Cloud Computing In Education

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- Also there are advantages for using cloud computing in learning related with the students like
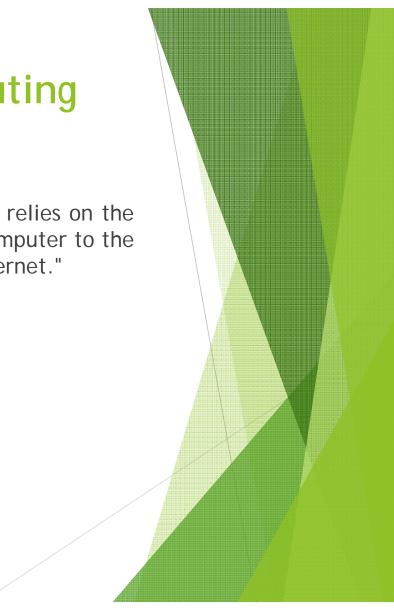- The challenges of using the cloud computing in education

Introduction

▶ A lot of organization using the computing resources to save their data, implement their applications and develop their programs; these computers need maintenance, management and place to save. Also the needs to these computers different from time to another, where sometimes there is a most needy for them and in other times the needs minimize.

▶ For that the organizations start thinking for alternative solutions save the resources and work in effectively manner, one of these solution was the cloud computing which provide the users a lot of choices through the internet.

The foundation of cloud computing

▶ The cloud computing term used in the late sixties.

▶ The term has inspired from the cloud.

▶ The cloud computing applications did not actually appear only at the beginning of 2000, when a Microsoft Corp. expand the concept of using software through the Web.

▶ In 2009 they launched integrated computing system that works through the concept of cloud computing.

The concept of the cloud computing

▶ The cloud computing can be defined as " its a techniqe relies on the transfer the processing and the storage from the user computer to the to what is called the cloud, which is accessed via the Internet."

Cloud computing characteristics

- Zaigham Mahmood descript the essential characteristics of Cloud Computing as following:

- On-demand self-service that enables users to consume computing capabilities (e.g. applications, server time, network storage) as and when required.

- Resource pooling that allows combining computing resources (e.g. hardware, software, processing, network bandwidth) to serve multiple consumers, such resources being dynamically assigned.

- Rapid elasticity and scalability that allows functionalities and resources to be rapidly and automatically provisioned and scaled.

- Measured provision to optimize resource allocation and to provide a metering capability to determine usage for billing purposes Extension to existing hardware and application resources, thus, reducing the cost of additional resource provisioning.

The cloud computing models architectures

► Infrastructure Model: Infrastructure as a Service "IaaS":

✓ This layer is essentially hardware and hardware services to enable Cloud Platforms and Applications to operate

✓ Customers get full control over server infrastructure

► Platform as a Service "PaaS":

✓ This layer refers to software and product development tools, which clients purchase so they can build and deploy their own applications

► Software as a Service "SaaS":

✓ This refers to prebuilt and vertically integrated applications

Cloud computing Deployment Models

- Private cloud
- Community cloud
- Public cloud
- Hybrid cloud

The importance of the Cloud in Education

- According to Gartner, by 2020, a corporate "no-cloud" policy will be as rare as a "noInternet" policy is today.

- According to the Surveys conducted by the magazine survey Ed Tech Magazine indicate that:

- 28% of colleges applying cloud computing.

- 29% of the colleges are planning to adopt cloud.

- 32% of the colleges in the discovery phase of cloud computing.

- The surveys indicate that by 2020 the higher education institutes will focus strongly on technology and methodologies which use the cloud technology solutions, such as:

- conferencing

- distance learning

- hybrid classes Hybrid classes (online learning and off-campus)

- And according to a report done by a Intel education, they noticed increasing use for the using of Google Apps in education, its user base of administrators, teachers and students from 10 million in 2010, to 20 million in 2012 to more than 40 million worldwide in 2014".

The advantage of using the cloud computing in education

▶ Enables the user to access files and applications through the cloud without the need to provide the application in the user device

▶ Save a lot of money to purchase software needed by the user

▶ Reduce the operational cost (like maintenance ..)

▶ Help the educational institutes to implement the last release from the applications

▶ The e-learning services using for a specified period of time (weeks, quarterly - a semester), the cost saving is very important, which provided by the cloud

▶ Encourage cooperation and communication between learners and teachers and others in academia

▶ Reducing the learning material cost: it enables teachers and students to reduce spending on different materials

▶ Provides comfortable experience: the students can learn from homes via internet

simplify the registration process and acceptance in universities

Storing extensive amounts of sensitive data and information that can be accessed easily

The advantages for using cloud computing in learning related with the students

▶ Conduct tests directly.

▶ Easy to send exercises and projects for students.

▶ Easy access to the tests and exercises and projects submitted by students.

▶ Easy exchange feedback between students and teachers.

▶ Ease of communication between students and teachers.

▶ Ease of communication between students.

▶ Helping to teach students new ways to develop the abilities of their projects and duties administration.

▶ Help students and teachers to use applications without loaded on their computers and help them to access stored files from any computer with an Internet connection.

▶ Students can access all programs at any time and from anywhere.

▶ Access to systems to develop applications and stored in the infrastructure of the institution.

▶ The possibility of developing customized training courses per semester.

The challenges of using the cloud computing in education

▶ security threats: like the loss of privacy, and tampering and leakage of sensitive data. therefore there must be a number of security requirements:

- Identification of identity and reliability: the users' accounts must be done by the cloud service provider.

- The license: the resources must be protected, therefore must have certain privileges for each user based on their accounts.

- Integrity and Confidentiality: encryption techniques must be used to protect organization sensitive data.

▶ Data loss: the data are all centered in one area of the network, Technical failure may get happen, which lead to the suspension of the service provider that means all work will cease pending until the failure fixing.

▶ Cloud computing is linked to connect to the Internet: If there is no Internet connection, it means not being able to access files and applications.

Thanks