



Analysis of Information Security Technology Based on Big Data

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Abstract

In today's society, Internet information technology has penetrated into various fields, and the widespread application of technologies such as the Internet of Things and cloud computing has further promoted the informatization of today's society, greatly improving the speed and scale of information processing. Due to the development speed of information processing technology and the improvement of production efficiency, traditional information processing technology cannot meet the current information processing requirements. Therefore, this article will take the overview of big data information technology as the starting point to explore the issue of big data information security and analyze the network information security processing technology. It must be optimized and innovated according to the current information processing technology and actual situation, so as to better solve the security problems existing in information processing, thereby improving processing speed, accuracy and security.

Keywords

Computer; Big data; Information security; Processing technology

Introduction

In today's society, computer network technology has played an important role in people's daily lives. With the continuous development of Internet technology, network transmission has greatly improved the speed and quality of information transmission, and has also broken through the limitations of face-to-face information transmission. Computer data processing refers to the efficient processing of large amounts of data and information through the continuous development of computer technology and various modern communication technologies, so that people can use this information in a timely and fast manner. More and more users are beginning to flock to the Internet, but while big data provides humans with a large amount of information services, it also brings some security vulnerabilities. Therefore, in order to solve this problem and bring users a better Internet experience, it is very necessary to strengthen the application research of big data in information security.

1. The concept of big data technology and the characteristics of computer big data information

1.1 The concept of big data technology

Big data technology is to record and archive people's daily production and life activities in a digital form, and use scientific methods to classify massive amounts of data, and filter out valuable and feasible information according to the needs of users. From this point, it can be seen that data storage is extremely extensive, and with the popularization of the Internet, data updates are getting faster and faster. When computer networks face such a large amount of data,

they must use scientific methods to analyze it, filter out useful information that can meet the different needs of users, ensure the accuracy, completeness and timeliness of the data, and maximize the value of the data.

1.2 Characteristics of computer big data

Information processing technology in the era of big data is mainly reflected in two aspects: quantity and type. In terms of quantity, people have higher and higher requirements for processing and dissemination, so it is necessary to comprehensively improve the technical level of information processing to ensure the quality and efficiency of data transmission. In terms of type, the use of big data technology can quickly and accurately process and analyze information, and filter out useful information to meet people's demand for information.

1.2.1 Large capacity

At present, the security issues of computer data are becoming increasingly prominent for enterprises and individuals. It is necessary to comprehensively strengthen its security protection and adopt more scientific and efficient information security technologies to provide security guarantees for the storage and use of data information. To achieve this, it is necessary to start from two aspects: improving information security protection and ensuring the normal operation of computer systems, preventing and controlling various security risks and viruses from the source, improving network security protection awareness, improving standard operating techniques, and minimizing information security issues.

1.2.2 Diversity

With the rapid development of big data technology, especially in the fields of big data and artificial intelligence, various new detection technologies and methods are emerging. Due to the diversity of data, staff can get more assistance when processing data, reducing more difficulties in work.

2. Network information security issues in the big data era

2.1 Safety issues caused by improper operation

In the era of big data, although a lot of information and data can be obtained through Internet technology, not every operator can obtain valuable information. Some information is processed by computer technology, and the specific conditions of these information in computer applications are generated by specific human behavior operations. In the operation process, under normal circumstances, subjective influences may be caused by improper operation, and even because of the details not paid attention to during the operation process, some computer security warnings may be ignored, and it is believed that when setting passwords or passwords, due to insufficient security awareness of computer networks, hidden security problems may occur in computers, resulting in security vulnerabilities in storage networks. This series of operational errors will increase the possibility of data loss stored in computers, and various network security risk issues will follow, bringing serious security risks to information systems and even huge economic losses.

2.2 Security issues caused by the characteristics of computer networks

Due to the rapid development of Internet technology, human beings are increasingly eager to use computer technology to achieve greater economic benefits, so that the Internet can browse resources and information more freely. However, due to the openness of computers, it has become a huge dangerous body, and its security has been greatly damaged. In order to reduce the security of certain security protocols under its openness, due to the advent of the era of big data processing, more and more people use computer networks for data integration. Often there will be some junk information in the computer. The generation of these junk information may affect the security of the computer network, including some important resources that can be deleted by the computer, or because the computer itself has a specific resource storage function for the recycle bin, and the security level of the recycle bin is relatively low, therefore, criminals obtain relevant information, which brings certain problems to the computer network security. In view of the current situation of computer networks in my country, it can be seen that the current computer network management system in my country is still imperfect, and due to the negligence of some users in network maintenance work, the management of stored information is not strict, which will also cause network equipment failure.

2.3 Security issues caused by virus attacks and hacker intrusions

In this era of big data, the two main threats are hackers and worm viruses. Because hacker attacks are often very threatening, it is difficult to defend against them effectively, which leads to information leakage and personal privacy leakage.

It mainly targets confidential information stored in computers, and illegally invades computers, causing certain key information to be lost or leaked, causing irreparable damage to users. In addition, due to the advancement of information technology, the openness of computer networks has also created conditions for the invasion of computer viruses. This type of virus is generally very hidden and is not easy to be detected before invading the computer network. Certain defects in computer networks are also easily overlooked, providing opportunities for virus invasion. When the virus is combined with a specific computer program, it will cause greater damage to the computer network, while causing the loss of computer stored data, and even paralyzing the network, endangering the data security of the computer network.

