M-Learning through EduCloud Computing in Campus

Prakash D. Bhise

Department of Computer Engineering
Pillai Institute of Information Technology, New Panvel, Maharashtra,India

Prof. Dipti Patil

Department of Computer Engineering
Pillai Institute of Information Technology, New Panvel, Maharashtra,India

Abstract- **EduCloud computing is the new technology that has various advantages and it is an adoptable technology in this present scenario. The main advantage of the EduCloud computing is that this technology reduces the cost effectiveness for the implementation of the Hardware, software and License for all . This is the better peak time to analyze the EduCloud and its implementation and better use it for the development of the quality and low cost education for all over the world.Mobile EduCloud Computing (MECC) which combines Mobile Computing and EduCloud Computing, has become one of the industry buzz words and a major discussion thread in the IT world since 2009. As MECC is still at the early stage of development, it is necessary to grasp a thorough understanding of the technology in order to point out the direction of future research.**

Keywords – EduCloud, Mobile Computing.

I. INTRODUCTION

EduCloud computing is the new technology that has various advantages and it is an adoptable technology in this present scenario. The main advantage of the EduCloud computing is that this technology reduces the cost effectiveness for the implementation of the Hardware, software and License for all. This is the better peak time to analyze the EduCloud and its implementation and better use it for the development of the quality and low cost education for all over the world.Data mining is the non-trivial extraction of implicit previously unknown and potentially useful information about data .Mobile EduCloud Computing (MCC) which combines mobile computing and EduCloud computing, has become one of the industry buzz words and a major discussion thread in the IT world since 2009. As MCC is still at the early stage of development, it is necessary to grasp a thorough understanding of the technology in order to point out the direction of future research.

The rest of the paper is organized as follows. Proposed Architecture Model of EduCloud Computing is explained in section II. Experimental results are presented in section III. Concluding remarks are given in section IV.

II. ARCHITECTURE MODEL

A. *EduCloud Computing for M-Learning –*

In Aiming to the current shortcomings of mobile learning of the network, we propose the architecture of mobile learning model based on EduCloud Computing Technology, and the architecture is divided into five layers, as shown in Figure 1.
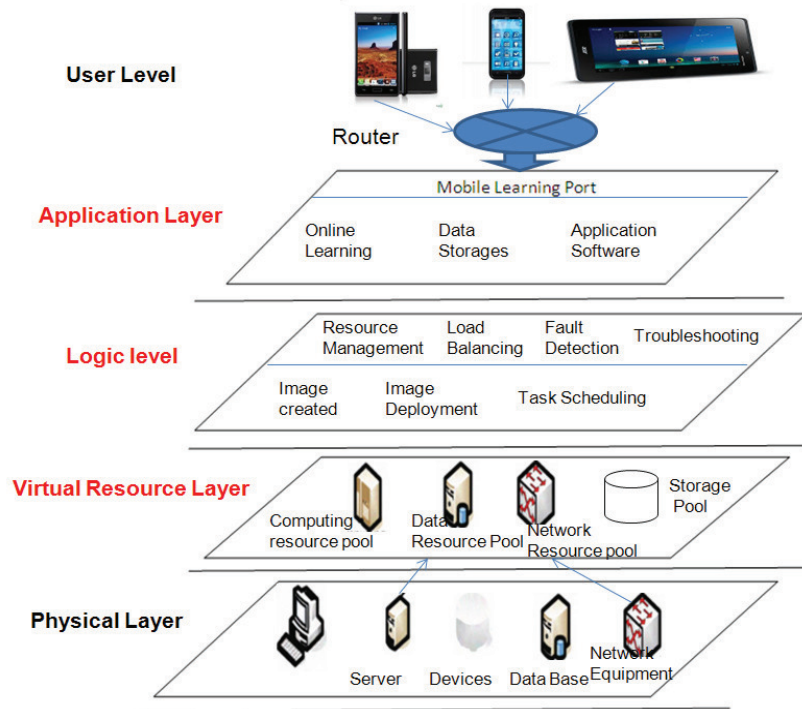
Figure 1.   EduCloud Computing for M-Learning model

B. Proposed System Application Model for EduCloud system –

Through the existing network technology and distributed technology, Virtualization technology, dispersive computers will be integrated into a superior capabilities be used for EduCloud computing operation such as the computing and storage. In Figure 2 shows the Proposed System Application Model for EduCloud system.
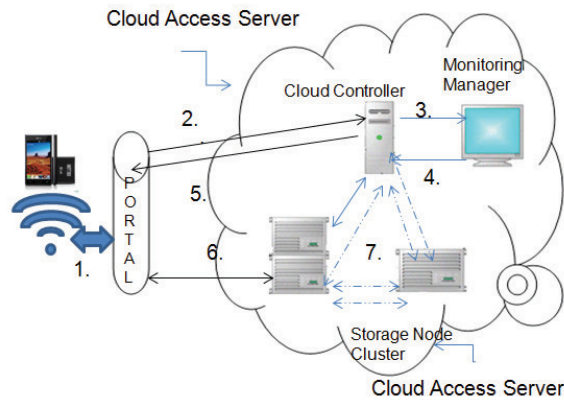

Figure 2.   Application Model for EduCloud Computing.

