



The 2015 International Conference on Soft Computing and Software Engineering (SCSE 2015)

E-learning Systems based on Cloud Computing: A Review

Ghazal Riahi

Faculty of Computer Science & IT, Payame Noor University, Assaluyeh, Iran, ghl.riahi@gmail.com

Abstract

Today and during the recent years, the Internet is a place to read web pages that allow users to environmental education and implementation of software applications that is changing. As with rapid growth of the cloud computing architecture usage, more and more industries move their focus from investing into processing power to renting processing power from a specialized vendor but education field is no different. E-learning systems usually require many hardware and software resources. Cloud computing technologies have changed the way applications are developed and accessed. They are aimed at running applications as services over the Internet on a scalable infrastructure. Now, Cloud computing that introduces efficient scale mechanism can let construction of E-learning system be entrusted to suppliers and provide a new mode for E-learning. Therefore, an E-learning system based on Cloud computing infrastructure is feasible and it can greatly improve the efficiency of investment and the power of management, which can make E-learning system development into a virtuous circle and achieve a win-win situation for suppliers and customers.

© 2015 The Authors. Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Peer-review under responsibility of organizing committee of The 2015 International Conference on Soft Computing and Software Engineering (SCSE 2015)

Keywords: Cloud computing, E-Learning, Traditional E-Learning, Cloud E-Learning.

1. Introduction

Nowadays E-Learning¹ is an Internet-based learning process. This system use Internet technology to design, implement, manage, support and extend learning and will greatly improve the efficiency of education. E-learning has a lot of advantages such as flexibility, diversity, measurement, opening and so on, and it will become a primary way for learning in the new century. The Current models of E-learning^{2,3} lack the support of underlying infrastructures, which dynamically allocate the required computation and storage capacities for an E-learning. Infrastructure is a one of the important constituents of an E-learning and has the direct impact on the prosperity and stability of system.

In recent years, Cloud computing⁴ as a new type of advanced technology accelerates the innovation for the computer industry. Cloud computing is a computing model based on networks, especially based on the Internet, whose task is to ensure that users can simply use the computing resources on demand and pay money according to their usage by a metering pattern similar to water and electricity consumption. Therefore, it brings a new business model, where the services it provides are becoming computing resources.

In this paper, we describe Cloud computing into an E-learning system as its infrastructure to build a sustainable and flourishing E-learning. This allows for some crucial and amusing features: i) to track the situation of resource configuration and utilization in real time, allocate resources on demand, and make full use of resources. ii) to allow workloads to recover from unavoidable hardware/software faults. iii) to promote the evolvement or extinction of learning species, including learning contents, services, and applications and goes on to describe the traditional E-learning and will provide a framework for E-learning cloud.

2. What is E-Learning?

Xiao Laisheng, et al ⁹, most of traditional education forms are becoming not being suitable for requirements of social progress and educational development and not being able to catch up with the changes of learning demand in time, thus computer networks have brought opportunities for it. Now, Cloud computing that introduces efficient scale mechanism can let construction of E-learning system be entrusted to suppliers and provide a new mode for E-learning. However, in traditional web-based E-learning mode, system construction and maintenance are located in interior of educational institutions or enterprises, which results in a lot of problems existed, such as a lot of investment needed, but without capital gains to return, without development potential and staying power. Cloud Computing technologies have changed the way applications are developed and accessible. Therefore, an E-learning system based on Cloud computing infrastructure is feasible and it can greatly improve the efficiency of investment and the power of management, which can make E-learning system development into a virtuous circle and achieve a win-win situation for suppliers and customers.

Paul Pocatilu, et al ¹⁰, as the rapid growth of the cloud computing architecture usage, more and more industries move their focus from investing into processing power to renting processing power from a specialized vendor. The field of education is no different. E-learning systems usually require many hardware and software resources. There are numerous educational institutions that cannot afford such investments, and cloud computing is the best solution for them.

Mohammed Al-Zoube ¹¹, many applications such as word processing, spreadsheets, presentations, databases and more can all be accessed from a web browser, while the software and files are housed in the cloud. Educational institutions can take advantage of cloud applications to provide students and teachers with free or low-cost alternatives to expensive, proprietary productivity tools. Browser-based applications are accessible with a variety of computer and mobile operating system. They are aimed at running applications as services over the Internet on a scalable infrastructure.

2.1. Traditional E-learning Issues

Traditional E-learning Network ^{9,13,16,23} at the University network or the Internet with its structure, maintenance and investment in schools or companies has been made for all. There are six parts in the intelligent network infrastructure components such as IP, utilization, and curriculum development, content creation, content management, learning management, delivery and development. Data, voice and video integration, multicast technology, safety, handling, storage, content distribution technology in the next generation intelligent infrastructure facilities is available and the network is controlled. Traditional E-learning network shown in Figure 1.

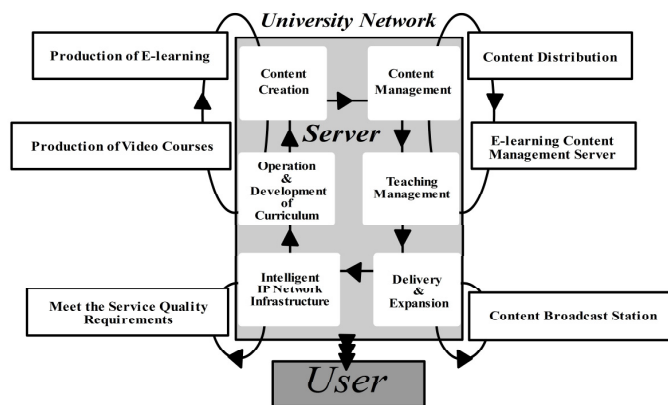


Fig1. A framework of Traditional E-Learning

Production center in the network has two functions: video production, and production of E-learning courses. Production of video programs can collect real-time image acquisition, real-time video capture, production, distribution, or storage of controlled and generated by the system's IP-based TV. This content can be in the forms directly to the goal of producing more of these. E-learning can produce, training programs based on text and multimedia educational content to create.

Content Management center also consists of two parts: the management server content E-learning and content distribution. E-learning Training Web server using advanced concepts, focusing on the transfer of multimedia educational content beyond text, focusing on joint action among learners, focusing on the control and management of learning, focusing on international standards, a systematic comprehensive and complete learning management. The content distribution system is available on centralized

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات