

EC2

1. What Is Amazon Ec2 Service ?

EC2 stands for Amazon **Elastic Compute Cloud**.

Amazon Elastic Compute Cloud is a part of Amazon.com's cloud-computing platform, Amazon Web Services, that allows users to rent virtual computers on which to run their own computer applications.

2. What Are The Features Of The Amazon Ec2 Service ?

Features of EC2-

1. Virtual computing service.
2. Preconfigured templates are available or else we are create our own templates.
3. Various config of CPU, Memory, storage etc. can be done.
4. Secure login using keypairs
5. Persistent volumes/storages are available for your data.
6. Multiple physical locations for your resources.
7. Firewall that enables you to specify the ports, protocols, IP etc.
8. Static IP addresses available.
9. Isolated Virtual networks possible.

3. What Are The Security Best Practices For Amazon Ec2 ?

Amazon EC2 is a cloud computing service provided by Amazon Web Services (AWS). The security of your EC2 instances is important, and there are several best practices you can follow to help keep your instances secure.

1. Use IAM roles to grant access to your EC2 instances, rather than using long-term AWS access keys. This will help ensure that any potential security breaches are limited in scope and can be quickly addressed.
2. Enable security group and network ACLs to control inbound and outbound traffic to your EC2 instances. This will help prevent unauthorized access to your instances.
3. Use Amazon EBS encryption to encrypt the data on your EC2 instance's attached EBS volumes. This will help protect your data from unauthorized access.
4. Enable multi-factor authentication (MFA) for your AWS root account and for any IAM users with administrative privileges. This will help prevent unauthorized access to your AWS resources.
5. Use AWS Config to monitor and audit the configuration of your EC2 instances and other AWS resources. This will help you detect and respond to any potential security issues.

6. Regularly review the access and security logs for your EC2 instances and other AWS resources. This will help you identify and address any potential security threats.

By following these best practices, you can help ensure the security of your EC2 instances and protect your data from unauthorized access.

4. Explain Storage For Amazon Ec2 Instance ?

Amazon EC2 instances use storage to store the operating system, applications, and data that you access when you connect to the instance. There are several types of storage that can be used with EC2 instances, including local storage, Elastic Block Store (EBS), and instance store.

Local storage is storage that is physically attached to the host computer that the instance is running on. This type of storage is also known as ephemeral storage because it is not persisted if the instance is stopped or terminated.

EBS is a durable and scalable storage solution that provides persistent storage for your EC2 instances. When you create an EBS volume, it is stored in a specific availability zone and can be attached to a single EC2 instance at a time.

Instance store is similar to local storage in that it is physically attached to the host computer that the instance is running on. However, instance store is persisted when the instance is stopped or terminated, unlike local storage.

Overall, the type of storage you choose for your EC2 instance will depend on your specific needs and requirements. EBS is generally recommended for most workloads because it provides persistent storage and high availability.

5. What Are The Basic Structures Of The Amazon Ec2 Service?

Features of EC2-

1. Virtual computing service.
2. Preconfigured templates are available or else we are create our own templates.
3. Various config of CPU, Memory, storage etc. can be done.
4. Secure login using keypairs
5. Persistent volumes/storages are available for your data.
6. Multiple physical locations for your resources.
7. Firewall that enables you to specify the ports, protocols, IP etc.
8. Static IP addresses available.
9. Isolated Virtual networks possible.

6. Explain Stopping, Starting, And Terminating An Amazon Ec2 Instance ?

Amazon EC2 is a cloud computing service provided by Amazon Web Services (AWS). When you launch an EC2 instance, it runs until you stop or terminate it. To stop an EC2 instance, you simply click the "Stop" button in the EC2 Management Console. This will shut down the instance and release its associated resources, such as CPU, memory, and storage. The instance will no longer be accessible, but you

will not be charged for its usage. You can start the instance again at any time by clicking the "Start" button in the EC2 Management Console.

To terminate an EC2 instance, you click the "Terminate" button in the EC2 Management Console. This will shut down the instance and release its associated resources, just like stopping an instance. However, terminating an instance will also delete the instance, including its attached EBS volumes and any data stored on those volumes. You will not be able to start or recover a terminated instance, so make sure you really want to terminate it before doing so.

