

NIST Essential Characteristics of Cloud Computing

- There are NIST five essential characteristics of Cloud Computing:
 - 1. On Demand Self service
 - 2. Broad Network Access
 - 3. Resource pooling
 - 4. Rapid elasticity
 - 5. Measured service

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NIST Essential Characteristics of Cloud Computing

- On Demand Self service:
 - Computer services such as Email, Application Network, or Server service can be provided without requiring interaction with each service provider.
 - Self-service means that the consumer performs all the actions needed to acquire the service himself, instead of going through an IT department.
 - For example The consumer's request is then automatically processed by the cloud infrastructure, without human intervention on the provider's side.

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• Broad Network Access:

Cloud capabilities are available over the network and accessed through standard mechanism that promote use by heterogeneous client such as mobile phone, laptop.

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NIST Essential Characteristics of Cloud Computing

- Resource pooling:
 - -The Cloud service providers resources are pooled together to serve multiple customers, with different physical and virtual resources dynamically assigned and reassigned according to the customers demand.
 - Here location is independent. Customer has no control or knowledge over the exact location of the provided resources but may be able to specify location at a higher level of abstraction (e.g. country, state, or datacentre).
 - Example of resources include storage, processing, memory, and network bandwidth.

NIST Essential Characteristics of Cloud Computing

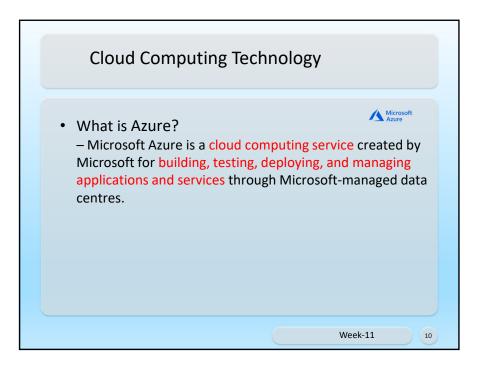
- Rapid elasticity:
 - Rapid Elasticity aims at matching the amount of resource allocated to a service with the amount of resource it actually requires, avoiding over- or underprovisioning.
 - Over-provisioning, i.e., allocating more resources than required, should be avoided as the service provider often has to pay for the resources that are allocated to the service.

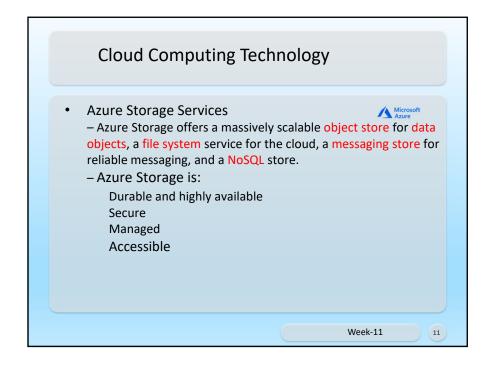
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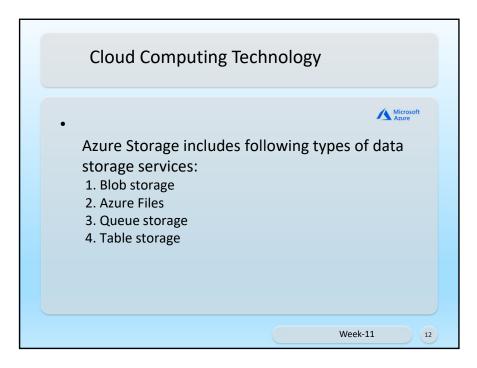
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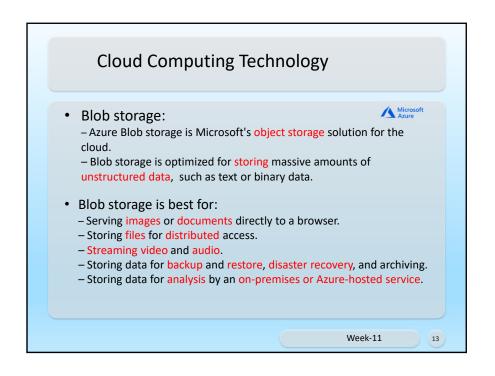
- Measured service:
 - Cloud systems automatically control and optimize resource use by controlling a metering capability at some level of abstraction appropriate to the type of service (e.g. storage, processing, bandwidth, and use of active account).
 - Resource usage can be monitored, controlled, and reported, providing transparency for both the provider and consumer of the utilized service.

