

Analysis of Computer Network Security Technology and Preventive Measures under the Information Environment

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Abstract—This paper first summarizes what informatization is, and then analyzes the service of informatization computer network security management system in detail. Then, it analyzes the specific application and problems of informatization in computer network security management system, including hash function to protect network information transmission security, symmetric encryption strategy to protect computer network information security and establishment of computer network security protection system in information environment. Finally, it expounds the relevant countermeasures to solve the network security threats under the information environment, including comprehensively strengthening the computer network security management under the information environment, establishing and perfecting the computer network security protection system under the information environment, and strengthening the research on the black and evil prevention mechanism under the information environment to protect the computer network information security. In this paper, under the background of informationization, people pay more attention to the security technology of computer network and related preventive measures.

Keywords- *informationization; Computers; Network security technology; Preventive measures*

I. INTRODUCTION

The development of science and technology plays a role in promoting all sectors of society. Our country's computer network technology has made greater progress, and the accompanying security problems have been paid more and more attention by people. People use computers more and more frequently in their daily life and work. Many things can be handled through computers as a medium while keeping close contact with the outside world. Network security risks will affect users' lives and work, and even cause property losses. With the increasing use of computer networks, the challenges to network security technology are increasing. Under the background of information environment, network information security has a great impact on the use of network technology. At present, computer network security technology and preventive measures need to be further strengthened in order to ensure the audience's network security.

II. BRIEF INTRODUCTION AND OVERVIEW OF INFORMATION COMPUTER NETWORK SECURITY MANAGEMENT SYSTEM

A. Brief introduction of information computer network security management system

The computer network security management system constantly improves the intrusion prevention system, and then effectively analyzes and supervises the abnormal data dynamics, so as to effectively improve the information security. In order to ensure the validity and real-time of data, information technology needs to screen and analyze large data groups, so as to benefit the development of information industry. As far as the development of information industry is concerned, the most important technology is information technology. Computer network security management system and audience users' information management are inseparable from information technology. In other words, information technology is the core technology to ensure security management system and audience users' information[1]. Under the background of information age, computer network security management system is an important guarantee for the safe operation of information and systems. Information technology can analyze network big data, and it is convenient to extract and send and receive information. However, due to the popularity of network big data, it may also cause users' information leakage and attacks on security systems, so how to improve the computer network security management system is even more important.

B. Information computer network security management system service

Information computer network security management system can effectively protect the integrity and security of data information. The specific work of information-based computer network security management is to deal with the confidentiality and integrity of relevant information and data, as well as access control and authentication of information. Under the background of information environment, the technology of computer network security management system can shield some bad junk signals, and this function of monitoring information content can also protect information security to the maximum extent. In the running of the program, one of the effective means to protect the computer network security management system is information detection. At present, the Internet is widely used, and there are many people using it. Internet information will be threatened by information leakage

and viruses. Only by effectively purifying the Internet information environment, optimizing and standardizing the use groups and processes of the Internet can the overall level of information security be improved[2].

III. APPLICATION AND PROBLEM ANALYSIS OF INFORMATIZATION IN COMPUTER NETWORK SECURITY MANAGEMENT SYSTEM

A. Hash function protects the security of network information transmission under the information environment

An effective means to protect the security of network transmission under the information environment is to create and submit files or specific data "fingerprints" by using hash function, and adjust the data information and its encryption security level, which is also one of the effective means to effectively deal with the signal matching work. In the same network information transmission work, the same type of hash function can be matched with different types of information. In other words, for the same hash function, the unique hash value corresponds to the information of any source channel. Under the information environment, one of the effective means to protect the security of network information transmission is hash function, so the use of hash function plays a particularly

important role in the security of network information transmission.