3. Analysis of computer network information security processing technology in the big data era

3.1 Cloud computing technology

As an emerging technology in the new era, cloud computing has a strong application prospect after a long period of technical optimization. The system adopts a distributed and parallel method to count and calculate various types of data through the massive information resources of the network. Cloud computing technology can be effectively applied to the information of big data, which greatly improves the calculation accuracy and speed of data. According to the characteristics of different information resources, the task allocation mechanism is used to classify the data to give full play to its utilization value. After receiving the instructions from the server, the application will process the data and analyze and preprocess each software through the branch service system. Finally, it will be uploaded to the cloud computing platform on the Internet and comprehensively analyzed. This series of operation processes allows cloud computing technology to process massive data with high quality to meet various application needs.

3.2 Data backup technology

With the widespread popularization and application of Internet technology in society, people's work efficiency in information processing has been greatly improved, but at the same time, we have to admit that the openness of the network has a great impact on the security of information. Data backup technology is a technology that prevents data loss caused by computer system failure. Using this technology, the method can copy all data to other media so that when system data is lost, relevant information can be found from other media. In today's world, the Internet is an indispensable media. However, due to the intrusion of spam, the Internet has faced unprecedented challenges in user security. In this context, data backup technology can make full use of important information feedback and scientific research data in daily life to avoid information loss, greatly improve the security of information, and also provide an excellent opportunity for the security of enterprises and individuals.

3.3 Professional firewall technology

As a traditional information security technology, firewall technology is usually used inside the network. As the most commonly used protection technology in the field of information security today, it also shines in the information security processing of computer big data. In computer networks in life, the most common types of firewalls are mainly in the form of application-level and filtering firewalls.

3.3.1 Application-level firewall

An application-level firewall is a firewall that can ensure the normal and efficient operation of a computer system. It can monitor the entire operation process of the computer to detect and deal with various harmful factors. When a malicious attack occurs, the application-layer firewall will automatically cut off the virus invasion, thereby helping administrators to prepare for network security in advance and reduce possible losses.

3.3.2 Filtering firewall technology

Filtering firewall technology combines the characteristics and functions of the computer itself, and can conduct all-round detection of the computer, making the computer virus nowhere to hide and allowing the computer system to

work normally. Through professional firewall technology, viruses and data are effectively isolated, thereby effectively protecting computer information and preventing data loss. It can also intercept some harmful information in the computer network information system and prevent it from entering the computer system, thereby ensuring the safety of the computer.

4. Specific application measures of big data technology in computer information security

4.1 Establish a security business system platform based on big data

In order to safely store a large amount of information data, we must start from the essence of the problem to optimize the computer's information security vulnerabilities. First, we must build a security service platform based on big data to concentrate massive amounts of data information on a platform so that the computer system can establish an authentication and authorization mechanism, so that users can grasp the information security situation in a timely manner and take corresponding measures to eliminate the existing security risks. In addition, the security service platform based on big data technology can also achieve autonomous learning in practical applications. For example, in terms of information protection, it can record all the details of information security and automatically handle similar problems in the future, thereby enhancing the information security of the system. In order to ensure the security of computer big data, big data technology can strictly detect massive and multi-type data, so as to discover potential risk types and eliminate them in time, ensure the security of data, thereby improving the system's security prevention capabilities and reducing the occurrence of network security incidents.

4.2 Pay attention to the dynamic changes of computer information

With the rapid development of information technology, the means of network attacks have become diversified, which not only brings greater challenges to large-scale computer information security, but also infringes on the rights and interests of users to a certain extent. Moreover, since computers will experience abnormal data paralysis after being attacked by the network, it also brings great difficulty to security management. Therefore, in information processing, we must make full use of the advantages of various security technologies and dynamically monitor the massive amount of computer information data so that we can better grasp the security of various types of information, thereby providing first-hand information for future technical optimization.

In the specific monitoring procedures, we must fully consider the different system operating environments, and according to the current different actual situations, conduct real-time monitoring and understand the system operation status, and based on these situations, continuously adjust and optimize our own information security processing technology, so that various information security technologies can adapt to different working environments, thereby improving the accuracy and scientific nature of information security.

4.3 Using authentication technology to ensure information security

In the Internet age, the application of massive data is extremely extensive, and relying solely on computer password technology can no longer meet the needs of information security protection. Therefore, in order to enable users to avoid information loss in actual applications, users can rely on user identity and network resources to strengthen the control of information data. At the same time, in order to enhance the protection of personal privacy, in the data security environment, most users will choose computer authentication. The main authentication technologies on the computer side include the following:

4.3.1 Digital abstract

Digital summary technology, also known as information summary technology, requires shortening the use time of computer information documents by using a single function as a link and effectively providing short code access, and ensuring that the short code is distributed to the recipient who needs the CCA before use. BPO converts the document according to the established format, and the result is equivalent to the received brief code. In this case, if there are no unexpected circumstances, the integrity of the document can be guaranteed.

4.3.2 Digital signature

When transmitting information, the file must be encrypted in advance and delivered to the recipient as a document. When decrypting, a public key that is very similar to the signature must be used. This protects the integrity of the information to a certain extent and strengthens the encryption security of the file in the hidden file system.

4.3.3 Digital envelope

Through the method of email information verification, information can be delivered to the other party in the form of sending. Due to the uniqueness of the address, it can not only ensure the security of the massive information contained in the data, but also ensure that the submitted information will not be maliciously tampered with by a third party, thereby ensuring the security of the information and protecting the security of the information to the greatest extent.

5. Conclusion

In summary, the security of computer data is becoming increasingly prominent for enterprises and individuals. It is necessary to comprehensively strengthen its security protection and adopt more scientific and efficient information security technologies to provide security for the storage and use of data information. To achieve this, it is necessary to strengthen the protection of information, ensure the normal operation of computer systems, and essentially prevent and control various security risks and viruses, improve network security protection awareness, improve standard operating techniques, and minimize information security issues.

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