**1.What is Amazon EC2 instance?**

**Answer**: An Amazon EC2 instance is a virtual server for running applications on the AWS infrastructure

**2.Which EC2 Purchasing Option can provide you the biggest discount, but it is not suitable for critical jobs or databases?**

**Answer**: Spot Instances are good for short workloads and this is the cheapest EC2 Purchasing Option. But they are less reliable because you can lose your EC2 instance.

**3.What should you use to control traffic in and out of EC2 instances?**

**Answer**: Security Groups operate at the EC2 instance level and can control traffic.

**4.How long can you reserve an EC2 Reserved Instance?**

**Answer**: EC2 Reserved Instances can be reserved for 1 or 3 years only.

**5.You would like to deploy a High-Performance Computing (HPC) application on EC2 instances. Which EC2 instance type should you choose?**

**Answer**: Compute Optimized EC2 instances are great for compute-intensive workloads requiring high-performance processors (e.g., batch processing, media transcoding, high-performance computing, scientific modelling & machine learning, and dedicated gaming servers).

**6.Which EC2 Purchasing Option should you use for an application you plan to run on a server continuously for 1 year?**

**Answer**: Reserved Instances are good for long workloads. You can reserve EC2 instances for 1 or 3 years.

**7.You are preparing to launch an application that will be hosted on a set of EC2 instances. This application needs some software installation and some OS packages need to be updated during the first launch. What is the best way to achieve this when you launch the EC2 instances?**

**Answer**: EC2 User Data is used to bootstrap your EC2 instances using a bash script. This script can contain commands such as installing software/packages, download files from the Internet, or anything you want.

**8.Which EC2 Instance Type should you choose for a critical application that uses an in-memory database?**

**Answer**: Memory Optimized EC2 instances are great for workloads requiring large data sets in memory.

**9.You have an e-commerce application with an OLTP database hosted on-premises. This application has popularity which results in its database has thousands of requests per second. You want to migrate the database to an EC2 instance. Which EC2 Instance Type should you choose to handle this high-frequency OLTP database?**

**Answer**: Storage Optimized EC2 instances are great for workloads requiring high, sequential read/write access to large data sets on local storage.

**10.Can you attach Security Groups to multiple EC2 instances within the same AWS Region/VPC?**

**Answer**: Yes.

**11.You're planning to migrate on-premises applications to AWS. Your company has strict compliance requirements that require your applications to run on dedicated servers. You also need to use your own server-bound software license to reduce costs. Which EC2 Purchasing Option is suitable for you?**

**Answer**: Dedicated Hosts.

**12.What are the features of the Amazon EC2 service?**

1.Virtual computing environment.

2.pre-configured templates for your instances (known as Amazon Machine Images).

3.Amazon Ec2 provides various configurations of CPU, memory, storage and networking capacity for your instances (known as instance type).

4.Secure login information for your instances using key pairs.

5.A firewall that enables you to specify the protocols, ports and source IP ranges that can reach your instances using security groups.

6.Static IP addresses for dynamic cloud computing (known as elastic address).

**13.What are the security best practices for EC2?**

**Answer**:

1.Use AWS identity and access management to control access to your AWS resources.

2.Restrict access by allowing only trusted hosts or networks to access ports on your instance.

3.Review the rules in your security groups regularly.

**14.Explain stopping, starting and terminating an EC2 instance.**

**Answer**: 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.

When an instance is terminated, the instance performs a normal shutdown, then the attached 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.

**15.What are the different types of EC2 instances based on their costs?**

**Answer**: The three types of Ec2 instances are:

**On-demand Instance**: With On-Demand Instances, you pay for compute capacity by the second with no long-term commitments. You have full control over its lifecycle—you decide when to launch, stop, hibernate, start, reboot, or terminate it.

There is no long-term commitment required when you purchase On-Demand Instances. You pay only for the seconds that your On-Demand Instances are in the running state, with a 60-second minimum.

On-Demand Instances are recommended for applications with short-term, irregular workloads that cannot be interrupted.

**Reserved Instance**: Reserved Instances provide you with significant savings on your Amazon EC2 costs compared to On-Demand Instance pricing. Reserved Instances are not physical instances, but rather a billing discount applied to the use of On-Demand Instances in your account. These On-Demand Instances must match certain attributes, such as instance type and Region, in order to benefit from the billing discount.

You can purchase a Reserved Instance for a one-year or three-year commitment, with the three-year commitment offering a bigger discount.

* One-year: A year is defined as 31536000 seconds (365 days).
* Three-year: Three years is defined as 94608000 seconds (1095 days).

Reserved Instances do not renew automatically; when they expire, you can continue using the EC2 instance without interruption, but you are charged On-Demand rates.

**Spot Instance:** A Spot Instance is an instance that uses spare EC2 capacity that is available for less than the On-Demand price. Because Spot Instances enable you to request unused EC2 instances at steep discounts, you can lower your Amazon EC2 costs significantly. The hourly price for a Spot Instance is called a Spot price. The Spot price of each instance type in each Availability Zone is set by Amazon EC2, and is adjusted gradually based on the long-term supply of and demand for Spot Instances. Your Spot Instance runs whenever capacity is available and the maximum price per hour for your request exceeds the Spot price.

Spot Instances are a cost-effective choice if you can be flexible about when your applications run and if your applications can be interrupted. For example, Spot Instances are well-suited for data analysis, batch jobs, background processing, and optional tasks.

**Dedicated Host**: An Amazon EC2 Dedicated Host is a physical server with EC2 instance capacity fully dedicated to your use. Dedicated Hosts allow you to use your existing per-socket, per-core, or per-VM software licenses, including Windows Server, Microsoft SQL Server, SUSE, and Linux Enterprise Server.

When you bring your own license, you are responsible for managing your own licenses. However, Amazon EC2 has features that help you maintain license compliance, such as instance affinity and targeted placement.

**16.Explain what T2 instances are?**

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

**17.What is Key-Pair in AWS?**

**Answer:** Key-Pair is a secure login information, which contains a public key and a private key. It is used to login into Ec2 instances securely.

**18. What is Amazon Machine Images (AMI) in AWS?**

**Answer**: An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, user community, or the AWS Marketplace; or you can select one of your own AMI’s

**19. What are the different types of Instances based on usage?**

**Answer:**

Compute Optimized.

Memory Optimized.

Storage Optimized.

General Purpose.

**20. What is the relation between the Availability Zone and Region?**

**Answer**: AWS availability zone is a physical location where an Amazon data centre is located. On the other hand, an AWS region is a collection or group of availability zones or data centres.

**21. What are the top product categories of AWS?**

**Answer**: The 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