



The Application of Cloud Computing in Library Management

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Abstract

Cloud computing is a product of the development of modern information technology that has garnered significant attention in the library field. In library management, cloud computing offers several advantages. For instance, it can decrease server error rates, lower operational costs, and enhance information resource sharing. Cloud computing not only enhances the quality and speed of information services for customers but also caters to the unique needs of individual customers. The paper discusses the management concepts of dynamic optimization, high efficiency, and low carbon footprint that should be implemented in libraries during the cloud computing era. The management concept of wisdom sharing and universal equality should be established. The management of libraries should transition from decentralization to integration, from "position service" to "span service", and from knowledge collection to open access. Information technology has evolved from a peripheral auxiliary role to core supporting functions. In the era of cloud computing, we should not only embrace cloud concepts and implement cloud services but also prioritize cloud security and foster cloud sharing.

Keywords

Cloud computing, library, management

With the development of science and technology, all kinds of new technologies, new ideas, and new thoughts promote the development and change of society. Cloud computing technology is the new product of the times, it has received much attention in the library field. The emergence of cloud computing technology has a certain impact on the modern management of libraries. As a highly centralized and virtual means of data and information management. The application of cloud computing technology in the library has completely subverted the traditional information management and processing methods. Therefore, the application of cloud computing in library management has certain practical significance.

1. The concept and advantages of cloud computing

1.1 The concept of cloud computing

Cloud computing technology realizes grid design distributed design, parallel design, and other work through computer science concepts, to effectively complete more advanced business processing. First of all, cloud computing technology can fully integrate distributed resources and data with the help of computers, and can realize the efficient collaborative development of data and resources, so that data and resources can better meet the needs of work [1]. Secondly, cloud computing technology can fully process computers through non-remote servers so that the data center of the computer can be effectively connected to be internet, and through cloud computing technology build a targeted infrastructure management mode, to complete the distributed calculation of data resources, laying a good foundation for subsequent management work. Finally, cloud computing technology can effectively integrate different

system pools, so as to establish a more advanced and efficient comprehensive service mechanism, improve the efficiency of system clock resource switching, strengthen the accuracy and timeliness of information access, and effectively improve the efficiency and quality of management.

1.2 Advantages of cloud computing

1.2.1 Reduce the server error rate

When conducting library management, data processing is one of the most important tasks, if there is a problem in the library's data processing, it is likely to lead to the paralysis of the overall information system of the library, which will have a serious impact on the daily operation of the library, and even interfere with the normal operation of other technologies. Therefore, through the effective use of cloud computing, it can realize the automatic troubleshooting and processing of various problems, timely and effectively solve the problems existing in the process of system operation, so that the advantages of network technology can be fully brought into play, meet the actual needs of library management, and promote the progress and upgrade of library management [2]. In addition, cloud computing technology can also help libraries further improve management efficiency, and conduct more efficient and scientific data recording and data searching. So that the library can provide more scientific and effective service content and functions, to implement more efficient management and control strategies so that the value of the library can really play out.

1.2.2 Reduce working costs.

In the process of using the traditional server of the library, there will be some restrictions due to objective conditions, especially when the number of users accessing the library is conditions, the pressure on the server will continue to increase. if the access pressure cannot be borne, the system will be paralyzed, which will lead to serious delays in the feedback of users' access information. it will not only further reduce the work efficiency of staff, but also reduce the user's experience [3]. Through the effective application of cloud computing technology and advanced infrastructure equipment, the carrying capacity of library servers can be further improved, the cost to be paid for actual work can be reduced, and the use needs of different users can be met, thus achieving more efficient management.

1.2.3 Optimize information resource sharing.

Through the effective application of cloud computing technology, libraries can establish a more efficient and high-quality library service platform, form an integrated information service system, help users further improve the quality and efficiency of data exchange, and achieve more convenient, timely, and effective data sharing [4]. Through cloud computing technology, various different systems in the venue can be effectively connected, so that the entire library is under network management, which can not only further optimize the user experience, and lay a good foundation for the long-term development of the library.

