

Intelligent System Optimization of course Network Teaching Based on Distributed Cloud IaaS System

Lan Ming
Hulunbeir University
Hulunbeir 021008, China

Abstract: This paper aims to design and implement a general IaaS cloud platform resource pool network management system to meet the management requirements of network resources in private cloud construction, using Nginx as the web server, uWSGI application server and Tornado application server to process users' non-real-time data and real-time data requests. The article analyzes the problems faced by local colleges and universities in the information big data environment by interpreting the connotation of future education and combining the experience of online course construction reform. Learning course-driven is the foothold. It intelligently analyzes students' mastery of knowledge and teachers' teaching evaluation, and gives teachers important feedback information, so that teachers can adjust teaching strategies in a timely manner, so that students can master knowledge at a deeper level.

Keywords: Intelligent System Optimization, Course Network Teaching, Distributed Cloud IaaS System

1. INTRODUCTION

The following is an abstract not aimed at any specific! Concrete research and application areas "with a certain generality and generality of the concept is derived from the definition of a computer system in a certain environment". Propose a common vision for the future of education [1], that is, towards inclusive, equitable, quality education and lifelong education for all. It is the key to seize the opportunity of informatization big data, carry out innovative and [2] intelligent changes in teaching and learning, provide intelligent professional and efficient education services, and achieve sustainable development of education [3]. Nowadays, with the continuous development of artificial intelligence technology, the functions of the network teaching platform cannot be satisfied with the traditional [4] teaching content management and information exchange, and need to bring intelligent experience to teachers in the process of teaching and learning [5].

The research on the network teaching system integrating intelligent and multimedia functions is just one direction of network education research [6] and development. This paper uses ASP (ActiveServerPages) technology to realize a project called "Engineering Fluid Mechanics". Learners can timely feedback learning information in a specific time according to their own learning process [7], and get accurate evaluation in time, so as to adjust their overall learning progress; how learners can correctly assess their own learning ability, etc. Cloud computing can be [8] divided into IaaS, PaaS and SaaS according to the different levels of services it provides. Among them, IaaS refers [9] to that users can obtain services from a complete computer infrastructure through the network.

IaaS encapsulates infrastructure such as hardware equipment into services for users to use [10], and provides users with computers (physical machines and virtual machines) through the network. Due to the use of GPRS services and SMS services, the delay cannot be estimated, and the real-time performance is also open to question. Reference [11] using cloud computing solutions, focusing on building a prototype system of environmental monitoring cloud platform and compatible with various sensor data [12], file data, stable and reliable performance, but also did not discuss the real-time performance of the system. Cloud computing brings public

customers Low cost, high performance [13], fast configuration and convenience of massive computing services.

But there are many problems with the convenience. In 2009, Gartner found that more than 70% of customers would not choose cloud computing services [14]. The subject resides in the environment and needs to interact with the environment. No subject is isolated and closed "it resides in a certain environment" requires continuous [15] interaction with the environment. During the "Thirteenth Five-Year Plan" period, the State Council issued a call for the "Overall Plan to Promote the Construction of World-Class [16] Universities and First-Class Disciplines". Colleges and universities have launched teaching reforms [17]. The survey results of the current situation of informatization teaching in local colleges and universities show that in [18] the construction of teaching mode, the transformation of teaching objectives, and the innovation of teaching content [19].

During the "Thirteenth Five-Year Plan" period, the State Council issued a call for the "Overall Plan to Promote the Construction of World-Class [20] Universities and First-Class Disciplines", and colleges and universities across the country launched teaching reforms. The survey results of the current situation of informatization teaching [21] in local colleges and universities show that in the construction of teaching mode, the conversion of teaching objectives, and the innovation of teaching content, it can reflect the characteristics [22] of interaction between teachers and students in real teaching, and the demonstration and operation of virtual experiments [23] can enhance students' understanding of course knowledge. Understand and enhance students' perceptual awareness of course knowledge [24].

Secondly, the development of online teaching is an inevitable trend of the development of information technology. Online education is a form of distance education. The scale of servers running IaaS can reach as many as tens of thousands, so users can think that the resources that can be applied are almost unlimited. At the same time, IaaS is shared by the public, so it has higher resource utilization efficiency. It refers to the educational organization form that carries out the process of teaching and learning activities in the network education environment constructed with the learning resources of

multimedia network courses as the medium with computer network, satellite communication network and telecommunication network as the medium.

Due to limited resources, the ability to process services is affected, and if you want to deploy multiple similar subsystems, you need to manage multiple IP addresses or domain names, and each machine runs the same business logic, resulting in a waste of resources.

2. THE PROPOSED METHODOLOGY

2.1 The Distributed Cloud IaaS System

The specification defines Deployment of packaged standard and virtualized images. In addition to the OVF specification, which is widely recognized by the industry, the Distributed Management Task Force has also released a series of virtualization technical specifications, such as CPU virtualization technical specifications and storage virtualization technical specifications (general rules).

