**1. What is AWS?**

-> Amazon Web Services (AWS) is a secure cloud services platform, offering compute power, database storage, content delivery and other functionality to help businesses scale and grow.

**2. What is IAM and its purpose?**

* AWS Identity and Access Management (IAM) is a web service that helps you securely control access to AWS resources for your users.
* You use IAM to control who can use your AWS resources (authentication) and what resources they can use and in what ways (authorization).

**3. What are policies in IAM?**

->A policy is a document that formally states one or more permissions.

To assign permissions to a user, group, role, or resource, you create a *policy*, which is a document that explicitly lists permissions.

In its most basic sense, a policy lets you specify actions, resources and Effect.

**Actions**: what actions you will allow.

**Resources**: which resources you allow the action on.

**Effect**: what the effect will be when the user requests access—either allow or deny.

**4. How to setup MFA?**

Multi factor authentication is extra layer of security for your AWS account.

->Sign in to the IAM console->In the navigation pane, choose Users->In the User Name list, choose the user name to whom to activate MFA->Choose the Security credentials tab -> Assign MFA device-> choose the edit icon->In the Manage MFA Device wizard, choose A virtual MFA device, and then choose Next Step-> scan QR code from the device-> enter the code in next screen and login.

**5. Two types of access for IAM user?**

* Programmatic access: If the user needs to make API calls or use the AWS CLI or the Tools for Windows PowerShell, create an access key (an access key ID and a secret access key) for that user.
* AWS Management Console access: If the user needs to access AWS resources from the AWS Management Console

**6. What is EC2 service used for?**

->Amazon Elastic Compute Cloud (Amazon EC2) provides scalable computing capacity in the Amazon Web Services (AWS) cloud.

Amazon EC2 eliminates your need to invest in hardware up front, so you can develop and deploy applications faster.

**7. Name few types of EC2 instances?**

->Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instance types comprise varying combinations of CPU, memory, storage, and networking capacity and give you the flexibility to choose the appropriate mix of resources for your applications

General Purpose

T2

M4

Compute Optimized

C4

C3

Memory Optimized

X1

R4

R3

Accelerated Computing Instances

P2

G2

F1

Storage Optimized

I3 – High I/O Instances

D2 – Dense-storage Instances

**8. Diff between T2 series and C series on Ec2 instances?**

* T2 instances are designed to provide moderate baseline performance and the capability to burst to significantly higher performance as required by your workload. They are intended for workloads that don't use the full CPU often or consistently, but occasionally need to burst. T2 instances are well suited for general purpose workloads, such as web servers, developer environments, and small databases
* Compute optimized instances are ideal for compute-bound applications that benefit from high performance processors. They are well suited for the following applications:

Batch processing workloads

Media transcoding

High-traffic web servers, massively multiplayer online (MMO) gaming servers, and ad serving engines

High performance computing (HPC) and other compute-intensive applications

**9. What are AMI’s?**

->Amazon Machine Images (AMI)

An Amazon Machine Image (AMI) provides the information required to launch an instance, which is a virtual server in the cloud. You specify an AMI when you launch an instance, and you can launch as many instances from the AMI as you need. You can also launch instances from as many different AMIs as you need.

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

**10. What is AWS marketplace, what are community AMI’s?**

* Community AMIs: Whenever you create an AMI, you can add permissions to it to make it public. In that case, it goes to "community AMIs". These are AMIs that comes from AWS users, and are not verified by AWS
* Marketplace: this is a whole service at AWS, and all AMIs here are verified by AWS. It is basically used for software vendors to sell their products through AWS. The customers will be billed by AWS only, but then AWS will pay the AMI owner in return. For Centos this is a bit particular, as this is a free distribution. But been in the marketplace conforms the users that the AMI is safe

**11. How can you create your own AMI?**

->From the Amazon EC2 Instances view, you can create Amazon Machine Images (AMIs) from either running or stopped instances.

Right-click the instance you want to use as the basis for your AMI, and choose Create Image (EBS AMI) from the context menu.

After it is created, it will appear in the AMIs view in AWS Explorer  
To see your AMIs, from the Viewing drop-down list, choose Owned By Me.

**12. Enable termination protection option is for what?**

->To help protect against data loss caused by accidental termination of an Amazon EC2 instance.

Enable termination protection option prevents an instance from being accidentally terminated by requiring that you disable the protection before terminating the instance

**13. What is EBS?**

->Amazon Elastic Block Store (Amazon EBS) provides persistent block storage volumes for use with [Amazon EC2](https://aws.amazon.com/ec2-sla/) instances in the AWS Cloud

**14. What are different types of Volumes?**

->

Amazon EBS Volume Types are as follows

Provisioned IOPS SSD (io1) Volumes.

General Purpose SSD (gp2) Volumes.

Throughput Optimized HDD (st1) Volumes.