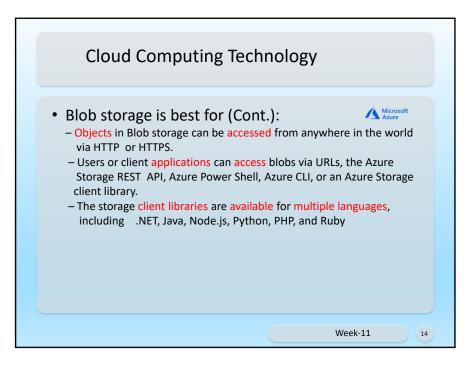


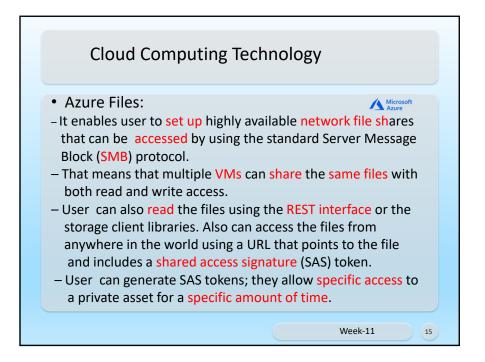


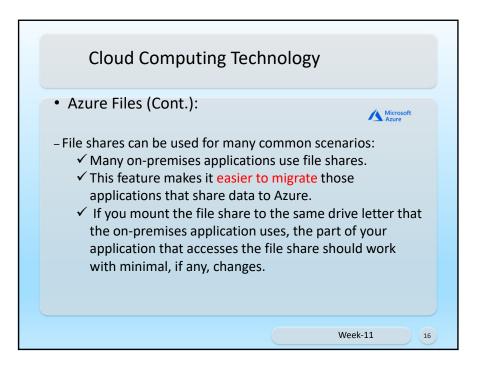


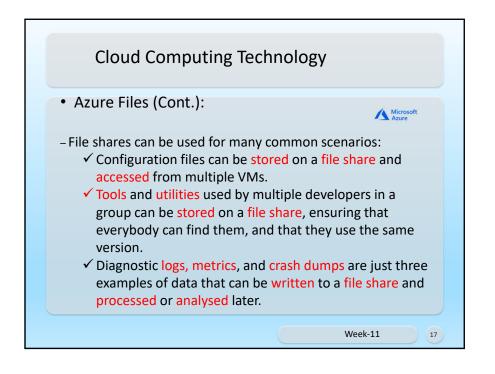


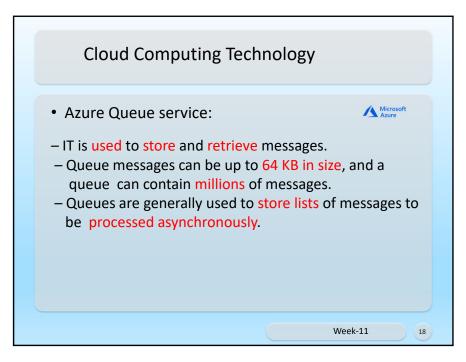


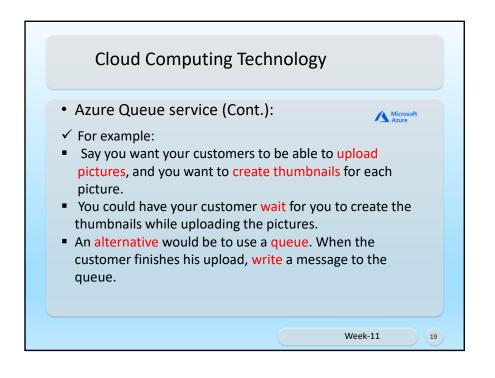


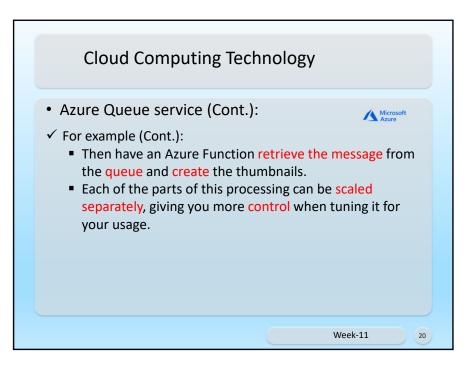


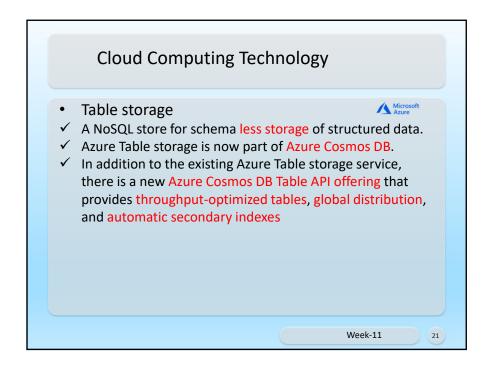


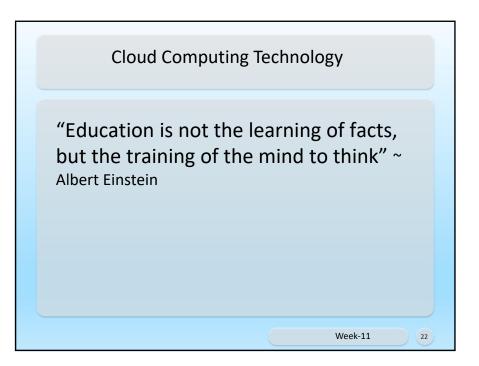












eValue Teaching Feedback

- We have put together a teaching and learning program in this unit which we have designed to align with current industry best practice.
- We hope that each of you can appreciate the practical approach taken to teaching Cloud Computing Technology and have enjoyed the practical assessment tasks.
- YOUR FEEDBACK IS APPRECIATED AND WE WILL KEEP WORKING HARD TO IMPROVE THE POINTS YOU MENTION.

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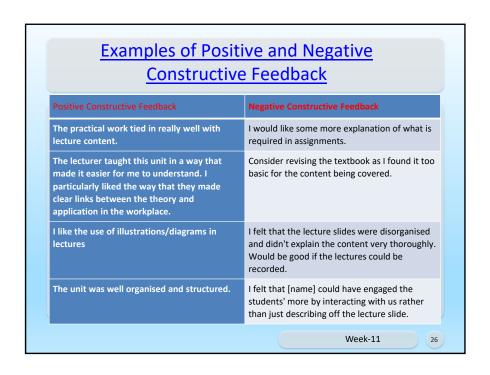
eValue Teaching Feedback

- The Trimester-1 eVALUate online survey now opens
- We read you responses and feedback, and we act on that.
- The feedback is confidential
- Respond at any time, from anywhere, on any device.
- Please provide any positive comments to reinforce what we are doing well and provide any constructive comments to suggest improvements

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What is constructive feedback?

- Constructive feedback is providing useful comments and suggestions that contribute to a positive outcome, a better process or improved behaviours.
- It provides encouragement, support, corrective measures and direction to the person receiving it.
 Knowing how to give constructive feedback is a valuable skill.
- Constructive feedback can be positive (letting someone know they're doing well), negative (letting people know about ways in which things could be improved), or neutral (just an objective observation).



Exam Outline

- Students must confirm the:
 - -venue
 - exam time
 - date
- This examination is a **2 hour** examination.
- An additional 15 minutes for reading the exam paper is provided immediately before this 2 hour period.