Steps which involve in Application model of EduCloud computing.

1. Smartphone to Wireless Connection with the M-learning portal

2. Verifying Username and password.

3. Validating using Cloud Controller.

4. Educloud Controller access or Denied.

5. Login or Error Message.

6. If login load shifted towards Controller to Node.

7. Application handling using Logically.

II. EXPERIMENT AND RESULT

This work is carried out on EduCloud Controller with one EduCloud Node .Following are the software and hardware requirement to build customized EduCloud controller with respect to proposed system.

1. Systems- minimum 4 GB Ram with 1 TB Hard Disk

2. Processor which having VT instruction support with EPT (Extended Page Table)

3. Minimum 3 System with 1:1:1, 1= Monitoring manager, 1=EduCloud Controller, 1= EduCloud Node

4. Ethernet Cables (Cat-5).
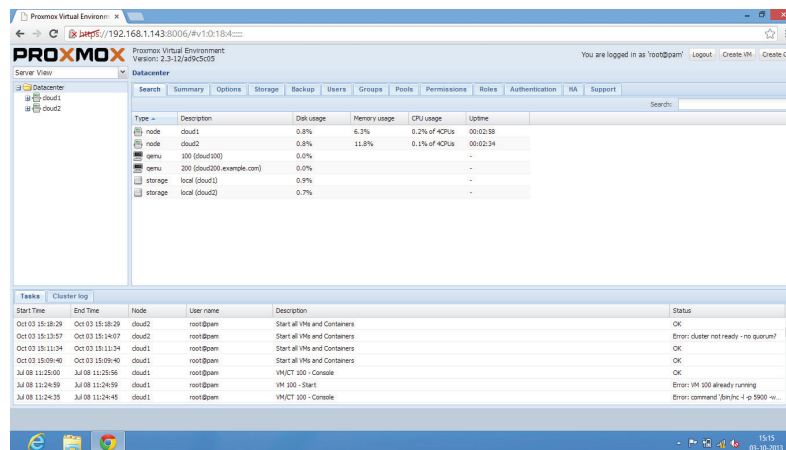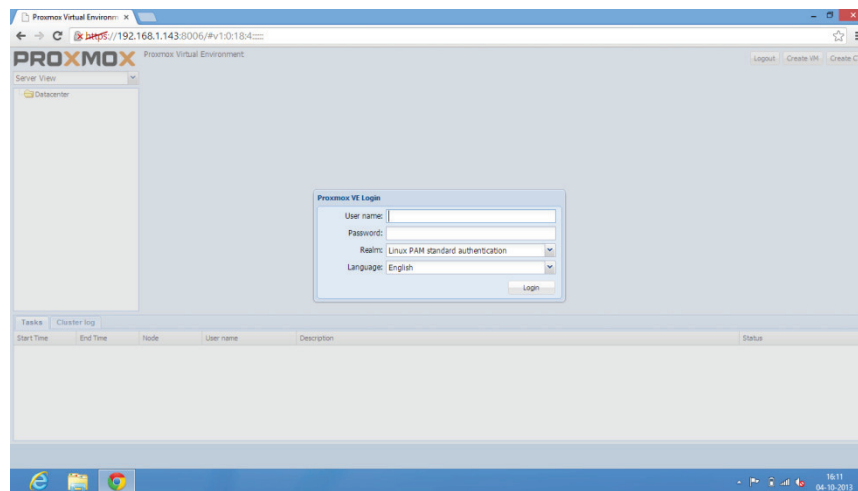
(b)

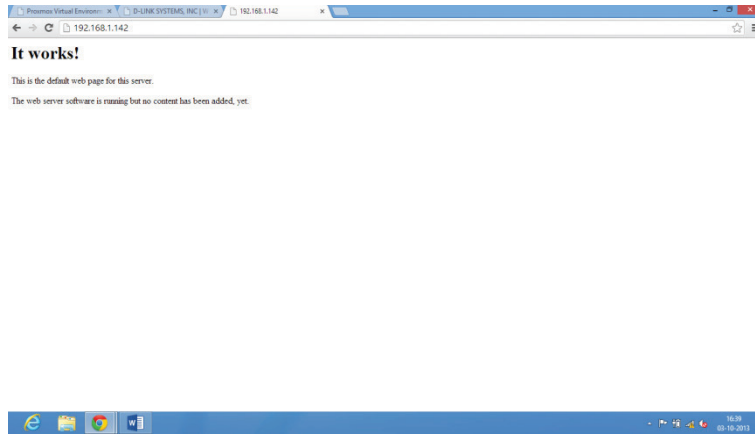Figure 3. (a) Login page for EduCloud Manager (b) Home Page for EduClod Manager

