



International Journal of Innovative Research in Computer and Communication Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website: www.ijircce.com

Vol. 6, Issue 2, February 2018

Review of Cloud Computing in Higher Education

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ABSTRACT: Higher education plays an important role in maintaining the financial growth of a country. Now a day the classroom coaching is altering and students are concerned more towards knowledge. Therefore in these changing surroundings, it's important that we think about the latest technology which will help the civilization with better teaching and learning process. One of such trending technology is shade compute. The need for education in this time has becomean always growing and developing and improving e-learning important solutions, so we need the e-learning systems to keep the speed with the knowledge. The new way is to use cloud computing, Cloud computing is very scalable and creates virtualized income that can be made available to users will have a major impact on the educational environment in the future. It largely refers to technology that delivers great computing resources via the web. Actually, the word 'cloud' is used to refer to internet which has at present eased and revolutionized education. The term cloud-based technologies refer to the act of storing and accessing in sequence and various programs over the internet. This paper focuses on the significance of cloud computing in education system.

KEYWORDS: Cloud Computing, Cloud Architecture, IaaS, PaaS, SaaS

I.INTRODUCTION

The role of Higher education (HE) for in general expansion of the world is bleakly approved. The collaboration between university, management and business, researchers and student has proven their payment to the modify of culture and the total world wealth. During the last few years, the universities offering higher education are making change to research universities and these universities use IT communications as foundation for their educational actions and Science research. With the evolution of technology, integer of educational services migrates from traditional form to the online form. These educational services, requires an adequate IT infrastructure using the proper technologies, guaranteeing the access of large number of users, fast and secure service access. The HE landscape around the world is in a constant state of flux and evolution, mainly as a result of significant challenges arising from efforts in adopting new and emerging technologies. It is increasingly acknowledged that using technology effectively in HE is essential for providing high quality education. The adaptation of new technology is very slow mainly due to the cost implication. The transformation requires massive funding and investment, which are difficult to come at the times of deep recession and depleted budget reserves of government and private institutions. The backing open to HE institute has harshly decreased in times of financial slow, top to economic crisis in HE institutions. To deal with their monetary shortfall, HE institutes are resorting to a variety of cost-cutting measures, including major cuts to IT budget. In the past few years the concept of "Cloud Computing (CC)" has emerged as a viable and promising solution to the challenges associated with shrinking IT budgets and escalating IT needs. CC is a model for enabling convenient; on demand network accesses to a shared pool of configurable computing resources (e.g., networks, servers, storage, application, and navy) that can be present in haste provisioned and released with minimal management effort or examine provider interaction. Users can access these assets from any computer with a high speed Internet connection while having no other connection to the hardware that holds the source software. Because computation takes place on a distant server, the user hardware and software rations are much lower than they would be otherwise, dropping both cost and protection rations. For this reason, CC holds appeal for HE institution seeking to ease IT budgets.



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II.LITERATURE REVIEW

Cloud computing prototypes have been everywhere for some time now, but the term developed “widespread” one-time in October 2007 when IBM and Google publicized a partnership in that sphere. This was surveyed by IBM’s declaration of the “Blue Cloud” determination. Later then, everybody is conversation about “Cloud Computing”. Of course, there also is the unavoidable Wikipedia entry.

It is imaginable that August 24, 2006 will go down as the centenary of Cloud Computing, as it was on this day that Amazon made the exam form of its Flexible Devious Cloud (EC2) public [Business Week 2006]. This offer, providing elastic IT incomes (computing capacity), marks a final landmark in lively profitable relations amongst IT operators and breadwinners. The period first developed general in 2007, to which the first admission in the English Wikipedia from arch 3, 2007 attests, which, again meaningfully, controlled a situation to usefulness calculating. Today, Cloud Totaling generates over 10.3 truckload competitions on Google. The possibility of Cloud Computing produced from humble organization services such as storing and control resources to include requests. However, this intended that indications such as submission provision providing and Software as a Service would also henceforth be involved underneath the title of Cloud Computing.

