Role Of Cloud Computing in Education

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1) Abstract -

It's no secret that trendy technology may be a propulsion in up to date education. The impact of cloud computing in education is clear. We observed that from improved accessibility, reduced prices and augmented collaboration, the cloud may be a supply of excellent for educational organizations and students. It is found that all students, whether or not they're form or degree candidates, will take pleasure in innovations in cloud computing.

Educational establishments are utilizing the cloud to extend property between colleges and their students. this can be an extended journey from the times of a disc storage system and serious textbooks that quickly went out of date. therefore what's happening during this cloud-based instructional revolution? it's going to appear overwhelming for your institution to withdraw into application modernization, however the positive impact of cloud computing on learning is important.

Keywords : Cloud computing, Private cloud, Teaching learning , Virtualization

2)Introduction-

Today, the term cloud computing" could be a vital term within the field of knowledge technology (IT). Cloud computing : could be a form of computing that's extremely climbable and uses virtualized resources that may be shared by purchasers [1]. Virtualization is one amongst the condition for the conclusion of cloud computing. It allows resources to be used once they area unit necessary [2]. the foremost necessary technologies and ideas in virtualization area unit computer code sharing, sharing, hardware simulation and emulation [3]. Purchasers don't want any background to use cloud services. A consumer using cloud computing will communicate with tons of servers at the same time and these servers exchange info between themselves [4]. Within the recent years, several educational units plan to design their IT activities to support their

considerations within the light-weight of various technology trends so that they are able to do their activities [5].

educational institutions unit forever required to upgrade their computer and hardware so as to draw in students and teachers to maintain with the developments in IT technologies [6]. In reality, continuous upgrades of computer software and hardware can l place pressure on the budgets of those educational units and this example is created poor within the gift advanced economic conditions [7]. In the view of rising education demands area unit forcing IT individuals to suppose new ways that to support educational priorities. Inside this economic context, cloud computing is one amongst the foremost necessary solutions on the education [8]. Over the years, the Teaching and learning are no longer confined to textbooks and classrooms and now it reaches to computers and mobile devices. Today, students are always connected whether they are on or off school. At the same time, the right technologies empower them with real-world and career-ready skills. Technology plays a major role in this change. Who have ever imagined that a student in one part of the world would be able to pursue a course in a college located thousands of miles away? One of the technologies that drive innovation for this industry is cloud computing. Essentially, cloud computing is a complex technology that shifts the emphases from physical resources to virtual resources. If you want to understand its impact on the education, you need to know what cloud computing is and how it actually works.

3) WHAT IS CLOUD COMPUTING?

Cloud computing is that the on-demand accessibility of ADPS resources, particularly knowledge storage and computing power, while not direct active management by the user. The term is usually accustomed describe knowledge centers accessible to several users over the web

The categories of resources and services that's offered by cloud computing, there are 3 main types of cloud computing [6].

They are:

Ø Infrastructure as a Service (IaaS):

Hardware like processors, servers, storage devices and network is delivered as a service which is known as infrastructure as a service.

Ø Platform as a Service (PaaS):

once programming platforms and tools like Java, Python, .Net, MySQL and many others.

Ø Software package as a Service (SaaS):

Applications delivered through the medium of the network as a service.

Clouds is deployed internally in a company, or can be provided as a service by third party. Counting on what resources area unit shared and delivered to the shoppers, there area unit four **sorts [12],**

They are:

Ø Non-public cloud. A cloud infrastructure employed by one organization o everybody within the organization will access knowledge, services and applications however others out of organization can't. The infrastructure could also be managed by the organization itself, or by a third-party supplier. Examples: Eucalyptus, VMware vCloud and Open Stack.

Ø Community cloud. :- A cloud infrastructure shared by many organizations in a community with common interests.

Ø A public cloud could be a cloud service offered to multiple customers by a cloud supplier. The term "public cloud" is employed to differentiate between the first cloud model of services accessed over the web and also the personal cloud model. Public clouds embrace SaaS, PaaS, and IaaS services.

