navigation pane, click AMIs, and select the AMI
    - Check the value of Root Device Type in the Details tab as follows
    - If the value is ebs, this is an Amazon EBS-backed AMI
    - If the value is instance store, this is an instance store-backed AMI

**Method 2:** Following are the steps to determine the root device type of an AMI using the command line

We can use one of the following commands.

* + - describe-images (AWS CLI)
    - Get-EC2Image (AWS Tools for Windows PowerShell)
  1. **Question 30. What Is The Size Limit For Amazon Ec2 Instance Store-backed Amis And Amazon Ebs-backed Amis ?**

**Answer :**

All AMIs are categorized as either backed by Amazon EBS or backed by instance store.

**Backed by Amazon EBS** – means that the root device for an instance launched from the AMI is an Amazon EBS volume created from an Amazon EBS snapshot.

**Backed by instance store** – means that the root device for an instance launched from the AMI is an instance store volume created from a template stored in Amazon S3.

**Root device size limit for** –

Amazon EBS – Backed is 16 TiB

Amazon Instance Store-Backed is 10 GiB

* 1. **Question 31. How You’re Charged In Amazon Ec2? Explain In Detail ?**

**Answer :**

* + - Charges varies upon AMIs backed and storage volums.
    - AMIs backed by instance storage charged for: AMI storage + Instance usage
    - AMIs backed by Amazon EBS storage charged for: Volume storage + Usage in addition to the AMI + instance usage
    - When an Amazon EBS-backed instance is stopped, you are not charged for instance usage, but you are still charged for volume storage.
    - AWS charges a full instance hour for every transition from a stopped state to a running state, even if we transition the instance multiple times within a single hour.

**For example:** if hourly instance charge for your instance is $0.10 and if you were to run that instance for one hour without stopping it, you would be charged $0.10. If you stopped and restarted that instance twice during that hour, then you would be charged $0.30 for that hour of usage (the initial $0.10, plus 2 x $0.10 for each restart).

* 1. **Question 32. What Is Shared Ami ?**

**Answer :**

A shared AMI is an AMI that a developer created and made available for other developers to use.

One of the easiest ways to get started with Amazon EC2 is to use a shared AMI that has the components you need and then add custom content. You can also create your own AMIs and share them with others.

* + - Use a shared AMI at your own risk. Amazon can’t vouch for the integrity or security of AMIs shared by other Amazon EC2 users. AWS recommends that you get an AMI from a trusted source.
  1. **Question 33. How To Update Ami Tools At Boot Time ?**

**Answer :**

AWS recommends that your AMIs download and upgrade the Amazon

EC2 AMI creation tools during startup. This ensures that new AMIs based on your shared AMIs have the latest AMI tools.

**For Amazon Linux, add the following to /etc/rc.local:**

# Update the Amazon EC2 AMI tools

echo ” + Updating EC2 AMI tools”

yum update -y aws-amitools-ec2

echo ” + Updated EC2 AMI tools”

* 1. **Question 34. How To Disable Password-based Logins For Root In Amazon Ec2 Instance ?**

**Answer :**

Using a fixed root password for a public AMI is a security risk that can quickly become known. Even relying on users to change the password after the first login opens a small window of opportunity for potential abuse.

**Following are the steps to disable password-based remote logins for the root user:**

**Open the /etc/ssh/sshd\_config file with a text editor and locate the following line:**  
#PermitRootLogin yes  
**Change the line to:**  
PermitRootLogin without-password  
The location of this configuration file might differ for your distribution.

* 1. **Question 35. What Is Public Key Credentials And How To Install It ?**

**Answer :**

Amazon EC2 uses public–key cryptography to encrypt and decrypt login information. Public–key cryptography uses a public key to encrypt a piece of data, such as a password, then the recipient uses the private key to decrypt the data. The public and private keys are known as a key pair.

After configuring the AMI to prevent logging in using a password, you must make sure users can log in using another mechanism.

* 1. **Question 36. How Is Stopping And Terminating An Instance Different From Each Other ?**

**Answer :**

**Starting, stopping and terminating are the three states in an EC2 instance, let’s discuss them in detail:**

* + - Stopping and Starting an instance: When an instance is stopped, the instance performs a normal shutdown and then transitions to a stopped state. All of its Amazon EBS volumes remain attached, and you can start the instance again at a later time. You are not charged for additional instance hours while the instance is in a stopped state.
    - Terminating an instance: When an instance is terminated, the instance performs a normal shutdown, then the attached Amazon EBS volumes are deleted unless the volume’s deleteOnTermination attribute is set to false. The instance itself is also deleted, and you can’t start the instance again at a later time.
  1. **Question 37. How Is A Spot Instance Different From An On-demand Instance Or Reserved Instance ?**

**Answer :**

First of all, let’s understand that Spot Instance, On-Demand instance and Reserved Instances are all models for pricing. Moving along, spot instances provide the ability for customers to purchase compute capacity with no upfront commitment, at hourly rates usually lower than the On-Demand rate in each region. Spot instances are just like bidding, the bidding price is called Spot Price.

The Spot Price fluctuates based on supply and demand for instances, but customers will never pay more than the maximum price they have specified. If the Spot Price moves higher than a customer’s maximum price, the customer’s EC2 instance will be shut down automatically.

But the reverse is not true, if the Spot prices come down again, your EC2 instance will not be launched automatically, one has to do that manually. In Spot and On demand instance, there is no commitment for the duration from the user side, however in reserved instances one has to stick to the time period that he has chosen.

* 1. **Question 38. Is It Possible To Change The Private Ip Addresses Of An Ec2 While It Is Running/stopped In A Vpc ?**

**Answer :**

The primary private IP address cannot be changed. Secondary private addresses can be unassigned, assigned or moved between interfaces or instances at any point.

* 1. **Question 39. Can S3 Be Used With Ec2 Instances, If Yes, How ?**

**Answer :**

Yes, it can be used for instances with root devices backed by local instance storage. By using Amazon S3, developers have access to the same highly scalable, reliable, fast, inexpensive data storage infrastructure that Amazon uses to run its own global network of web sites. In order to execute systems in the Amazon EC2 environment, developers use the tools provided to load their Amazon Machine Images (AMIs) into Amazon S3 and to move them between Amazon S3 and Amazon EC2.

Another use case could be for websites hosted on EC2 to load their static content from S3.

* 1. **Question 40. If You Want To Launch Amazon Elastic Compute Cloud (ec2) Instances And Assign Each Instance A Predetermined Private Ip Address You Should ?**

**Answer :**

The best way of connecting to your cloud resources (for ex- ec2 instances) from your own data center (for eg- private cloud) is a VPC. Once you connect your datacenter to the VPC in which your instances are present, each instance is assigned a private IP address which can be accessed from your datacenter. Hence, you can access your public cloud resources, as if they were on your own network.

* 1. **Question 41. Explain What Happens When I Reboot An Ec2 Instance ?**

**Answer :**

Rebooting an instance is like rebooting a PC. The hard disk isn’t affected. You don’t return to the image’s original state, but the contents of the hard disks are those before the reboot.

Rebooting isn’t associated with billing. Billing starts when you instantiate an image and stops when you terminate it. Rebooting in between hasn’t any effect.

* 1. **Question 42. How You Will Change The Root Ebs Device Of My Amazon Ec2 Instance ?**

**Answer :**

* + - Stop the instance.
    - Detach the root EBS volume.
    - Attach the alternate EBS volume (as the root e.g. /dev/sda1)
    - Start the instance.
    - This presupposes that your alternate EBS volume is bootable, of course – it has to contain the bootable OS image.
  1. **Question 43. What Is The Underlying Hypervisor For Ec2 ?**

**Answer :**

Xen

* 1. **Question 44. What Are Spot Instances In Amazon Ec2 ?**

**Answer :**

In Amazon EC2, we can even bid for getting a computing instance. Any instance procured by bidding is a Spot Instance. Multiple users bid for an EC2 Instance. Once the bid price exceeds the Spot price, the user with the highest bid gets it. As long as their bid price remains higher than the Spot price, they can keep using it.

Spot price varies with the supply and demand. Once Spot price exceeds Bid price, the instance will be taken back from the user.

* 1. **Question 45. What Is The Difference Between A Spot Instance And A Demand Instance On Ec2 ?**

**Answer :**

“On-Demand” instances allow the user to use the compute by hour without requiring long term commitment. There are no guarantees that the user will always be able to launch specific instance types in an availability zone, though AWS tries it’s best to meet the needs. This service is preferable for POCs and they do not suffer an interruption of the service(by AWS) like Spot instances.

“Spot” instances are a bid\_for\_low\_price version of On-Demand instances, but could be shut down by AWS anytime the Spot instance price goes higher than bid price. Spot price fluctuates based on the supply and demand of the capacity. It’s essentially the leftover capacity of AWS to be used. There is no difference in the performance compared to On-Demand instances and is usually cheaper than On-demand instances as there is no guarantee provided over the availability. The user can choose a start time and end time for the instances or can make a persistent request(no end time specified) for this service. This service is preferable for computing needs which are not tied to any deadlines, computing needs are large and the interruption of service is acceptable.

* 1. **Question 46. What Are The Main Features Of Classic Load Balancer In Ec2 ?**

**Answer :**

**Some of the main features of Classic Load Balancer (CLB) in Amazon EC2 are as follows:**

**Health Check:** Based on the result of Health Check, Classic Load Balancer can decide to route the traffic. If any instance has unhealthy results, CLB will not route the traffic to that instance.

**Security:** We can create security groups for CLB in Virtual Private Cloud (VPC). With these features, it is easy to implement secure load balancing within a network.

**High Availability:** With CLB, we can distribute traffic among EC2 instances in single or multiple Availability Zones. This helps in providing very high scale of availability for the incoming traffic.

**Sticky Sessions:** CLB also supports sticky session by using cookies. The sticky sessions make sure that the traffic from a user is always routed to the same instance so that user gets seamless experience.

**IPv6:** CLB also support Internet Protocol version 6.

**Operational Monitoring:** We can also perform operational monitoring CLB and collect statistics on request count, latency etc. These metrics can be monitored in CloudWatch.

* 1. **Question 47. What Are The Main Features Of Application Load Balancer (alb) In Amazon Ec2 ?**

**Answer :**

**Main features of Application Load Balancer (ALB) are as follows:**

* + - **Content-Based Routing:** In ALB, we can make use of content in the request to decide the routing of a request to a specific service.
    - **HTTP/2:** ALB supports the new version of HTTP protocol. In this protocol, we can send multiple requests on same connection. It also supports TLS and header compression.
    - **WebSockets:** ALB supports WebSockets in EC2. With WebSockets, a server can exchange real-time messages with the end-users.
    - **Layer-7 Load Balancing:** ALB can also load balance HTTP/HTTPS application with layer-7 specific features.
    - **Delete Protection:** ALB also provides Delete Protection option by which we can prevent it from getting deleted by mistake.
    - **Containerized Application Support:** We can use ALB to load balance multiple containers across multiple ports on same EC2 instance.
  1. **Question 48. What Is A Placement Group In Ec2 ?**

**Answer :**

AWS provides an option of creating a Placement Group in EC2 to logically group the instances within as single Availability Zone.

We get the benefits of low network latency and high network throughput by using a Placement Group.

Placement Group is a free option as of now. When we stop an instance, it will run in same Placement Group in restart at a later point of time.

The biggest limitation of Placement Group is that we cannot add Instances from multiple availability zones to one Placement Group.

* 1. **Question 49. What Types Of Issues Do You Face While Connecting To An Ec2 Instance ?**

**Answer :**

**Some of the possible connection issues with EC2 instance are:**

* + - Connection time out
    - Permission denied due to host key not found
    - Unprotected private key file
    - Permission denied due to user key not recognized by server
    - No supported authentication method available
    - Server refused the key AWS Video Training

### 1. Name the three basic types of Cloud Services?

**Answer :**Cloud Services can be mainly classified into three types, namely,

* Storage
* Networking
* Computing

### 2. Explain the relation between availability region and zone?

**Answer :**The distinct geographical areas are referred to as availability regions.

For example - Asia South (Chennai) and US West 1 ( North Washington).

However, the sites included under these regions are called availability zones.

Usually, only isolated regions are included, capable of replicating themselves as per requirement.

### 3. Name the types of queues in SQS?

**Answer :**The two known types of queues in SQS are as follows

1. FIFO Queues
2. Standard Queues

### 4. Name the various product categories available under AWS?

**Answer :**We can categorize the following as top products under AWS:

1. Analytics
2. Identity
3. Security
4. Compliance
5. Storage
6. Database
7. Machine learning

### 5. Under AWS, mention the snow family members?

**Answer :**The members of the snow family include

1. AWS Snowmobile
2. AWS Snowcone
3. AWS Snowball

### 6. Name the attacks which the AWS Shield can prevent?

**Answer :**The AWS shield safeguards the Amazon EC2 from common infrastructure layer and the DDoS attacks like UDP reflection attacks, such as NTP reflection, DNS reflection, SSDP reflection, etc.

### 7. Name the cheapest AWS region?

The US standard falls among the cheapest AWS regions in the World.

### 8. What can be the maximum possible size of an S3 bucket?

**Answer :**5TB is the maximum possible size of an S3 bucket.

### 9. Name the available regions in AWS?

**Answer :**The AWS services can be availed across 18 regions across South America, North America, Asia Pacific, and the EU.

### 10. Name the most popular AWS services?

**Answer :**

1. Amazon Glacier
2. Amazon SNS
3. Amazon Kinesis
4. Amazon VPC
5. Amazon CloudFront
6. Amazon S3
7. Amazon Lambda

### 11. Name the various Amazon EC2 instances?

**Answer:**The various types of [Amazon EC2](https://mindmajix.com/overview-of-amazon-ec2) instances include

1. Accelerated Computing
2. Compute-optimized Instances
3. Memory-optimized
4. Storage Optimized
5. General-purpose Instances.

### 12. List down the benefits of AWS?

**Answer:**The benefits of AWS include

1. Users can avail of the services of AWS at a lower cost.
2. These services are user-friendly and easy to use
3. They also contain several advantages that users can easily rely upon.

### 13. Can we say that Amazon S3 is a Global service?

**Answer:**Amazon S3 has a global e-commerce network run on scalable storage infrastructure and a web interface for object storage. Thus one can say that Amazon S3 is a global service.

### 14. Are all the Amazon services region-based?

**Answer:**Not all the services provided are region-based, but most of them are.

### 15. Mention the uses of Amazon's Lightsail's Container Services?

**Answer:**The uses are as follows

1. It helps running containerized applications in the Cloud
2. The container services help run applications directly from web apps to multi-tiered microservices.
3. The Amazon Lightsail takes care of the underlying infrastructure while running applications.

### 16. Explain the function of Amazon EC2 in Amazon Auto Scaling fleet management.

**Answer:**

1. Firstly, it has the job of balancing capacity across various availability zones.
2. Secondly, the malfunctioning EC2 instances are replaced with new ones.
3. Lastly, the health of the running EC2 instances is monitored in the cloud infrastructure.

### 17. Distinguish between RPO and RTO in AWS?

**Answer:**

RPO stands for Recovery Point Objective. It can be defined as the amount of time or data loss one can afford after a disaster in the service. It is generally measured in the sub-second range.

RTO can be defined as the time taken as the recovery time after a disaster to return to regular operations. Generally measured in minutes, the RTO stands for Recovery Time Objective.

### 18. Describe how Amazon ElastiCache functions?

**Answer:**The Amazon ElastiCache functions as a message, cache, queue, database, etc., which majorly serves as a fast in-memory data store. Nevertheless, it also supports session stores, gaming leaderboards, real-time transactions, and Business intelligence tools.

### 19. Describe the connection between Amazon RDS and Neptune?

**Answer:**The connectivity of Amazon RDS with Amazon Neptune stands in the shared technologies while managing security group management, instance lifestyle management, and encryption at rest with Amazon KMS keys.

### 20. How is content delivery speeded up using content delivery?

**Answer:**A Global network infrastructure consisting of more than 300 Points of Presence (PoPs) speeds up content delivery. The required optimization of the content delivery is achieved through Websockets and edge termination.

### 21. Name the tools and techniques the user can employ to identify whether you are paying the correct amount?

**Answer:**The ways by which you can check whether you are paying the correct amount are by employing the following resources

1. Cost explorer
2. AWS budget
3. Cost allocation Tags
4. By checking the top table services

### 22. Other than Console, what are the tools by which you can log into the cloud environment?

**Answer:**The tools that can help you log into cloud applications are as follows

1. AWS SDK
2. AWS CLI for Linux
3. AWS CLI for Windows
4. Eclipse
5. Putty

### 23. Name the services which can minimize DDoS attacks?

**Answer:**The services capable of reducing DDoS attacks are

1. Amazon CloudFront
2. ALL
3. VPC
4. AWS Shield
5. AWS WAF

### 24. What ways to set up a system for monitoring metrics in real-time in AWS?

**Answer:**The application status of various custom events and AWS services can be monitored using Amazon Cloudwatch

1. AWS API calls
2. Auto-scaling lifecycle events
3. Scheduled events
4. State changes in Amazon EC2

### 25. Name the various types of Cloud services?

**Answer:**The different types of cloud services are

1. Data as a service
2. Platform as a service
3. Software as a service
4. Infrastructure as a service

### 26. Name some of the AMI Designs?

**Answer:**The most common types of AMIs are as follows

1. Just enough Baked AMI
2. Hybrid AMI
3. Fully Baked AMI

### 27. Name some of the DB Engines the user can use in AWS RDS?

**Answer:**DB Engines capable of being used in the AWS RDS are

1. MariaDB
2. OracleDB
3. PostgreDB
4. MS-SQL DB
5. MYSQL DB

### 28. Name the different pricing models for EC2?

**Answer:**The different pricing models for EC2 are

1. Scheduled
2. Reserved
3. Spot
4. Dedicated
5. on-demand

### 29. Name the types of Volumes for EC2 instances?

**Answer:**The volume for EC2 instances is of two types

1. EBS- Elastic Block Stores
2. Instance store volumes

### 30. Define Cloud Watch.

**Answer:**A tool capable of monitoring different types of AWS services, such as application, health inspection, networking, etc., is called Cloudwatch.