III.CLOUD COMPUTING

Cloud computing is a type of Internet-based computing that provides common computer processing property and data to computers and other devices on claim. It is a representation for enable everywhere, on-demand access to a common lake of configurable compute property (e.g., computer networks, servers, storage, applications and services), which can be fast provisioned and out with minimum management effort. Darken calculate and storeroom freedom explanation provide users and assignment with various capabilities to accumulate and line their information in either in secret owned, or third-party data midpoint that may be situated remote absent from the consumer–variety in detachment from crosswise a capital to across the world. Darken figure relies on allocation of possessions to complete judgment and country of level, comparable to a value (like the electrical energy grid) over an electrical energy complex. In other foreign language, Cloud Computing is a process of deliver/enable scalable, flexible and about completely expandable software armed forces using internet technology. It is a method of transport Software as a examination (SaaS), deliver in a pay-per-use foundation. It provides self-examine capability to users with scalable features to increase usage on constraint.

IV.BENEFITS AND CHARACTERISTICS OF CLOUD COMPUTING

The HE establishment must consider the pro and con of difficult new technology, particularly those having incomplete budget. The profit of cloud computing solution more than traditional technology is: [4]

A. MOBILITY:

At the present time student widely use transportable strategy to admission data. Students want to refer textbook, syllabi and even do their research online via their Smartphone, laptop or tablet. Cloud-based classroom applications are the most excellent way to make easy this switch over between apprentice and faculty.

B. NEW SERVICES:

Many colleges and university at present are initial to offer practical classrooms via online knowledge and video conferencing. Cloud servers allow institutions to offer these innovative training methods that can be access by students from anyplace via tablets, computers or mobile devices.

C. STORAGE:

Scalable cloud storage space offer colleges and universities the skill to fast enlarge storeroom capabilities. HE institutions have vast records to fight with, including the whole thing from apprentice and faculty in sequence to course substance. This data can fast overpower usual on-site storage space option. Moreover, if a normal catastrophe happens or if a server fails, colleges and universities can speedily drop data that may never be retrievable again. Cloud storage also offers business stability and failure improvement.

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D. EFFICIENCY:

Institutions of higher education are look for new ways to make their organizations more resourceful. A fresh inspection by Faronicsin their “position of the darken” story indicate that nearly 55% of institutions want enlarged competence and judge that cloud computing is the top mode to make this come to pass There can be several definition available on cloud computing. A wide-ranging definition is given by National Institute of Standards and Technology states that “Cloud computing is a model for enabling everywhere, fitting,

On-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and at huge with minimum administration effort or service provider interaction”. From the definition we can say that darken computing has following characteristics

- On-demand self-service.
- Broad network access.
- Resource pooling.
- Rapid elasticity.

V. SERVICES OF CLOUD

With an aim of falling the spending of the university for IT interactions and the difficulty faced by universities and institutions, the usual install software on the university grounds computers are now replace by cloud computing. With the command of cloud, at the moment higher learning can gain important elasticity and quickness and can move around the insightful data into distant and globe wide information center ‘ the cloud’ itself. To use the cloud a service the universities and the Institutions has to primary define their supplies and has to take an extraordinary awareness for the isolation and critical issues. [5]

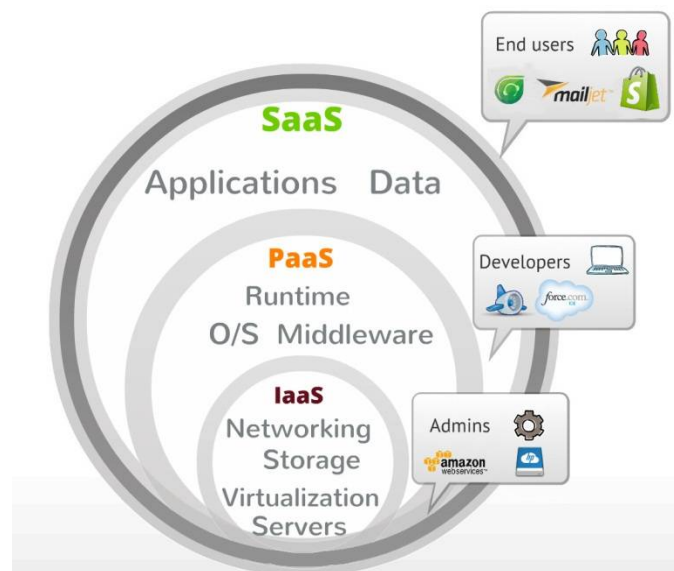
THERE ARE SEVERAL CLOUD SERVICES AS FOLLOWS:

A INFRASTRUCTURE AS A SERVICE (IAAS):

It can be used to convince the communications requirements of the students, faculties or examiner internationally or nearby with some explicit hardware design for a specific task.

