

AWS INTERVIEW QUESTIONS

1. What is IAM user

IAM user is a **resource** which is associated with **credentials**

This is typically referred to as a **service account**.

IAM user is a restricted access to AWS cloud

2 How do you give access to IAM users..??

There are 2 types of access in IAM

Programmatic access and AWS console Access

Create user select access type and attach policies and create user

3 how iam roles and policies written in which language

Policies are expressed in JSON. When you create or edit a JSON policy

IAM identifies JSON syntax errors

Policies have a maximum size between 2048 characters and 10,240

4. What is the difference between region and availability zones

=> AWS Regions are large and widely dispersed into separate geographic locations

=> Availability zones are highly available data centres within each AWS regions that are isolated from failures in other Availability Zones.

5. IN how many types we can access an AWS console

AWS Management Console

Command Line Interface

Software Development Kits

6. How multi factor authentication works in AWS

=> IT is an AWS IAM best practice that requires a second authentication factor in addition to username and password sign-in credentials.

=> extra layer security

=> You can enable MFA at the AWS account level for root and IAM users you have created in your account

=>MFA is a multiple step authentication that can provide more than one authentication form.

=> It is an extra layer of security.

=> It may come in the form of security code that may come to your mobile device or your email

7. What is the basic process of building an EC2 instances

- choose an Amazon Machine Image
- Choose an Instance Type
- Configure Instance Details(**Number of instances,Network VPC ,Subnet**)
- Add Storage.
- Add Tags.
- Configure Security Group.
- Launch

8. What are the uses of security groups.??

- Security Groups help you secure your cloud environment
- It acts as a virtual firewall for your EC2 instance to control incoming and outgoing traffic
- Inbound rules control incoming traffic outbound rules control outgoing traffic
- We can specify one or more security group while launching
- Security groups are stateful in nature

9. How the 2 Ec2 instances connected

=> **Public to private**

- Select instance and click on connect
- `chmod 400 g-oregon.pem`
- Type the SSH command with this structure: **`ssh -i "g-oregon.pem"`**
- **`ec2-user@10.0.1.50`** (`ssh -i pem file username and ip address`)

PUBLIC TO PUBLIC

- Type the SSH command in one instance to connect to 2nd instance
- with this structure: **`ssh -i file.pem username@ip-address. ...`**
- Press enter and type yes

10. How to connect an EC2 instance to on premises..??

- Using AWS client

11 What is the bootstrap of a server and its usage..?

- Bootstrapping in AWS simply means to add scripts to AWS EC2's instance that can be executed when the instance starts.
- It is a good automation practice

Example bootstrap script

```
#!/bin/bash
Yum update -y
Yum install httpd -y
Systemctl start httpd
```

12 What are the different instance types and their uses..??

- Compute Optimised Instances - high performance web servers ,gaming purpose
- Memory-Optimised Instances- deliver fast performance for workload it process large data in memory
- Accelerated Computing Instances- this instance are use for hardware accelerated to perform functions such as floating point number calculation,graphic processing
- Storage Optimised Instances- designed for work load that requires high sequential read and write access to very large data in local storage
- General Purpose Instances -this instances are ideal for application that use resources in equal proportions
ram and cpu are directly proportional

13 What is an EC2 instance connected ..??

- simple and secure way to connect to your instances using **Secure Shell (SSH)**

14 how costing exist in EC2 instance

- Costing in AWS EC2 is based on what instance we choose

15 How many types of instances are based on availability and types..??

Ondemand => low cost and flexibility of AWS Ec2 without and long term Commitment

=> By default Aws consider ON DEMAND

=> pay as you go

Reserved => it is for allocated for min 1 year to max 3 years

=> 75% offer compare to ON DEMAND

Spot => Spot instance available for up to 90% discount compared to ON demand

=> unused instances are auctioned

Dedicated => Pay only for what you use with no long-term commitments.

=> 75% offer compare to ON DEMAND

=> hourly based pay

16 what is public ip and private ip and its uses..??

- A public IP address can be accessed from outside the world over the internet
But public Ip changes when you stop and start the Ec2 instance
- A private IP address is Accessed within the vpc on which Ec2 is created.

PUBLIC : not free

PRIVATE: Free

17 how we can make an public ip to static

- => **Allocate** an Elastic IP and **Associate** to the instance
- => public IP which comes with instance is not static
- => It changes every time we restart or start the server to avoid change of ip address we use elastic IP address
- => AWS charge you for **Allocating** and also for **Associating** until you release the elastic IP

18 how we can connect an EC2 instance to Internet

- Using SSH

19. What is elastic IP and its uses

An Elastic IP address is a reserved public IP address that you can assign to any EC2 instance

20. difference between vcpu and cpu and Advantages..??