### 31. What are the types in which Cloudwatch can be classified?

**Answer:** Cloudwatch can be classified into two types, namely,

1. Detailed Monitoring
2. Basic Monitoring

### 32. Define Glacier.

**Answer:**AN archiving or backup tool that helps in backing up data to S3 is referred to as Glacier.

### 33. Name the types of Routing policies in Route53.

**Answer:** The various types of Routing policies in Route53 are as follows

1. Failover routing
2. Geolocation routing
3. Weighted routing
4. Multivalue answer
5. Simple routing
6. Latency routing

### 34. By Default, how many Elastic Ip Addresses does AWS offer?

**Answer:** By Default, Aws offer five elastic IP per region.

### 35. Discuss the benefits of Cloud Computing?

**Answer:**The benefits of Cloud Computing are listed below

1. No IT maintenance
2. Better performance
3. Device-independent
4. Lesser Computing Cost
5. Business connectivity

### 36. How can you access the AWS platform?

**Answer:**We can access the AWS platform in the following ways

1. AWS SDK
2. AWS CLI
3. AWS Console.

### AWS Interview Questions and Answers For S3

### 37. Name the different types of storage classes in Amazon S3?

**Answer:**The types of storage classes available are

1. Amazon S3 standard-infrequent Access
2. Amazon S3 Reduced Redundancy Storage
3. Amazon Glacier
4. Amazon S3 standard

### 38. How can Amazon VPC be monitored?

**Answer:**Amazon VPC can be monitored in the following ways

1. VPC Flow Logs
2. Cloud watch Logs and Cloud watch

### 39. List the essential features of Amazon Cloud?

**Answer:**The features of the Amazon Cloud includes

1. Prefix searches
2. Range searches
3. Entire text search
4. Boolean searches

### 40. Mention the year when the company officially launched amazon company EC2?

**Answer:**In 2006, the company announced the official launch of EC2.

### 41. Name the types of Load Balancers in AWS?

**Answer:**The various types of Load Balancers in AWS are

1. Network Load Balancer
2. Classic Load Balancer
3. Application Load Balancer

### 42. What maximum number of buckets can users create in S3?

**Answer:**The maximum number of buckets completed in S3 is 100.

### 43. What are the possible storage options available for EC2 instances?

**Answer:**The possible storage options available for EC2 instances are

1. Amazon S3
2. Amazon Storage
3. Amazon EBS
4. Amazon EC2 instance store

### 44. Name some of the popular DevOps tools?

**Answer:**The famous well known DevOps tools are listed below

1. Git - version control system tool
2. Selenium - Continuous Testing Tool
3. Docker - Containerization Tool
4. Chef, Puppet, Ansible - Deployment and Configuration Management tool
5. Jenkins - Continuous Integration Tool
6. Nagios - Continuous Monitoring Tool

### 45. What are the layers of Cloud Architecture in AWS?

**Answer:**In AWS, the layers of Cloud Architecture are

1. Capacity Controller
2. Group Controller
3. Cloud regulator
4. Hub Controller

### 46. Name the types of AMIs provided by AWS?

**Answer:**The AMI types provided by AW2S are as follows

1. EBS upheld
2. Example Store Upheld

### 47. Name the AWS service that only exists for images and rudimentary cache data?

**Answer:**The AWS service that exists only to rudimentary cache data and images is AWS Edge locations.

### 48. What is the maximum boot time taken for a store-backed AMI?

**Answer:**The maximum boot time for an Amazon occasion store-backed AMI Is 5 minutes.

### 49. What are the processes through which Amazon Route 3 provides low latency and high availability?

**Answer:**The Amazon Route 3 provides both HIgh availability and low latency, which can be seen through

1. Reliance
2. Ideal Locations
3. Universally Distributed Servers.

### 50. Name the various types of policies

**Answer:** The different types of policies are

1. Access Control List
2. Meeting policies
3. Consent limits
4. Asset-based policies

### 51. What is the maximum number of Elastic IPs a user can create in AWS?

**Answer:**The maximum number of Elastic IPs created per AWS account per area is 5.

### 52. Under which Cloud service, we can categorize Load Balancer and DNS service?

**Answer:**IAAS-stockpiling Cloud administration includes DNS and Load Balancer administrations.

### 53. What are the available volumes in EBS?

**Answer:**The available volume types in EBS are

1. Provisioned IOPS
2. Cold HODD
3. Throughput optimized
4. Magnetic
5. General-purpose

### 54. List some connection issues that can be faced while connecting to an EC2 instance?

**Answer:**The connection issues which you might face while connecting to the EC2 instance are

1. Host key missing
2. Connection timeout
3. User key unrecognized
4. Server refusing key

### 55. What are the methods for encrypting data in S3?

**Answer:**The methods for encrypting data in S3 includes

1. C(Client-side)
2. S3(AES 256 encryption)
3. KMS(Key management service).

### 56. Define SNS.

**Answer:**A web service of the AWS which notifies the user of any activity in the Cloud that requires attention as per the user's desire in the form of messages or emails is referred to as SNS or Simple Notification Service.

### 57. List the various types of Storage gateways.

**Answer:**The types of storage gateways are as follows

1. Volume gateway
2. File gateway
3. Tape gateway

### 58. Suggest some types of backups in the RDS database.

**Answer:**The possible backups in the available database are as follows

1. Manual
2. Automated

### 59. List the types of Virtualization in AWS?

**Answer:**Types of Virtualization in AWS are listed below as

1. Paravirtualization
2. Hardware-assisted virtualization.

### 60. Explain the importance of buffers in AWS?

**Answer:**The role of a buffer is to synchronize and integrate various components in AWS. It links multiple apparatus delivering quick services at a uniform rate, thus maintaining equilibrium.

### 61. Define Snowball.

**Answer:**The Snowball plays the role of transferring a large amount of data in and out of the AWS at a meager networking cost.

### 62. Define policies.

**Answer:**The permissions attached to the Created AWS users to access their accounts are referred to as policies.

### 63. Name the cloud watch merits available for EC2 instances?

**Answer:**In general, the cloud watch metrics available are

1. CPU credit balance
2. CPU utilization
3. CPU credit balance
4. Disk writes
5. Disk reads
6. Networking
7. Network out

### 64. What are the ways of controlling the security of VPC?

**Answer:**The security of a Virtual Private Cloud can be regulated with the help of the Network Access Control List and Security Groups.

### 65. Briefly describe the VPC peering connection?

**Answer:**The connection of two or more Virtual Private Clouds is achieved through VPC peering, where the connected VPCs function coherently.

### 66. Define Redshift.

**Answer:**Redshift is Amazon's data warehouse product through which we can access powerful and fast services.

### 69. How to upload a file of more than 100 MB in Amazon S3?

**Answer:**Multipart Upload Utility of the AWS helps upload large files. Here, the files are generally divided into parts and then uploaded parallel and independently to reduce the upload time. After completing the upload, the software will convert the files into a single file.

### 69. How can the data in EBS be accessed?

**Answer:**The highly functional block-level storage provided by Elastic Block Storage can be connected to any EC2 instance and can be accessed with great ease.

### 70. What possible ways of speeding up data transfer in Snowball?

**Answer:**How Snowball can speed up data transfer is as follows

1. By reducing encryption through the transfer of large files or batches of small files
2. We need to prioritize activities in the snowball machine
3. And also by performing multiple copy operations on the same Snowball device.

### 71. Mention some security practices in Amazon EC2?

**Answer:**The best essential practices for security includes

1. Review security infrastructure regularly
2. The access key and secure the AWS account
3. The unimportant applications and services are to be disabled.

### 72. Name the components of Auto-scaling?

**Answer:**The components of Auto-scaling include

1. Auto-scaling groups
2. Launch configuration

### 73. Differentiate Stateful and Stateless Firewall.

**Answer:**A Stateful Firewall is a security group that helps in the regulation of traffic among various AWS resources and instances.

On the other hand, a security group that allows or denies traffic based on rules and is an Access control List at the Subnet level is called Stateless Firewall.

### 74. Define Amazon DynamoDB?

**Answer:**Amazon's product provides a reliable and fast database with enhanced scalability for storing vast data and increased performance.

### 75. How can you differentiate between the Service and SAML Federated roles?

**Answer:**Access to AWS based on designed roles is permitted by Federated Roles.

### 76. Mention some of the benefits of STS (Security Token Service)?

**Answer:**The benefits of Security Token Service say that as the credentials are temporary, there is no necessity to rotate or revoke them.

### 77. Define IaaS.

**Answer:**The Cloud service, with the help of various services run on a pay-as-you-go basis in AWS, is called IaaS.

### 78. What is ElectiCache?

**Answer:**The service that helps in the managing memory caching environment is denoted as Amazon ElastiCache

### 79. Mention the benefits of ElastiCache?

**Answer:**The benefits of ElastiCache are as mentioned below

1. Cost-effectiveness
2. Scalable Caching environment
3. High performance

### 80. Define PaaS.

**Answer:**The significant role of PaaS is to successfully run cloud platforms predominantly to monitor, develop and test the software that is functioning.

### 81. Write the archive storage capacity in Glacier?

**Answer:**The maximum storage capacity of Glacier is 40 TB.

### 82. What is the purpose of Connection Draining?

**Answer:**The health check failed, and non-updated instances are rerouted with the help of Connection draining.

### 83. Explain Vertical and Horizontal scaling in AWS

**Answer:**Vertical scaling refers to adding resources to infrastructure to increase the performance and power of an existing machine.

In Horizontal scaling, the power and performance are enhanced by the augmentation of new machines.

### 84. What are the network parameters while launching instances in a cluster placement group?

**Answer:**On launching instances in Cluster placement groups, we can expect the following parameters

1. 10 Gbps in a single row
2. 20 Gbps in multi-flow
3. However, the network traffic outside the group is restricted to 5 Gbps.

### 85. Suggest a possible way to reduce the Amazon EC2 instance load?

**Answer:**Attaching a load balancer to an autoscaling group effectively reduces the load by distributing it among various instances.

### 86. Discuss the purpose of lifecycle hooks is auto-scaling?

**Answer:**In Amazon AWS, there are situations when you need to install necessary software or extract log files. During these situations, lifecycle hooks help add wait time before an instance's termination or launch.

### 87. Define Lambda.

**Answer:**Lambda facilitates deploying functions that are triggered by events and also help to run server-less applications

### 88. Define SES.

**Answer:**SES is an Amazon service that helps send bulk emails to users at a low cost.

### 89. Explain lambda edge?

**Answer:**Functions such as the response to CloudFront events to execute functions in AWS without a managing server is performed by Lambda edge.

### 90. Explain Amazon kinesis Firehose?

**Answer:**Amazon Kinesis Firehose is a data Firehouse that helps stack information in devices or information stores without a continuous organization.

### 1. Define Amazon EC2 service?

**Answer:**Amazon EC2 is an on-demand computing resource that helps host applications. During uncertain workloads, it is amicable. This computing resource is time friendly and allows quick scaling as per the requirement.

### 2. Give the features of the Amazon EC2 service.

**Answer:**The features of the Amazon EC2 service are:

* Virtual computing environment
* Amazon EC2 provides configurations like CPU, memory, storage, and networking capacity.
* It provides metadata.
* Data storage volumes that are deleted when you stop or terminate your instance

### 3. Discuss the security measures of Amazon EC2?

**Answer:**

* Restricts access and makes it available only for trusted hosts or networks to access
* Only open up permissions according to your requirement
* Disable password-based login
* AWS identity usage and management of access to control AWS resources

### 4. What do you mean by Key-pairs?

**Answer:**Key-pairs is password or login information used to prove identity whenever connected to the Amazon EC2 instance.

### 5. What is the way to recover a lost EC2 instance?

* The root volume of the instance has to be detached
* By modifying the configuration file
* By restarting the original instance
* By attaching importance to a temporary instance

### 6. What is Amazon EC2 auto-scaling?

**Answer:**As per the changing demands in workloads, the Amazon EC2 service removes or adds EC2 instances. It also detects unhealthy EC2 instances.

### 7. What is the medium to recover EC2 instance by configuring CloudWatch

**Answer:**Following are the medium to retrieve EC2 samples:

* By creating an alarm using Amazon CloudWatch
* Then go to the Define alarm action tab
* Finally, choose to recover this instance option

### 8. What do you know about fleet management in Amazon EC2 auto-scaling?

**Answer:**This efficient serving computing resource automatically replaces unhealthy EC2 instances with new instances. Therefore, we can say that it continuously surveils the health of Amazon EC2 instances.

### 9. Provide a brief difference between terminating and stopping an EC2 instance method.

**Answer:**When you stop an instance, it means that the model shuts down, and again when you start the sample, the attached volumes to the instance remain attached.

When you terminate an instance, it automatically deletes the EBS volumes attached; hence, the system can never restore it.

### 10. Provide a rough idea of the Amazon EC2 service structurally.

**Answer:**The basic structures are-

* It provides a virtual computing atmosphere.
* The storage capacity of the system is erased when you stop and or dismiss a process a process.
* Amazon EC2 delivers configurations like CPU, memory, storage, and networking capacity.
* Using key pair, you can lock your data.

### 11. Discuss the different types of EC2 instances based on their cost.

**Answer:**There are three types of EC2 instances:

* Spot instance
* Reserved Instance
* On-demand instance

### 12. How can S3 be discarded with EC2 instances?

**Answer:**The EC2 instances can be cast-off by native occurrence storage.

### 13. Discuss the regions and availability zones of Amazon EC2 instances.

**Answer:**This instance is hosted in multiple locations across the World. All the isolated places are called Availability zones.

### 14. How can the EBS device be rebooted?

**Answer:**Rebooting an Ebs device is like rebooting your PC, which means it does not affect your hard disk. Rebooting does not have any effect as such.

### 1. What is AWS EC2?

AWS EC2 is a service offered by Amazon to help customers to host compute services in their IT environment as a part of cloud computing. Amazon EC2 removes all of the manual setup typically involved in running virtual servers. It gives you full control over your computing resources, which you can scale as needed.

### 2. What is the full form of EC2?

Amazon Elastic Compute Cloud

### 3. What is an Instance in EC2?

An instance is a virtual server running apps on AWS EC2. An instance may represent a small segment of a single machine, that has a separate hard drive or OS, etc. From one physical machine you may have multiple little computers ([Virtual machines](https://thinkcloudly.com/top-50-cloud-computing-terms-you-need-to-know/)) which are referred to as Instances.

### 4. Why do we use EC2?

Amazon EC2 allows you to create as many or as few virtual servers as you need, manage security and networking, and configure storage in real time. Amazon EC2 lets you scale up or Scale down your workload as needed to meet changing business requirements. This way, you’re able to manage unexpected surges without sacrificing availability.

### 5. What do you mean by Spot instances in AWS EC2?

AWS Spot Instances let you make use of unused EC2 capacity on the AWS cloud. You can get Spot Instances at up to 90% off On-Demand prices. Spot Instances can be used for a variety of stateless, fault-tolerant, or flexible applications, such as big data, containerized workloads, etc.

### 6. What is Reserved instances in AWS EC2?

Reserved Instances are provided by Amazon Web Services (AWS) for customers to use for a variety of tailor-made uses. Amazon provides EC2 Reserved Instances at an hourly rate as well as an optional reservation of capacity for such instances at the same time.

### 7.  Explain the benefits of AWS EC2.

* **Reliability:** Each Amazon EC2 region in the Amazon Web Services network has an SLA of 99.9% availability. Thus, instance replacement is simple and fast.
* **Security:** Amazon implements Amazon VPC to deliver stable networking and security. The compute instances reside in a virtual private cloud ([VPC](https://thinkcloudly.com/virtual-private-cloud-vpc-and-aws-subnet/)) that is logically partitioned with a specific IP range.
* **Flexibility:** Choosing an EC2 instance can involve different factors such as types, software packages, instance storage, and operating systems. You can configure the memory, CPU, and boot partition size to suit the operating system and application.
* **Cost Saving:** EC2 is cost-effective because it enables consumers to configure plans to suit their needs. This will allow them to save money and maximize their resources. Amazon has such great savings because the power and scale of their EC2 instance is significantly lower in cost, compared to the other cloud providers.

### 8. What are the categories available in Reserved instances in AWS?

* **Standard RIs**

They are ready to be used on a steady stage. There is a 75% discount on their On-Demand instances.

* **Convertible RIs**

If you create another RI of equal or greater value in exchange, you can adjust RI’s attributes. You can also use convertible RIs for steady-state computations. For On-Demand instances, they offer discounts up to 54%.

* **Scheduled RIs**

By utilizing recurring, predictable RIs, you can schedule your capacity reservations to be completed within only a few days, weeks, or months. You can activate scheduled RIs at any time within your allocated timeframe.

### 9. Why EC2 is Important?

1. No need of any hardware.
2. Scalable up and down.
3. Pay for what you use.
4. Full control on machine.
5. Secure
6. Accessible from anywhere in the world via internet enabled device.

### 10. What is the AWS EC2 instance classification?

* On-Demand Instances
* Spot instances
* Reserved Instances (RI)

### 11. Is Amazon EC2 IaaS or PaaS?

EC2 is[**IaaS**](https://thinkcloudly.com/top-50-cloud-computing-terms-you-need-to-know/)(infrastructure as as service)

### 12. Explain t**he Basic Structure of AWS Ec2 Service ?**

* **Instances-** Instances are servers hosted in the AWS cloud using the EC2 services.
* **AMI –** AMI provides you the templates with an operating system and application pre-configured to reduce the chances of errors.
* **EBS-** A block-level storage device that you can attach to a single EC2 instance, EBS volume is a durable way to increase the disk space.
* **Security Group-** A security group provides a way to block the traffic of a particular machine from other network-connected computers for the security of the EC2 instance.
* **IAM-** Identity and Access Management, or IAM role, is used for managing access of AWS.
* **VPC-** AWS’ Virtual Private Cloud (VPC) allows you to set up a virtual network that AWS resources can then join.
* **Load Balancers-** Load Balancing distributes the incoming application or network traffic across multiple targets, such as Amazon EC2 instances, containers, and IP addresses, in multiple Availability Zones.
* **Cloud Watch-** The Amazon CloudWatch tool monitors all of your AWS resources and apps, collecting data and tracking variables in real time.

### 13. What is AMI in AWS EC2?

The Amazon Machine Image is a special type of virtual appliance used to create a virtual machine within the Amazon Elastic Compute Cloud. The AMI is the unit of deployment for services delivered through EC2.

### 14. What are regions and availability zones in AWS EC2?

Amazon EC2 is deployed at several locations throughout the world, each of which includes regions and Availability Zones. The regions are actually different geographical areas. There are many individual places in each region called Availability Zones.

### 15. What Is Security Group In Amazon Ec2 ?

When added to an instance, security groups function as a firewall, controlling the incoming and outgoing traffic of that instance.

### 16. Explain the Best Practices For Amazon Ec2 ?

To receive the most benefits and satisfactions from and in Amazon EC2:

* Security and Network Best Practices
* Storage
* Resource Management
* Backup and Recovery

### 17. What is the use of a Key Pair?

With key pairs, https://thinkcloudly.com/wp-content/uploads/2022/09/Google-Cloud-Architect.pngs can log in to their instances securely. Public-key [cryptography](https://thinkcloudly.com/cryptography/) is utilized to keep information such as login credentials safe.

### 18. Can we create our own AMI if yes how?

Yes we can create our own AMI, you can Launch an instance from a public AMI and save it to use for your own project as a custom AMI.