Stopping, starting, and terminating EC2 instances can be useful for managing your AWS resources and reducing your costs. For example, you can stop an instance when it is not needed, such as when you are not using it during off-hours, and start it again when you need it. You can also terminate an instance if it is no longer needed, such as when you are done using it for a project. By carefully managing your EC2 instances, you can help ensure that you are only using the resources you need, when you need them.

7. Can S3 Be Cast-off With Ec2 Instances, In Case Of “yes” Please Specify How ?

Yes, it is possible to cast off with EC2 instances by using root approaches which have the backup of native occurrence storage. When a developer or a client is using Amazon S3 services, they have the capability to use extremely scalable and additionally fast, dependable, low priced data storage structures that are used by Amazon itself to track the worldwide network of its own websites.

However, in order to perform these operations in the Amazon EC2 atmosphere, developers need to use certain tools in order to load their Amazon Machine Images (AMIs) into Amazon S3 and then transfer them back to Amazon EC2. The additional use of this method might be when developers need to load stationary content into S3 from their websites hosted on Amazon EC2.

8. What Are Regions And Availability Zones In Amazon Ec2 ? Explain In Brief ?

Amazon EC2 uses a global infrastructure to provide cloud computing services, which is divided into regions and availability zones.

A region is a geographic area that consists of multiple availability zones. Each region is designed to be isolated from the others, so that events such as natural disasters or power outages in one region don't affect the availability of your applications in another region.

Availability zones, also known as AZs, are physically separate locations within a region. Each availability zone is a collection of data centers that are connected to each other with low-latency, high-throughput networking.

By using multiple availability zones within a region, you can build highly available and fault-tolerant applications that can withstand the loss of a single availability zone without impacting the availability of your application.

In summary, regions and availability zones are the building blocks of Amazon EC2's global infrastructure. Regions are isolated geographic areas that consist of multiple availability zones, which are physically separate locations within a region that are connected with low-latency networking.

9. Explain How To Launch Ec2 Instance In An Availability Zone ?

To launch an EC2 instance in a specific availability zone, follow these steps:

1. Log in to the AWS Management Console and navigate to the EC2 service.
2. Select the "Instances" menu and click the "Launch Instance" button.
3. In the wizard, select the Amazon Machine Image (AMI) that you want to use for your EC2 instance.
4. Choose the instance type, which will determine the hardware specifications of your EC2 instance.
5. Configure the details of your instance, including the security group, key pair, and IAM role.
6. Click the "Advanced Details" link to expand the wizard and show additional options.
7. Select the availability zone from the drop-down menu.
8. Continue through the wizard to configure any other options you want and then launch your EC2 instance.

It's important to note that the availability zone you select will determine the physical location of your EC2 instance. This can be important for reasons such as performance, latency, and compliance. So, it's worth taking the time to carefully consider which availability zone is the best fit for your needs.

10. What Is Amazon Ec2 Root Device Volume ?

A root device volume is the storage volume that contains the operating system, boot files, and system libraries for the instance. It is created from an Amazon Machine Image (AMI), which specifies the root device volume size and type. The root device volume is the default storage location for your instance, and it cannot be deleted or detached while the instance is running.

The storage system's root volume contains special directories and configuration files that help you administer the storage system.

11. How To Persist Root Device Volume In Amazon Ec2 Instance ?

To persist the root device volume on an Amazon EC2 instance, you can create an Amazon Elastic Block Store (EBS) snapshot of the volume and use it to create a new EBS volume. This new volume can be attached to the instance in place of the root device volume, allowing you to preserve the data on the root device volume even if the instance is terminated or stopped.

Here are the steps to create an EBS snapshot and attach it to an EC2 instance:

1. Open the Amazon EC2 console.
2. Select the instance that you want to create a snapshot of the root device volume for.
3. In the Actions menu, select the "Create Snapshot" option.
4. In the "Create Snapshot" dialog box, enter a name and description for the snapshot.

