Application of Cloud Computing in IDC System

Xiaoyun Fan

Computer Department, Liaoning Petro-chemical Vocational & Technology College, Jinzhou, 121001, China

30270688@qq.com

Keywords: cloud computing; information technology; application; virtualization; IDC

Abstract. The rapid development of information technology to cloud computing era with the information of the total amount of rapid growth, cloud storage arises at the historic moment, it as a new storage model has gradually be known. In essence, the operation mode of IDC system is a comprehensive management system which combines the functions of centralized collection, data storage and data processing, and it has a good application in the field of communication related industries in China. After the integration of cloud computing technology, IDC system, the operational effectiveness of a qualitative leap, the most important is to support the daily management of China's telecommunications operators. The application and implementation of cloud computing technology in IDC system is described in this paper, in order to bring useful reference for practice.

Introduction

The practical application of the cloud computing technology is very important for the management of the new enterprise, especially for the Internet type enterprise, the integration of the cloud computing technology and the integration of the various aspects of management is indispensable. At this stage, the cloud computing and other advanced science and technology in the field of the popularization and application of the industry, to people's life and work has brought a lot of convenience. Cloud storage services are on the rise, just like network hard disk, online storage, online backup services belong to cloud storage service. Through the analysis of the current cloud data center equipment energy consumption and data access rules, and combined with the existing IDC special environment, the operational efficiency of cloud computing technology based on IDC system has a high economic value and social benefits.

Cloud Computing

The core of cloud computing [1] is the service charge, which make use of virtualization into computing resources data center and then return the processing results back to the user. National Institute of Standards and Technology (NIST) give the definition of Cloud Computing: Cloud computing is a pay-per-use model for enabling available, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. This cloud model promotes availability and is comprised of five key characteristics, three delivery models, and four deployment models [2]. From a practical point of view, the application of cloud computing technology to the development of the Internet industry under the environment of the information age has laid the foundation. From the previous research data to understand that such mechanism in cloud computing task scheduling system and data deployment level is strong, then developed a dynamic data aggregation algorithm for green cloud computing data center, and its application to the IDC system, the feedback effect is good. Thus, cloud computing technology is worth to promote the application of the communication related areas.

The essential characteristics for Cloud Computing are on-demand self-service, broad network access, resource pooling, rapid elasticity, and measured Service.

On-demand self-service. A consumer can unilaterally provision computing capabilities, such as server time and network storage, as needed without requiring human interaction with each service's provider.

Broad network access. Capabilities are available over the network and accessed through standard mechanisms that promote use by heterogeneous thin or thick client platforms (e.g., mobile phones, laptops, and PDAs).

Resource pooling. The provider's computing resources are pooled to serve all consumers using a multi-tenant model, with different physical and virtual resources dynamically assigned and reassigned according to consumer demand. The customer generally has no control or knowledge over the exact location of the provided resources. Examples of resources include storage, processing, memory, network bandwidth, and virtual machines.

Rapid elasticity. Resources or service ability can quickly and flexibility to supply. For users, which can supply the resources or service almost infinite ability, can at any time according to need to buy. Users need not worry about resources is used not quite, also need not worry about the waste of resources.

Measured service. Cloud computing use after some degree of abstract measurement capability (such as storage, processing, and bandwidth or activities such as user accounts) achieve automatic control, optimizing some service resource use, have a clear price and charge policy.

The Practical Application of Cloud Computing Technology in IDC System

IDC system, that is, the internet data center system, can also be seen as a new type of industry operation mode. From the point of view of technology frame structure, IDC management system is a comprehensive data system which is based on the existing system framework of physical machine room. In essence, with the support of cloud computing technology and the support of network data virtualization technology, the distributed storage capability of IDC system has been further strengthened. For the construction of the communications industry platform, the integration of Hadoop for the open source cloud computing technology system will be the current and future development of the mainstream of the IDC system for a long period of time[3].At present, more and more enterprises of our country in various fields for the IDC business so have a high value of practical application of cloud computing technology in the IDC system, which can ensure the excellent effect of data terminal (mobile) Internet use, avoid the previous IDC system data platform "collapse" phenomenon.

