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Assignment-2

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(1) How cloud computing differs from distributed and parallel comp.

The main difference between cloud computing and distributed computing is that the cloud computing provides hardware, software and other infrastructure resources over the internet while the distributed computing divides a single task among multiple computer that are connected via a network to achieve the task faster than using an individual computer.

Cloud computing	Distributed computing.
(1) A computing technique that delivers hosted service over the internet	(1) A computing techoique that allows multiple computers to communicate and coordinate work by passing message through the network to acheive a common task.
(2) Its classified into 4 diff types such as public cloud, private cloud, community cloud and Hybrid cloud.	(2) Its classified into 3 different types such as Distributed Computing System, Distributed Information system and Distributed pervasive system.

③ Cloud computing provides services on demand computer services over internet on pay per user model

③ The goal of distributed computing is to distribute a single task among multiple computers and to solve it quickly by maintaining coordination between them.

The difference between parallel computing & cloud computing

Parallel computing	Cloud Computing
In this computing, each and every processing step will get completed at same time.	This computing is a distributed architecture built on a virtual or remote facility.
Video processing and simulation are the examples of parallel computing.	There is no need to buy hardware or any other network for installation.
This can be done by using hardware or a customized network.	It needs a confirmed approval from APIs where the vendor make the data available such as data auth, security & so on.

(8) What is multi-tenancy and its advantage in cloud computing ?

Multi-tenancy means that a SaaS (Software as a Service) vendor provides a single version of its software for all its customers. This differes from a single-tenant hosted solution, where the application is housed on a vendor's server but the codebase is unique for each customer.

Advantages of a multitanancy SaaS over a third party-hosted, single-tenancy application include the following.

1. lower costs through economies of scale.
2. Shared infrastructure leads to lower cost.
3. Ongoing maintenance and updates
4. Configuring can be done while leaving the underlying codebase unchanged
5. vendors have a vested interest in making sure everything run smoothly.

(3) Differentiate between virtualization and VM properly?

Virtualization is a process whereby software is used to create an abstraction layer over computer hardware that allows the hardware elements of a single computer to be divided into multiple virtual computer.

Virtualization has brought a major revolution in our technology sector over the past few years

The ability to virtualized has resulted in much more efficient use of hardware resources especially the ones which are in higher demand. By virtualization of IT resources, enterprises are able to utilize their hardware much more effectively and efficiently.

whereas, VM are fully virtualized instance of physical computers. VMs also come with a pre-defined set of specs, which include storage, RAM, GPU and CPU.

Although these resources are virtualized or software defined, VMs are fully capable of executing tasks.

(4) Why is hypervisor important? what is its role in cloud?

Hypervisors offers critical benefits for small businesses, large organizations and individual users alike.

These include:

→ Reliability.
→ Data replication.
→ Hardware neutral
→ Server consolidation
→ Desktop virtualization.

Features of a hypervisors?

⇒ Partitioning

Hypervisor partitioning the underlying Hardware is a method for efficiently using an abundance of hardware resources by enabling multiple independent software payloads to run concurrently on the same hardware.

⇒ Resource Distribution:

It manages independent virtual machines by distributing resources like memory, network bandwidth, etc. among them.

Importance of

→ Data Replication
→ Consolidation servers
→ Desktop virtualization.

Ques (5)

Vertical Operability

It is the set of computing services optimized for use in a particular way for an industry or a specific business model.

Unlike organization who can make with general purpose cloud computing services, those within certain industries or vertical market often have more niche IT requirements around security, compliance and other factors.

Vertical cloud computing providers aim to offers services that help their customers meet these unique requirements

→ Benifits of vertical operability.

(i) Increased scalability
(ii) on-demand resources access
(iii) Reduce need for investment on-promise software
(iv) Pay as you go service

(v) Industry specific features and services.

→ A potential draw back is that some companies might not have the same ecomy as major public cloud provides, which leads to less competetive pricing.