### 19. Can you Change Private IP Addresses On An EC2 in an Aws VPC when it is in running state?

A primary private IP address cannot be changed, but secondary private addresses can be moved between interfaces or instances at any time.

### 20. What happens when an EC2 Instance is rebooted?

A reboot is like restarting a computer. The hard disk isn‘t affected. You don‘t get the image‘s original state back, but the hard disk’s contents revert to the original.

A reboot is like restarting a computer. The hard disk isn‘t affected. You don‘t get the image‘s original state back, but the hard disk’s contents revert to the original.

### **[1) Explain EC2 in Amazon?](https://www.onlineinterviewquestions.com/aws-ec2-interview-questions/" \l "collapseUnfiled1)**

Amazon EC2 stands for Elastic Compute Cloud which is a web service interface. It also provides resizable compute capacity in the AWS cloud. It is used by developers to have complete control over web-scaling and computing resources.

### **[2) Mention some pros and cons of using Amazon EC2?](https://www.onlineinterviewquestions.com/aws-ec2-interview-questions/" \l "collapseUnfiled2)**

Some Pros and Cons of using Amazon EC2 is as follows.

**Pros**

* It has the ability to expand resources for the deployment of your cloud according to demand makes it extremely likable.
* Cloud hosting offers excellent backup capabilities, so it's a breeze to go back to the previous version.
* The cloud infrastructure prevents us from maintaining local hardware resources.

**Cons**

* The entire configuration and spin-up process require comprehensive technical knowledge.
* It has a little lack of training documentation and support. We tried to use Lambda expressions in the execution of program flow and found no great resources on this subject.

### **[3) List types of EC2 instances available in AWS?](https://www.onlineinterviewquestions.com/aws-ec2-interview-questions/" \l "collapseUnfiled3)**

The types of EC2 instances available in AWS are listed below:

* General-Purpose instances.
* 2. Compute Optimized instances.
* 3. Memory Optimized instances.
* 4. Accelerated Computing instances.
* 5. Storage Optimized instances

### **[4) What is the easiest and safest way to backup in Amazon EC2?](https://www.onlineinterviewquestions.com/aws-ec2-interview-questions/" \l "collapseUnfiled4)**

### **[5) For what purpose EC2 instance tags are used?](https://www.onlineinterviewquestions.com/aws-ec2-interview-questions/" \l "collapseUnfiled5)**

EC2 instance tags are used for the following purposes:

* It helps you to manage your instances, images, and other Amazon EC2 resources.
* It allows you to assign your own metadata to each resource in the form of tags.
* It enables you to categorize your AWS resources in different ways such as by purpose, owner, or environment.

### **[6) Why do we create instances in AWS?](https://www.onlineinterviewquestions.com/aws-ec2-interview-questions/" \l "collapseUnfiled6)**

We should create instances in AWS to obtain and configure capacity with minimal friction.

### **[7) List some tools to monitor AWS?](https://www.onlineinterviewquestions.com/aws-ec2-interview-questions/" \l "collapseUnfiled7)**

Some tools to monitor AWS are as follows:

* Nagios XI
* AppDynamics
* SolarWinds® AppOptics
* SolarWinds Papertrail
* StackPath Edge Delivery
* Paessler PRTG Network Monitor
* ManageEngine Applications Manager
* SolarWinds Database Performance Analyzer
* SolarWinds Database Performance Monitor
* SolarWinds Server & Application Monitor

### **[8) How do you route a domain name to an EC2 Instance?](https://www.onlineinterviewquestions.com/aws-ec2-interview-questions/" \l "collapseUnfiled8)**

To route a domain name to an EC2 Instance follow these steps:

* **Open the Route 53 console at https://console.aws.amazon.com/route53/.**
* In the navigation pane, choose Hosted zones.
* Choose the **name** of the hosted zone that matches the**name** of the **domain** that you want to **route** traffic for.
* Choose Create Record.
* Specify **Routing** policy and Choose to Create records values.

### **[9) What is the difference between a public IP and an elastic IP in AWS?](https://www.onlineinterviewquestions.com/aws-ec2-interview-questions/" \l "collapseUnfiled9)**

The differences between a public IP and an Elastic IP in AWS are as follows:

| S. N. | Public IP | Elastic IP |
| --- | --- | --- |
| 1 | It is assigned to your launched instance. | It is assigned to your AWS account. |
| 2 | When an instance is terminated the public IP attached to it gets released and further when you relaunch the same instance new IP address is assigned. | Elastic IP does not change and they remain the same even if you terminate the instance and later again restart the same instance. |

### **[10) How to regenerate a .pem file for my AWS EC2 server?](https://www.onlineinterviewquestions.com/aws-ec2-interview-questions/" \l "collapseUnfiled10)**

**[11) What is the difference between a spot instance and an on-demand instance?](https://www.onlineinterviewquestions.com/aws-ec2-interview-questions/" \l "collapseUnfiled11)**

**[12) How to set AWS EC2 CPU utilization to max or use all cores?](https://www.onlineinterviewquestions.com/aws-ec2-interview-questions/" \l "collapseUnfiled12)**

**[13) How do we permanently terminate or delete AWS EC2 instance?](https://www.onlineinterviewquestions.com/aws-ec2-interview-questions/" \l "collapseUnfiled13)**

**[4) What is the purpose of 'Reservations' in Amazon EC2?](https://www.onlineinterviewquestions.com/aws-ec2-interview-questions/" \l "collapseUnfiled14)**

[15](https://www.onlineinterviewquestions.com/aws-ec2-interview-questions/" \l "collapseUnfiled15)**[) What is the difference between Amazon ECS and Amazon EC2?](https://www.onlineinterviewquestions.com/aws-ec2-interview-questions/" \l "collapseUnfiled15)**

The difference between Amazon ECS and Amazon EC2 are as follows:

| S. N. | Amazon EC2 | Amazon ECS |
| --- | --- | --- |
| 1 | EC2 is simply a remote virtual machine that you can launch. | ECS is a logical group of EC2 instances on which you can run an application without having to scale your own cluster management infrastructure because ECS manages that for you. |

### **[16) I am not able to ping my AWS EC2 instance. What is the problem?](https://www.onlineinterviewquestions.com/aws-ec2-interview-questions/" \l "collapseUnfiled16)**

### **[17) How to find EC2 instances running a certain AMI?](https://www.onlineinterviewquestions.com/aws-ec2-interview-questions/" \l "collapseUnfiled17)**

The following steps are used to find EC2 instances running a certain AMI.

* Open the Amazon EC2 console at https://console.aws.amazon.com/ec2/.
* In the navigation pane, choose AMIs.
* In the navigation pane, choose Snapshots, and select the snapshot (look for the AMI ID in the Description column).
* (Optional) If you are finished with an instance that you launched from the AMI, terminate it

### **[18) What is '2' signifies in EC2 of AWS?](https://www.onlineinterviewquestions.com/aws-ec2-interview-questions/" \l "collapseUnfiled18)**

‘2’ signifies the two continuous C’s such as Compute Cloud in EC2 of AWS.

### **[19) What is ec2 snapshot?](https://www.onlineinterviewquestions.com/aws-ec2-interview-questions/" \l "collapseUnfiled19)**

An **Amazon Elastic Block Store (EBS) snapshot** is a point-in-time representation of the Amazon EBS volume, which is gradually copied to Amazon Simple Storage Service (Amazon S3) and are incremental images of data. This means that individual blocks of EBS volume data that have evolved since the last EBS snapshot are stored in the next EBS snapshot and this is how incremental images of data are produced in Amazon AWS EBS snapshot.

## What is EC2?

Amazon EC2 (Elastic Compute Cloud) is a web service interface that provides resizable compute capacity in the AWS cloud. It is designed for developers to have complete control over web-scaling and computing resources.  
EC2 instances can be resized and the number of instances scaled up or down as per our requirement. These instances can be launched in one or more geographical locations or regions, and Availability Zones (AZs). Each region comprises of several AZs at distinct locations, connected by low latency networks in the same region.

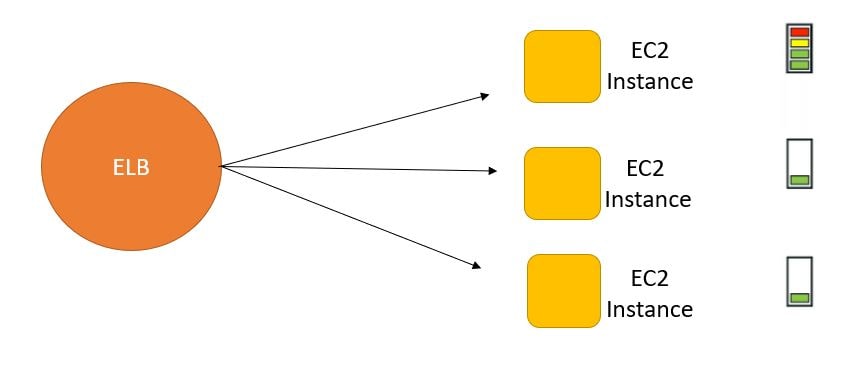
## What are the features of Amazon EC2?

* **Bare Metal instances**- Amazon EC2 bare metal instances provide your applications with direct access to the processor and memory of the underlying server.Bare metal instances are built on the Nitro system, a collection of AWS-built hardware offload and hardware protection components that come together to securely provide high performance networking and storage resources to EC2 instances.
* **Pause and Resume Your Instances**- You will not be charged for instance usage while your instance is hibernated. Storage is charged at standard EBS rates. For more information about hibernation, and supported instance types and operating systems.
* **High I/O Instances**- High I/O I3 and I3en instances are backed by Non-Volatile Memory Express (NVMe) based SSDs, and are ideally suited for customers running very high performance NoSQL databases, transactional systems, and Elastic Search workloads. High I/O instances also offer sequential disk throughput up to 16 GB/s, which is ideal for analytics workloads.
* **Flexible Storage Options**- Amazon EBS provides persistent, highly available, consistent, low-latency block storage volumes for use with Amazon EC2 instances. Each Amazon EBS volume is automatically replicated within its Availability Zone to protect you from component failure, offering high availability and durability. It is designed for application managers who need to tune workloads for capacity, performance and cost.
* **Elastic IP Addresses**- Elastic IP addresses are static IP addresses designed for dynamic cloud computing. An Elastic IP address is associated with your account not a particular instance, and you control that address until you choose to explicitly release it.
* **Enhanced Networking**- This feature uses a new network virtualization stack that provides higher I/O performance and lower CPU utilization compared to traditional implementations. In order to take advantage of Enhanced Networking, you should launch an HVM AMI in VPC, and install the appropriate driver.

## Explain Elastic Block Storage?

Amazon Elastic Block Store (EBS) is an easy to use, high-performance, block-storage service designed for use with Amazon Elastic Compute Cloud (EC2) for both throughput and transaction intensive workloads at any scale. A broad range of workloads, such as relational and non-relational databases, enterprise applications, containerized applications, big data analytics engines, file systems, and media workflows are widely deployed on Amazon EBS.

## How does Elastic Load Balancer work?

A load balancer accepts incoming traffic from clients and routes requests to its registered targets (such as EC2 instances) in one or more Availability Zones. It then resumes routing traffic to that target when it detects that the target is healthy again.  


## What is S3?What is it used for?

Amazon Simple Storage Service is storage for the Internet. It is designed to make web-scale computing easier for developers. Amazon S3 has a simple web services interface that you can use to store and retrieve any amount of data, at any time, from anywhere on the web.  
It is used for:  
industry-leading scalability, data availability, security, and performance.

## What is Lambda in Amazon EC2?

AWS Lambda is a responsive cloud service that inspects actions within the application and responds by deploying the user-defined codes, known as functions. It automatically manages the compute resources across multiple availability zones and scales them when new actions are triggered.It supports the code written in Java, Python and Node.js, and the service can launch processes in languages supported by Amazon Linux

## What is the difference between terminating and stopping an EC2 instance?

* Terminate Instance- When you terminate an EC2 instance, the instance will be shutdown and the virtual machine that was provisioned for you will be permanently taken away and you will no longer be charged for instance usage. Any data that was stored locally on the instance will be lost. Any attached EBS volumes will be detached and deleted. However, if you attach an EBS Snapshot to an instance at boot time, the default option in the Dashboard is to delete the attached EBS volume upon termination.
* Stop Instance- When you stop an EC2 instance, the instance will be shutdown and the virtual machine that was provisioned for you will be permanently taken away and you will no longer be charged for instance usage. The key difference between stopping and terminating an instance is that the attached bootable EBS volume will not be deleted. The data on your EBS volume will remain after stopping while all information on the local (ephemeral) hard drive will be lost as usual. The volume will continue to persist in its availability zone. Standard charges for EBS volumes will apply.

## What is auto-scaling?

Amazon EC2 Auto Scaling helps you maintain application availability and allows you to automatically add or remove EC2 instances according to conditions you define. Dynamic scaling responds to changing demand and predictive scaling automatically schedules the right number of EC2 instances based on predicted demand.

## Describe Storage For Amazon Ec2 Occurrence ?

Amazon EC2 provides you with flexible, cost effective, and easy-to-use data storage options for your instances. Each option has a unique combination of performance and durability. These storage options can be used independently or in combination to suit your requirements.  
These storage options include the following:

* Amazon EBS- Amazon EBS provides durable, block-level storage volumes that you can attach to a running instance. You can use Amazon EBS as a primary storage device for data that requires frequent and granular updates. For example, Amazon EBS is the recommended storage option when you run a database on an instance.
* Amazon EC2 instance store- This disk storage is referred to as instance store. Instance store provides temporary block-level storage for instances. The data on an instance store volume persists only during the life of the associated instance; if you stop, hibernate, or terminate an instance, any data on instance store volumes is lost.
* Amazon EFS file system- Amazon EFS provides scalable file storage for use with Amazon EC2. You can create an EFS file system and configure your instances to mount the file system.
* Amazon S3- Amazon S3 provides access to reliable and inexpensive data storage infrastructure. It is designed to make web-scale computing easier by enabling you to store and retrieve any amount of data, at any time, from within Amazon EC2 or anywhere on the web.
* Adding storage- The root storage device contains all the information necessary to boot the instance. You can specify storage volumes in addition to the root device volume when you create an AMI or launch an instance using block device mapping.

## What is WorkSpaces in AWS EC2?

Amazon WorkSpaces is a managed, secure Desktop-as-a-Service (DaaS) solution. You can use Amazon WorkSpaces to provision either Windows or Linux desktops in just a few minutes and quickly scale to provide thousands of desktops to workers across the globe.A WorkSpace is available as a bundle of operating system, compute resources, storage space, and software applications that allow a user to perform day-to-day tasks just like using a traditional desktop.

## How To Connect To Your Amazon Ec2 Instance?

Following are the steps to connect to a Linux instance:

* Install PuTTY on your local machine.
* Get your instance ID.
* Get the public DNS name of the instance.
* Locate the private key.
* Enable inbound SSH traffic from your IP address to your instance.
* Converting Your Private Key Using PuTTYgen.
* Starting a PuTTY Session.
* Now you are connected to your EC2 instance.

## What Is Amazon Machine Image (ami) ?

An Amazon Machine Image (AMI) provides the information required to launch an instance. You must specify an AMI when you launch an instance. You can launch multiple instances from a single AMI when you need multiple instances with the same configuration. You can use different AMIs to launch instances when you need instances with different configurations.

## What Is Public Key Credentials?

A public key credential is created and stored by an authenticator at the behest of a WebAuthn Relying Party, subject to user consent. Subsequently, the public key credential can only be accessed by origins belonging to that Relying Party.

### **1. What is AWS EC2?**

Amazon web service platform is a combination of infrastructure as a service (IaaS), platform as a service (PaaS) and packaged software as a service (SaaS) which produce cloud computing solutions with cost effectiveness, flexibility and so on.

An EC2(Elastic Compute Cloud) instance is simply a virtual server in Amazon Web Services terminology.

With an EC2 instance, AWS subscribers can request and provision a computer server within the AWS cloud.

Amazon EC2 enables you to scale up or down to handle changes in requirements or spikes in popularity, reducing your need to forecast traffic.

### **2. What is AWS S3?**

Amazon Simple Storage Service (Amazon S3) is an object storage service offering industry-leading scalability, data availability, security, and performance.

You can store any type of file on the Amazon S3 cloud object storage service.

So, you can store and retrieve any type of file on amazon s3 cloud, you can makes these files publicly available or only available to your organization.

### **3. What is AMI?**

An Amazon Machine Image (AMI) provides the information required to launch an instance. An Amazon Machine Image (AMI) is used to create virtual servers (Amazon Elastic Compute Cloud or EC2 instances) in the Amazon Web Services (AWS) environment.

You must specify an AMI when you launch an instance. You can launch multiple instances from a single AMI when you need multiple instances with the same configuration.

You can use different AMIs to launch instances when you need instances with different configurations. It offers an easy and visual mode of launching instances of your virtual machine on the cloud platform.

### **4. What is Amazon EC2 Root Device Volume?**

When you create an instance, the root device volume has the picture that was utilized to boot up the case in any case.

### **5. What is the connection between Instance and AMI?**

An Amazon Machine Image (AMI) is a template that contains a software configuration (for example, an operating system, an application server, and applications). **From an AMI, you launch an instance**, which is a copy of the AMI running as a virtual server in the cloud.

You can launch multiple instances of an AMI, as shown in the following figure.

Instances keep running until you stop, hibernate, or terminate them, or until they fail. If an instance fails, you can launch a new one from the AMI.

### **6. What is AWS EC2 Instance Storage?**

An instance storage provides temporary or Ephemeral block-level storage for an EC2 instance.

Instance store storage is located on the disks that are physically attached to the host computer.

Instance store is ideal for temporary storage of information that changes frequently, such as buffers, caches, scratch data, and other temporary content, or for data that is replicated across a fleet of instances, such as a load-balanced pool of web servers.

### **7. What are the Best Practices for Security in Amazon EC2?**

* Restrict access and allow only trusted hosts or networks to use the instance ports, using EC2 Security groups.
* Use AWS Identity and access management (IAM roles) for access control.
* Disable password-based login.
* Do not open S3 storage buckets for public access unless needed.

### **8. What is difference between Terminating an EC2 Instance and Stopping an Instance?**

**When we terminate** an EC2 instance, it transfers to the stopped state, while the EBS volumes are deleted and can’t be recovered.

But **when we stop** an EC2 instance, it's like a normal shutdown of the instance and then, it moves to the stopped state.

### **9. How to launch EC2 instance?**

* First, login into your AWS console and open up the EC2 console.
* Choose Launch Instance from the dashboard.
* Pick an AMI
* Pick an Instance Type.(Based on OS and RAM)
* Select Review and Launch (let the wizard take care of the remaining configuration settings).
* Select Security Group from the Security Groups on the Review Instance Launch page, and click on Launch.
* When it asks for a key pair, pick an Existing key pair.
* Click on View Instance to return to the EC2 console.