- => **CPUs are hardware-based**
CPUs physically exist inside your computer
Without CPU we cannot run programs on computer
- => **vCPUs are software-based.**
vCPU do not exist in computer
,they're created by **hypervisors when** needed

21. What is an Ec2 hibernate and its advantages..??

Select an instance, and choose Instance state, Hibernate instance. If Hibernate instance is disabled, the instance is already hibernated or stopped, or it can't be hibernated

22. What are ENI and EBS. ??

ENI: Elastic network interface

An ENI is logical networking component in VPC

EBS: ELASTIC BLOCK STORAGE

Two types of Volumes **ROOT VOLUME** and **ADDITIONAL VOLUME**

ROOT VOLUME: By default comes with instance

ADDITIONAL VOLUME: 1 volume which we can add
based on our requirement

- => In EC2 machine the volume is stored in different EBS HUB in AWS
- => We are accessing the volume from EBS HUB not from AWS DATA CENTERS
- => EBS Volume is a unlimited storage because we can add multiple number of
- => Additional volumes to EC2 machine

23 Tell me the EBS Types and Disadvantages..??

GENERAL PURPOSE(SSD)

= balance price and performance for transactional applications

PROVISIONED IOPS (SSD)

= Highest performance volume designed for critical application

THROUGHPUT OPTIMISED(HDD)

= Low cost volume used for frequently Accessed applications

COLD (HDD)

= Lowest cost volumes used for less frequently applications

24. What is an advantage of EBS snapshot

- => EBS volumes cannot be moved directly to any other AZ or Region
- => By using EBS snapshot we can move one AZ to another AZ and one region to another Region

25. What is EBS ENcryption ?

- => AWS EBS offers a straight forward Encryption
- => Doesn't matter if the volume is in rest or transit or backup it will ask for the ENCRYPTION
- => ENCRYPTIONS supports all volumes types

26. What is the EBS story when coming to server related.?

Two types of Volumes **ROOT VOLUME** and **ADDITIONAL VOLUME**

ROOT VOLUME: By default comes with instance

ADDITIONAL VOLUME: Also called as ephemeral volume which we can add based on our requirement

=> In EC2 machine the volume is stored in different EBS HUB in AWS

=> We are accessing the volume from EBS HUB not from AWS DATA CENTERS

=> EBS Volume is a unlimited storage because we can add multiple number of

=> Additional volumes to EC2 machine

27. How does EBS costing exist.??

- EBS volume exist based on selection of volume types like **GENERAL PURPOSE SSD , PROVISIONED IOPS SSD, THROUGHPUT HDD, COLD HDD**

28. What is EFS.?

=> EFS is Elastic file system

=> EFS is capable of being mounted

=> EFS is on demand file system

=> we can attach EFS to multiple EC2 instances

EFS ADVANTAGES COMPARED TO EBS

=> we can attach EFS to multiple EC2 instances

29. HOW CAN WE MAKE AN APPLICATION BETTER WITH SCALABILITY

SCALABILITY:

increase or decrease the capacity of an server

Using scalability we can better performance of application

30. WHAT ARE THE TYPES OF SCALING

HORIZONTAL: increasing the servers is called Horizontal scaling
Auto Scaling comes under Horizontal Scaling

VERTICAL : increasing the capacity of the server like CPU, RAM,
Scalability comes under vertical scaling

31. What are the Advantages of High availability.??

=> we can access the application without any downtime of servers

=> it has 99.999% uptime, also known as "five nines"

32. DIFFERENCE BETWEEN HORIZONTAL AND VERTICAL SCALING.??

HORIZONTAL: increasing the servers is called Horizontal scaling
Auto Scaling comes under Horizontal Scaling

VERTICAL : increasing the capacity of the server like CPU, RAM,
Scalability comes under vertical scaling

33. WHAT IS LOAD BALANCING CONCEPT IN AWS..??

=> the responsibility of load balancer is receive the incoming traffic and distribute the load to the targets

=> load balancer monitor the health of the targets

=> if one ec2 machine is not healthy then load balancer distribute the traffic to another ec2 machine

34. WHAT ARE THE DIFFERENT TYPES OF LOAD BALANCERS.?

Application Load Balancer:

Application Load Balancer makes routing decisions at the application layer(HTTP,HTTPS)

Network Load Balancer:

Network Load Balancer makes routing decisions at the transport layer (TCP/SSL).