5. Click the "Create Snapshot" button to start the snapshot process.
6. Wait for the snapshot to complete. This may take some time depending on the size of the volume.
7. Once the snapshot is complete, select it from the list of snapshots in the Amazon EC2 console.
8. In the Snapshot details pane, click the "Create Volume" button.
9. In the "Create Volume" dialog box, select the availability zone and volume type for the new EBS volume.
10. In the "Device" field, enter `/dev/sda1` to specify that this volume should be used as the root device volume for the instance.
11. Click the "Create" button to create the new EBS volume.
12. Once the volume is created, select the instance in the Amazon EC2 console and choose the "Actions" menu.
13. Select the "Attach Volume" option and specify the new EBS volume that you just created as the volume to attach.
14. Click the "Attach" button to attach the new EBS volume to the instance.
15. After the volume is attached, you can restart the instance to use the new root device volume.

By creating an EBS snapshot and attaching it as a new EBS volume, you can preserve the data on the root device volume of your EC2 instance even if the instance is terminated or stopped. This allows you to persist data on the root device volume and use it with a new instance if needed.

12. What Is Security Group In Amazon Ec2 ?

A security group acts as a virtual firewall for your EC2 instances to control incoming and outgoing traffic. Inbound rules control the incoming traffic to your instance, and outbound rules control the outgoing traffic from your instance. When you launch an instance, you can specify one or more security groups.

13. What Are The Features Of Security Group In Amazon Ec2 ?

A security group acts as a virtual firewall for your EC2 instances to control incoming and outgoing traffic. Inbound rules control the incoming traffic to your instance, and outbound rules control the outgoing traffic from your instance. When you launch an instance, you can specify one or more security groups.

14. How To Create Security Group In Amazon Ec2 ?

To create a security group in Amazon EC2, follow these steps:

1. Open the Amazon EC2 Management Console and sign in to your AWS account.
2. In the navigation pane on the left, click "Security Groups" under the "NETWORK & SECURITY" heading.
3. Click the "Create Security Group" button.
4. In the "Create Security Group" dialog box, enter a name and description for the security group.

5. Select the VPC that you want to associate the security group with.
6. Click the "Create" button to create the security group.
7. In the "Inbound Rules" section, you can add rules to control incoming traffic to your EC2 instances. To add a rule, click the "Add Rule" button and specify the protocol, port range, source, and any other relevant details.
8. In the "Outbound Rules" section, you can add rules to control outgoing traffic from your EC2 instances. To add a rule, click the "Add Rule" button and specify the protocol, port range, destination, and any other relevant details.
9. When you are finished adding rules, click the "Save" button to save the security group.

You can now use the security group to control the inbound and outbound traffic to your EC2 instances. You can also attach the security group to your EC2 instances to apply the rules to those instances.

15. How To Launch An Amazon Ec2 Instance ?

To launch a new EC2 instance from an AMI, do the following:

1. Open the [EC2 console](#).
Note: Be sure to [select the AWS Region](#) that you want to launch the instance in.
2. From the navigation bar, choose AMIs.
3. Find the AMI that you want to use to launch a new instance. To begin, open the menu next to the search bar, and then choose one of the following:
If the AMI that you're using is one that you created, select Owned by me.
If the AMI that you're using is a public AMI, select Public images.
If the AMI that you're using is a private image that someone else shared with you, select Private images.
Note: The search bar automatically provides filtering options as well as automatically matching AMI IDs.
4. Select the AMI, and then choose Launch.
5. Choose an instance type, and then choose Next: Configure Instance Details.
Optionally [select configuration details](#), such as associating an IAM role with the instance.
6. Select Next: Add Storage. You can [use the default root volume type, or select a new type](#) from the Volume Type drop down. Select Add New Volume if you want to add additional storage to your instance.
7. Select Next: Add Tags. You can [add custom tags](#) to your instance to help you categorize your resources.
8. Select Next: Configure Security Group. You can [associate a security group with your instance](#) to allow or block traffic to the instance.
9. Select Review and Launch. Review the instance details.
10. Select Previous to return to a previous screen to make changes. Select Launch when you are ready to launch the instance.
11. Select an existing key pair or create a new key pair, select the acknowledge agreement box, and then choose Launch Instances.
12. Choose View Instances to check the status of your instance.

16. How To Connect To Your Amazon Ec2 Instance ?

To connect to your Amazon Elastic Compute Cloud (Amazon EC2) instance, you will need to use a Secure Shell (SSH) client. If you are using a Linux or Mac operating system, you can use the built-in `ssh` command in a terminal window. If you are using a Windows operating system, you can use a third-party SSH client such as PuTTY. To connect to your EC2 instance using `ssh`, you will need the following information:

- The public DNS name or public IP address of your EC2 instance
- The private key file (.pem file) associated with the instance's key pair

With this information, you can connect to your EC2 instance using the following `ssh` command:

```
ssh -i /path/to/private/key.pem ec2-user@public.dns.name
```

Replace `/path/to/private/key.pem` with the actual path to the private key file on your local machine, and replace `public.dns.name` with the actual public DNS name or public IP address of your EC2 instance.