### **10. How can you upgrade EC2 Instance?**

You can follow below steps to upgrade EC2 (with downtime of few minutes):

1. Login into your AWS EC2 Console.
2. Navigate to "Instances" (From left-pane) and Select instance which you want to upgrade
3. Now, right-click on instance and select "Stop Instance", since, we cannot upgrade running instance, we will have to stop it, it will not take time.
4. Once, you have stopped the instance, Right-Click on it, and then select "Instance Settings", then select "Change Instance Type"
5. On Instance Selection screen, choose the new instance type, for example, I am upgrading from "t2.Micro" to "t2.medium", so select "t2.medium" and click "Apply"
6. Then Again, right-click instance, and select "Start Instance", to start it.
7. After a minute or two it will start working with upgraded version of instance.

### **11. How can you upgrade EC2 Instance without downtime?**

Follow below steps to upgrade or change EC2 instance without downtime:

1. Create a image of your Current Instance, you can do this, by right-clicking on your Instance, and then select "Image" -> "Create Image" (Creates an AMI of the instance)
2. Now create a new EC2 Instance with upgraded configuration and using above created image
3. Deasccociate Public IP Address from old server and associate it with new EC2 Server
4. That's it, your new upgaded Ec2 instance is ready.
5. You can terminate old instance, after checking new one has all your data.

### **12. How Would You Stop the Deletion of Root Device Volume Using a Console?**

* At the EC2 console, click on Launch Instance.
* On the Amazon Machine Image page, select the AMI and choose an Instance Type.
* On the Instance Details pages, configure the settings.
* Deselect "Delete on Termination" on the Add Storage page.
* Complete the remaining wizard configuration pages and click Launch.

### **13. What is a Security Group in EC2?**

Security groups in EC2 work as firewalls for associated instances.

They control both outbound and inbound traffic at the instance level, we can add rules to, incoming and outgoing traffic of instance, for example:

* Allow or not, to connect to our instance using SSH.
* Permit the outbound and inbound access for HTTP and HTTPS from any location.

### **14. How Would You Disable a Password-based Login for Root User?**

Perform following steps

* Login to remote server in Linux
* Open the /etc/ssh/sshd\_config file on any text editor.
* Looks for #PermitRootLogin and change it to ***without-password***.

### **15. Can You Use S3 with an EC2 Instance?**

Yes, we can use the Amazon S3 with EC2 instances with root devices using local instance storage.

### **16. Explain the difference between Public IP and Elastic IP.**

**Public IP:** It is a usual Public IP Address that is associated to EC2 instance. If an instance is stopped, the associated Public Address is released and once the instance starts again, a new Public Address is issued resulting in updating the host record on DNS Server.

**Elastic IP:** Elastic IP Address is a static Public Address that's associated to EC2 instance. EIP will not change even if a server is stopped and started again. This address also allows a instance to host resources on public internet very similar to Public Address.

### **17. What is EBS volume?**

EBS (Elastic Block Store) is a virtual block device that can be attached to EC2 instance. After you attach a volume to an instance, you can use it as you would use a physical hard drive. EBS volumes are flexible.

### **18. Can we attach multiple EBS volume to an instance?**

Yes, You can attach multiple EBS volumes to a single instance.

### **19. Describe AWS Elastic Load Balancer.**

A load balancer distributes incoming traffic across targets, such as your EC2 instances. This enables you to increase the availability of your application.

To ensure continuous delivery of our applications, Amazon provides us with Elastic Load Balancer with EC2, that can automatically distribute traffic to our application across multiple targets such as instances, lambda functions, virtual appliances, IP address and containers.

**Q.1 Explain the importance of buffer in Amazon Web Services?**

**Ans.** An**Elastic Load Balancer**works in a way by distributing the incoming traffic equally across various AWS instances. A buffer will analyze different components and makes the arrangement additional elastic to a burst of load or traffic.

The components are regular to work in an unstable way of processing the requests and receiving. The buffer makes the equilibrium connecting number of apparatus and modifies them effort at the identical rate to supply more frequent services.

**Q.2 What is the function of the command- ec2-create-group Create Security Group?**

**Ans.**Creates a new security group for use with your account.

**Q.3 Differentiate stopping and terminating instances?**

**Ans.** **Stopping and Starting an instance:** IF an instance stops, it performs a normal shutdown. In the next step, it is transit to a stop state. Every**Amazon EBS**volumes remain attached, and the instance can start again for further use. There are no further upfront charges.

**Terminating an instance:** During the termination process the instance performs a normal shutdown, and then the attach Amazon EBS volumes delete unless the volume’s delete on termination attribute is set to false. The instance itself also delete, and you can’t start the instance again at a later time.

**Q.4 When will you incur costs with an Elastic IP address (EIP)?**

**Ans.**When it allocates and associate with a stopped instance.

**Q.5 Differentiate between Spot Instances. An On-Demand instance or Reserved Instance?**

**Ans.**Spot instances give the flexibility for purchasers to get reason capability with no direct commitment, at hourly rates typically less than the On-Demand rate in every region. Spot instances are similar to bidding; the bidding value is termed terms.

The terms fluctuate supported provide and demand for instances. However, customers can never pay quite the utmost value they need nominal. If the spot moves on top of a customer’s most prices, the customer’s EC2 instance is going to be clean up mechanically.

However, the reverse isn’t true, if the Spot costs come back down once more, your EC2 instance won’t launch mechanically, and one must do this manually.

In Spot and on-demand instance, there’s no commitment for the period from the user aspect, but in reserved instances, one must keep on with the fundamental measure that he has chosen.

**Q.6 Are the Reserved Instances available for Multi-AZ Deployments?**

**Ans.**Available for all instance types

**Q.7 You have a video transcoding application. The videos are processed consistent with a queue. If the process of a video interrupts in one instance, it resumes in another instance. Presently there’s a large backlog of videos that must process, for this, you wish to feature a lot of instances. However, you would like these instances solely until your backlog reduce. That of those would be an economical way to do it?**

**Ans.** You should be exploitation AN on Demand instance for a similar. Why? Initial of all, the employment needs to process currently, which means it’s imperative, second you don’t would like them once your backlog is cleared, so Reserved Instance is out of the image, and since the work is imperative, you can’t stop the work on your instance simply because the terms spiked, so Spot Instances shall additionally not use.

Thence On-Demand instances shall the correct alternative in this case.

**Q.8 What kind of network performance parameters can you expect when you launch instances in cluster placement group?**

**Ans.**The network performance differs between the instance type and network performance specification, in a placement group the user can expect till

* 10 Gbps in a single-flow.
* 20 Gbps in multi-flow for an instance full duplex.
* Network traffic excluding the selected group will limit to 5 Gbps(full duplex).

**Q.9 Is one Elastic IP address enough for each instance that I actually have running?**

**Ans.**Each instance comes with its own personal and public address. The personal address is associated solely with the instance and it came back to Amazon EC2 only if it’s stopped or terminated. Similarly, the public address is associated solely with the instance till it’s stopped or terminated.

However, this will get replaced by the Elastic information processing address that stays with the instance as long because the user doesn’t manually detach it. However, what if you’re hosting multiple websites on your EC2 server, therein case you’ll need quite one Elastic IP address.

**Q.10 You need to set up an Amazon S3 bucket to serve static assets for your public-facing internet application. That technique can make sure that all objects uploaded to the bucket are set to public read?**

**Ans.** Configure the bucket policy to set all objects to public read. Making changes to every object is not preferred as it’s better to set the policy for the complete bucket. IAM is used to give more granular permissions since this is a website, all objects would be public by default.

**Q.11 Explain how S3 can use with EC2 instances?**

**Ans.**It will use for instances with root devices backed by native instance storage. With the help of**Amazon S3**, developers can use equivalent extremely scalable, reliable, fast, cheap data storage infrastructure. This infrastructure is used by Amazon to run its own international network of websites.

So as to execute systems within the Amazon EC2 atmosphere, developers use the tools provided to load their Amazon Machine pictures (AMIs) into Amazon S3 and to manoeuvre them between Amazon S3 and Amazon EC2.

**Q.12 How can a user move the data to long distances by using the internet with the help of Amazon S3 Bucket?**

**Ans.** Transfer Acceleration will use to transfer the data as it powers the data transfer with the use of optimized network paths and Amazon’s content delivery network. This network is more than 300% compared to normal data transfer speed.

**Q.13 How can a user boost up data transfer in Amazon Snowball?**

**Ans.**By playing multiple copy operations at just once i.e. if the digital computer is powerful enough, you’ll be able to initiate multiple cp commands every from totally different terminals, on an equivalent Snowball device.

Transferring giant files or by making a batch of a tiny file, this may cut back the secret writing overhead. Eliminating spare hops i.e. build a setup wherever the supply machine(s) and also the snowball are the sole machines active on the switch getting used, this could massively improve performance.

**Q.14 Can a user connect the company’s data centre to the Amazon Cloud?**

**Ans.** Yes, you’ll be able to try this by establishing a VPN(Virtual Private Network) affiliation between your company’s network and your VPC (**Virtual personal Cloud**), this may permit you to act together with your EC2 instances as if they were inside your existing network.

**Q.15 Is it possible to alter the personal IP addresses of associate EC2 whereas it’s running/stopped in an exceedingly VPC?**

**Ans.**The primary personal IP address connects with the instance throughout its lifespan and can’t modify, but secondary personal addresses will unassigned, appointed or rapt between interfaces or instances at any purpose.

**Q.16 Can a user attach multiple subnets to a routeing table?**

**Ans.** Route Tables use to route network packets. Therefore, in a subnet having multiple route tables can cause confusion as to detect the location of the packet. Therefore, there is a single route table in a subnet.

Considering the route table it can have any no. of records or information. This clarifies that attaching many subnets to a routeing table is possible.

**Q.17 If a user uses Amazon CloudFront, is able to use direct hook up with transfer objects from his data centre?**

**Ans.** Yes. **Amazon CloudFront** supports custom origins. It also includes origins from outside of AWS. With **AWS Direct Connect**, the user will charge with the different information transfer rates.

**Q.18 If AWS Direct Connect fails, can the user loose connectivity?**

**Ans.** If a backup AWS Direct Connect design, within the event of a failure it’ll change by reversal to the second. It suggests changing two-way Forwarding Detection (BFD) once configuring your connections to make sure quicker detection and failover.

On the opposite hand, if you’ve got design a backup IPsec VPN affiliation instead, all VPC traffic can failover to the backup VPN affiliation mechanically. Traffic to/from public resources like Amazon S3 is going to route over the net.

If a user doesn’t have a backup AWS Direct Connect link or an IPsec VPN link, then Amazon VPC traffic will lead to a rise in the event of a failure.

**Q.19 If a user launches a standby RDS instance, can or not it’s within the same convenience Zone as the primary?**

**Ans.** No, since the aim of getting a standby instance is to avoid associate infrastructure failure (if it happens), so the standby instance is kept during a completely different convenience zone that may a physically completely different freelance infrastructure.

**Q.20 When should a user prefer Provisioned IOPS over normal RDS storage?**

**Ans.** If you’ve got batch-oriented workloads. Provisioned IOPS deliver high IO rates however on the opposite hand it’s high-ticket still.

Execution workloads are not in need of manual intervention as they allow full utilization of systems, which states that provisioned IOPS are most popular for batch-oriented work.

**Q.21 How are Amazon RDS, DynamoDB and Redshift different from each other?**

**Ans. Amazon RDS**may a direct service for relative databases; it manages fixing, upgrading, backing of information etc. of databases for you while not your intervention. RDS is probably a database management service for structure data solely.

**Amazon DynamoDB**, on the opposite hand, maybe a NoSQL info service, NoSQL deals with unstructured information.

***Amazon Redshift***, is a completely different service, its data warehouse product and employ in data analysis.

**Q.22 Can a user run more than one DB instance for Amazon RDS for free?**

**Ans.**Yes. A user can run over one Single-AZ small info instance, that too for free! but, use exceeding 750 instance hours, across all Amazon RDS Single-AZ small db instances, across all eligible database engines and regions, will lead to the billing at normal Amazon RDS costs.

For example: if you run 2 Single-AZ small db instances for four hundred hours every in an exceedingly single month, you may accumulate 800 instance hours of usage, of that 750 hours are free. You may bill for the remaining fifty hours at the quality Amazon RDS value.

**Q.23 Can a user retrieve only a particular part of the information if he has a nested JSON data in DynamoDB?**

**Ans.**Yes. Once using the GetItem, BatchGetItem, question or Scan Apis, the user will able to outline a Projection Expression to see that attributes ought to retrieve from the table. Those attributes will embody scalars, sets, or parts of a JSON document.

**Q.24 A corporation is deploying a brand new two-tier internet application in AWS. The corporate has restricted workers and needs high handiness, and also the application needs advanced queries and table joins. That configuration provides the answer for the company’s requirements?**

**Ans.** Amazon DynamoDB. DynamoDB has the flexibility to scale over RDS or the other computer database service, so DynamoDB would the apt selection.

**Q.25 What will cause to the backups and dB Snapshots if a user deletes the dB Instance?**

**Ans.**When you delete a DB instance, you have got an option of making a final dB snapshot, if you are doing that you simply will restore your info from that photograph.

AWS RDS retains these user-created dB snapshots together with all different manually created dB snapshots when the instance delete. In addition, automated backups delete and solely manually created dB Snapshots preserve.

1. What is a VPC (Virtual private cloud)?
   * VPC is used to set up a logically separate data center in the cloud which can be used to distinguish your AWS service from services which are hosted by other users. Once we setup a VPC we have to provide a IPv4 address range which can be used by resources hosted in it . The IP range can be from \16 to \28.
2. What is a subnet?
   * Once we are done with setting up of VPC, we can spin up multiple subnets in the VPC. The number of subnets we can initiate depend on the number of availabilty zones in that perticular region. One subnet spans only a single AZ. The IP addresses range assigned to a subnet is subset of the parent VPC’s IP address range. Any two subnets cannot overlap the IP addresses among themselves. The VPC is used to setup public and private instances.
3. What is difference between public and private subnet.
   * Instances present in the public subnet can accessed from the internet while we cannot access the resources present in the private subnet. We can make a public subnet by sending out traffic using Internet Gateway in the route table from the subnet.
4. What is an EC2 and different type of EC2 options present in AWS?
   * EC2 provides resize able compute capacity in cloud. It reduces time required to obtain and boot new server instance to minutes.
   * Different EC2 options present are as under:
     + Ondemand
     + Reserved
     + Spot
     + Dedicated Hosts.
5. What is internet gateway.
   * An **Internet** **Gateway** is a logical connection between an Amazon **VPC** and the **Internet**. It is not a physical device Only one can be associated with each **VPC**. It does not limit the bandwidth of **Internet** connectivity.
6. Can a subnet span across multiple Availability zones?
   * No a subnet cannot span across multiple availability zones
7. Why is it recommended to spin an AWS Lambda without any VPC?
   * If we assign a VPC to lambda it will try to assign an ENI to the instances which behind the screen. And this process can take some time, which can increase the latency for the lambda results.
8. What is an ENI?
   * An elastic network interface is a logical networking component in a VPC that represents a virtual network card. For more information you can follow the link: [**Network Interface**](https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/using-eni.html#eni-basics).
9. What are the different  uses of Internet gateway.
   * Internet gateway has two main utilizations:
     + All the resources in a subnet are assigned with private IP and they don’t know their public IP. The network address translation for instances which has been assigned public IP.
     + Other use of an internet gateway is to make the resource in a subnet internet accessible. In other words a subnet is made public with the help of internet gateway.
10. What is a NAT instance?
    * Resources present in the private subnet can use NAT instance to access internet. Though we still cannot access these instances from outside, hence keeping them secure.
11. How to set up a NAT instance?
    * We have to create a NAT instance using already present AMI in the public subnet. And route out the traffic from the private subnets route table to this particular instance.
12. What is a bastion host?
    * Instances launched into private subnets can be accessed by bastion host. These are instances launched in the public subnet. We need to create an security group which allows ingress SSH or RDP only from bastion host. And assign this security group to the instances present in private subnet.
13. What  is NAT gateway.
    * NAT gateway is fully managed service provided by AWS to make internet accessible for the resources present in the private subnet.
14. How is NAT instance different from NAT gateway?
15. How is NAT different from bastion host.
    * EC2 instances in private subnet can access internet with the help of NAT instance.
    * Secure administration(SSH or RDP) of EC2 instances in private subnets can be done by using bastion host.
16. What are different levels of security present in AWS to prevent your resources?
    * There are two security layers present for our resources in AWS VPC. One is network level security, also known as NACL(Network access control list) and another one is instance level security know as security group(SG).
17. What type of security is present at subnet level?
    * We can create network access control list to allow or block traffic from specific IP addresses.
18. What is difference between security group and network ACL?
    * I have covered the differences in one of my previous [articles which you can find here.](https://www.dotnetforall.com/difference-nacl-security-group-aws/)
19. Is security group stateless or stateful in nature. And why is it so?
    * Security group is completely stateful in nature as it remembers the incoming or outgoing traffic port to allow the other side of traffic.
20. What is difference between scale out and scale up?
    * Scale out is to increase the number of resources. This is also known as horizontal scaling. On the other hand the scale up is to increase the current capacity of the resource in use. In  other words to increase the RAM or processing power of current resource in use.
21. What are different type of storage present in AWS?
    * Block Based (EBS)
    * File Based (EFS)
    * Object Based (S3)
22. What is EBS?
    * Allows you to create storage volumes and attach them to EC2 instances. Notably we can think of it as an hard disk which we can attach to VM.
23. How is EBS different from EFS?
24. Why there is need of EFS when there is S3 already present?
    * As S3 is object based storage we cannot store files with locks and permissions. Therefore it is not possible to mount a S3 to an EC2 instance. Where as EFS is file based storage and it can be used to mount to multiple EC2 instances.
25. What is an AMI?
    * AMI are pre configured images which provide information to launch instances in the cloud. In fact these are the back bone of the EC2 instances. Meanwhile we can create our own AMI as well with the software configured as per our need. We can share the same AMI with public or privately within the same region or different region.
26. What does an AMI consist?
    * An AMI includes the following:
      + A template for the root volume for the instance (for example, an operating system, an application server, and applications)
      + Launch permissions that control which AWS accounts can use the AMI to launch instances
      + A block device mapping that specifies the volumes to attach to the instance when it’s launched
27. Can you create your own AMI and share it?
    * Yes we can create our own AMI and share it with a particular account or publicly in the same region or different region.
28. What are different type of EBS volume types?
    * SSD Based: SSD is flash based with no moving parts. All points in SSD are highly available and accessible which makes them very good candidate for good I/O performance.
    * HDD based: HDD is made up of moving parts. Eventually these parts have to move to the data location to read it. And hence a bad candidate for for I/O operations. But it has very good performance for sequential I/O.
29. Which services have multi AZ enabled by default?
    * There are service like S3, DynamoDb , EKS are the services are by default build to support multi AZ deployment. Therefore there is no need for a user to to provide any multi AZ option for these services.
30. Can you use all the IP addresses assigned for a VPC?
    * The user cannot use the first four IP addresses and the last IP address in each subnet CIDR block , and cannot be assigned to an instance. For example, in a subnet with CIDR block 10.0.0.0/24, the following five IP addresses are reserved:
      + - 10.0.0.0: Network address.
        - 10.0.0.1: Reserved by AWS for the VPC router.
        - 10.0.0.2: Reserved by AWS. The IP address of the DNS server is always the base of the VPC network range plus two; however, we also reserve the base of each subnet range plus two. For VPCs with multiple CIDR blocks, the IP address of the DNS server is located in the primary CIDR.
        - 10.0.0.3: Reserved by AWS for future use.
      + 10.0.0.255: Network broadcast address. We do not support broadcast in a VPC, therefore we reserve this address.
31. What are the three type of gateways present in AWS?
    * The three type of gateways present in AWS are:
      + Internet gateway
      + NAT gateway

### 1. **Try this AWS scenario based interview question.**I have some private servers on my premises, also I have distributed some of my workload on the public cloud, what is this architecture called?

