Research on the Development and Utilization of Information Resources in Cloud Computing

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Abstract*:* This paper tentatively puts forward ideas on the development of network information resources development, from theory shows that the cloud computing this efficient and powerful new calculation model in the network information resources development and utilization is effective and feasible.

Keywords Cloud computing; information resources; Development and Utilization.

INTRODUCTION

Cloud Computing is an Internet-based new computing technologies using of distributed processing, parallel processing and grid computing techniques. Cloud computing regard hardware resources and application services which distribute in a variety of servers, PCs, mobile telephones and all devices which can access the Internet. Because of these computing resources' dynamic, scalability, scalability and the virtualization can be realized, in academia and the IT industry is called "cloud." Cloud computing technology has powerful parallel processing capabilities to handle all parallel computing resources, and in the manner required for the service provided to the user. Cloud computing users do not care about the way the internal structure of its services and real service, the service thus formed is called cloud services.

THE DEFINITION OF CLOUD COMPUTING

The idea of cloud computing was first proposed by Google and IBM at the end of 2007 in their cloud computing program. The technical white paper of IBM "Cloud Computing "designated cloud computing as an application program which can simultaneously depict a system platform or a type of application program, and which can arrange, configure , reconfigure and cancel service according to the needs.

cloud computing is actually a super computing service pattern which, based on virtualization network and technology, combines software and hardware, fully makes use of all the available integrates large-scale network computing resources and information resources. Its basic principle is to run all the application programs users need on the Internet server cluster without needing to run them on users' terminal devices such as smart-phones, personal computers, palmtop computer etc.

The data processed and used by users are not stored in the local devices, but instead in the data centers of the internet. Cloud computing service providers provide users with enormous data storage space and powerful computing processing capacity, and are responsible for management and maintenance of users' data and application program. Therefore, the computing work done at users' terminal is largely reduced, and little demands are made for its performance because numerous complicated computing, processing and storing functions are transferred to the network behind the terminals. Users can get connected to the cloud computing platform via various terminal devices at any time and any place, and use cloud computing service whenever they need.

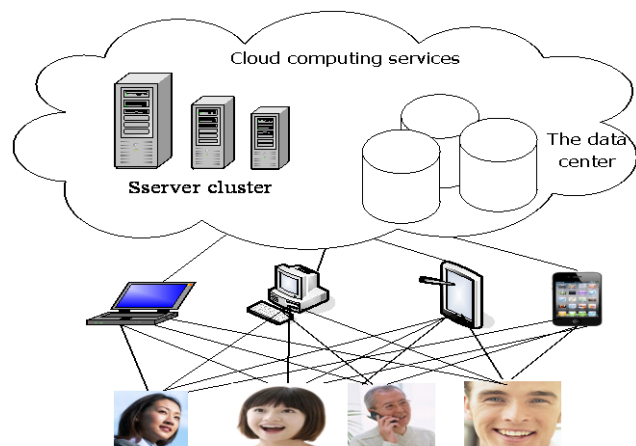See Figure 1 for the basic application of cloud computing.

Fig.1 Basic application of cloud computing.

THE USAGE OF CLOUD IN INFORMATION RESOURCES DEVELOPMENT AND UTILIZATION

Cloud Computing (Cloud Computing) is a parallel computing, distributed computing and grid computing development. It is also a mixed evolution of virtualization technology, utility computing, infrastructure as a service (IaaS), Platform as a Service (PaaS) and software as a service (SaaS) and other concepts. The information resources

development and utilization based on cloud computer technology can share a large-scale computing by means of computer cloud technology, change the traditional information resource acquisition mode, tap the potential contact information and improve the use of the value of information, with an integration of its service concept.

The strong ability of cloud computing to integrate resources

In the field of information service of which the backbone is data storage, analysis and retrieval, the overall business information services capabilities can be improved with the strong ability to integrate resources provided by cloud computing[10]. With the help of cloud-based cross-database, cross-regional data resource integration ability, information resources service platform cloud environment can be achieved on all types of digital resources cloud integration, thus forming digital resources and services group, breaking the information unbalance caused by scattered resources, improve the effective flow and utilization of resources, reducing the duplication of resources.

The massive data analysis capabilities and massive computing data mining capabilities

In cloud computing environment, knowledge services will develop new applications due to its super computing data analysis and data mining ability. Powerful cloud computing capabilities will integrate analyzing system of private cloud computing systems, as well as unlimited public cloud computing capabilities, to build the overall information analysis, knowledge production, provide sufficient computing resources and break the single organization with limited IT infrastructure resources. With this advantage, users can change the currently single and simplified knowledge services, providing knowledge for complex analysis and calculation services, improving the productivity and quality of knowledge, which can realize the change from traditional information service-oriented applications and resources into providing diversified and personalized services to users

The scalability of cloud platform

As knowledge service platform requires strong computing and storage capacity and the ability to obtain useful information from massive data resources, the cloud system architecture based on knowledge services has good scalability. There are two main extensions, one is vertical scalability, namely to increase resources in the same logical unit to increase

processing capacity; another is the horizontal scalability, namely to increase resources more logical units, so that they work as one unit with virtualization technology. Knowledge Service Platform cloud environment will use the better lateral expansion mode which has a extended schema.