If you are using PuTTY to connect to your EC2 instance, you will first need to convert the private key file (.pem file) to a PuTTY-compatible private key file (.ppk file) using the PuTTYgen utility. Then, you can use the following steps to connect to your EC2 instance:

1. Open the PuTTY client and enter the public DNS name or public IP address of your EC2 instance in the Host Name field.
2. In the Category tree on the left, expand Connection, expand SSH, and then click on Auth.
3. In the Authentication parameters section, click on the Browse button and select the private key file (.ppk file) that you generated using PuTTYgen.
4. In the Category tree on the left, click on Session and then enter a name for the session in the Saved Sessions field.
5. Click on the Save button to save the session.
6. Click on the Open button to start the SSH session.

You will be prompted to enter the username for the instance (which is typically `ec2-user` for Amazon Linux instances). After you enter the username, you will be connected to your EC2 instance.

17. How To Add A EBS Volume To Your Amazon Ec2 Instance ?

To add an Amazon Elastic Block Store (EBS) volume to your Amazon Elastic Compute Cloud (EC2) instance, you can follow these steps:

1. Sign in to the AWS Management Console and navigate to the EC2 service.
2. In the navigation pane, choose Instances and select the EC2 instance you want to add an EBS volume to.
3. Choose the Actions dropdown menu, and select Attach Volume.
4. In the Attach Volume dialog box, specify the EBS volume you want to attach, choose the device name for the volume (e.g. /dev/sdf), and then choose Attach.

After the EBS volume is attached to your EC2 instance, you can use it like any other physical hard drive. For example, you can format it, mount it, and store data on it.

18. How To Clean Up Your Amazon Ec2 Instance And Volume ?

To clean up your Amazon EC2 instance and volume, you can terminate the instance and delete the associated EBS volume. This will remove the instance and its root device volume from your Amazon EC2 account, freeing up resources and reducing your AWS charges.

Here are the steps to terminate an EC2 instance and delete its EBS volume:

1. Open the Amazon EC2 console.
2. Select the instance that you want to clean up.
3. In the Instance details pane, click the "Terminate" button.
4. In the confirmation dialog box, click the "Yes, Terminate" button to terminate the instance.
5. Wait for the instance to be terminated. This may take some time depending on the size of the instance and the volume attached to it.
6. Once the instance is terminated, select the EBS volume that was attached to it.
7. In the Volume details pane, click the "Delete" button.
8. In the confirmation dialog box, click the "Yes, Delete" button to delete the volume.

By terminating the instance and deleting the associated EBS volume, you can clean up your Amazon EC2 resources and reduce your AWS charges. It's important to regularly review and clean up unused EC2 instances and volumes to ensure that you are only using the resources that you need.

19. What Are The Best Practices For Amazon Ec2 ?

There are several best practices for using Amazon EC2 that can help you optimize your use of the service and reduce your AWS costs. Here are a few of the most important best practices to follow:

1. Use Amazon EC2 Auto Scaling to automatically add or remove instances based on your workload. This can help you ensure that you have the right amount of capacity to meet demand and avoid over-provisioning or under-provisioning.
2. Use Amazon EC2 Reserved Instances to save up to 75% on your EC2 costs. Reserved Instances give you a discount on the hourly usage charge for an instance, and they can be purchased for a one-year or three-year term.
3. Use Amazon EC2 Spot Instances to take advantage of unused EC2 capacity at a discounted price. Spot Instances are instances that are available for bidding, and you can bid on them to get a lower price than the on-demand rate.
4. Use Amazon EBS Optimized Instances to improve the performance of your EBS volumes. EBS Optimized Instances are designed to deliver high performance for EBS volumes, and they can provide up to 10 Gbps of dedicated bandwidth to your EBS volumes.
5. Use Amazon EC2 instance types that are appropriate for your workload. EC2 offers a range of instance types with varying amounts of CPU, memory, storage, and networking performance. Choose the instance type that best meets the needs of your workload to optimize performance and cost.