1. Virtual Private Network
2. Private Cloud
3. Virtual Private Cloud
4. Hybrid Cloud

**Answer D.**

**Explanation:**This type of architecture would be a hybrid cloud. Why? Because we are using both, the public cloud, and your on premises servers i.e the private cloud. To make this hybrid architecture easy to use, wouldn’t it be better if your private and public cloud were all on the same network(virtually). This is established by including your public cloud servers in a virtual private cloud, and connecting this virtual cloud with your on premise servers using a VPN(Virtual Private Network).

Learn to design, develop, and manage a robust, secure, and highly available cloud-based solution for your organization’s needs with the [Google Cloud Platform Course](https://www.edureka.co/google-cloud-architect-certification-training).

## Section 2: Amazon EC2 Interview Questions

For a detailed discussion on this topic, please refer our [**EC2 AWS**](https://www.edureka.co/blog/ec2-aws-tutorial-elastic-compute-cloud/) blog.

### 2. What does the following command do with respect to the Amazon EC2 security groups?

**ec2-create-group CreateSecurityGroup**

1. Groups the user created security groups into a new group for easy access.
2. Creates a new security group for use with your account.
3. Creates a new group inside the security group.
4. Creates a new rule inside the security group.

**Answer B.**

**Explanation:**A Security group is just like a firewall, it controls the traffic in and out of your instance. In AWS terms, the inbound and outbound traffic. The command mentioned is pretty straight forward, it says create security group, and does the same. Moving along, once your security group is created, you can add different rules in it. For example, you have an RDS instance, to access it, you have to add the public IP address of the machine from which you want access the instance  in its security group.

### **3. Here is aws scenario based interview question. You have a video trans-coding application. The videos are processed according to a queue. If the processing of a video is interrupted in one instance, it is resumed in another instance. Currently there is a huge back-log of videos which needs to be processed, for this you need to add more instances, but you need these instances only until your backlog is reduced. Which of these would be an efficient way to do it?**

You should be using an **On Demand** instance for the same. Why? First of all, the workload has to be processed now, meaning it is urgent, secondly you don’t need them once your backlog is cleared, therefore Reserved Instance is out of the picture, and since the work is urgent, you cannot stop the work on your instance just because the spot price spiked, therefore Spot Instances shall also not be used. Hence On-Demand instances shall be the right choice in this case.

### 4. You have a distributed application that periodically processes large volumes of data across multiple Amazon EC2 Instances. The application is designed to recover gracefully from Amazon EC2 instance failures. You are required to accomplish this task in the most cost effective way.

**Which of the following will meet your requirements?**

1. Spot Instances
2. Reserved instances
3. Dedicated instances
4. On-Demand instances

**Answer: A**

**Explanation:**Since the work we are addressing here is not continuous, a reserved instance shall be idle at times, same goes with On Demand instances. Also it does not make sense to launch an On Demand instance whenever work comes up, since it is expensive. Hence Spot Instances will be the right fit because of their low rates and no long term commitments.

**5. How is stopping and terminating an instance different from each other?**

Starting, stopping and terminating are the three states in an EC2 instance, let’s discuss them in detail:

* **Stopping and Starting** an instance: When an instance is stopped, the instance performs a normal shutdown and then transitions to a stopped state. All of its Amazon EBS volumes remain attached, and you can start the instance again at a later time. You are not charged for additional instance hours while the instance is in a stopped state.
* **Terminating** an instance: When an instance is terminated, the instance performs a normal shutdown, then the attached Amazon EBS volumes are deleted unless the volume’s *deleteOnTermination* attribute is set to false. The instance itself is also deleted, and you can’t start the instance again at a later time.

### **6. If I want my instance to run on a single-tenant hardware, which value do I have to set the instance’s tenancy attribute to?**

1. Dedicated
2. Isolated
3. One
4. Reserved

**Answer A.**

**Explanation:**The Instance tenancy attribute should be set to Dedicated Instance. The rest of the values are invalid.

### 7. When will you incur costs with an Elastic IP address (EIP)?

1. When an EIP is allocated.
2. When it is allocated and associated with a running instance.
3. When it is allocated and associated with a stopped instance.
4. Costs are incurred regardless of whether the EIP is associated with a running instance.

**Answer C.**

**Explanation:**You are not charged, if only one Elastic IP address is attached with your running instance. But you do get charged in the following conditions:

* When you use more than one Elastic IPs with your instance.
* When your Elastic IP is attached to a stopped instance.
* When your Elastic IP is not attached to any instance.

### **8. How is a Spot instance different from an On-Demand instance or Reserved Instance?**

First of all, let’s understand that Spot Instance, On-Demand instance and Reserved Instances are all models for pricing. Moving along, spot instances provide the ability for customers to purchase compute capacity with no upfront commitment, at hourly rates usually lower than the On-Demand rate in each region. Spot instances are just like bidding, the bidding price is called Spot Price. The Spot Price fluctuates based on supply and demand for instances, but customers will never pay more than the maximum price they have specified. If the Spot Price moves higher than a customer’s maximum price, the customer’s EC2 instance will be shut down automatically. But the reverse is not true, if the Spot prices come down again, your EC2 instance will not be launched automatically, one has to do that manually.  In Spot and On demand instance, there is no commitment for the duration from the user side, however in reserved instances one has to stick to the time period that he has chosen.

### **9. Are the Reserved Instances available for Multi-AZ Deployments?**

1. Multi-AZ Deployments are only available for Cluster Compute instances types
2. Available for all instance types
3. Only available for M3 instance types
4. D. Not Available for Reserved Instances

**Answer B.**

**Explanation:** Reserved Instances is a pricing model, which is available for all instance types in EC2.

### **10. How to use the processor state control feature available on the  c4.8xlarge instance?**

The processor state control consists of 2 states:

* The C state – Sleep state varying from c0 to c6. C6 being the deepest sleep state for a processor
* The P state – Performance state p0 being the highest and p15 being the lowest possible frequency.

Now, why the C state and P state. Processors have cores, these cores need thermal headroom to boost their performance. Now since all the cores are on the processor the temperature should be kept at an optimal state so that all the cores can perform at the highest performance.

Now how will these states help in that? If a core is put into sleep state it will reduce the overall temperature of the processor and hence other cores can perform better. Now the same can be  synchronized with other cores, so that the processor can boost as many cores it can by timely putting other cores to sleep, and thus get an overall performance boost.

Concluding, the C and P state can be customized in some EC2 instances like the c4.8xlarge instance and thus you can customize the processor according to your workload.

### **11. What kind of network performance parameters can you expect when you launch instances in cluster placement group?**

The network performance depends on the instance type and network performance specification, if launched in a placement group you can expect up to

* 10 Gbps in a single-flow,
* 20 Gbps in multiflow i.e full duplex
* Network traffic outside the placement group will be limited to 5 Gbps(full duplex).

### 12. To deploy a 4 node cluster of Hadoop in AWS which instance type can be used?

First let’s understand what actually happens in a Hadoop cluster, the Hadoop cluster follows a master slave concept. The master machine processes all the data, slave machines store the data and act as data nodes. Since all the storage happens at the slave, a higher capacity hard disk would be recommended and since master does all the processing, a higher RAM and a much better CPU is required. Therefore, you can select the configuration of your machine depending on your workload. For e.g. – In this case c4.8xlarge will be preferred for master machine whereas for slave machine we can select i2.large instance. If you don’t want to deal with configuring your instance and installing hadoop cluster manually, you can straight away launch an Amazon EMR (Elastic Map Reduce) instance which automatically configures the servers for you. You dump your data to be processed in S3, EMR picks it from there, processes it, and dumps it back into S3.

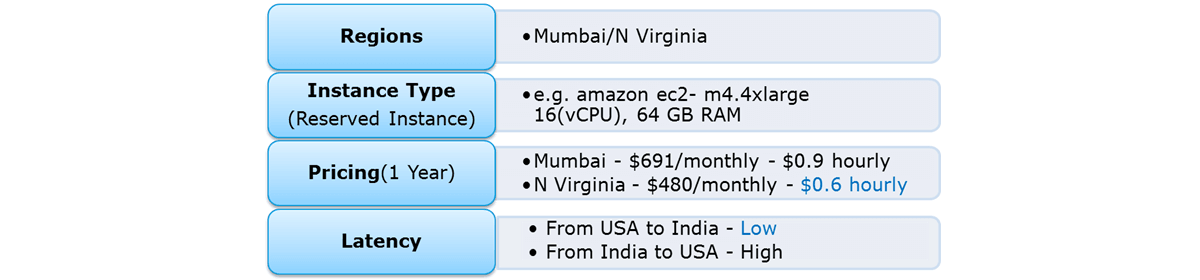
### 13. Where do you think an AMI fits, when you are designing an architecture for a solution?

AMIs(Amazon Machine Images) are like templates of virtual machines and an instance is derived from an AMI. AWS offers pre-baked AMIs which you can choose while you are launching an instance, some AMIs are not free, therefore can be bought from the AWS Marketplace. You can also choose to create your own custom AMI which would help you save space on AWS. For example if you don’t need a set of software on your installation, you can customize your AMI to do that. This makes it cost efficient, since you are removing the unwanted things.

### 14. How do you choose an Availability Zone?

Let’s understand this through an example, consider there’s a company which has user base in India as well as in the US.

Let us see how we will choose the region for this use case :

So, with reference to the above figure the regions to choose between are, Mumbai and North Virginia. Now let us first compare the pricing, you have hourly prices, which can be converted to your per month figure. Here North Virginia emerges as a winner. But, pricing cannot be the only parameter to consider. Performance should also be kept in mind hence, let’s look at latency as well. Latency basically is the time that a server takes to respond to your requests i.e the response time. North Virginia wins again!

So concluding, North Virginia should be chosen for this use case.

### 15. Is one Elastic IP address enough for every instance that I have running?

Depends! Every instance comes with its own private and public address. The private address is associated exclusively with the instance and is returned  to Amazon EC2 only when it is stopped or terminated. Similarly, the public address is associated exclusively with the instance until it is stopped or terminated. However, this can be replaced by the Elastic IP address, which stays with the instance as long as the user doesn’t manually detach it. But what if you are hosting multiple websites on your EC2 server, in that case you may require more than one Elastic IP address.

### 16. What are the best practices for Security in Amazon EC2?

There are several best practices to secure Amazon EC2. A few of them are given below:

* Use AWS Identity and Access Management (IAM) to control access to your AWS resources.
* Restrict access by only allowing trusted hosts or networks to access ports on your instance.
* Review the rules in your security groups regularly, and ensure that you apply the principle of least
* Privilege – only open up permissions that you require.
* Disable password-based logins for instances launched from your AMI. Passwords can be found or cracked, and are a security risk.

## Section 3: Amazon Storage

### 17. **Another scenario based interview question.**You need to configure an Amazon S3 bucket to serve static assets for your public-facing web application. Which method will ensure that all objects uploaded to the bucket are set to public read?

1. Set permissions on the object to public read during upload.
2. Configure the bucket policy to set all objects to public read.
3. Use AWS Identity and Access Management roles to set the bucket to public read.
4. Amazon S3 objects default to public read, so no action is needed.

**Answer B.**

**Explanation:** Rather than making changes to every object, its better to set the policy for the whole bucket. IAM is used to give more granular permissions, since this is a website, all objects would be public by default.

### 18. A customer wants to leverage Amazon Simple Storage Service (S3) and Amazon Glacier as part of their backup and archive infrastructure. The customer plans to use third-party software to support this integration. Which approach will limit the access of the third party software to only the Amazon S3 bucket named “company-backup”?

1. A custom bucket policy limited to the Amazon S3 API in three Amazon Glacier archive “company-backup”
2. A custom bucket policy limited to the Amazon S3 API in “company-backup”
3. A custom IAM user policy limited to the Amazon S3 API for the Amazon Glacier archive “company-backup”.
4. A custom IAM user policy limited to the Amazon S3 API in “company-backup”.

**Answer D.**

**Explanation:** Taking queue from the previous questions, this use case involves more granular permissions, hence IAM would be used here.

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### **19. Can S3 be used with EC2 instances, if yes, how?**

Yes, it can be used for instances with root devices backed by local instance storage. By using Amazon S3, developers have access to the same highly scalable, reliable, fast, inexpensive data storage infrastructure that Amazon uses to run its own global network of web sites. In order to execute systems in the Amazon EC2 environment, developers use the tools provided to load their Amazon Machine Images (AMIs) into Amazon S3 and to move them between Amazon S3 and Amazon EC2.

Another use case could be for websites hosted on EC2 to load their static content from S3.

### 20. A customer implemented AWS Storage Gateway with a gateway-cached volume at their main office. An event takes the link between the main and branch office offline. Which methods will enable the branch office to access their data?

1. Restore by implementing a lifecycle policy on the Amazon S3 bucket.
2. Make an Amazon Glacier Restore API call to load the files into another Amazon S3 bucket within four to six hours.
3. Launch a new AWS Storage Gateway instance AMI in Amazon EC2, and restore from a gateway snapshot.
4. Create an Amazon EBS volume from a gateway snapshot, and mount it to an Amazon EC2 instance.

**Answer C.**

**Explanation:**The fastest way to do it would be launching a new storage gateway instance. Why? Since time is the key factor which drives every business, troubleshooting this problem will take more time. Rather than we can just restore the previous working state of the storage gateway on a new instance.

### 21. When you need to move data over long distances using the internet, for instance across countries or continents to your Amazon S3 bucket, which method or service will you use?

1. Amazon Glacier
2. Amazon CloudFront
3. Amazon Transfer Acceleration
4. Amazon Snowball

**Answer C.**

**Explanation:** You would not use Snowball, because for now, the snowball service does not support cross region data transfer, and since, we are transferring across countries, Snowball cannot be used. Transfer Acceleration shall be the right choice here as it throttles your data transfer with the use of optimized network paths and Amazon’s content delivery network upto 300% compared to normal data transfer speed.

### 22. How can you speed up data transfer in Snowball?

The data transfer can be increased in the following way:

* By performing multiple copy operations at one time i.e. if the workstation is powerful enough, you can initiate multiple cp commands each from different terminals, on the same Snowball device.
* Copying from multiple workstations to the same snowball.
* Transferring large files or by creating a batch of small file, this will reduce the encryption overhead.
* Eliminating unnecessary hops i.e. make a setup where the source machine(s) and the snowball are the only machines active on the switch being used, this can hugely improve performance.

## Section 4: AWS VPC

### 23. If you want to launch Amazon Elastic Compute Cloud (EC2) instances and assign each instance a predetermined private IP address you should:

1. Launch the instance from a private Amazon Machine Image (AMI).
2. Assign a group of sequential Elastic IP address to the instances.
3. Launch the instances in the Amazon Virtual Private Cloud (VPC).
4. Launch the instances in a Placement Group.

**Answer C.**

**Explanation:** The best way of connecting to your cloud resources (for ex- ec2 instances) from your own data center (for eg- private cloud) is a VPC. Once you connect your datacenter to the VPC in which your instances are present, each instance is assigned a private IP address which can be accessed from your datacenter. Hence, you can access your public cloud resources, as if they were on your own network.

### **24. Can I connect my corporate datacenter to the Amazon Cloud?**

Yes, you can do this by establishing a VPN(Virtual Private Network) connection between your company’s network and your VPC (Virtual Private Cloud), this will allow you to interact with your EC2 instances as if they were within your existing network.

### **25. Is it possible to change the private IP addresses of an EC2 while it is running/stopped in a VPC?**

Primary private IP address is attached with the instance throughout its lifetime and cannot be changed, however secondary private addresses can be unassigned, assigned or moved between interfaces or instances at any point.

### 26. Why do you make subnets?

1. Because there is a shortage of networks
2. To efficiently utilize networks that have a large no. of hosts.
3. Because there is a shortage of hosts.
4. To efficiently utilize networks that have a small no. of hosts.

**Answer B.**

**Explanation:**If there is a network which has a large no. of hosts, managing all these hosts can be a tedious job. Therefore we divide this network into subnets (sub-networks) so that managing these hosts becomes simpler.

### 27. Which of the following is true?

1. You can attach multiple route tables to a subnet
2. You can attach multiple subnets to a route table
3. Both A and B
4. None of these.

**Answer B.**

**Explanation:**Route Tables are used to route network packets, therefore in a subnet having multiple route tables will lead to confusion as to where the packet has to go. Therefore, there is only one route table in a subnet, and since a route table can have any no. of records or information, hence attaching multiple subnets to a route table is possible.

### 28. In CloudFront what happens when content is NOT present at an Edge location and a request is made to it?

1. An Error “404 not found” is returned
2. CloudFront delivers the content directly from the origin server and stores it in the cache of the edge location
3. The request is kept on hold till content is delivered to the edge location
4. The request is routed to the next closest edge location

**Answer B.**

**Explanation:** CloudFront is a content delivery system, which caches data to the nearest edge location from the user, to reduce latency. If data is not present at an edge location, the first time the data may get transferred from the original server, but from the next time, it will be served from the cached edge.

### 29. If I’m using Amazon CloudFront, can I use Direct Connect to transfer objects from my own data center?

Yes. Amazon CloudFront supports custom origins including origins from outside of AWS. With AWS Direct Connect, you will be charged with the respective data transfer rates.

### **30. If my AWS Direct Connect fails, will I lose my connectivity?**

If a backup AWS Direct connect has been configured, in the event of a failure it will switch over to the second one. It is recommended to enable Bidirectional Forwarding Detection (BFD) when configuring your connections to ensure faster detection and failover. On the other hand, if you have configured a backup IPsec VPN connection instead, all VPC traffic will failover to the backup VPN connection automatically. Traffic to/from public resources such as Amazon S3 will be routed over the Internet. If you do not have a backup AWS Direct Connect link or a IPsec VPN link, then Amazon VPC traffic will be dropped in the event of a failure.