This paper aims to design and implement a general IaaS cloud platform resource pool system network management system. The system needs to be able to virtualize the network infrastructure in the resource pool to meet the network resource service requirements required by the IaaS private cloud platform, including the public network IP service. This paper uses Nginx as the web server, uWSGI application server and Tornado application server to handle the user's for non-real-time data and real-time data requests, the latest WebSocket protocol in HTML5 is used to ensure real-time data. The IaaS layer cloud infrastructure consists of a physical layer and a virtualization layer. The physical layer includes large-scale PC or server clusters, storage facilities, computing facilities, physical networks, and the external environment (composed of power distribution, fire alarms, and weak current control).

The virtualization layer is mainly composed of virtual machine (VM, Virtual Machine), virtual machine monitor (VMM, Virtual Machine Monitor), virtual machine network and virtualization software. IaaS private cloud consists of a private cloud management platform and one or more resource pools System composition. The remote access part of users is mainly realized by using existing network resources. Users can access multiple terminals through mainstream browsers, because the responsive Web design method is adopted.

2.2 The Course Network Teaching Based on Distributed Cloud IaaS System

The private cloud management platform and the resource pool system are connected through the resource pool. Management interface connection. Users and administrators can use and manage the private cloud through the user self-service portal and management portal in the cloud management platform, respectively.

A system based on multi-agent technology refers to a system in which multiple agents communicate with each other, coordinate with each other, and complete tasks together. It not only has the resource sharing of general distributed systems#easy to expand#strong reliability#flexibility#real-time Good features, and each agent can solve large-scale complex problems through mutual coordination. The network teaching platform consists of user management, class management, course management, homework management, questioning management, practice management, examination management, question bank management, check-in management, communication There are several sections for

management and daily maintenance of the system. INTS is based on the knowledge base. The student model is accessed through the user's browser.

It expresses students' learning characteristics and learning status, uses and adjusts teaching strategies in the background process, and diagnoses and predicts students' behavior. Network teaching is an Internet-based teaching mode, and its implementation depends on related technologies such as computers and communication networks, and these The rapid development of technology provides a strong guarantee for the development of online education. At present, many key technologies are involved in the process of developing and implementing an intelligent network teaching system. Resource services are various resources that are included in private cloud services and can be used to serve users. Resources can be divided into three basic types: computing resources, network resources, and storage resources. At the software level, they are managed through the computing subsystem, network subsystem, and storage subsystem, respectively. The student model is formed according to the interaction between the student and the system and the response history. It can be dynamically modified according to the individual student's learning situation. The system can carry out individualized learning and intelligent navigation through the student model

2.3 The Intelligent System Optimization of Course Network Teaching

The class management part includes functions such as adding, deleting, modifying and checking class information, adding, deleting, modifying and checking of class students, importing and exporting Excel, class course management and statistical analysis of class students' course conditions. Vocational education, higher education, special education and other fields and levels of education goals and pursuits, in order to build a modern education system that serves the lifelong learning of the whole people, and form a new pattern of education governance with the participation of the whole society. The domain knowledge base describes the knowledge of the entire professional field of the course and is the material basis of the entire system.

In the system, the domain knowledge is organized into a knowledge network composed of the connections between knowledge points. The domain knowledge base stores each knowledge point and its connection information. The keyword matching is extracted from the questions raised by students. Corresponding keywords, according to the keywords, and then find records related to the keywords from the answer library as search results. Fuzzy matching is based on keyword matching. It mainly means that the data centers in the resource pool are not affected by each other, and the services of different users in the data center are logically separated. If external network access is required, an isolation zone and appropriate firewall restrictions are required. The VMM maps data from each virtual machine's virtual interface to any physical or virtual interface through a simple L2 software transformation, a process also known as "Ethernet Virtualization".

The intelligent navigation function adopts the method of learning history inheritance, and is designed according to the students' previous learning progress and practice situation, simulating the characteristics of interaction between teachers and students in real teaching. Meet the realistic demands of multiple subjects. The lack of systematic educational theories and advanced educational concepts among educators is a

common phenomenon in the education team of local colleges and universities. The future networked teaching mode has gone beyond traditional teaching. The learning page adopts a frame structure composed of three pages. The left frame directory is designed in a tree structure. With the function of merging and expanding, adopting this design page makes it easy for users to understand the hierarchical structure of knowledge, and can avoid the phenomenon of wandering.

3. CONCLUSIONS

It is imperative to reform the education and teaching system of local colleges and universities under the guidance of the future education connotation in the big data environment. The construction of a networked smart teaching ecosystem is supported by information technology. A network framework of resource pools with good performance and high reliability is an indispensable foundation for the construction of an IaaS private cloud platform. Realizing a network management subsystem with reasonable structure, strong usability and high scalability has become an urgent need for the network construction of various enterprises and institutions. Guided by the core literacy and ability training of future talents, the teaching strategy analyzes the current learning situation of the students in the student model, and obtains the teaching strategy according to the students' strategy preferences.

4. REFERENCES

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