By following these best practices, you can improve the performance and cost-efficiency of your Amazon EC2 deployments.

20. What Is The Size Limit For Amazon Ec2 Instance Store-backed Amis And Amazon Ebs-backed Amis ?

The size limit for Amazon EC2 instance store-backed AMIs and Amazon EBS-backed AMIs depends on the instance type and the number of volumes that are attached to the instance.

For instance store-backed AMIs, the size limit is determined by the instance type and the number of instance store volumes that are attached to the instance. Each instance store volume can be up to 16 TiB in size, and most instance types support up to eight instance store volumes. This means that the maximum size for an instance store-backed AMI can be up to 128 TiB for most instance types.

For EBS-backed AMIs, the size limit is determined by the number of EBS volumes that are attached to the instance. Each EBS volume can be up to 16 TiB in size, and most instance types support up to 16 EBS volumes. This means that the maximum size for an EBS-backed AMI can be up to 256 TiB for most instance types.

It's important to note that these size limits are the maximum sizes that are supported by Amazon EC2. You may not be able to use the full size of an instance store or EBS volume due to limitations of the operating system or file system that you are

using. In general, it's best to choose the AMI and volume size that is appropriate for your workload and avoid using the maximum size unless it is absolutely necessary.

21. How You're Charged In Amazon Ec2? Explain In Detail ?

Amazon EC2 is a cloud computing service provided by Amazon Web Services (AWS). The pricing for EC2 instances is based on the type and number of instances you run, as well as the amount of time you use them.

When you create an EC2 instance, you must choose a pricing model that determines how you will be charged for the instance. There are two pricing models available: On-Demand and Reserved.

With On-Demand instances, you pay a fixed rate per hour or per second depending on the instance type you choose. This pricing model is suitable for users who want the flexibility to increase or decrease their compute capacity on demand, without the need to commit to a long-term contract.

With Reserved instances, you pay a lower, fixed rate in exchange for committing to use the instances for a one or three-year term. This pricing model is suitable for users who need a consistent amount of compute capacity and can make upfront payments to reduce their overall costs.

In addition to the cost of the instances themselves, you may also be charged for other AWS services and features that you use in conjunction with EC2. For example, you may be charged for data transferred in and out of your instances, for data stored in an Amazon Elastic Block Store (EBS) volume, or for data stored in an Amazon S3 bucket.

22.Can S3 Be Used With Ec2 Instances, If Yes, How ?

Yes, Amazon Elastic Compute Cloud (EC2) instances can be used with Amazon Simple Storage Service (S3). S3 can be used to store data that is accessible to EC2 instances. To access S3 from an EC2 instance, you can use the AWS SDK or command-line tools to make API requests to S3. Additionally, you can mount an S3 bucket as a file system on an EC2 instance, which allows you to access S3 data as if it were stored on a local file system.

23. If You Want To Launch Amazon Elastic Compute Cloud (ec2) Instances And Assign Each Instance A Predetermined Private Ip Address You Should ?

If you want to launch Amazon Elastic Compute Cloud (EC2) instances and assign each instance a predetermined private IP address, you can do so by using the EC2 launch wizard and selecting the option to specify a private IP address for each instance. When you launch the instances, you will be able to specify the private IP address for each instance in the wizard. This will ensure that each instance is assigned the private IP address that you specified.

24. Explain What Happens When I Reboot An Ec2 Instance ?

When you reboot an EC2 instance, the following occurs:

1. The EC2 instance is stopped and then restarted, which means the operating system and other software running on the instance are restarted.

2. The EC2 instance retains its original IP address and any attached instance storage.
3. The instance's metadata, such as its Amazon Machine Image (AMI) ID and instance type, remains the same.
4. Any block storage volumes attached to the instance, such as Amazon Elastic Block Store (EBS) volumes, are not affected by the reboot and will continue to be available to the instance.

In short, rebooting an EC2 instance restarts the operating system and software on the instance, but does not affect the instance's underlying hardware or attached storage

25.How You Will Change The Root Ebs Device Of My Amazon Ec2 Instance ?

