TOPICS

What is Operating system?

==>OS will act as a mediator between the computer Hardware components and END USER

why we need Operating System?

==>To install the software's ,to store the files ,to work with any tool

Evaluation of Operating Systems?

==>In 1950 first operating system came into market

==>In 1960 first Unix OS came into market

==>In 1980 Microsoft released MS-DOS Operating System

==>In 1991 Linux Torvalds released Linux Operating System

-->Linux is a free and open source operating system

-->Linux is a Multi User based operating system

Linux has several distributions .

Many companies redesigned LINUX OS and released with their brand name like

PHEL,UBUNTU,CENT OS,SUSE,DEBAIN,AMAZON LINUX ...etc

Why Linux:

Most secured OS

Windows Operating System

===>Windows Os is recommended mostly for the personal Usage

Linux Operating System

==>Linux OS mainly recommended for servers or production environment

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EC2:

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We are using AWS Cloud Services which are provided by the AMAZON Web Services.

==>EC2 stands for "Elastic Compute Cloud" which is very popular and most demanding service from AWS.

==>using EC2 ,we can create virtual Machines or virtual Servers which are called as Instances.

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What is Key pair in AWS:

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==>While creating an instance, we will create a key-pair

==>Ec2 Instance will provide the key-pair for us.

==>Key-pair consists of public-key and private key

==>After launching the EC2 insstance ,if we want to connect with EC2 Instance we have to send the private key to AWS Ec2 instance.

==>If our private key os matched with AWS ,EC2 public key then connection will be established otherwise connection will be rejected.

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PUTTY:

Putty is a free software which is used to connect from windows machines to Linux machines.

==>When we created EC2 instance we have downloaded key pair(.ppk)

==>some time we have get pem files (.pem) extension

==>Putty cant understand .pem files hence we need to converts the .pem file

into .ppk file.

==>To convert the .pem files to .ppk we should use PUTTY GEN software

==>once we convertes the .pem files into .ppk files we can use that .ppk file

to connect with the EC2 Instance.

Note:

Now latest update is :

we no need to conver the .pem file to .ppk file

because directly we will create the .ppk file from EC2 instance while creating .

Define and explain the three basic types of cloud services and the AWS products that are built based on them?

The three basic types of cloud services are:

Computing

Storage

Networking

Here are some of the AWS products that are built based on the three cloud service types:

Computing - These include EC2, Elastic Beanstalk, Lambda, Auto-Scaling, and Lightsat.

Storage - These include S3, Glacier, Elastic Block Storage, Elastic File System.

Networking - These include VPC, Amazon CloudFront, Route53

What is the relation between the Availability Zone and Region?

AWS regions are separate geographical areas, like the US-West 1 (North California) and Asia South (Mumbai). On the other hand, availability zones are the areas that are present inside the regions. These are generally isolated zones that can replicate themselves whenever required.

3. What is auto-scaling?

Auto-scaling is a function that allows you to provision and launch new instances whenever there is a demand. It allows you to automatically increase or decrease resource capacity in relation to the demand.

Name some of the AWS services that are not region-specific

AWS services that are not region-specific are:

IAM

Route 53

Web Application Firewall

Cloud Front

Define Amazon EC2 regions and availability zones?

Availability zones are geographically separate locations. As a result, failure in one zone has no effect on EC2 instances in other zones. When it comes to regions, they may have one or more availability zones. This configuration also helps to reduce latency and costs.

Q. Mention the different types of instances in Amazon EC2 and explain its features?

A. 1. General Purpose Instances: They are used to compute a range of workloads and aid in the allocation of processing, memory, and networking resources.

2. Compute Optimized Instances: These are ideal for compute-intensive applications. They can handle batch processing workloads, high-performance web servers, machine learning inference, and various other tasks.

3. Memory Optimized: They process workloads that handle massive datasets in memory and deliver them quickly.

4. Accelerated Computing: It aids in the execution of floating-point number calculations, data pattern matching, and graphics processing. These functions are carried out using hardware accelerators.

5. Storage Optimised: They handle tasks that require sequential read and write access to big data sets on local storage.

What is the use of SSH?

SSH stands for Secure Shell and is an administrative protocol that lets users have access and control the remote servers over the Internet to work using the command line.

