Novel Cloud Supported E Learning Framework

[1]M.SRI LAKSHMI ,[2]P.NIKITHA
[1]Asst.professor, Dept. of Computer Science and Engineering,
G.Pullaiah College of Engineering and Technology, Kurnool.
[2]M.Tech Student, Dept. of Computer Science and Engineering,
G.Pullaiah College of Engineering and Technology, Kurnool.

Abstract:- Cloud computing plays vital roles in various sectors like education, business etc…The restoration of the prohibited people once more into society through training is effectively credible through E-learning the same number of individuals who may experience issues while going to customary learning programs either in schools, organizations or colleges. The creation and arrangement of available e-learning substance may subsequently turn into a key calculate empowering individuals with various to get to necessities to appreciate quality learning encounters and administrations. In Nowadays Computer Education is now essential for people of every stratification but due to the poor economic condition, many in many states of our country and other countries are unable to introduce their citizens with rich technologies and innovation developed by the computer system. Consequently, a cloud-based shared based system may help for uniform distribution of resources between people of every stratum. The main aim of our study is to propose an efficient and effective cloud-based e-Learning model which uses the limited resources in such a path in order to adjust the current institutional assets in a conservative way.The model proposed is for the nation like India to enhance nature of advanced education in an exceptionally financially savvy way.

Keywords: e-Learning model, Cloud Computing, Business Process Management,

1. INTRODUCTION

The use of Information and Communication Technology in higher education has totally revolutionized the way learning is being done. A new form of education has been discovered known as e-Learning where the digitized books, animations, video lectures have replaced the printed books and materials which subsequently is a superior experience to the end user. The major benefits are in terms of reduction in cost, upgraded learning and controlled use of paper. With availability of Internet and WWW, the education domain started offering many educational contents to the learners. Some new cost effective trends are now in use like Cloud computing. It provides prominent adaptability in accessing and sharing as the service oriented computing platforms over the network but also sharing the assets such as digital libraries. E-Learning helps the user to access the learning material and contents. The SaaS (Software as a Service) model of Cloud computing is there to offer e-Learning contents as a service to the learners.

"In Cloud computing technology based e-Learning system all the academic institutions of a Country or State are expected to be connected globally so that they can share the resources and e-contents for e-learning process"[2]. To connect the academic institutes for e-Learning system we can think e-Cloud model. The proposed e-Cloud gives the adaptability and in addition versatility to utilize assets on-request without physical purchasing or installation at user site. Rather than one service provider where the software has to install on each system, different providers utilize varied implementation technologies and architectures for University or Institutes. There may be management problem as different cloud providers may provide a common architecture.

During the last five years, e-Learning courses were based on the Learning Management Systems in the browser. With new trends of Web 2.0 and e-Learning 2.0, the content developers have moved to Rich Internet Applications. The multimedia based e-Learning materials stay as a backbone for several universities.

This study aims to propose an "ICT enabled e-Learning Service system based on cloud computing model". It focuses on "e-Learning as an On Demand Service" stored in cloud environment i.e. Cloud Learning to benefit the learners worldwide. The concept gives a fundamental shift globally by providing a new way to store and host the e-Learning materials in the cloud environment. Learners in a cost effective way, get a better opportunity to enhance their skills and to attain hands on experience in various fields [3].

The main aim of our study is to propose an efficient and effective cloud based e-Learning model which uses the limited resources in such a path in order to adjust the current institutional assets in a conservative way [63].The model proposed is for the nation like India to enhance nature of advanced education in exceptionally financially savvy way.

Easy and cost effectiveness of information in terms of maximum availability in minimum resources is one of the people's main concerns when we work in ICT domain. E-Learning innovation consolidated with most recent advancements is giving more arrangement and is decreasing the unpredictability from customary e-learning philosophy. The main focus stays on Infrastructure, Operating platforms, Software and security before designing e-learning systems based on cloud model [4].

2. PROBLEM STATEMENT

"Education is a main factor for sustainable development"[1]. "The importance of education, especially in developing countries like India, is increasing because of advancing pressure to catch up with global competitiveness"[7]. Typically, in India low quality of education and narrow possibilities in attending schools in rural areas leads to hindrance in the growth.

The potential of e-Learning though very promising, suffers because of gaps between developed and developing citizen of any country making knowledge transfer not only difficult but also expensive. E-learning consists of formal training, such as courses, on line training and exams, selected learning objects, formalization through document collections and community formation which can be achieved via software and education resources using a cloud model Many upcoming cloud computing companies offer the cloud power in their products to be more cost effective. E-Learning as a widespread technology helps to compensate the shortage of faculties and the study material.

3. SYSTEM MODEL

PROPOSED MODEL

Before shifting towards a cloud based e-Learning model (eLM) a well-defined strategy supporting Cloud Computing capabilities is required. System execution achievement relies upon the presence of administration arranged engineering at the institutional level i.e. service oriented architecture at the institutional level. The necessary infrastructure for cloud implementation is required. The money related perspective looks bad without SOA and BPM (Business Process Management), moving towards cloud since it prompts high expenses with rebuilding of existent frameworks. Likewise, for progress, the cloud technique ought to be in arrangement with the college methodology. As induced from the current explores identified with the experience of a few foundations and colleges on the move to Cloud Computing and in utilizing it, we propose a relocating technique towards cloud, framed of the accompanying stages (figure 1):

a) Cloud Computing Knowledge Base Development;
b) Evaluation of the present phase of the college from IT needs, structure and use perspective;
c) Experimenting the Cloud Computing arrangements;
d) Choosing the most proper Cloud Computing arrangement;
e) Cloud Computing arrangement Implementation and administration.