To change the root EBS volume of an EC2 instance, you can use the AWS Management Console or the AWS command line interface (CLI). Here is a high-level overview of the steps involved in this process:

1. Stop the EC2 instance.
2. Detach the root EBS volume from the EC2 instance.
3. Create a snapshot of the root EBS volume.
4. Create a new EBS volume from the snapshot.
5. Attach the new EBS volume to the EC2 instance.
6. Start the EC2 instance.

Here are the detailed steps for changing the root EBS volume using the AWS Management Console:

1. Sign in to the AWS Management Console and navigate to the EC2 service.
2. In the left navigation panel, under Instances, select Instances.
3. In the list of EC2 instances, select the instance whose root EBS volume you want to change.
4. In the Actions menu, select Stop.
5. In the Stop Instances dialog box, select Yes, Stop.
6. After the instance has stopped, select the instance and in the Actions menu, select Detach Volume.
7. In the Detach Volume dialog box, select Yes, Detach.
8. In the left navigation panel, under Elastic Block Store, select Snapshots.
9. Select the root EBS volume that you detached from the EC2 instance and in the Actions menu, select Create Snapshot.
10. In the Create Snapshot dialog box, enter a name and description for the snapshot and select Create Snapshot.
11. After the snapshot has been created, in the left navigation panel, under Elastic Block Store, select Volumes.
12. Select the root EBS volume that you detached from the EC2 instance and in the Actions menu, select Delete Volume.

13. In the Delete Volume dialog box, select Yes, Delete.
14. In the left navigation panel, under Elastic Block Store, select Snapshots.
15. Select the snapshot that you created and in the Actions menu, select Create Volume.
16. In the Create Volume dialog box, select the EC2 instance that you want to attach the volume to, enter the size of the volume, and select Create.
17. After the volume has been created, select the volume and in the Actions menu, select Attach Volume.
18. In the Attach Volume dialog box, select the EC2 instance that you want to attach the volume to and select Attach.
19. In the left navigation panel, under Instances, select Instances.
20. Select the EC2 instance that you attached the new root EBS volume to and in the Actions menu, select Start.
21. In the Start Instances dialog box, select Yes, Start.

After the EC2 instance has started, it will be using the new root EBS volume that you attached.

26. What Is The Underlying Hypervisor For Ec2 ?

The underlying hypervisor for Amazon EC2 (Elastic Compute Cloud) is the Xen hypervisor. Amazon EC2 uses the Xen hypervisor to create and manage virtual machines (VMs) known as EC2 instances.

The Xen hypervisor is an open-source type 1 hypervisor that allows multiple operating systems to run on a single physical host. It is a bare-metal hypervisor that runs directly on the host hardware and provides a thin layer of abstraction between the physical host and the VMs that run on top of it.

The use of the Xen hypervisor allows EC2 instances to be highly customizable and flexible. Users can choose the operating system, memory, CPU, and other resources that their EC2 instances will use. This allows them to tailor their instances to their specific workloads and applications.

In addition to providing the underlying hypervisor for EC2, Amazon also uses the Xen hypervisor for other AWS services, such as Amazon Lightsail and Amazon Elastic Container Service (ECS).

27. What Are Spot Instances In Amazon Ec2 ?

Amazon EC2 Spot Instances are a type of EC2 instance that allows you to bid on spare Amazon EC2 computing capacity. Spot Instances are available at a discount compared to On-Demand and Reserved Instances, and can provide significant cost savings for users who are flexible with their compute capacity requirements.

Spot Instances are ideal for workloads that are flexible and can be interrupted, such as batch processing, scientific computing, data analysis, and application testing.

When you launch a Spot Instance, you specify the maximum price that you are willing to pay for the instance, and Amazon EC2 will only launch the instance if the Spot price is lower than your specified price. If the Spot price rises above your specified price, Amazon EC2 will interrupt the instance and you will no longer be charged for it.

Spot Instances are a good option for users who want to save money on their EC2 compute costs and are willing to have their instances interrupted when the Spot price rises above their specified maximum price. They are also a good option for users who have workloads that can be easily interrupted and resumed, such as batch processing and application testing.