## Section 5: Amazon Database

### 31. If I launch a standby RDS instance, will it be in the same Availability Zone as my primary?

1. Only for Oracle RDS types
2. Yes
3. Only if it is configured at launch
4. No

**Answer D.**

**Explanation:**No, since the purpose of having a standby instance is to avoid an infrastructure failure (if it happens), therefore the standby instance is stored in a different availability zone, which is a physically different independent infrastructure.

### 32. When would I prefer Provisioned IOPS over Standard RDS storage?

1. **If you have batch-oriented workloads**
2. If you use production online transaction processing (OLTP) workloads.
3. If you have workloads that are not sensitive to consistent performance
4. All of the above

**Answer A.**

**Explanation:** Provisioned IOPS deliver high IO rates but on the other hand it is expensive as well. Batch processing workloads do not require manual intervention they enable full utilization of systems, therefore a provisioned IOPS will be preferred for batch oriented workload.

### **33. How is Amazon RDS, DynamoDB and Redshift different?**

* Amazon RDS is a database management service for relational databases,  it manages patching, upgrading, backing up of data etc. of databases for you without your intervention. RDS  is a Db management service for structured data only.
* DynamoDB, on the other hand, is a NoSQL database service, NoSQL deals with unstructured data.
* Redshift, is an entirely different service, it is a data warehouse product and is used in data analysis.

### 34. If I am running my DB Instance as a Multi-AZ deployment, can I use the standby DB Instance for read or write operations along with primary DB instance?

1. Yes
2. Only with MySQL based RDS
3. Only for Oracle RDS instances
4. No

**Answer D.**

**Explanation:**No,Standby DB instance cannot be used with primary DB instance in parallel, as the former is solely used for standby purposes, it cannot be used unless the primary instance goes down.

### 35. Your company’s branch offices are all over the world, they use a software with a multi-regional deployment on AWS, they use MySQL 5.6 for data persistence.

**The task is to run an hourly batch process and read data from every region to compute cross-regional reports which will be distributed to all the branches. This should be done in the shortest time possible. How will you build the DB architecture in order to meet the requirements?**

1. For each regional deployment, use RDS MySQL with a master in the region and a read replica in the HQ region
2. For each regional deployment, use MySQL on EC2 with a master in the region and send hourly EBS snapshots to the HQ region
3. For each regional deployment, use RDS MySQL with a master in the region and send hourly RDS snapshots to the HQ region
4. For each regional deployment, use MySQL on EC2 with a master in the region and use S3 to copy data files hourly to the HQ region

**Answer A.**

**Explanation:**For this we will take an RDS instance as a master, because it will manage our database for us and since we have to read from every region, we’ll put a read replica of this instance in every region where the data has to be read from. Option C is not correct since putting a read replica would be more efficient than putting a snapshot, a read replica can be promoted if needed  to an independent DB instance, but with a Db snapshot it becomes mandatory to launch a separate DB Instance.

### **36. Can I run more than one DB instance for Amazon RDS for free?**

Yes. You can run more than one Single-AZ Micro database instance, that too for free! However, any use exceeding 750 instance hours, across all Amazon RDS Single-AZ Micro DB instances, across all eligible database engines and regions, will be billed at standard Amazon RDS prices. For example: if you run two Single-AZ Micro DB instances for 400 hours each in a single month, you will accumulate 800 instance hours of usage, of which 750 hours will be free. You will be billed for the remaining 50 hours at the standard Amazon RDS price.

### 37. Which AWS services will you use to collect and process e-commerce data for near real-time analysis?

1. Amazon ElastiCache
2. Amazon DynamoDB
3. Amazon Redshift
4. Amazon Elastic MapReduce

**Answer B,C.**

**Explanation:** DynamoDB is a fully managed NoSQL database service. DynamoDB, therefore can be fed any type of unstructured data, which can be data from e-commerce websites as well, and later, an analysis can be done on them using Amazon Redshift. We are not using Elastic MapReduce, since a near real time analyses is needed.

### **38. Can I retrieve only a specific element of the data, if I have a nested JSON data in DynamoDB?**

Yes. When using the GetItem, BatchGetItem, Query or Scan APIs, you can define a Projection Expression to determine which attributes should be retrieved from the table. Those attributes can include scalars, sets, or elements of a JSON document.

### 39. A company is deploying a new two-tier web application in AWS. The company has limited staff and requires high availability, and the application requires complex queries and table joins. Which configuration provides the solution for the company’s requirements?

1. MySQL Installed on two Amazon EC2 Instances in a single Availability Zone
2. Amazon RDS for MySQL with Multi-AZ
3. Amazon ElastiCache
4. Amazon DynamoDB

**Answer D.**

**Explanation:**DynamoDB has the ability to scale more than RDS or any other relational database service, therefore DynamoDB would be the apt choice.

### 40. What happens to my backups and DB Snapshots if I delete my DB Instance?

When you delete a DB instance, you have an option of creating a final DB snapshot, if you do that you can restore your database from that snapshot. RDS retains this user-created DB snapshot along with all other manually created DB snapshots after the instance is deleted, also automated backups are deleted and only manually created DB Snapshots are retained.

### 41. Which of the following use cases are suitable for Amazon DynamoDB? Choose 2 answers

1. Managing web sessions.
2. Storing JSON documents.
3. Storing metadata for Amazon S3 objects.
4. Running relational joins and complex updates.

**Answer C,D.**

**Explanation:**If all your JSON data have the same fields eg [id,name,age] then it would be better to store it in a relational database, the metadata on the other hand is unstructured, also running relational joins or complex updates would work on DynamoDB as well.

### **42. How can I load my data to Amazon Redshift from different data sources like Amazon RDS, Amazon DynamoDB and Amazon EC2?**

You can load the data in the following two ways:

* You can use the COPY command to load data in parallel directly to Amazon Redshift from Amazon EMR, Amazon DynamoDB, or any SSH-enabled host.
* AWS Data Pipeline provides a high performance, reliable, fault tolerant solution to load data from a variety of AWS data sources. You can use AWS Data Pipeline to specify the data source, desired data transformations, and then execute a pre-written import script to load your data into Amazon Redshift.

### 43. Your application has to retrieve data from your user’s mobile every 5 minutes and the data is stored in DynamoDB, later every day at a particular time the data is extracted into S3 on a per user basis and then your application is later used to visualize the data to the user. You are asked to optimize the architecture of the backend system to lower cost, what would you recommend?

1. Create a new Amazon DynamoDB (able each day and drop the one for the previous day after its data is on Amazon S3.
2. Introduce an Amazon SQS queue to buffer writes to the Amazon DynamoDB table and reduce provisioned write throughput.
3. Introduce Amazon Elasticache to cache reads from the Amazon DynamoDB table and reduce provisioned read throughput.
4. Write data directly into an Amazon Redshift cluster replacing both Amazon DynamoDB and Amazon S3.

**Answer C.**

**Explanation:**Since our work requires the data to be extracted and analyzed, to optimize this process a person would use provisioned IO, but since it is expensive, using a ElastiCache memoryinsread to cache the results in the memory can reduce the provisioned read throughput and hence reduce cost without affecting the performance.

### 44. You are running a website on EC2 instances deployed across multiple Availability Zones with a Multi-AZ RDS MySQL Extra Large DB Instance. The site performs a high number of small reads and writes per second and relies on an eventual consistency model. After comprehensive tests you discover that there is read contention on RDS MySQL. Which are the best approaches to meet these requirements? (Choose 2 answers)

1. Deploy ElastiCache in-memory cache running in each availability zone
2. Implement sharding to distribute load to multiple RDS MySQL instances
3. Increase the RDS MySQL Instance size and Implement provisioned IOPS
4. Add an RDS MySQL read replica in each availability zone

**Answer A,C.**

**Explanation:**Since it does a lot of read writes, provisioned IO may become expensive. But we need high performance as well, therefore the data can be cached using ElastiCache which can be used for frequently reading the data. As for RDS since read contention is happening, the instance size should be increased and provisioned IO should be introduced to increase the performance.

### 45. A startup is running a pilot deployment of around 100 sensors to measure street noise and air quality in urban areas for 3 months. It was noted that every month around 4GB of sensor data is generated. The company uses a load balanced auto scaled layer of EC2 instances and a RDS database with 500 GB standard storage. The pilot was a success and now they want to deploy at least  100K sensors which need to be supported by the backend. You need to store the data for at least 2 years to analyze it. Which setup of the following would you prefer?

1. Add an SQS queue to the ingestion layer to buffer writes to the RDS instance
2. Ingest data into a DynamoDB table and move old data to a Redshift cluster
3. Replace the RDS instance with a 6 node Redshift cluster with 96TB of storage
4. Keep the current architecture but upgrade RDS storage to 3TB and 10K provisioned IOPS

**Answer C.**  
**Explanation:**A Redshift cluster would be preferred because it easy to scale, also the work would be done in parallel through the nodes, therefore is perfect for a bigger workload like our use case. Since each month 4 GB of data is generated, therefore in 2 year, it should be around 96 GB. And since the servers will be increased to 100K in number, 96 GB will approximately become 96TB. Hence option C is the right answer.

## Section 6: AWS Auto Scaling, AWS Load Balancer

### 46. Suppose you have an application where you have to render images and also do some general computing. From the following  services which service will best fit your need?

1. Classic Load Balancer
2. Application Load Balancer
3. Both of them
4. None of these

**Answer B.**

**Explanation:**You will choose an application load balancer, since it supports path based routing, which means it can take decisions based on the URL, therefore if your task needs image rendering it will route it to a different instance, and for general computing it will route it to a different instance.

### 47. What is the difference between Scalability and Elasticity?

Scalability is the ability of a system to increase its hardware resources to handle the increase in demand. It can be done by increasing the hardware specifications or increasing the processing nodes.

Elasticity is the ability of a system to handle increase in the workload by adding additional hardware resources when the demand increases(same as scaling) but also rolling back the scaled resources, when the resources are no longer needed. This is particularly helpful in Cloud environments, where a pay per use model is followed.

### 48. How will you change the instance type for instances which are running in your application tier and are using Auto Scaling. Where will you change it from the following areas?

1. Auto Scaling policy configuration
2. Auto Scaling group
3. Auto Scaling tags configuration
4. Auto Scaling launch configuration

**Answer D.**

**Explanation:**Auto scaling tags configuration, is used to attach metadata to your instances, to change the instance type you have to use auto scaling launch configuration.

### 49. You have a content management system running on an Amazon EC2 instance that is approaching 100% CPU utilization. Which option will reduce load on the Amazon EC2 instance?

1. Create a load balancer, and register the Amazon EC2 instance with it
2. Create a CloudFront distribution, and configure the Amazon EC2 instance as the origin
3. Create an Auto Scaling group from the instance using the CreateAutoScalingGroup action
4. Create a launch configuration from the instance using the CreateLaunchConfigurationAction

**Answer A.**

**Explanation:**Creating alone an autoscaling group will not solve the issue, until you attach a load balancer to it. Once you attach a load balancer to an autoscaling group, it will efficiently distribute the load among all the instances. Option B – CloudFront is a CDN, it is a data transfer tool therefore will not help reduce load on the EC2 instance. Similarly the other option – Launch configuration is a template for configuration which has no connection with reducing loads.

### 50. When should I use a Classic Load Balancer and when should I use an Application load balancer?

A Classic Load Balancer is ideal for simple load balancing of traffic across multiple EC2 instances, while an Application Load Balancer is ideal for microservices or container-based architectures where there is a need to route traffic to multiple services or load balance across multiple ports on the same EC2 instance

### 51. What does Connection draining do?

1. Terminates instances which are not in use.
2. **Re-routes traffic from instances which are to be updated or failed a health check.**
3. Re-routes traffic from instances which have more workload to instances which have less workload.
4. Drains all the connections from an instance, with one click.

**Answer B.**

**Explanation:**Connection draining is a service under ELB which constantly monitors the health of the instances. If any instance fails a health check or if any instance has to be patched with a software update, it  pulls all the traffic from that instance and re routes them to other instances.

### 52.When an instance is unhealthy, it is terminated and replaced with a new one, which of the following services does that?

1. Sticky Sessions
2. Fault Tolerance
3. Connection Draining
4. Monitoring

**Answer B.**

**Explanation:**When ELB detects that an instance is unhealthy, it starts routing incoming traffic to other healthy instances in the region. If all the instances in a region becomes unhealthy, and if you have instances in some other availability zone/region, your traffic is directed to them. Once your instances become healthy again, they are re routed back to the original instances.

### 53. What are lifecycle hooks used for in AutoScaling?

1. They are used to do health checks on instances
2. They are used to put an additional wait time to a scale in or scale out event.
3. They are used to shorten the wait time to a scale in or scale out event
4. None of these

**Answer B.**

**Explanation:**Lifecycle hooks are used for putting wait time before any lifecycle action i.e launching or terminating an instance happens. The purpose of this wait time, can be anything from extracting log files before terminating an instance or installing the necessary softwares in an instance before launching it.

### **54. A user has setup an Auto Scaling group. Due to some issue the group has failed to launch a single instance for more than 24 hours. What will happen to Auto Scaling in this condition?**

1. Auto Scaling will keep trying to launch the instance for 72 hours
2. Auto Scaling will suspend the scaling process
3. Auto Scaling will start an instance in a separate region
4. The Auto Scaling group will be terminated automatically

**Answer B.**

**Explanation:** Auto Scaling allows you to suspend and then resume one or more of the Auto Scaling processes in your Auto Scaling group. This can be very useful when you want to investigate a configuration problem or other issue with your web application, and then make changes to your application, without triggering the Auto Scaling process.

## Section 7: CloudTrail, Route 53

### 55. You have an EC2 Security Group with several running EC2 instances. You changed the Security Group rules to allow inbound traffic on a new port and protocol, and then launched several new instances in the same Security Group. The new rules apply:

1. Immediately to all instances in the security group.
2. Immediately to the new instances only.
3. Immediately to the new instances, but old instances must be stopped and restarted before the new rules apply.
4. To all instances, but it may take several minutes for old instances to see the changes.

**Answer A.**

**Explanation:** Any rule specified in an EC2 Security Group applies immediately to all the instances, irrespective of when they are launched before or after adding a rule.

### 56. To create a mirror image of your environment in another region for disaster recovery, which of the following AWS resources do not need to be recreated in the second region? ( Choose 2 answers )

1. Route 53 Record Sets
2. Elastic IP Addresses (EIP)
3. EC2 Key Pairs
4. Launch configurations
5. Security Groups

**Answer A.**

**Explanation:**Route 53 record sets are common assets therefore there is no need to replicate them, since Route 53 is valid across regions

### 57. A customer wants to capture all client connection information from his load balancer at an interval of 5 minutes, which of the following options should he choose for his application?

1. Enable AWS CloudTrail for the loadbalancer.
2. Enable access logs on the load balancer.
3. Install the Amazon CloudWatch Logs agent on the load balancer.
4. Enable Amazon CloudWatch metrics on the load balancer.

**Answer A.**

**Explanation:**AWS CloudTrail provides inexpensive logging information for load balancer and other AWS resources This logging information can be used for analyses and other administrative work, therefore is perfect for this use case.

### 58. A customer wants to track access to their Amazon Simple Storage Service (S3) buckets and also use this information for their internal security and access audits. Which of the following will meet the Customer requirement?

1. Enable AWS CloudTrail to audit all Amazon S3 bucket access.
2. Enable server access logging for all required Amazon S3 buckets.
3. Enable the Requester Pays option to track access via AWS Billing
4. Enable Amazon S3 event notifications for Put and Post.

**Answer A.**

**Explanation:**AWS CloudTrail has been designed for logging and tracking API calls. Also this service is available for storage, therefore should be used in this use case.

### 59. Which of the following are true regarding AWS CloudTrail? (Choose 2 answers)

1. CloudTrail is enabled globally
2. CloudTrail is enabled on a per-region and service basis
3. Logs can be delivered to a single Amazon S3 bucket for aggregation.
4. CloudTrail is enabled for all available services within a region.

**Answer B,C.**

**Explanation:** Cloudtrail is not enabled for all the services and is also not available for all the regions. Therefore option B is correct, also the logs can be delivered to your S3 bucket, hence C is also correct.

### **60. What happens if CloudTrail is turned on for my account but my Amazon S3 bucket is not configured with the correct policy?**

CloudTrail files are delivered according to S3 bucket policies. If the bucket is not configured or is misconfigured, CloudTrail might not be able to deliver the log files.

### **61. How do I transfer my existing domain name registration to Amazon Route 53 without disrupting my existing web traffic?**

You will need to get a list of the DNS record data for your domain name first, it is generally available in the form of a “zone file” that you can get from your existing DNS provider. Once you receive the DNS record data, you can use Route 53’s Management Console or simple web-services interface to create a hosted zone that will store your DNS records for your domain name and follow its transfer process. It also includes steps such as updating the nameservers for your domain name to the ones associated with your hosted zone. For completing the process you have to contact the registrar with whom you registered your domain name and follow the transfer process. As soon as your registrar propagates the new name server delegations, your DNS queries will start to get answered.

## Section 8: AWS SQS, AWS SNS, AWS SES, AWS ElasticBeanstalk

### 62. Which of the following services you would not use to deploy an app?

1. Elastic Beanstalk
2. Lambda
3. Opsworks
4. CloudFormation

**Answer B.**

**Explanation:** Lambda is used for running server-less applications. It can be used to deploy functions triggered by events. When we say serverless, we mean without you worrying about the computing resources running in the background. It is not designed for creating applications which are publicly accessed.

### 63. How does Elastic Beanstalk apply updates?

1. By having a duplicate ready with updates before swapping.
2. By updating on the instance while it is running
3. By taking the instance down in the maintenance window
4. Updates should be installed manually

**Answer A.**

**Explanation:** Elastic Beanstalk prepares a duplicate copy of the instance, before updating the original instance, and routes your traffic to the duplicate instance, so that, incase your updated application fails, it will switch back to the original instance, and there will be no downtime experienced by the users who are using your application.

### **64. How is AWS Elastic Beanstalk different than AWS OpsWorks?**

AWS Elastic Beanstalk is an application management platform while OpsWorks is a configuration management platform. BeanStalk is an easy to use service which is used for deploying and scaling web applications developed with Java, .Net, PHP, Node.js, Python, Ruby, Go and Docker. Customers upload their code and Elastic Beanstalk automatically handles the deployment. The application will be ready to use without any infrastructure or resource configuration.

In contrast, AWS Opsworks is an integrated configuration management platform for IT administrators or DevOps engineers who want a high degree of customization and control over operations.