Analysis on the Advantages of Cloud Computing Technology in Practice

IDC system's business model is more special, the need to rely on the advantages of cloud computing technology to maintain the operation. Overall, cloud computing technology can not only locate the original data information, and make data backup and migration preparation, and also need to process data information of the assessment of intelligence, for the implementation of information query and deployment processing to prepare for the later application of query technology in cloud data management in the process of also in the cloud computing technology in the system of data link control to complete [4]. In fact, because of the Internet technology platform services or integration of resource objects larger, and the number of servers is also countless. At the same time in different environment, the location of the server at the same time, it is difficult to effectively manage all of the server equipment [5]. In order to ensure the whole process of resource security and efficiency, in the actual operation of the IDC system, in the current resource data content of continuous expansion, the entire IDC system to continuously provide users with high-quality services is difficult, so the application of cloud computing technology will be highlighted.

Cloud Computing Data Center Architecture

Cloud computing architecture is divided into two parts, service and management [6]. In service,

mainly provides users based on cloud of mainly services, of these three levels: IaaS, PaaS and SaaS. On the management side, mainly in the management of clouds to give priority to, its function is to ensure that the whole cloud computing center can be safe, stable operation, and can be effective management [7]. The general framework is shown in Fig.1.

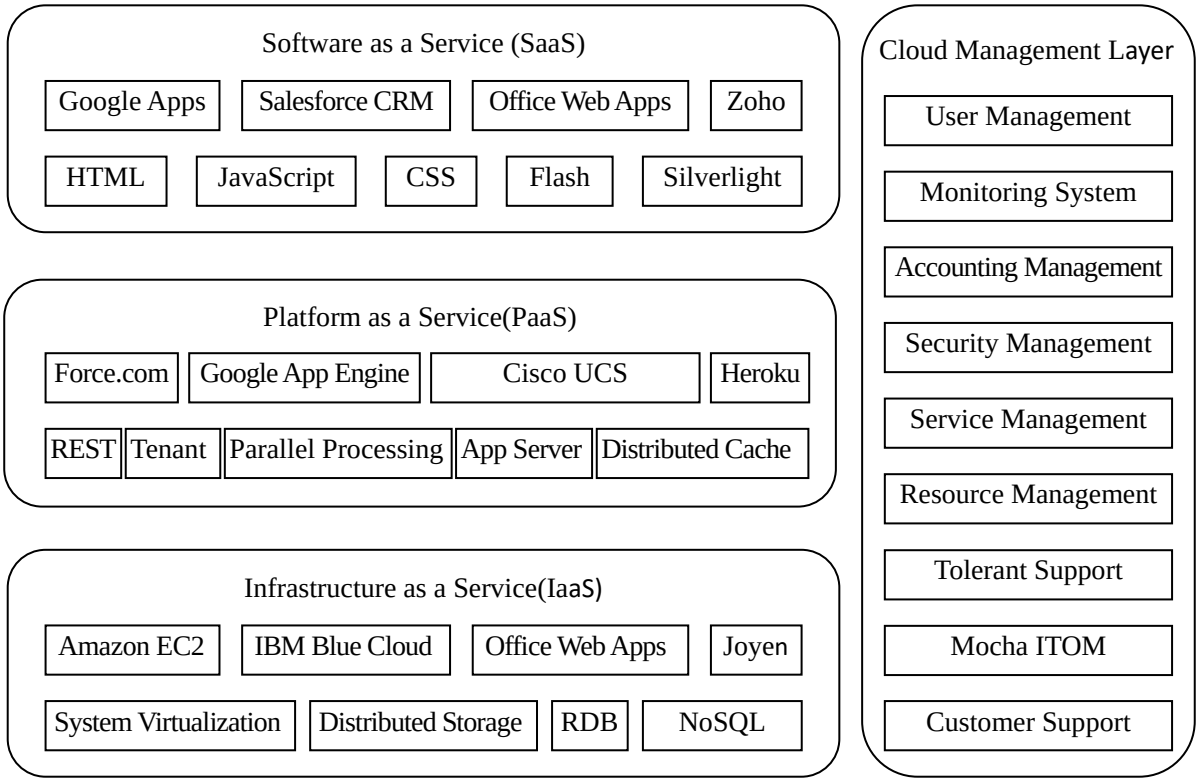

Fig.1. Cloud computing data center general framework

Cloud Computing Environment Data Storage System Structure

Realize the cloud computing environment is the foundation of the data storage by tens of thousands of cheap storage equipment made of a large storage center [8]. These heterogeneous storage equipment through their respective distributed file system will be dispersed, low reliable resources polymerization as a high reliability, high expansibility whole, on the basis of which, the customer cloud storage service [9]. The typical cloud computing environment data storage system structure as shown in Fig.2.

