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E-learning Systems based on Cloud Computing: A Review

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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.

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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.

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