Cold HDD (sc1) Volumes.

**15. Can we create volume in one zone and attach it to an instance in the other zone?**

->No, we cannot attach same volume to other instances.

**16. How to take backups of EBS volume?**

->You can create the snapshots of the EBS volume

Another we can create AMI

**17. How to restore lost/corrupted volumes in from snapshots?**

->To restore the volume from a snapshot

Search for the snapshot under the snapshot section using its description.

Right click and select the "Create Volume" option.

Fill in the required details in the Create Volume dialog box and click the "Create" option.

A volume with the same snapshot will be created and then you can attach the new volume to an EC2 Instance for further use.

**18. How to transfer volume from one zone to other zone?**

->With Amazon EBS, you can create point-in-time snapshots of volumes which we store for you in Amazon Simple Storage Service (Amazon S3). After you've created a snapshot and it has finished copying to Amazon S3 (when the snapshot status is completed), you can copy it from one AWS region to another, or within the same region.

**19. How to resize EBS volumes.**

->Modifying an EBS Volume from the Console

The following procedure shows how to apply available volume modifications from the Amazon EC2 console.

Open the Amazon EC2 console

Choose Volumes, select the volume to modify and then choose Actions, Modify Volume.

The Modify Volume window displays the volume ID and the volume's current configuration, including type, size, and IOPS. You can change any or all of these settings in a single action. Set new configuration values as follows:

To modify the type, choose a value for Volume Type.

To modify the size, enter an allowed integer value for Size.

If you chose Provisioned IOPS (IO1) as your volume type, enter an allowed integer value for IOPS.

After you have specified all of the modifications to apply, choose Modify, Yes.

Note

Modifying volume size has no practical effect until you also extend the volume's file system to make use of the new storage capacity

**20. Modify volume feature from AWS?**

-><https://aws.amazon.com/blogs/aws/amazon-ebs-update-new-elastic-volumes-change-everything/>

Same as above

**21. What are security groups?**

->A security group acts as a virtual firewall that controls the traffic for one or more instances. When you launch an instance, you associate one or more security groups with the instance.

**22. Can we attach a Security group to multiple instances?**

->Yes, you associate one or more security groups with the instance

**23. What is diff between inbound and outbound rules in SG?**

* An inbound firewall protects the network against incoming traffic from the Internet or other network segments
* An outbound firewall protects against outgoing traffic originating inside an enterprise network.

**24. What are Elastic IP’s and how is it different from normal Public IP assigned to an EC2 instance?**

-> Elastic IP’s are static IP’s. In AWS each instance will get a public IP as per the options we provide and this is dynamic, it changes on restart of instance.

An *Elastic IP address* is a static IPv4 address designed for dynamic cloud computing. An Elastic IP address is associated with your AWS account. With an Elastic IP address, you can mask the failure of an instance or software by rapidly remapping the address to another instance in your account.

**25. What are Key pairs?**

->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, and then the recipient uses the private key to decrypt the data. The public and private keys are known as a *key pair*.

**26. What is ELB?**

->Elastic Load Balancing distributes incoming application traffic across multiple EC2 instances, in multiple Availability Zones. This increases the fault tolerance of your applications.

The load balancer serves as a single point of contact for clients, which increases the availability of your application. You can add and remove instances from your load balancer as your needs change, without disrupting the overall flow of requests to your application. Elastic Load Balancing scales your load balancer as traffic to your application changes over time, and can scale to the vast majority of workloads automatically.

**27. What are target groups?**

->Target group is where your load balancer routes requests to the targets in a target group using the protocol and port that you specify, and performs health checks on the targets using the health check settings that you specify.

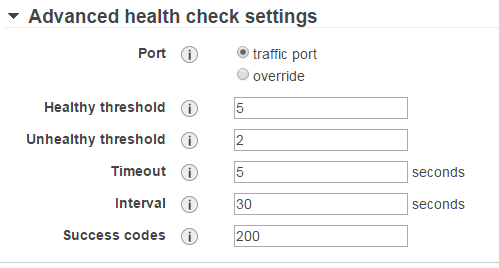
.   
->You register targets, such as EC2 instances, with a *target group*. To route requests to the targets in a target group

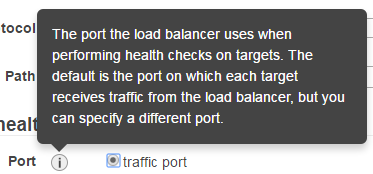
**28. What are health check settings in target group?**

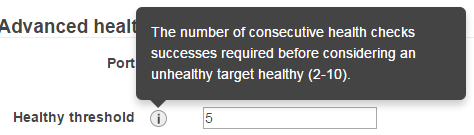
->Your Application Load Balancer periodically sends requests to its registered targets to test their status. These tests are called *health checks*.