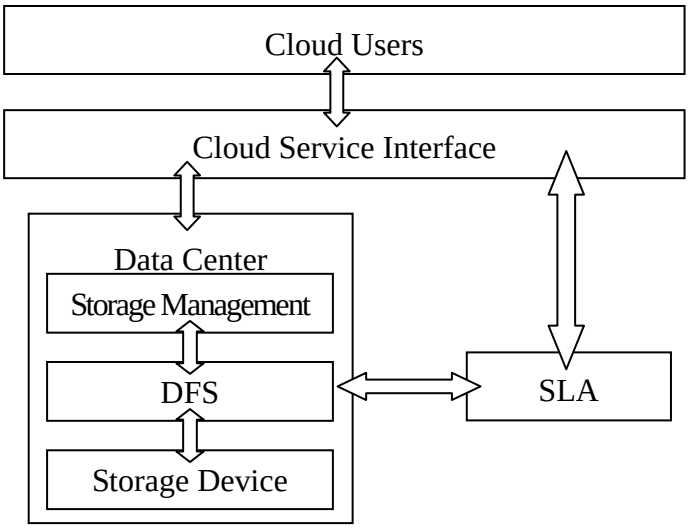

Fig.2. Cloud computing environment data storage system structure

Research on the Implementation of Cloud Computing Technology in IDC System

By studying the commercial operation mode of IDC system and the related product service, it is clear that the cloud computing technology can be used in the IDC system. From a specific point of view, the cloud data query processing technology has the ability to expand the line, usability and other characteristics of the target. Moreover, the query processing technology in the heterogeneous environment has a strong ability to run, with a more flexible user interface, in order to meet the user's differentiated data query and storage requirements. The current operation mode of IDC system is very special, because even in the cloud computing technology, it still needs to explore a business model that can be beneficial to the operation of IDC system to consolidate its effectiveness.

In fact, the IDC system is only in recent years the rapid emerging technology management in the operation mode of our country developed technology, not only the kernel system need to debug, and take the IDC system to maintain the operation of the enterprises also need to adapt, or to accumulate sufficient resources. In spite of this, the IDC system based on cloud computing technology has been greatly improved compared with the past.

Conclusion

All in all, the advantages of cloud computing technology is the type of technology before inherent cannot match the new development opportunity, which is the emergence of cloud computing technology brings to the construction of communication network platform. In fact, China's current network scale is growing, to be capable of carrying hosting, system maintenance, resource allocation and troubleshooting of high level operation management mode, is based on cloud computing technology IDC system operation is feasible, bring high economic value for the industrial operation.

References

[1] T. L. Zhao, H. Zhong, "Research on Application and Implementation of Cloud Computing Technology in IDC System," Telecom World, vol. 23, no. 7, pp.76,2016.

[2] L. Liang, T. Wang, "Research on the Construction of Library Based on Cloud Computing and IDC, " Journal of Xi’an University of Arts & Science(Natural Science Edition), vol. 18, no. 1, pp. 93-97,2015.

[3] Y. Li, H. Jiang, G. Wang, "Application Research of Cloud Computing Based on IDC," Journal of Jilin University(Information Science Edition),vol. 32,no. 4,pp.446-449,2014.

[4] Smitha Shivshankar, Abbas Jamalipour, "A Cloud Computing Perspective for Distributed Routing in Vehicular Environments," ZTE Communications, vol. 14,no. 7,pp. 12-15,2016.

[5] H. Y. Li, "Design and Implementation of the Upper Level Application Technology of Cloud Computing IDC," Master's degree of Fudan University,2014.

[6] X. K. Zhao, J. W. Yin, Z. N. Chen, S. HE, "vSpec: Workload-Adaptive Operating System Specialization for Virtual Machines in Cloud Computing," Science China(Information Sciences), vol. 59, no. 9, pp. 47-62, 2016.

[7] W. T. Huang, "Research on the Application of Cloud Computing in Mobile IDC Platform," Master's degree of Tianjin University,2014.

[8] J. Z. Wang, "Cloud Computing Technology Overview," Computer Knowledge and Technology, vol. 12, no. 20, pp. 52-54,2016.

[9] H. Zhou, "Research on Cloud Computing Technology," Prospect of Science and Technology, vol. 26, no. 15, pp. 2-3,2016.