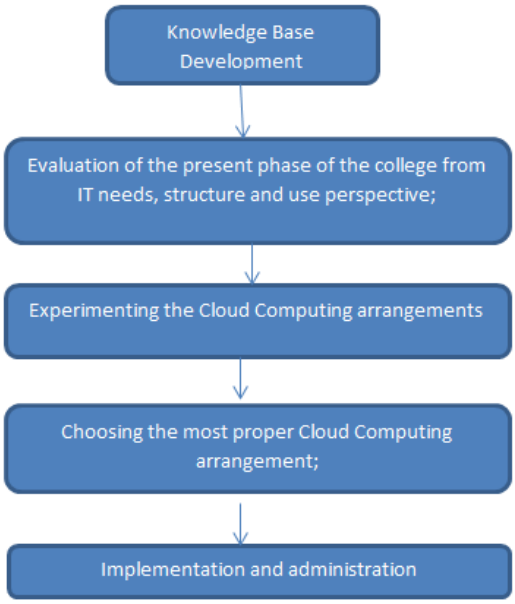

Figure 1. Cloud model Adoption Strategy in e-Learning

Cloud Computing Knowledge Base Development. In the first step the knowledge base is developed by participating at seminars, conferences, discussions with the suppliers and consulting the most recent researches in the field. The allocation of sufficient resources for research decides the success of this phase and helps to better understand as to how Cloud Computing capacities in various authoritative structures from colleges and between foundations [6], the dangers and advantages, the best utilization rehearses and approaches of Cloud Computing. The exploration led is by a group shaped essentially of IT staffs that are in changeless correspondence with the clients. The group examines the arrangement with respect to the targets, the advance, advantages and expenses of the Cloud Computing arrangement[9].

Evaluation of the present stage of the university from IT needs, structure and usage point of view: Assessment of the present phase of the college from IT needs structure and utilization perspective: The initial step comprises of understanding the college IT foundation. It includes understanding the information, administrations, procedures and applications that might be relocated or should be kept up inside the college, and hence watch the security approach. According to the IT needs, their structure and utilization, the classifications of clients who collaborate with the present IT framework and their necessities are broke down[12].

Experimenting the Cloud computing solutions. The move from conventional to cloud may continuously be accomplished by beginning from a pilot testing and after that the applications picked. The initial step includes advancement and condition testing or how to store information inside the cloud. The subsequent stage is to check day by day handling of the inside operations. With a specific end goal to guarantee the security and insurance arrangements, the segments of open and private cloud are checked. Low costs should dependably be kept up.

Picking the most fitting Cloud computing arrangement. The initial step comprises of distinguishing the information and applications, capacities and fundamental procedures inside the college. These might be gathered by the three extensive classes of exercises from the college: educating, examine and authoritative help for the initial two exercises.

Implementation and management. Selecting the Cloud model forms the final step depending on the functions, processes and applications identified. The mission and importance of business practices form the main identification criteria of the candidate applications to Cloud. In fact most of the organizations use hybrid patterns of Cloud. Hybrid model encourages them to keep up key components from their framework in house. Date and data is under direct control and along these lines externalizing less delicate parts. A vital examination is led keeping in mind the end goal to pick the execution arrangement with respect to the choices of either combination or relocation. As observations are analyzed from tables and the experience of universities in implementing various cloud solutions.

4. BENEFITS OF PROPOSED ARCHITECTURE

The advantages derived from proposed architecture are:

a) Powerful computing and storage capacity: The data is distributed in a large number of distributed computers.

b) High availability. Via programmed identification distributed computing framework recognizes the hub disappointment and prohibits it in this manner keeping up the typical operation.

c) High security. As data is storied intensively so relying on one or more data center, the managers manage the unified data, allocate the resources, balance load, deploy the software, control security, and do the reliable real time monitoring, thus guaranteeing the users' data security to the greatest possible degree[13].

d) Virtualization. Each application deployment environment and physical platform is not related. It is managed, expensed, migrated, and backup through virtualization platform. The basic equipment which incorporates servers, stockpiling and systems administration gear, extensive virtualization, with a specific end goal to construct an assets pool of shared, circulated on-request.

e) **Provides simple access** to country understudies at organizations which need significant offices to run exorbitant programming on superior processors. Though heavy investment is required for this architecture but the benefits justify the cost.

f) In the **classic e- learning model**, teachers who is assigned teaching tasks, conducts regular lectures to train students' skills.

Students by attending online autonomous learning and cooperative learning sessions can accomplish teachers' assignments. But in the proposed architecture teachers also answer students' questions and offer essential teaching to major and difficult points. In addition, teachers can also use multimedia to enhance teaching content.

5. CONCLUSION:

Our study was fully focused on the basic and popular issues in cloud based e-learning technology.in this paper we presented a novel e-learning framework using cloud computing. We also presented various benefits of Proposed Architecture which leads storage capacity, high availability, high security, virtualization, simple access, classic e- learning model.

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