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Exam Outline This is a closed book examination. You should take pens and pencils. Calculators are not allowed. The maximum number of marks is 60. Do not write your name anywhere on the paper.

Examination Outline

- There are two sets of questions
- I do not know which set will provide you during exam day.
- Both sets consist of Short Answers Questions.
- Each set has five questions to be answered.
- When asked to "describe briefly" or "explain", ensure that you provide sufficient specific detail to convey a clear understanding of the concept or issue.

Exam Questions: Set-1 Question 1. Fundamental Cloud Computing Marks: a) [2+3+6=11 Marks] b) [5+9=14 Marks] and c) [1+3+8=12 Marks] Question 2. Cloud Computing Mechanisms Marks: a) [1+3=4 Marks] Question 3. Cloud Storage Marks: a) [1+4=5 Marks]; b) [8 Marks] Question 4. Working with Clouds Marks: a) [1+5=6 Marks]

Exam Questions: Set-2 Question 1. Fundamental Cloud Computing Marks: a) [5+9=14 Marks]; and b) [2+3+5=10 Marks] Question 2. Cloud Computing Mechanisms Marks: a) [1+3+1=5 Marks] Question 3. Cloud Storage Marks: a) [1+4=5 Marks]; b) [8 Marks] Question 4. Working with Clouds Marks: a) [1+5=6 Marks] Question 5. Topic on Cloud Computing Technology Marks: [4+4+4=12 Marks]

Reading Guide for Exam Preparation • Most of the questions are from Text Book • Read the following chapters from your text book: • Chapters – 3: Understanding Cloud Computing • Chapter – 4: Fundamental Concepts and Models • Chapter – 5: Cloud-Enabling Technology • Chapter – 7: Cloud Infrastructure Mechanisms • Chapter – 8: Specialized Cloud Mechanisms • Chapter – 9:Cloud Management Mechanisms • Chapter – 16: Service Quality Metrics and SLAs

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Reading Guide for Exam Preparation

- Chapters 3: Understanding Cloud Computing
 - Sections:
 - 3.1 Origins and Influences
 - 3.2 Basic Concepts and Terminology
 - 3.3 Goals and Benefits
- Chapter 4: Fundamental Concepts and Models Sections:
 - 4.1 Roles and Boundaries
 - 4.2 Cloud Characteristics
 - 4.3 Cloud Delivery Models
 - 4.4 Cloud Deployment Models

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Reading Guide for Exam Preparation

- Chapter 5: Cloud-Enabling Technology
- Sections:
 - 5.2 Data Centre Technology
 - 5.3 Virtualization Technology
 - 5.5 Multitenant Technology
- Chapter 7: Cloud Infrastructure Mechanisms
- Sections:
 - 7.2 Virtual server
 - 7.3 Cloud Storage Devices
 - 7.5 Resources Replication
 - 7.6 Ready-Made Environment

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Reading Guide for Exam Preparation

- Chapter 8: Specialized Cloud Mechanisms
- Sections:
 - 8.1 Automated Scaling Listener
 - 8.2 Load Balancer
 - 8.3 SLA Monitor
 - 8.6 Failover System
 - 8.7 Hypervisor
 - 8.8 Resources Cluster
 - 8.9 Multi-Device Broker

Reading Guide for Exam Preparation

- Chapter 9:Cloud Management Mechanisms
- Sections:
 - 9.2 Resource Management System
 - 9.3 SLA Management System
 - 9.4 Billing Management System
- Chapter 11: Fundamental Cloud Architectures
- Sections:
 - 11.2 Resources Pooling Architecture
 - 11.3 Dynamic Scalability Architecture
 - 11.8 Redundant Storage Architecture

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Reading Guide for Exam Preparation

- Chapter 16: Service Quality Metrics and SLAs
- Sections:
 - 16.1 Service Quality Metrics
 - 16.3 SLA Guidelines

In addition to the above Chapters from Text book you should read the lectures slides from week-1 to week-11.

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