Module -1

1- What is cloud computing?

Ans:- Cloud computing is a model that provides computing resources over the internet, or "the cloud". This includes services like storage, servers, networking, databases, software, analytics, and intelligence.

2-Describe cloud computing deploy model.

Ans:- cloud deployment model is a framework that defines how cloud computing services are delivered, managed, and configured. It determines the following

- Location: Where the infrastructure is located
- Access: How the infrastructure is accessed
- Management: Who manages the infrastructure
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The choice of deployment model can impact the following aspects of cloud services: cost, scalability, control, security, and compliance.

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Different models have different advantages and disadvantages, so it's important to understand them before choosing one. The right model can help a business align with its goals, optimize resource use, and meet legal and security requirements.

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Some examples of cloud deployment models include:

- Public cloud

  A low-cost option with no capital expenditure. It's ideal for businesses that need quick access to resources.

- Private cloud

  Involves capital expenditure, but is still less expensive than owning and operating the infrastructure. Private clouds are more secure and offer better compliance support than public clouds.

- Community cloud

  Allows multiple organizations to share computing resources. For example, universities might share resources for research, or police departments might share resources within a county or state.

3-What are components of cloud computing?

Ans:- Explanation: Usually, Cloud Computing offers three types of services to the users that are Platform as a service (or PaaS), Application as a service (or AssS), and Software as a service (or SaaS).

4-cloud computing advantage and disadvantage Advantages of Cloud Computing

Ans:- Scalability and flexibility to meet changing business needs.

- Cost savings through reduced infrastructure and maintenance expenses.

- Security and data privacy concerns due to third-party data storage.

- Dependence on reliable internet connectivity for access and functionality.

Cost Efficiency. ...

Scalability and Flexibility. ...

Accessibility and Mobility. ...

Enhanced Security. ...

Disaster Recovery and Business Continuity. ...

Data Privacy and Security Concerns. ...

Limited Control and Customization. ...

Network Dependency and Connectivity Issues.

Module -2

1-What is virtualization and virtualization type?

Ans:- Virtualization is used to create a virtual version of an underlying service With the help of Virtualization, multiple operating systems and applications can run on the same machine and its same hardware at the same time, increasing the utilization and flexibility of hardware. It was initially developed during the mainframe era.

It Is one of the main cost-effective, hardware-reducing, and energy-saving techniques used by cloud providers. Virtualization allows sharing of a single physical instance of a resource or an application among multiple customers and organizations at one time. It does this by assigning a logical name to physical storage and providing a pointer to that physical resource on demand. The term virtualization is often synonymous with hardware virtualization, which plays a fundamental role in efficiently delivering Infrastructure-as-a-Service (IaaS) solutions for cloud computing. Moreover, virtualization technologies provide a virtual environment for not only executing applications but also for storage, memory, and networking.

Virtualization

Virtualization

Host Machine: The machine on which the virtual machine is going to be built is known as Host Machine.

Guest Machine: The virtual machine is referred to as a Guest Machine.

2-Type of hypervisor and how to manage it?

Ans:-There are two main hypervisor types, referred to as “Type 1” (or “bare metal”) and “Type 2” (or “hosted”). A type 1 hypervisor acts like a lightweight operating system and runs directly on the host’s hardware, while a type 2 hypervisor runs as a software layer on an operating system, like other computer programs.

3-Roles of virtualization in cloud computing?

Ans:- Virtualization in cloud computing brings many benefits to customers, such as: It provides enhanced development productivity. It lets customers run multiple operating systems. It lowers the costs of IT infrastructure and spares organizations the need to invest time, resources, and money into bringing new systems online.

4-What is container?

Ans:-Containers are packages of software that contain all of the necessary elements to run in any environment. In this way, containers virtualize the operating system and run anywhere, from a private data center to the public cloud or even on a developer’s personal laptop.

5-What is high availability and live migration in virtualization?

Ans:- Live migration refers to the process of moving a virtual machine (VM) running on one physical host to another host without disrupting normal operations or causing any downtime or other adverse effects for the end user. Live migration is considered a major step in virtualization.

5-Storage configuration –describe block storage, file storage and object storage---DAS NAS

and SAN

Ans:- The three systems also use different storage mechanisms: DAS primarily uses hard-drive storage with sectors, NAS uses shared files, and SAN uses block storage. Different technologies are also used for transmitting data. DAS uses IDE/SCSI, NAS uses TCP/IP and Ethernet, and SAN uses Fibre Channel and IP.

6-Describe storage allocation and provisioning. Storage Allocation

Ans:- Storage provisioning is the process of allocating and managing storage resources in a system. It optimizes performance, storage capacity, and operation speeds. Storage provisioning ensures that there is enough storage space when and where it is needed.