The Application of Cloud Computing Technology in Journal Communication Platform under the Background of Media Convergence: Take WeChat Public Platform as an Example

Yuan YAO¹, Chang-jun FU², Chen-chen JI¹, Lin HE¹, Xin YAO¹ and Zhen WANG¹

¹Jiangsu Institute of Science and Technology Information, 210042, China
²Nanjing Forestry Police College, 210000, China

Keywords: New media platform, Cloud computing technology, Media convergence.

Abstract. In order to provide technical support for the media convergence, by taking WeChat public platform as an example, this paper proposed a service mode and system structure which used cloud computing technology in WeChat platform by analyzing the cloud computing technology that applied in WeChat platform. This paper also pointed out the development prospect that cloud computing is applied in new media platform, which aimed to provide technical experience for the periodicals media convergence.

Introduction

At the fourth meeting of the central committee in 2014, General Secretary Xi Jinping made clear that “traditional media and emerging media are convergence and developed”, and media convergence in various industries was surging. On February 19, 2016, at the party's press and opinion work symposium General Secretary Xi pointed out that to promote convergence development, we should take the initiative to use the new media's communication advantages. The new media, represented by WeChat, micro-blog and App, broke through the previous single academic publishing channels. With its socialization, rapid and fragmented reading mode, people's habit of reading and acquiring information is changed. The publishing and management mode of sci-tech periodicals has reached a critical period of transformation and upgrading.[1]

The integration of traditional journals and new media is a new topic born with the development of new media technology. The lack of maturity can draw lessons from experience, which makes the road of media convergence difficult. In the process of convergence, there are problems such as blindness, high degree of content, increasing operation cost and infringement of new media[2]. The media convergence needs technical support.

WeChat gathered a large number of users. WeChat can achieve good communication results. In WeChat communication, users have more initiative and users really become the core. Interactivity is the advantage of the current WeChat communication, which is strictly the advantage of new media communication. For WeChat, they can be filtered on information and realize “private tailored”, as long as in WeChat public platform to search relevant public, click on the attention can be anywhere at any time receive information by WeChat public platform[3]. Therefore, WeChat has become the most widely used new media tool in the process of periodical media convergence.

Application of Cloud Computing Technology in New Media Platform of Journal

Advantages of Application

Under the background of media convergence, the development of new media has changed people's reading habits and broadened the access to information. And new media in the process of its development needs technical support. Cloud computing technology, with its unique advantages and is suitable for WeChat public platform using features, provides the development of new media platform a good technical support.
Support Dynamic Expansion of Resources. According to the actual demand of new media business, cloud computing technology dynamically increases, deletes or transfers the computing, storage and network nodes required by the upper business. Using cloud computing technology, idle resources can be started and added to the system to improve the operation capability of new media platform business under high load. At the same time, cloud computing technology can transfer idle resources into energy saving mode to improve the resource utilization efficiency of new media platform under low business load.

Support Cloud Transcoding and Distribution. Cloud computing technology can transform the original text format content from the server cluster into various formats such as PC and mobile terminal according to the characteristics of new media in the journal. In the new media business of the journal, the multi-format output of cloud computing and the implementation of special technology, adaptive terminal network and other technologies provide a good guarantee for the distribution and reception of resources.

Virtualization Ensures Efficient and Diversified Business. Rapid transformation and upgrading is the characteristic of new media business system. By integrating cloud storage and cloud content into cloud computing platform, the distribution of new media business across physical resources platform has been realized, and the flexible management and system diversification of new media business have been realized.

WeChat Public Platform and SAE Cloud

WeChat Public Platform and Its Advantages. Dominated and developed by Tencent cloud team, WeChat public platform is an effective and safe custody platform, can provide multiple dimensions of functions and services such as platform construction, data analysis, business marketing and payment transaction security. At present, there are many operating systems of mobile terminal, mainly including IOS and Android. Due to the incompatibility between these systems, many APP design versions need to be developed. Therefore, based on the environment of WeChat public platform, it can realize the cross-terminal operation of an application and save the development cost.