35. DIFFERENCE BETWEEN ALB AND CLB

ALB:

ALB works at layer 7 (HTTP, HTTPS)

ALB host multiple application in 1 load balancer

CLB:

CLB Host single Application in 1 load balancer

CLB works for both layer4(TCP) and Layer 7(HTTP,HTTPS)

36. WHAT IS THE ADVANTAGES OF STICKINESS IN ALB

37. WHAT ARE THE TYPES OF PROTOCOLS USED IN LOAD BALANCER

HTTPS
HTTP
TCP (TRANSMISSION CONTROL PROTOCOL)
SSL (SECURED SOCKET LAYER)

38. WHAT IS SSL

SSI secured the data which is in transit between server and browser.
In simple words it keep the information private and secure
SSL protects sensitive information
SSL encrypted the information

39 WHAT IS ASG AND USES.?

- => Auto Scaling helps you ensure that you have the correct number of EC2 instances available to handle the load for your application.
- => You create collections of EC2 instances, called Auto Scaling groups.
- => You can specify the minimum number of instances and the maximum number of instances in the Auto Scaling group, and Amazon EC2 Auto Scaling ensures that your the group never goes above this size.

40. AWS RDS ..??

- => AWS RDS is a collection of managed services that makes it simple to set up, operate and scale databases in the cloud

RDS TYPES..??

General purpose
Memory Optimised
Burstable performance

41. WHAT IS RDS BACKUP AND ITS ADVANTAGES.??

Manual
Automatic

MANUAL:

we take the backup in the form of snapshot
If database is lost we restore snapshot as database

AUTOMATIC:

AWS takes backup regularly
Aws will take the backup of database automatically
Backup is maintained for last 35 days(retention period)
Default retention period is 7 days
AWS take incremental backup in every one minute

ADVANTAGES OF RDS:

=> Automatic backups
=> Multi Availability zones
=> Read replica

42. WHAT ARE DB SNAPSHOTS. AND ADVANTAGES?

MANUAL:

we take the backup in the form of snapshot
If database is lost we restore snapshot as database

43. WHAT IS RDS ENCRYPTION

Amazon RDS encrypts your database using keys
You manage with aws KMS (key management service)

44.DIFFERENCE BETWEEN NACL AND SG

NACL

NACL provides security at subnet level
NACL layer is firewall of subnet
NACL is very first protection to subnet after VPC
NACL also have inbound and outbound rules likes security groups
NACL is stateless (inbound and outbound rules should be open same)

SECURITY GROUPS

SG Will provide security to instance level
SG are stateful because we are enabling ports only in INBOUND RULES
And we are not Enabling OUTBOUND RULES

45. ADVANTAGES OF READ REPLICA

Whenever database instance getting a heavy read operation from web server then database instance diverts read operations to READ REPLICA the read replica will handle the request and responds to select operations

46. HOW MANY READ REPLICAS WE CAN CREATE FOR DB

5 READ REPLICAS

Server allow you to add up to 5 read replicas to each DB instances

47. WHAT ARE THE DIFFERENT DB ENGINES IN RDS AND WHAT IS THE USES OF AURORA DB

Amazon aurora
My sql
Maria DB
PostgreSQL
Oracle
Microsoft SQL server

USES OF AURORA DB

AWS Aurora helps in providing security, availability and reliability of commercial Database

48. WHAT IS S3

- => **S3** simple storage service
- => s3 is global
- => S3 is secure durable and highly scalable object storage
- = > in S3 we can store and retrieve any amount of data from anywhere on the web
- => S3 is one of the safe place to store your files
- => It is object based storage
- => Object are stored in buckets
- => S3 is unlimited storage because files are unlimited in the bucket
- => by default S3 is private
- => by default all are disable mode

BUCKET:

- => bucket is a container for object
- => we can create only 100 buckets in each account
- => objects are stored in buckets
- => buckets are regional
- => bucket store only flat files like Images, videos , pdf , etc but not applications

49. WHAT IS S3 VERSIONING AND ITS USES.??

- => Versioning is like a backup tool
- => version ID is always unique
- => versioning is LIFO last in first out

USES:

- => recover the deleted object by enabling versioning
- => it will maintain different versions of object

50. MENTION THE DIFFERENT TYPES OF ENCRYPTIONS AVAILABLE IN S3

Two types of Encryptions

- => AES-256 (advanced encryption standard) single encryption
- => AWS -KMS (key management service) double encryption.

