EC2 AND IAM – Interview Preparation

EC2 Preparation:

1. Instance Types:
   - General Purpose: This is a normal instance type where this type of instance is basically used for deploying static websites and 1 tier applications
   - Compute Optimised: Compute optimised instance are used for high end application that are used for high performance
   - Memory Optimised: Memory optimised are used to process high workloads for an application so high amounts of data can be stored and processes easily
   - Accelerated Optimised: this is used for running high end hardwares to run them easily and perform function that are having more amount of optimisation usage
   - Storage optimised: Storage optimised are mostly used to store large amounts of data that are to be used to read and write in data set

2. Pricing Model:
   - On-Demand: Where the instance is priced based on the demand of the client
   - Reserved: The instance type where they are reserved before hand to reduce the price of the instance
   - Spot instance: the instance that are brought on the spot for immediate usage based on an unused instance under an discount

3. Creating a security group:
   - Security groups are totally based on an inbound and outbound rules
   - Security groups are based on allowing an inbounding and outbound rule but we cannot restrict IP in SG's
   - For restricting IP, we can used NACL
   - SG's are mostly attending on instance level

4. What are placement groups:
   - Types of placement groups present :
     - Cluster
     - Spread
     - Partition
   - Cluster: These are where all the EC2 are group in a same AZ's and they allocate high risk because when the AZ's is down the total ec2 servers are down .They are used to allocate low latency

- Partition: Different partitions are made in a different region of the availability zone so this is used to prevent from high risk
- Spread: hardware is used to be stored in separate hardware so they are stored in separate partition in different separate region and AZ's

5. EBS: (elastic block storage)

Elastic block storage is used to store backups templates of the instances

- They are movable, portable and can be moved from one instance to another instance

IAM Preparation:

1. How does IAM help implement the principle of least privilege?
   - IAM offers purpose such as roles , users and permission boundaries
   - These are used as an additional security for the AWS account and securing servers
   - And also we can use IAM to protect the account from giving out permission boundaries for the user

2. What is the difference between IAM Policies, Resource-Based Policies, and Permission Boundaries?
   - IAM policies are used to provide a additional security for the aws account
   - Resouce based policies are like giving out permission to the user to have only the given permission to the resouces
   - Permission boundaries are those where the user is being stopped from accessing an particular resource more than the permission they are given

3. What are IAM Identity-Based Policies and how do they work?
   - Identity based polices are those which are given to the users groups based on the level of permission they must be having
   - They are 2 types managed and inline policies

4. How do you enforce Multi-Factor Authentication (MFA) for specific users or groups in IAM?
   - Multi factor authentication is like creating an IAM user by enabling MFA access
   - You can use SCP at account level to enable MFA at account level

5. What is an IAM AssumeRole, and how does it differ from an IAM Role?
   - IAM roles are an particular permission that needs specific permissions and credentials to be accessed by the users and its application
   - Assume roles are the same but act on API and also they only inherit the permission temporarily

6. How do Service Control Policies (SCPs) work in AWS Organizations?
   - SCP are not used to allocate permission but they are used to control the permission of the organisation
   - They are mostly used to restrict the persmissions than granting them
   - They are used to stop unauthorised access of the users

7. What is the difference between an AWS IAM Role and an AWS IAM User? When should you use each?
   - IAM roles are like creating an temporary roles for an resources or an service that can be used in the service to provide he permission
   - IAM users are like an long term permission where the user is created with the permission that are created and along with them comes the credentials to access the user ID

8. How do IAM Session Policies differ from Identity-Based Policies?
   - IAM session policies are like the assume roles where they are used for an temporary purpose and also only used for an certain duration
   - Identity based policies are like the roles that are being given to the users and groups to allocate them the permissions where they have long term purpose of policies