B. PLATFORM AS A SERVICE (PAAS):

Certain provider is opportunity up submission platform to authorize regulars to build their own request without the cost and difficulty of trade and organization the fundamental hardware and software layers.



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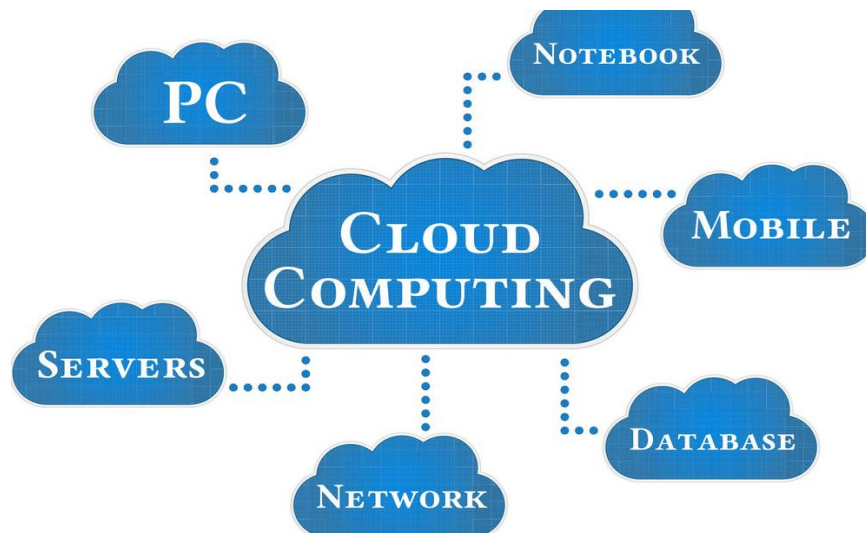
C. SOFTWARE AS A SERVICE (SAAS):

The application service supplier is hosting the request which runs and interactsthrough web browser, hosted desktop or remote client. It eliminate the require to install and run the request on customer own computer and make simpler preservation plus maintain.

D. COMPUTING AS A SERVICE (CAAS):

Providers offer admission to rare computing authority on practical server such as Amazons, EC2 service.

FOLLOWING FIGURE SHOWS THE UNIVERSITY USING THE SERVICES OF CLOUD COMPUTING:



VI. ACTIVITIES IN HIGHER EDUCATION

A. STUDENT ACTIVITIES:

1. View marks card and download marks cards
2. View attendance status
3. E-learning
4. Notes
5. Projects
6. QPs,
7. Circulars
8. Online videos
9. Interaction with domain experts and other college students-By forum
10. Knowledge sharing

B. FACULTY ACTIVITIES:

1. Online attendance (No manual) and marks
2. Online/offline academic resources
3. Domain expert interaction
4. View status like experience, feedback, college
5. Research
 1. Sharing of knowledge between research scholars
 2. Resource sharing like papers, QPs, results etc



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C. PARENTS ACTIVITIES:

1. View the status their son/daughter
2. Interaction with college and university

D. COLLEGE MANAGEMENT ACTIVITIES:

1. use for accrediting process
2. Lesser cost of maintenance
3. Availability of all information

E. UNIVERSITY:

1. Maintain overall communication
2. Timely update all documents
3. Adopt high security

VII. CONCLUSION

Cloud computing is a growing compute example which promise to provide chance for deliver a variety of processor armed forces in a way that has not been well-informed before. It is necessary for an instructive and knowledge association. With is financial statement restrictions and sustainability brave, to use the cloud arrangement best matched to its IT activities. Several profit of the changeover to cloud computing were pointed out in this paper along with concerns regarding the adoption. Cloud computing paradigm is still relatively young in terms of maturity and adoption. The expectation is that it will undergo several changes in the future, in terms of resources, issues, risks and eventually best practice and principles. One main conclusion that we draw is that cloud computing may have extensive possible in humanizing the IT application and transportation at education institution. In the prospect, as cloud compute continuous development of presentation and this will bring new opportunity for the growth of education.

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