51. WHAT IS S3 GLACIER AND ITS ADVANTAGES

- => S3 glacier is a secure and durable service with low cost archiving and long term Backup
- => retrieval period is 90days retrieval time is 5 minutes to 12 hours
- => In s3 glacier data is available in all 3 Az's
- => IN Glacier data is compressed in Zip file

52. How can we prevent S3 from Public access.?

- => Block all public access

53. HOW TO HOST AN STATIC WEBSITE IN S3

- => upload object in bucket
- => Go to properties and enable Static website Hosting
- => access website using URL which we get after enabling static website hosting

54 WHAT IS ROUTE 53 AND DNS

- => amazon Route 53 is a domain name system service
- => 53 is a a port number
- => IP configure to Route 53 and to get URL or name

DNS :

- => DNS translates human readable domain names to machine readable IP address in Vice versa**
- => Different types of record in Route 53**

55. DIFFERENT TYPES OF RECORD IN ROUTE 53

- => A record (Address record)**
- => AAAA record (ipv6 address record)**
- => CNAME (canonical name record)**
- => CAA (certification authority authorization)**
- => MX (mail exchange record)**
- => NAPTR (name authority pointer record)**
- => NS (name server record)**
- => PTR (pointer record)**

56. WHAT ARE DIFFERENT ROUTING POLICIES AND ITS USES

=> simple:

This is the default routing policy.
Using a simple routing policy we get the 1st advantage.
This is all about providing Route 53 user friendly domain names to the public.
We cannot get the 2nd advantage
We can connect only one region.

=> latency:

The term "Latency" refers to delay due to network traffic.
The policy continuously monitor network traffic (latency) in multiple regions by sending ping requests. Diverts the traffic to the region which has less latency.

=> geo location:

If a user request website from london, he will be directed to london region
If a user requests a website from India, he will be directed to india region.
Requests should be diverted based on the origin of the location
It is based on geographical location.

=> weighted:

In this policy, we connect two regions. Based on the weights
We assign, load will be distributed.

=> Failover:

We will define one region as "Main" (Active)
another region as "Standby" (Passive)
Route 53 will divert all traffic to the Main region.
Incase "Main" region is lost, the Route 53 will divert the traffic to "Standby"
Route 53 will monitor the health of the load balancer continuously.

57. WHAT ARE THE DIFFERENT TYPES OF DOMAIN NAMES..??

- .com (commercial purpose)
- .net (Network purpose)
- .gov (government purpose)
- .edu (educational purpose)
- .Org (organisational purpose)

58 WHAT IS VPC

- => VPC is a virtual private cloud
- => VPC is a virtual data center in the cloud
- => vpc is a logically isolated section of AWS cloud where you can launch AWS resources
- => VPC consist of IGW, Route tables, NACLs, Subnets, Security groups,
- => Your Vpc automatically comes with default NACL And allows inbound rules and outbound by default.
- => you can create custom NACL by default each custom NACL denies all Inbound and outbound traffic rules until you add rules
- => NACL stateless
- => SG are State full
- => 1 subnet is equal to one availability zone
- => Size of vpc is dependent on subnet mask
- => the maximum subnet value is 32

59 what is subnet and its uses.??

- => partition inside the VPC is called subnet
- => 1 subnet is equal to 1 AZ
- => maximum subnet value is 32
- =. We can create private and public subnets
- => public subnet is accessible for public access
- => private is accessible within the server

60. WHAT IS ROUTING TABLE AND USES

- => To provide internet from IGW to public subnet we should create route table

61. WHAT IS INTERNET GATEWAY AND USES..??

62 WHAT IS NAT GATEWAY AND USES..??

63. WHAT IS VPC PEERING AND ITS USES.?

64 AWS LAMBDA AND BENEFITS

- => Aws Lambda is a serverless computing service
- => that runs the code in response to events and automatically manages the compute resources.
- => Lambda stores the code in Amazon S3 buckets and encrypts it
- => languages supported by AWS Lambda
Python,java,C+, Ruby, Powershell

BENEFITS OF LAMBDA

- => **No servers to manage**
- => **continuous scaling**
- => **modernise your application**

65 WHAT IS DYNAMO DB AND ITS USES.?

66. WHAT IS AN API GATEWAY

67 WHAT IS AN COGNITO USER POOL

68 WHAT ARE MICRO SERVICES AND THEIR USES HOW CAN WE BUILD THEM

69 WHAT IS A DISASTER RECOVERY AND TYPES

70 WHAT IS AN DATA MIGRATION FROM ON PREM TO CLOUD

71 DIFFERENCE TYPES OF DMS

72 WHAT IS AN AWS GLUE

73 WHAT ARE ETL JOBS AND ITS BENEFITS

74 WHAT IS AN SNS IN AWS

75 WHAT IS AN SQS IN AWS

76 WHAT IS AN SMS IN AWS

77 CLOUD WATCH AND CLOUD TRAIL DIFFERENCES