AZURE FUNDAMANETALS

1. What is cloud computing? What is Azure?
2. How to create an Azure account list the steps and requirements?
3. Describe different types of cloud models.
4. Describe different cloud services.
5. What are some cloud computing advantages?
6. Differentiate Capital expenses vs. operating expenses

Q1)

Cloud Computing is the on-demand availability of computer system resources, especially data storage (cloud storage) and computing power, without direct active management by the user. Large clouds often have functions distributed over multiple locations, each of which is a data center. Cloud computing relies on sharing of resources to achieve coherence and typically uses a "pay as you go" model, which can help in reducing capital expenses but may also lead to unexpected operating expenses for users.

Top service providers

AWS

AZURE

GCP

IBM

Azure is cloud based service offered by Microsoft it offers a variety of services such as IAAS,SAAS,PAAS

Cloud computing types are service deployment models that let you choose the level of control over your information and types of services you need to provide. There are three main types of cloud computing services, sometimes called the cloud computing stack because they build on top of one another.

The first cloud computing type is infrastructure-as-a-service (IaaS), which is used for Internet-based access to storage and computing power. The most basic category of cloud computing types, IaaS lets you rent IT infrastructure - servers and virtual machines, storage, networks, and operating systems - from a cloud provider on a pay-as-you-go basis.

The second cloud computing type is platform-as-a-service (PaaS) that gives developers the tools to build and host web applications. PaaS is designed to give users access to the components they require to quickly develop and operate web or mobile applications over the Internet, without worrying about setting up or managing the underlying infrastructure of servers, storage, networks, and databases.

The third cloud computing type is software-as-a-service (SaaS) which is used for web-based applications. SaaS is a method for delivering software applications over the Internet where cloud providers host and manage the software applications making it easier to have the same application on all of your devices at once by accessing it in the cloud.

Q2)

TO create an account for azure follow below steps

AZURE FUNDAMANETALS

Steps

Search for azure on google

Create a Microsoft account if not available else login from a Microsoft account

Enter all credentials and credit card details for trial or free version

Select free services offered by azure

Q3)

Public clouds

Public clouds are cloud environments typically created from IT infrastructure not owned by the end user. Some of the largest public cloud providers include Alibaba Cloud, Amazon Web Services (AWS), Google Cloud, IBM Cloud, and Microsoft Azure.

Traditional public clouds always ran off-premises, but today's public cloud providers have started offering cloud services on clients' on-premise data centers. This has made location and ownership distinctions obsolete.

All clouds become public clouds when the environments are partitioned and redistributed to multiple tenants. Fee structures aren't necessary characteristics of public clouds anymore, since some cloud providers (like the Massachusetts Open Cloud) allow tenants to use their clouds for free. The bare-metal IT infrastructure used by public cloud providers can also be abstracted and sold as IaaS, or it can be developed into a cloud platform sold as PaaS.

Private clouds

Private clouds are loosely defined as cloud environments solely dedicated to a single end user or group, where the environment usually runs behind that user or group's firewall. All clouds become private clouds when the underlying IT infrastructure is dedicated to a single customer with completely isolated access.

But private clouds no longer have to be sourced from on-premise IT infrastructure. Organizations are now building private clouds on rented, vendor-owned data centers located off-premises, which makes any location and ownership rules obsolete. This has also led to a number of private cloud subtypes, including:

Managed private clouds

Customers create and use a private cloud that's deployed, configured, and managed by a third-party vendor. Managed private clouds are a cloud delivery option that helps enterprises with understaffed or underskilled IT teams provide better private cloud services and infrastructure.

Dedicated clouds

A cloud within another cloud. You can have a dedicated cloud on a public cloud (e.g. Red Hat OpenShift® Dedicated) or on a private cloud. For example, an accounting department could have its own dedicated cloud within the organization's private cloud.

Hybrid clouds

A hybrid cloud is a seemingly single IT environment created from multiple environments connected through local area networks (LANs), wide area networks (WANs), virtual private networks (VPNs), and/or APIs.

The characteristics of hybrid clouds are complex and the requirements can differ, depending on whom you ask. For example, a hybrid cloud may need to include:

At least one private cloud and at least one public cloud

Two or more private clouds

Two or more public clouds

A bare-metal or virtual environment connected to at least one public cloud or private cloud

But every IT system becomes a hybrid cloud when apps can move in and out of multiple separate—yet connected—environments. At least a few of those environments need to be sourced from consolidated IT resources that can scale on demand. And all those environments need to be managed as a single environment using an integrated management and orchestration platform.

Multiclouds

Multiclouds are a cloud approach made up of more than 1 cloud service, from more than 1 cloud vendor—public or private. All hybrid clouds are multiclouds, but not all multiclouds are hybrid clouds. Multiclouds become hybrid clouds when multiple clouds are connected by some form of integration or orchestration.

A multicloud environment might exist on purpose (to better control sensitive data or as redundant storage space for improved disaster recovery) or by accident (usually the result of shadow IT). Either way, having multiple clouds is becoming more common across enterprises that seek to improve security and performance through an expanded portfolio of environments.

Q4)

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Q5)

1) Back-up and restore data

Once the data is stored in the cloud, it is easier to get back-up and restore that data using the cloud.

2) Improved collaboration

Cloud applications improve collaboration by allowing groups of people to quickly and easily share information in the cloud via shared storage.

3) Excellent accessibility

Cloud allows us to quickly and easily access store information anywhere, anytime in the whole world, using an internet connection. An internet cloud infrastructure increases organization productivity and efficiency by ensuring that our data is always accessible.

4) Low maintenance cost

Cloud computing reduces both hardware and software maintenance costs for organizations.

5) Mobility

Cloud computing allows us to easily access all cloud data via mobile.

6) IServices in the pay-per-use model

Cloud computing offers Application Programming Interfaces (APIs) to the users for access services on the cloud and pays the charges as per the usage of service.

7) Unlimited storage capacity

Cloud offers us a huge amount of storing capacity for storing our important data such as documents, images, audio, video, etc. in one place.

8) Data security

Data security is one of the biggest advantages of cloud computing. Cloud offers many advanced features related to security and ensures that data is securely stored and handled.

Q6)

Capital Expenditures (CapEx)

Capital expenditures (CapEx) are purchases of significant goods or services that will be used to improve a company's performance in the future. They include the cost of fixed assets and the acquisition of intangible assets such as patents and other forms of technology. Capital expenditures are typically for fixed assets like property, plant, and equipment (PP&E).2 For example, if an oil company buys a new drilling rig, the transaction would be a capital expenditure.

Operating Expenses (OpEx)

Operating expenses are the costs that a company incurs for running its day-to-day operations. These expenses must be ordinary and customary costs for the industry in which the company operates.3 Companies report OpEx on their income statements and can deduct OpEx from their taxes for the year when the expenses were incurred.4