2. Management concept of library in the cloud computing era

2.1 Dynamic Optimization

Cloud computing appears in the form of computing and application platforms for modern information management. This management mode combined with cloud computing is a new management mode in today's society. Its role is mainly to integrate scattered data and resources and optimize them. After processing, it is reclassified, distributed, retrieved, and applied, and the relevant information is uploaded to the "sea of clouds", so the user can obtain the required data and information from the "cloud" anytime and anywhere. It completely subverts the traditional data processing methods, more convenient, low carbon, and environmental protection. The cloud platform can widely collect user needs, provide and distribute data and information continuously, and become a super information base integrating large data and large libraries. The library needs to build a network platform, and effectively combine cloud computing technology to build a suitable cloud computing platform, apply dynamic management technology in the virtual world, improve the quality of information service, and meet the information needs of users.

2.2 Efficient and low-carbon

To establish a cloud computing library, we should first establish the concept of clean, environmentally friendly, low-carbon, and efficient, and try to eliminate transnational network enterprises like some like building a large number

of server clusters around the world, this will inevitably lead to a large consumption of energy. Compared with the establishment of large servers, the application of cloud computing has made outstanding contributions to energy conservation and environmental protection. Library application in cloud technology has unique advantages, the library has a dedicated server at the beginning of its establishment, and as long as the library makes full use of these resources, and is transformed and upgraded, integrated with excellent performance if the server cluster, there is no need to re-plan and purchase new servers, which not only saves a lot of money and energy, but also integrates data and information, has more advantages in management, retrieval and sharing of information, and can obtain more efficient and convenient services with the least resources and funds to achieve the purpose of integrating cloud technology.

Service is the purpose and core of cloud computing, and better and more convenient service users are the purpose of cloud computing applications. The library establishes a cloud computing system, which can be constructed by itself using its own resources, and can also outsource the IT and cloud computing services to professional contractors, the library pays the contractors on schedule according to the actual situation and achieves the purpose of obtaining more efficient and convenient services with the least resources and funds in low-carbon, environmentally friendly and efficient operation mode [5].

2.3 Wisdom sharing

Intelligence is the inevitable trend of the development of computer technology, cloud computing is an effective way to achieve intelligent development, through the use of cloud computing, information technology gradually tends to be intelligent, so as to achieve wisdom sharing. Applying cloud computing to library management makes it even more so intelligent, to achieve the true sense of resource sharing, and wisdom sharing. The traditional library, because of the different background of the construction, makes the construction of the library limited by the purpose, region, collection, and resources, resulting in the use of the library group being limited, and the scope of service is limited. Through the use of cloud computing, the library's service groups have been greatly expanded, and the library's literature resources, book resources, equipment, and facilities, as well as persons, have become effective resources of modern libraries with cloud computing technology, so that they are no longer limited to the traditional scope of services, and can provide information services for the whole society more widely, which will more effectively promote the library sustainable development. Professional cloud technology outsourcing businessmen, integrated databases, and sound management systems and concepts have established smooth data communication bridges between libraries and service objects, so as to maximize wisdom sharing. All libraries have a powerful database as a support, so as to achieve the purpose of inter-library communication and resource sharing, the intelligent sharing of library resources in the context of internet interoperability to achieve data sharing.

2.4 Universal Equality

The equal, fast, and convenient use of library resources for readers is the ideal of every library manager. The value vision contained in the library is equality and freedom, serving the public. With the rapid development of computer technology in today's network, fair, equal, and free use of resources to achieve equal service opportunities, taking into account the balanced development between urban and rural areas and between regional areas, overall arrangement and coordinated development, so as to form an effective, fast and reasonable library service system. The concept of intelligent sharing, intelligent management, and public service has become a reality. Free access to information resources and equal and fair access to information and data, cloud computing technology provides technical support for the concept from ideal to reality.

3. Transformation and development of library management in the cloud computing era

3.1 Move from decentralization to integration

In the era of cloud computing, each independent library is no longer a single individual, but a unit on the cloud technology platform, and the data and materials of all libraries are no longer isolated, but realize the great integration and sharing of data. The library can have individual unique styles, but it should actively cooperation with each library on the platform to exchange needs, smooth communication, and realize reasonable allocation of resources. In addition, the library should also make effective use of the cloud computing platform to create a special and personalized plate

and provide targeted services for customers with unique needs. At the same time, the physical library can also take advantage of the cloud computing platform to focus more on personalized services for local readers. The so-called internet is the vast starry sky, the cloud computing library is the background of the starry sky, and each library is a bright star, its own light, its own dedication, and contact, only in this way can truly realize the sharing of resources.

