

National University of Computer and Emerging Sciences, Lahore Campus



Course: Intro to Cloud Computing
Program: BS (Computer Science)
Duration: 20 Minutes
Paper Date: 07-Feb-23
Section: BCS (6A)
Exam: Quiz 01

Course Code: CS-4037
Semester: Spring 2023
Total Marks: 20
Weight: 02%
Page(s): 02
Roll No.

Instruction/Notes:

Use of programmable calculators is not allowed. Exchange of stationary is strictly prohibited. Show complete working in all questions. Attempt all question parts together. Question attempted in separate parts will not be marked.

Q # 6 is a BONUS Question. (You will not lose marks if unable to attempt).

Question # 1: [4 marks, CLO # 1]

Choose the correct option.

1. Collection of virtualized servers is called:

- (a) Virtualization (b) Data center **(c) Cluster** (d) None of these

2. Jira is a software tool used in the industry as:

- (a) Bug tracker (b) Issue tracker (c) Agile project management tool **(d) All of these**

3. Multiprotocol Label Switching (MPLS) is used to:

- (a) Enable Data Link layer (layer 2) services on Network layer (layer 3) of the OSI model
(b) Enable Network layer (layer 3) services on Data Link layer (layer 2) of the OSI model
(c) Enable Transport layer (layer 4) services on Data Link layer (layer 4) of the OSI model
(d) All of the above

4. Power Management Modules (PMMs) are used in data center for:

- (a) Storing raw power and transmitting pure consistent power to the servers**
(b) Storing pure consistent power and transmitting raw power to the servers
(c) Storing raw power and transmitting the same raw power to the servers
(d) Both a and b

Question # 2: [4 marks, CLO # 1]

Suppose you want to deploy LUMS static website on a Web server running on Jazz cloud based in Islamabad.

(a) Will you attach a Hard Disk Drive (HDD) storage or a Solid State Drive (SSD) storage with the Web server, and why?

Hard Disk Drive (HDD) will be good enough and less expensive as well.

Since we are accessing a **static website**, which does not have large user interaction, HDD is the suitable option.

(b) Will you use IPSec VPN or Site to Site VPN for the connectivity between LUMS campus and Web server deployed on Jazz cloud in Islamabad, and why?

IP Sec VPN will be less expensive and will be the right choice.

Since we are accessing a **static website**, IP Sec VPN should be used.

Question # 3: [4 marks, CLO # 1]

Differentiate b/w virtualization and cloud computing? Give two examples each for the virtualization products and cloud platforms.

Virtualization

Virtualization is the creation of a virtual - rather than actual - version of something, such as an operating system (OS), a server, a storage device or network resources.

Virtualization uses software that simulates hardware functionality to create a virtual system.

VMware Workstation, Oracle VM Virtual Box, VMware Fusion.

Cloud Computing

Collection of virtualized server in the form of single cluster or many clusters.

Cloud computing is the on-demand availability of computer system resources, especially data 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.

VMware vSphere, Microsoft Azure, Amazon Web Services,

Question # 4: [4 marks, CLO # 1]

Differentiate b/w parallel and distributed computing? Are distributed computing and cloud computing the same concepts? Briefly explain your answer.

Parallel Computing

Parallel computing is a type of computation in which many calculations or processes are carried out simultaneously.

Large problems can often be divided into smaller ones, which can then be solved at the same time.

Distributed Computing

A distributed system is a system whose components are located on different networked computers, which communicate and coordinate their actions by passing messages to one another from any system.

Distributed computing is a field of computer science that studies distributed systems.

Distributed computing can be private to a specific organization. The organization buy the distributed systems and maintain them. While cloud computing is based on parallel and distributed computing and is publically available. The user rented the cloud resources as a utility with pay-as-you-go or reservation pricing.

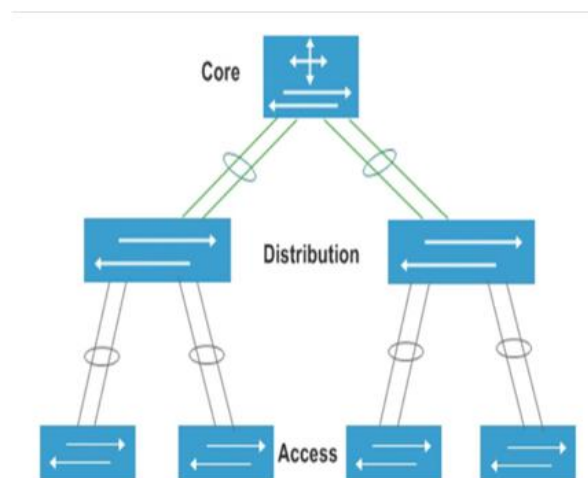
Question # 5: [4 marks, CLO # 1]

What is the difference between access switch, aggregation switch and core switch? Elaborate your answer with traffic flow diagram.

Access Switch: The access switch is used to access the terminal.

Aggregation / Distribution Switch: The aggregation switch is used to aggregate the access switch.

Core Switch: The core switch is used to aggregate the aggregation switch and is also responsible for connecting to the Internet.



Question # 6: [2 marks, CLO # 1] (Bonus Question)

Consider a physical machine which is not on cloud. Can we run the machine with virtualized Operating System? Give reason for your answer.

Yes, we can run the machine with virtualized Operating System. We can simply install VMware ESXI OS on a server. It will provide all the abstraction capabilities of virtualization while the server will not be on cloud (not in any cluster).