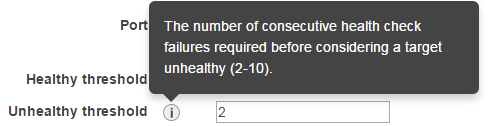
The load balancer sends requests to registered targets using the port and protocol that you specified for the target group

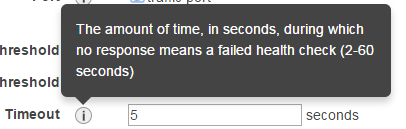
**29. Describe advanced health check settings from Target groups?**

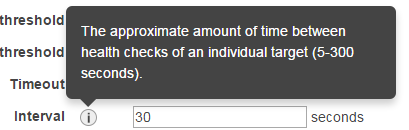


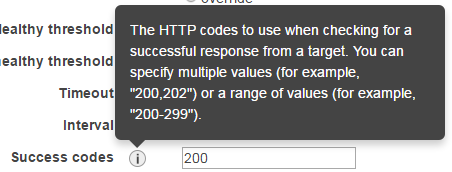












**30. Difference between internet facing and internal ELB?**

* An Internet-facing load balancer has a publicly resolvable DNS name, so it can route requests from clients over the Internet to the EC2 instances that are registered with the load balancer.
* An internal load balancer to distribute traffic to your EC2 instances from clients with access to the VPC for the load balancer

**31. What is VPC?**

->Amazon Virtual Private Cloud (Amazon VPC) lets you provision a logically isolated section of the Amazon Web Services (AWS) cloud where you can launch AWS resources in a virtual network that you define. You have complete control over your virtual networking environment, including selection of your own IP address range, creation of subnets, and configuration of route tables and network gateways.  You can use both IPv4 and IPv6 in your VPC for secure and easy access to resources and applications.

Amazon Virtual Private Cloud (Amazon VPC) enables you to launch Amazon Web Services (AWS) resources into a virtual network that you've defined.

**32. What is default VPC?**

->If you create your AWS account you'll have a *default VPC* in each AWS region. A default VPC is ready for you to use — you can immediately start launching instances into your default VPC without having to perform any additional configuration steps. A default VPC combines the benefits of the advanced networking features provided by the EC2-VPC platform with the ease of use of the EC2-Classic platform

**33. Can we create default VPC?**

Yes, we can create default; we have reference image in AWS documentation for creating this.

**34. What is DNS hostnames option used for in VPC?**

**35. What are Subnets in VPC?**

->A portion of a network that shares a common address component.

Default Subnets

The CIDR block for a default VPC is always a /16 netmask (172.31.0.0/16). This provides up to 65,536 private IPv4 addresses. The netmask for a default subnet is always /20, which provides up to 4,096 addresses per subnet, a few of which are reserved for our use.

**36. What is difference between Private and Public subnet?**

->The instances in the public subnet can send outbound traffic directly to the Internet, whereas the instances in the private subnet can't. Instead, the instances in the private subnet can access the Internet by using a network address translation (NAT) gateway that resides in the public subnet.

**37. How can you design a highly available network in VPC?**

**38. What are Internet Gateways?**

->A gateway is a node (router) in a computer network, a key stopping point for data on its way to or from other networks. Thanks to gateways, we are able to communicate and send data back and forth. The Internet wouldn't be any use to us without gateways (as well as a lot of other hardware and software).

**39. What are Nat gateways?**

->NAT Gateways. You can use a network address translation (NAT) gateway to enable instances in a private subnet to connect to the Internet or other AWS services, but prevent the Internet from initiating a connection with those instances.

**40. What are Route tables?**

->A routing table is a set of rules, often viewed in table format that is used to determine where data packets traveling over an Internet Protocol (IP) network will be directed. All IP-enabled devices, including routers and switches, use routing tables.

**41. What are NACL?**

->A *network access control list (ACL)* is an optional layer of security for your VPC that acts as a firewall for controlling traffic in and out of one or more subnets. You might set up network ACLs with rules similar to your security groups in order to add an additional layer of security to your VPC

**42. What is VPC Peering?**

->A VPC peering connection is a networking connection between two VPCs that enables you to route traffic between them using private IPv4 addresses or IPv6 addresses. Instances in either VPC can communicate with each other as if they are within the same network.

**43. What is RDS?**

Amazon Relational Database Service (Amazon RDS) is a web service that makes it easier to set up, operate, and scale a relational database in the cloud. It provides cost-efficient, resizable capacity for an industry-standard relational database and manages common database administration tasks.

**44. What are different DB software (Engines) supported by RDS?**

Amazon RDS provides you six familiar database engines to choose from, including [Amazon Aurora](https://aws.amazon.com/rds/aurora/), [PostgreSQL](https://aws.amazon.com/rds/postgresql/), [MySQL](https://aws.amazon.com/rds/mysql/), [MariaDB](https://aws.amazon.com/rds/mariadb/), [Oracle](https://aws.amazon.com/rds/oracle/), and [Microsoft SQL Server](https://aws.amazon.com/rds/sqlserver/).