28. What Is The Difference Between A Spot Instance And A Demand Instance On Ec2 ?

The main difference between a Spot Instance and a On-Demand Instance in Amazon EC2 is the pricing model and the ability to be interrupted. Here is a comparison of these two instance types:

Spot Instance	On-Demand Instance
Pricing is based on the current Spot price, which can fluctuate based on supply and demand.	Pricing is based on a fixed rate per hour or per second depending on the instance type.
Can be interrupted by Amazon EC2 when the Spot price rises above the user-specified maximum price.	Will not be interrupted unless the user stops or terminates the instance.
Provides a discount compared to On-Demand Instances.	More expensive than Spot Instances but provides more consistent pricing and availability.
Suitable for workloads that are flexible and can be interrupted.	Suitable for workloads that require a consistent and predictable amount of compute capacity.

In general, Spot Instances are a good option for users who want to save money on their EC2 compute costs and are willing to have their instances interrupted when the Spot price rises above their specified maximum price. On-Demand Instances are a good option for users who need a consistent and predictable amount of compute capacity and are willing to pay a higher price for it.

29. What Are The Main Features Of Classic Load Balancer In Ec2 ?

Amazon EC2 Classic Load Balancer is a legacy load balancing service provided by Amazon Web Services (AWS). Classic Load Balancer is designed to distribute incoming traffic across multiple EC2 instances in a single Availability Zone. Some of the main features of Classic Load Balancer include:

- **Load balancing:** Classic Load Balancer distributes incoming traffic across multiple EC2 instances in a single Availability Zone. This allows you to scale your applications and improve their availability and performance.
- **Health checks:** Classic Load Balancer periodically checks the health of its registered EC2 instances and only routes traffic to healthy instances. This ensures that your applications are always available and performant.
- **SSL/TLS termination:** Classic Load Balancer can terminate incoming SSL/TLS connections and offload the SSL/TLS decryption process to the load balancer. This can improve the performance of your applications by reducing the CPU load on your EC2 instances.
- **Sticky sessions:** Classic Load Balancer can enable sticky sessions, which allow requests from the same client to be routed to the same EC2 instance. This is useful for applications that require session persistence, such as online shopping carts.
- **Detailed monitoring:** Classic Load Balancer provides detailed metrics and logs that can help you monitor and troubleshoot your load balancing configuration.

In general, Classic Load Balancer is a simple and effective solution for load balancing traffic to EC2 instances in a single Availability Zone. It provides essential load balancing features and can help improve the availability and performance of your applications.

30. What Are The Main Features Of Application Load Balancer (ALB) In Amazon Ec2 ?

Amazon EC2 Application Load Balancer (ALB) is a modern load balancing service provided by Amazon Web Services (AWS). ALB is designed to distribute incoming traffic across multiple EC2 instances in multiple Availability Zones. Some of the main features of ALB include:

- **Load balancing:** ALB distributes incoming traffic across multiple EC2 instances in multiple Availability Zones. This allows you to scale your applications and improve their availability and performance.
- **Health checks:** ALB periodically checks the health of its registered EC2 instances and only routes traffic to healthy instances. This ensures that your applications are always available and performant.
- **SSL/TLS termination:** ALB can terminate incoming SSL/TLS connections and offload the SSL/TLS decryption process to the load balancer. This can improve the performance of your applications by reducing the CPU load on your EC2 instances.

- **Advanced routing:** ALB supports advanced routing rules that allow you to route traffic based on the content of the incoming request. This is useful for applications that have multiple services or microservices that need to be accessed through the same load balancer.
- **Detailed monitoring:** ALB provides detailed metrics and logs that can help you monitor and troubleshoot your load balancing configuration.

In general, ALB is a more advanced and feature-rich load balancing solution than Classic Load Balancer. It provides a wider range of features and can be used to load balance traffic to EC2 instances across multiple Availability Zones.

31. What Is A Placement Group In Ec2 ?

EC2 Placement groups determine how the instances are placed on the underlying hardware. AWS now provides three types of placement groups. Cluster – clusters instances into a low-latency group in a single AZ.

32. What Types Of Issues Do You Face While Connecting To An Ec2 Instance ?

Some of the most popular connection issues with EC2 instance are:

I. Connection time out: Connection may time out due to long running processes or low network speed.

II. Permission denied: You may be denied permission to connect to EC2 instance if the host key is not found.

III. Unprotected private key file: You need to have a secure and protected private key for EC2 access.

IV. User key not recognized by server: Server may not recognize the user key and deny permission to user.

V. No supported authentication method: You may be using an authentication method that is not supported by EC2.