Computer network security and prevention in the era of big data

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Abstract: with the continuous progress and development of information technology, the modern society has ushered in the big data stage, which means that related industries are entering a critical period of development and transformation. While computer network promotes the prosperity of social economy and culture, it also faces the problems of security and regulation. In view of this, this paper briefly introduces the background of the big data era and the current situation of network security, and discusses in detail the computer network security problems and Countermeasures in the big data era, hoping to maintain the computer network security and make people's production and activities more convenient.

Key words: big data era; Computer network; Safety issues; Preventive measures

Introduction

In recent years, the word "big data" has been mentioned more and more, and the field of data penetration has become wider and wider, marking that the era of big data has been brought, and a digital world has been established through more comprehensive perception, preservation and sharing of data. In this context, computer network security is facing great challenges. We need to maintain and avoid operating system security issues, computer virus infection risk, illegal invasion and foreign attacks. It can be seen that the implementation of computer network security protection measures is of great importance, which is worth our further exploration and practice.

1 Background of big data Era

Big data refers to massive data information resources, which also contain a huge amount of valuable information, which is worthy of further development and utilization. The processing and application of big data mainly rely on cloud computing, which takes data as the core of computer network and changes the way people obtain data information resources. In the era of big data, cyber crime is becoming more and more widespread, which also highlights the importance of computer network security and norms from the side, and it is worth our attention and in-depth exploration. In order to ensure computer network security and formulate norms, we must first analyze the relevant basic concepts and the current situation of network security, and draw a conclusion that computer network security in the era of big data is facing great tests and challenges. Secondly, combining with the current technical means and rich resources to adjust the working mode of computer network, more and more people realize the importance of computer network security, and at the same time, improve the protection ability from all aspects, believe that it can effectively protect the information security of computer network users, and finally build a harmonious and pure network environment. Finally, we should actively build a computer network security monitoring system to investigate and point out the factors threatening network security in time, which can effectively protect the information and data of computer network users. In short, in the era of big data, it is necessary to do a good job in computer network security and protection. Only by doing a good job in hardware maintenance, routine management, communication and security management, can we ensure the information security of computer network users.

2 Current situation of network security in the era of big data

In the era of big data, it is necessary to take preventive measures for computer network security. The so-called computer network security and specification mainly refers to the management and protection of information integrity, confidentiality and availability. Computer network security can be divided into two specific levels, namely physical security and logical security. The former is that the computer hardware facilities are protected to prevent the loss and destruction of information; The latter is the direct protection of data, and the protection of information has integrity, confidentiality and availability. With the continuous progress and development of modern society, the problem of massive data security has been widely concerned, and its relationship with human activities has become increasingly close. However, by analyzing the current situation of network security in the era of big data, we can still summarize the adverse phenomena such as network paralysis, account and password theft, which make the contradiction of computer network security continue to escalate, seriously threatening the personal privacy of the public and the stable development of social economy. It can be seen that no matter individuals, enterprises or social organizations, it is necessary to do a good job in computer network security and standardization, maintain computer network security while playing its social function, and promote social stability and economic prosperity and development.

3 Computer network security in the era of big data

1. Security issues of operating system

In fact, the premise of ensuring computer network security is that computer equipment has a secure operating system, but with the popularization and popularization of big data technology, more computer network security operating systems have been developed to network operation. Then, it is prone to various security vulnerabilities, including RDP vulnerabilities, VM vulnerabilities, UPnP vulnerabilities, etc.. If these vulnerabilities are exploited by attackers, it is likely to break through the security defense line of the computer

operating system, and then pose a threat to network users.

2. Computer virus infection risk

Computer virus refers to a kind of programming program, which can automatically copy or modify into other programs during the operation of the computer, and then cause computer failure or even paralysis. There are various ways of transmission of computer viruses with different degrees of infection risk, such as sending and receiving e-mail, inserting unsafe mobile hard disk or U disk, etc.. At present, there are more than 14000 kinds of active viruses widely spread. In the era of big data, this number is still growing and has become one of the important factors threatening the security of computer networks.

3. Illegal invasion and external attack

(1) transmission protocol attack

Some transport protocols have vulnerabilities when they are formulated, which provides an opportunity for attackers. They use various means to attack the system, which may cause the target system to fail to operate normally or crash directly, so it is a malicious attack. For example, synflood attack in the transmission protocol is typical. It can be specifically targeted at the "three handshakes" vulnerability in tcp/ip protocol, which will eventually lead to the collapse of the whole system.

(2) camouflage technology attack

The main method of camouflage technology attack is to forge IP addresses, DNS resolved addresses, routing entries, etc., causing the server to fail to recognize or respond normally, resulting in the same gateway address and the failure to forward data packets. After a period of time, a network segment will be in a state of collapse or paralysis.

(3) attack service port

Due to the improper design of some computer application software, it is easy to leak the address space security in the execution process, which will lead to the paralysis of the service port under attack. For example, the application software may not be able to process part of the messages or requests, resulting in the failure of the application software to operate normally, which will lead to the collapse or paralysis of the whole system. The common attack type is OOB, which mainly targets TCP port 139 of windows system to randomly send data, which will cause the CPU to always be in working state.