Overview of SAE Cloud. Sina App Engine (SAE), developed by Sina research and development center, is a public cloud computing service platform in China. For Web developers, the cost of using SEA cloud hardware is low. So there is no risk of hardware input. With low development costs, SAE covers almost all areas of Web development. With low operation and maintenance cost, the applications on SAE don't need to be concerned with hardware maintenance, service monitoring, data tolerance and other operations. More safe and reliable, SAE automatically provides SQL statements performance analysis, frontal attack, code inspections and other functions. All applications on SAE are multi-machine room disaster deployment, which is more secure and reliable than the traditional deployment model [4].

Service Mode and System Structure of Cloud Computing Technology in New Media Platform of Periodicals

Service Mode

In the new media (WeChat public platform) cloud computing service mode, we select the PaaS service, namely the platform as the service. PaaS services can block infrastructure deployment and operations of the lower layer, only provide middleware level services to users and greatly improve the service effects. Users do not care about the complex scheduling operations of services, such as database services, storage, and workflow, only deploy the upper layer of applications. At this point, multiple physical hosts can presents a unified service cluster through the distributed computing of multiple operating systems of through cloud computing to the users.

PaaS service is a platform which integrates cloud computing, cloud distribution, cloud storage, business flow, unified service and business management. With the help of the platform service
ability, PaaS services can make users participate in the development of application services and operations, achieve content, business, control and separation, open and extend the capacity of the platform, reduce the difficulty and costs of the business management. Cloud computing service provides the functions of stream media distribution, encryption and decryption, multi-code flow, multi-screen interaction, etc. It also supports the transmission, analysis and display of streaming media on the terminal devices of Android, IOS, Microsoft and other operating systems [5].

**System Structure**

WeChat public platform requires a Web service station in the form of domain name that handles the information interactions with the background. By choosing to build Web services on the SAE cloud platform, it can save hardware inputs, reduce operating costs, and also have high security performances.

First, you need to build a Web environment which based on the Tomcat + JSP for development coding [5], using more than 1.7 JDK versions. Second, deploy an application environment in the SAE, the part is divided into two steps: first step, create an application, the purpose is to obtain the domain name which belongs to this application and the number and levels. Based on the characteristics of WeChat cloud interaction, this study selects the economic quota of 256 M, 5 ~ 50 threads. Second step, deploys the applications through the web, deploys the code in the SAE cloud environment, creates a code version, uploads the war code package, and completes the deployment (as shown in the figure 1).

![Figure 1. System structure.](image)

**Development Prospect of Cloud Computing Technology Applied to New Media Platform in Journals**

It is of great significance to promote the development of new media business in journals because of its super computing power and large storage space can realize the unified management of system.

**Big Data Analysis Drives Industry Development**

The development of new media business in journals has led to the rapid growth of data. How to use and dig into these data information is an important aspect to improve the competitiveness of the industry. The era of big data is based on the user behavior data analysis. The data mining to find users a comprehensive, complete and dynamic real-time network behavior patterns and summing up the behavior patterns of different groups, according to different groups, different business model, accurate advertising [6].

**Cloud Storage Technology Improves Flexibility**

With the development of new media business, video, audio and other resource data volume also gradually increase, requiring more and more storage space. If use a large capacity storage device separately, the cost of resource access, scheduling, bandwidth and other costs will increase with the
development of new media business. Using cloud storage technology, the distributed file storage and application of cluster and network load balance technology can greatly improve the efficiency and security of user queries for resources, and improve the timeliness of access.

**Cloud Security System Builds Strong System**

In order to better promote the use of new media platforms, it still need security arrangements of media convergence in journals based on cloud computing technology. We need to follow the principle of network security, computer security, and mobile terminal security defense in depth. On the one hand, we should build a complete security technology system based on physics, network, system, data, content and communication. On the other hand, it is necessary to establish a security management system, to authenticate and encrypt user access by setting up encryption, retrieval, secret key management, etc., to realize risk assessment and monitoring.

**Acknowledgement**

The research reported in this paper was sponsored by the Jiangsu High-quality Project Foundation of Social Science (Grant. No.17SYC-162), and Scientific research project Foundation of Jiangsu Institute of Science & Technology Information. (Grant. No. ZL2018011).

**References**