B. Establishing computer network security protection system under the information environment

Under the information environment, there are new requirements for computer network security protection system, and the traditional network security management can not meet the needs. At present, it is necessary to establish a brand-new computer network security protection system according to the actual situation. The establishment of computer network security protection system first needs to screen the objects to be encrypted, and determine and clarify the conditions of the objects to be encrypted; Then, the network environment and security problems of the encrypted object are operated by using the protection analysis method, and the loopholes and other problems in network security are analyzed to establish the encryption system of computer network information data; Finally, the hidden dangers of network security are solved, so that the encryption system of computer network information data can be established and put into use[3]. The passive attack and active attack process of establishing computer network information security protection system are shown in Figure 1 below:

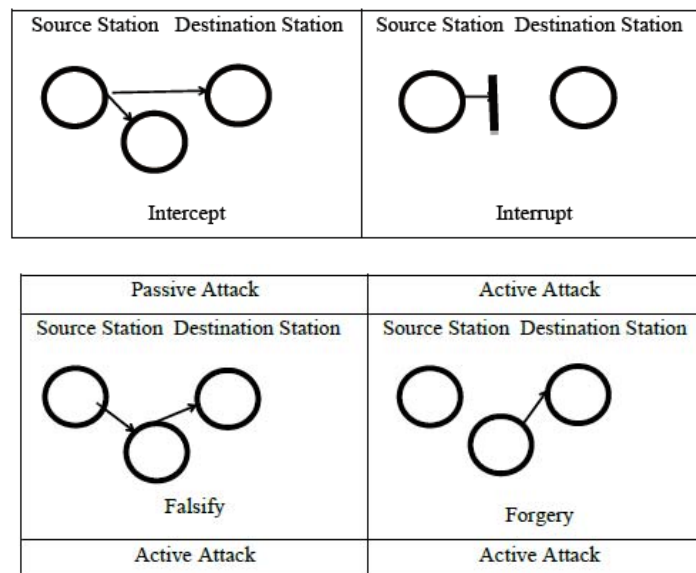


Figure.1 Passive attack and active attack on network

C. Computer network is invaded by viruses under the information environment

The information-based social environment has driven the progress of science and technology, which makes people use computers as the medium in their daily life and work, improving work efficiency and saving time and cost. People use computers to transmit related files and other information when they are working. Although this process saves time, it is also vulnerable to virus invasion, which makes the computers they use and the computers that receive files suffer from virus invasion. The security of information illusion is affected by

virus intrusion, and at the same time, it will lead to the related problems of personal information and privacy leakage. The running system of computer will also be affected by virus, which will cause losses to users[4]. The computer network is invaded by viruses, which will cause problems in the running programs of the computer, and may also cause the personal information of users to be leaked, which will affect the use feelings of customers. Under the information network environment, computers are more vulnerable to viruses. Users are easily affected by viruses when they use computer networks to transmit information. It may also bring viruses into your own computer. In this way, the computer system used is infringed,

and the normal running state of the computer is affected, which makes the audience feel bad, and in serious cases, it will also bring property losses to users.

D. Unauthorized access to computer network under the information environment

Under the information environment, computer networks are widely used, and authorized people can browse and operate related platforms in a certain range, but unauthorized access will threaten the security of the platform. Access to files and other information in the platform without authorization will result in the loss of important information of the platform and easily destroy the security mechanism of the system[5]. Generally speaking, a common attack method for unauthorized access is that IP addresses take advantage of platform vulnerabilities or deception to gain control. At present, there are many unauthorized visits. Unauthorized access will not only threaten the operation safety of the platform, but also cause the leakage of the actual information of users. Unauthorized access includes unauthorized access and illegal access. Unauthorized access may lead to the loss of important information in the platform, and to a certain extent, it also destroys the security mechanism of the platform system. How to avoid unauthorized access is the focus of computer network information security technology under the current information environment.