(4) trojan virus attack

Trojan horse is a common hidden virus, which is often used by hackers to attack computer systems. Once a Trojan virus is implanted in the computer running process, the virus will control the host, and then become a hidden user to carry out a series of operations. In most cases, trojan virus is implanted to collect key information such as account number, password and password, which can cause serious threat and trouble to computer users.

4 Computer network security and preventive measures in the era of big data

1. Strengthen the protection of the security of computer network information according to law

At this stage, big data is widely used in people's life and work. With the development and progress of science and technology, big data is obviously reflected in the real-time dynamics of logistics, health monitoring, the use of electrical facilities and other aspects, which has far-reaching significance for modern residents. Although the use of big data technology supported by the Internet and computers has brought us convenience, it has also brought many hidden dangers, which means that modern residents and computer users must pay close attention to the security status of computer networks before they can effectively enjoy the above convenient services and improve their living and working standards as a whole. In order to ensure the security of computer network, it is necessary to strengthen the protection of the security of computer network information according to law, such as establishing and improving laws and regulations on information application, building special information security protection system, etc., which can effectively highlight the authority and enforcement of the law and effectively protect the information security of computer network users. On this basis, China's relevant departments should complete the important work of improving the legal system in the shortest time to ensure that personal information is not disclosed during the operation of computer networks, and improve the protection and protection properties.

2. Strengthen the management of computer network information security

In recent years, the rapid development of China's Internet and big data industries has effectively improved the reliability of data and information resources, making them play a social function and multiple values. Therefore, major domestic enterprises have actively invested in the reuse and reproduction of data and information resources, but have not paid attention to the importance and economic value of computer network security. Based on this, from the perspective of modern industrial transformation and upgrading, it is also necessary to strengthen the management of computer network information security and strive to systematically manage and restrict relevant enterprises and businesses. At the same time, our government should also strengthen the importance of computer network security management, set up a department dedicated to the management of computer network information, and arrange to regularly check the relevant codes of network operation, so as to ensure that the computer network security and specifications are re determined by manual inspection.

3. Strengthen the protection of account security

As far as computer users are concerned, account numbers and accounts belong to personal property, including a large number of users' personal information and assets. Once stolen by others, they will face irreparable consequences and losses, as well as large economic losses. With the rapid development of network technology, applications of different types and functions can be widely used, which makes personal accounts and accounts show a rapid growth trend. Therefore, it is very important to strengthen the protection of computer network user

account and account. Users themselves should also establish the awareness of property protection, and continuously improve the awareness of network security and account use. For example, in the process of setting passwords, try to avoid simple numbers and letters, but splice numbers, letters and symbols, and strengthen the protection level of passwords to ensure the security of account information.

4. Strengthen the application of firewall and security monitoring system

In the era of big data, firewall and security monitoring system are effective measures to ensure the security of computer network. Improving the level and technical ability of firewall can effectively ensure the information security of computer users. Among them, the firewall function can divide the data information management system into internal and external management systems, and the internal management security factor is high, so the storage of important information can be placed in this module, so as to maximize the security of users' personal information.

5. Strengthen the application of anti-virus software and email identification system

At present, due to the frequent occurrence of computer network security problems, a large number of virus detection and killing software have been applied in the process of computer operation, which not only ensures the safe operation of computer network, but also plays a positive role in blocking viruses and avoiding spam advertising and SMS. Therefore, in the era of big data, it is necessary to strengthen the use of anti-virus software and e-mail identification system. While starting the firewall, the firewall is used to block viruses, malicious software, etc., which can not only effectively kill viruses, but also catch all viruses hidden inside the computer.

6. Repair computer vulnerabilities

Repairing computer vulnerabilities can effectively solve the current computer network security problems. In the process of repairing vulnerabilities, repair software can be used to fully grasp and flexibly apply the relevant working principles. At the same time, understand the workflow of repair software, reasonably apply vulnerability repair technology, repair computer vulnerabilities and reasonably control them with technology. First of all, computer vulnerability repair software must keep pace with the times, be able to repair increasingly advanced and opportunistic computer vulnerabilities, and also be able to adapt to the current computer network security requirements. Secondly, timely update the relevant database resources and expand the application scope of computer repair software, which can play a role in promoting the sustainable development of software repair, network environment and social environment. Finally, within the scope of computer network security, improve the system patch technology to continuously repair vulnerabilities. Under the influence of big data technology, computer networks will become more and more perfect. Therefore, to improve the security of computer networks and make regulations, we must strengthen the repair of various system vulnerabilities and effectively improve the security performance of computer networks. The author believes that in the future R & D and practice, we should also install the software with repair function in the computer. If it fails to achieve the expected effect, we should continue to innovate and optimize the solution to the problem, so that the more practical and targeted fixed-point repair software can effectively repair the computer system vulnerabilities and effectively enhance the computer network security, It also provides users with a pure and healthy network environment.

Concluding remarks

In a word, with the vigorous development of China's science and technology, computer network security problems and contradictions continue to escalate, so that relevant workers must dutifully study countermeasures, solve problems, maintain computer network security, standardize relevant processes, and boost social stability and economic prosperity and development. In the era of big data, relevant workers should actively overcome the difficulties in technology, management and information, and strive to start from the daily computer maintenance and standardization, so as to nip the hidden dangers of information security in the cradle.

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