SSH is a secured encrypted version of the previously known Telnet which was unencrypted and not secure. This ensured that the communication with the remote server occurs in an encrypted form.

SSH also has a mechanism for remote user authentication, input communication between the client and the host, and sending the output back to the client.

What is a Cloud?

A cloud is a collaboration of networks, hardware, services, storage, and interfaces that help in delivering computing as a service. It has three users:

1. End users

2. Business management users

3. Cloud service providers

What is Cloud Computing?

It is an advanced-stage technology implemented so that the cloud provides its services globally as per the user requirements. It provides a method to access several servers worldwide.

What are some of the key features of Cloud Computing?

Reliable

Scalable

Agile

Location Independent

Multi-tenant.

What are the benefits of Cloud Computing?

The main benefits of Cloud Computing are:

Data backup and storage of data

Powerful server capabilities

Incremented productivity

Cost-effective and time-saving

What are the cloud service models?

Infrastructure as a Service (IaaS)

Platform as a Service (PaaS)

Software as a Service (SaaS)

Mention the layers of PaaS architecture.

Cloud Controller

Automatically creates virtual machines and controllers

Deploys applications

Connects to services

Automatically scales up and down

Storage Services

Object

NoSQL

Relational

Block storage

Applications Stored in Storage Services

Simple-to-scale applications

Easier recovery from failure

Explain the Cloud Computing Architecture.

Cloud Computing Architecture brings together two components of cloud computing – the front-end and the back-end. It is important to bring the correct services together for the benefit of both internal and external people. If need be, the cloud management should be able to quickly make required changes.

What are the Cloud Storage Levels?

Files

Blocks

Datasets

Objects

What is an AMI? How do we implement it?

AMI is Amazon Machine Image, which basically is a copy of your root file system. It feeds the information required to launch an instance.

We implement AMI by specifying an AMI whenever we want to launch an instance. Multiple instances can be launched from a single AMI with the same configuration.

In the case of launching instances with different configurations, we would need to launch different AMIs.

AMI includes one or more snapshots of your EBS volumes, in the case of instance-store backed AMIs, along with a template for the root volume of your instance (like an operating system, an application server, and applications).

It launches the permissions that decide which AWS accounts can use the AMI for launching instances. It also needs a block device mapping for specifying the volumes in order to attach them to the instances whenever they are launched.

What is Amazon Relational Database Service (Amazon 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 AWS Cloud. It provides cost-efficient, resizable capacity for an industry-standard relational database and manages common database administration tasks.

Amazon EC2 and on-premises databases:

Amazon Elastic Compute Cloud (Amazon EC2) provides scalable computing capacity in the AWS Cloud. Amazon EC2 eliminates your need to invest in hardware up front, so you can develop and deploy applications faster.

When you buy an on-premises server, you get CPU, memory, storage, and IOPS, all bundled together. With Amazon EC2, these are split apart so that you can scale them independently. If you need more CPU, less IOPS, or more storage, you can easily allocate them.

For a relational database in an on-premises server, you assume full responsibility for the server, operating system, and software. For a database on an Amazon EC2 instance, AWS manages the layers below the operating system. In this way, Amazon EC2 eliminates some of the burden of managing an on-premises database server.

The three important KPIs are as follows:

1) Meantime to failure recovery - This is the average time taken to recover from a failure.

2) Deployment frequency - The frequency in which the deployment occurs.

3) Percentage of failed deployments - The number of times the deployment fails.

Pay-As-You-Go

With AWS purchase services as you need them and only for the period when you plan to use them. AWS pricing has no upfront fees, termination penalties, or long term contracts. The AWS Free Tier helps you get started with AWS. Visit the pricing pages of each service to learn more.

Name some of the non-regional AWS services.

Some of the non-regional AWS services.

CloudFront

IAM

Route 53

Web Application Firewall

How is stopping and terminating an instance different from each other?

Starting, stopping and terminating are the three states in an EC2 instance, let's discuss them in detail:

Answer:

a) Stopping and Starting an instance: 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.

b) Terminating an instance: When an instance is terminated, the instance performs a normal shutdown, then the attached Amazon 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.