Ø Hybrid cloud. A cloud infrastructure that consists of 2 or more cloud infrastructures (private, community or public).

The infrastructure is connected by interfaces that modify sharing every knowledge, application or other resources.

4).Benefits of Cloud Computing in EdUCATION:

Cloud computing refers to a setup of computing resources which will be shared anyplace, no matter where the users are. By implementing cloud computing, it becomes easy to bring lecturers and students along on one platform. Colleges and universities needn't have to purchase, own, and maintain their own servers and information centers. Rather than , they'll leverage cloud computing to avail reason power, databases, storage, and alternative services, they'll continually make sure regarding their resources being secure on the cloud.

1. **Study virtual schoolroom environments**

With cloud-based system, it becomes potential for colleges & universities to have own virtual lecture rooms. It reduces the infrastructural prices and they will cut the expenses of on conducting regular lecturers in their colleges. Rather, they will collaborate with skillful teachers who work remotely and with efficient resources. At constant time, lecturers will produce and deliver on-line courses to students anyplace. Students will attend for virtual exams, saving their time and expenses effectively.

2. **Simple Accessibility**

another profit is that the accessibility of the cloud. As long as you've got a web association you'll be able to access your knowledge from anyplace. When on the cloud, employees, partners and shoppers will access and update data from any location. Those updates with software package or platforms are automatic, or in time period. Having the power to access data et al. thus simply and quickly will increase practicality and helps foster innovation. workers have their knowledge at their fingertips regardless of wherever there, either roaming round the store or performing on the road. Your knowledge is safer moreover. Since your knowledge is keep during a secure knowledge center rather than your server space, losing power doesn't have an effect on the cloud. several service suppliers maintain ninety nine.99% uptime. Your knowledge is often accessible via a web association.

3. Intensive cost-savings

Another advantage of cloud computing that is intensive price savings. Each students and teachers will expertise massive edges during this situation. Students need not have to invest in costly books and applications as these learning resources are accessible on the cloud. Teachers can also lower the management prices by simplifying processes like enrollment and assignment.

4. Secure information storage

With good accessibility as a value savings, cloud computing additionally serves the advantage of secure information storage. Organizations that deliver learning through the cloud will adopt a VPN for making certain information security. At constant time, learners will shield their privacy by exploitation VPN for cloud-based learning applications.

5. Measurability

Scalability refers to the flexibility of the applications to match the growing no. of users. Cloud computing covers the faculties, colleges, and universities. It permits them to rescale the educational applications and experiences quickly and simply. As a result, they will handle associate degree increasing variety of scholars. in addition, measurability additionally helps them to manage the usage and avoid the wastage of resources.

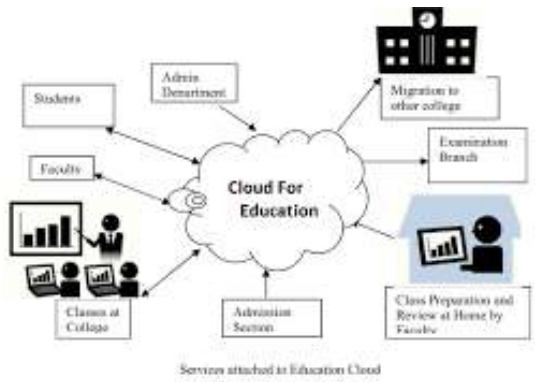

Fig. 1 : Cloud based system for education

5) Conclusion-

Cloud computing is an emerging computing paradigm and next-generation platform that can provide convenient, on-demand access to a centralized shared computing resources that can be deployed with minimal cost and with good efficiency. The shift towards cloud computing may enable educational institutions to provide an effective educational environment to students and staff without taking into account location and time. It reduces overheads of the educational institutions. IT complexity and cost. In this study, we discussed the factors that make cloud computing attractive to academic institutions, and also examined the differences between different cloud deployment models with respect to their infrastructure, advantages and disadvantages. Finally, several general examples of the best practices for cloud computing usage were provided and a case study from the primary education

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