**45. Diffrent DB instance types?**

Standard

Memory Optimized

Micro instances

**46. What is MutiAZ RDS instances?**

Amazon RDS provides high availability and failover support for DB instances using Multi-AZ deployments. ... Running a DB instance with high availability can enhance availability during planned system maintenance, and help protect your databases against DB instance failure and Availability Zone disruption.

When you provision a Multi-AZ DB Instance, Amazon RDS automatically creates a primary DB Instance and synchronously replicates the data to a standby instance in a different Availability Zone(AZ). Each AZ runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable.

**47. Different storage types in RDS?**

Magnetic, General Purpose (SSD) and Provisioned IOPS (SSD)

**48. What is backup retention policy?**

A Backup Retention Policy determines the retention time of data, archival rules, data formats and the permissible means of storage, access and encryption, while weighing legal and privacy concerns against economics and 'need to know' concerns

**49. Where we configure NAT and why?**

We configure NAT to connect instances in the private subnets to outer world, it acts as one way bridge for instances to connect to outer world.

**50. What is cloudwatch?**

Amazon CloudWatch. Amazon CloudWatch is a monitoring service for AWS cloud resources and the applications you run on AWS. You can use Amazon Cloud Watch to collect and track metrics, collect and monitor log files, set alarms, and automatically react to changes in your AWS resources.

**51. What is Route53?**

Amazon Route 53 (Route 53) is a scalable and highly available Domain Name System (DNS). It is part of Amazon.com's cloud computing platform, Amazon Web Services (AWS). The name is a reference to TCP or UDP port 53, where DNS server requests are addressed.

**52. What is s3 – restrictions on s3**

**53. What is s3 endpoints**

An endpoint is a URL that is the entry point for a web service.

**What is EBS**

**What is snapshot**

**What is volume**

**Have worked on AWS and AZURE**

**How to launch a instance from AWS**

**What is autoscaling? What triggers have you used for scaling?**

AWS CodeDeploy supports Auto Scaling, an AWSservice that can launch Amazon EC2 instances automatically according to conditions you define. These conditions can include limits exceeded in a specified time interval for CPU utilization, disk reads or writes, or inbound or outbound network traffic.

**What is s3cmd used for?**

S3cmd is a free command line tool and client for uploading, retrieving and managing data in Amazon S3 and other cloud storage service providers that use the S3 protocol, such as Google Cloud Storage or DreamHost DreamObjects. It is best suited for power users who are familiar with command line programs.

**What is AWS CLI used for? Give any real time scenario where you used AWS CLI?**

The AWS Command Line Interface (CLI) is a unified tool to manage your AWS services. With just one tool to download and configure, you can control multiple AWS services from the command line and automate them through scripts.

**How can we mount s3bucket in Linux instance as a mountpoint? Any real time use case for it?**

S3fs

**Please explain the procedure for setting up a alarm with Cloud Watch monitoring?**

**What is AWS Beanstalk? Name any platform you used in beanstalk and the code deployment procedure for it?**

AWS Elastic Beanstalk is an orchestration service offered from Amazon Web Services for deploying infrastructure which orchestrates various AWSservices, including EC2, S3, Simple Notification Service (SNS), CloudWatch, autoscaling, and ElasticLoad Balancers.

Tomcat

**Name few customization options available with Beanstalk?**

Configuration Options

Advanced Environment Customization with Configuration Files (.ebextensions)

Using Elastic Beanstalk Saved Configurations

Environment Manifest (env.yaml)

Configuring Auto Scaling with Elastic Beanstalk

Configuring the EC2 Instances in your Elastic Beanstalk Environment

Configuring the Load Balancer in your Elastic Beanstalk Environment

Configuring Databases with Elastic Beanstalk

Configuring AWS X-Ray Debugging

Configuring VPC with Elastic Beanstalk

Configuring CloudWatch Logs with Elastic Beanstalk

Configuring Amazon SNS Notifications with Elastic Beanstalk

Your Elastic Beanstalk Environment's Domain Name

Configuring HTTPS for your Elastic Beanstalk Environment

What is Launch configuration in Autoscaling?

A launch configuration is a template that an Auto Scaling group uses to launchEC2 instances. When you create a launch configuration, you specify information for the instances such as the ID of the Amazon Machine Image (AMI), the instance type, a key pair, one or more security groups, and a block device mapping.

**What is Route 53 used for, name few features of route 53?**

**Difference between AWS Region and Zone?**

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*.

**Can we have data from a volume in one zone to other zone instance?**

->Create a snapshot of the volume, and create a new volume from the snapshot in the other AZ