Figure 4. M-Learning Portal

Table -1 Testing outcome to calculating speed

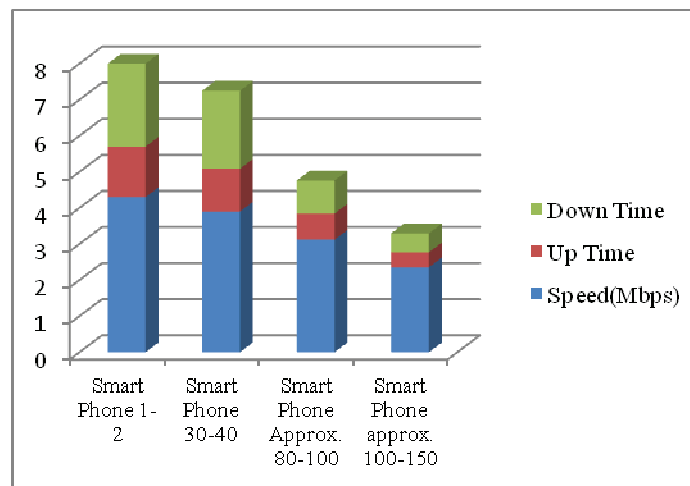|	Speed(Mbps)	Up Time	Down Time
Smart Phone 1-2	4.3	1.4	2.3
Smart Phone 30-40	3.9	1.19	2.16
Smart Phone Approx. 80-100	3.12	0.723	0.916
Smart Phone approx. 100-150	2.356	0.414	0.527

Figure 5. Graph for wireless speed with Stress Testing

Table 1 show the parameter in wireless such as Smartphone, while a physical infrastructure may be good from a management point of view and offer cheap deployment, having all those wires running throughout a building can be costly and awkward to maintain. For example, if a business increases its workforce, all those new workers will need physical connections at their desk – connections that will need to be manually set up. Any breakages in the wired connection will also have to be manually fixed as there is no software solution to a broken Ethernet pin. Figure 5 shows the calculation of speed limit of wireless device within a campus using EduCloud Computing.

IV.CONCLUSION

Cloud computing can improve learning, and cloud learning can optimize human learning, to bring new ideas to the learner or changes on the behavior Help the students, staff, Trainers, Institutions using Smartphone. Mobile cloud learning – a novel unification of cloud and mobile learning. M-Learning on EduCloud is Aanywhere-Anytime on premises. Finally it improve internet from intranet.

In the future, we plan to address some additional issues for the MCC, such as: Low Bandwidth, that could be solved with 4G (5G) or strong wireless device, Network Access Management, QoS (from technical point of view such as network delay by using cloudlets, clonecloud etc.), cost management etc.

The launch of Aakash tablet PCs for the student community is likely to increase the number of users' for educational online resources exponentially. Considering the mammoth Indian education sector, cloud computing can play a great role to bring a paradigm shift in teaching learning process in the future.

REFERENCES

[1]   N.Mallikharjuna Rao, C.Sasidhar, V. Satyendra Kumar "Cloud Computing Through Mobile-Learning" Vol. 4, No. 1, pp. 102-108, IEEE/ICUMT Oct 2010.

[2]   Yunjuan Bai "Cloud Learning: a New Learning Style" 978-1-61284-774-0/11/$26.00 ©2011 IEEE

[3]   Benjamin Hirsch, Jason W.P. Ng "Education Beyond the Cloud: Anytime-anywhere-learning in a smart campus environment" ITST 6th International Conference of Computer Science,Dec 2011 Abu Dhabi

[4]   Han Qi " Research on Mobile Cloud Computing: Review, Trend and Perspectives978-1-4673-0734-5/12 ©2012 IEEE

      Le Guan "A Survey of Research on Mobile Cloud Computing" 2011 10th IEEE/ACIS International Conference on Computer and Information Science

[5]   Minjuan Wang "The Evolution of Learning - From Classroom to Cloud" 2012 Eighth International Conference on Intelligent Environments, 978-0-7695-4741-1/12 © 2012 IEEE DOI 10.1109/IE.2012.67

[6]   Jason W.P. Ng, Nader Azarmi" The Intelligent Campus (iCampus) End-to-end learning lifecycle of a knowledge ecosystem" 2010 Sixth International Conference on Intelligent Environments, 978-0-7695-4149-5/10 © 2010 IEEE DOI 10.1109/IE.2010.49

[7]   http://www.yahyanursalim.com/linux/cloud-computing-with-proxmox-ve.html, on 11th oct, 2013

[8]   http://en.wikipedia.org/wiki/Mobile_cloud_computing, on 11th oct,2013