IV. COUNTERMEASURES TO SOLVE THE NETWORK SECURITY THREAT UNDER THE INFORMATION ENVIRONMENT

A. Strengthening computer network security management in an all-round way under the information environment

Under the information environment, we need to upgrade the technology of network security and strengthen the management of computer network security. Computer network security is divided into two aspects, namely, management and technology. Network security needs to ensure both security technology and security management. Anti-virus software in computer network can kill and intercept viruses, and install new anti-virus software when new viruses appear, but this process is not a permanent cure. Computer network users' awareness of security maintenance is weak, and the system of computer network security management is not perfect at present. Only by further strengthening the management of computer network security, paying attention to avoiding browsing virus software and web pages, and installing corresponding virus killing software in computers, can network security be guaranteed and the leakage of important information be reduced. Computer network security management needs to be further strengthened. Under the background of informationization, computer network security is threatened more. One of the effective means to reduce the risk of computer network security threat is to comprehensively strengthen computer network security management[6].

B. Anti-virus technology of computer network under the information environment

Under the information network environment, network viruses pose a great threat to the security of computers. Anti-virus technology can effectively restrain and reduce the harm of network viruses to computers, which is conducive to ensuring the safe operation of computer networks. At present, there are many anti-virus products, and the audience can compare the

performance and price of anti-virus products and formulate corresponding anti-virus systems. Anti-virus technology can effectively prevent the attack of network viruses, and targeted anti-virus system has a better effect on preventing viruses, which can effectively protect computer network security. Under the information environment, computer networks are greatly affected by viruses. One of the important means that viruses do harm to computers is to strengthen the research and development of computer network anti-virus technology, and at the same time, it is necessary to install anti-virus software in computers. The audience can select and install relevant anti-virus software according to their own needs, and can also tailor the anti-virus system according to their own needs. This is conducive to ensuring the normal operation of computers and the security of network information.

C. Establishing and perfecting the system of computer network security protection under the information environment

Under the background of informationization, it is particularly important to build a network security protection system. Introducing the related technologies of network information data encryption in the process of construction can enable the computer network security protection system to build a powerful computer network information data encryption system. In the construction of computer network security protection system under information environment, we should pay attention to dealing with all kinds of problems in the construction process, select the objects that need to encrypt data, analyze all kinds of security vulnerabilities that may appear in computer network, solve them with professional technology, deal with them with the original experience, and set relevant procedures to avoid the same security problems from appearing again[7]. The original computer network security protection system can not meet the needs of computer network security protection at present, so it should be upgraded and improved. At present, the system of computer network security protection needs to be further strengthened and improved. The ways and scope of computer network information transmission are increasing, which brings new challenges to computer network security protection. The original computer network security protection system needs to be further upgraded and improved. In the process of building the computer network security protection system, it is necessary to introduce the new technology of network information data encryption. At the same time, in this process, it is necessary to analyze the possible security threats, find out the security vulnerabilities in computer network security protection, and repair and improve them.

D. Strengthen the research of black and evil prevention mechanism and protect the information security of computer network under the information environment

Hacking is one of the factors that threaten the information security in computer network under the information environment. This is a man-made means to destroy the computer network information security protection system. In order to reduce and avoid this situation, the relevant departments of our country need to deeply study and improve the hacker prevention mechanism in network security. In the process of network information security protection, the

application model of digital resources under the background of big data era is studied in detail. In-depth study of hacker technology in computer network, real-time supervision of computer network, analysis, record and arrangement of hackers when they are found to invade computer network, so as to take this as the basis of reliability, and then improve the hacker prevention mechanism[8]. Relevant technicians study the archived hacker attack records, and upgrade the computer network security protection system in a targeted way, so that the phenomenon of hacking and illegal invasion stealing network information resources and personal information is gradually reduced, the network crime rate is reduced, and the related losses and injuries caused by hacking are reduced.

V. CONCLUSION

Under the background of informationization, the security management of computer network is valued by users and researchers, and the information security in computer network is extremely important. In the network security management system, information technology plays a very important role, which can effectively protect the security of users' information and data in the computer network. Under the information environment, the computer network security technology needs to be continuously optimized and improved on the basis of the original technology, and continue to innovate. At the same time, attention should be paid to the construction of prevention systems to ensure the protection of potential security risks, intercept invading viruses and unauthorized access to steal information, and ensure the civilization and security of the computer network environment under the background of big data. This will promote the informatization progress and sustainable development of our national network security management system.

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