### 65. What happens if my application stops responding to requests in beanstalk?

AWS Beanstalk applications have a system in place for avoiding failures in the underlying infrastructure. If an Amazon EC2 instance fails for any reason, Beanstalk will use Auto Scaling to automatically launch a new instance. Beanstalk can also detect if your application is not responding on the custom link, even though the infrastructure appears healthy, it will be logged as an environmental event( e.g a bad version was deployed) so you can take an appropriate action.

For a detailed discussion on this topic, please refer [**Lambda AWS**](https://www.edureka.co/blog/aws-lambda-tutorial)blog.

## Section 9: AWS OpsWorks, AWS KMS

### **66. How is AWS OpsWorks different than AWS CloudFormation?**

OpsWorks and CloudFormation both support application modelling, deployment, configuration, management and related activities. Both support a wide variety of architectural patterns, from simple web applications to highly complex applications. AWS OpsWorks and AWS CloudFormation differ in abstraction level and areas of focus.

**67.** I created a key in Oregon region to encrypt my data in North Virginia region for security purposes. I added two users to the key and an external AWS account. I wanted to encrypt an object in S3, so when I tried, the key that I just created was not listed.  What could be the reason?

1. External aws accounts are not supported.
2. AWS S3 cannot be integrated KMS.
3. The Key should be in the same region.
4. New keys take some time to reflect in the list.

**Answer C.**

**Explanation:**The key created and the data to be encrypted should be in the same region. Hence the approach taken here to secure the data is incorrect.

### 68.  A company needs to monitor the read and write IOPS for their AWS MySQL RDS instance and send real-time alerts to their operations team. Which AWS services can accomplish this?

1. Amazon Simple Email Service
2. Amazon CloudWatch
3. Amazon Simple Queue Service
4. Amazon Route 53

**Answer B.**

**Explanation:**Amazon CloudWatch is a cloud monitoring tool and hence this is the right service for the mentioned use case. The other options listed here are used for other purposes for example route 53 is used for DNS services, therefore CloudWatch will be the apt choice.

### 69. What happens when one of the resources in a stack cannot be created successfully in AWS OpsWorks?

When an event like this occurs, the “automatic rollback on error” feature is enabled, which causes all the AWS resources which were created successfully till the point where the error occurred to be deleted. This is helpful since it does not leave behind any erroneous data, it ensures the fact that stacks are either created fully or not created at all. It is useful in events where you may accidentally exceed your limit of the no. of Elastic IP addresses or maybe you may not have access to an EC2 AMI that you are trying to run etc.

### 70. What automation tools can you use to spinup servers?

Any of the following tools can be used:

* Roll-your-own scripts, and use the AWS API tools.  Such scripts could be written in bash, perl or other language of your choice.
* Use a configuration management and provisioning tool like puppet or its successor Opscode Chef.  You can also use a tool like Scalr.
* Use a managed solution such as Rightscale.

### **1. Define and explain the three basic types of cloud services and the AWS products that are built based on them?**

The three basic types of cloud services are:

* Computing
* Storage
* Networking

Here are some of the AWS products that are built based on the three cloud service types:

Computing - These include EC2, Elastic Beanstalk, Lambda, Auto-Scaling, and Lightsat.

Storage - These include S3, Glacier, Elastic Block Storage, Elastic File System.

Networking - These include VPC, [Amazon CloudFront](https://www.simplilearn.com/tutorials/aws-tutorial/aws-cloudfront), Route53

### **2. What is the relation between the Availability Zone and Region?**

AWS regions are separate geographical areas, like the US-West 1 (North California) and Asia South (Mumbai). On the other hand, availability zones are the areas that are present inside the regions. These are generally isolated zones that can replicate themselves whenever required.



### **3. What is auto-scaling?**

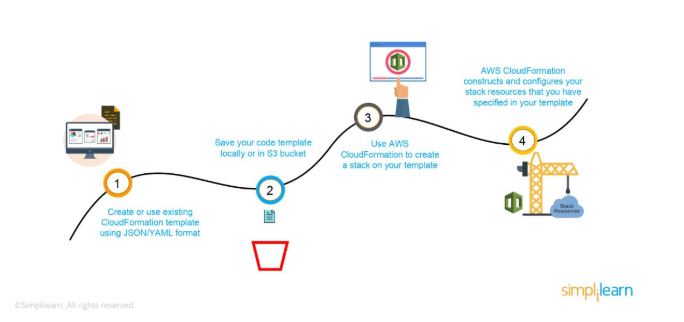
[Auto-scaling](https://www.simplilearn.com/tutorials/aws-tutorial/aws-auto-scaling) is a function that allows you to provision and launch new instances whenever there is a demand. It allows you to automatically increase or decrease resource capacity in relation to the demand.

### **4. What is geo-targeting in CloudFront?**

Geo-Targeting is a concept where businesses can show personalized content to their audience based on their geographic location without changing the URL. This helps you create customized content for the audience of a specific geographical area, keeping their needs in the forefront.

### **5. What are the steps involved in a CloudFormation Solution?**

Here are the steps involved in a CloudFormation solution:



1. Create or use an existing CloudFormation template using JSON or YAML format.
2. Save the code in an S3 bucket, which serves as a repository for the code.
3. Use [AWS CloudFormation](https://www.simplilearn.com/tutorials/aws-tutorial/aws-cloudformation) to call the bucket and create a stack on your template.
4. CloudFormation reads the file and understands the services that are called, their order, the relationship between the services, and provisions the services one after the other.

### **6. 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.

### **7. What are the tools and techniques that you can use in AWS to identify if you are paying more than you should be, and how to correct it?**

You can know that you are paying the correct amount for the resources that you are using by employing the following resources:

#### **Check the Top Services Table**

It is a dashboard in the cost management console that shows you the top five most used services. This will let you know how much money you are spending on the resources in question.

#### **Cost Explorer**

There are cost explorer services available that will help you to view and analyze your usage costs for the last 13 months. You can also get a cost forecast for the upcoming three months.

#### **AWS Budgets**

This allows you to plan a budget for the services. Also, it will enable you to check if the current plan meets your budget and the details of how you use the services.

#### **Cost Allocation Tags**

This helps in identifying the resource that has cost more in a particular month. It lets you organize your resources and cost allocation tags to keep track of your AWS costs.

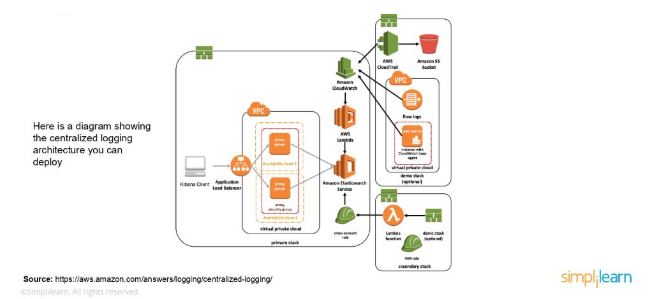
### **8. Is there any other alternative tool to log into the cloud environment other than console?**

The that can help you log into the AWS resources are:

* Putty
* AWS CLI for Linux
* AWS CLI for Windows
* AWS CLI for Windows CMD
* AWS SDK
* Eclipse

### **9. What services can be used to create a centralized logging solution?**

The essential services that you can use are Amazon CloudWatch Logs, store them in [Amazon S3,](https://www.simplilearn.com/tutorials/aws-tutorial/aws-s3) and then use Amazon Elastic Search to visualize them. You can use Amazon Kinesis Firehose to move the data from Amazon S3 to Amazon ElasticSearch.



### **10. What are the native AWS Security logging capabilities?**

Most of the AWS services have their logging options. Also, some of them have an account level logging, like in AWS CloudTrail, AWS Config, and others. Let’s take a look at two services in specific:

#### **AWS CloudTrail**

This is a service that provides a history of the AWS API calls for every account. It lets you perform security analysis, resource change tracking, and compliance auditing of your AWS environment as well. The best part about this service is that it enables you to configure it to send notifications via AWS SNS when new logs are delivered.

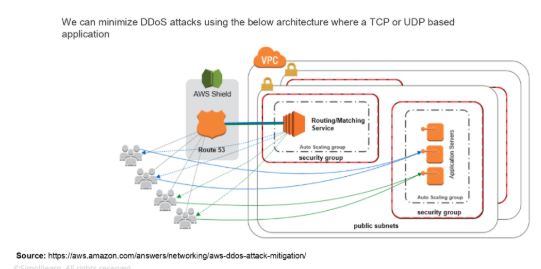
#### **AWS Config**

This helps you understand the configuration changes that happen in your environment. This service provides an AWS inventory that includes configuration history, configuration change notification, and relationships between AWS resources. It can also be configured to send information via AWS SNS when new logs are delivered.

### **11. What is a DDoS attack, and what services can minimize them?**

[DDoS](https://www.simplilearn.com/tutorials/cryptography-tutorial/ddos-attack) is a cyber-attack in which the perpetrator accesses a website and creates multiple sessions so that the other legitimate users cannot access the service. The native tools that can help you deny the DDoS attacks on your AWS services are:

* AWS Shield
* AWS WAF
* Amazon Route53
* Amazon CloudFront
* ELB
* VPC



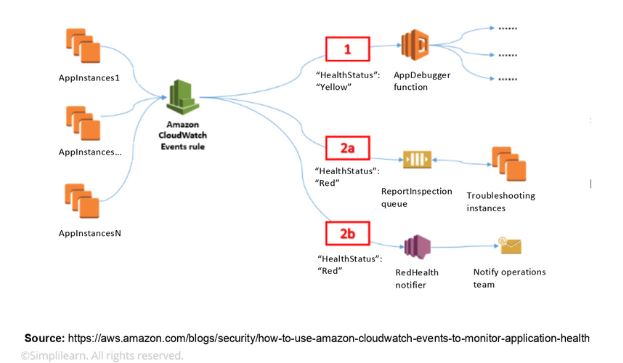
### **12. You are trying to provide a service in a particular region, but you do not see the service in that region. Why is this happening, and how do you fix it?**

Not all Amazon AWS services are available in all regions. When Amazon initially launches a new service, it doesn’t get immediately published in all the regions. They start small and then slowly expand to other regions. So, if you don’t see a specific service in your region, chances are the service hasn’t been published in your region yet. However, if you want to get the service that is not available, you can switch to the nearest region that provides the services.

### **13. How do you set up a system to monitor website metrics in real-time in AWS?**

Amazon CloudWatch helps you to monitor the application status of various AWS services and custom events. It helps you to monitor:

* State changes in [Amazon EC2](https://www.simplilearn.com/tutorials/aws-tutorial/aws-ec2)
* Auto-scaling lifecycle events
* Scheduled events
* AWS API calls
* Console sign-in events



### **14. What are the different types of virtualization in AWS, and what are the differences between them?**

The three major types of virtualization in AWS are:

#### **Hardware Virtual Machine (HVM)**

It is a fully virtualized hardware, where all the virtual machines act separate from each other. These virtual machines boot by executing a master boot record in the root block device of your image.

#### **Paravirtualization (PV)**

Paravirtualization-GRUB is the bootloader that boots the PV AMIs. The PV-GRUB chain loads the kernel specified in the menu.

#### **Paravirtualization on HVM**

PV on HVM helps operating systems take advantage of storage and network I/O available through the host.

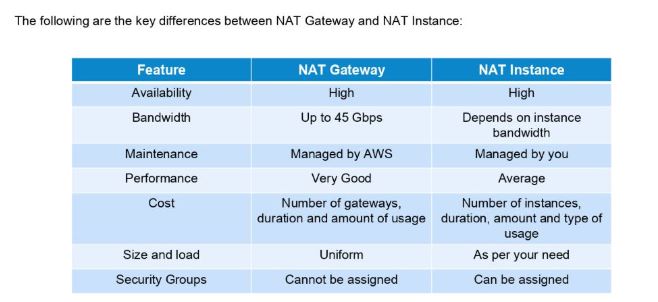
### **15. Name some of the AWS services that are not region-specific**

AWS services that are not region-specific are:

* [IAM](https://www.simplilearn.com/tutorials/aws-tutorial/aws-iam)
* Route 53
* Web Application Firewall
* CloudFront

### **16. What are the differences between NAT Gateways and NAT Instances?**

While both NAT Gateways and NAT Instances serve the same function, they still have some key differences.



### **17. What is CloudWatch?**

The Amazon CloudWatch has the following features:

* Depending on multiple metrics, it participates in triggering alarms.
* Helps in monitoring the AWS environments like CPU utilization, EC2, Amazon RDS instances, Amazon SQS, S3, Load Balancer, SNS, etc.

### **18. What is an Elastic Transcoder?**

To support multiple devices with various resolutions like laptops, tablets, and smartphones, we need to change the resolution and format of the video. This can be done easily by an AWS Service tool called the Elastic Transcoder, which is a media transcoding in the cloud that exactly lets us do the needful. It is easy to use, cost-effective, and highly scalable for businesses and developers.

### **19. What is Amazon EC2?**

EC2 is short for Elastic Compute Cloud, and it provides scalable computing capacity. Using Amazon EC2 eliminates the need to invest in hardware, leading to faster development and deployment of applications. You can use [Amazon EC2](https://aws.amazon.com/ec2/) to launch as many or as few virtual servers as needed, configure security and networking, and manage storage. It can scale up or down to handle changes in requirements, reducing the need to forecast traffic. EC2 provides virtual computing environments called “instances.”

### **20. What Are Some of the Security Best Practices for Amazon EC2?**

Security best practices for Amazon EC2 include using Identity and Access Management (IAM) to control access to AWS resources; restricting access by only allowing trusted hosts or networks to access ports on an instance; only opening up those permissions you require, and disabling password-based logins for instances launched from your AMI.

### **21. Can S3 Be Used with EC2 Instances, and If Yes, How?**

Amazon S3 can be used for instances with root devices backed by local instance storage. That way, developers have access to the same highly scalable, reliable, fast, inexpensive data storage infrastructure that Amazon uses to run its own global network of websites. To execute systems in the Amazon EC2 environment, developers load Amazon Machine Images (AMIs) into Amazon S3 and then move them between Amazon S3 and Amazon EC2.

Amazon EC2 and Amazon S3 are two of the best-known web services that make up AWS.

### **22. What is the difference between stopping and terminating an EC2 instance?**

While you may think that both stopping and terminating are the same, there is a difference. When you stop an EC2 instance, it performs a normal shutdown on the instance and moves to a stopped state. However, when you terminate the instance, it is transferred to a stopped state, and the EBS volumes attached to it are deleted and can never be recovered.

### **23. What are the different types of EC2 instances based on their costs?**

The three types of EC2 instances are:

#### **On-demand Instance**

It is cheap for a short time but not when taken for the long term

#### **Spot Instance**

It is less expensive than the on-demand instance and can be bought through bidding.

#### **Reserved Instance**

If you are planning to use an instance for a year or more, then this is the right one for you.

### **24. How do you set up SSH agent forwarding so that you do not have to copy the key every time you log in?**

Here’s how you accomplish this:

1. Go to your PuTTY Configuration
2. Go to the category SSH -> Auth
3. Enable SSH agent forwarding to your instance



### **25. What are Solaris and AIX operating systems? Are they available with AWS?**

Solaris is an operating system that uses SPARC processor architecture, which is not supported by the public cloud currently.

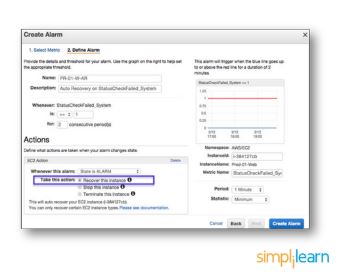
AIX is an operating system that runs only on Power CPU and not on Intel, which means that you cannot create AIX instances in EC2.

Since both the operating systems have their limitations, they are not currently available with AWS.

### **26. How do you configure CloudWatch to recover an EC2 instance?**

Here’s how you can configure them:

* Create an Alarm using Amazon CloudWatch
* In the Alarm, go to Define Alarm -> Actions tab
* Choose Recover this instance option



### **27. What are the common types of AMI designs?**

There are many types of AMIs, but some of the common AMIs are:

* Fully Baked AMI
* Just Enough Baked AMI (JeOS AMI)
* Hybrid AMI

### **28. What are Key-Pairs in AWS?**

The Key-Pairs are password-protected login credentials for the Virtual Machines that are used to prove our identity while connecting the Amazon EC2 instances. The Key-Pairs are made up of a Private Key and a Public Key which lets us connect to the instances.

### **29. What is Amazon S3?**

S3 is short for Simple Storage Service, and Amazon S3 is the most supported storage platform available. S3 is object storage that can store and retrieve any amount of data from anywhere. Despite that versatility, it is practically unlimited as well as cost-effective because it is storage available on demand. In addition to these benefits, it offers unprecedented levels of durability and availability. Amazon S3 helps to manage data for cost optimization, access control, and compliance.

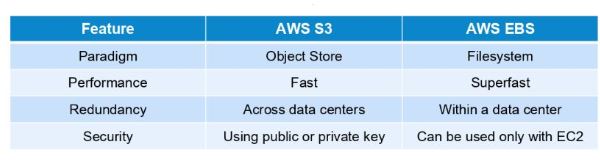
### **30. How can you recover/login to an EC2 instance for which you have lost the key?**

Follow the steps provided below to recover an EC2 instance if you have lost the key:

1. Verify that the EC2Config service is running
2. Detach the root volume for the instance
3. Attach the volume to a temporary instance
4. Modify the configuration file
5. Restart the original instance

### **31. What are some critical differences between AWS S3 and EBS?**

Here are some differences between AWS S3 and EBS



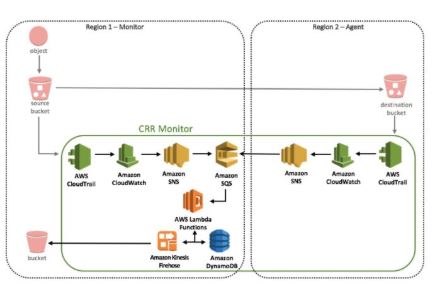
### **32. How do you allow a user to gain access to a specific bucket?**

You need to follow the four steps provided below to allow access. They are:

1. Categorize your instances
2. Define how authorized users can manage specific servers.
3. Lockdown your tags
4. Attach your policies to IAM users

### **33. How can you monitor S3 cross-region replication to ensure consistency without actually checking the bucket?**

Follow the flow diagram provided below to monitor S3 cross-region replication:



### **34. What is SnowBall?**

To transfer terabytes of data outside and inside of the AWS environment, a small application called SnowBall is used.

Data transferring using SnowBall is done in the following ways:

1. A job is created.
2. The SnowBall application is connected.
3. The data is copied into the SnowBall application.
4. Data is then moved to the AWS S3.