The effect of targeted information delivery

When a user is surrounded by vast amounts of information, eager to extract the contents from the mass of data in a limited period of time, the Knowledge Services cloud platform analyze the massive amount of Internet content, users and their relationship, obtain user behavior, interests, hobbies and relevant knowledge and greatly improve the delivery of a message, thus achieving the expectation that the same behavior of people with different needs can have access to information content with different behavioral characteristics. Based on cloud platform information resources, corporate and commercial organizations can provide users with personalized services for different user needs.

The concept of cloud service integration

On the basis of the traditional application integration technology, greater degree of application integration and resource expansion can be achieved by cloud computing. Extend the concept of application integration to services integration, which will integrate information retrieval services, data mining services, digital reference services and other service capabilities and resources into knowledge service system, achieving a centralized information and collaborative services.

CLOUD RESOURCES DEVELOPMENT AND UTILIZATION OF INFORMATION ARCHITECTURE

This model uses the powerful processing capabilities of cloud computing platform to significantly enhance the development and utilization of network information resources performance [11]. The bottom layer is the physical information resources to obtain the raw data and provides hardware and application virtualization, including network equipment and storage devices; the second layer is a cloud resource management with business logic control, providing development for cloud computing, operation, management and monitoring of the environment; the top layer is a cloud resource service layer, providing self-service portal, service and application platform (Figure 2).
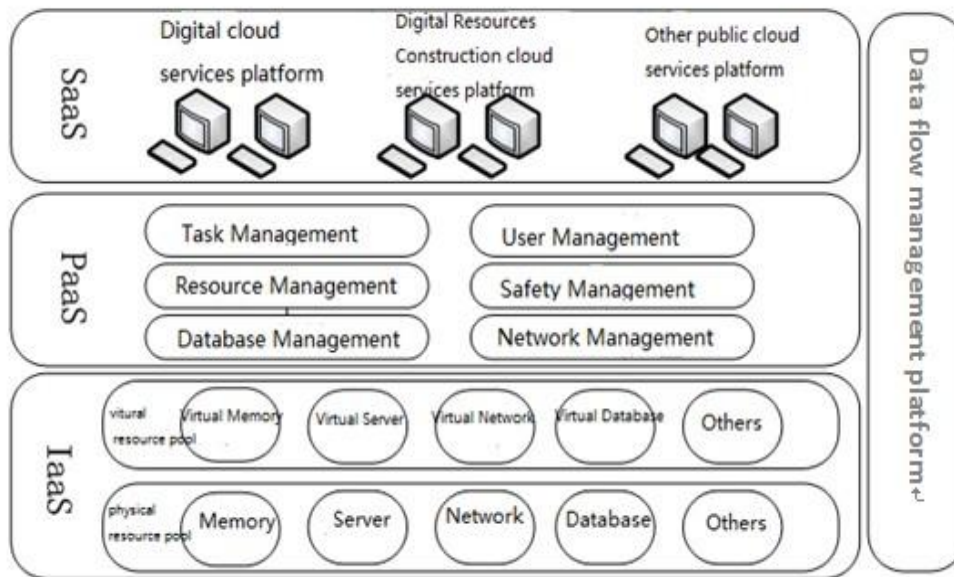
Figure 2: Information resources development and utilization of cloud architecture

This architecture model is divided into three levels: the first level is the service request and operation; the second level is the infrastructure and service applications; and the third level is the service creation, implementation and monitoring. The core part is the second stage. The three types for cloud computing namely IaaS, PaaS and SaaS will divide it into three layers, where the underlying physical resources include network resources provided by the service provider, server resources, database resources and software resources. The virtual resource pool will classify the same resources into homogeneous or nearly-homogeneous virtual resource pool. Information Resources is mainly responsible for the middleware platform for building cloud computing resource management and construction management of a large number of resources, to optimize load balancing, scheduling, and to provide safe and reliable service to the application layer. And the management services layer based on the technology of multi-tenant can package the cloud computing capabilities of digital Information Resources Construction into a standard WebService service, so that any user can have a personalized configuration of their SaaS software according to their own demand without affecting other users.

CONCLUSION

It has been a long-standing dream of mankind to use computing as a service, and the emergence of cloud computing technology provides the possibility to realize this dream. This paper tentatively puts forward ideas on the development of network information resources development, showing that the cloud computing in the network information resources development and utilization is feasible and effective.

The flow structure model of cloud information resources is a form of net information resources development and utilization, which solves the problems that net information resources monitor management and development. At the same time, its improvement and development can bring people more convenient and efficient information services in the future.

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