3.2 From “positional service” to “cross-border service”

To measure whether a library has realized modern management, an important criterion is whether it has changed the passive concept of accepting customers to actively serving customers. The library that integrates cloud technology can achieve seamless integration of information and effective communication so that the library can realize the service without limitation and realize cross-border service. Through personalized services, libraries that integrate advanced cloud computing can actively share data resources on the network, instead of passively waiting for users to come to the library. For example, libraries can cooperate with Baidu and other companies to launch user-friendly apps, keep pace with the times, and realize mobile data sharing.

3.3 From knowledge collection to open access

The traditional library focuses on collecting materials, whereas the cloud library serves as an efficient center for accessing and transferring information. Subject information portals, virtual reference, open access, and knowledge integration have become the main functions of libraries in the cloud era. The key for users to utilize the library is the type of resources they can access, rather than the quantity of resources available in the library. The cloud library should function as a global knowledge cooperation alliance. It should not only offer users information conveniently and swiftly but also serve as an essential space for sharing information among users.

3.4 Information technology has been transformed from a peripheral auxiliary function to a core supporting function

At the beginning of its establishment, the library was basically restricted by the area of the library and provided services for users by expanding the scale of the collection. In the age of information technology, the library should be transformed into a database of information resources, providing the management function and service function of data information. On the use of information customers, the library statistics and actively meets the needs of customers, no longer like the traditional library conformist, information technology has changed from a peripheral auxiliary function to a core support function. The library integrates information technology, including the data resources in the information technology, its management mode, and service mode based on the cloud computing platform. The application of cloud computing

enables the library and users to realize the intercommunication of resources through the network, and information technology plays a key role in the future development of cloud libraries.

4. Thoughts on library management in the cloud computing era

The application of information technology has completely subverted the traditional position of libraries, and the development of technology makes the library face great challenges in the future, especially the application of cloud computing technology has attracted wide attention from all walks of life, especially the library circle. Libraries. Libraries should make full use of information technology to better serve the library cause.

4.1 Establish a cloud concept

The idea behind the library is equality, freedom, and public service. In the information age, the concept of intelligent sharing, intelligent management, and serving the public of the library should also keep pace with the Times. Therefore, the library staff must change their thoughts and establish the value of great service. With the combination of cloud computing technology, each independent library is no longer a single individual, but a unit on the cloud technology platform, and the data and materials of all libraries are no longer isolated, but achieve a large integration and sharing of data. Libraries should actively carry out various cooperation, exchange what they have with each other on the cloud platform, and realize reasonable allocation of resources.

4.2 Developing cloud services

There is a library in cloud computing because libraries can effectively use cloud technology to expand from simply serving some users to serving the entire region or even all people. This makes it possible for libraries to serve no longer limited [6]. Users can transfer information resources in the library's cloud, and can also enjoy information resources in the library's cloud. Other customers can also enjoy the unencrypted public resources that all customers transmit. This greatly expands the extent to which information can be shared. There is no need for libraries to waste vast amounts of money and material on books and electronic resources. Library services will be more grounded and more effective. With the rapid development of information technology, the role played by libraries is still very important both in information platforms and data management. At present, many libraries have begun to apply cloud computing technology for management and service. Libraries need to make deep changes and embrace cloud computing in all its aspects.

4.3 Ensure cloud security

The problem of information security, the biggest and most important problem in the information age, also exists in the cloud library. It is impossible to show all the data of the library to the network without reservation. It is necessary to store some important data in the local hard disk, and some special data are even confidential data that cannot be shared in the network, how to realize the connection and sharing of cloud data and local data is an urgent problem to be solved. The reason why all data cannot be shared is that the security of data cannot be guaranteed. Therefore, how to ensure the security of data has become a key issue for libraries in the information age. Libraries should consider and solve the security problems of cloud data from all angles.

4.4 Implement cloud sharing

There is competition in all walks of life, especially when new things come into being, and everyone comes together. For the cloud technology convergence of libraries, libraries should control the competition among data management outsourcers. The effective use of cloud computing technology will have a wide and far-reaching impact on the entire library industry, and the cloud service industry of the library will face a big reshuffle, and a lot of related auxiliary industries will be derived. The original intention of cloud libraries is to share data rather than vicious competition, so the database providers of relevant libraries need to clarify the concept in order to ensure the maximum use of resources.

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