### **35. What are the Storage Classes available in Amazon S3?**

The Storage Classes that are available in the Amazon S3 are the following:

* Amazon S3 Glacier Instant Retrieval storage class
* Amazon S3 Glacier Flexible Retrieval (Formerly S3 Glacier) storage class
* Amazon S3 Glacier Deep Archive (S3 Glacier Deep Archive)
* S3 Outposts storage class
* Amazon S3 Standard-Infrequent Access (S3 Standard-IA)
* Amazon S3 One Zone-Infrequent Access (S3 One Zone-IA)
* Amazon S3 Standard (S3 Standard)
* Amazon S3 Reduced Redundancy Storage
* Amazon S3 Intelligent-Tiering (S3 Intelligent-Tiering)

### **36. What Is Amazon Virtual Private Cloud (VPC) and Why Is It Used?**

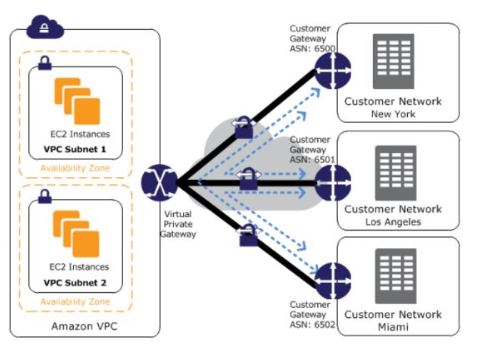
A [VPC](https://www.simplilearn.com/tutorials/aws-tutorial/aws-vpc) is the best way of connecting to your cloud resources from your own data center. Once you connect your datacenter to the VPC in which your instances are present, each instance is assigned a private [IP address](https://www.simplilearn.com/tutorials/cyber-security-tutorial/what-is-an-ip-address) that can be accessed from your data center. That way, you can access your public cloud resources as if they were on your own private network.

### **37. VPC is not resolving the server through DNS. What might be the issue, and how can you fix it?**

To fix this problem, you need to enable the DNS hostname resolution, so that the problem resolves itself.

### **38. How do you connect multiple sites to a VPC?**

If you have multiple VPN connections, you can provide secure communication between sites using the AWS VPN CloudHub. Here’s a diagram that will show you how to connect various sites to a VPC:



### **39. Name and explain some security products and features available in VPC?**

Here is a selection of security products and features:

* Security groups - This acts as a firewall for the EC2 instances, controlling inbound and outbound traffic at the instance level.
* Network access control lists - It acts as a firewall for the subnets, controlling inbound and outbound traffic at the subnet level.
* Flow logs - These capture the inbound and outbound traffic from the network interfaces in your VPC.

### **40. How do you monitor Amazon VPC?**

You can monitor VPC by using:

* CloudWatch and CloudWatch logs
* VPC Flow Logs

### **41. How many Subnets can you have per VPC?**

We can have up to 200 Subnets per Amazon Virtual Private Cloud (VPC).

### **42. When Would You Prefer Provisioned IOPS over Standard Rds Storage?**

You would use Provisioned IOPS when you have batch-oriented workloads. Provisioned IOPS delivers high IO rates, but it is also expensive. However, batch processing workloads do not require manual intervention.

### **43. How Do Amazon Rds, Dynamodb, and Redshift Differ from Each Other?**

Amazon RDS is a database management service for relational databases. It manages patching, upgrading, and data backups automatically. It’s a database management service for structured data only. On the other hand, DynamoDB is a NoSQL database service for dealing with unstructured data. Redshift is a data warehouse product used in[data analysis.](https://www.simplilearn.com/data-analysis-methods-process-types-article)

### **44. What Are the Benefits of AWS’s Disaster Recovery?**

Businesses use cloud computing in part to enable faster disaster recovery of critical IT systems without the cost of a second physical site. The AWS cloud supports many popular disaster recovery architectures ranging from small customer workload data center failures to environments that enable rapid failover at scale. With data centers all over the world, AWS provides a set of cloud-based disaster recovery services that enable rapid recovery of your IT infrastructure and data.

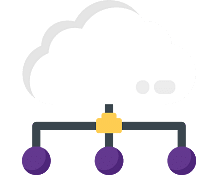
### **45. How can you add an existing instance to a new Auto Scaling group?**

Here’s how you can add an existing instance to a new Auto Scaling group:

* Open EC2 console
* Select your instance under Instances
* Choose Actions -> Instance Settings -> Attach to Auto Scaling Group
* Select a new Auto Scaling group
* Attach this group to the Instance
* Edit the Instance if needed
* Once done, you can successfully add the instance to a new Auto Scaling group

### **46. What are the factors to consider while migrating to Amazon Web Services?**

Here are the factors to consider during AWS migration:

* Operational Costs - These include the cost of infrastructure, ability to match demand and supply, transparency, and others.
* Workforce Productivity
* Cost avoidance
* Operational resilience
* Business agility

### **47. What is RTO and RPO in AWS?**

RTO or Recovery Time Objective is the maximum time your business or organization is willing to wait for a recovery to complete in the wake of an outage. On the other hand, RPO or Recovery Point Objective is the maximum amount of data loss your company is willing to accept as measured in time.

### **48. If you would like to transfer vast amounts of data, which is the best option among Snowball, Snowball Edge, and Snowmobile?**

AWS Snowball is basically a data transport solution for moving high volumes of data into and out of a specified AWS region. On the other hand, AWS Snowball Edge adds additional computing functions apart from providing a data transport solution. The snowmobile is an exabyte-scale migration service that allows you to transfer data up to 100 PB.

### **49. Explain what T2 instances are?**

The T2 Instances are intended to give the ability to burst to a higher performance whenever the workload demands it and also provide a moderate baseline performance to the CPU.

The T2 instances are General Purpose instance types and are low in cost as well. They are usually used wherever workloads do not consistently or often use the CPU.

### **50. What are the advantages of AWS IAM?**

AWS IAM allows an administrator to provide multiple users and groups with granular access. Various user groups and users may require varying levels of access to the various resources that have been developed. We may assign roles to users and create roles with defined access levels using IAM.

It further gives us Federated Access, which allows us to grant applications and users access to resources without having to create IAM Roles.

### **51. Explain Connection Draining**

Connection Draining is an AWS service that allows us to serve current requests on the servers that are either being decommissioned or updated.

By enabling this Connection Draining, we let the [Load Balancer](https://www.simplilearn.com/tutorials/aws-tutorial/aws-load-balancer) make an outgoing instance finish its existing requests for a set length of time before sending it any new requests. A departing instance will immediately go off if Connection Draining is not enabled, and all pending requests will fail.

### **52. What is Power User Access in AWS?**

The AWS Resources owner is identical to an Administrator User. The Administrator User can build, change, delete, and inspect resources, as well as grant permissions to other AWS users.

Administrator Access without the ability to control users and permissions is provided to a Power User. A Power User Access user cannot provide permissions to other users but has the ability to modify, remove, view, and create resources.

### **53. How is AWS CloudFormation different from AWS Elastic Beanstalk?**

Here are some differences between AWS CloudFormation and AWS Elastic Beanstalk:

* AWS CloudFormation helps you provision and describe all of the infrastructure resources that are present in your cloud environment. On the other hand, AWS Elastic Beanstalk provides an environment that makes it easy to deploy and run applications in the cloud.
* AWS CloudFormation supports the infrastructure needs of various types of applications, like legacy applications and existing enterprise applications. On the other hand, AWS Elastic Beanstalk is combined with the developer tools to help you manage the lifecycle of your applications.

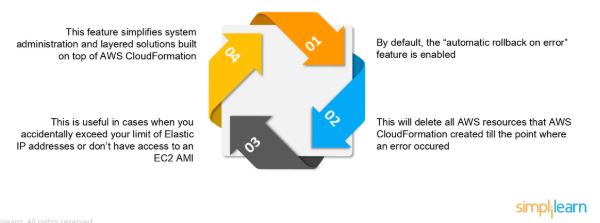
### **54. What are the elements of an AWS CloudFormation template?**

AWS CloudFormation templates are YAML or JSON formatted text files that are comprised of five essential elements, they are:

* Template parameters
* Output values
* Data tables
* Resources
* File format version

### **55. What happens when one of the resources in a stack cannot be created successfully?**

If the resource in the stack cannot be created, then the CloudFormation automatically rolls back and terminates all the resources that were created in the CloudFormation template. This is a handy feature when you accidentally exceed your limit of Elastic IP addresses or don’t have access to an EC2 AMI.



### **56. How can you automate EC2 backup using EBS?**

Use the following steps in order to automate EC2 backup using EBS:

1. Get the list of instances and connect to AWS through API to list the Amazon EBS volumes that are attached locally to the instance.
2. List the snapshots of each volume, and assign a retention period of the snapshot. Later on, create a snapshot of each volume.
3. Make sure to remove the snapshot if it is older than the retention period.

### **57. What is the difference between EBS and Instance Store?**

EBS is a kind of permanent storage in which the data can be restored at a later point. When you save data in the EBS, it stays even after the lifetime of the EC2 instance. On the other hand, Instance Store is temporary storage that is physically attached to a host machine. With an Instance Store, you cannot detach one instance and attach it to another. Unlike in EBS, data in an Instance Store is lost if any instance is stopped or terminated.

**58. Can you take a backup of EFS like EBS, and if yes, how?**

Yes, you can use the EFS-to-EFS backup solution to recover from unintended changes or deletion in Amazon EFS. Follow these steps:

1. Sign in to the AWS Management Console
2. Click the launch EFS-to-EFS-restore button
3. Use the region selector in the console navigation bar to select region
4. Verify if you have chosen the right template on the Select Template page
5. Assign a name to your solution stack
6. Review the parameters for the template and modify them if necessary

### **59. How do you auto-delete old snapshots?**

Here’s the procedure for auto-deleting old snapshots:

* As per procedure and best practices, take snapshots of the EBS volumes on Amazon S3.
* Use AWS Ops Automator to handle all the snapshots automatically.
* This allows you to create, copy, and delete Amazon EBS snapshots.



### **60. What are the different types of load balancers in AWS?**

There are three types of load balancers that are supported by Elastic Load Balancing:

1. Application Load Balancer
2. Network Load Balancer
3. Classic Load Balancer

### **61. What are the different uses of the various load balancers in AWS Elastic Load Balancing?**

#### **Application Load Balancer**

Used if you need flexible application management and TLS termination.

#### **Network Load Balancer**

Used if you require extreme performance and static IPs for your applications.

#### **Classic Load Balancer**

Used if your application is built within the EC2 Classic network

### **62. What Is Identity and Access Management (IAM) and How Is It Used?**

[Identity and Access Management (IAM)](https://www.simplilearn.com/tutorials/aws-tutorial/aws-iam) is a web service for securely controlling access to AWS services. IAM lets you manage users, security credentials such as access keys, and permissions that control which AWS resources users and applications can access.

### **63. How can you use AWS WAF in monitoring your AWS applications?**

AWS WAF or AWS Web Application Firewall protects your web applications from web exploitations. It helps you control the traffic flow to your applications. With WAF, you can also create custom rules that block common attack patterns. It can be used for three cases: allow all requests, prevent all requests, and count all requests for a new policy.

### **64. What are the different AWS IAM categories that you can control?**

Using AWS IAM, you can do the following:

* Create and manage IAM users
* Create and manage IAM groups
* Manage the security credentials of the users
* Create and manage policies to grant access to AWS services and resources

### **65. What are the policies that you can set for your users’ passwords?**

Here are some of the policies that you can set:

* You can set a minimum length of the password, or you can ask the users to add at least one number or special characters in it.
* You can assign requirements of particular character types, including uppercase letters, lowercase letters, numbers, and non-alphanumeric characters.
* You can enforce automatic password expiration, prevent reuse of old passwords, and request for a password reset upon their next AWS sign in.
* You can have the AWS users contact an account administrator when the user has allowed the password to expire.

### **66. What is the difference between an IAM role and an IAM user?**

The two key differences between the IAM role and IAM user are:

* An IAM role is an IAM entity that defines a set of permissions for making AWS service requests, while an IAM user has permanent long-term credentials and is used to interact with the AWS services directly.
* In the IAM role, trusted entities, like IAM users, applications, or an AWS service, assume roles whereas the IAM user has full access to all the AWS IAM functionalities.

### **67. What are the managed policies in AWS IAM?**

There are two types of managed policies; one that is managed by you and one that is managed by AWS. They are IAM resources that express permissions using IAM policy language. You can create, edit, and manage them separately from the IAM users, groups, and roles to which they are attached.

### **68. Can you give an example of an IAM policy and a policy summary?**

Here’s an example of an IAM policy to grant access to add, update, and delete objects from a specific folder.



Here’s an example of a policy summary:



### **69. How does AWS IAM help your business?**

IAM enables to:

* Manage IAM users and their access - AWS IAM provides secure resource access to multiple users
* Manage access for federated users – AWS allows you to provide secure access to resources in your AWS account to your employees and applications without creating IAM roles

### **70. What Is Amazon Route 53?**

Amazon Route 53 is a scalable and highly available Domain Name System (DNS). The name refers to TCP or UDP port 53, where DNS server requests are addressed.

### **71. What Is Cloudtrail and How Do Cloudtrail and Route 53 Work Together?**

CloudTrail is a service that captures information about every request sent to the Amazon Route 53 API by an AWS account, including requests that are sent by IAM users. CloudTrail saves log files of these requests to an Amazon S3 bucket. CloudTrail captures information about all requests. You can use information in the CloudTrail log files to determine which requests were sent to Amazon Route 53, the IP address that the request was sent from, who sent the request, when it was sent, and more.

### **72. What is the difference between Latency Based Routing and Geo DNS?**

The Geo Based DNS routing takes decisions based on the geographic location of the request. Whereas, the Latency Based Routing utilizes latency measurements between networks and AWS data centers. Latency Based Routing is used when you want to give your customers the lowest latency possible. On the other hand, Geo Based routing is used when you want to direct the customer to different websites based on the country or region they are browsing from.

### **73. What is the difference between a Domain and a Hosted Zone?**

#### **Domain**

A domain is a collection of data describing a self-contained administrative and technical unit. For example, [www.simplilearn.com](https://www.simplilearn.com/) is a domain and a general DNS concept.

#### **Hosted zone**

A hosted zone is a container that holds information about how you want to route traffic on the internet for a specific domain. For example, lms.simplilearn.com is a hosted zone.

### **74. How does Amazon Route 53 provide high availability and low latency?**

Here’s how Amazon Route 53 provides the resources in question:

#### **Globally Distributed Servers**

Amazon is a global service and consequently has DNS services globally. Any customer creating a query from any part of the world gets to reach a DNS server local to them that provides low latency.

#### **Dependency**

Route 53 provides a high level of dependability required by critical applications

#### **Optimal Locations**

Route 53 uses a global anycast network to answer queries from the optimal position automatically.

### **75. How does AWS config work with AWS CloudTrail?**

AWS CloudTrail records user API activity on your account and allows you to access information about the activity. Using CloudTrail, you can get full details about API actions such as the identity of the caller, time of the call, request parameters, and response elements. On the other hand, AWS Config records point-in-time configuration details for your AWS resources as Configuration Items (CIs).

You can use a CI to ascertain what your AWS resource looks like at any given point in time. Whereas, by using CloudTrail, you can quickly answer who made an API call to modify the resource. You can also use Cloud Trail to detect if a security group was incorrectly configured.

### **76. Can AWS Config aggregate data across different AWS accounts?**

Yes, you can set up AWS Config to deliver configuration updates from different accounts to one S3 bucket, once the appropriate IAM policies are applied to the S3 bucket.

### **77. How are reserved instances different from on-demand DB instances?**

Reserved instances and on-demand instances are the same when it comes to function. They only differ in how they are billed.

Reserved instances are purchased as one-year or three-year reservations, and in return, you get very low hourly based pricing when compared to the on-demand cases that are billed on an hourly basis.

### **78. Which type of scaling would you recommend for RDS and why?**

There are two types of scaling - vertical scaling and horizontal scaling. Vertical scaling lets you vertically scale up your master database with the press of a button. A database can only be scaled vertically, and there are 18 different instances in which you can resize the RDS. On the other hand, horizontal scaling is good for replicas. These are read-only replicas that can only be done through Amazon Aurora.

### **79. What is a maintenance window in Amazon RDS? Will your DB instance be available during maintenance events?**

RDS maintenance window lets you decide when DB instance modifications, database engine version upgrades, and software patching have to occur. The automatic scheduling is done only for patches that are related to security and durability. By default, there is a 30-minute value assigned as the maintenance window and the DB instance will still be available during these events though you might observe a minimal effect on performance.

### **80. What are the consistency models in DynamoDB?**

There are two consistency models In DynamoDB. First, there is the Eventual Consistency Model, which maximizes your read throughput. However, it might not reflect the results of a recently completed write. Fortunately, all the copies of data usually reach consistency within a second. The second model is called the Strong Consistency Model. This model has a delay in writing the data, but it guarantees that you will always see the updated data every time you read it.

### **81. What type of query functionality does DynamoDB support?**

DynamoDB supports GET/PUT operations by using a user-defined primary key. It provides flexible querying by letting you query on non-primary vital attributes using global secondary indexes and local secondary indexes.

### **1. Suppose you are a game designer and want to develop a game with single-digit millisecond latency, which of the following database services would you use?**

Amazon DynamoDB

### **2. If you need to perform real-time monitoring of AWS services and get actionable insights, which services would you use?**

Amazon CloudWatch

### **3. As a web developer, you are developing an app, targeted primarily for the mobile platform. Which of the following lets you add user sign-up, sign-in, and access control to your web and mobile apps quickly and easily?**

Amazon Cognito

### **4. You are a Machine Learning Engineer who is on the lookout for a solution that will discover sensitive information that your enterprise stores in AWS and then use NLP to classify the data and provide business-related insights. Which among the services would you choose?**

AWS Macie

### **5. You are the system administrator in your company, which is running most of its infrastructure on AWS. You are required to track your users and keep tabs on how they are being authenticated. You wish to create and manage AWS users and use permissions to allow and deny their access to AWS resources. Which of the following services suits you best?**

AWS IAM

### **6. Which service do you use if you want to allocate various private and public IP addresses to make them communicate with the internet and other instances?**

Amazon VPC

### **7. This service provides you with cost-efficient and resizable capacity while automating time-consuming administration tasks**

Amazon Relational Database Service

### **8. Which of the following is a means for accessing human researchers or consultants to help solve problems on a contractual or temporary basis?**

Amazon Mechanical Turk

### **9. This service is used to make it easy to deploy, manage, and scale containerized applications using Kubernetes on AWS. Which of the following is this AWS service?**

Amazon Elastic Container Service

### **10. This service lets you run code without provisioning or managing servers. Select the correct service from the below options**

AWS Lambda

### **11. As an AWS Developer, using this pay-per-use service, you can send, store, and receive messages between software components. Which of the following is it?**

Amazon Simple Queue Service

### **12. Which service do you use if you would like to host a real-time audio and video conferencing application on AWS, this service provides you with a secure and easy-to-use application?**

Amazon Chime

### **13. As your company's AWS Solutions Architect, you are in charge of designing thousands of similar individual jobs. Which of the following services best meets your requirements?**

AWS Batch